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More Jobs, Better Jobs: A Priority for Egypt

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Acronyms and Abbreviations

AfDB	Africa Development Bank
CAPMAS	Central Agency for Public Mobilization and Statistics
ECA	Egyptian Competition Authority
EGP	Egyptian Pound
EIDS	Egypt Industrial Development Strategy
ELMPS	Egypt Labor Market Panel Survey
FDI	Foreign Direct Investment
GCMA	Greater Cairo Metropolitan Area
ILO	International Labour Organisation
LFP	Labor Force Participation
MENA	Middle East and North Africa Region
MFTI	Ministry for Trade and Industry
MOI	Ministry of Investment
MOP	Ministry of Planning
MSE	Micro and Small Enerprise
NDP	National Democratic Party
SFD	Social Fund for Development
SME	Small and Medium Enterprise
SOE	State Owned Enterprise
TFP	Total Factor Productivity
UAE	United Arab Emirates
WBES	World Bank Enterprise Survey
WDI	World Development Indicators

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1. Economic Growth, Industrial Policy and Jobs: A Long-Run Perspective

Much of the current debate around the recent economic crisis in Egypt has focused on unemployment. While unemployment is an important marker of labor market health, the jobs problem in Egypt precedes the recent crisis, and is manifested markedly in other labor market metrics. Indeed, the link between growth and unemployment in Egypt is weak, particularly for men. This chapter argues that the reason for this weak link is partly related to decades of flawed industrial policies that have discouraged investment in employment-generating activities. Industrial policies, including those implemented in the mid-2000s, were never focused on mitigating market failures to promote the emergence of fast-growing, high productivity firms. Instead, they have worked to preserve insider privileges, leading to growth in sectors that are not labor intensive. Policy makers therefore need to look beyond supply-side focused labor market policies to accelerate employment growth.

Jobs have been front and center of the policy debate since the January 2011 Egyptian revolution. However, much of the current debate around unemployment has focused on the crisis – after all, political, and correspondingly economic, crises have severe effects on labor markets. A recent Gallup poll found that 80 percent of Egyptians believe that Egypt is worse off today than it was prior to the 25th January Revolution, and only 50% believe that it will recover in the next five years.[1] A large part of this pessimism comes from a negative view of the labor market and its future prospects; roughly 70% of Egyptians believe that employment opportunities in both the public and private sectors have declined, and more than half believe it will take five years or more to improve, with 11% going so far as to say that it will never improve. The argument in this report is that the jobs crisis in Egypt preceded the Arab Spring and will persist after stability returns unless there is a dramatic change in public policies. In fact, respondents in earlier Gallup polls overwhelmingly dissatisfied with job opportunities in their area: in 2010, only 11 percent of respondents reported satisfaction and in 2009, 60 percent said that the main obstacle for youth was the lack of good jobs. One of the critical factors underpinning this jobs crisis is the decades of flawed industrial policies that have discouraged investment in employment-generating activities. Policy makers therefore need to look beyond labor market policies to accelerate employment growth.

Events from recent decades provide evidence that crisis dramatically suppresses employment. Standard macroeconomic analysis, pointing as it does to a close relationship between aggregate demand and the demand for labor, suggests that crisis can have important effects on employment. The East Asian financial crisis of 1997 saw spikes in unemployment rates across Southeast Asia; unemployment rates in Korea notably tripled from around 2% to over 6% from 1997 to 1998.[2] Unemployment in the United States rose from 6% in 2008 to over 9% in 2009 as the Global Financial Crisis unfolded.[3] The more recent Eurozone financial crisis saw unemployment rates nearly triple in Greece, from 9.3% in June 2009 to 24.4% in June

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[1] June 12-19, 2013. Gallup
[2] Kim (2012).
[3] Bureau of Labor Statistics. "Current Population Survey."

2012.[4] Young workers are especially vulnerable to swings in times of crisis. The 2008 Global Financial Crisis saw increases in American youth unemployment from about 10% at the onset to a peak of about 17%. The recent Eurozone crisis saw already high youth unemployment rates in the European Union turn even higher. From 2007 to 2013, workers in Greece under age 25 experienced an increase in unemployment rate from roughly 22% to over a staggering 60%.[5]

However in Egypt we find that the relationship between growth and employment manifests itself as changes in job *quality* rather than job *quantity*. Historically, the correlation between output and employment in Egypt has been much weaker than in other countries; the analysis in this chapter and the rest of the report demonstrates that this weak correlation can be traced to a policy environment that shifts economic activity to sectors that are not labor-intensive or that are outside of the formal sector. The main effect of recent crises has not been to increase unemployment, but rather to exacerbate a pre-existing trend towards lower quality jobs. Egyptians are increasingly working in informal and insecure jobs: fewer and fewer workers report that their employment includes written contracts or social insurance and thee has been a recent, sharp uptick in the number of casual laborers. The unemployment rate in Egypt by itself does not sufficiently measure the extent to which the labor market responds to economic growth.

Egypt's labor laws, industrial policies, and the manner in which they are implemented, discourage employment, and particularly formal employment, by raising the costs of labor, artificially reducing the price of non-labor inputs, and directly encouraging, through tariff and other industrial policies, the production of non-labor-intensive products. For example, evidence discussed in Chapter 5 reveals that a remarkable 95 percent of firms are very small, usually informal, and engaged in service activities where productivity – and employment growth – are slow. This firm profile is what one would expect in environments where entrepreneurial activity is suppressed by complex regulation and threats of arbitrary government decision-making. At the same time, less productive, capital-intensive, large enterprises, where productivity and employment growth are slow, benefit from privileged access to capital and energy, protecting them from competition.

Policy distortions have historically been large in Egypt, therefore, one cannot fully understand the barriers to job creation and job quality without fully understanding industrial policy. In particular, the pattern of incentives to public and private sectors, the sequencing of recent reforms and the related fiscal policy, and the open encouragement of energy-incentive sectors could have all contributed to the structure and dynamics of the private sector, and played a role in reducing its competitiveness and its ability to create jobs. In these circumstances, unemployment can be difficult to overcome even in periods of rapid growth.

In this chapter, we analyze both labor laws and trade and industrial policies in Egypt to better understand how these have shaped current employment outcomes. We find that labor laws incentivized workers to seek public sector jobs. Moreover, even when the public sector option was curtailed, significant constraints on hiring and firing in the private sector remained and continued to discourage private sector employment. For example, the process of declaring bankruptcy in Egypt is costly, expensive and very long, and can pose an additional impediment to firm entry, growth and exit.[6]

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[4] Hellenic Statistical Authority. "Press Release: Labor Force Survey June 2012".
[5] http://www.theatlantic.com/business/archive/2013/05/europes-record-youth-unemployment-the-scariest-graph-in-the-world-just-got-scarier/276423/.
[6] The Egyptian Center for Economic Studies, *The Efficiency of the Bankruptcy System in Egypt*, 2005
http://www.eces.org.eg/Uploaded_Files/%7BE6BD9326-F643-4152-8319-5C4800CE6B6C%7D_ECESWP100.pdf

We also explore the effects of industrial policy on employment. Most recently, the impressive reform agenda adopted in 2004 led to average annual growth of about 7 percent a year between 2006 and 2008 and a decline in unemployment from 11.2 percent in 2004/5 to 8.7 percent in 2007/8. However, these rates are well above the unemployment rates recorded in the early 1970's, which fluctuated around 2 percent. One potential explanation for relatively high unemployment, despite apparently more favorable economic policies, is the large increase in the size of the labor force. However, this chapter argues that the policy environment, even after 2004, continued to favor sectors that were not labor-intensive; these are the sectors that grew. This is especially true of the hydrocarbons sector, where changes in the international oil price led to important changes in GDP, but did not directly alter employment.

The rest of the chapter is organized as follows. We first use standard macroeconomic analysis to show that the relationship between GDP growth and employment in Egypt is negative, consistent with Okun's Law, but weaker than expected, particularly for men (who make up most of the labor force). This puzzle can partly be explained by the uneven impact of sectoral growth on employment, which in turn can be traced to labor laws and industrial policies. The third section outlines the history of these policies, beginning with Nasser in the 1950s, describing the policies and reforms along with the main macroeconomic and employment outcomes. It also highlights a few of important laws governing hiring and firing, benefits and wages, as well as bankruptcy. Finally, we describe the patterns of growth and job creation by economic activity during the last decade with a link to some of the laws and industrial policies that have been recently adopted.

A. The relationship between GDP growth and unemployment is weak

The evidence around the world points to a negative, short-run correlation between growth in output and unemployment. This was first shown to be an empirical regularity in the United States by Arthur Okun in 1962 (Okun 1962); many studies since then have confirmed the correlation across many countries and time periods (Box 1.1). However, distortions in product and labor markets, including those induced by government policy, can weaken the correlation.

The relationship between growth and unemployment builds on the idea that shifts in aggregate demand cause output to fluctuate around its potential. These output movements cause firms to hire and fire workers, changing employment. In turn, changes in employment move the unemployment rate in the opposite direction. This counter-cyclical relationship in the short-run between growth in output and unemployment was shown to be an empirical regularity in the United States by Arthur Okun in 1962 (Okun, 1962). Popularly known as Okun's Law, many studies have confirmed this relationship since.

For the United States, many authors posit that a one percent deviation of output from its potential causes an opposite change in unemployment of half a percentage point (Mankiw, 2012). One of the advantages of Okun's law is that it is easy to relate the analysis of the goods market to that of the labor market because labor is an important input in the production process. As the growth rate of the economy exceeds its potential, employment tends to grow faster than the labor force, with the unemployment rate falling in the process.

Cross-country comparisons of the relationship between unemployment and output have been estimated for other countries, but magnitudes vary depending on the country and time period.[7] Estimates in these papers of the increase in output growth associated with unemployment reduction of one percent range from a low of two percent in the U.S. and Canada, to three to five percent in Europe, to more than 10 percent in Japan, with some estimates for Europe tending to be higher for more recent time periods. However, estimates that adjust for gaps and use panel methods yield coefficient estimates that are lower than those for the US, the rationale being that most of the unemployment in Europe is structural, implying that an increase in growth is likely to have a smaller impact on employment (Freeman, 2001).[8]

In the case of Egypt, this relationship is not as strong as one would expect. One could look at Figure 1.1A and conclude that, consistent with Okun's Law, employment growth correlates with changes in GDP. However, this correlation is by no means consistent over time: it is much stronger in the period since the economic reforms adopted in 2004. Nor is it consistent across genders. As seen in Figure 1.1B, female employment is responsible for *all* of the correlation of growth and labor markets observed in Figure 1.1A. Although males constitute roughly four-fifths of the Egyptian labor force, their employment exhibits almost no correlation with growth. Females are a small part of the work force, but because their employment is unusually and extraordinarily responsive to growth, rising much faster than the economic growth rate in good times and falling much further when growth is slow, the correlation of female employment and growth is sufficient to create the aggregate appearance of a growth-employment relationship (see Annex Table 1.1 for details). This is largely due to fluctuations in agricultural employment, which is a much more important source of employment for women than for men (see Chapters 2 and 4). With the more recent time period, the same relationship continues to hold (Figure 1.2). This is consistent with earlier empirical estimates of Okun's Law in Egypt that also found a weaker than expected relationship (Moosa, 1997, Elshamy, 2013).

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[7] See Freeman (2001), Knoester (1986), and Paldam (1987), Ball et al (2013), Pierdzioch et al (2011), among others.
[8] Note that some studies have supported the existence of an asymmetric Okun's coefficient for the US (Crespo Cuaresma, 2003; Silvapulle et al, 2004). They find that cyclical unemployment is approximately twice more responsive to contemporaneous economic growth when the latter is in the 'recessionary' regime.

FIGURE 1.1: GROWTH IN GDP AND EMPLOYMENT PER CAPITA (ANNUAL PERCENT CHANGE)

A. Total Population

B. Male and Female Population

Growth in share of employed population

Growth in real GDP per capita

Growth in the share of employed men, 15+
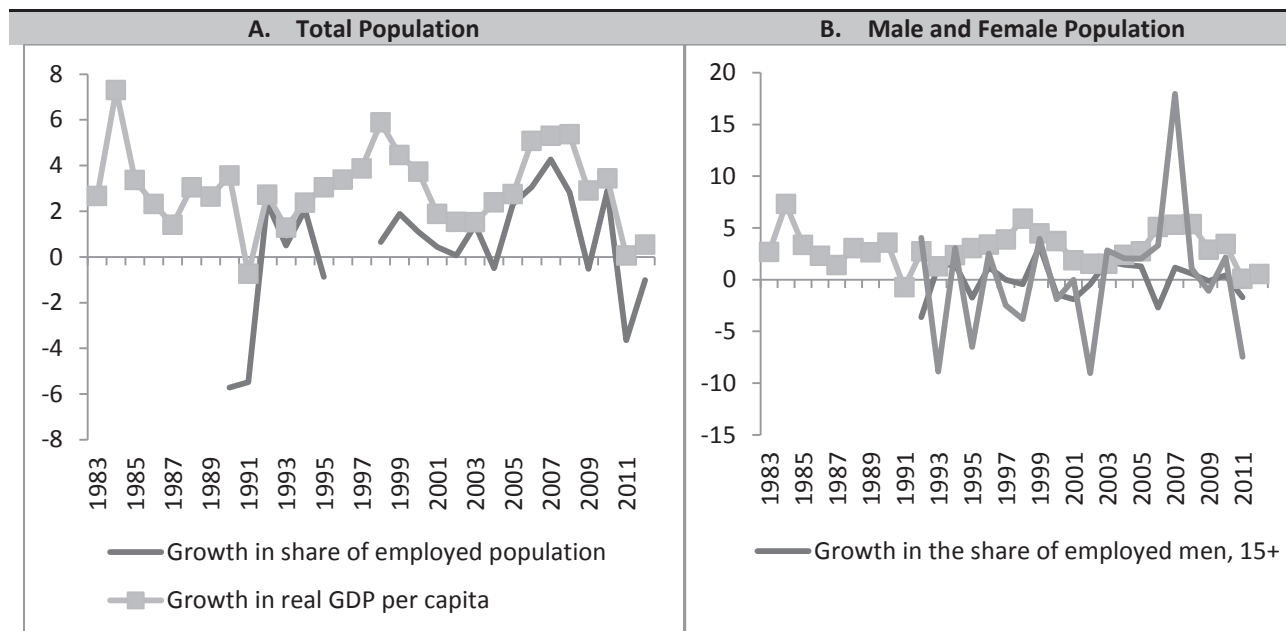
Source: IMF International Finance Statistics.

FIGURE 1.2: GDP AND UNEMPLOYMENT GROWTH (ANNUAL PERCENTAGE CHANGE)

A. Annual Data

B. Quarterly Data

GDP growth (left axis)

Change in unemployment (right axis)

4-quarter GDP growth (left axis)

4-quarter change in unemployment (right axis)
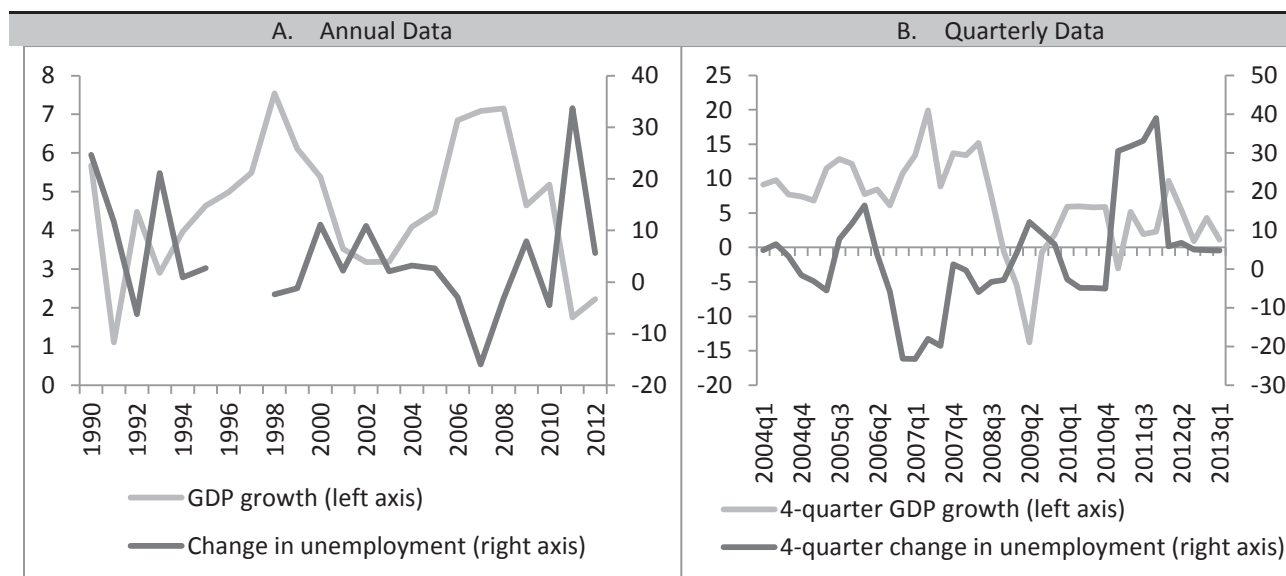
Source: IMF International Finance Statistics.

Source: ILO, CAPMAS and IMF International Finance *Statistics.*

This report focuses on two potential explanations for the absence of a stronger correlation for men. First, at the micro level, to the degree that fluctuations in labor demand lead to movements between the formal and informal sector instead of movements into and out of employment, one would expect to see a lower correlation between changes in output and unemployment. We explore this explanation in Chapter 2.

Second, at the aggregate level, public policies pushed output growth towards sectors that are not labor intensive, lowering the correlation between output growth and employment.

In this chapter, we focus on this second explanation, examining a few key labor laws that influence employment and reviewing sectoral growth patterns and the industrial policies that have shaped them over the last 60 years. The key lesson from this discussion is that economic policies in Egypt have not aimed primarily at economic and jobs growth. If they had, they would have focused more on removing market failures that impede growth, such as coordination failures that impede the development of export markets, or insecure property and contract rights. Rather, private and public sector investments have been shaped by industrial policies aimed at promoting particular sectors and by energy and financial sector policies that have significantly distorted the prices of oil and capital. Public policy towards industrialization has consistently operated in favor of insiders – but insiders have responded by pursuing economic activity in the areas with highest rents, which (like property development or insurance) are not necessarily areas with the greatest potential for job creation.

Moreover, both market failures and public policy have conspired to favor capital-intensive sectors. Artificially low costs of capital and energy raise the rate of return to investments in these sectors relative to labor-intensive industries. In addition, entrepreneurs with close relationships with the government not only have more economic opportunities, but their property and contract rights are also more secure, making capital investments (those that are most exposed to insecurity) relatively more attractive for them. Finally, although public employment has been curtailed, public sector employment policies distorted labor markets with generous pay and benefits in excess of those that employees could have received in the private sector.

B. Historically, policies have not supported labor-intensive modes of production[9]

In the sixty years following independence, Egypt has changed its industrial policies substantially, but in no period did industrial policy support labor-intensive modes of production. Nasser's early days (1952–1956) were marked by the expropriation of land, followed by the era of import substitution industrialization (1956-1970), achieved in part through nationalization and the build-up of state-owned industrial firms. Sadat's open-door policies (1970–1981) expanded the space for the private sector, but heavy regulations maintained a bias in favor of capital-intensive activities. These policies persisted during Mubarak's first 10 years in office (1981–1991). The economic crisis of 1991 led to retrenchment, including substantial structural adjustment and privatization (1991–2004), with support from the IMF and the World Bank. Finally, in 2004, Mubarak appointed a new technocratic cabinet and charged it with fundamentally revising economic policy (2004-2011). Despite the myriad, apparently market-oriented reforms launched during that time, the bias against labor-intensive, fast-growing sectors remained. The result was one of no substantial improvement in the quality and availability of employment, leading to frustration among the growing young, educated labor force, culminating in the 2011 revolution.

The risks to poorly designed industrial policy interventions were especially high in Egypt because of the profound impact of hydrocarbons (i.e. oil and gas) on the economy. As well as being an oil and gas producer in its own right, the economy has two other income streams that are strongly related to MENA's resource wealth, namely Suez Canal receipts and remittances from the Gulf. These income sources – which

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[9] This section draws heavily from Loewe (2013).

are forms of economic "rent" – create the conditions for adverse effects on the structure of the economy. First, income flows not related to current production of domestic goods and services raises the relative demand for non-tradables, a Dutch Disease effect resulting in real exchange rate appreciation. As the subsequent discussion will show, Egypt has in fact seen a cycle of exchange rate overvaluation and adjustment, indicating a mismatch of macroeconomic management with hydrocarbon spillovers. In terms of economic structure, Dutch Disease will manifest itself in a relatively large non-traded sector (retail and wholesale trade, construction, household services), undercutting the transformative potential of the economy. Second, the presence of domestic oil and gas resources creates the temptation for energy subsidies, both as a form of "sharing" the benefits of resource wealth and for providing below-opportunity cost subsidies to domestic industry. As will be seen throughout this report, Egyptian policy thinking was particularly vulnerable to the pitfalls of this approach. At a political economy level, the availability of rent streams enabled the reluctance of the government to promote an autonomous private sector (Malik and Awadallah, 2013).

1. The Nasser era and statist experiments (1952–1970)

Nasser focused on state-led industrial policies. The Free Officers staged a coup d'état in 1952, putting an end to the Egyptian monarchy and to British colonial rule, and formed a military junta under Egypt's first President, Muhammad Naguib. Gamal Abdel Nasser took over as president in 1956; political decision making was centralized in the office of the president. Nasser sought to accelerate industrialization, first, by requiring large landowners to sell landholdings above a threshold to the government, in exchange for 30 year government bonds. Among other objectives, Nasser expected that landlords would monetize the bonds and invest in industry. However, capital owners instead transferred their assets to safety abroad. Second, though, Nasser embarked on a course of state-led growth, particularly state-led industrialization. For example, in 1956 using a loan from the erstwhile Soviet Union, the government began to establish the first state-owned industrial enterprises to produce basic commodities (Loewe 2013, page 19). Nasser also expropriated foreign banks and insurance companies – both sources of capital for state-led industrialization—as well as foreign-owned manufacturing companies. In 1957, the government introduced licensing requirements to establish, expand, change the purpose or location of industrial plants, as well as for many other business decisions. The state also used differential tax rates to direct labor and capital into priority economic sectors. In 1960, Nasser took this state-led approach further by nationalizing Egypt's two largest industrial complexes, the remaining banks, insurance companies, transportation and trading companies, public utility providers, hotels and department stores, as well as all industrial enterprises with more than 10 employees. Not surprisingly, the private sector contribution to gross capital formation plummeted from 72 to 26 percent (Loewe 2013, page 20).

During this period, industrial policies were not only skewed against the private sector, they were biased against labor-intensive production. The state increasingly invested in import-substituting industries to produce primary and intermediate goods (chemicals, metals, paper, steel, fertilizer and textiles) as well as higher technology consumption goods such as automobiles, TV and radio sets, and pharmaceuticals (Loewe 2013, 20). By one measure, the new nationalization strategy was successful: economic growth reached 6 percent, surpassing that of most developing regions. Industrial production increased even faster and became more diversified, and labor productivity rose as previously unused labor was put to work. However, these effects proved to be illusory and unsustainable. Nasser's industrial policies, unlike those of East Asia ten

years later, did nothing to promote the competitiveness of Egyptian products in foreign markets. On the contrary, between 1948 and 1973, Egypt's share of global exports shrunk from 1.0 to 0.2 per cent of global trade. While domestic products had been successfully substituted for many imported primary and consumption goods, Egypt had become dependent on imported capital goods. Since Egypt had hardly any products to sell on world markets, it used up the country's foreign reserves to finance its imports. After Egypt's defeat in the Six-Day War in 1967, it became evident that Egypt was nearly bankrupt and the private sector had almost disappeared (Loewe 2013, 21).[10]

These industrial policies were countered by expanding public employment. Confronted by a flood of labor market entrants with secondary education in the late 1950s and 1960s, and perhaps suspecting that current industrial policies would lead to little absorption, the Egyptian government initiated a major public employment drive that included an employment guarantee to university graduates (Richards 1992). These policies further distorted incentives for employment growth in the non-state sector. In 1964, the guarantee was extended to the graduates of vocational secondary schools and technical institutes and formalized into law. The policy also itself created an even greater demand for secondary and post-secondary education, especially combined with the abolition of school fees for higher educational institutions in 1963 (Richard 1992, Assaad 1997). This policy was extended in 1973 to demobilized military conscripts of all educational levels (Assaad, 1997).

At the same time, benefits to public sector employees were expanded. Even before the 1952 Revolution, public sector employees enjoyed financial benefits and greater job security relative to those working in the private sector; and these continued to expand thereafter. During the 1952 revolution, the government realized the need to create a special pensions fund that covered civil servants and public sector employees, and was implemented through Law No. 316 of 1952. In 1959, the Authority on Social Insurance was established (Law No. 92) and made responsible for providing pensions to employees who qualify based on work injuries, old age, disability, or death.[11] Moreover, civil servants who worked at public facilities and bodies and public administrative and economic departments now became eligible for exceptional pensions and bonuses (Law No. 71 of 1964).

2. Sadat's infitāḥ (open-door) policies (1970–1981)

By the time Anwar as-Sadat succeeded Nasser in office, it was clear that Egypt had to export in order to finance its imports. The challenge was to mobilize funds for investments in new export industries. Sadat decided to solicit foreign capital in what is known as Egypt's infitāḥ (open-door) policy. First, all foreign capital was accorded comprehensive legal protection against expropriation as well as the right to be fully re-exported at any time. However, because foreign investors had little recourse in the event that the government reneged on these commitments, they needed further incentives to increase their risk-adjusted rates of return. Second, therefore, foreign private investors were offered multiple tax holidays and reductions. In 1977, these rights and provisions were extended to domestic private investors (Loewe 2013, 21).

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[10] Unfortunately, there is not employment data available for this period. CAPMAS data on unemployment starts in 1970

[11] In 1964 (Law No. 63) health insurance benefits were granted to employees from the private and the public sectors, excluding specific types of workers (i.e. all temporary workers in public facilities, workers in agriculture, and domestic workers).

However, the government maintained its elaborate framework of financial and fiscal incentives to guide investment. Policies that differentiated tax, customs and interest rates by sector, product and location (rural/urban) persisted, all with the goal of making private investments in certain economic sectors more attractive than in others and to channel resources from one sector or from one group of people to another. For instance, Egyptian farmers were compelled to sell their crops at below market prices to the state, which resold the items abroad at higher prices to generate revenues to subsidize food, water and energy for urban households. Similarly, the exchange rate was divided into three tariffs: the most favorable for state-owned enterprises in strategic areas (petrochemicals, textiles and processed food), the second for other state-owned enterprises, and the least favorable for private enterprises (Loewe 2013, 21).

It might appear that these policies succeeded. GDP growth accelerated from 1973 to 1976 (Figure 1.3) reaching 14½ percent in 1976. However, much of this was fortuitous. For example, Egypt benefited from an increase in international oil and gas prices that somewhat boosted exports (Figure 1.3).

In fact, these policies discouraged employment growth. First, industrial policy continued to favor non-labor intensive sectors. Second, the continued arbitrary implementation of these policies favored individuals with closer connections (*wasta*) to the state.[12] Those without these connections were more exposed to arbitrary regulation and were reluctant to invest. Those with these connections confronted a higher risk-adjusted rate of return to capital investment – since they were less vulnerable to hidden expropriation – and so were relatively more likely to favor capital-intensive modes of production. Third, in an environment where investors worried about arbitrary government decision making, unfair competition from

FIGURE 1.3: GROWTH IN GDP AND EXPORTS, 1970-1981 (ANNUAL PERCENT CHANGE)

Source: International Financial Statistics.

connected firms, and large potential swings in the policy environment, tax incentives were insufficient to offset the risks of investment, slowing growth more generally.
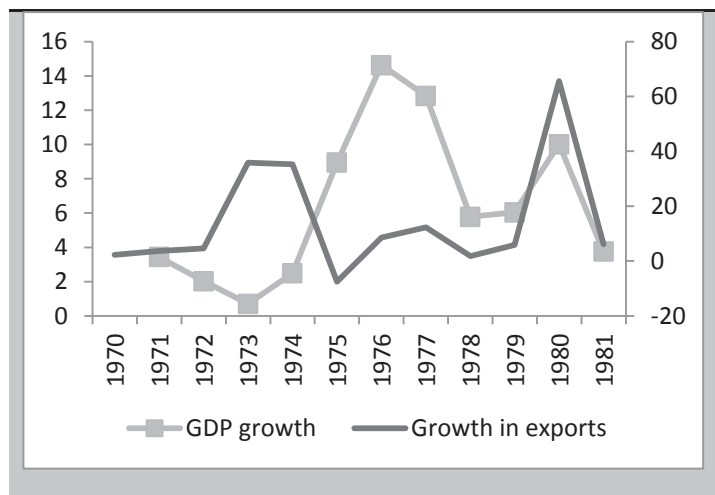
Egypt was unable to attract significant amounts of foreign investment, and owners of local capital were hesitant to invest in domestic industry. Although a few of the most heavily protected manufacturing industries (food, leather, wood, textiles and construction) did manage to attract some private investment, the state made up 75 per cent of all investments. Egypt's state-owned enterprises were constantly turning out deficits, having to rely on subsidies. Throughout the 1970s and 1980s, Egypt's manufacturing sector deteriorated: overall investment stagnated at 25.5 per cent of GDP, manufactured exports declined from 4 to 1 percent of GDP and imports rose from 10 to 15 percent of GDP (Loewe 2013, 22).

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[12] Business people with good connections (wasţa) to the regime were able to circumvent restrictions and controls and obtain permits and licenses before their competitors. They learned about changes in regulations, tax rates, trade rules and new profitable business opportunities early on, while other well-connected investors were able to get public contracts to expand infrastructure (including roads, telephone lines and sewage systems), construct social housing and public buildings, and import essential goods (Loewe 2013, 22).

As manufacturing deteriorated, the repercussions on employment were just as sharp. A cornerstone of Egypt's social contract was full employment. Until the late 1970s, and thanks to rising external income from oil and gas exports, Suez Canal user fees and taxes on remittance inflows, the government was able to finance swelling public-sector employment. However, by the late 1970's full employment was more difficult to realize: the unemployment rate increased from a low of 1.5 percent in 1972 to 5.2 percent by 1980 (CAPMAS).

At the same time, the gap in wages, benefits and job security between public and private sector employees steadily increased. Law No. 95 of 1974 and Law No. 10 of 1978 gave government civil servants lifetime job security, attractive benefits and pensions, and a retirement age of 60, with generous possibilities both for early retirement and for extending retirement and pensionable ages.[13] Employees working in the public sector and civil servants were also guaranteed a minimum wage in 1978.

3. Mubarak's first 10 years in office (1981–1991)

Hosni Mubarak's industrial policies first consisted on expanding investment incentives and continued differentiated prices. Following Sadat's assassination in 1981, Hosni Mubarak maintained and expanded investment incentives through tax holidays and the creation of economic free zones; these benefits continued to flow to those with close state connections. Mubarak also continued to differentiate prices, custom duties and interest rates to support and protect public sector companies. However, he also devalued the Egyptian pound to make exports more competitive (Loewe 2013, 23).

As occurred in the early years of prior regimes, Mubarak's policies also initially appeared to be successful. Real economic growth averaged 6.8 percent a year between 1981 and 1985,[14] the share of manufacturing rose from 13.5 to 18 percent of GDP between 1981 and 1987, and industrial labor productivity increased by more than 3 percent per year (Loewe 2013, 23). These developments can be traced to the devaluation, which promoted exports (Figure 1.4). In addition, though, a new enterprise sector emerged, belonging to the Egyptian military.

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[13] Under Law No. 79 of 1975, the pensionable age is 60 years old for private and public sector employees, but it is more flexible for specific employees in the public sector. Pensions received at an early retirement age depend on the age of the public sector employee, number of years served, and the average salary.
[14] Based on WDI figures.

Although Mubarak tried to limit the army's influence in politics, he supported the military's development of commercial activities in different sectors. The military became increasingly involved in commercial ventures, including tourism, construction, vehicles, fertilizer, olives and bread. These were partly financed by the sale of valuable land around Cairo and along the coasts to private investors. At the same time, military investors, relative to any other class of domestic or foreign investment, were least vulnerable to arbitrary or expropriatory government regulation. Although National Accounts do not include information about the military economic sector, some observers believe that it had swollen to 20-30 percent of GDP by 2011 (Loewe 2013, 23). Indeed, the private sector is heavily dependent on the military when it comes to buying land, as the armed forces possess legal power to confiscate public land at any time for purposes of national security – a further disincentive to private sector-led employment growth.[15]

FIGURE 1.4: EGYPT: GROWTH IN GDP AND EXPORTS, 1980-1991 (ANNUAL PERCENT CHANGE)

Source: International Financial Statistics.

Continued public sector employment growth was no longer possible by the mid-1980s, especially given the economic crisis spurred by lower oil prices. The 1985 decline in world oil prices severely affected Egypt's income from hydrocarbon exports, remittances and Suez Canal user fees (Figure 1.5). At the same time, global interest rates rose. These two factors created a crisis in the Egyptian economy. Partly due to this stricter fiscal stringency, the employment guarantee policy became unsustainable by the mid-1980s, though it was never formally abolished. Indeed, the last cohort of graduates to have been offered automatic appointments through the centralized manpower allocation system was the 1984 cohort of university graduates and the 1983 cohort of vocational secondary and technical institute graduates (Assaad 2007, p.394).

FIGURE 1.5: CRUDE OIL PRICE INDEX, 2005 = 100, SIMPLE AVERAGE OF SPOT PRICES (DATED BRENT, WEST TEXAS INTERMEDIATE, AND THE DUBAI FATEH)

Source: IMF.

Although the private sector continued to grow by 8 percent per annum, it was too small to make enough of a difference. In 1990, it accounted at most for 23 percent of Egypt's manufacturing sector output,

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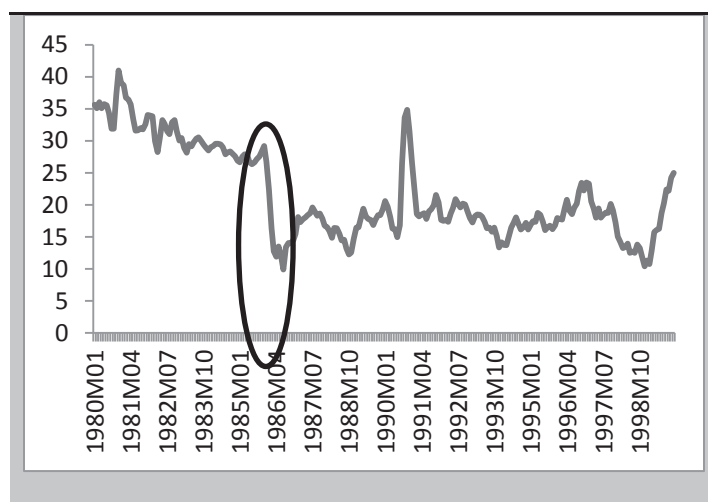
[15] Zeinab Abul-Magd, "The Army and the Economy in Egypt", Jadalyyia, 23 December 2011.

25 percent of its employees and 45 percent of its exports (Loewe 2013, 24). Economic growth dropped to 1.1 percent in 1991 and for the first time ever, the official unemployment rate reached 9.6 percent.[16]

4. Privatization (1991–2004)

The crisis compelled the government to look to the International Monetary Fund (IMF) and World Bank in order to receive a stand-by credit, debt relief from the Paris Club and a World Bank loan to finance a comprehensive stabilization and structural adjustment package. As part of this package, the government agreed to rein in expenditures, privatize state-owned enterprises, deregulate markets and liberalize trade. In the following years, the government: (i) reduced public spending in all areas (especially subsidies for energy and food, and in the social sectors), (ii) extended tax holidays for private investors, (iii) began to liberalize the financial sector, (iv) decontrolled most commodity prices, (v) reduced customs duties, non-tariff trade barriers and capital transfer restrictions, and (vi) pegged the Egyptian Pound (after a 10 per cent devaluation) to the US dollar (Loewe 2013, 24).

These reforms triggered a second growth spurt after 1991. This was partially due to a fortuitous increase in the country's external income from remittances and Suez Canal user fees, reasons unrelated to the policy shift. However, the country also experienced a private investment boom. Policy reforms explain some of this: the liberalization of markets and prices, including expanded possibilities for investments (particularly by connected investors) in previously closed sectors such as telecommunications, TV, ports, airports, power plants and cement, and reductions in tax and customs tariffs and the deregulation of the financial sector (Loewe 2013, 25).

The government also granted significant implicit subsidies to favored investors to spur growth. These took the form of allocations of cheap land around Cairo and Alexandria, complete with low-cost access to good infrastructure.[17] According to Sfakianakis (2004), a number of top bureaucrats took advantage of their insider status to go into business, in some cases using their access to information about political decisions or market conditions to enter profitable niches. Others purchased privatized enterprises at bargain prices. The privatization process that began in the

FIGURE 1.6: GROWTH IN REAL GDP PER CAPITA, 1980-2003
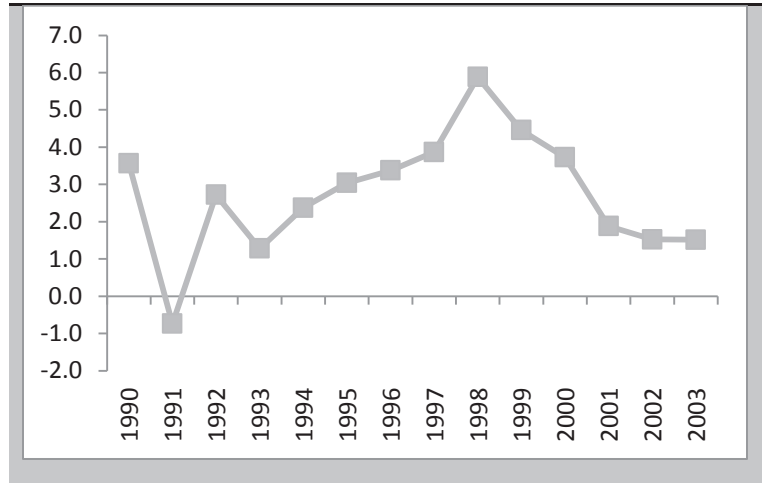
Source: IMF Financial Statistics

1990s created opportunities for former bureaucrats to establish powerful networks of privilege which occasionally competed with established private sector elites. At times, these newer business interests were able to turn public monopolies into private monopolies. At other times they colluded in purchasing parts of privatized companies (Sfakianakis, 2004).

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[16] GDP figure based on IMF, unemployment rate based on CAPMAS.
[17] The reforms created the possibility for the creation of new networks that linked state officials and former bureaucrats, and permitted them to capture the benefits of privatization, often at the expense of more established business actors (Stakianakis, 2004).

The result was an increase in economic activity, and strong growth in private-sector manufacturing. GDP per capita increased annually by an average of 3.4 percent per year between 1992 and 1999[18] and the manufacturing sector's total-factor productivity rose by 1 percent. The government budget deficit fell from 20 to 1 percent of GDP, inflation dropped from 21 to 6 percent and debt-service spending was cut from 49 to 13 percent of total government spending between 1989 and 1997 (Loewe 2013, 25). Moreover, private-sector manufacturing output increased by 14 percent a year between 1990 and 2002 while public sector manufacturing output decreased by 2 percent per annum. In 1997, the share of total exports of the private sector rose to 36 percent. In 2003 its share of total industrial value added and employment reached 70 and 60 percent, respectively. Public sector manufacturing was restructured and several enterprises were granted more autonomy and the right to compete.[19]

To the extent that growth was driven by one-off grants of cheap land and the opening of new sectors to limited investment, we would expect to see strong effects on growth in the short-term, but little effect over the longer-term. Consistent with this, after a few years, Egypt's second growth spurt slumped (Figure 1.6). Annual per-capita growth fell to 1.5 percent in 2003, manufacturing exports decreased from 2 to 1 percent of GDP and FDI stagnated at 0.7 percent of GDP. The government budget deficit increased again, the gross investment rate dropped to 16.5 percent and poverty levels rose. Despite the government's decade-long effort to diversify the economy, exports were still as concentrated in 2004 as in the early 1960s (Loewe 2013, 26).

5. Reform period (2004-2011)

When the Egyptian pound was floated in 2003, it immediately depreciated by more than 25 per cent, which caused Egyptian exports to become more competitive. At the same time, public sector employment was frozen. However, the move was deeply unpopular and the regime was simply no longer able to maintain its side of the 'social contract' – whereby leaders used subsidies and public employment to maintain regime support. This type of exchange was possible because Egypt had substantial sources of external income, including gas exports, Suez Canal user fees and development assistance. When these financial inflows were abundant as in the late 1970s, the government could easily offer a job in the public administration to every university graduate, leading to very low unemployment rates of about 2 percent (Figure 1.7). However, after the 1985 collapse of world energy prices, income from external sources shrunk while the number of

FIGURE 1.7: UNEMPLOYMENT RATE 1970 -1992
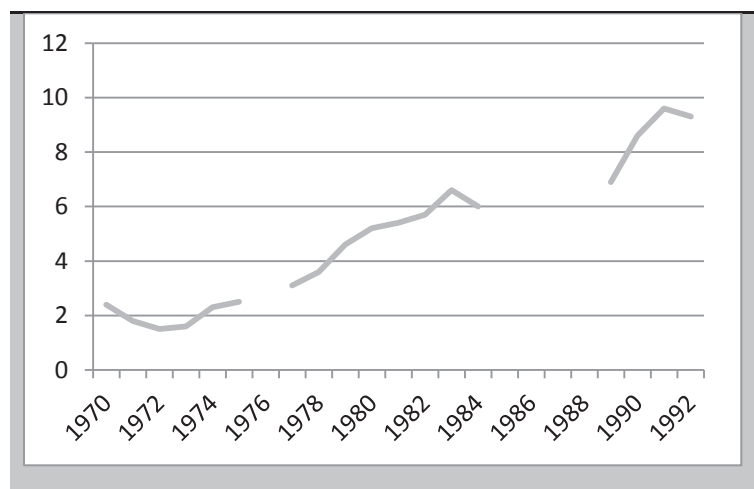
Source: CAPMAS

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[18] IMF International Financial Statistics

[19] However, little progress was made in privatizing public enterprises. Although the government prepared 314 state-owned enterprises (15 percent of the total) for privatization, very few were actually sold before 1996. By 2004, only 93 had been sold and another 110 had been partly privatized. Not included were military businesses, which are said to be much more efficient than government enterprises, but no one – in or outside the regime – has ever proposed privatizing them (Loewe 2013, 24-25).

recipients of social benefits increased as a result of Egypt's steady demographic growth. The government was forced to reduce the benefits and constrain public employment, at the risk of losing its legitimacy and encouraging social unrest, and this is evident in the rising rates of unemployment by the early 1990s.

In 2004, the government changed the course of Egyptian economic policy more sharply than at any time since the days of Nasser. President Mubarak appointed businessman Ahmed Nazif, the former Minister for Communications and Information Technology who had overseen the modernization of Egypt's information and communication technology (ICT) sector, as prime minister. Nearly half of the 37 ministers belonged to the market-friendly wing of the regime and were themselves entrepreneurs (Loewe 2013, 29). On its first day in office, the cabinet resumed the privatization of state-owned enterprises; deepened customs, tax and administration reforms; liberalized the financial sector and rationalized market regulations (see Annex 1.2). It also launched several strategies for private sector development that would constitute the core of industrial policy between 2004 and 2011 (Loewe 2013, 30).

Certainly, the reforms dramatically increased the role of the private sector in the Egyptian economy. Between 2004 and 2008 alone, the Egyptian state more than doubled its privatization revenues compared to the preceding decade. However, though superficially aimed at opening up markets, the effect of the reforms was to promote a noteworthy concentration of capital within the private sector. By 2011, numerous sectors were dominated by individual privately-owned companies that hold monopoly positions in their sectors – the antithesis of pro-market reforms. A small group of individuals and families, through direct ownership and interlocking management and board relationships, managed to gain control of a large slice of the economy (Roll, 2013).

Growth accelerated subsequent to the reforms (Figure 1.6), rising to 7 percent a year between 2006 and 2008. Non-hydrocarbon growth surged from 5.8 percent in 2005/06 to 7.1 percent in 2006/07, broadening to labor-intensive agriculture, manufacturing, services, and construction. The growth spurt created about 2.5 million jobs between end-2004 and March 2007, reducing unemployment from 11.8 percent to 9 percent (IMF, 2007). Following this period of steady economic growth, Egypt faced a series of economic shocks were particularly harmful to the poor, including the global food and financial crisis, which resulted in a sharp increase in poverty and in extreme poverty, much of which was concentrated in rural Upper Egypt (World Bank 2011).[20]

However, while taking dramatic steps to increase the role of private investment in the Egyptian economy, the Nazif cabinet did not abandon the idea of state-guided industrialization. On the one hand, it did not relax prohibitions on foreign ownership across large areas of the economy, such as aviation, engineering services, energy production, steel and aluminum production, construction, insurance, and fertilizer. On the other hand, it sought to make industrial policy more efficient. To this end, it created the Ministry for Trade and Industry (MFTI) to unite the three ministries for trade, state-owned enterprises and industry under one roof. The MFTI became the principal player in industrial policy – along with the Ministry of Investment (MOI) and the Social Fund for Development (SFD). In 2006, the MFTI issued the 'Egypt Industrial Development Strategy' (EIDS), the government's main policy document for private sector development (Loewe 2013, 31 and Annex 1.3).

While EIDS gave emphasis to innovation and triggered investment and exports by selected firms, it did not focus on mitigating market failures. As Keefer (2014) observes, the economic justifications for industrial policy have evolved over the past two generations, however they have always been linked to

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[20] Arab Republic of Egypt, Poverty in Egypt 2008-09: Withstanding the Global Economic Crisis

notions of market failure: where these are severe, government policy has a role to play in accelerating the pace of industrial transformation. In contrast, while the ministerial reforms streamlined the administration of industrial policy and EIDS gave greater emphasis to the promotion of innovation and human capital acquisition, they did not substantially shift industrial policy towards a greater focus on mitigating market failures. EIDS did trigger investments and exports by selected firms. However, its most powerful instrument for doing this appears to have been generous subsidies that offset persistent market failures (e.g., with respect to finance or regulatory uncertainty and political risk) rather than by eliminating those failures.

Industrial policies always have redistributive consequences: some sectors are favored at the expense of other sectors, or consumers, or taxpayers. In Egypt, this redistributive tendency historically favored insiders and connected individuals. The EIDS appears not to have been an exception, exhibiting little transparency with respect to how it targeted benefits (Roll 2013) and investing little effort in measuring actual impact and the costs and benefits of EIDS subsidies. In this respect, therefore, the new industrial policies of the 2000s were similar to those of earlier governments.

Industrial policy in Egypt, including the EIDS, were never structured to promote the emergence of fast-growing, high productivity firms, as they were in East Asia, and in Korea in particular (see Box 1.2). For example, the share of manufacturing and services value-added in GDP was nearly the same in the early 1970s in Egypt as it was in the late 2000s, 15-17 percent and 44 – 49 percent, respectively (*World Development Indicators*). Galal and El-Megharbel (2005) further argue that from 1980-1999, product variety may have actually declined (when properly designed industrial policy should promote greater variety). Moreover, total factor productivity scarcely improved, and those industrial sectors that received the greatest assistance exhibited the lowest rates of productivity improvement.[21]

There is some evidence that insider privileges were largely preserved during eight years of pro-market policies. Chekir and Diwan (2012) find that 22 politically-connected firms, 1/6 of the largest firms traded on the Egypt Stock Exchange, fell in value by 23 percentage points more than non-connected firms following the Arab Spring unrest. If market reforms had also levelled the playing field, such disparate consequences of the Arab Spring would not have been observed.

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[21] TFP grew in Egypt at a 3.3 percent annual rate from 1983-1990, before dropping to 1.6 percent from 1991-2000 and to 1.1 percent from 2001-2006. TFP growth in the private sector soared to 5.6 percent in the 1980s, falling to 1.9 percent from 1991 – 2006 (Loayza and Honorati 2007).

The results of Egyptian industrial policy contrast sharply with those of Korea's. As did Egypt under Nasser, South Korea heavily supported state-owned enterprises. Under Sadat, Egypt aimed to boost exports, as did Korea. Korea, like Egypt under Mubarak, created a state agency to oversee industrial policy. Nevertheless, throughout 60 years of industrial policy, Egypt's approach to industrial policy persistently diverged from South Korea's.

In East Asia, where problems of government credibility and political risk were as severe as in Egypt, governments used very large subsidies (direct and indirect, for example through massive investments on infrastructure), but conditioned them on achieving ambitious export targets and targeted them to economic activities that were entirely new. In Egypt, in contrast, Galal and El-Megharbel (2005) indicate that subsidies associated with industrial policy were actually small over the 20 year period 1980 - 2000. Moreover, they were short-lived.

These policies prodded targeted South Korean firms – among them, many state-owned firms – to become world-class producers. In 1980, 20 years after South Korea embarked on these policies, its real purchasing parity power-adjusted income per capita ($5,543) was the same as Egypt's in 2010 ($5,760). However, while Egypt's manufacturing value-added amounted to 15.8 percent of GDP in 2010, by 1980 Korea's manufacturing value-added had reached 24.4 percent of GDP (rising to 30 percent in 2010). By 2012, the country had risen from the devastation of the Korean War to become one of the 25 richest countries in the world.

The Korean government's commitment to link subsidies to target achievement was credible because industrial policy was overseen by a tightly-organized, elite administrative apparatus that was created precisely for this purpose. For example, from 1948-1960, the public administration was treated as a patronage vehicle; only four percent of higher-level entry positions were based on the civil service exam; this changed to 20 percent as part of the extensive administrative reforms meant to facilitate industrial policy (Evans, p. 52).

These administrative reforms contrast sharply with the MENA experience. For example, the Social Fund for Development was once one of the most efficient and transparent agencies in Egypt (Loewe 2013). However, its preeminence faded in the face of political pressure to use the Fund as a source of patronage jobs. This weakened the capacity of the government to implement industrial policy, but it also undermined the credibility of its policies, since bureaucracies organized around patronage are less effective checks on opportunistic behavior by leaders.

C. While reforms led to growth, they did not add a lot of jobs

How has the trajectory of industrial policy affected growth and employment creation? Because industrial policy favored, above all, economic activities by connected individuals, we expect to observe the fastest growth in sectors where insider advantages were most important. Egypt had 3 growth spurts in the last three decades (Figure 1.8). The first followed the "open door" policy implemented after Mubarak's accession in 1981. The second followed the structural adjustment policies implemented after 1991. The third followed the wide-ranging tax and administrative reforms implemented after 2004.

FIGURE 1.8: GROWTH IN REAL GDP PER CAPITA (ANNUAL PERCENTAGE CHANGE)
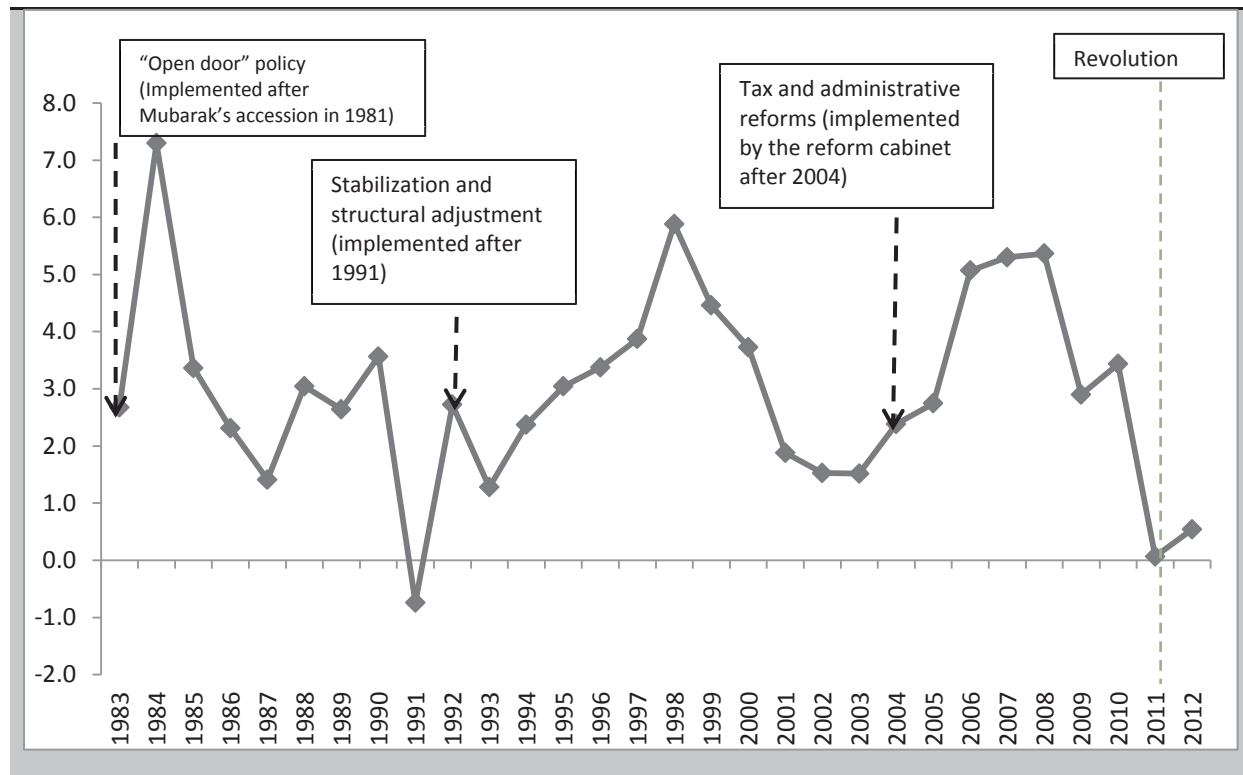
Source: IMF International Finance Statistics and Loewe (2013).

Consistent with this, focusing on the last decade, Figure 1.9 **shows that GDP growth was led by the insurance, extractives, and telecom sectors, all of which benefited from reforms that began in 2004, as the insurance and telecom lines, especially, makes clear**. All three sectors, though liberalized, required government permissions to enter. For example, the telecommunications sector grew impressively following the allocation of the 3G mobile network to UAE-Egyptian consortium in late 2006. Unfortunately, these are not labor-intensive sectors. Similarly, the increase in the international price of oil in 2008 clearly had an impact on the growth of the extractive industry sector and to some extent to services from the Suez Canal. Again, neither of these sectors are particularly labor intensive. In contrast, the most labor intensive sectors, lacking rents that could be allocated to insiders, such as agriculture and manufacturing, have seen weaker growth. Despite the stated objective of industrial policy over generations to spur manufacturing, the sectoral GDP of manufacturing was approximately 40 percent larger in 2010/11 than in 1999/2000, averaging a growth rate of only 3.2 percent per year, slower than the rate of growth of the labor force, which has averaged 3.3 percent between 2002 and 2011.

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FIGURE 1.9: SECTORAL GDP (INDEX, 2000=100)
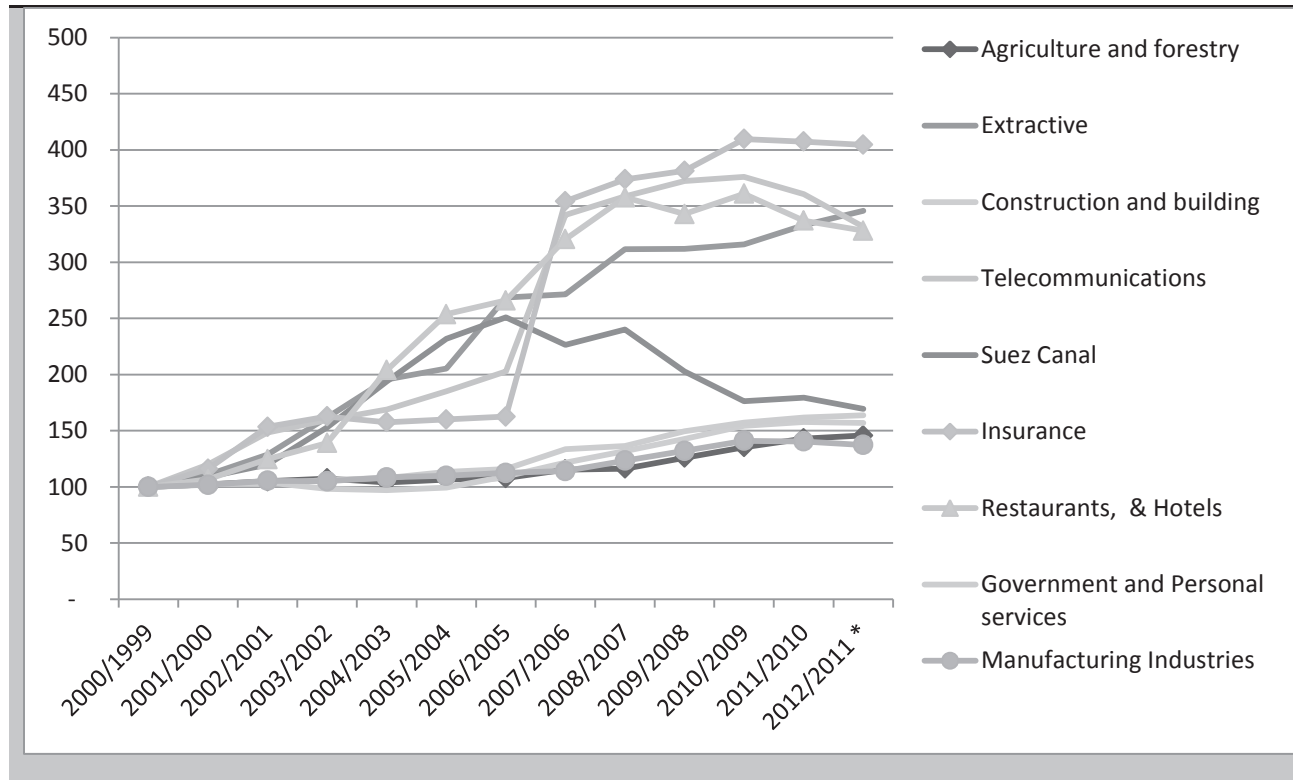
Source: CAPMAS and WDI.

Employment creation has been strongest in hospitality, construction, and miscellaneous services (Figure 1.10**).** Each of these industries employed roughly 65-70% more workers in 2008 than it did in 2000. Utilities, agriculture, real estate, and transportation form a middle tier of industries, growing by 35-40% over the period. Below this are manufacturing and retail, which grew by 25% and 19% respectively. Finally, public administration employment was essentially flat, employing only 3% more workers in 2008 than it did in 2000, and the other public sector dominated industries of health, education, and social work grew by only 10-15%. The fact that employment in mining and quarrying fell as its contribution to GDP rose is further evidence of the bias against labor that is embedded in government policy. There is also some evidence that public policy may have created a mismatch between worker skills and available jobs: the 2008 IMF Staff Report reports widespread skilled labor shortages, despite high official unemployment (8½ percent).[22] Policies that suppress demand for workers with secondary education, but increase demand for "expert" workers (e.g., as in extractives or insurance) would have this effect.

In the Egyptian context, it is difficult to understand the barriers to job creation without taking into account the effect of public policies on private incentives to invest, enter new markets, expand and innovate. Since the time of Nasser, industrial policies in Egypt have had the perverse effect of slowing industrialization and job-growth outside of the public sector. This is partly because, as in many countries, policies did not respond to market failures; by not removing market failures, industrialization relied on direct and indirect subsidies that proved to be unsustainable, but also, as with energy subsidies, encouraged investments in sectors that were not labor-intensive. Industrial policy was also seen as an instrument of

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[22] IMF. 2009. "Arab Republic of Egypt: 2008 Article IV Consultation—Staff Report". IMF Country Report No. 09/25.

regional policy to alleviate spatial disparities (see Chapter 3), but this only had the effect of tying up capital in preferential and low productivity investments away from the agglomeration benefits of Cairo and Alexandria. Overall, the irony is that Egypt's extensive interventionist policies were motivated by theories of accelerating the transformation of the economy; as practiced, they retarded it.

FIGURE 1.10: EMPLOYMENT BY SECTOR

A. Growth in Employment by industry (Index, 2000=100)

- Agriculture, Hunting and Forestry
- Mining and Quarrying
- Manufacturing
- Electricity, Gas and Water Supply
- Construction
- Wholesale and Retail Trade
- Hotels and Restaurants
- Transport, Storage and Communications
- Public Administration and Defense

B. Industrial Composition of Employment (percent of total employment)

- Education
- Public administration and defence; compulsory social security
- Transport, storage and communications
- Wholesale and retail trade
- Construction

Source: ILO.

This is also partly because the beneficiaries of industrial policies were restricted to a small fraction of entrepreneurs and firms that were able to receive generous subsidies without a corresponding obligation to become competitive in export markets, in contrast to the recipients of East Asian subsidies. While identities changed, the principle that insiders would reap enormous gains from industrial policies remained unchanged from the time of Nasser until the Arab Spring. At the same time, the uneven playing field discouraged employment generation by non-insiders and encouraged insiders to focus on sectors where rents were highest, but these were also where opportunities for employment generation more modest: insurance, extractives, construction (which is dependent on access to land). It is important to note that for extractives, one element of policy was a tilt of the internal terms of trade against upstream production and in favor of domestic industry and urban households. The gains to these groups come at the eventual cost of reinvestment incentives in the upstream primary sector, as Egypt is now seeing in the form of declining oil and gas production.

Macroeconomic volatility forms part of the framework for understanding investment and employment outcomes, but its impact on jobs is mediated through the development policy factors highlighted above. The historical perspective makes clear that Egypt has seen cycles of fiscal and current account imbalances along with exchange rate crises that are familiar to emerging market economies. But the underlying structural policies and the way in which economic vulnerabilities were managed explain the chronic worsening of job quality. To preview a comparison from Chapter 5, Turkey has experienced the macroeconomic volatility of emerging markets in virulent form over the years, but this has not precluded the emergence of a dynamic firm sector associated with expanded trade.

In this chapter, we highlight the role of public policies, which favored output growth in sectors that are not labor intensive, as part of the reason for the weak correlation between output and employment in the Egyptian context, particularly for men. The long term dependence on the public sector to create employment has left a lasting legacy: even though employment in the public sector has been frozen since 2003, ten years later, 85 percent of Egyptians still look to the government as the main provider of jobs (Gallup Poll, 2013). We now turn to evidence from micro data, which reveals the large and increasing role of informal and irregular work that conceals the degree to which fluctuations in labor demand translate into movements in and out of unemployment. In addition, we demonstrate that the deteriorating outcomes in the Egyptian labor market are particularly salient for young people, women and in certain parts of the country. Finally, we show that the Egyptian private sector is characterized by a lack of dynamism which is also in part a result of the nature of industrial policy in Egypt, which has not guaranteed a level playing field within the private sector.

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Annex 1.1. Estimating Okun's Law for Egypt

Assuming that shifts in aggregate demand cause output to fluctuate around its potential we can write a relationship between output and employment and between employment and unemployment:

$$(1)\ E_t - E_t^* = \gamma(y_t - y_t^*) + \varphi_t,\ \gamma > 0;$$
$$(2)\ u_t - u_t^* = \delta(E_t - E_t^*) + \mu_t,\ \delta > 0;$$

where E_t is the log of employment, y_t is the log of output, u_t is the unemployment rate, and * indicates a long-run level. Then substitute (1) into (2) as follows:

$$(3)\ u_t - u_t^* = \beta(y_t - y_t^*) + \varepsilon_t,\ \beta < 0.$$

Equation (3) implies that there is a proportionate relationship between the output gap and the deviation of unemployment from its natural rate.

There are two ways to estimate Okun's Law shown in (3) above. The simplest way is to estimate changes in unemployment on changes in log of real GDP, where beta can be interpreted as a simple correlation between changes in output and unemployment, as follows:

$$(4)\ \Delta u_t = \alpha^d + \beta^d \Delta y_t + e^d{}_t.$$

Although this version does not estimate the output gap or deviations from full employment, it has the advantage that it can be estimated for relatively short time series without having to worry about the stationary properties of the data. Using this formulation, Okun found $\beta^d = 0.36$ for the US, leading to the conclusion that a one percentage point decrease in GDP growth was associated with a 0.3-percentage-point increase in the unemployment rate. An alternative estimation strategy is to explicitly model deviations from full employment and the output gap:

$$(5)\ u_t = \alpha^g + \beta^g(y_t - y_t^*) + e^g{}_t$$

where the output gap is set equal to the cyclical component of the log of GDP is calculated by applying the Hodrick Prescott filter to the observed time series.

We estimate specifications (4) and (5) using quarterly data from 2003q1 to 2013q1. Quarterly real GDP data are reported by CAPMAS and MOP, while quarterly unemployment data come from the ILO LABORSTA database and the output gap is calculated by using HP filter. Given the relatively small sample size, and the potential for structural changes during the sample period, the results must be taken with a grain of salt. However, they are indicative of a negative and significant correlation between GDP growth and unemployment, particularly in the case of female unemployment. Surprisingly, the same is not true for male unemployment, despite the fact that men make up the large majority of the labor force.

Annex Table 1.1 reports estimates for equation (4) using year-to-year changes in unemployment on changes in log of real GDP. We find that the results are statistically significant for all workers, but particularly so for women. When the sample is constrained to men, the relationship is no longer statistically significant. The results indicate that a one percent increase in year-to-year GDP growth is associated with a 5.8 percent reduction in the female unemployment rate. Given the volatility of female employment, this is likely capturing the large swings in female labor force participation, as much as anything else.

Similarly, Annex Table 1.2 reports estimates for equation (5) using deviations from full employment and the output gap. Again, we find statistically significant for women, but not for men. Given the small sample size, it may be too much of a stretch to claim that these estimates actually reflect the output gap and deviations

from full employment. Here they are presented as a way to corroborate the general finding that there seems to be a negative correlation between output and unemployment, particularly in the case of women.

ANNEX TABLE 1.1: CHANGES IN UNEMPLOYMENT ON CHANGES IN LOG OF REAL GDP

	Δu All	Δu (Men)	Δu (Women)
β^d	-5.376	-5.542	-5.822
	(1.774)**	(3.921)	(1.360)**
α^d	6.472	6.678	6.900
	(1.795)**	(3.968)	(1.377)**
R2	0.21	0.05	0.34
Adjusted R2	0.19	0.03	0.32
N	37	37	37

* $p<0.05$; ** $p<0.01$

Source: CAPMAS, MOP and ILO.

ANNEX TABLE 1.2: DEVIATIONS FROM FULL EMPLOYMENT ON THE OUTPUT GAP

	u (All)	u (Men)	u (Women)
β^g	-10.492	-5.941	-26.865
	(4.672)*	(5.150)	(6.795)**
α^g	10.402	6.789	22.653
	(0.211)**	(0.233)**	(0.307)**
R2	0.11	0.03	0.29
Adjusted R2	0.09	0.01	0.27
N	41	41	41

* $p<0.05$; ** $p<0.01$

Source: CAPMAS, MOP and ILO.

Earlier empirical estimates of Okun's Law also found a weaker than expected relationship (Moosa, 2008 and Elshamy, 2013). Part of this may be due to the lack of a long enough time series to enable a good estimate. For instance, Moosa (2008) uses annual data between 1990 and 2005, but given the relatively short time series, the author interpolates the annual series into quarterly data and then estimates a dynamic ARDL model. In contrast, Elshamy (2013) uses annual data from 1970 to 2010 and finds a similarly small, but statistically significant relationship. However, in either of these studies, no distinction is made between male and female unemployment rates.

Annex 1.2: Key Structural Reforms, July 2004–February 2007[23]

Exchange rate system

- Set up interbank market allowing banks to freely trade foreign exchange (late 2004).
- Abolished surrender requirement on export proceeds (December 2004).

Trade regime

- Cut average weighted tariff rate from 14.6 percent to 9.1 percent, reduced number of tariff bands, and eliminated import fees and surcharges (September 2004).
- Reduced average tariff rate further to 6.9 percent (February 2007).

Public sector

- Raised prices of subsidized fuel (September 2004, July 2006) and electricity (December 2004).
- Income Tax Law modified (mid-2005), simplifying the rate structure, broadening of tax base, cutting personal and corporate income tax rates, and setting a higher minimum threshold.
- Broadened and streamlined stamp tax (August 2006).
- Public expenditure management reforms focus on upgrading budget classification; establishing a Treasury Single Account; and rationalizing financial relations between general government institutions (launched in 2004).
- Launched reform of tax administration; large taxpayer unit established (2005); and income tax and indirect tax departments merged (2006).

Financial sector

- Strong progress on comprehensive financial sector restructuring plan (launched September 2004) comprising bank mergers, sale of stakes in joint venture banks, resolution of NPLs, privatization of a state bank, and reform of nonbank financial sector.
- Banks to meet minimum LE 500 million in paid up capital (June 2005).
- Sale of most joint-venture banks to private sector (2004-06) and sale of the Bank of Alexandria to a foreign bank (December 2006), together putting well over half of all banking assets in private ownership.
- Over half of private sector NPLs restructured by mid-2006; public sector NPLs being cleared with capital infusion by government (ongoing since 2005, financed mostly from privatization receipts).

Privatization

- Between mid-2004 and mid-2006, privatization of public sector companies, of public stock in joint ventures, and of public land generated proceeds of about LE 16 billion; allocation of 3G mobile network to UAE-Egyptian consortium for US$2.9 billion (late 2006).

Regulatory

- Regulatory framework for investors was simplified (Administrative steps for starting a business, the duration of the procedure and its cost were reduced.)

Transparency

- Subscription to SDDS (January 2005).
- Publication of 2005 and 2006 Article IV Staff Reports.
- Publication of monetary policy statement and communiques following monetary policy meetings (since 2005).

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[23] Source: Enders, 2007.

Annex 1.3: What was the Egypt Industrial Development Strategy?[24]

The EIDS defined eight fields of action detailed below (Loewe 2013, 33 -38). A separate 'board of trustees' was named to monitor progress in each field.

1. *Human resources and entrepreneurship:* The target was to (i) provide on-the-job training for workers upon the request of their employers and (ii) strengthen the technology focus of training.
2. *Facilitating private investors' access to capital.* While the strategy document lists many measures that were needed, its final version did not name any specific government actions.
3. *Provision of land infrastructure:* the Industrial Development Authority was assigned to (i) manage the state-owned industrial zones, (ii) provide land and infrastructure to enterprises in these zones (or elsewhere), and (iii) facilitate cooperation between the zones so as to encourage formation of industrial clusters.
4. *Innovation and technology:* ETTICs are 12 non-profit organizations that, for a price, provide Egyptian companies with appropriate technological solutions and know-how – either by putting the companies in contact with Egyptian universities and research centers or by purchasing the technology abroad.
5. *Quality assurance:* national quality system to align Egyptian manufacturing with international norms and standards, thereby facilitating Egyptian exports.
6. *Enterprise competitiveness:* The Industrial Modernization Centre (IMC) provides funds to companies for (i) on-the-job training for workers; (ii) training for entrepreneurs; (iii) quality management (establishing standards, calibrating, laboratory upgrading); (iv) information and communications technology systems upgrades; (v) innovation and R&D; (vi) technology transfer; (vii) export development (e.g. market research and export strategies). Until 2008, the IMC refunded up to 80 per cent of the total costs for modernization in Lower Egypt and as much as 90 per cent in Upper Egypt. The IMC can provide a subsidy of 10 per cent for the total costs of urgently needed equipment (up to EGP 100,000) (MFTI 2006, 36; IMC 2008, 5).These services are restricted, however, to formal private-sector industrial entities with at least 10 full-time, socially insured workers and rising sales in the previous three years.
7. *Export promotion:* Export Council grants subsidies for textile, engineering, chemical and food exports. The initial subsidy was 10 per cent of the value of the exported goods but it was raised to 15 per cent after the start of the global economic and financial crisis.
8. *FDI promotion.* The eighth component was intended to attract FDI to Egypt. However, this goal is beyond the MFTI's competence, which is why the EIDS does not propose any concrete measures for its achievement.

Promotion of non-exporting companies. In 2009, the MFTI decided to become active in a ninth domain that was not originally part of the EIDS: the promotion of enterprises that are not (yet) exporting their products. This decision was based on the consideration that most exporters have grown on the home market before they manage to sell their products abroad.

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[24] Loewe 2013, p.31.

2. Hidden Weakness: Egypt's Labor Market from 1998 to 2012

While Egypt's labor market has experienced numerous shocks recently, the most important challenges policy-makers face are long-term trends. Although unemployment has been on the decline, the jobs created have been overwhelmingly lower-quality jobs in the informal sector, despite increasing levels of human capital. The labor market is also extremely uneven, with women, youths, and those in peripheral Egypt all having difficulty accessing high quality jobs. Understanding and resolving the issues in the Egyptian labor market is an urgent priority, since policy-makers have a small window of opportunity to institute reforms before demographic pressure in Egypt begins to rise again.

A. The unemployment rate masks a deteriorating labor market

In the last five years, Egypt has been subject to a variety of global and domestic shocks, including the financial crisis, the global food price crisis, and most recently, the revolution of 2011. In the face of similar shocks, many countries experienced significant increases in unemployment and deterioration in other markers of labor market performance. In Egypt, there are also important long-term features and trends that define the structure of the labor market well beyond the recent tumultuous period. These long-term trends are important to understand the response of the Egyptian labor market to the recent economic and political crises and in defining policy corrections. By drawing on a unique panel dataset that covers a fourteen-year period from 1998 to 2012 and includes the period immediately after the Egyptian revolution of 2011 (Box 2.1), this report examines the evolution of Egypt's labor market from multiple perspectives.

If we consider the unemployment rate alone as a barometer of labor market health in Egypt, the news over the last 14 years has been surprisingly good. Although unemployment is still high at 8.7%, this is considerably lower than the 11.7% unemployment rate Egypt was experiencing in 1998, and is essentially unchanged from the 8.5% unemployment rate in 2006 (Figure 2.1). Strong economic growth in the years between 1998 and 2006 produced solid gains in employment, and despite the considerable turmoil Egypt has experienced recently, those gains have remained intact.

However, it is *not* enough to use the unemployment rate alone: the headline unemployment rate conceals a labor market that is undergoing radical changes. The unemployment rate does not reflect changes in job quality, job security and labor force participation. All jobs are not created equal: as in other lower middle-income countries, many Egyptian workers are informally or irregularly employed. Distinguishing formal employment from these potentially lower quality jobs provides us a more nuanced view of the vitality of the Egyptian job market. The headline unemployment rate also masks the degree to which unemployment is concentrated in two vulnerable groups, youths and women.

BOX 2.1: THE EGYPT LABOR MARKET PANEL SURVEYS
The ELMPS currently comprise of three panel rounds of nationally and regionally representative surveys, conducted in 1998, 2006 and most recently in 2012. Spanning almost a 15 year period, it the largest panel survey in Egypt and in the MENA region. In each follow-up round, the survey visited original households, households that split from the original sample as sons and daughters, among others, and move out of the original household to form their own households. To compensate for attrition as well as the implications of this tracking structure of the sample, each panel year, a refresher sample of households was included and representativeness maintained.
The ELMPS 12 survey, co-financed by the World Bank and led by the Economic Research Forum, was collected during March to June 2012. The final sample of the ELMPS 2012 was 12,056 households, of which 6,724 were originally in the 2006 sample, 3,332 were households that included individuals that split from an original 2006 households, and 2,000 were new households from a refresher sample that oversampled high migration areas. 80.5 percent of the 8,351 households interviewed in 2006 were located in 2012 and interviewed. The 2012 sample contains a total of 49,173 individual records, of whom 28,759 had been previously interviewed in 2006 and 13,218 had been interviewed in both 1998 and 2006. These figures translate into a 77.4 percent tracking rate for individuals interviewed in 2006 and a 55.1 percent tracking rate (across three rounds of the survey) for individuals first interviewed in 1998.25 Questionnaires were administered by CAPMAS field staff, with detailed quality control procedures in place.
These surveys comprise three instruments covering a range of detailed topics with a central focus on labor market experiences: two household-level questionnaires and one individual-level questionnaire.

In this report, we track the status of the labor market in Egypt by combining insights from a broader range of measures. As is standard practice, we confine ourselves to describing labor market outcomes among the working-age population, defined as men and women aged 15-64. The first measure we use is *labor force participation*[26]. A person is considered to be participating in the labor market if they are *employed* or *unemployed*. A person is defined as employed if they worked for monetary gain (including in their own business or in a family enterprise) for at least one hour in the last week, or if they did not work but had jobs or businesses from which they were temporarily absent. If they did not work in the last week, but were available for work and actively searched for employment sometime in the last 4 weeks, they are *unemployed*. Individuals who are neither employed nor actively searching for work are considered to be out of the labor force; these typically include students, housewives, retirees, those engaged in mandatory military service, and subsistence agricultural workers. The fraction of the population that is participating in the labor force is the *labor force participation rate*, and the fraction of the labor force that is unemployed is the *unemployment rate*. The fraction of the entire population that is employed is the *employment-population ratio*.

We also distinguish between several institutional sectors of employment and types of contract. The purpose of this taxonomy is to allow us to understand job *quality* on a more nuanced level. The *farm*

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[25] The figures exaggerate attrition rates because they don't take into account unavoidable attrition due to deaths or emigration to other countries.

[26] Our definition corresponds to the "the standard market labor force" definition described in Kraft & Assaad (2012). They also define alternate measures including "extended" labor market participation (which counts subsistence workers as employed) and "broad" labor market participation (which counts those who are available for work but who did not actively search for employment as unemployed).

sector includes all employers, self-employed, or unpaid family workers who report that their primary job is agricultural. Note that *wage-workers* who work in agriculture are *not* considered to be in the farm sector. All those who work in the government or for public enterprises or are in a working arrangement which either provides social insurance or a formal, written work contract, are in the *formal* sector.[27] We will typically subdivide this category into the *formal private* sector and the *public* sector. Subdividing formal employment into public and formal private sectors allows us to understand the different roles of the public and private sectors in providing high-quality formal employment. Workers who lack both social insurance *and* a written contract, and who are not in the farm sector or the formal sector, are considered to be in the *informal private* sector. Finally, we will on occasion further subdivide the informal private sector into *irregular informal* (or simply *irregular*) workers (those who are in the informal private sector and report that their primary employment is either casual or seasonal) and *regular informal* workers.[28]

We refer to three measures based off of formal employment: the formal employment rate, the formal employment share, and the formal employment-population ratio. Similar to the unemployment rate, the *formal employment rate* is the fraction of the labor force that is employed in a formal job. The *formal employment share* instead refers to the fraction of the employed that are in the formal sector, and the *formal employment-population ratio* is the fraction of the entire population that is formally employed. Having defined these measures, we can now begin to analyze the labor market in more detail.

B. Informal employment is the new normal

Three long-term trends characterize the Egyptian labor market: expansion in informal private sector employment, contraction in public jobs, and stagnation in formal private sector employment. We have already described the robust decline in the unemployment rate from 11.7% to 8.7% between 1998 and 2012 (Figure 2.1). This expansion of employment comes entirely from a rapid expansion of the informal private sector (which employed 30.7% of the labor force in 1998 and 40.0% in 2012), which has compensated for declining public sector employment (which dropped from 34.0% to 27.1%) and stagnant formal private sector employment (which increased only very slightly from 13.0% to 13.5%).

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[27] This is a standard ILO definition for formal employment.
[28] A small number of formal sector workers report that they are irregularly employed. These workers are not considered to be part of the "irregular" sector as defined here.
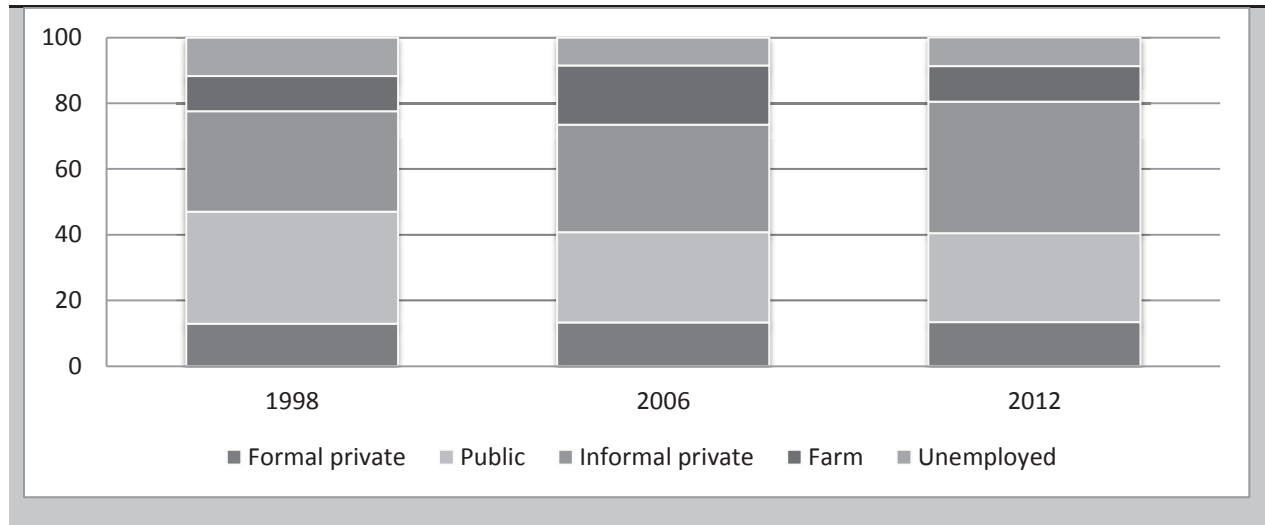
Source: ELMPS 1998, 2006, 2012.

As in many countries in the Middle East and North Africa, labor force participation is far higher among men than it is among women, 80.2% for men in 2012 versus 23.0% for women (Figure 2.2**).** Men who do not participate in the labor force almost all fall into one of three groups: students, retirees, and those performing mandatory military service. Among non-student, non-retiree, non-military men, labor force participation is nearly universal (96-98%) and there are only slight fluctuations. Since the duration and timing of mandatory military service is different for young men of different generations and educational levels, we focus primarily on *employment rates* for men rather than *employment-population ratios*[29]. For women, labor force participation rates are low even after excluding these groups, so our analysis will include both employment rates and employment-population ratios as appropriate.

The labor market for men and women is very different. Women are far more dependent on the public sector for jobs than are men, especially for formal sector jobs as there are almost no women employed in the formal private sector (Figure 2.3, Figure 2.4, Figure 2.5 and Figure 2.6). In addition to a low labor force participation rate, women also have a much higher unemployment rate: today over half of unemployed Egyptians are female. While the men's labor market reflects the overall labor market trends described earlier, women's have had extremely stable non-farm sector employment, both in the public sector and the informal sector. Women have reported substantial fluctuations in farm employment, which fits with high responsiveness between GDP growth and women's employment described in Chapter 1 (although see Box 2.2 for caveats regarding the measurement of agricultural employment in the ELMPS). Chapter 4 undertakes a detailed examination of labor market outcomes and trends for women.

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[29] Because men in mandatory military service in the ELMPS are reported as jobless and non-participants in the labor force, previous papers using the data which report the jobless rate, labor force participation rate, or employment-population ratio give a different view of the labor the market, especially for young men.

FIGURE 2.2: LABOR FORCE PARTICIPATION, TOTAL AND BY GENDER - 1998, 2006 AND 2012

	1998	2006	2012
Total	47	52	51
Male	73.24	77.24	80.19
Female	21	27	23
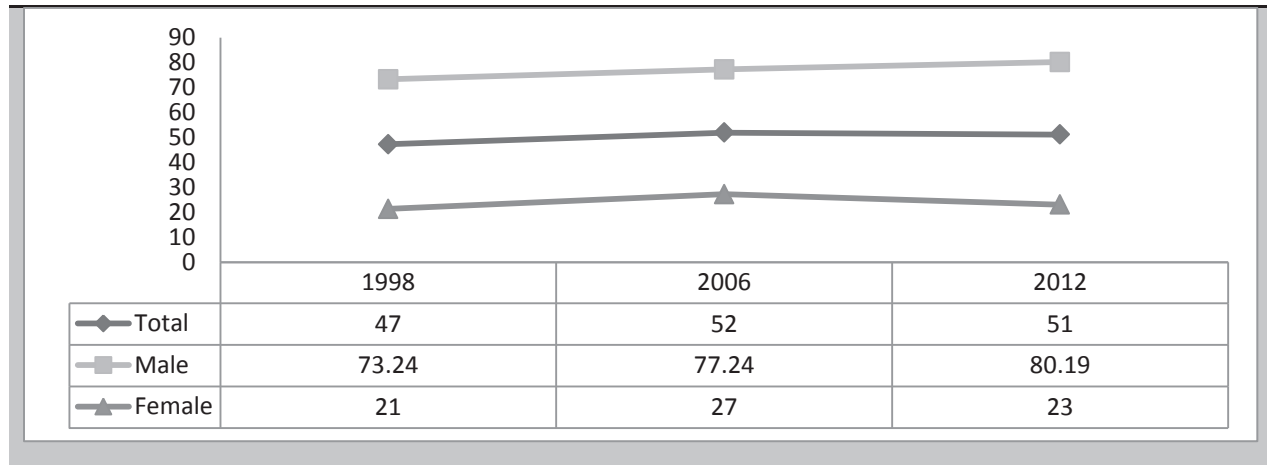
Source: ELMPS 1998, 2006, 2012.

FIGURE 2.3: JOB STATUS, MALE LABOR FORCE PARTICIPANTS AGED 15-64
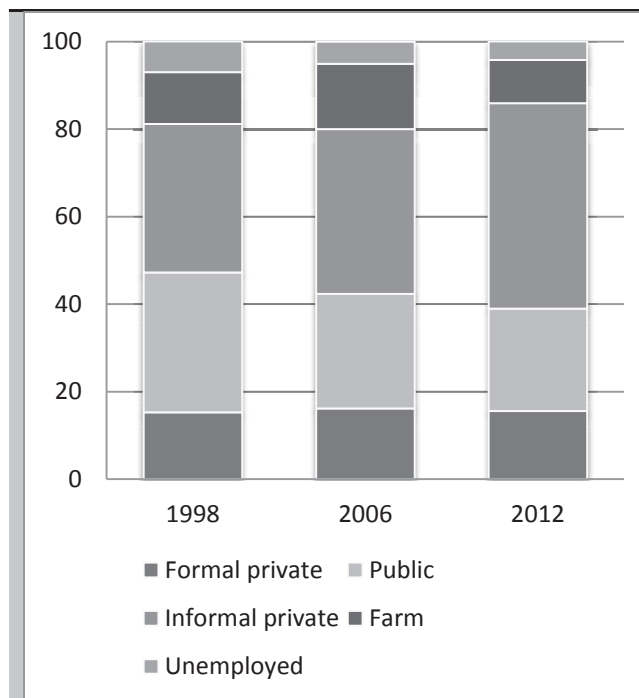
FIGURE 2.4: JOB STATUS, FEMALE LABOR FORCE PARTICIPANTS AGED 15-64
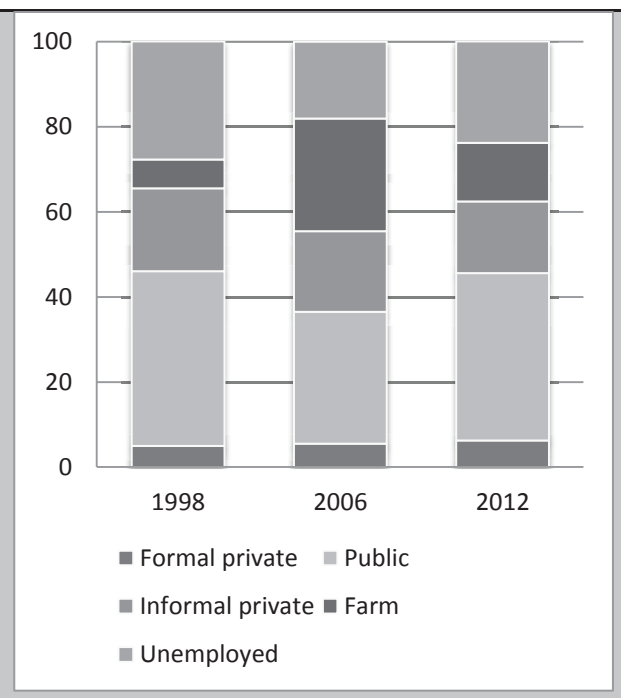
■ Formal private   ■ Public
■ Informal private ■ Farm
■ Unemployed

■ Formal private   ■ Public
■ Informal private ■ Farm
■ Unemployed
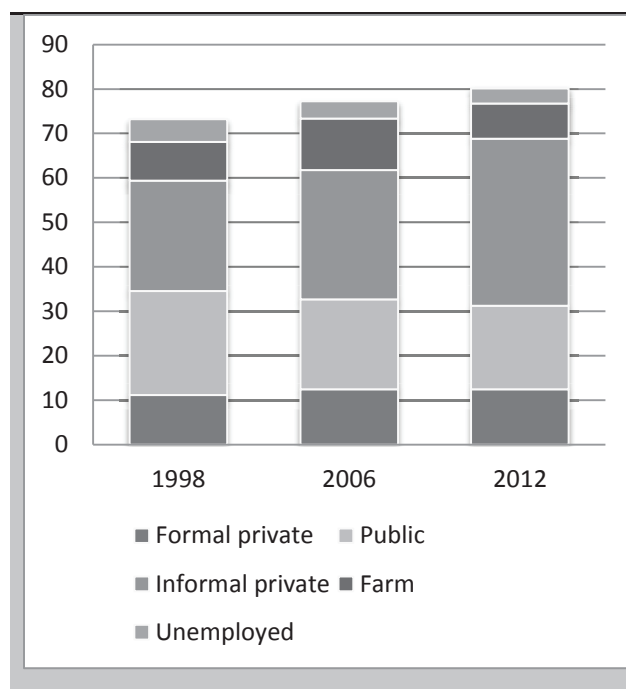
Source: ELMPS 1998, 2006, 2012.
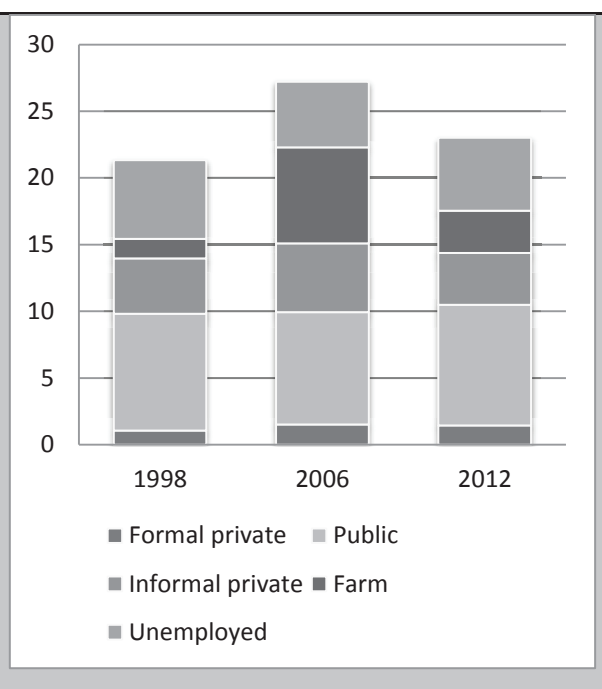
Source: ELMPS 1998, 2006, 2012.

There are significant spatial dimensions to the Egyptian labor market as well. Formal sector employment is concentrated in metropolitan Egypt and declines substantially as we move into the non-metropolitan urban areas, rural Lower Egypt, and is dramatically lower in rural Upper Egypt (TABLE **2**-**1**). This pattern is primarily explained by the formal private sector, which is much more important in metropolitan Egypt than in any other region; in fact, metropolitan Egypt is the only region in which the formal private sector employs more men than the public sector. However, metropolitan Egypt also has a much higher unemployment rates for men than the rest of Egypt. Chapter 3 undertakes a detailed examination of the labor market's spatial dimensions.

TABLE 2-1: JOB STATUS BY REGION, MALE LABOR FORCE PARTICIPANTS AGED 15-64

	Formal private	Public	Informal private	Farm	Unemployed
Metropolitan	27.2	25	40.7	0.2	6.9
Urban Lower	17.1	24.1	50.6	3.1	5.2
Urban Upper	13.2	28.8	46	6.5	5.5
Rural Lower	12.4	24.7	45.8	14	2.9
Rural Upper	7.4	18.2	53.7	18.4	2.4
Source: ELMPS 2012.					

Both demand and supply side factors are at work in explaining these patterns and changes in the labor market. We briefly discuss changes in the industrial composition of employment (on the demand side) and in education attainment (on the supply side) in the following two sections, and go into further detail throughout

the report. In particular, Chapter 5 uses firm-level data in a detailed examination of private sector job creation and firm dynamics.

Irrespective of industry, job formality is on the decline

Today the industrial composition of employment is led by agriculture, but it is far from the only source of jobs. We divide Egypt's labor market into 9 broad industries. From largest to smallest, these are: agriculture, manufacturing (also including the mining and utilities industries, which are very small employers), retail and wholesale, social services (including health, education, and social work), construction, public administration, transportation and storage, professional services (primarily information, communication, and financial services), and a catchall category for all other services. In 2012, 8.6% of working-age Egyptians worked[30] in agriculture (see Box 2.2). However, there is also substantial employment in manufacturing, which employs 7.1%, retail/wholesale (6.6%), and social services (6.5%).

FIGURE 2.7: EMPLOYMENT BY INDUSTRY, % OF WORKING-AGE POPULATION
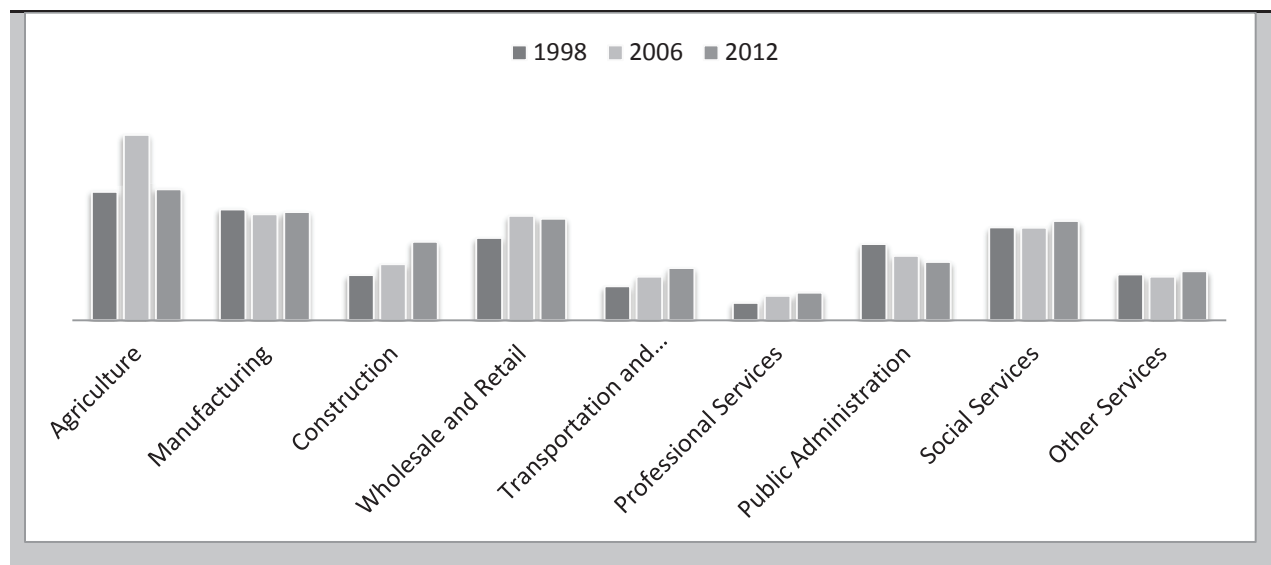
Source: ELMPS 1998, 2006, 2012.

There are three important long-term trends in the sources of employment over the last 14 years: expansion in the construction and transport industries and contraction in public administration (Figure 2.7**).** The construction industry employed slightly over one million Egyptians in 1998, but by 2012 it had more than doubled in size, to slightly under 2.5 million workers. The timing of the construction boom suggests that it may be driven by increased demand for housing from Egypt's recent rapid population growth (discussed at the end of this chapter). The transportation and storage industry has also grown steadily and significantly, although it remains relatively small. In the meantime, public administration has shrunk as a source of employment, reflecting cutbacks in the public sector. It is in fact the only non-agricultural industry that saw a decline in absolute employment between 2006 and 2012, losing about 40,000 jobs. In addition to these long-

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[30] It should, however, be noted that this depends heavily on our not counting subsistence agriculture as employment. If we include subsistence agriculture, the fraction of workers engaged in agricultural work increases dramatically.

term trends, we observe what appears to be a one-time jump in the wholesale and retail industry, from employing 5.4% of the working-age population in 1998 to 6.8% in 2006, which corresponds to approximately 1.1 million new jobs being created in the industry, but between 2006 and 2012 its share remained stable.

BOX 2.2: AGRICULTURAL EMPLOYMENT IN THE ELMPS

Agriculture clearly plays a very important role in the Egyptian labor market. Unfortunately, there are several issues in the ELMPS that make it somewhat difficult to interpret shifts in agricultural employment in Egypt across the survey period. Agricultural employment in Egypt is highly seasonal, and the three survey rounds were conducted at different times. ELMPS 1998 was conducted in November and December of 1998; ELMPS 2006 was conducted between December 2005 and March 2006; and ELMPS 2012 was conducted between March 2012 and May 2012. These surveys therefore capture workers at different times in the crop cycle and this cyclicality may be driving changes in agricultural employment. This is compounded by the fact that this seasonality has differential effects by region, age, and gender. Lower and Upper Egypt grow a substantially different mix of crops (World Bank 2006), there are strong gender roles associated with agricultural tasks (especially on small farms), and agricultural employment is strongly slanted towards youth.

In addition, it is difficult to ascertain the difference between unpaid agricultural work, subsistence farming, and labor force non-participation, all three of which are states commonly reported by women. These can be affected not only by seasonality but also by the precise framing of the question, which varies between survey rounds. In this report, we choose to characterize women who engage in subsistence farming but no other form of paid or unpaid employment (and who are not searching for a job) as not participating in the labor force. We will discuss the implications of this choice where appropriate.

While agriculture is clearly an important source of employment in Egypt, because of seasonality across time, important differences in cropping patterns across space, and varying roles for men and women, estimates of employment in agriculture across the survey years should be interpreted with caution. The fluctuations we observe in the ELMPS data likely reflect a mix of true variation and measurement error.

The formality share of employment varies widely across industries. Employment in the public administration and social service industries is overwhelmingly formal (over 95%), which is not surprising given the dominance of the public sector in those industries (Figure 2.8). Professional services are also quite formal, with more than 2 in 3 workers possessing social insurance or a written contract. Manufacturing and transportation and storage are the only other industries in which more than half of workers are formally employed. At the other end, agricultural employment is almost entirely informal (fewer than one in fifty are formally employed) and only 1 in 6 construction workers are formally employed.

Over the last 14 years, there has been a secular trend of deformalization that cuts across nearly every industry. Almost industry saw formality rates drop between 1998 and 2006, then drop further between 2006 and 2012. Transportation and storage saw the largest decline, 16.7 percentage points from 1998 to 2012, and the large wholesale/retail sector saw a drop of 14.5 percentage points. This within-industry trend was the main driver of the overall deformalization of the Egyptian economy. As we show later in the chapter, the redistribution of the labor force across industries was much less important.
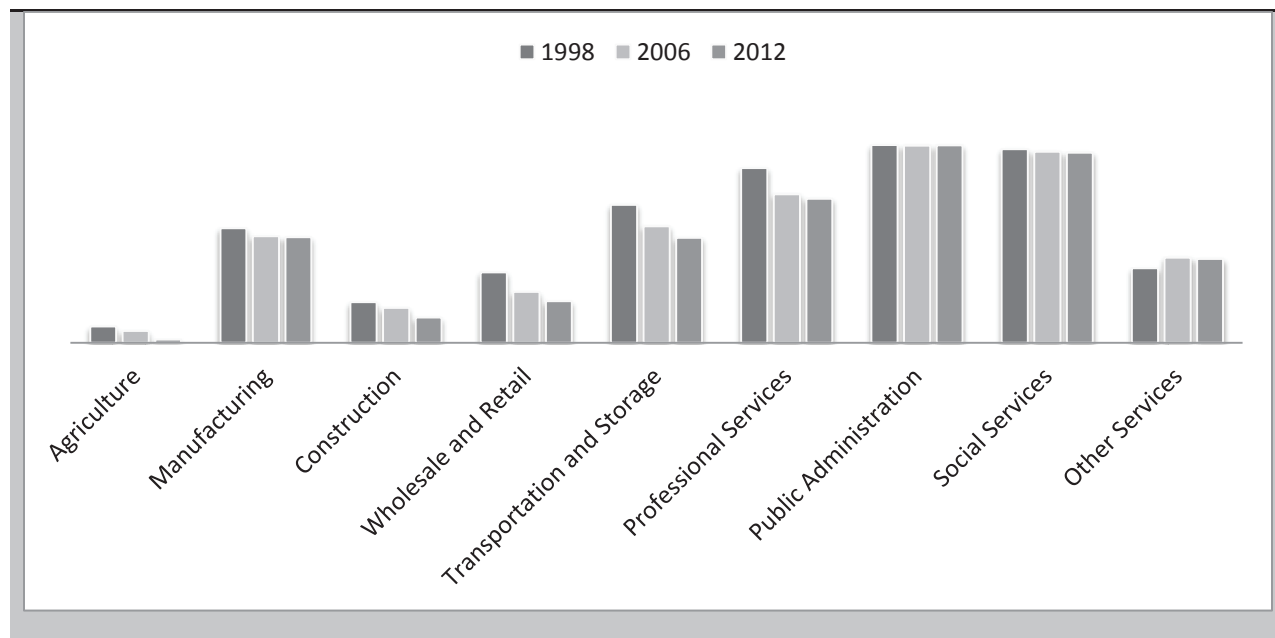
Source: ELMPS 1998, 2006, 2012.

Education is no longer a guarantee of a formal job

In most countries, education is an important determinant of labor market outcomes, and changes in educational attainment may be responsible for changes in the labor market. To track the implications of higher education on labor market outcomes, we split the population into five segments by their highest completed educational attainment: the illiterate, the literate without diploma, elementary school graduates, secondary school graduates, and post-secondary graduates. Note that we do not distinguish between those who exited school after completing secondary education, and those who continued on to post-secondary education but did not graduate. We also do not distinguish between those who graduated from vocational secondary school and those who graduated from general secondary school. In addition, we will on occasion combine into a single group all those who are literate without diploma and elementary school graduates.

By any measure, Egypt's population has become much educated. Over the last 14 years, the working-age population has become more literate (with the literacy rate rising 68.4% to 76.2%), more likely to graduate from secondary school (35.8% rising to 50.1%) and more likely to graduate from post-secondary education (12.8% rising to 17.6%) (Figure 2.9). The fact that secondary school graduation rates increased the most suggests it was motivated by a desire for the public sector employment guaranteed to secondary school graduates. The dramatic changes in education are even more evident if we consider how educational attainment has evolved by birth cohort, illustrated in Figure 2.10. If we consider two cohorts 40 years apart -- the 1940-1944 cohort (aged 70-74 today) and the 1980-1984 cohort (aged 30-34 today) – we see that the literacy rate has doubled from 41% to 82% and the secondary graduation rate has *more than tripled* from 19% to 67%.

FIGURE 2.9: EDUCATION ATTAINMENT OF THE WORKING AGE POPULATION – 1998 TO 2012
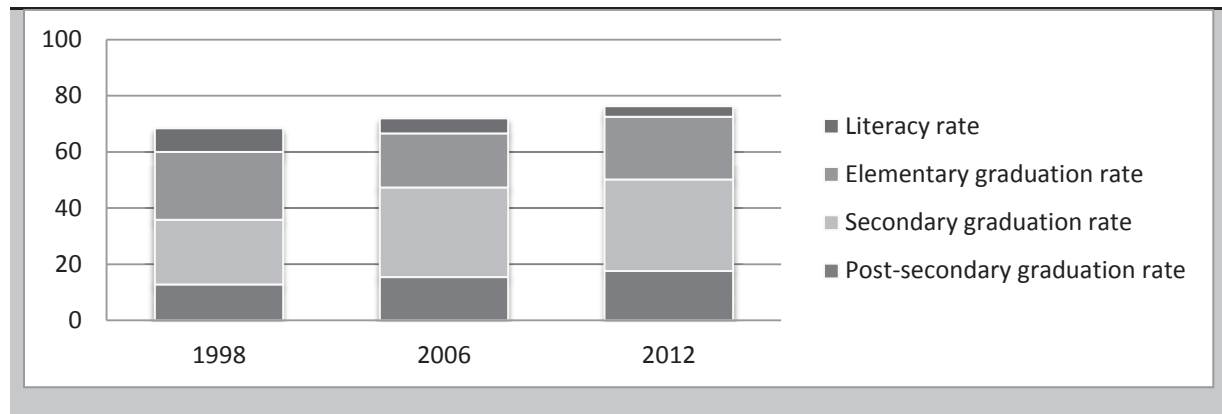
Source: ELMPS 1998, 2006, 2012.

FIGURE 2.10: EDUCATION ATTAINMENT BY BIRTH COHORT
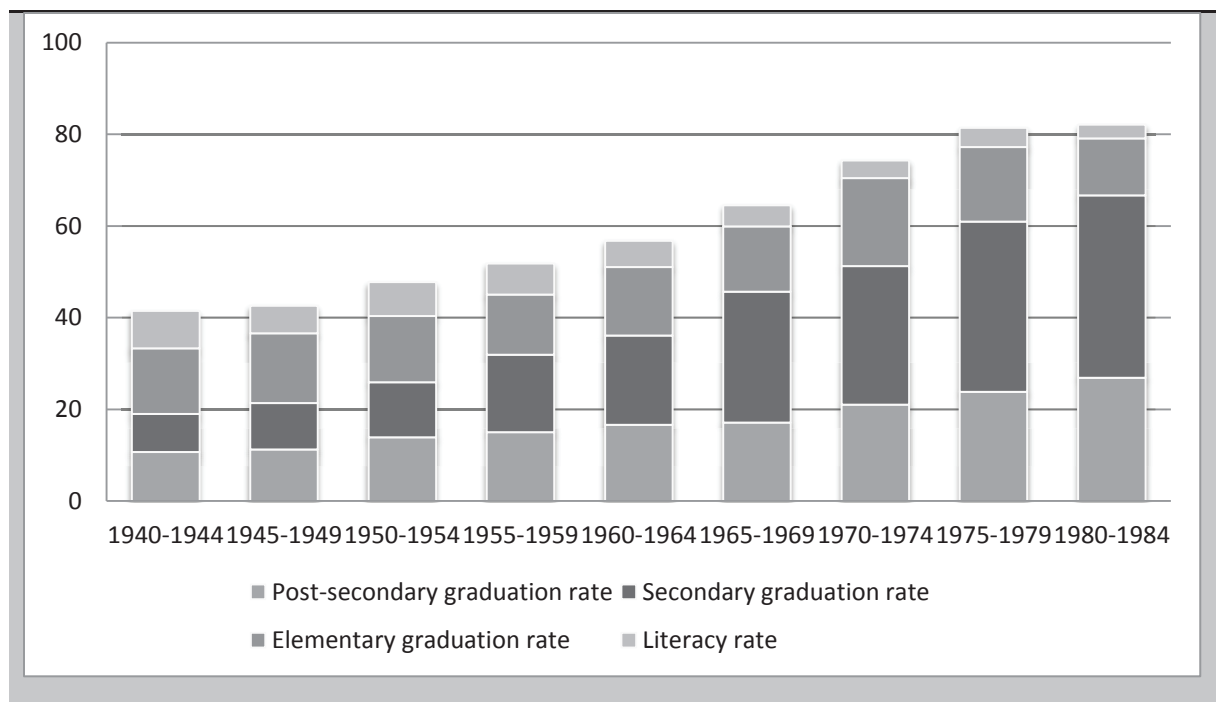
Source: ELMPS 2012.

Educated men are more likely to be formally employed but are also more likely to be unemployed.
Illiterate men have a 16% formal employment rate compared to a 67% formal employment rate for men with
post-secondary education (Table 2-2). However, illiterate men and men with below secondary education
have extremely low unemployment rates (below 2 percent) but men with secondary education have a 5
percent unemployment rate and men with post-secondary education have a 7 percent unemployment rate. It
is not surprising that the formal employment rate rises with education, especially in light of the employment
guarantee policy, but it is uncommon for educational attainment to be associated with higher unemployment
rates.

Over the last fourteen years, the labor market has deformalized for men of all education levels. Given that educational attainment is linked with higher formality rates, and that educational attainment has been increasing at the same time that formality has been decreasing, it is necessary that deformalization must have occurred in at least one educational category. In fact, formal employment rates fell for men in all four categories, by 10-20 percentage points for literate men and by 4 percentage points for illiterate men, who had the lowest rates initially (Table 2-2). In all cases, the decline was driven by the public sector. The informal employment rate has also risen in each educational group, although illiterate men were once again the least affected.

TABLE 2-2: LABOR MARKET OUTCOMES BY EDUCATIONAL ATTAINMENT, WORKING-AGE MALE LABOR FORCE PARTICIPANTS

		1998	2006	2012
Formal private	Illiterate	9.2	9.3	7.3
	Below secondary	17.4	17.3	13.6
	Secondary	14.7	15.8	15.8
	Post-secondary	20	22.1	24.1
Public	Illiterate	11.3	10.4	8.9
	Below secondary	27.6	20.1	15.0
	Secondary	36.3	26.6	24.1
	Post-secondary	58.6	48.3	43.2
Informal private	Illiterate	54	47.5	58
	Below secondary	38.7	45.9	59.4
	Secondary	26	38.6	47.5
	Post-secondary	11.7	16.8	23.5
Farm	Illiterate	22.3	31.5	23.7
	Below secondary	12	14.8	9.7
	Secondary	9.3	11.9	7.7
	Post-secondary	2.2	3.2	2.2
Unemployed	Illiterate	3.3	1.3	2.1
	Below secondary	4.3	1.9	2.4
	Secondary	13.7	7.1	4.9
	Post-secondary	7.5	9.5	7

Source: ELMPS 1998, 2006, 2012.

By contrast, the trend of decreasing unemployment is heavily concentrated among men with secondary education. For men with secondary attainment, the unemployment rate decreased from 14% in 1998 to 5% in 2012. The unemployment declined for other educational categories as well, but only by 1-2 percentage points. Of course, the unemployment rate among men with secondary attainment began much higher than the other educational groups, and still remains elevated compared to those with lower levels of education. However today those with secondary attainment now have a lower unemployment rate than those with post-secondary attainment.

The reasons for informality are deep-rooted

To what extent can we explain the changes in the labor market due to the changes in human capital and industrial composition of employment discussed above? We can investigate this question using an econometric technique that decomposes changes into a component that is "explained" by changes in the observable features of the working-age population, and another component that cannot be explained by the observable features of the working-age population (see Box 2.3).

The decline of formal employment has been driven by factors within industries rather than movements between them. The formal employment share declined from 50.8% to 44.6% between 1998 and 2006, and only a third of that decline can be explained by changes in the industrial composition of Egypt's labor market. Using indicator variables for industry as our explanatory variables, we decompose the 6.2 percentage points decline into a 2.2 percentage point "explained" decline and a 4 percentage point "unexplained" decline. This means that if the industrial mix had remained at 1998 levels but the formal share of employment within each industry declined to 2006 levels, we would have observed a 4 percentage point decline rather than a 6.2 percentage point decline. The 3.9 percentage point decline in formal employment share between 2006 and 2012 actually occurred despite a shift towards more formal industries (mainly due to sharp declines in agricultural employment).

We also cannot explain the decrease in formality by the changes in labor force characteristics (education, age, and location) discussed above. In fact, rising educational attainment over this time period, and the association between education and formality, implies that these observed characteristics cannot explain the declines in formality. When we include variables for age, education, and location, we can only explain 1.1 percentage points of the 1998-2006 decline, and based on those characteristics we should have seen a 1.8 percentage point *increase* in the formality rate between 2006 and 2012. This suggests that demand side factors may be more relevant in explaining the trend of declining formality.

Declining male unemployment also cannot be explained by changes in the labor force. We can similarly decompose the declines in the male unemployment rate into the elements that can and cannot be explained by changes in the labor force[31]. When we do so, we see that none of the 1.9 percentage point decline in the male unemployment rate between 1998 and 2006 can be explained by labor force

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[31] We cannot use changes in the industrial mix, as the unemployed by definition do not work in any industry.

characteristics. In fact, based on these characteristics we would have expected the unemployment rate to rise by 0.8 percentage points, because the male labor force became more educated and more concentrated in the early 20s age bracket, both of which are associated with high unemployment. Since 2006, demographics have been working in Egypt's favor, as half of the much milder 0.8 percentage point decline between 2006 and 2012 can be attributed to the aging of the labor force while educational attainment has begun to level off.

Increasing informality is a puzzle: changes in informality cannot be explained by changes in the characteristics of the workforce or the industrial composition of employment. The roots of informality in Egypt go deeper, and are very likely associated with demand side factors including distortive industrial policy and regulations, as well as the erstwhile policy of guaranteed public employment. At the same time, the trend towards job informality disproportionately affects young entrants into the labor market.

C. Entering the labor market is a difficult process

Much like many other lower middle income and MENA countries, Egypt has persistently high levels of youth and young adult unemployment; however, these unemployment rates have decreased very dramatically over the last fourteen years. Male unemployment in Egypt has followed a clear pattern in all three rounds of the ELMPS. Unemployment rates begin high for 15-19 year olds, surge as more men graduate from school and enter the labor market, and then decline rapidly until stabilizing near 2% by the time men reach their mid to late 30s. This pattern has remained remarkably consistent over time: every 20 year old man who entered the labor market in the last fourteen years faced an unemployment rate above 10%. Youth unemployment therefore appears to be a structural feature of the Egyptian labor market, but it has declined remarkably over the last 14 years. Men aged 20-24 faced an unemployment rate of 20% in 1998, 15% in 2006, and only 12.1% today. In what follows, we define six age categories: teens (15-19), youth (20-24), young adults (25-29), early prime (30-49), late prime (50-59) and greying (60-64).

In addition to facing higher unemployment, young Egyptians are also employed in a different mix of industries than older Egyptians. The agriculture and construction sectors in particular are very important sources of employment for the young: 17.1% of employed Egyptian youth work in construction and 22.4% in agriculture; these proportions decline to 5.5% and 18.2% respectively for Egyptians in their late prime[32] (Table 2-3). It is possible that the recent growth of the construction industry over the last 14 years is one of the factors driving the decrease in unemployment among young men. On the other hand, older workers are more likely to work in social services and public administration compared to younger workers.

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[32] Since 60 is the mandatory retirement age for many public sector positions, the employment mix of greying workers will obviously be much different than those in their late prime.

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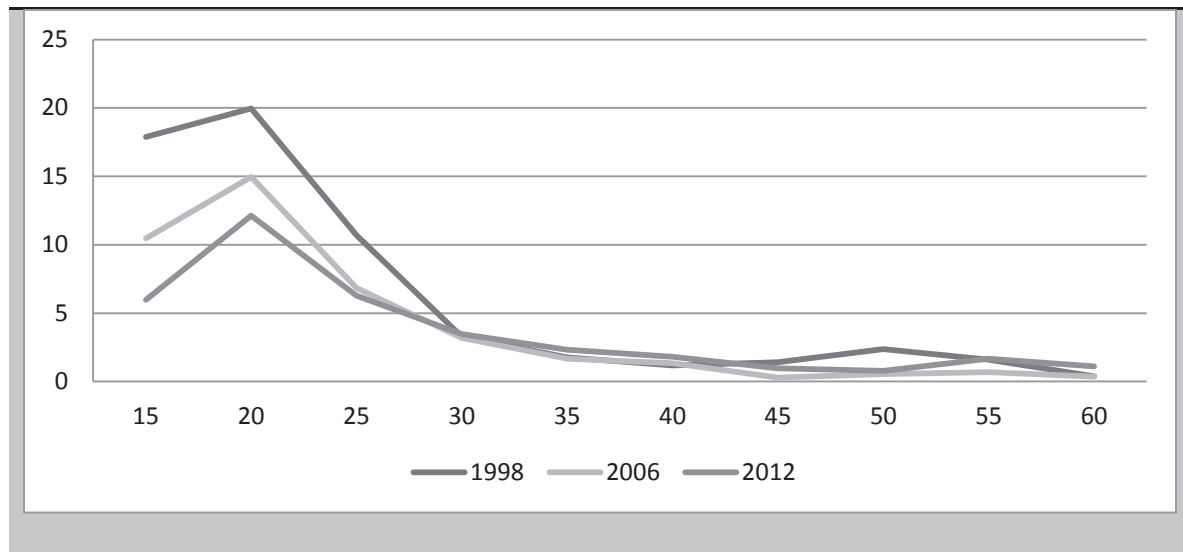
Source: ELMPS 1998, 2006, 2012.

TABLE 2-3: INDUSTRY OF EMPLOYMENT BY AGE CATEGORY, 2012

	Teen (15-19)	Youth (20-24)	Young adult (25-29)	Early prime (30-49)	Late prime (50-59)	Greying (60-64)
Agriculture	34.6	22.4	17.1	15.5	18.2	47.6
Manufacturing	17.5	16.1	15.6	15.8	13.5	9.1
Construction	19.5	17.1	14.0	10.1	5.5	4.7
Wholesale and retail	15.9	16.0	15.9	14.0	11.4	20.0
Transportation and storage	5.9	8.0	8.6	7.6	5.5	6.2
Professional services	0.2	2.8	4.8	4.2	3.7	2.3
Public administration	0.2	0.9	4.0	9.4	18.6	1.0
Social services	0.1	8.0	12.1	16.7	17.7	3.8
Other services	6.2	8.6	7.9	6.8	5.8	5.3
TOTAL	100	100	100	100	100	100

Source: ELMPS 1998, 2006, 2012.

One possible contributor to high youth unemployment is the central role that personal connections play in the labor market, as those lacking connections may face a long job search process. The use of connections as a key element of job search is well acknowledged in popular discourse in the MENA region. In the Arab Democracy Barometer Wave II 2010-2011 poll, nearly half of Egyptians reported that the use of connections to obtain jobs was extremely widespread, while a further 30% reported that connections were sometimes used to obtain employment[33]. In addition, a 2009 Gallup poll found that 75 percent of respondents in Egypt agreed that "knowing people in high positions is critical to getting a job in this country", and a 2011 poll found that 51 percent of respondents used friends and family as their primary source for

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[33] This is line with reports from other MENA countries in the same poll, although Egypt is somewhat on the low side as slightly under two-thirds of respondents overall reported widespread connection usage.

information on jobs. The use of connections in the Egyptian market was also documented in Wahba and Zenous (2005), and has been extensively studied in countries across the world[34]. The importance of connections to the employer-employee relationship mirrors their importance at the firm-government level (discussed in Chapters 1 and 5).

Egyptians directly report frequent use of personal connections to search for and find jobs. The ELMPS collects data on connections by asking employed wage-workers about the primary method they used to acquire their current job and by asking the unemployed about the methods they are using to search for jobs. Table 2-4 lists the most commonly reported methods. We see that 32.1% of workers reported that the primary method they used to acquire their current job was by asking friends or relatives for help, and 46.9% of unemployed reported asking friends or relatives for help in finding a job. However, these numbers are likely to understate the true importance of connections for employment, as public sector workers are probably underreporting their use of connections. 59.1% of public sector workers reported that registration in a government employment office or entering into a job lottery was the primary way that they found their current job (Table 2-5), but these methods may be accompanied by using connections. In the private sector, the use of connections appears to be the primary method of finding a job, with more than 45 percent of those employed reporting the use of *wasta*.

TABLE 2-4: SEARCH METHOD USAGE

Method	Finding current job	Searching for job[35]
Registered in government employment office	12.0	34.1
Entered government job competition	13.5	38.4
Sent job application	11.1	34.3
Asked friends or relatives for help	32.1	46.9
Contacted employer/contractor	13.7	9.0
Solicited by employers	7.7	N/A
Other	9.9	47.7
Source: ELMPS 2012.		

We examine the use of connections in the public sector indirectly by looking at the correlation between parents and children's employment in the public sector. On a raw level, we find that men whose fathers worked in the public sector have a public sector employment rate of 32.4%, compared to 19.1% for men whose fathers did not work in the public sector. Even after accounting for age, education level, region, gender, marital status, and parental education, we still find that Egyptians with fathers in the public sector are 5.9 percentage points more likely to have jobs in the public sector, and Egyptians with mothers in the public are 8.8

TABLE 2-5: SEARCH METHOD USAGE BY SECTOR

Method	Public	Formal private	Informal private
Registered in government employment office	28.0	3.3	0.2
Entered government job competition	31.1	5.1	0.2
Sent job application	18.5	17.0	1.9
Asked friends or relatives for help	11.4	45.3	46.4
Contacted employer/contractor	0.1	9.7	28.0
Solicited by employers	0.7	5.5	15.2
Other	10.2	14.0	8.1
Source: ELMPS 2012.			

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[34] See, among others, Munshi and Rosenzweig (2006) in India; Holzer (1987), Holzer (1988), and Montgomery (1991) in the US; and Addison and Portugal (2002) in Portugal.
[35] Multiple responses allowed.

percentage points more likely (Annex Table **2.1**, column 1). This intergenerational relationship strongly suggests that being connected to the right people is extremely important even in the public sector. Given that it is difficult to directly measure connection use in the public sector, we focus on the importance of contacts specifically for private sector jobs (and as a search method for the unemployed).

Connection usage is high across many different types of workers and jobs, but certain personal and job characteristics are associated with higher use of connections. Gender is a clear example. Men are slightly more likely to have found a job through contacts than women (4.8 percentage points), however unemployed men are *much* more like to search for jobs using connections than are unemployed women, more than one half of men compared to just one third of women (Table 2-6). This is consistent with findings from previous World Bank reports (World Bank 2010) and may be one issue inhibiting women's access to high-quality jobs. The importance of connections for finding a job seems to decrease slightly with age.[36] Lastly, among personal characteristics, we see notable variation at the regional level. Those from metropolitan Egypt are somewhat more likely to have found jobs using connections and much more likely to be looking for jobs using contacts. In terms of job characteristics, there are two noteworthy details. First, the rapidly growing construction industry also appears to be the industry in which contacts matter the least. Second, unlike in many other economies, connection usage does *not* appear to lose importance after the first job, and in fact seems to become more important for workers in their second or third jobs. This is somewhat unusual, and may indicate that the usage of connections in Egypt reflects underlying problems of nepotism in the labor market. It may also be linked to issues of generational inequality, as today both entry and advancement in the labor market require use of connections. This relationship between job order and connection usage remains intact and statistically significant after controlling for other characteristics in a multivariate regression (Annex Table **2.1**, column 2)[37].

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[36] For the unemployed, as unemployment rates are very low for older people, sample sizes become too small to meaningfully analyze.

[37] It should be noted that this regression result does not explain much of the observed variation in connection usage, likely because we have no direct measure of the quality and quantity of a worker's connections.

	Employed	Unemployed
Male	46.5	53.9
Female	41.7	33.5
Illiterate	42.3	46.9
Below secondary	48.4	47.5
Secondary	48.1	35.8
Post-secondary	43.1	46.1
Teen	47.0	39.1
Youth	48.3	47.1
Young adult	46.4	39.3
Early prime	45.8	36.7
Late prime	42.0	51.3
Greying	41.9	28.8
Metropolitan	50.6	58.8
Urban Lower	47.1	35.7
Urban Upper	42.5	40.0
Rural Lower	45.6	31.8
Rural Upper	41.8	40.3
Agriculture	43.4	
Manufacturing	50.6	
Construction	32.1	
Wholesale and retail	54.8	
Transportation and storage	51.1	
Professional services	40.4	
Other Services	60.8	
1st job	43.9	
2nd job	48.6	
3rd+ job	48.2	
Source: ELMPS 2012.		

High rates of connection usage may also imply structural problems in the labor market that go beyond simple favoritism. Reliance on preexisting connections between workers and employers can also be a response to information- or contract-based market failures. For instance, personal connections may give employers access to better information about prospective employees; using German data, Dustmann, Glitz, and Schönberg (2011) show that "job search networks help to reduce informational deficiencies in the labor market and lead to productivity gains for workers and firms." Connections also become much more important in an environment with weak rule of law, since if employers and workers are not able to enter into externally-enforceable legal contracts they must instead rely on implicit contracts enforced by mutual friends or family members. Concrete improvements in public policy can address these issues and open the labor market up to the less connected. For instance, a better educational system that provides stronger signals of worker quality can reduce information problems, and legal reforms that promote the fair and consistent enforcement of laws can lessen the need for implicit contracting.

Formal employment rates for men across different age groups have also followed a relatively consistent pattern over the last 14 years. Male formal employment rates have always started very low (below 5%) for teens, and have then shown consistent increases with age until leveling off between 60 and 70 percent (Figure 2.12). Unlike the decrease in unemployment, which was focused on youth unemployment, the formal employment rate has lowered across all age brackets but especially in the older age groups.

FIGURE 2.12: MALE FORMAL EMPLOYMENT RATES, BY AGE
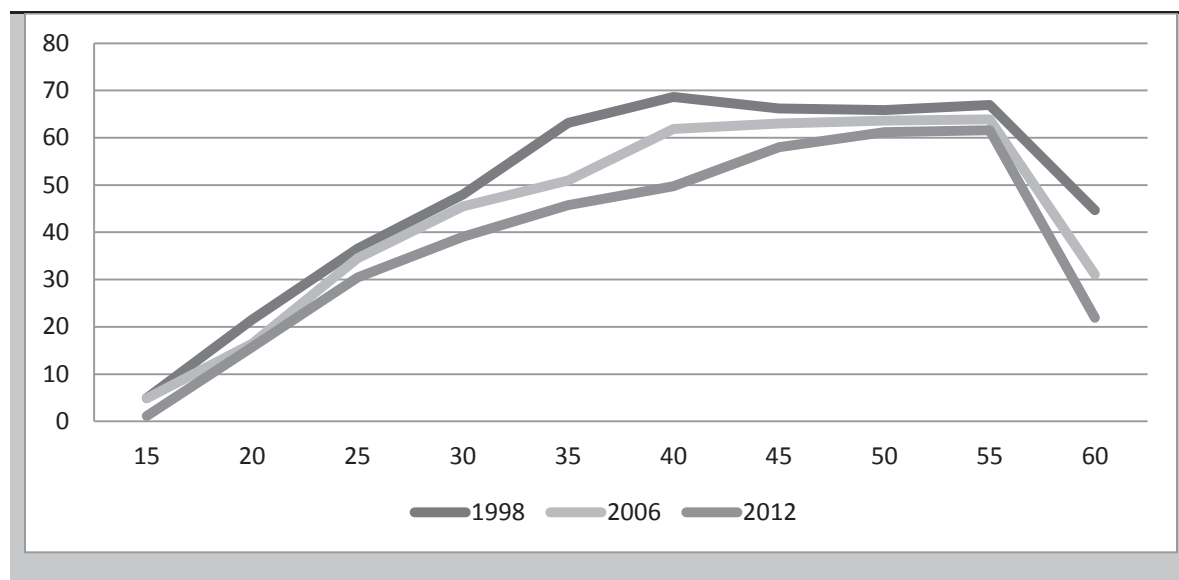
Source: ELMPS 1998, 2006, 2012.

The problem of low formal employment among young Egyptians today is therefore not an issue of *age* alone but also an issue of *generation*. The pattern of declines seen in Figure 2.12 suggests that there are particular generations of men experiencing continued low formal employment rates. We can see this clearly by comparing labor market outcomes at a fixed age (29[38]) for men of in different birth cohorts, using the retrospective employment history component of the ELMPS (Figure 2.13). While overall employment at age 29 has remained very high and flat across all cohorts, formal employment at age 29 is lower among younger cohorts than among older cohorts. This is all the more striking given the dramatic rise in educational attainment taking place in Egypt over this time period. Egyptians born in 1955 were 29 years old in 1984, and at that time 54% of those who were participating in the labor market had a formal job. Egyptians born in 1980 were 29 years old in 2009, but only 40% had found formal sector employment by that age. Instead, the probability of informal employment at age 29 has risen for each successive birth cohort.

This strong generational bias is tied into the employment guarantee policy. Men and women with secondary and post-secondary education born between 1955 and 1959, and who were therefore covered by the guaranteed employment policy, were extremely likely to be employed by age 29. Only secondary

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[38] We chose age 29 to coincide with the end of the "young adult" age bracket and as an approximate measure of when most men have reached their final occupational status. Another recent study of the Egyptian labor market (Carvalho & Binzel 2013) selected age 28 for similar reasons.

education appeared to be required in order to get a public sector job (Figure 2.14). However, moving to the 1960-1964 birth cohort (the younger members of which graduated after the 1983-1984 cutoff), we see a reduction in public sector employment at age 29, but with equal rates for secondary and post-secondary education. For later cohorts, however, public sector employment rates fall faster for those with secondary education, and a wide gap opens up between secondary graduates and post-secondary graduates. These later generations have experienced sharply declining returns to secondary education.

FIGURE 2.13: EMPLOYMENT STATUS AT AGE 29 BY BIRTH COHORT, ALL LABOR FORCE PARTICIPANTS

Legend: ■ Formal private ■ Public ■ Informal private & farm ■ Unemployed
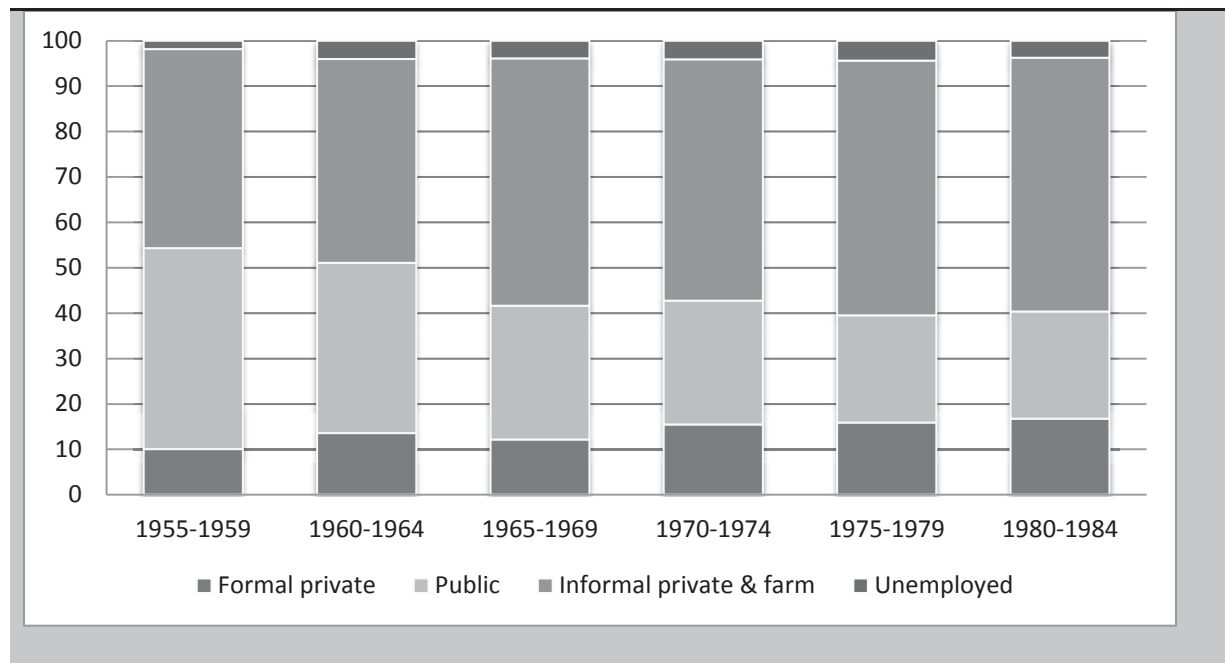
Source: ELMPS 2012.

FIGURE 2.14: PROBABILITY OF HAVING A PUBLIC SECTOR JOB AT AGE 29 BY BIRTH COHORT

Legend: ■ Illiterate ■ Below secondary ■ Secondary ■ Post-secondary
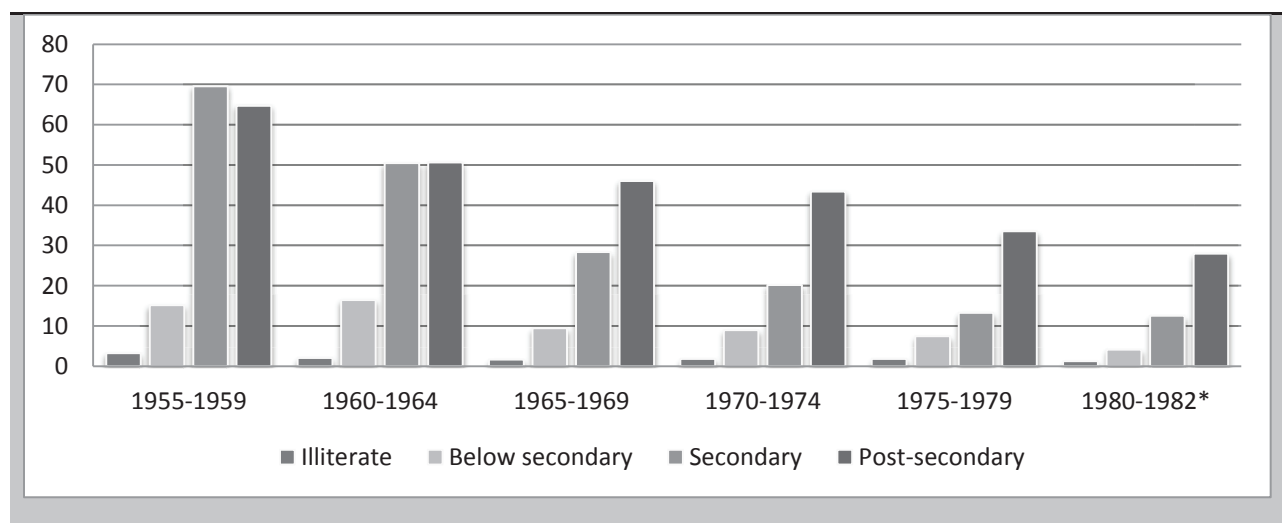
Source: ELMPS 2012.

Recent cohorts of educated young people have faced disadvantages upon entering the labor market. In order to see how different birth cohorts fared upon their entry into labor market, we look at labor market outcomes very soon after the typical student completed their education: age 20 for secondary graduates and age 24 for post-secondary graduates. For those with secondary education the unemployment rate upon labor market entry has steadily declined (Figure 2.15), mirroring the changes in aggregate outcomes for secondary graduates we have already discussed (as seen in Table 2-2)[39]. The unemployment rate at entry went from 34% for the 1955-1959 cohort to 25% for the 1970-1974 cohort and 15% for the 1984-1989 cohort. Similarly, the informal employment rate increased from 23% to 56.1% to 71.7% for these cohorts and the formal employment rate dropped from 45% to 19% to 13%. For those with post-secondary education, there was a drop in formal employment at entry from 67.8% for the 1955-1959 cohort to 45% for the 1960-1964 cohort (Figure 2.16), but since then, there has not been a consistent pattern in overall formal employment. There has, however, been a fairly consistent long-term trend towards higher formal private sector employment upon entry for each cohort born since 1960, rising from 9% for the 1960-1964 cohort to 21% for the 1985-1989 cohort.

These recent cohorts have not been catching up to earlier cohorts, and in fact the generational inequity in access to formal jobs becomes larger with age. Recent labor market entrants are finding it more difficult to get formal jobs initially, but that is not the only disadvantage they face. They are also finding it more difficult to transition into formal jobs as they get older. As a crude measure of this transition rate, we consider the labor market outcomes at age 29 of those who were not formally employed at the "entry age" by birth cohort (Figure 2.17). In the 1955-1959 and 1960-1964 cohorts, more than half of those who missed formal employment initially were able to secure it by age 29. But of those born since 1970, fewer than 40% have been able to make that transition. This means that the generational gap in formality is higher at age 29 than it was at age 20 or age 24. We examine these post-labor market entry transitions more rigorously using the ELMPS panel data in Chapter 6.

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[39] These trends for Egyptians with secondary education is consistent with the suggestion by Assaad (2008) among others that high unemployment in Egypt is partially due to the high expectations for public employment engendered by the government's employment guarantee policy, and that unemployment among recent generations of Egyptians has been decreasing in part because new labor market entrants adjust their expectations and become more willing to accept informal private sector jobs (which they find less preferable to public sector jobs): "the dramatic slowdown in government hiring in the 1998-2006 period has finally sent a clear message that it is no longer worthwhile to queue for government jobs." (Assaad 2008)
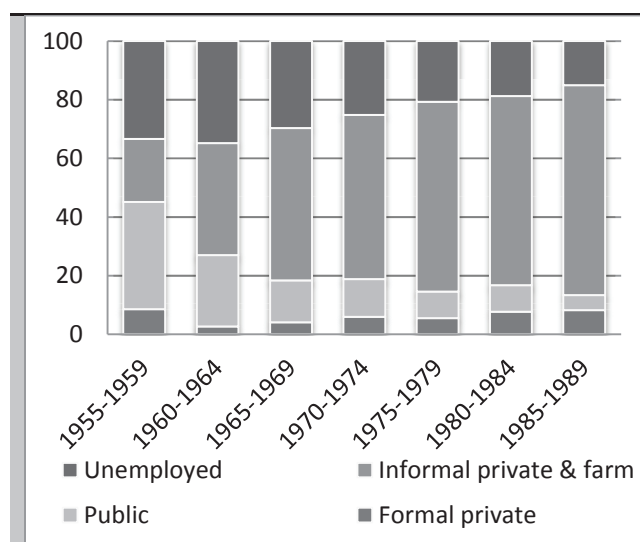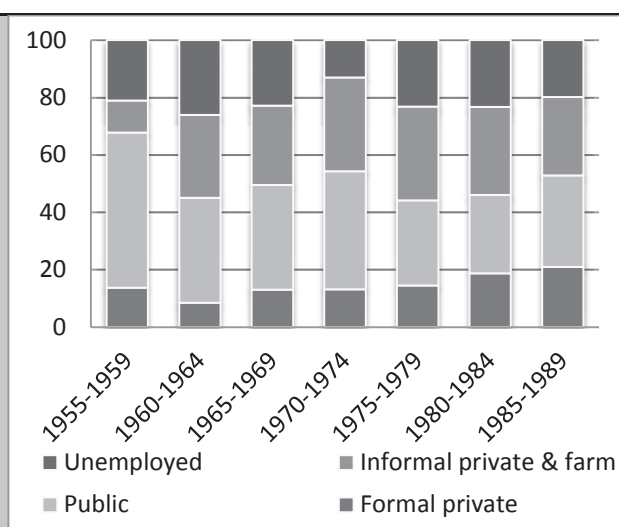
Source: ELMPS 2012.

FIGURE 2.17: PROBABILITY OF FORMAL EMPLOYMENT AT AGE 29 FOR THOSE WITHOUT FORMAL JOBS AT ENTRY BY EDUCATIONAL ATTAINMENT
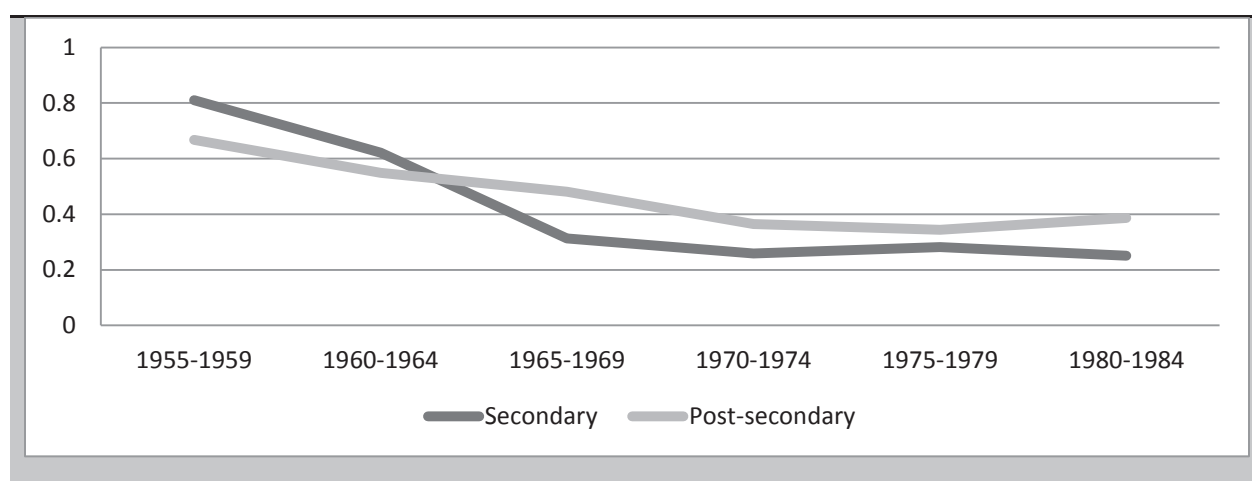
Source: ELMPS 2012.

Egypt faces a unique demographic challenge

The long-term challenges related to the labor market facing young entrants are especially important because Egypt is in a time of rapid demographic change. Changes in child mortality and fertility – the so-called "demographic transition" – have created a "youth bulge" generation that is currently working its way through the labor force. In 1998, the distribution of the working-age male labor force was relatively flat, with a mild peak of 13.6% of the labor force in the 25-29 age bracket (Figure 2.18). However, by 2006 we see that 17.3% of the labor force was focused at this peak, and the fraction of labor force participants in the 20-24 age bracket also increased from 12.8% to 17.3%. These workers were drawn from both the 15-19 age

brackets and the 30-49 age brackets. This reflects both a youth bulge entering the labor force and increasing secondary educational attainment (which lowers the fraction of the labor force in the young age brackets as they remain in school longer). As we move into 2012, we see that the labor force peak remains in the same 25-29 age bracket, and the fraction of the labor force in that age bracket remains essentially the same (17.7%). However, the overall distribution shifts to the right, as the fraction of workers in the 15-24 age brackets decrease by a total of 5.3 percentage points and the fraction of workers in the 30-39 age brackets increase by a total of 6.4 percentage points.

FIGURE 2.18: MALE WORKING AGE LABOR FORCE, DISTRIBUTION BY AGE
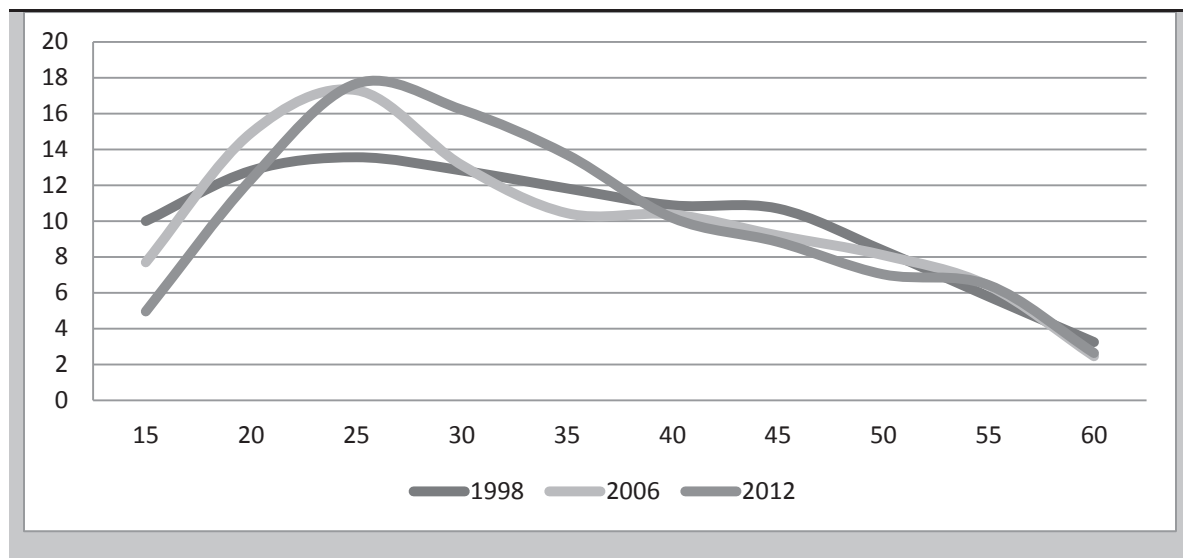
Source: ELMPS 1998, 2006, 2012.

An unusual demographic pattern is becoming evident in Egypt due to rebounding fertility rates. Egypt initially followed a very standard demographic pattern, shifting from high child mortality rates and high fertility rates to low child mortality and fertility rates, with a period of low child mortality and high fertility in between that gave rise to the current "youth bulge" generation, roughly centered around those born in 1983. That generation is now reaching reproductive age and their children will constitute another large generation, which is again a standard demographic pattern. What is surprising and unprecedented is that fertility has rebounded among women of the initial youth bulge generation, which has created an *extraordinarily* large second youth bulge. The peak age bracket of the first bulge generation (age 25-29) contains slightly more than 7.5 million Egyptians, 9.6% of the population (Figure 2.19). Currently there are more than 11 million children under the age of 5, more than one-seventh of the population and nearly half again as many Egyptians as in the 25-29 age bracket. When the second bulge generation begins to enter the labor force in a few years, it will shift the age distribution of the labor force leftwards again and place increasing demographic pressure on the labor market.
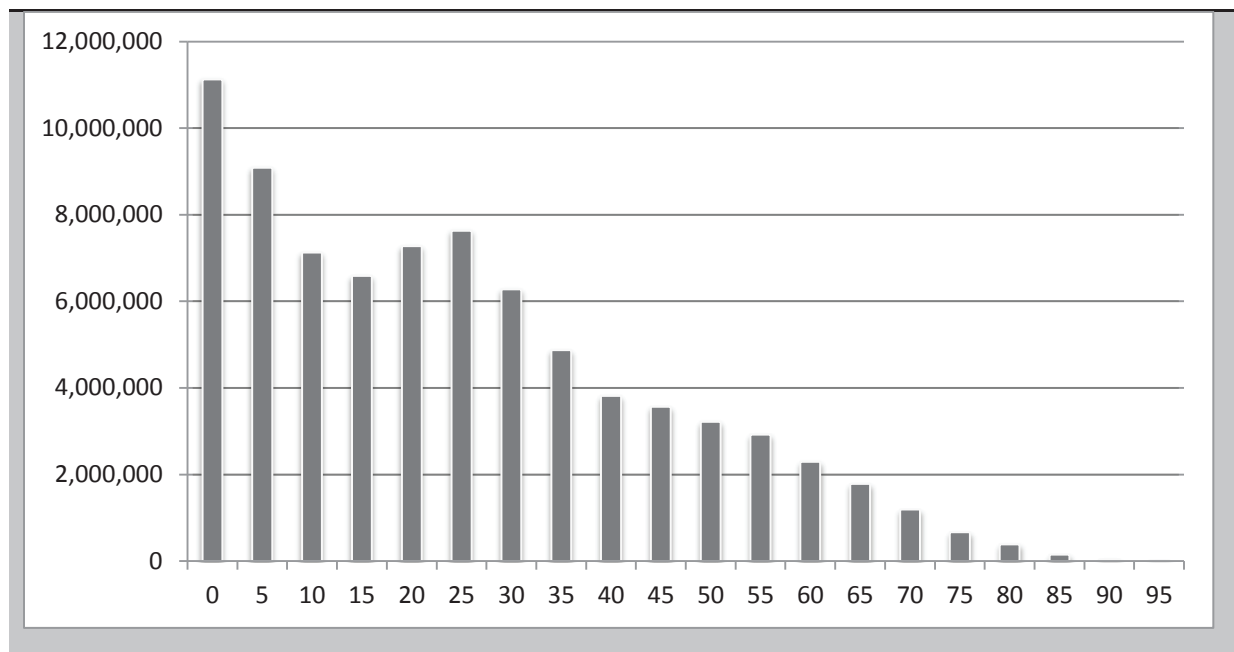
Source: ELMPS 2012.

How has the Egyptian economy continued to reduce unemployment, overcoming the steady curtailment of the public sector and the stagnation in the formal private sector over the last 14 years? Why have those jobs been overwhelmingly created in the informal sector? Untangling these mysteries is vitally and urgently important, as policymakers have a window of opportunity to institute proper reforms before the echo generation begins to exert demographic pressure on the labor market. In the remainder of this report, we examine this issue along three different dimensions: regionally differentiated and segmented labor markets (Chapter 3), and the long-standing problems of women's unemployment and non-participation in the private sector (Chapter 4). We also consider the demand-side of the labor market (Chapter 5) and undertake an in-depth study of the nature of informal employment (Chapter 6).

In this chapter, we briefly touched on regional differences in the Egyptian labor market. We saw that the labor market is far from monolithic, with formal private sector employment heavily concentrated in the core metropolitan areas. In the next chapter, we describe this and other spatial patterns and analyze their causes and consequences. The highly agglomerated nature of the Egyptian economy presents unique opportunities and challenges, and a deep understanding of all parts of Egypt is necessary in order to craft effective policy.

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Annex 2

Annex Table 2.1: Connections in the labor market		
Outcome	Probability of public sector employment	Probability that connections were used for current job
Sample	Labor force participants age 15-64	Wage-workers employed outside private sector age 15-64
	(1)	(2)
2nd job		0.039**
		(0.019)
3rd or higher job		0.039
		(0.024)
Father in public sector	0.059***	0.034*
	(0.011)	(0.020)
Mother in public sector	0.088***	-0.004
	(0.030)	(0.052)
Female	0.107***	-0.060*
	(0.009)	(0.032)
Literate	0.260***	0.065
	(0.039)	(0.041)
Elementary	0.259***	0.005
	(0.026)	(0.026)
Secondary	0.397***	0.023
	(0.018)	(0.024)
Post-secondary	0.580***	-0.012
	(0.020)	(0.032)
Age 20-24	0.255***	0.013
	(0.087)	(0.038)
Age 25-29	0.377***	-0.024
	(0.083)	(0.039)
Age 30-34	0.485***	-0.025
	(0.081)	(0.042)
Age 35-39	0.587***	-0.015
	(0.073)	(0.045)
Age 40-44	0.659***	-0.084*
	(0.064)	(0.047)
Age 45-49	0.756***	-0.126**
	(0.044)	(0.049)
Age 50-54	0.787***	-0.102*
	(0.034)	(0.056)
Age 55-59	0.792***	-0.083
	(0.030)	(0.065)
Age 60-64	0.348***	-0.099
	(0.110)	(0.084)
Urban Lower	0.022	-0.015
	(0.015)	(0.020)
Urban Upper	0.076***	-0.074**
	(0.016)	(0.036)
Rural Lower	0.051***	-0.035
	(0.013)	(0.048)
Rural Upper	0.052***	-0.019
	(0.016)	(0.026)
Currently Married	0.080***	0.020

	(0.013)	(0.050)
Widowed/Divorced	0.022	-0.126*
	(0.033)	(0.069)
Father literate	0.012	0.007
	(0.011)	(0.022)
Father secondary	0.009	0.105*
	(0.018)	(0.063)
Father post-secondary	0.010	-0.040
	(0.022)	(0.028)
Mother literate	0.028**	-0.090***
	(0.014)	(0.027)
Mother secondary	-0.019	-0.072***
	(0.025)	(0.023)
Mother post-secondary	0.012	-0.110***
	(0.035)	(0.025)
Observations	15,224	5,937
Pseudo R-squared	0.261	0.0128

Probit estimations. Marginal effects, evaluated at sample means for continuous variables, are shown. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: ELMPS 2012.

3. A Labor Market Divided: Spatial Disparities in the Labor Market[40]

> *Egypt's labor market is characterized by substantial regional disparities, which generally lie along a continuum that runs from the core metropolitan areas to the rural periphery. Over the last 14 years, there has been substantial convergence between these regions, but that convergence has been the result of stagnation in the core rather than strong growth in the periphery. Continued disparities are likely the result of Egypt's historically low levels of migration and a lack of dynamism in the private sector. As a result, the returns to education have declined dramatically in the peripheral areas, and the demographic structure implies that, absent private sector job creation in the periphery or migration to job opportunities in the core, peripheral Egypt's labor market is likely to deteriorate further.*

Views of the Egyptian economy are frequently shaped by the experience of the dense metropolitan areas surrounding Alexandria, Suez, Port Said, and (especially) Cairo. However, the majority of Egyptians reside outside these areas (Figure 3.1**), and their economic lives are substantially different from those of the metropolitan residents.** This chapter examines how labor market outcomes vary across Egypt and discusses the segmentation of the labor market. We split Egypt into five regions: metropolitan Egypt (encompassing Cairo, Alexandria, Port Said, and Suez), urban Lower Egypt, urban Upper Egypt, rural Lower Egypt, and rural Upper Egypt[41].

Following the economic geography literature, we utilize a core-periphery *continuum* **to delineate space rather than a simpler urban-rural** *distinction,* **as it appears to better fit the**

FIGURE 3.1: SPATIAL DISTRIBUTION OF POPULATION IN 2012

Source: ELMPS 2012.

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[40] Many of the findings in this chapter mirror those in World Bank (2012), a dedicated report on the economic geography of Egypt, using different data sources and placed in the specific context of the labor market. That report also includes detailed discussion on other topics including regional differences in living standards and inequality of opportunity, housing market reform, and local public finance, and may be a valuable reference for interested readers.

[41] See Assaad & Kraft (2013a) for specific definitions.

MAP 3.1: ELMPS COVERAGE MAP

metropolitan
urban Lower
rural Lower
mixed Lower
urban Upper
rural Upper
mixed Upper

200 km boundary
around Cairo
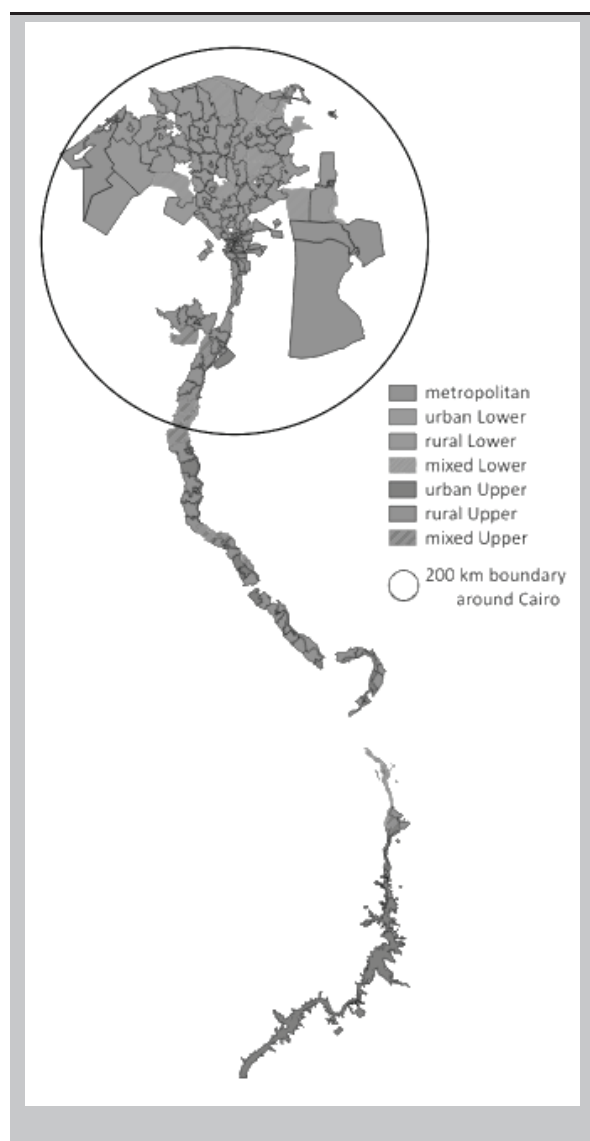
Source: ELMPS 2012 and CAPMAS.

observed spatial variations in labor market outcomes. This is in part because the regions of Egypt are broadly defined, and contain a certain degree of overlap. There are a number of governorates in Egypt that are split between the metropolitan region, the urban Lower region, and the rural Lower region (Map 3.1). We supplement the analysis in places by distinguishing between "near" governorates (all the governorates in Lower Egypt and the governorates of Upper Egypt that are close to Cairo) and "distant" governorates (those governorates in Upper Egypt that are more distant from Cairo). The "distant" governorates in the sample consist of Menia, Asyout, Suhag, Qena, Aswan, and Luxor. As seen in Map 3.2, these are roughly speaking the governorates in our sample that lie more than 200km away from Cairo (the other governorates that are distant from Cairo are not included in our sample). Unfortunately, due to the construction of the ELMPS the respondents in these sub regions do not constitute a representative sample, so we cannot make definitive statistical statements but rather indicative ones. However, the differences between close and distant Upper Egypt are quite stark and so we will present some statistics focusing on each.

Overall, the pattern of labor market outcomes has metropolitan Egypt at one end of the spectrum and rural Upper Egypt at the other, and other regions falling somewhere in between. The continued existence of these wide disparities over the ELMPS period in labor market outcomes suggests that there is labor market segmentation occurring along regional lines.[42] In addition, the relevant regional margin at which outcomes are significantly different is not always the same. For example, metropolitan Egypt has very similar secondary school graduation rates as non-metropolitan urban Egypt, but much higher rates than rural Lower Egypt, which in turn has much higher rates than rural Upper Egypt. However, workers in metropolitan Egypt earn a distinct wage premium over workers in both urban and rural Egypt.

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[42] Segmentation indicates that workers in different regions "*operate in different labor markets, with different working conditions, different promotional opportunities, different wages, and different market institutions*" as defined in Reich, Gordon, & Edwards (1973).

A. Spatial segmentation is a pervasive feature of the labor market

Source: CAPMAS.

Egyptians face three substantial spatial gaps in the labor market: in wages, in job formality, and in unemployment (Table 3-1**).** Nearly three- quarters of employed Egyptian men hold a wage job as their primary source of labor income. The average monthly wage for men in metropolitan Egypt (among men aged 15-64 who report a wage job as their primary job) was EGP 1595, while the average wages in other regions ranged from EGP 1026 to EGP 1207, between 33% and 20% less than metropolitan Egypt. Wages follow a clear metropolitan-urban-rural pattern; in this case, Upper Egypt fares somewhat better than Lower Egypt. Note that these gaps (and the ones which follow) are calculated for those who *live* in the region rather than those who *work* in the region; as we shall discuss later, the distinction between place of work and residence can be an important one.

Job formality and unemployment are also affected by distance from the metropolitan core, which is usually associated with a concentration of jobs, but also with a concentration of relatively well-educated job seekers. In terms of formality, metropolitan Egypt fares the best, with a majority (56.2%) of the labor force employed in the public or formal private sector. Non-metropolitan urban areas have formality rates of 44% and 47%; outside metropolitan Egypt, there is a drop in formality to 36.3% in rural Lower Egypt and then an even sharper drop to 24.9% in rural Upper Egypt. This is driven in large part by the formal private sector, which plays a large role in metropolitan Egypt's labor market but almost no role in rural Upper Egypt. Youth unemployment, on the other hand, is much smaller outside rural Upper Egypt, which consistently has the lowest unemployment rate for both men and women. In all other regions, unemployment rates for men and women have nearly opposite spatial patterns. Male unemployment is at its highest in metropolitan Egypt at 14.7% and decreases as we move from the core to the periphery. This unemployment gap is a common phenomenon in developing countries, and is frequently credited to the existence of a lower-productivity farm sector in the rural areas that absorbs men who would otherwise be unemployed[43]. Female unemployment on the other hand is at its highest in rural Lower Egypt (at 52.2%) and declines moving towards the core, dropping to 32.7% in the core. The (relatively) low female unemployment rates found in metropolitan Egypt and rural Upper Egypt are likely driven by very different phenomena. Women in metropolitan Egypt have greater access to the formal sectors for work, while women in rural Upper Egypt are being absorbed by the farm sector.

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[43] Harris & Todaro (1970) present the canonical economic model of rural-urban migration in the presence of high urban unemployment.

TABLE 3-1: SPATIALLY DIFFERENTIATED LABOR MARKET OUTCOMES, 2012

Region of residence	Average monthly wages[44]	Employment (% of working age population in labor force)				Unemployment rate (ages 15-29)		
		Formal private	Public	Informal	Farm	Total	Men	Women
Metropolitan	1525	24.6	31.6	34.8	0.1	19.3	14.7	32.7
Urban Lower	1132	12.9	31.0	40.4	2.9	24.7	13.1	50.2
Urban Upper	1207	10.8	35.7	36.4	7.3	18.5	10.0	43.5
Rural Lower	1026	10.2	26.1	39.6	14.2	18.1	6.3	52.2
Rural Upper	1074	6.4	18.6	47.6	22.9	8.1	3.6	30.3
Metropolitan	1525	24.6	31.6	34.8	0.1	19.3	14.7	32.7
Near	1057	10.4	25.4	40.4	14.1	17.4	7.2	46.7
Distant	1113	6.7	25.5	46.1	15.9	10.4	4.5	40.9

Source: ELMPS 2012.

FIGURE 3.2: FORMAL PRIVATE SECTOR EMPLOYMENT RATE BY DISTANCE FROM HOME LOCALITY TO CLOSEST METROPOLITAN CENTER

Source: ELMPS 2012 and CAPMAS.

When we consider how these outcomes vary across metropolitan, near governorates and distant governorates, we see a somewhat different core-periphery pattern (Table 3-1). Wages continue to be distinctly higher in metropolitan Egypt compared to the rest of Egypt and are very slightly higher in distant governorates than in governorates near Cairo. The share of employment in the formal private sector declines significantly between metropolitan Egypt and near governorates and drops even further between near governorates and distant governorates, supporting the idea that the formal private sector is heavily focused in metropolitan Egypt and thins continually with distance. We can see how formal private employment declines continuously even in areas near metropolitan Egypt in Figure 3.2. The figure plots the formal private employment rate by distance to the center of the closest metropolitan area for distances out to 200km. We observe an approximately 24% formal private employment rate for those living less than 40 km from the center of a metropolitan area, then a sharp

[44] For male wage-workers of working age.

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decline to approximately 10% for those further than 80 km away by a shallower decline, leveling off at around 9% for those who are 100-200km away. On the other hand, the informal private sector increases its share of the labor force as we move from metropolitan Egypt to distant governorates. Table 3-1 also makes it clear that metropolitan Egypt has a distinctly larger public sector and a distinctly smaller farm sector than both near and distant governorates but that outside metropolitan Egypt, there is very little distinction.

TABLE 3-2: EDUCATIONAL ATTAINMENT ACROSS SPACE, WORKING AGE POPULATION, 2012

	Literacy rate	Elementary graduation rate	Secondary graduation rate	Post-secondary graduation rate
Metropolitan	86.8	83.6	59.7	28.3
Urban Lower	82.3	79.0	59.8	23.5
Urban Upper	82.1	79.2	60.1	22.5
Rural Lower	74.4	70.4	48.1	13.4
Rural Upper	62.8	58.5	35.4	7.4
Source: ELMPS 2012.				

There are large regional variations in educational attainment and in the distribution of population by age. As discussed in Chapter 2, education and age play important roles in determining labor market outcomes. Wages and formal employment generally increase with age, while unemployment decreases. Wages and formal employment also increase with education, but so does unemployment. Spatial variation in these attributes is therefore one factor that may contribute to several of the gaps we observe. Metropolitan Egypt has, overall, the highest levels of human capital of the five regions, followed by the other urban regions, rural Lower Egypt, and finally rural Upper Egypt, which trails the other regions in both education and labor market experience (Table 3-2). Metropolitan Egypt also has more potential workers in the prime age categories (30-59) than the other regions, especially rural Upper Egypt where the population as a whole is much younger (Table 3-3).

TABLE 3-3: AGE DISTRIBUTION ACROSS SPACE, WORKING AGE POPULATION, 2012

	Teen (15-19)	Youth (20-24)	Young adult (25-29)	Early prime (30-49)	Late prime (50-59)	Greying (60-64)
Metropolitan	11.4	12.7	14.5	39.9	15.6	5.9
Urban Lower	11.5	14.0	16.0	38.7	14.2	5.6
Urban Upper	14.4	15.7	14.9	38.7	12.2	4.3
Rural Lower	13.6	15.0	16.4	39.2	11.8	4.0
Rural Upper	16.6	17.8	16.5	34.8	10.1	4.2
Source: ELMPS 2012.						

Multivariate regression analysis reveals that the regional differences in age and education are important factors, but that they only explain about half of the regional wage and formality gaps. Such analysis allows us to determine how much of the gaps in outcomes across regions can be explained by differences across regions in education and age structure, and how much is explained by variations within the regional labor markets themselves. We compare the regional differences in wages[45], formal employment, and unemployment, while accounting for differences in education and age using indicator variables: the results are reported in Annex Table **2.1**. Column 1 shows that holding those characteristics constant narrows the average wage gap between metropolitan Egypt and rural Upper Egypt from 30% to 17.0%. Columns 2 and 3 show that the gap in job formality between metropolitan and rural Upper Egypt is reduced to 14.1 percentage points for men and 16.8 percentage points for women. Column 4 shows that approximately one third of the difference in the young male unemployment rate can be explained by human capital. For instance, the multivariate regression predicts that, after accounting for age and education, a young man in rural Upper Egypt has a roughly 7 percentage point lower unemployment rate than his counterpart in metropolitan Egypt instead of the 10.1 percentage point difference we observed in reality. Column 5 shows that the same basic pattern in female youth unemployment holds (lowest in metropolitan Egypt and Upper Egypt, highest in Lower Egypt), but the difference between urban and rural Upper Egypt essentially disappear. Interestingly, if we exclude distant Egypt from the analysis we find that wage gaps close by up to 6 percentage points suggesting that the labor market is somewhat integrated in the areas surrounding metropolitan Egypt (Column 6).

One of the reasons for these differences in employment and formality across Egypt is differences in the mix of industries across regions, which follows a core-periphery pattern. Agriculture shows a clear, obvious pattern of increasing importance along the standard metro-to-rural Upper Egypt continuum. However, the other industries are much more split along Lower Egypt –Upper Egypt lines rather than rural-urban. Manufacturing is heavily focused in Lower and metropolitan Egypt, but there is little difference in employment in manufacturing between those who live in urban and rural Egypt. The public administration and social services industries are more important as a source of employment in the non-metropolitan urban areas, as is the retail/wholesale industry; this is consistent with the relative lack of formal private sector jobs

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[45] We use log monthly wages from all jobs and as the dependent variable for the wage regressions, following standard practice and the coefficients can therefore be interpreted as the average percent difference in wages. We also include only workers who list a wage job as their primary occupation in those regressions, excluding those who are primarily self-employed and only get wages from a secondary job.

in those regions. Notably, construction is substantially more important as a source of employment for residents of rural Upper Egypt than it is for other regions, employing 7.3% of the working-age population of rural Upper Egypt compared to 4-5% in other regions.

The overall distribution of jobs in Egypt is tilted heavily towards metropolitan Egypt and away from rural Egypt. 6.8 million of the approximately 22.3 million workers in Egypt in 2012 report working in metropolitan Egypt, indicating that 31% of jobs are located in metropolitan Egypt compared to only 25% of the population (Figure 3.4). The non-metropolitan urban regions also provide a larger fraction of jobs than their population (13% and 8% of jobs in urban Lower and urban Upper Egypt respectively, compared to 10% and 7% of population). There are many fewer jobs located in rural Egypt as a proportion of population (although this measure of employment does not include subsistence farming). In addition, around 9% of workers report that they work in multiple regions (whom we refer to as mobile workers), many of them in the construction industry. The fact that the metropolitan and urban regions contain a number of jobs disproportionate to their population is indicative of the high rates of commuting (discussed later in the chapter). The concentration of the formal private sector in metropolitan Egypt to some extent reflects the industrial distribution of employment: manufacturing, transportation, professional services, and other services are all industries with large formal private sectors, and are each larger employers of the residents of metropolitan Egypt than any other region.
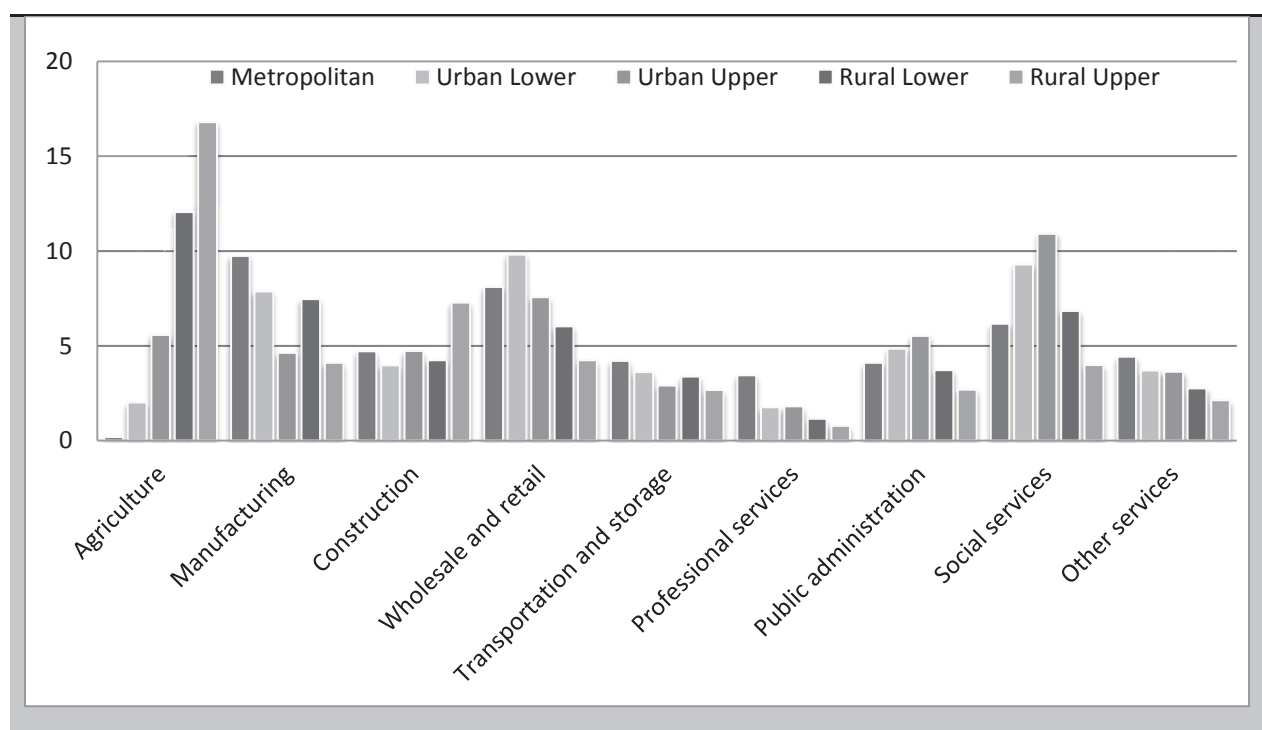
Source: ELMPS 2012.

Superior access to domestic and international markets and economies of agglomerations are two reasons why firms are choosing to locate in metropolitan Egypt. The population density in the Nile Delta is extremely high, and the metropolises of Egypt surround this region. Firms in the core metropolitan regions are therefore able to sell their goods to many nearby consumers without paying high transport costs, and can

draw upon a larger local labor force. Alexandria, Suez, and Port-Said are also all major ports, and easier access to international markets benefits firms by allowing them to export final goods and import intermediate goods. In addition, for a variety of reasons many firms benefit from being near other firms in either the same or different industries. Firms in the same industry may experience benefits from having a labor force specialized in industry-specific skills, or from information exchange and technological diffusion (Henderson et al 2001, Lall et al 2004, McCann 1998), and firms in different industries could be customers for each other's goods. New firms may then choose to locate near existing firms in order to take advantage of these agglomeration economies and old firms may see little benefit to relocation. In Indonesia, Deichmann et al (2005) found that agglomeration economies were strong enough that increasing infrastructure in lagging regions would have only a very limited effect in attracting firms from "leading" regions.

This means that, while the concentration of formal private sector employment in the core of Egypt is problematic for peripheral areas, spatial industrial policy is unlikely to work. As documented thoroughly in World Bank (2012), Egypt has had overwhelmingly negative experiences with industrial zones and other supply-side attempts to induce firms to spread out from metropolitan Egypt. For instance, as of 2006 only 483,000 jobs had been created in industrial zones despite their potential to accommodate 2.5 million jobs (World Bank 2006). The low cost of land parcels in these areas, meant as incentives for investors, have spurred land speculation rather than firm growth. Even if firms were enticed to relocate, there could be a large overall negative effect on the economy as declining agglomeration economies lead to lower firm productivity.

FIGURE 3.4: NUMBER OF JOBS IN 2012 BY WORK REGION
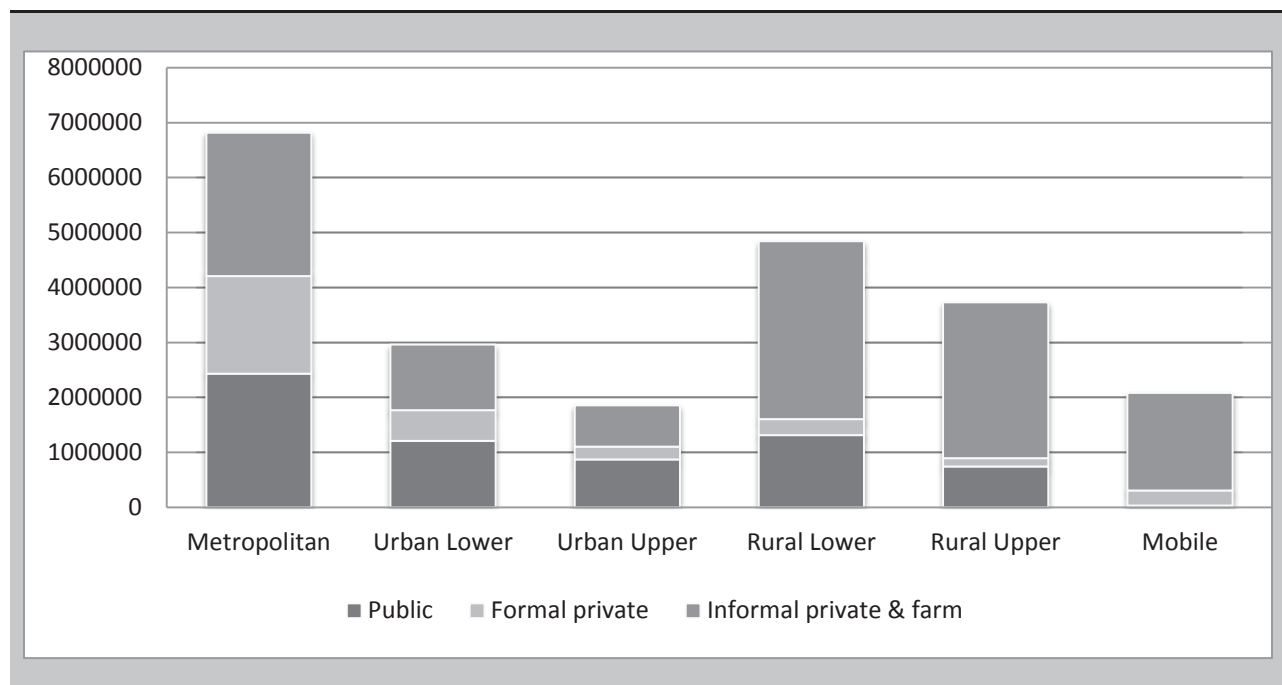
Source: ELMPS 2012.

Previous work has identified that night-time lights illuminate areas of economic activity**.** Since the mid-1960s, the US Air Force has used satellite imaging to collect data on night-time light emissions, and economists have recently shown that this luminosity can be used as a measure of economic activity (Elvidge et al. 2001, Ghosh et al. 2011, Henderson et al. 2011, Ghosh et al. 2013). In Egypt, we see that lights are highly focused in the metropolitan areas both in 1996/1997 (Map 3.3) and in 2005/2006 (Map 3.4), and while Cairo is certainly the largest center of activity the smaller metropolitan areas also play important roles.

MAP 3.3: NIGHT-TIME LIGHTS IN 1995/1996	MAP 3.4: NIGHT-TIME LIGHTS IN 2005/2006
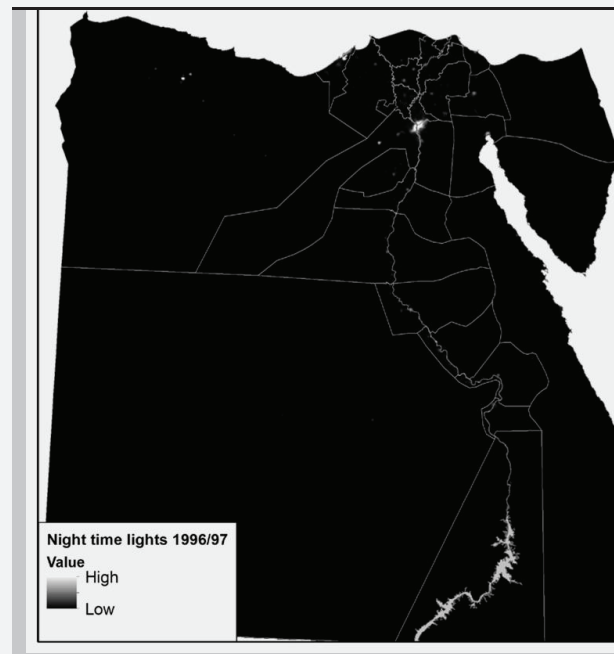
Night time lights 1996/97
Value
High
Low

Source: NOAA DMSP

Night time lights 2005/06
Value
High
Low
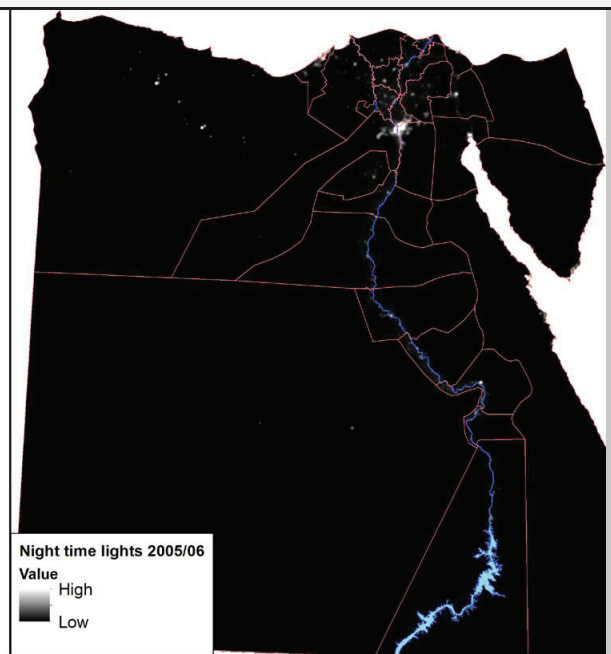
Source: NOAA DMSP

B. Convergence in outcomes has been driven by stagnation in the core

The current gaps in formality and wages, although quite large, have in fact closed dramatically over the last 15 years (Figure 3.5 **and** Figure 3.6**).** In 1998, there was a 33 percentage point gap in job formality between metropolitan Egypt and rural Upper Egypt, which declined to 27 percentage points by 2012. Similarly, in 1998 the average male wage-worker in rural Upper Egypt earned 61% less than his counterpart in metropolitan Egypt, while by 2012 that wage gap closed to 30%.

FIGURE 3.5: FORMAL EMPLOYMENT RATE, 1998 - 2012
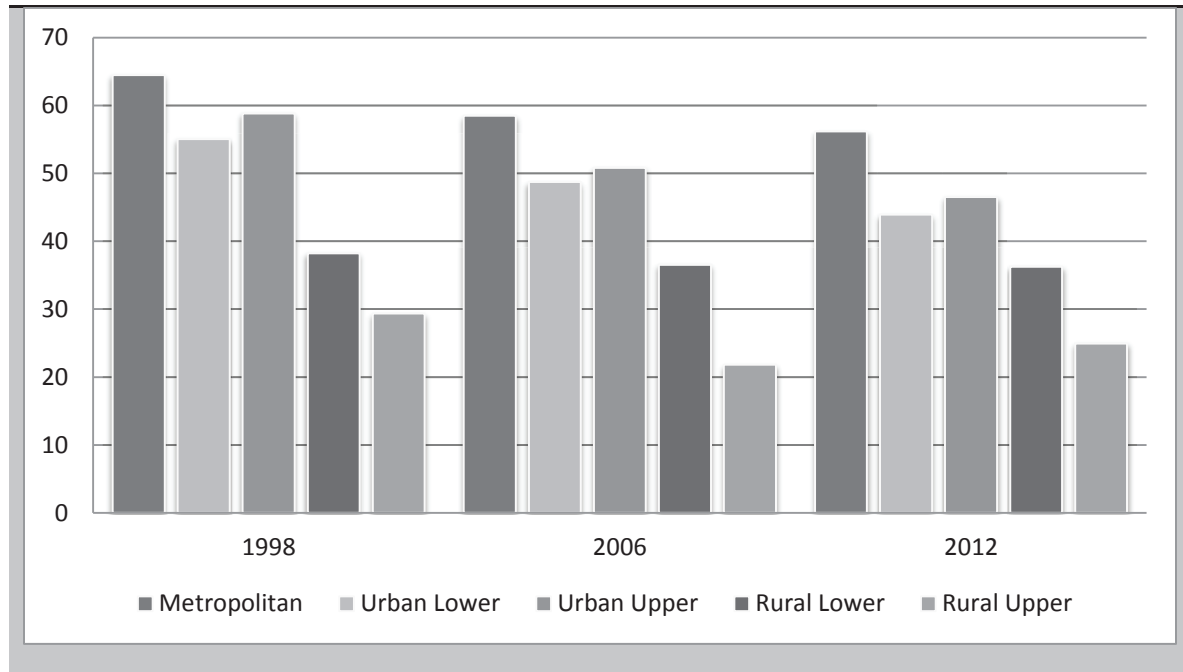
Source: ELMPS 1998, 2006, 2012.

Unfortunately, this convergence has not been due to growth in the periphery, but rather because of stagnation in the core. Formality in rural Upper Egypt has in fact declined by 4.4 percentage points between 1998 and 2012, falling from 29.4% to 24.9%. The gap with metropolitan Egypt only closed because metropolitan Egypt's formal employment rate declined even more sharply, from 64.5% to 56.2%. There are two other features worth noting here. While rural Egypt has been catching up to metropolitan Egypt, urban Egypt has actually been falling behind. Urban Lower Egypt was 9.4 percentage points less formal than metropolitan Egypt in 1998, while now it is 12.3 percentage points less formal; the same is true for urban Upper Egypt. In addition, it is the public sector that is driving this convergence, which has been shrinking more rapidly in the core than it has in the periphery. 40.8% of the metropolitan labor force worked in the public sector in 1998, but this dropped 9.2 percentage points to 31.6% in 2012. By comparison, 24.4% of the labor force of rural Upper Egypt worked in the public sector in 1998 and this dropped 5.8 percentage points to 18.6% in 2012. This by itself drove the convergence in formality between these two regions.
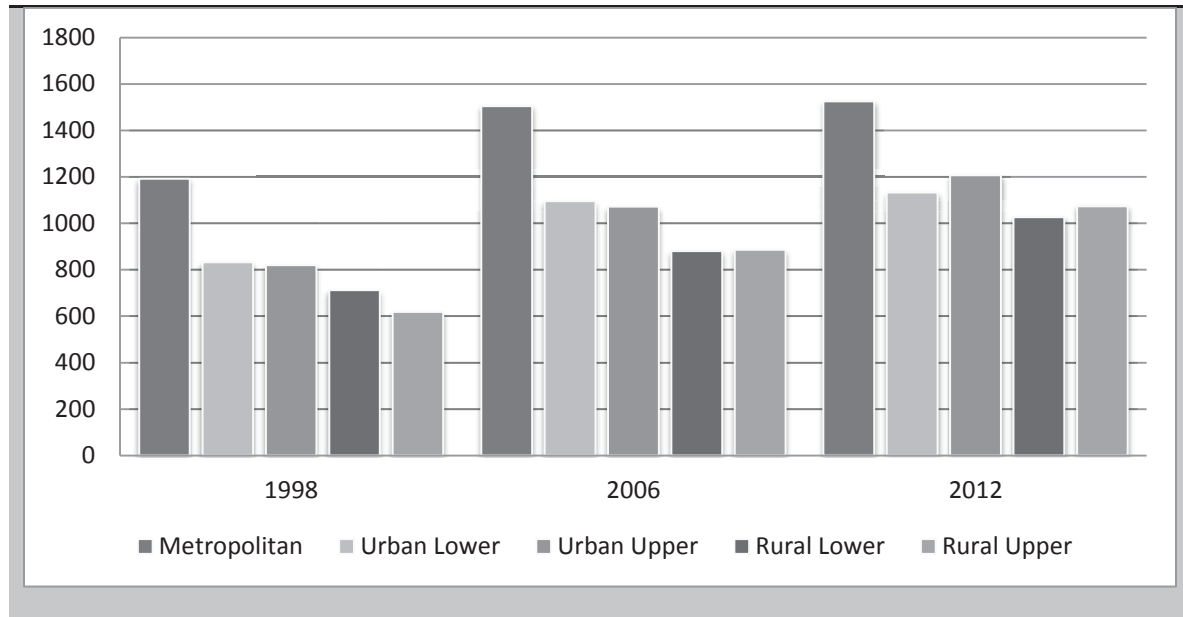
Source: ELMPS 1998, 2006, 2012.

The narrowing wage gap should also be interpreted as evidence of deterioration in the core rather than progress in the periphery. While real wages did increase in all regions from 1998 to 2012, they grew slower in metropolitan Egypt than in other regions. In metropolitan Egypt, real wages grew at an average rate of 1.8% per year over the 14 year period, by 2.2 to 2.8 percent annually in the intermediate areas of non-metropolitan urban Egypt, and rural Lower Egypt, and by 4 percent per annum in rural Upper Egypt. Wages in urban Upper Egypt also grew somewhat faster than those in Lower Egypt. The increase in wages in Upper Egypt should be interpreted with caution as monthly wages in rural Upper Egypt and urban Upper Egypt were the lowest to start with, and those areas also have higher concentrations of non-wage workers (primarily self-employed farmers).

Source: ELMPS 1998, 2006, 2012.

FIGURE 3.8: YOUTH UNEMPLOYMENT RATES ACROSS REGIONS, FEMALE AGE 15-29, 1998 - 2012
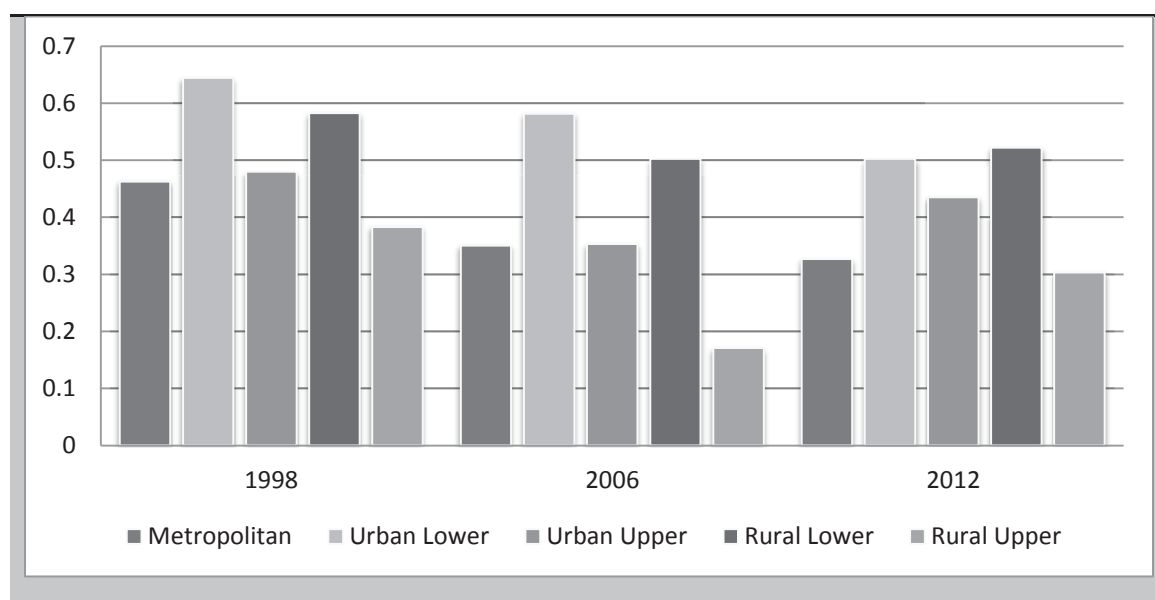
Source: ELMPS 1998, 2006, 2012.

The male youth unemployment gap along core-periphery lines has only recently asserted itself. In 1998, metropolitan Egypt had a substantially lower male youth unemployment rate than Lower Egypt and somewhat higher than Upper Egypt (Figure 3.7). By 2006, however, steep declines in unemployment in rural Egypt and a slight increase in metropolitan Egypt created a large gap between the rural areas and the metropolitan and urban areas. Further declines in the unemployment rate of the non-metropolitan urban

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areas have led to the metropolitan-urban and urban-rural gaps we observe in 2012.[46] The pattern of elevated female youth unemployment in Lower Egypt has persisted over time, but the relative unemployment gap between metropolitan Egypt and Upper Egypt has reduced (Figure 3.8). In 1998, female youth unemployment was 8 percentage points higher in metropolitan Egypt than in rural Upper Egypt, whereas today the gap is only 2.4 percentage points.

The good news is that spatial gaps in education have closed

There has been regional convergence in educational attainment, driven by rapid improvements for men in the peripheral areas. The overall increase in education among Egyptians over the last 50 years (discussed briefly in Chapter 2) has on average increased more rapidly in peripheral areas than in core areas. The secondary graduation rate among the working age population rose by 14.3 percentage points compared to 11.4 percentage points in metropolitan Egypt (Figure 3.9).

FIGURE 3.9: EDUCATIONAL ATTAINMENT, 1998 - 2012
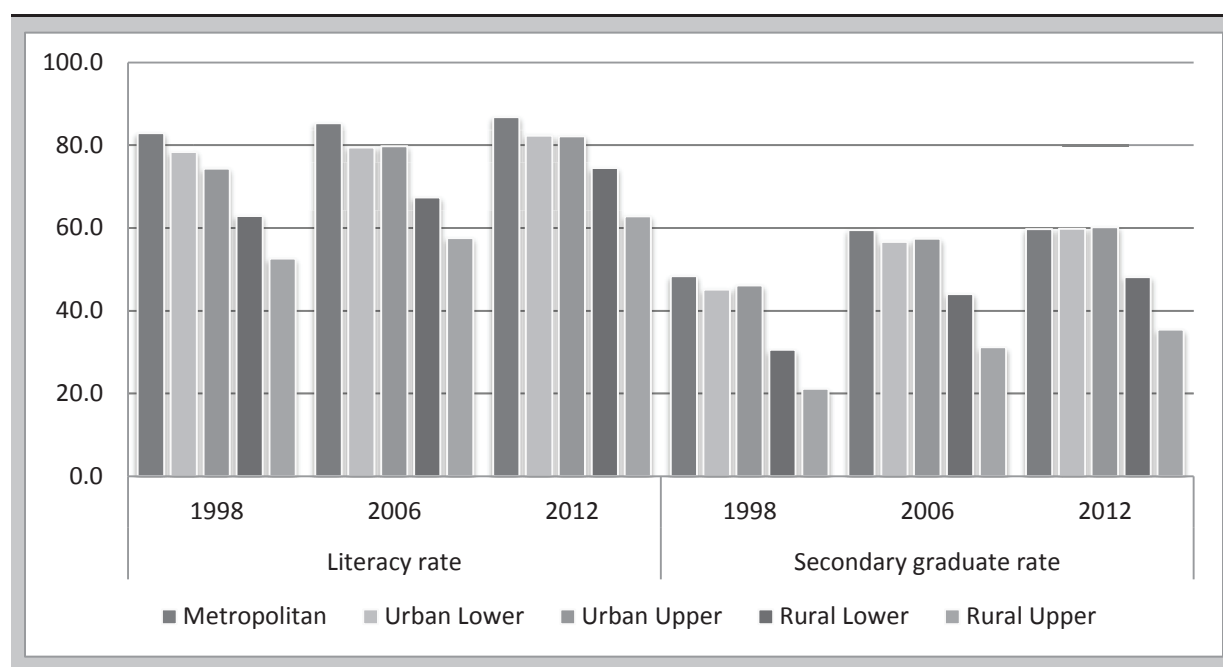
Source: ELMPS 1998, 2006, 2012.

In every region, we see that it has become more and more difficult for young secondary graduates to find formal employment. In each region, there were very large drops in formal employment at age 20 between the 1955-1959 cohort and the 1965-1969 cohorts. For cohorts since then, there has been no clear pattern in most regions, except in urban Lower Egypt where there has been a consistent decline. The pattern of "convergence through stagnation" is also apparent here: 63% of the 1955-1959 cohort in metropolitan Egypt was formally employed at age 20 compared to 33.6% of those in rural Upper Egypt. For the 1985-1989 cohort, the numbers are 20% and 7.4%, a huge decline in the gap (Figure 3.10). This is actually most noticeable when we consider metropolitan Egypt and rural Lower Egypt, which went from a gap of over 30

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[46] These gaps are consistent with the discussion of unemployment rate in Assaad & Kraft (2013b), however we choose to highlight the *relative* changes in unemployment rather than the absolute decline.

percentage points in the 1955-1959 cohort to a gap of 3 percentage points in the 1985-1989 cohort.
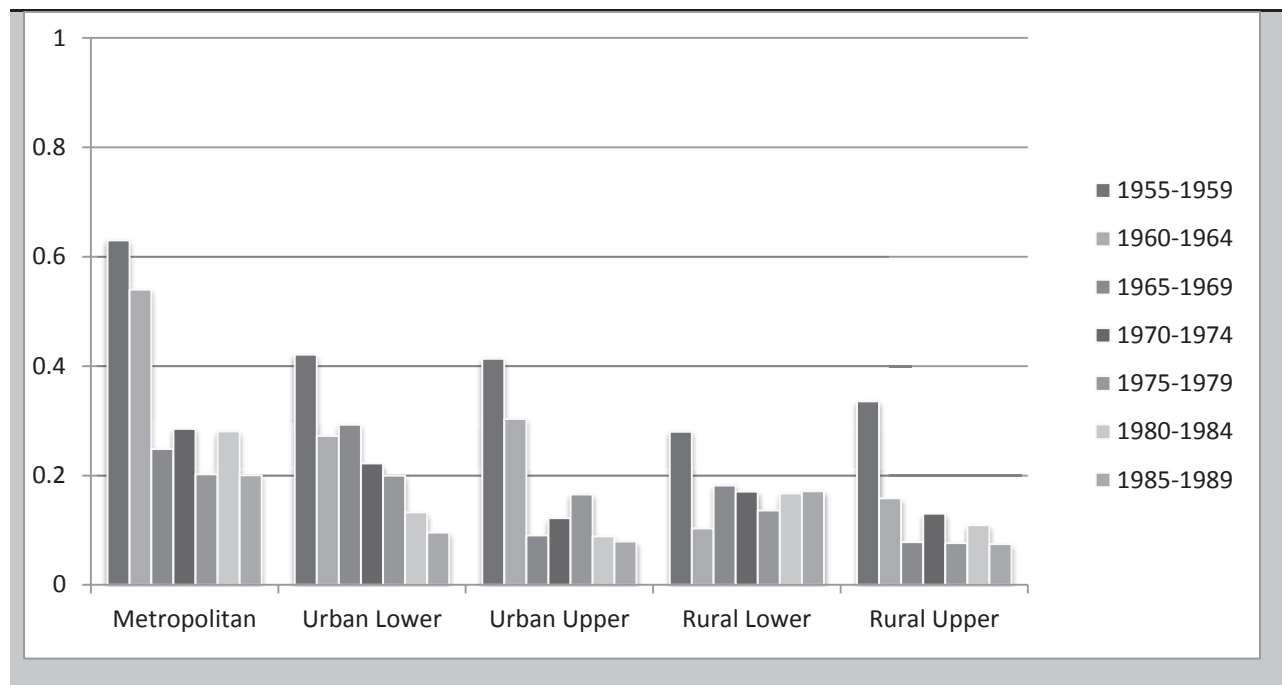
Source: ELMPS 2012.

But within the formal private sector, young secondary graduates do face relatively better odds of employment. This phenomenon, however, is only evident in two regions: metropolitan Egypt and rural Lower Egypt. After a sharp decline for those born after 1960, formal private sector employment at age 20 has been growing steadily for metropolitan Egyptians, from a low of 4.3% in 1960-1964 to 14.4% for the most recent cohort. Rural Lower Egypt does not have such a steady trend, but in last three cohorts we observe substantial increases, from 3.9% to 7.8% to 10.6%. The isolation of this effect to rural Lower Egypt and metropolitan Egypt suggests that the proper distinction to make is metropolitan-close Egypt-distant Egypt, and along these lines we do see a similar pattern (Figure 3.11).

Formality rates among post-secondary graduates at age 24 also follow as similar pattern across regions, with large drops in formality among older cohorts and fluctuations thereafter. There has been a steady improvement in formal private sector employment from the 1960 cohort onwards in metropolitan Egypt and in near governorates, but only fluctuations in distant Egypt. This implies that the convergence experienced over the last 14 years may begin reversing itself soon, as access to the formal private sector becomes a more important component of job quality than availability of public sector employment.

FIGURE 3.11: AGE-20 FORMAL PRIVATE EMPLOYMENT RATE BY DISTANCE TO METROPOLITAN, SECONDARY GRADUATES
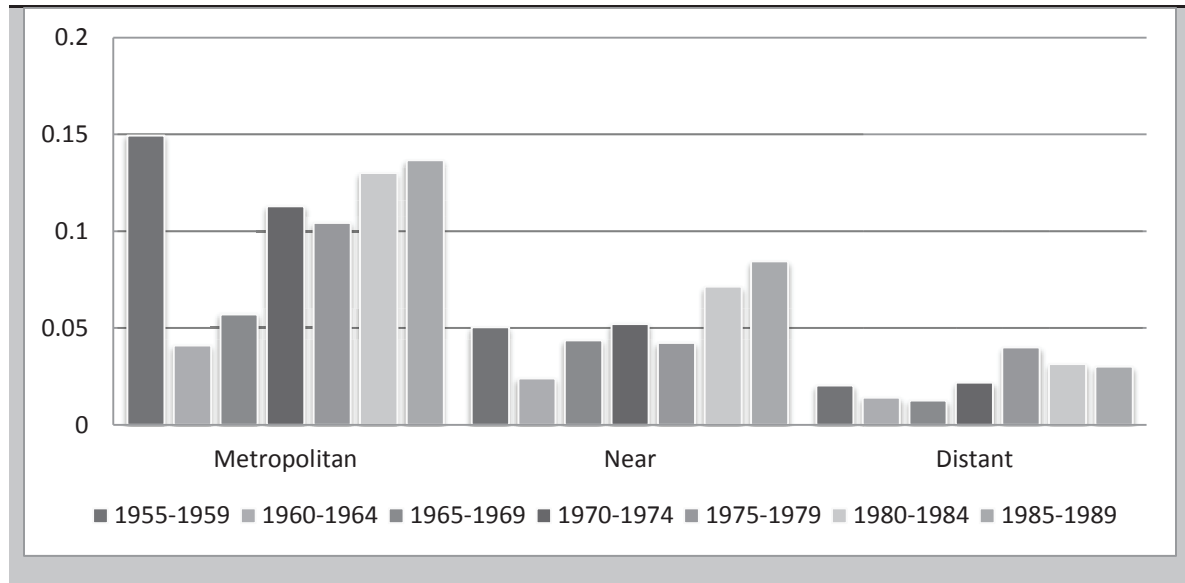
Source: ELMPS 2012.

To measure the relative contribution of time trends in education and demographics in explaining spatial variations in outcomes over time, we pool the 1998, 2006, and 2012 rounds of ELMPS in a multivariate regression. The regression models are similar to those earlier in the chapter, but interact the regional dummy variables with survey round dummies and include controls for the educational and age structure of the labor force. This essentially allows us to see how the labor market gaps would have evolved if the educational attainment and the age structure of the labor force in each region had remained constant over time. Results are reported in Annex Table 3.2.

Regression analysis shows that only a small portion of the narrowing wage gap or of the increasing unemployment gap can be attributed to narrowing differences in human capital. The average gap in wages between metropolitan Egypt and rural Upper Egypt closed by 31.1% between 1998 and 2012; if other attributes had been held constant, the gap would have closed by 27.6% instead (Column 1). A similar pattern holds for comparisons across other regions, with differences in human capital explaining little of the changes in the observed gaps in wages or unemployment. When controlling for other factors, the spatial variations in female youth unemployment over time are not statistically significant.

After accounting for human capital, we find that formality rates for men exhibit a pattern of rural-metropolitan convergence but urban-metropolitan divergence. For women, on the other hand, formality rates have been increasingly divergent between metropolitan and non-metropolitan Egypt. The metropolitan-urban gap for men increased from roughly 3.5 percentage points in 1998 to 9 percentage points in 2012, while the metropolitan-rural formality gap decreased from roughly 15 percentage points in 1998 to 9 percentage points in 2012. Women, however, have substantial divergence in formality between metropolitan Egypt and all non-metropolitan regions. This can likely be attributed to the fact that formal private sector jobs for women are almost entirely focused in metropolitan Egypt (see Chapter 4), which partially insulated them from declines in public sector employment.

The bad news is formal jobs in the core are disappearing

The convergence in formality is also not explained by a relatively higher growth in formal employment in regions with low rates of formality. A high rate of job creation in Egypt between 1998 and 2006 was evident in all regions, but within 2006 and 2012, job creation was much slower and concentrated in metropolitan Egypt and rural Lower Egypt. Approximately 940,000 of the 6 million jobs (15.6%) created between 1998 and 2006 were in urban Lower Egypt (Figure 3.12), a region that contains only 10 percent of the Egyptian population. Many of these jobs were in the formal sector and especially the public sector. After the strong growth of 1998-2006, the non-metropolitan urban areas of Egypt experienced near-total stagnation between 2006 and 2012. This is especially true in urban Lower Egypt, where total employment actually fell over that time period. Metropolitan Egypt and rural Lower Egypt have instead borne the burden of job creation over the last 6 years.[47] Note that the formality gap between rural Egypt and metropolitan Egypt has declined over the past 15 years even though metropolitan Egypt has been consistently producing more formal sector jobs than rural Egypt. This occurs because the jobs created in metropolitan Egypt (and also in urban Egypt) are frequently occupied by commuting residents of rural Egypt. The pattern of convergence through stagnation is not for the most part explained by formal firms relocating from metropolitan Egypt to peripheral Egypt. Rural Upper Egypt experienced very large fluctuations in employment between 1998 and 2012 due to changes in agricultural employment.

FIGURE 3.12: JOB GROWTH 1998-2012
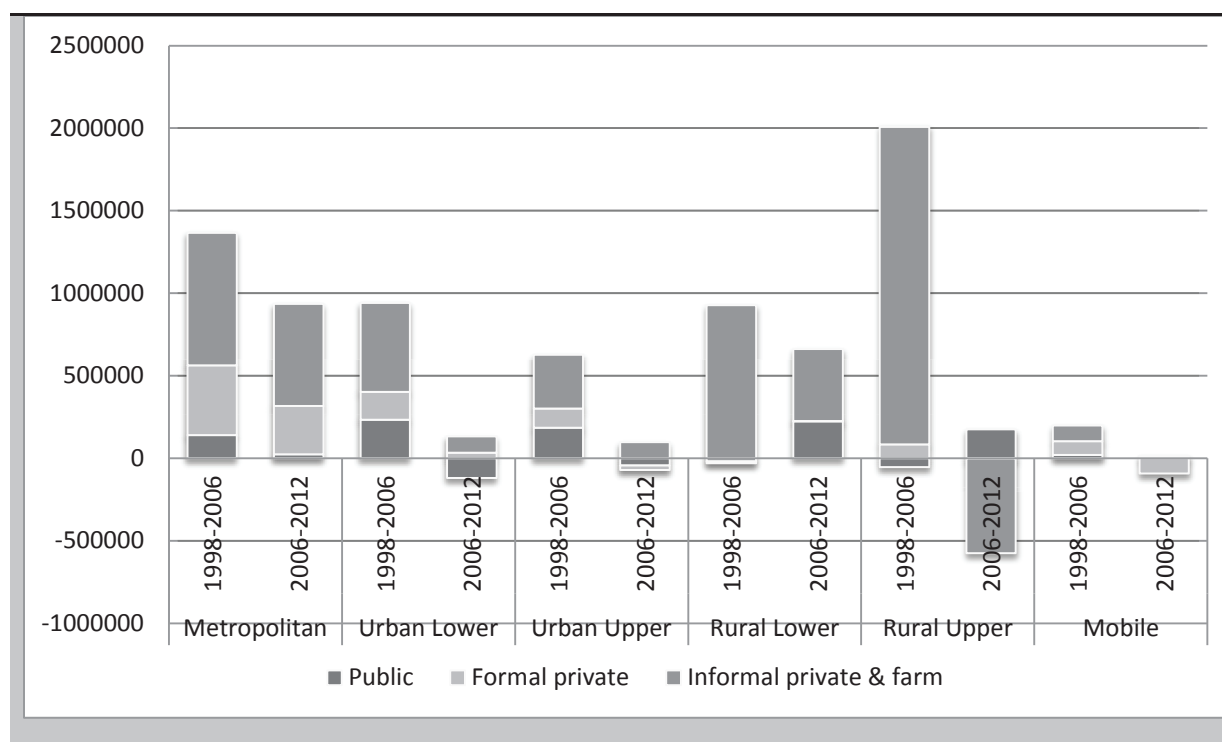
Source: ELMPS 1998, 2006, 2012.

Focusing on the 2006-2012 period, we see that the overwhelming majority of jobs added in the important growth industries were informal. This is especially the case in construction, an industry that is

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[47] Although the employment growth in those areas might plausibly be attributed to changes in survey methodology that change how workers are counted as "mobile".

undergoing rapid growth and which is almost entirely informal (Figure 3.13). Since many of these new jobs are located in metropolitan Egypt, this is one possible source of the convergence in relative decline in formality in this region. In all other regions as well, the growth in jobs in construction appears to be almost entirely informal (Figure 3.13), although fewer informal construction jobs were added than in metropolitan Egypt. Retail exhibits a strong trend towards deformalization that is mostly occurring outside metropolitan Egypt, as the non-metropolitan urban areas have lost formal jobs while gaining informal ones, and the transportation and storage industry has added some formal jobs but for the most part those jobs appear to be reclassified mobile jobs rather than true growth.

FIGURE 3.13: JOB GROWTH BY LOCATION & INDUSTRY 2006-2012
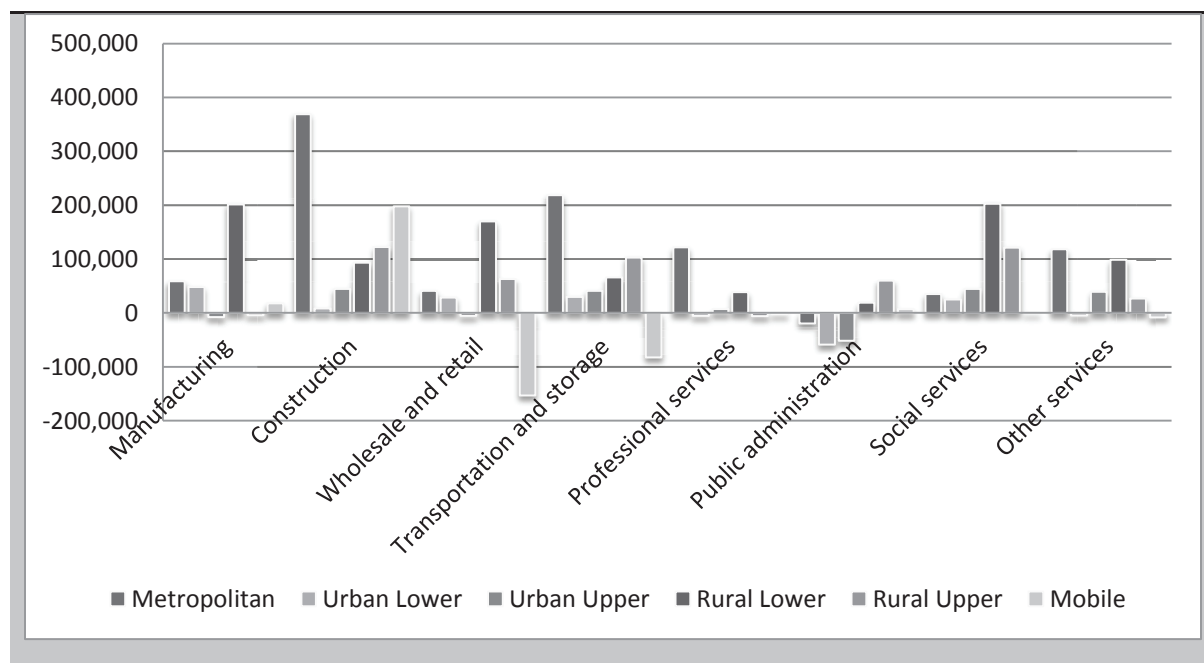
Source: ELMPS 2006, 2012.

Manufacturing in rural Lower Egypt was one of the largest contributors to job creation. The majority of these jobs were informal, and almost all of the formal jobs were in the public sector. The growth in private sector manufacturing was led by the furniture manufacturing industry, which was responsible for half of the net manufacturing employment growth in rural Lower Egypt (Figure 3.14).
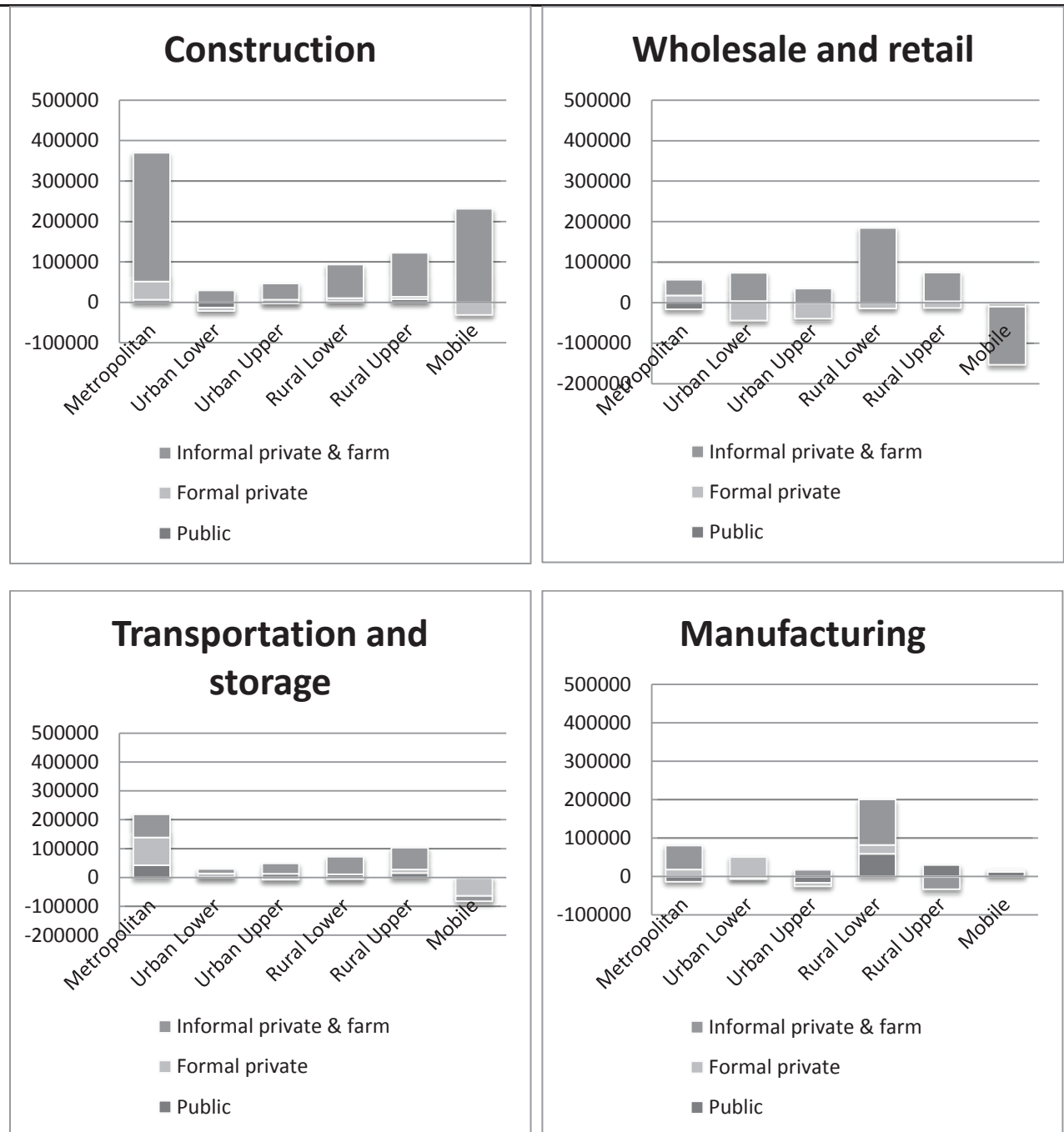
Source: ELMPS 2006, 2012.

FIGURE 3.15: METROPOLITAN WAGE GAP WITHIN FURNITURE INDUSTRY
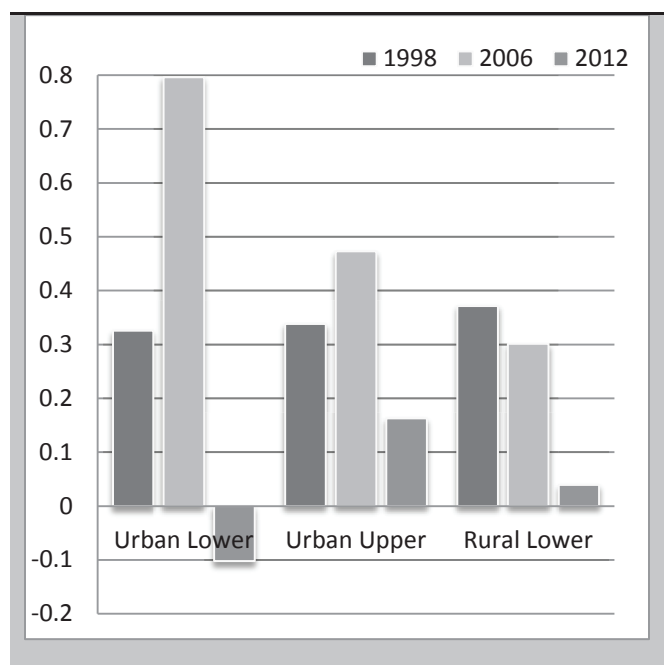
Source: ELMPS 1998, 2006, 2012.

At the same time that the furniture industry has been expanding in rural Lower Egypt, it has begun to contract in metropolitan Egypt, and formal jobs in metropolitan Egypt are being replaced with informal ones in rural Lower Egypt. Furniture industry jobs in metropolitan Egypt dropped from 98,000 to 86,000 between 2006 and 2012. This process is occurring simultaneously with a remarkable cross-regional convergence in industrial wages: in 1998, the average furniture worker in rural Lower Egypt earned 37% per month less than his counterpart in metropolitan Egypt, while today that gap is only 4% (Figure 3.15). This suggests that the low prevailing wages in rural Lower Egypt (as well as lower rents) may have induced furniture firms to spring up there. However, these new furniture firms are smaller and hire much more informally than firms in metropolitan Egypt: about one in three furniture workers in metropolitan Egypt are formal, compared to less than one in twelve in rural Lower Egypt (Figure 3.16). This suggests that benefits of formality at the firm level may diminish with distance from metropolitan Egypt, possibly due to weaker overall rule of law.
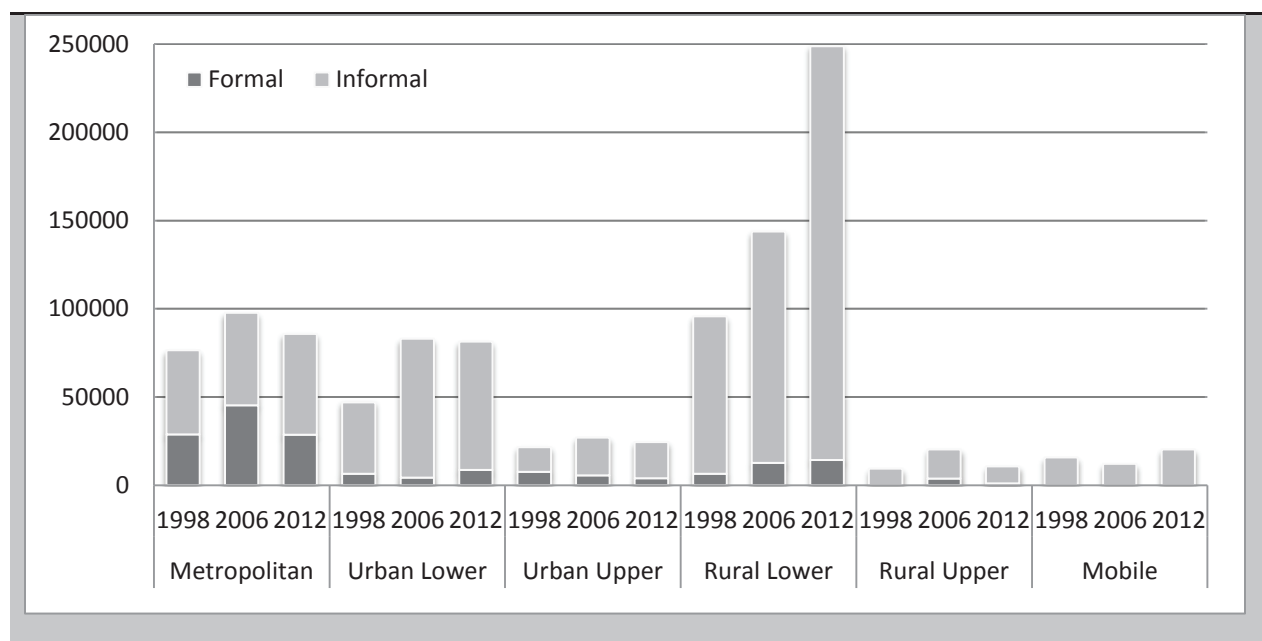
Source: ELMPS 1998, 2006, 2012.

C. Worker mobility is determined by distance from the core

Physical worker mobility comes in several different forms. The simplest form of mobility is *commuting*, in which workers reside in one area and work in another. *Permanent internal migration* occurs when a person or an entire household changes their permanent residence to a different area. Finally, there is the possibility of *international migration*, which may be either temporary or permanent in this sense. All these methods of mobility are common in differing degrees in low and middle-income countries, and each play different roles in different parts of Egypt. While we have for the most part focused on regional differences thus far, the ELMPS reports locality[48] of birth and of current residence, and district[49] of workplace, allowing us to examine the role of mobility at each of these levels (Wahba (2007) and Assaad and Arntz (2005) show the necessity of looking at subregional migration and commuting respectively). Commuting is the most important form of interregional labor mobility, with just under a quarter of Egyptians reporting that they live in one region and work in another. Internal migration, however, is much lower, especially over long distances: only 8.8% of Egyptians in 2012 reported that they currently lived in a region other than their home region, and most of those moves were between regions in the same governorate. International migration is not uncommon, especially in the areas further from the metropolitan regions. Approximately one in twenty households reported that one of their (former) members moved abroad, although many of these moves appear to be for temporary employment rather than permanent relocation.

Given sufficient labor mobility, workers with similar characteristics should end up with similar levels of overall quality of life (Alonzo 1964, Mills 1967). Factors that influence overall quality of life are fundamental job quality (due to higher wages or increased stability), individual costs associated with the job (primarily due

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[48] "Locality" is a general term that encompasses *shyakha* (neighborhood) in urban areas and villages in rural areas.
[49] "District" is a general term that encompasses *markaz* in urban areas and *qism* in rural areas.

to the cost of commuting in terms of time and money), local cost of living (which varies due to the cost of housing and the local price of goods), and local amenities (such as access to clean water and high-quality schooling and healthcare). With perfect mobility, workers with the same levels of human capital will pick the jobs and residences that give them the highest overall quality of life. The most attractive residential areas will see the cost of housing increase due to higher demand; the locations with high quality jobs will have more people seeking work there; and the most popular travel routes will become congested until no worker sees a benefit from either migration or commuting.

The regional gaps in job quality we observed between metropolitan Egypt could therefore either be the result of labor market segmentation or in differences in these other determinants of quality of life. Wages in metropolitan Egypt might be higher because the cost of living is higher, so that workers are reluctant to move there, and because the area is highly congested, making the cost of commuting higher and making workers reluctant to commute in. These factors could sustain a wage gap. On the other hand, the local amenities provided in metropolitan Egypt might be better than those offered in other regions, which would have the opposite effect[50]. We explore these issues in the following sections.

Egypt's commuter economy brings some people closer to jobs

Commuting is by far the most common method of labor mobility in Egypt[51]. 13.8% of working-age, employed Egyptians commute between governorates for their jobs, and 26.4% commute between regions (Table 3-4). Commuting is particularly common for those working in rural Lower Egypt, as more than a third of workers from that region work in a different region than the one they live in (10% in metropolitan Egypt and 14.1% in urban Lower Egypt). We include in our definition of commuters all those who report living in one district, governorate, or region and working in another.

TABLE 3-4: COMMUTING RATES

	Prevalence
Non-commuter	63.6
District commuter	22.6
Governorate commuter	13.8
Regional commuter	26.4
Source: ELMPS 2012.	

Not surprisingly, metropolitan Egyptians are the least likely to commute. **The prevalence of commuting is lowest in the core and highest in the periphery**. The fraction of those who work solely in their home region is roughly 10 percentage points lower in urban Lower Egypt than it is in metropolitan Egypt, and the fraction of rural Egyptians who work in their home region is nearly 25 percentage points lower. While metropolitan Egypt is a very common destination for commuters, in most regions it is only the second most common. Rural Lower Egyptians are likely to work in metropolitan Egypt (11%) but slightly more likely to work in urban Lower Egypt (14%). Workers in Upper Egypt are more likely to do rural-urban or urban-rural commuting than commuting to Cairo, although when we split Upper Egypt into "near" and "far" we do see high rates of commuting from "near" Upper Egypt to metropolitan Egypt. Metropolitan Egypt is the top destination only for workers living in urban Lower Egypt, and only 4.6% of them report working (solely) in metropolitan Egypt.

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[50] World Bank (2012) documents a number of spatial differences in quality of life; of particular note is the extraordinary regional variation in the child mortality rate, which in 2008 was 18 per thousand in urban Lower and metropolitan Egypt but 45 per thousand in rural Upper Egypt.

[51] High commuting rates are common in other lower income and lower middle income countries and countries in the MENA region; see Abrahams (2014) for evidence from Palestine.

Men are much more likely to commute than women, especially across long distances, and young workers are more likely to commute further than older workers. In understanding the true correlates of commuting, one concern is that both education and age may be correlated with distance to various destinations. For instance, the most educated residents of rural Lower Egypt may be those who live very close to metropolitan Egypt, and it may be distance rather than education that is the true determinant of commuting. To adjust for this, we use locality fixed-effects by including a dummy for each of the 876 localities that are listed as residences in a multivariate regression. This in essence means that we compare the probability of commuting for workers who live in the same locality and are thus the same distance from possible work destinations, but differ in other characteristics such as age and education. Results are reported in Annex Table **3.3**.

TABLE 3-5: REGIONAL COMMUTING FLOWS IN 2012

		Work region					
		Metropolitan	Urban Lower	Urban Upper	Rural Lower	Rural Upper	Mobile
Region of residence	Metropolitan	92.9	1.5	0.8	0.6	0	4.3
	Urban Lower	4.5	82.3	0.6	2.6	0.1	9.9
	Urban Upper	3.9	0.3	78.2	0	8.9	8.8
	Near	7.8	0.4	77.0	0	5.4	9.5
	Distant	1.9	0.2	78.8	0	10.8	8.3
	Rural Lower	10.7	13.8	0.5	65.5	0.1	9.4
	Rural Upper	8.5	0.6	8.8	0.2	67.0	14.9
	Near	14.0	0.9	5.0	0.4	65.1	14.7
	Distant	5.0	0.4	11.2	0.1	68.2	15.1

Source: ELMPS 2012.

Looking specifically at the probability of commuting to metropolitan Egypt, we see that education is positively associated with commuting to metropolitan Egypt even taking all other factors into account. Across the six specifications in Annex Table **3.3**, we consistently see that higher educational attainment is associated with commuting to metropolitan Egypt. Those with post-secondary attainment appear to be 5 to 7 percentage points more likely to commute to metropolitan Egypt. In specifications (1) and (3), which include both men and women, we can see that women are indeed much less likely to commute to metropolitan Egypt than men of similar ages and education levels. Specifications (1), (2), and (3) also confirm that commuting to metropolitan Egypt is more common among residents of rural Egypt than it is among residents of urban Egypt. Specifications (3) and (6) include family background characteristics as well as demographics, including father's education level and sector of employment and the mother's education level. Mother's education appears to be a substantial determinant of commuting: men whose mothers are secondary or post-secondary graduates are substantially more likely to commute to metropolitan Egypt than those whose mothers had less than secondary attainment, and this effect remains the same in the fixed-effects specification (6). The father's employment characteristics, on the other hand, only appear to be important in specification (3); once locality fixed-effects are introduced, the coefficients become very small and insignificant.

For men, commuting rates increase throughout their late teens and twenties then steadily decline with age. The fraction of male workers who commute between regions increases from age 15 to 29, reaching a maximum of 34.3% for the 25-29 age bracket, then begins a steady decline with age finishing at 12.4% for the 60-64 age bracket (Figure 3.17). It is noteworthy that this relationship between age and commuting has been emerging slowly over the last 15 years: in 1998, there was no peak at age 25, just a consistent downward trend. It isn't until 2012 that we see increases in the commuting rates throughout men's 20s. There also appears to be both an age and generational component to commuting patterns. For each successive cohort born after 1970, the fraction of men who reported regional commuting at ages 25 and 30 has been rising steadily. Young men today are more likely to commute than old men today, and young men today are more likely to commute than young men 10 or 20 years ago.

FIGURE 3.17: MALE COMMUTING RATES BY AGE
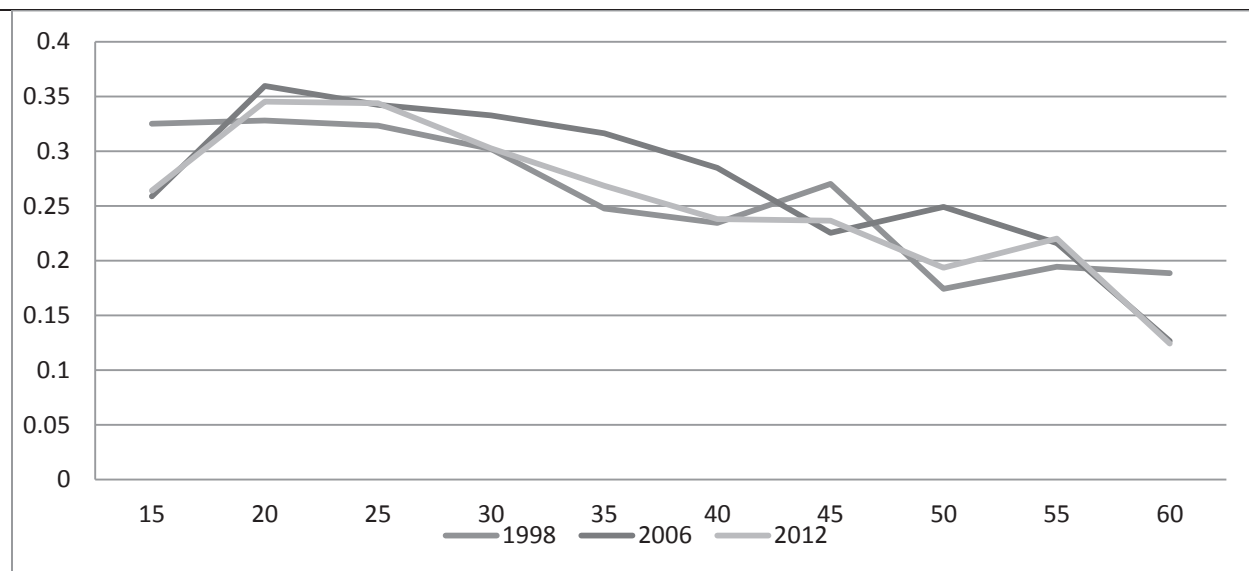
Source: ELMPS 1998, 2006, 2012.

Cross-district and cross-governorate commuters appear to have substantially higher job quality than non-commuters. 52% of district commuters and 50% of governorate commuters work in the formal sector, compared to 34% of non-commuters. This increased formal employment rate is explained almost entirely by the fact that those employed in the farm sector are most likely non-commuters. We also see that commuters have very different industries of work than non-commuters (ANNEX TABLE **3.4**). Manufacturing, construction, and transportation are all more common among commuters than among non-commuters. The wholesale and retail industry, on the other hand, is a much smaller presence among commuters, as is the social services industry.

Given the high rates of interregional commuting, the persistently high wage gaps between those who live in metropolitan Egypt and those who live in the nearby regions are somewhat puzzling. Since the workers near metropolitan Egypt are clearly capable of accessing some of the jobs in metropolitan Egypt, one would expect that workers from the areas near metropolitan Egypt would choose the higher-wage jobs in metropolitan Egypt over the lower-wage local jobs. If metropolitan employers have no reason to prefer workers from metropolitan areas, the greater supply of labor in metropolitan Egypt would then continually

drive down wages until workers in (for example) rural Lower Egypt have no incentive to take jobs in metropolitan Egypt.

One plausible explanation for this is that workers are willing to accept jobs with somewhat lower wages that are closer to their homes in order to avoid the cost in travel time and money involved in commuting longer distances. As previously discussed, workers who choose their jobs in order to obtain the highest possible quality of life will take more than the quality of the job itself into account; they will also be concerned with the expense associated with increased commuting time. This could sustain a regional wage gap because workers in rural Lower Egypt might actually prefer a local job that pays EGP 1000 per month to a metropolitan job paying EGP 1500 per month that has a 60-minute commute. Given that urban areas in Egypt are highly congested, this is likely to play an important in their labor market decisions.

Another explanation is that workers from outside metropolitan Egypt are being systematically excluded from some of the high-quality jobs available in metropolitan Egypt, creating a segmented labor market. We can provide a certain degree of suggestive evidence for this by comparing the wages of three types of workers: those who live and work in metropolitan Egypt, those who live and work outside metropolitan Egypt, and those who live outside metropolitan Egypt but commute to a job in metropolitan Egypt. That fact that residents of metropolitan Egypt earn higher average wages than commuters to metropolitan Egypt (Table 3-6) suggests that those living in metropolitan Egypt have access to higher-wage jobs than those living outside. This effect is particularly notable because, as just discussed, those who commute into metropolitan Egypt should be unwilling to work in a metropolitan job unless it offers higher wages to compensate them for the additional cost and inconvenience of traveling.

TABLE 3-6: WAGES BY COMMUTER TYPE, MEN AGE 15-64, 2012

Works and lives in metropolitan	1549.0
Works in metropolitan, lives elsewhere	1163.4
Works and lives outside metropolitan	1058.7

Source: ELMPS 2012.

Of course, we may be concerned that other factors, such as higher levels of education and experience, are the true drivers of higher wages, and so we use multivariate regression analysis to examine this possibility. For the purposes of this regression, we exclude the small number of workers who live in metropolitan Egypt but work elsewhere, as well as those who report that they work in multiple regions, and we also exclude those who live in distant Egypt as commuting to metropolitan Egypt is infeasible for them[52]. The results are presented in ANNEX TABLE **3.5**: the coefficient on "metropolitan worker" gives the average percent wage difference between those who live outside and commute into metropolitan Egypt , compared to those who both live and work outside metropolitan Egypt. The coefficient on "metropolitan resident" gives the difference between those who live and work in metropolitan Egypt and those who commute in. We see that working in metropolitan Egypt by itself yields higher wages and for those who also live there, there are additional wage gains even after controlling for education, age, and parental background. When we include a control for commuting time (in minutes) reported by workers, it has a positive effect on wages, which suggests at least partial compensation for the opportunity cost of commuting.

Are there any other explanations for the observed segmentation? While we cannot provide definitive answers to this using the data available in the ELMPS, the widely discussed role of connections in the labor market is one possibility. Residents of metropolitan Egypt might have better connections to potential employers in metropolitan than non-residents, affording them better access to high-quality jobs or

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[52] There is no qualitative change in the results when we include these groups.

alternatively residents of metropolitan Egypt may have better access to impersonal search methods and thus be less *reliant* on connections than non-residents; this latter explanation is consistent with the findings of Wahba and Zenou (2005).

When commuting is not an option, worker mobility within Egypt is limited

While commuting is very common in Egypt, permanent interregional migration is relatively rare. The ELMPS allows us to examine this in two different ways. First, in a cross-section analysis of the 2012 ELMPS, we find that only 8.4% of working-age respondents reported that they were born in a different region than the one in which they currently reside[53]. Second, we can use the panel aspect of the ELMPS to track individuals between 2006 and 2012 and measure how many changed their region of residence between survey years. This allows us to track *recent* rates of internal migration. Here, we see that 1.2% of working-age Egyptians reported a different region of residence in 2012 than they did in 2006. By contrast, we find a much higher 2.7% migration rate between 1998 and 2006. Using a somewhat different methodology, Wahba (2007) finds the migration rate from 1998 to 2006 was higher than the migration rate from 1990 to 1998. Combining this evidence suggests that the migration rate in 1998-2006 is atypically high, and that the 2006-2012 migration rate may be considered as a return to normal rather than a sudden downward trend.

As a result of this low rate of internal migration, and because the bulk of migration is within urban areas, Egypt's urbanization rate has remained stagnant since the 1970s at 44%. In the 1970s, Egypt had close to the median urbanization rate among Middle East/North African nations; today, it has the second lowest (higher only than Yemen), with the next lowest being Syria at 56%. Urbanization has been slowed not only by the lack of migration, but also because what little migration occurs is frequently between the urban and metropolitan areas, and in addition there is substantial urban-rural migration. Table 3-7 reports the fraction of natives of each region who now reside in another region as reported in the 2012 cross-section. We see that urban Upper Egypt has the highest rates of outmigration, with 17.3% of natives reporting that they currently reside in a different region. Overall, 15-17% of those born in non-metropolitan urban Egypt now reside in one of the other regions, mostly in metropolitan areas but some in their respective rural regions as well. The bulk of the internal migration occurs from urban areas into metropolitan areas.

TABLE 3-7: MIGRATION BY BIRTH REGION (FRACTION OF THOSE BORN IN A REGION LIVING IN EACH REGION)

		Current home region				
		Metropolitan	Urban Lower	Urban Upper	Rural Lower	Rural Upper
Birth region	Metropolitan	94.5	0.9	0.6	2.6	1.5
	Urban Lower	8.5	84.9	0.2	6.3	0.2
	Urban Upper	10.9	0.7	82.7	0.5	5.2
	Rural Lower	4.3	2.1	0.0	93.3	0.2
	Rural Upper	5.3	0.1	2.1	0.4	92.1
	Total	27.4	9.5	7.3	31.3	24.6
Source: ELMPS 2012.						

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[53] This is very close to the 2009 migration rate of 8% based on CAPMAS's Labor force surveys in Herrera & Badr (2012), and slightly higher than half the world average of 15%.

The high rates of urban-metropolitan migration contrast with the relatively low rates of commuting found between those regions. Wahba (2007) notes that the jump in the migration rate from 1998-2006 was accompanied by a decline in the commuting rate over the same time period and speculates that interregional commuting and interregional migration can substitute for each other. The high rate of interregional migration between areas with low rates of interregional commuting supports this idea as we show later in this chapter.

However, these low levels of interregional migration mask much higher levels of intra-regional migration and especially intra-governorate migration[54]. In 2012, 20.2% of working-age Egyptians lived in a different locality than they were born in and 15.5% lived in a different district. Only 8.0% lived in a different governorate. We see similar patterns if we examine migration in the panel data: 14.1% of working-age individuals moved localities between 2006 and 2012, 5.4% changed districts, and only 1.1% changed governorates. It is clear therefore that the majority of internal migration takes place within a governorate, and very few people cross governorate and regional boundaries.

Internal migrants of all kinds have very different characteristics than non-migrants. Table 3-8 uses panel data to compare non-movers (Column 1) with those who changed localities within a district (Column 2), those who changed district within a governorate (Column 3), those who changed governorates (Column 4), and those who changed regions[55] (Column 5). Migrants are substantially younger than non-migrants, and migrants who move further are younger than migrants who move shorter distances. 44.1% of non-migrants were below the age of 30 as compared to 48.9% of locality migrants and 70.7% of governorate migrants. In addition, migrants are more likely to be women than non-migrants, and this probability also roughly increases with distance. Educational attainment also tends to increase with migration distance, especially at the margin of secondary attainment. The post-secondary graduation rate among migrants is 2 to 8 percentage points higher compared to non-migrants, while the secondary graduation rate, elementary graduation rate, and literacy rate are all 4 to 15 percentage points higher. This is consistent with our findings earlier that the returns to living in metropolitan areas are greater for those with higher levels of education. The differences in migration patterns based on starting regions are more difficult to interpret; this is especially true since the size of localities and districts differ by region, as does the proximity of governorates. For instance, the fact that district movers and governorate movers are much more likely to come from metropolitan Egypt while regional movers are much less likely in part reflects the fact that the Greater Cairo area encompasses many governorates that are very close together, so that a move of equal distance is more likely to cross inter-governorate boundaries in metropolitan Egypt than in rural Egypt.

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[54] This result is once again consistent with the findings of Wahba (2007).

TABLE 3-8: MIGRANT ATTRIBUTES

Attribute (in 2006)	Non-migrant	Locality	District	Governorate	Region
Male	49.5	41.7	46.6	34.7	36.2
Female	50.5	58.3	53.5	65.3	63.8
Teen	16.6	18.3	19.6	25.7	27.2
Youth	14.9	16.8	21.7	27.1	24.7
Young Adult	12.6	13.8	15.9	17.9	15.5
Early prime	37.4	33.1	33.0	23.1	27.6
Late prime	14.2	12.9	8.2	4.6	3.9
Greying	4.4	5.2	1.6	1.7	1.2
Literacy rate	69.6	74.0	76.2	83.1	83.5
Elementary graduation rate	63.7	69.5	71.5	78.1	78.2
Secondary graduation rate	44.7	50.7	49.1	58.2	58.5
Post-secondary graduation rate	14.1	16.8	21.9	19.2	19.0
Metropolitan	25.5	20.1	44.0	38.4	8.9
Urban Lower	11.0	8.0	5.7	5.2	13.1
Urban Upper	8.1	3.6	4.3	4.2	13.2
Rural Lower	31.4	47.2	7.3	27.2	38.5
Rural Upper	24.1	21.1	38.7	25.1	26.3
Never married	30.27	33.9	42.0	61.7	51.46
Currently married	63.79	60.9	54.0	34.6	44.78
Widowed/divorced	5.94	5.2	4.0	3.7	3.75
Source: ELMPS 2006, 2012.					

FIGURE 3.18: MIGRATION RATES BY BIRTH COHORT
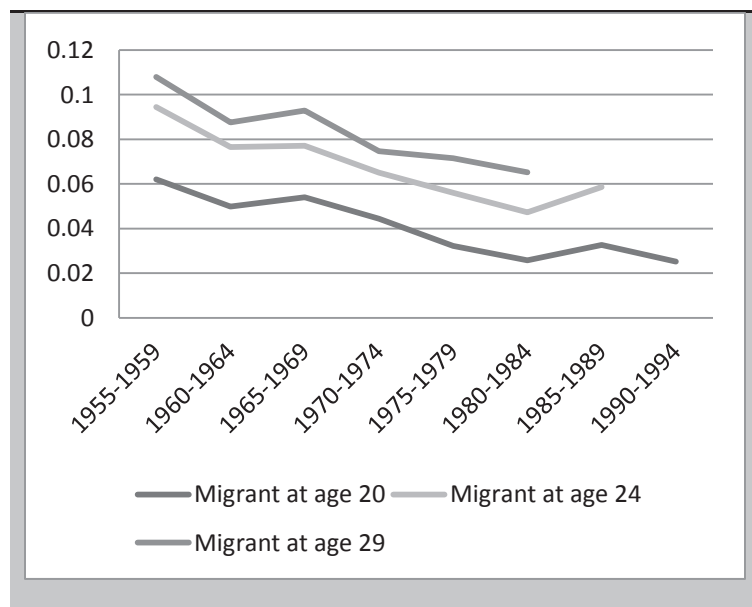
Source: ELMPS 2012.

Younger Egyptians are more likely to migrate than older Egyptians. Based on the 2006-2012 panel data, we see that the cross-regional migration rate was 2.3% for both teens and youth but dropped steadily to below 0.5% by age 55-59, and that this decline is not solely driven by the correlation of age with marital status and of marital status with probability of migration, since we observe very similar trends if we look at migration only among the married. This is to be expected, as people tend to accumulate more location- or job-specific human capital with, or deepen their ties to local communities (Ritchey 1976).

However, it is also possible that this result is due to generational differences rather than age. We can investigate this using the ELMPS 2012 module on residential history, in which respondents report each change in residence they experienced since

age 15. This allows us to determine where a respondent lived at age 29 (or any other age) and thus determine whether they were a interregional migrant at that time, very similar to our earlier approach to generational changes in labor market outcomes[56]. This measure shows us that interregional migration rates were actually substantially *higher* for earlier generations. Of the 1955-1959 cohort, 10.8% reported that they were an interregional migrant at age 29, but of the cohort born 25 years later (1980-1984), only 6.5% reported interregional migration at age 29 (Figure 3.18). This generational decline in permanent migration may be linked to the declining labor market for recent cohorts, either because mobility restrictions are inhibiting them from taking high-quality jobs or because the paucity of high-quality jobs is reducing the returns to migration. These generational trends also run opposite to the generational trends in commuting we have already seen; Figure 3.19 shows this by plotting both trends together.

FIGURE 3.19: MIGRATION AND COMMUTING RATES BY GENERATION

Migrant at age 24

Regional commuter at age 24

Source: ELMPS 2012.
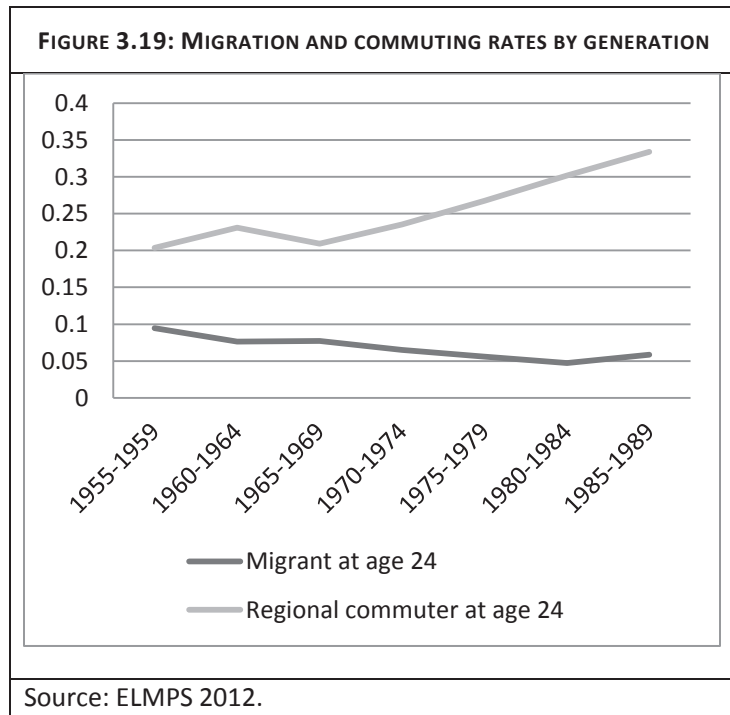
The commonality of both short-distance migration and short-distance commuting and the rarity of long-distance migration suggest that internal migration is not bridging the gap between the markets of near and distant Egypt, creating labor market segmentation between close and distant regions. This makes the anemic formal private sector in distant Egypt an issue of greater concern for policy-makers. In Lower Egypt and near Upper Egypt ("near Egypt"), the lack of formal private sector job creation outside the core can be compensated for by faster job creation in the core and increased rates of commuting and short-distance migration. But for distant Upper Egypt, commuting is not an option and so the concentration of formal employment may be a much larger constraint on their access to good jobs.

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[56] The interregional migration rate here is the number of Egyptians reporting that they lived in a region of Egypt other than their region of birth at age 29, divided by the number of Egyptians reporting that they lived in Egypt at age 29. In other words, those who lived abroad were not included.

There is no doubt that congestion on the roads is a common experience in Egypt. Congestion is especially widespread in Cairo. As one of the most populous megalopolises of the world, it exerts great demand on the road network. The urban agglomeration of Cairo, designated as the Greater Cairo Metropolitan Area (GCMA), is the largest urban area in Egypt, Africa and the Middle East. Including the governorates of Cairo, Giza and Qalyobiya and a number of new cities, the population reached 17 million people in 2006. In addition urbanization is rapid in the GCMA, where it is expected to reach 24 million in 2027 (World Bank, 2010).

This tremendous traffic demand results in severe delays in travel, thus it impacts not only commuting to jobs, but also the price of transportation (Felkner et al. 2012). The average person spends 500 hours per year in traffic in the

MAP 3.5: VOLUME CAPACITY INDEX

Volume Capacity Index
Low
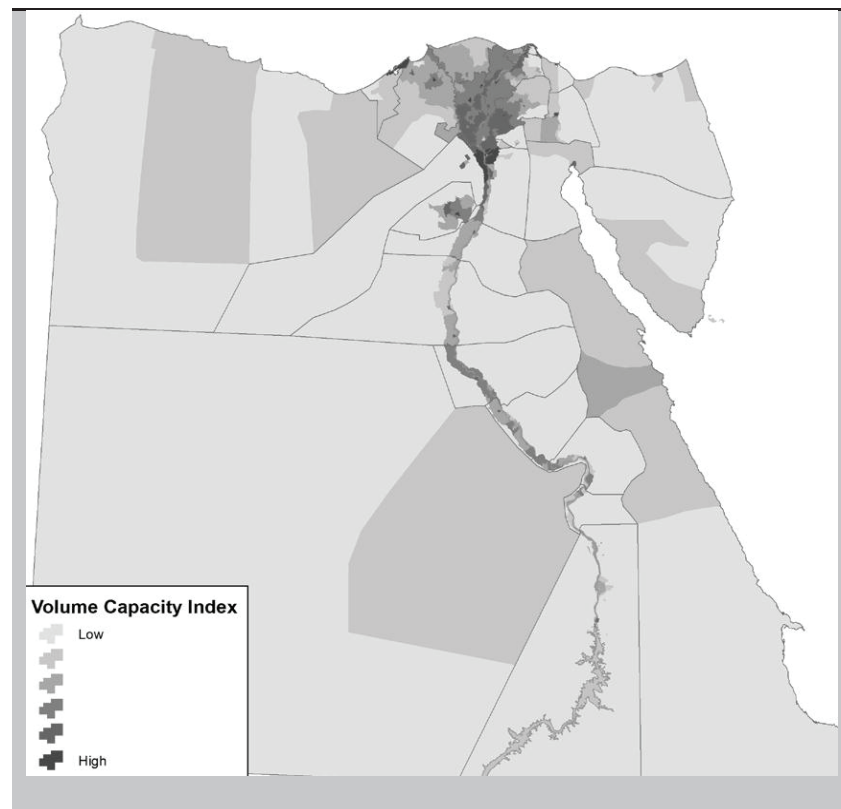
High

Source: World Bank (2012).

Cairo metro area (EgyptCarPoolers.com, 2010). Average travel speeds in high congestion time periods and locations range from 11 – 20 km/h (JICA: 2003 and Nation Institute of Transit in EGSER, 2008: 56, respectively). Furthermore, JICA 2003 report projected a reduction of the travel speed from 19 km/h to 12 km/h by 2020 in the worst-case scenario. The most recent estimates indicate that the travel speed had fallen to around 12 km/h in 2005, notably due to increased car ownership associated with higher income growth and urbanization (World Bank, 2010). Map 3.5 illustrates the relative level of Volume to Capacity Index that simply measures the number of vehicles and sum of the length of roads as a proxy of congestion[57].

Mitigating congestion and smart growth are at the forefront of the development agenda in Egypt. Even though the Egyptian government has actively pursued substantial efforts including new public transportation systems (e.g. metro), congestion persists. Recognizing this has economic implications as well as adverse environmental and public health effects, efforts to understand and mitigate congestion are useful to address the range of policy intervention options and investments to alleviate congestion, especially within the context of access to jobs and job growth.

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[57] See Felkner et al. 2012 for more details.

When commuting is not an option, Egyptians look beyond Egypt

A substantial number of Egyptians work outside Egypt. In 2012, 6.1% of Egyptian households reported that at least one former[58] member of the household is currently living abroad. This of course understates the degree of international migration, as it excludes entire households that have migrated to another country and does not consider international migrants who have subsequently returned to Egypt (noted in Wahba (2007)). The majority of these immigrants (71.3%) live in the Persian Gulf Countries, with 44.5% living in Saudi Arabia alone. A further 21.2% live in other parts of MENA, with 7.2% living in Europe and North America.

International migrants are overwhelmingly male (96.8%) are very different from average male Egyptians. They are substantially better educated than male Egyptians living within the country, with a 26.4% post-secondary graduation rate compared to 19.1%, and a secondary graduation rate of 74.4 (compared to 53.9%). International migrants are also much more concentrated in the young adult and early prime age groups than non-migrant men, with 79.4% of international migrants being between the ages of 25-39 compared to only 54.5% of non-migrant men.

TABLE 3-9: CHARACTERISTICS OF INTERNATIONAL MIGRATIONS

	All men age 15-64	Male international migrants age 15-64
Teen	14.0	0.4
Youth	14.9	10.7
Young adult	14.6	21.7
Early prime	39.9	57.7
Late prime	12.2	7.6
Greying	4.5	2.0
Literate	83.2	88.3
Elementary graduate	78.7	82.3
Secondary graduate	53.9	74.4
Post-secondary graduate	19.1	26.4
Source: ELMPS 2012.		

Much of the international migration we observe is likely to be the equivalent of temporary work migration rather than permanent migration. While it is difficult to directly measure an international migrant's intention to return, we see indirect clues that many international migrants are temporary rather than permanent migrants. By construction, in the ELMPS every household must have a household head that does not currently live abroad. This results in a substantial fraction of women that are labeled as the "household head" because their husbands, the primary earners of the household, live and work abroad. More than half of international migrants from Egypt are reported as being the husband of a female household head in the ELMPS.

TABLE 3-10: % HOUSEHOLDS WITH CURRENT INTERNATIONAL MIGRANT	
Metropolitan	3.3
Urban Lower	4
Urban Upper	4.6
Rural Lower	6.5
Rural Upper	10.6

Source: ELMPS 2012.

International migrants are much more likely to come from the periphery than from the core, suggesting that international migration is taking the place of internal migration in distant governorates. Only 3.3% of households in metropolitan Egypt contain an international migrant, which rises steadily along the core-periphery dimension and attains a maximum of 10.6% of households in rural Upper Egypt. When we consider only distant rural Upper Egypt, the prevalence increases to 13.3%. Coupled with the low rates of long-distance internal migration previously observed, it is reasonable to conclude that the lack of a formal private sector in distant Upper Egypt and the systematic exclusion of recent generations from the public sector has been one driver of international migration.

International migration is highly dependent on connections, and continued dependence on international migration if left unchecked could result in persistent inequality. Overall, 69.7% of employed international migrants between the ages of 25 and 39 reported that a household member, relative, or acquaintance helped them acquire their current job, 30 percentage points higher than the equivalent figure of 39.8% for similarly aged men who work domestically[59]. This dependence on connections could lead to a situation in which the ability to work abroad is passed within a narrow set of people, who will continue to experience advantages over equally educated men from different backgrounds.

Even though low internal migration rates mask substantial worker mobility in the form of commuting and to some extent, international migration, these have not been nearly enough to eliminate spatial segmentation. Moreover, the fact that Egypt's regions have converged in outcomes does not mean that spatial disparities should not be of concern to policy-makers. On the one hand, convergence has occurred through deterioration in formality rates in the core. On the other hand, Egypt faces large demographic challenges caused by the unusual size of the echo generation (as discussed in Chapter 2). However, while all regions of Egypt follow the same overall boom-echo pattern, the timing of the boom and echo and the depth of the dip differ from region to region. As we move from core to periphery, the boom generation becomes younger, the population dip becomes shorter and shallower. As is frequently the case, the sharpest contrast is between metropolitan Egypt and rural Upper Egypt (Figure 3.20 and Figure 3.21). In metropolitan Egypt, the leading edge of the boom generation has already entered their early 30s, so for the next 10 years, the fraction of the population in the high-unemployment 20-29 age group will decline from 18% to 14%, and it will be fully 20 years before metropolitan Egypt will have a larger percentage of its population aged 20-29. However, in rural Upper Egypt, the fraction of the population in the 20-29 age group is set to stay at 20% for the next 15 years, at which point it will increase to 22% and is likely to continue rising moving forward. This is likely to be driven at least in part by population growth in distant Upper Egypt. The differential timing of demographic pressure makes it important to ease labor mobility even in the short term to bridge the distance between jobs and people, especially in distant Egypt.

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[59] This figure increases to 48% if men working in the public sector are excluded.

FIGURE 3.20: METROPOLITAN EGYPT   FIGURE 3.21: RURAL UPPER EGYPT
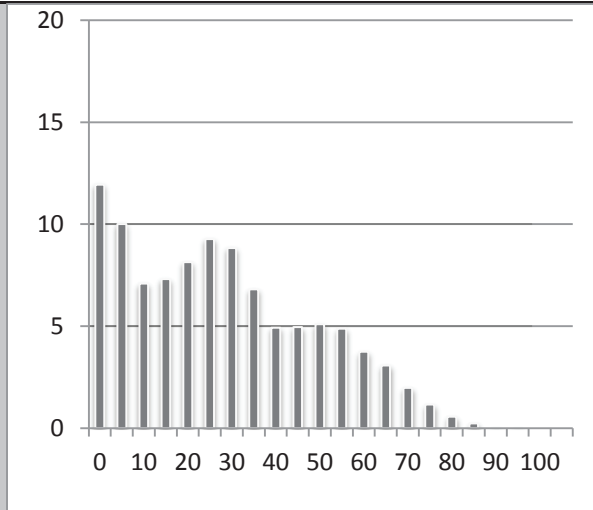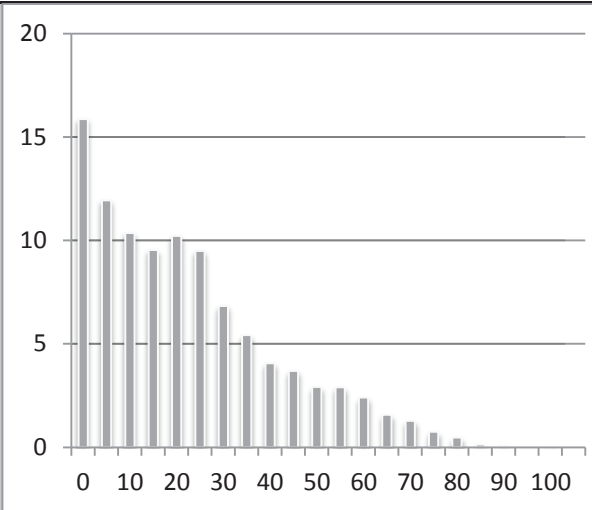
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Annex 3

Outcome	Log monthly wages	Probability of formal employment		Probability of unemployment		Log monthly wages
Sample	Male wage earners age 15-64	Male labor force participants age 15-64	Female labor force participants age 15-64	Male labor force participants age 15-d29	Female labor force participants age 15-29	Male wage earners age 15-64, near Egypt only
	(1)	(2)	(3)	(4)	(5)	(6)
Urban Lower	-0.19***	-0.089***	-0.153***	-0.009	0.160***	-0.19***
	(0.03)	(0.019)	(0.036)	(0.014)	(0.056)	(0.03)
Urban Upper	-0.21***	-0.083***	-0.067*	-0.027**	0.086	-0.18***
	(0.03)	(0.018)	(0.037)	(0.011)	(0.056)	(0.04)
Rural Lower	-0.26***	-0.066***	-0.227***	-0.052***	0.164***	-0.25***
	(0.03)	(0.016)	(0.033)	(0.012)	(0.046)	(0.03)
Rural Upper	-0.17***	-0.141***	-0.168***	-0.070***	0.063	-0.11***
	(0.03)	(0.017)	(0.039)	(0.011)	(0.058)	(0.04)
Literate	0.04	0.233***	0.422***	0.008	0.306*	0.03
	(0.05)	(0.034)	(0.089)	(0.041)	(0.170)	(0.05)
Elementary	0.08***	0.255***	0.518***	-0.016	0.258**	0.07**
	(0.03)	(0.023)	(0.049)	(0.021)	(0.101)	(0.03)
Secondary	0.18***	0.412***	0.758***	0.046**	0.635***	0.19***
	(0.03)	(0.019)	(0.035)	(0.021)	(0.057)	(0.03)
Post-secondary	0.44***	0.596***	0.875***	0.125***	0.545***	0.44***
	(0.03)	(0.016)	(0.024)	(0.036)	(0.064)	(0.04)
Age 20-24	0.19***	0.348***	0.196	0.003	0.058	0.21***
	(0.05)	(0.077)	(0.141)	(0.016)	(0.078)	(0.06)
Age 25-29	0.29***	0.505***	0.354***	-0.055***	-0.108	0.35***
	(0.05)	(0.064)	(0.124)	(0.017)	(0.078)	(0.06)
Age 30-34	0.37***	0.588***	0.401***			0.45***
	(0.05)	(0.053)	(0.115)			(0.06)
Age 35-39	0.44***	0.632***	0.549***			0.48***
	(0.05)	(0.044)	(0.076)			(0.06)
Age 40-44	0.47***	0.652***	0.602***			0.53***
	(0.06)	(0.035)	(0.050)			(0.06)
Age 45-49	0.52***	0.689***	0.664***			0.57***
	(0.05)	(0.024)	(0.030)			(0.06)
Age 50-54	0.55***	0.690***	0.663***			0.60***
	(0.06)	(0.020)	(0.027)			(0.06)
Age 55-59	0.70***	0.695***	0.628***			0.79***
	(0.06)	(0.017)	(0.024)			(0.07)
Age 60-64	0.31***	0.554***	0.497***			0.35***
	(0.11)	(0.047)	(0.126)			(0.13)
Constant	6.40***					6.34***
	(0.05)					(0.06)
Observations	8,234	11,704	3,478	4,398	1,369	6,008
R-squared	0.13					0.15
Pseudo R-squared		0.221	0.381	0.0965	0.122	
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1						
Source: ELMPS 2012.						

Outcomes	Log monthly wages	Probability of formal employment	Probability of formal employment	Probability of unemployment	Probability of unemployment
Sample	Male wage-workers age 15-64	Male labor force participants age 15-64	Female labor force participants age 15-64	Male labor force participants age 15-29	Female labor force participants age 15-29
	(1)	(2)	(3)	(4)	(5)
Round: 2006	0.16***	-0.102***	-0.080***	-0.008	-0.104**
	(0.02)	(0.018)	(0.031)	(0.014)	(0.046)
Round: 2012	0.16***	-0.181***	-0.033	-0.008	-0.069
	(0.03)	(0.019)	(0.038)	(0.017)	(0.052)
Region Urban Lower	-0.28***	-0.041*	-0.049	0.017	0.192***
Urban Lower interacted with round	(0.03)	(0.024)	(0.037)	(0.020)	(0.061)
2006	0.05	-0.004	-0.020	-0.022	0.040
	(0.04)	(0.028)	(0.047)	(0.019)	(0.078)
2012	0.09**	-0.055*	-0.107**	-0.024	-0.032
	(0.04)	(0.030)	(0.047)	(0.020)	(0.078)
Region = Urban Upper	-0.34***	-0.033	0.069*	-0.007	0.014
Urban Upper interacted with round	(0.03)	(0.023)	(0.039)	(0.016)	(0.060)
2006	0.06*	-0.010	-0.064	-0.002	0.042
	(0.04)	(0.027)	(0.042)	(0.022)	(0.080)
2012	0.13***	-0.054*	-0.131***	-0.029	0.070
	(0.04)	(0.028)	(0.043)	(0.019)	(0.083)
Region = Rural Lower	-0.35***	-0.128***	-0.094**	0.035*	0.179***
Rural Lower interacted with round	(0.03)	(0.023)	(0.045)	(0.019)	(0.059)
2006	0.03	0.042	0.010	-0.056***	0.010
	(0.04)	(0.028)	(0.057)	(0.013)	(0.073)
2012	0.09**	0.060**	-0.135***	-0.072***	-0.014
	(0.04)	(0.029)	(0.049)	(0.011)	(0.073)
Region = Rural Upper	-0.45***	-0.194***	-0.111**	-0.023	0.043
Rural upper interacted with round	(0.03)	(0.023)	(0.054)	(0.018)	(0.080)
2006	0.15***	0.051*	-0.097*	-0.057***	-0.100
	(0.04)	(0.030)	(0.059)	(0.014)	(0.084)
2012	0.27***	0.052	-0.069	-0.058***	0.034
	(0.04)	(0.033)	(0.063)	(0.015)	(0.098)

Literate	0.09***	0.274***	0.361***	0.005	0.266**
	(0.03)	(0.019)	(0.064)	(0.025)	(0.129)
Elementary	0.10***	0.300***	0.513***	0.006	0.289***
	(0.02)	(0.016)	(0.038)	(0.016)	(0.069)
Secondary	0.18***	0.453***	0.736***	0.119***	0.686***
	(0.02)	(0.014)	(0.025)	(0.017)	(0.038)
Post-secondary	0.42***	0.594***	0.852***	0.256***	0.624***
	(0.02)	(0.011)	(0.017)	(0.030)	(0.044)
age 20-24	0.18***	0.225***	0.077	-0.020**	0.014
	(0.03)	(0.032)	(0.057)	(0.009)	(0.036)
age 25-29	0.28***	0.406***	0.282***	-0.094***	-0.153***
	(0.03)	(0.026)	(0.054)	(0.010)	(0.035)
age 30-34	0.33***	0.509***	0.420***		
	(0.03)	(0.022)	(0.049)		
age 35-39	0.39***	0.575***	0.571***		
	(0.03)	(0.018)	(0.037)		
age 40-44	0.45***	0.618***	0.651***		
	(0.03)	(0.014)	(0.026)		
age 45-49	0.52***	0.639***	0.679***		
	(0.03)	(0.012)	(0.020)		
age 50-54	0.58***	0.640***	0.667***		
	(0.03)	(0.010)	(0.021)		
age 55-59	0.67***	0.639***	0.643***		
	(0.04)	(0.009)	(0.019)		
age 60-64	0.34***	0.525***	0.547***		
	(0.07)	(0.020)	(0.064)		
Constant	6.26***				
	(0.03)				
Observations	17,634	26,177	8,387	9,917	3,408
R-squared	0.203				
Pseudo R-squared		0.253	0.419	0.123	0.189
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1					
Source: ELMPS 1998, 2006, 2012.					

Outcome	Probability of commuting to metropolitan Egypt					
Sample	Workers in near Egypt living outside metropolitan Egypt, age 15-64					
	Both sexes	Men only	Men only	Both sexes	Men only	Men only
	(1)	(2)	(3)	(4)	(5)	(6)
Literate	0.043**	0.051**	0.045*	0.028	0.034	0.033
	(0.021)	(0.024)	(0.024)	(0.021)	(0.023)	(0.023)
Elementary	0.042***	0.048***	0.039***	0.020	0.024*	0.025*
	(0.013)	(0.015)	(0.015)	(0.013)	(0.014)	(0.014)
Secondary	0.070***	0.083***	0.069***	0.054***	0.064***	0.064***
	(0.010)	(0.013)	(0.013)	(0.010)	(0.013)	(0.013)
Post-secondary	0.087***	0.103***	0.075***	0.070***	0.086***	0.077***
	(0.012)	(0.016)	(0.016)	(0.012)	(0.016)	(0.017)
Youth	0.049*	0.047*	0.052*	0.054**	0.052*	0.061**
	(0.025)	(0.028)	(0.028)	(0.026)	(0.029)	(0.029)
Young adult	0.071***	0.077***	0.094***	0.072***	0.082***	0.106***
	(0.023)	(0.026)	(0.029)	(0.023)	(0.026)	(0.030)
Early prime	0.051**	0.055**	0.086***	0.049**	0.052**	0.092***
	(0.022)	(0.024)	(0.029)	(0.022)	(0.024)	(0.030)
Late prime	0.052**	0.043	0.083***	0.053**	0.047*	0.092***
	(0.024)	(0.026)	(0.031)	(0.024)	(0.027)	(0.033)
Greying	-0.002	-0.007	0.034	-0.010	-0.012	0.033
	(0.025)	(0.027)	(0.032)	(0.026)	(0.029)	(0.034)
Urban Upper	0.036***	0.044***	0.048***			
	(0.013)	(0.017)	(0.017)			
Rural Lower	0.066***	0.075***	0.090***			
	(0.008)	(0.010)	(0.011)			
Rural Upper	0.116***	0.136***	0.156***			
	(0.015)	(0.018)	(0.019)			
Currently married			-0.029			-0.039**
			(0.018)			(0.019)
Divorced/widowed			-0.081**			-0.082**
			(0.033)			(0.036)
Father literate			0.004			-0.007
			(0.012)			(0.012)
Father secondary			-0.042*			-0.036
			(0.025)			(0.025)
Father post-secondary			0.006			0.013
			(0.033)			(0.032)
Mother literate			-0.022			-0.014
			(0.016)			(0.015)
Mother			0.050			0.055*

secondary			(0.033)			(0.032)
Mother post-secondary			0.175**			0.148**
			(0.069)			(0.062)
Father in public sector			0.032**			0.006
			(0.015)			(0.015)
Father farmer			-0.034***			-0.009
			(0.013)			(0.014)
Female	-0.092***			-0.086***		
	(0.007)			(0.007)		
Constant	-0.046*	-0.066**	-0.062**	0.027	0.020	0.023
	(0.024)	(0.027)	(0.029)	(0.023)	(0.025)	(0.028)
LOCALITY FIXED EFFECTS	NO	NO	NO	YES	YES	YES
Observations	7,584	6,074	6,073	7,584	6,022	6,073
R-squared	0.041	0.030	0.043	0.184	0.192	0.196
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1						
Source: ELMPS 2012.						

ANNEX TABLE 3.4: COMMUTER JOB CHARACTERISTICS, MEN AGE 15-64

		Non-commuters	District commuters	Governorate commuters	Region commuters
Sector	Formal Private	10.2	24.8	26.6	19.0
	Public	23.7	27.5	22.9	22.3
	Informal	49.6	46.7	50.1	57.4
	Farm	16.5	1.0	0.5	1.4
Industry	Agriculture	27.1	4.9	4.5	7.1
	Manufacturing	13.8	21.3	24.0	18.8
	Construction	7.5	21.9	24.6	29.3
	Wholesale and retail	16.6	12.3	11.0	9.6
	Transportation & and storage	6.9	13.7	9.4	13.5
	Professional services	3.1	5.8	4.1	3.0
	Public administration	7.3	8.2	6.5	7.8
	Social services	10.4	5.5	3.9	4.6
	Other services	7.2	6.5	12.0	6.5
Wage	Average monthly wage	1043.1	1433.4	1286.6	1146.4

Source: ELMPS 2012.

Outcome	Log monthly wage	Log monthly wage	Log monthly wage
Sample	Male workers living and/or commuting to metropolitan Egypt	Male workers living and/or commuting to metropolitan Egypt	Male workers living and/or commuting to metropolitan Egypt
	(1)	(2)	(3)
Working in metropolitan Egypt	0.122***	0.068**	0.052
	(0.030)	(0.034)	(0.035)
Living in metropolitan Egypt	0.136***	0.078**	0.074**
	(0.034)	(0.037)	(0.037)
Log commute time (oneway, minutes)		0.036***	0.018
		(0.012)	(0.012)
Literate	0.033	0.008	-0.012
	(0.052)	(0.053)	(0.052)
Elementary	0.085**	0.052	0.033
	(0.035)	(0.037)	(0.036)
Secondary	0.211***	0.120***	0.073**
	(0.031)	(0.034)	(0.036)
Post-secondary	0.455***	0.216***	0.106**
	(0.035)	(0.039)	(0.046)
Father literate		-0.010	-0.011
		(0.025)	(0.025)
Father secondary		-0.001	-0.009
		(0.053)	(0.048)
Father post-secondary		0.007	0.004
		(0.057)	(0.052)
Mother literate		0.052*	0.050*
		(0.030)	(0.029)
Mother secondary		0.094*	0.114**
		(0.057)	(0.051)
Mother post-secondary		0.184**	0.176**
		(0.088)	(0.082)
Father in public sector		0.014	0.029
		(0.027)	(0.028)
Father farmer		0.031	0.020
		(0.029)	(0.028)
age 20-24	0.202***	0.000	0.230***
	(0.062)	(0.000)	(0.062)
age 25-29	0.315***	0.197***	0.323***
	(0.060)	(0.063)	(0.060)
age 30-34	0.421***	0.315***	0.410***
	(0.061)	(0.061)	(0.061)

age 35-39	0.459***	0.406***	0.465***
	(0.065)	(0.061)	(0.064)
age 40-44	0.539***	0.468***	0.509***
	(0.066)	(0.065)	(0.067)
age 45-49	0.559***	0.529***	0.532***
	(0.063)	(0.067)	(0.065)
age 50-54	0.562***	0.543***	0.526***
	(0.066)	(0.064)	(0.069)
age 55-59	0.779***	0.539***	0.668***
	(0.073)	(0.067)	(0.074)
age 60-64	0.326**	0.728***	0.330***
	(0.128)	(0.074)	(0.127)
WEALTH DECILE FE	NO	YES	YES
INDUSTRY FE	NO	NO	YES
OCCUPATION FE	NO	NO	YES
SECTOR FE	NO	NO	YES
Constant	6.100***	5.973***	6.340***
	(0.059)	(0.083)	(0.197)
Observations	5,298	5,232	5,216
R-squared	0.161	0.205	0.246

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source: ELMPS 2012.

4. Separate but not Equal: Gender Inequality in the Labor Market

> *Female labor force participation in Egypt has remained low for many years, and is poised to drop further in the near future. As is the case for men, recent generations of Egyptian women have experienced mounting difficulties in acquiring high quality employment despite rising educational attainment; for women, this problem has been compounded by their near-absence from the formal private sector. This disconnect can be attributed in large part to gender wage gaps in the private sector and a higher effective cost of commuting experienced by women relative to men due to social norms, safety concerns, and the inflexible work schedules entailed by long commutes. While married life and labor force participation are apparently becoming more compatible over time, the poor labor market opportunities available to women have been an important factor driving the surprising recent increases in fertility.*

Countries in the MENA region have the lowest female labor force participation (LFP) rates in the world, and Egypt is no exception. Egypt's female LFP rate in 2012 was 23 percent, slightly lower than the MENA average of 25 percent. Men in Egypt and other MENA countries, however, participate in the labor force at the same rates as in other parts of the world; in Egypt, 80 percent of working-age men are employed or actively seeking work, and the bulk of non-participants are either students, retired, or serving their mandatory military service. Across rural, urban, and metropolitan Egypt, the female LFP in 2012 was less than a third that of men. It is therefore no surprise that the 2013 Global Gender Gap report ranks Egypt 125th of 136 countries in terms of women's economic opportunity.

Based on evidence from other countries, Egypt's female labor force participation rate should be increasing over time, however this has not been happening over the last fourteen years. Many cross-country studies have noted an empirical relationship between income levels and women's participation in the workforce (Mammon and Paxson, 2000; Goldin, 1995). At low levels of per capita income, women tend to work more; and as incomes increase, participation declines and eventually rises as the country gets richer and women get more educated. Given Egypt's level of income, its female labor force participation rate should be rising, but we have instead seen stagnation or decline. The stagnation of the female labor force participation rate is indicative of the many hurdles Egyptian women face in finding high-quality employment.

A. Young women are dropping out of the workforce

Women in Egypt face multiple differences from men in the labor market: a lower labor force participation rate, a higher unemployment rate, and a much lower formal private sector employment rate. Female labor force participation in Egypt is not only low[60], but has also shown little sign of increasing over the

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[60] We use the "market" definition of labor force participation with search required (that does not include subsistence workers are members of the labor force, or individuals who are not actively searching for jobs. By the

last 15 years, moving from 21% in 1998 to 27% in 2006, before dropping back down to 23% in 2012. It is only one factor contributing to high rates of joblessness among Egyptian women: they also suffer from an extremely high unemployment rate, to the point where women now make up the majority of job-seekers despite their low levels of labor force participation. The formal employment share for women is higher than for men (60% of women's jobs are formal compared to 41% of men's jobs), but they are much more dependent on the public sector for employment. The formal private sector employs only 1.5% of women of working age compared to 12.5% of men in 2012 (Figure 4.1), and the informal private sector is also far smaller, employing only 4% of women compared to 38% of men.

The volatility in women's employment that we observed in chapter 1 is likely due to volatility in agricultural employment. Although the ELMPS is not ideally constructed for the analysis of agricultural employment (see Box 2.2), the sharp changes in farm employment we observe in Figure 4.1 strongly suggest that agriculture is a particularly volatile sector. While a larger fraction of men are in the farm sector than women, overall employment is lower for women and thus their employment rate will respond strongly to changes in agricultural employment.

FIGURE 4.1: FEMALE LABOR FORCE OUTCOMES, AGES 15-64   FIGURE 4.2: FEMALE LABOR FORCE OUTCOMES, AGES 15-29
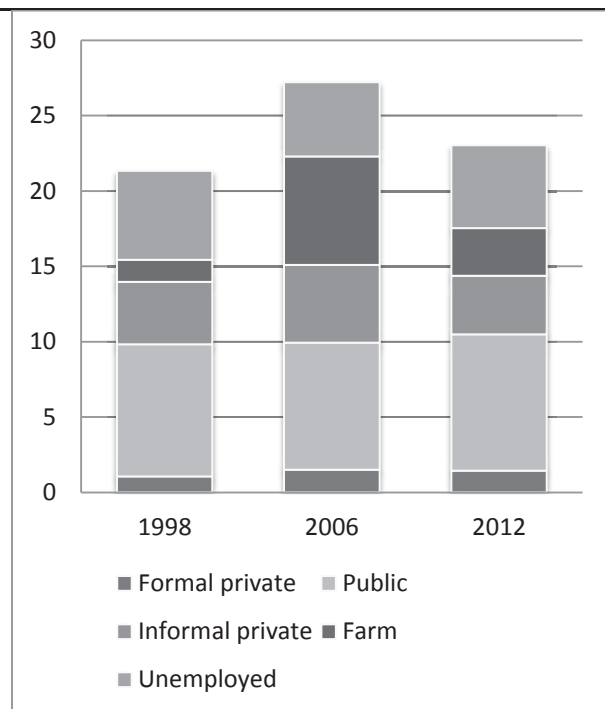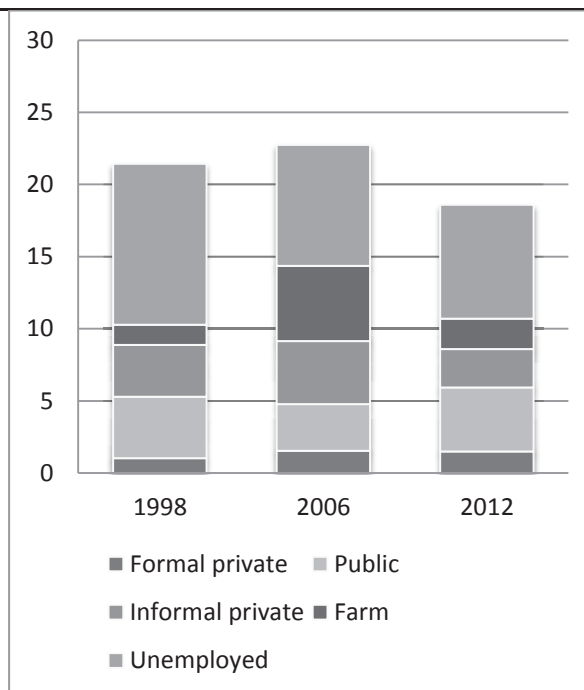
Source: ELMPS 1998, 2006, 2012.   Source: ELMPS 1998, 2006, 2012.

As is the case with young men, young women have much worse labor market outcomes than older women, and have experienced recent declines in labor force participation. During this time of stagnant female labor force participation, we have also seen a dramatic decline in LFP for young women (those aged 15-29) between 2006 and 2012, dropping from 22.7% to 18.6%, mostly attributable to declines in the farm

extended definition, female LFP is higher and stable between 1998 and 2006, but experienced a large decline between 2006 and 2012; this is due to women reporting less subsistence agriculture.

sector and the informal private sector (Figure 4.2). Labor force participation *upon entry* has also been declining for recent cohorts of educated women, which we can see using the retrospective employment history module of the ELMPS. Women with secondary or post-secondary education have experienced large declines in labor force participation at age 20 (for secondary graduates) or age 24 (for post-secondary graduates), dropping by 30-35 percentage points for both groups since the 1955-1959 cohort (Figure 4.3). This is even more notable because our retrospective measure of labor force participation tends to understate participation among older cohorts[61].

FIGURE 4.3: FEMALE LFP AMONG NON-STUDENT, EDUCATED LABOR MARKET ENTRANTS
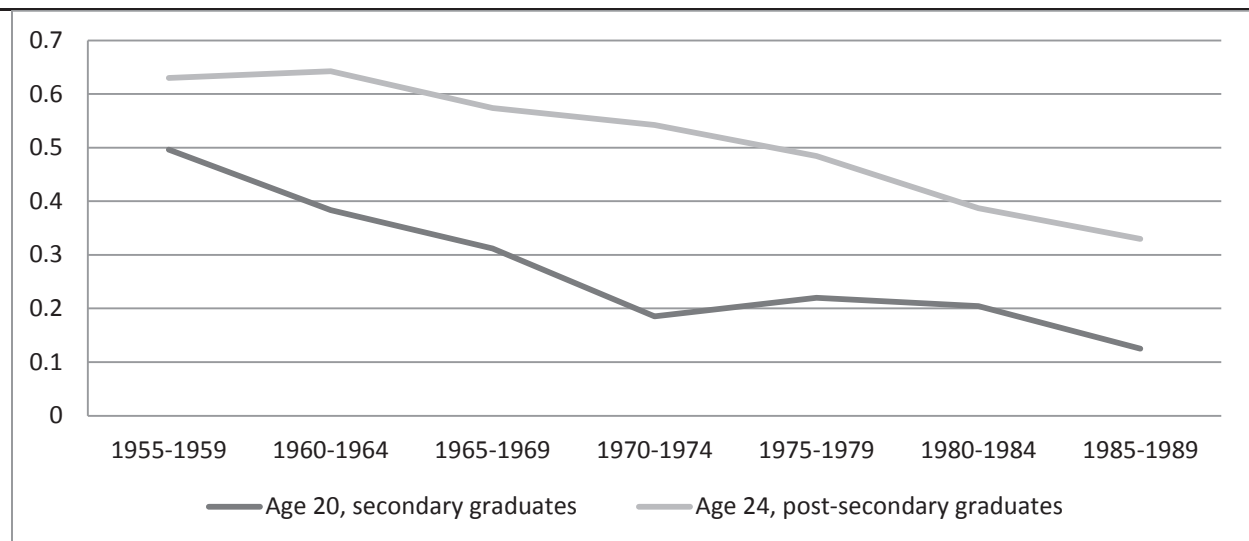
Source: ELMPS 2012.

While women's *overall* formal employment to population ratio has not changed materially over the last fourteen years, there have been dramatic changes within individual age categories and there is clear evidence of generational inequality. While the formal employment to population ratio has been stable at approximately 10 percent for the last fourteen years, this is due to the fact that a few cohorts of women have had consistently good labor market outcomes while other cohorts have failed to find formal jobs. There have been large increases in formal employment for women between the age of 45 and 59 (roughly 7-12% in each 5 year age bracket) paired with decreases in formal employment for younger women (roughly 5% for women between age 30 and age 39) (Figure 4.4). The age bracket with the highest level of formal sector employment increases over this time period, tracking the labor market conditions of a single cohort. For the last fourteen years, the 1960-1964 cohort has always had the highest formal employment to population ratio,

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[61] Due to the structure of the ELMPS, only women who ever held a job are asked to report their labor force status history. Women who are currently not in the labor force and who never held a job are categorized as "not in labor force" at all ages. This could result in underreporting of the labor force participation rate, since some women may have been searching for a job at age 24 but never obtained one and left the labor force; those women will be incorrectly categorized as "not in labor force at age 24". All things being equal, this will be a larger problem for women from earlier cohorts. A 25 year old woman who has been unemployed since age 23 will be recorded as "unemployed at age 24" (and thus as a labor force participant), while a 30 year old women who was similarly unemployed from ages 23-25, never found a job, and then subsequently left the labor force will be reported as "not in labor force" at age 24. Also, those who report that they were in school at age 20 or 24 are excluded entirely.

although it declined somewhat between 2006 and 2012 (most likely due to retirement). The formal labor market for women is thus dominated by a cohort of women whose entrance into the labor market coincided with a time when the government guaranteed public sector employment to everyone with secondary education.[62]

FIGURE 4.4: FORMAL FEMALE EMPLOYMENT TO POPULATION RATIO
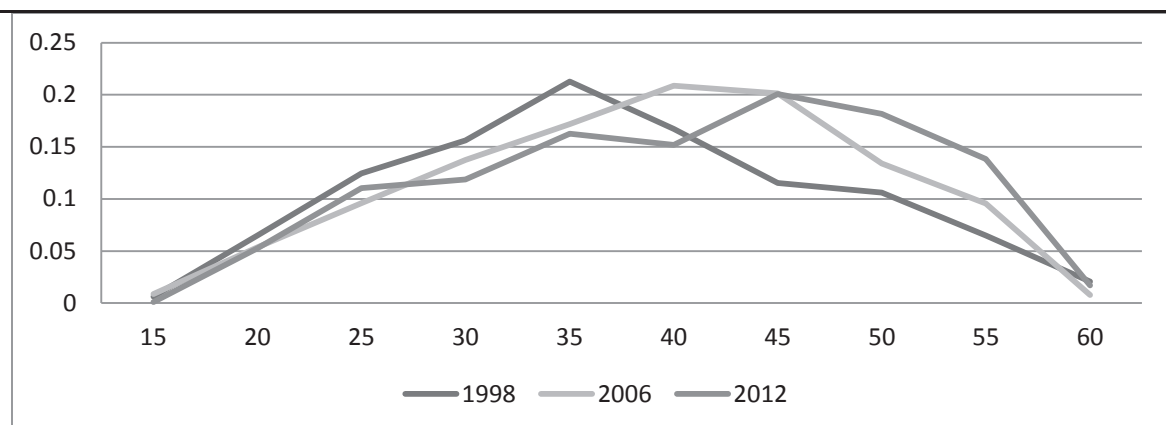
Source: ELMPS 1998, 2006, 2012.

This stagnation in formal employment is occurring despite dramatic improvements in women's educational attainment, which has been rising even faster than men's over the same time period. Women born between 1945 and 1949 had a literacy rate of 27%, a secondary graduation rate of 11%, and a post-secondary graduation rate of only 6%, while for women born forty years later the rates are 84%, 69%, and 28% respectively (Figure 4.5). We have also seen tremendous convergence between male and female education over this time period. The gender gap in secondary graduation rates was 21.2 percentage points for the 1955-1959 cohort but this has subsequently narrowed to a barely perceptible 3.1 percentage point gap; the post-secondary gap has disappeared entirely (Figure 4.6). This gap is narrowing due to catch-up in women's educational attainment in the core metropolitan areas (Figure 4.7). For older cohorts, the low gender gaps in rural Upper and Lower Egypt stem from low levels of secondary education for both men and women. Over time, we see that as gaps in secondary education between men and women come down in metropolitan and urban Egypt, gaps increase in rural Egypt as men become more likely to complete secondary education. For the youngest cohorts today, these gaps in rural Lower Egypt have been almost eliminated as both men and women attain secondary schooling. However, significant gender disparities remain in rural Upper Egypt.

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[62] The stability of women's formal employment (unlike men's, which has been decreasing) is due to the stability of employment for women already employed in the public sector and the fact that women in the public sector are somewhat younger on average than men in the public sector and so fewer of them have retired over the last 15 years.

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FIGURE 4.5: EDUCATIONAL ATTAINMENT OF WOMEN, BY BIRTH COHORT
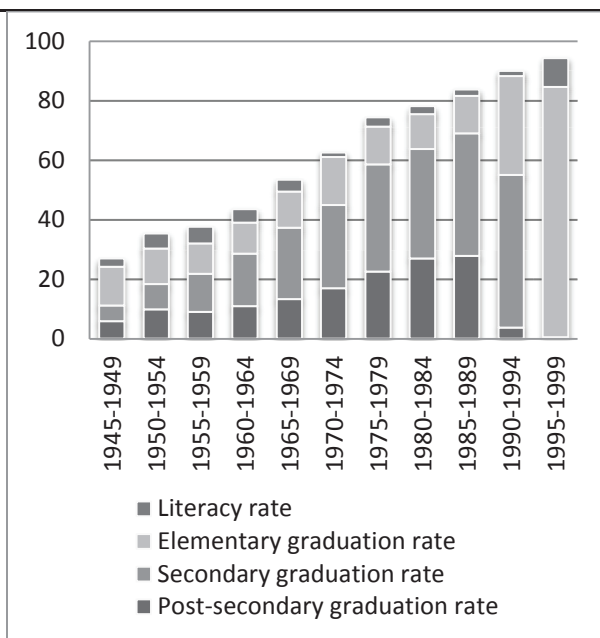
FIGURE 4.6: SECONDARY GRADUATION RATES BY GENDER AND BIRTH COHORT
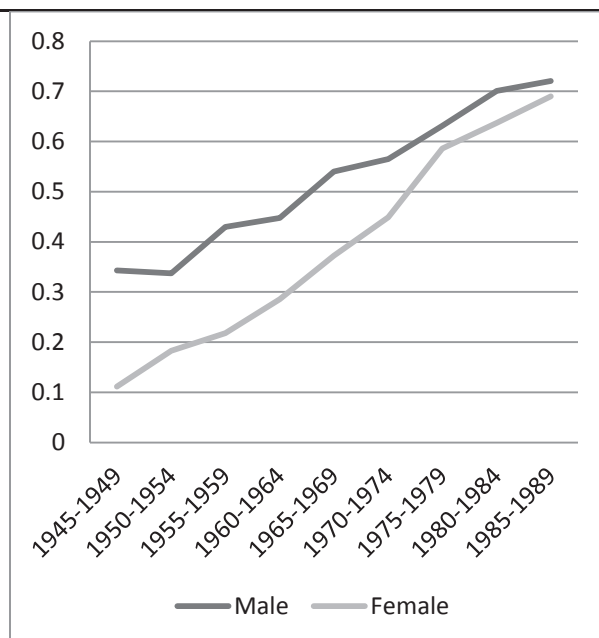
Source: ELMPS 2012.

Source: ELMPS 2012.

FIGURE 4.7: GENDER GAPS IN SECONDARY ATTAINMENT, BY REGION AND BIRTH COHORT
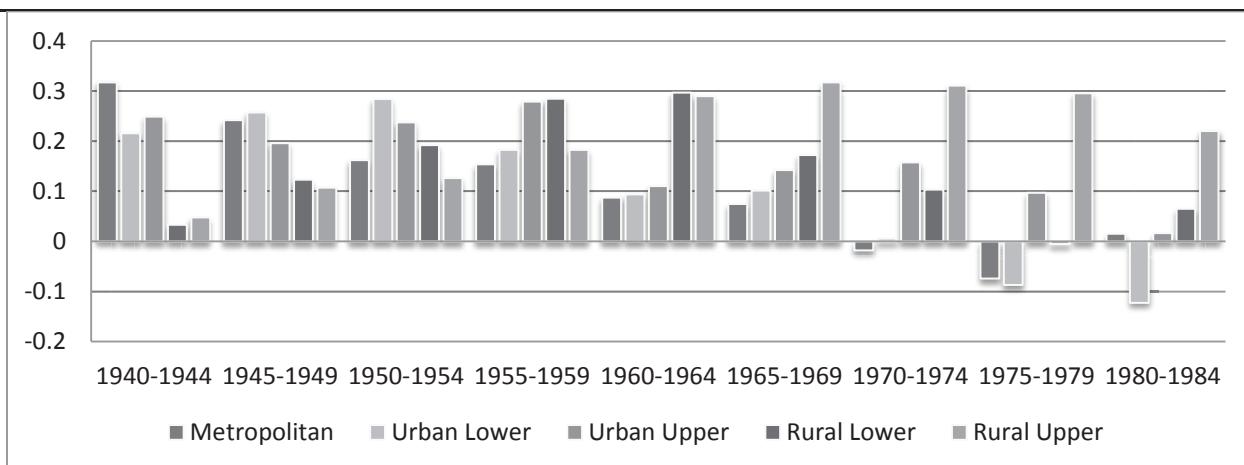
Source: ELMPS 2012.

Employment opportunities for women outside the public sector have not expanded, which has led to declining returns to education and particularly declining returns to secondary education. Figure 4.8 plots the formal employment-population ratio for older and younger women by education level: 74% of women aged 55-59 with post-secondary education were formally employed in 2012 compared to 62% of those with secondary education and only 2% of those who were literate but did not complete secondary education. For these women, secondary education appears to be a prerequisite for formal sector employment, while post-

secondary education is helpful but not essential. However, for women aged 25-29, these numbers dropped to 31% for post-secondary education, 6% for secondary education, and 1% for literate without secondary education. The decline does cut across educational status, but since the drop is the largest for women with secondary education (56 percentage points, compared to 31 percentage points for women with post-secondary education), secondary education by itself no longer appears to be of much use for young Egyptian women. These findings are confirmed by regression analysis including the interaction of age and education as well as controls for other characteristics; see ANNEX TABLE 4.1 for results[63]. This also appears to be an issue of generation rather than simply age, as it is for men. It is not simply that women take time to age into formal employment, as the older cohorts of women had formal employment even from a relatively young age. The declining availability of high-quality employment is one of several possible explanations for why educated women have been leaving the labor force.

FIGURE 4.8: FORMAL EMPLOYMENT TO POPULATION RATIO FOR WOMEN BY AGE AND EDUCATION, 2012
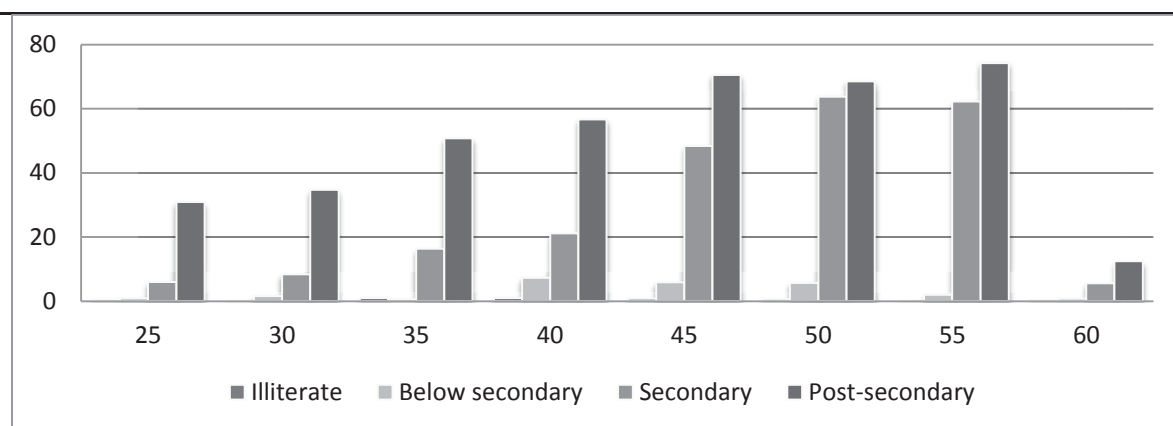
Source: ELMPS 2012.

B. Constraints, not preferences limit female participation

Typically, an individual's decision regarding labor force participation is determined by both preferences and constraints. For women who balance dual roles within and outside the home, constraints

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[63] Since the ELMPS only gathers fertility data on women below the age of 50, we present specifications for women age 15-49 that include dummies for presence of children at different ages (column 1, 3, 5) and for women age 15-64 that do not (column 2, 4, 6). We find that among 25-29 year old women (the excluded category) post-secondary education increases the probability of formal employment by approximately percentage points (relative to illiteracy) and secondary education increases it by only 15-17 percentage points. We can firmly reject the possibility that these effects are statistically equal. Among 45-49 year olds, however, we find that post-secondary education improves the probability of formal employment by 75 percentage points and secondary education improves it by 57 percentage points, a much smaller gap. When we extend the analysis to older women by removing the controls for children, we find that the gap disappears past age 50. We see similar patterns in labor force participation and overall employment with very similar magnitudes, suggesting that the effect on formal employment is mechanically driving the overall effect (columns 3-6).

can be particularly salient. A woman who is not the primary earner in her household may decide that her time is best spent on activities outside the labor market unless her additional income is necessary to keep up a desired standard of living. To the extent that non-participation is driven by these preferences, a low female labor force participation rate is not a matter of great concern for policy-makers. However it is also possible that Egypt's low female labor force participation rate actually reflects the barriers women face in accessing high-quality jobs. Potential barriers include the exceptionally low wages offered to women as well as other factors such as constraints on physical mobility, social norms, or a lack of the connections necessary to find a good job. In this section, we examine several of these possibilities.

Women get paid less than similar men

One disadvantage that women face in the labor market is the tremendous difference in the wages earned by males compared to similar women. This is an important problem in its own right (especially if the wage gap is due to discrimination by employers) and it may also present a significant barrier to women's participation in the labor market if they cannot find jobs that compensate them sufficiently for their work. Gender wage gaps are documented across both developing and developed countries (see for example Altonji and Blank 1999 and Pissaredes et al. 2005) The 2010 Gender Assessment of Egypt used the 2006 round of the ELMPS and found evidence of substantial gender wage gaps in Egypt, as have several other studies (e.g. Assaad and Arntz 2005, Said 2009, El-Hamidi and Said 2008).

At first glance, we see no evidence of a gender wage gap, however this fails to account for the different characteristics of men and women. In 2012, men had slightly lower median hourly wages than women (4.5 EGP for men vs. 4.9 EGP for women) but slightly higher median monthly wages than women (EGP 900 for men vs. EGP 800 for women), as they typically work longer hours (a median of 48 hours per week versus 36 hours per week for women). But women in wage earning jobs in Egypt differ from their male counterparts in many respects, such as education and experience and raw wage gaps do not account for these differences in attributes that are correlated with wages. Therefore a more accurate depiction of the gender wage gap is a comparison of the wages earned by a man and a woman with otherwise identical characteristics.

TABLE 4-1: CHARACTERISTICS OF FEMALE AND MALE WAGE WORKERS, 2012

	Women	Men
Experience (years)	14.6	17.0
Illiterate	5.8	14.9
Below secondary	6.2	23.2
Secondary	34.4	37.3
Post-secondary	53.6	24.6
Metropolitan	40.1	28.2
Urban Lower	15.0	9.3
Urban Upper	10.0	7.2
Rural Lower	27.1	31.8
Rural Upper	7.8	23.6
Formal private	10.8	17.3
Public	75.2	33.1
Informal private	14.1	49.6
Source: ELMPS 2012.		

Female wage-workers are on average more educated and work in better-paying regions and sectors than male wage-workers, and therefore if there was no gender wage gap we should actually expect them to be earning more than men on average. In 2012, female wage-workers had 90% secondary school graduation rate and a 54% post-secondary graduation rate, compared to 62% and 25% for men. They are also more likely to live in metropolitan Egypt (40% of female wage-workers compared to 28% of male wage-workers), which has higher average wages than the rest of Egypt (see Chapter 3 on spatial disparities), and female wage workers are also more likely to be formally employed[64] (Table 4-1). When we compare median hourly wages for men and women of equal educational levels, we find that illiterate women, women with below secondary education, and women with post-secondary education all have substantially lower median hourly wages than men; only women with secondary education have slightly higher wages (Table 4-2).

We consequently find that there are large gender wage gaps, and that these wage gaps increase with educational attainment. Following common practice in the literature, we calculate gender wage gaps using multivariate regressions to estimate the determinants of hourly wages (in logs[65]). We estimate regressions separately for male and female workers using experience (and experience squared) and indicators for educational level and region as explanatory variables (Annex Table 4.2, columns 1 and 2). The purpose of these regressions is to measure how the 'returns' to these key attributes (like experience and education) vary by gender. This approach is fundamentally similar to Table 4-2, except that the regressions allow us to account for difference in several attributes at once. This allows us to find the predicted wage gap between men and women with same level of experience (zero years) and in the same location (metropolitan Egypt). We see in Figure 4.9 that this gap is largest for illiterate women

TABLE 4-2: MEDIAN WAGES BY EDUCATION LEVEL

	Female	Male
Illiterate	2.5	4.0
Below secondary	2.7	4.0
Secondary	4.7	4.4
Post-secondary	5.8	6.3
Source: ELMPS 2012.		

(whose hourly wages are less than half those of illiterate men) but narrows to 30-33% for women with higher levels of education.[66]

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[64] Note that the relatively high level of formal private sector employment for women among wage workers is due to the fact that most female formal sector employment is wage work, while many of the women working in the informal sector are either self-employed or unpaid family workers.

[65] Measuring wages in logs makes the estimates less susceptible to extreme values and also allows a more convenient interpretation of the results, since difference in the log of wages is approximately equivalent to percentage differences in absolute wages.

[66] The 2010 Egypt Gender assessment also found that the wage gap narrowed with education in 2006, however at that time the relevant margin was secondary education, whereas now the important margin at which the wage gap narrows appears to be literacy.

After accounting for all of the personal characteristics in Table 4-1**, we find that there is an "unexplained" 12% wage gap between men and women.** We conduct this 'decomposition' using the same methodology as Chapter 2 (see Box 2.3), but applied across genders rather than across survey rounds[67]. The raw wage gap is separated into two components, an "explained" gap attributed to differing observed characteristics of the genders, and an "unexplained" gap attributed to differing returns to those characteristics across genders. An unexplained wage gap of 12 percent implies that if the average female wage-worker (in terms of education, experience, and location) were compensated for those characteristics as well as male wage-workers, she would have an hourly wage approximately 12% higher than she does in reality[68]. Note that the existence of a wage gap does not necessarily imply active discrimination against women by employers: another possible explanation is that men and women differ in terms of some productive characteristics that we do not observe. For instance, if productivity in the labor market is based primarily on physical strength, employers will be willing to pay a higher hourly wage for stronger workers. Supposing that men are stronger than women on average, unless we include a measure of physical strength in our decomposition we will find a persistent "unexplained" gender wage gap even in the absence of active discrimination against women.

FIGURE 4.9: GENDER WAGE GAP BY EDUCATIONAL ATTAINMENT (LOG)

Source: ELMPS 2012.

The gender wage gap increases to 14% when we also account for job characteristics such as sector, industry, and occupation, indicating that the gender wage gap does not stem from women's exclusion from high-paying professions. It is possible that women prefer to work in sectors, occupations, or industries that pay less or because they are being systematically excluded from the high-paying ones. By including these job characteristics as additional explanatory variables in the wage decomposition, we can look at the gender wage gap for workers with similar characteristics who work in the similar industries, occupations, and sectors. The fact that accounting for sector of work causes the wage gap to increase means that women are in fact more likely than men to be employed in lucrative sectors, occupations, or industries. This may not be surprising given that women are clustered in the well-paying public sector and absent from the low-paying construction industry[69].

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[67] Also see the 2010 Gender Assessment for a complete description.

[68] This wage gap is lower than the gaps shown in Figure 4.9 because of the disproportionate access to better-paying public sector jobs enjoyed by older cohorts of experienced women.

[69] If anything, it is odd that the wage gap increases this little, given how many female wage-earners work in the public sector. This can partially be explained by the fact that women are not only more likely to be in the high-paying public sector, but that *college-educated* women are more highly concentrated in the *metropolitan formal sector* than men, and the highest wage returns to education are in precisely that sector and region. We can account for this by including interactions between sector and education or sector and region as explanatory variables, and when we do this, the wage gap rises to 16 or 17%.

The private sector exhibits a much larger gender wage gap than the public sector. Public sector jobs have a smaller raw wage gap in favor of men (paid 3% more than women) but after accounting for personal characteristics the "unexplained" gap increases to 20%. For the formal private sector, the raw gap is 26% and expands to a 39% unexplained gap. For the informal private sector the raw wage gap is 50% but the unexplained gap is actually a bit smaller, only 40% (within this sector, men's characteristics are actually superior to women's characteristics). [70]

While it has been suggested by previous researchers that women have a strong preference for public sector work for non-pecuniary reasons, we find no evidence of this in our data. The ELMPS includes a module that gives us some insight into public sector preference, albeit in a subjective and self-reported manner. In 2012, all unemployed people were asked what minimum monthly salary would be required for them to accept a job in the public sector, a job in the formal private sector, and a job in the informal private sector (their "reservation wages" in the parlance of economics). This can be considered a crude measure of sector preference: if an individual considers public sector work to be intrinsically better than formal private sector work, there should be wage offers that they are willing to accept if the job were in the public sector but not if the job were in the formal private sector. This hypothetical job offer would be one that paid more than their public sector reservation wage but lower than their formal private sector reservation wage.

Women on average appear to be willing to work for lower wages than men, and while both genders express a preference for public sector jobs we find no evidence that women have a stronger preference relative to men (Figure 4.10). Most people indicated that they were willing to accept a lower wage for public sector work than for formal private sector work, and a lower wage for formal private sector work than for informal private sector work. The average wage minimum acceptable wage for public sector work was EGP 849 per month and EGP 1158 for formal private sector work, with 70% of workers listing a lower reservation wage for public sector than for private sector. The unemployed were very reluctant to take up informal private sector work (with an average minimum monthly wage of EGP 1614). There is also a clear gender distinction in reservation wages: unemployed women are on average willing to work for approximately an 22% lower monthly wage compared to unemployed men. If women truly had a stronger preference for public sector work compared to men, we would expect to see that the difference between men's and women's reservation wages should be largest in the public sector as a reflection of women's eagerness to work there (or, equivalently, their disinterest in working in the other sectors). In fact, we find that women are on average willing to work for approximately 22 percent less than men within each sector[71].

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[70] The wage gap has evolved since 1998 in two different directions. If we decompose the wage gap using only the variation in human capital, we find a 15% wage gap in 1998, 3 percentage points higher than the current wage gap. However, in 1998 that wage gap was cut in half when accounting for employment characteristics (sector, occupation, and industry). This suggests that women in the recent past did experience substantial exclusion from the high-paying industries and occupations.

[71] This is confirmed with regression analysis (see Annex Table 4.4).
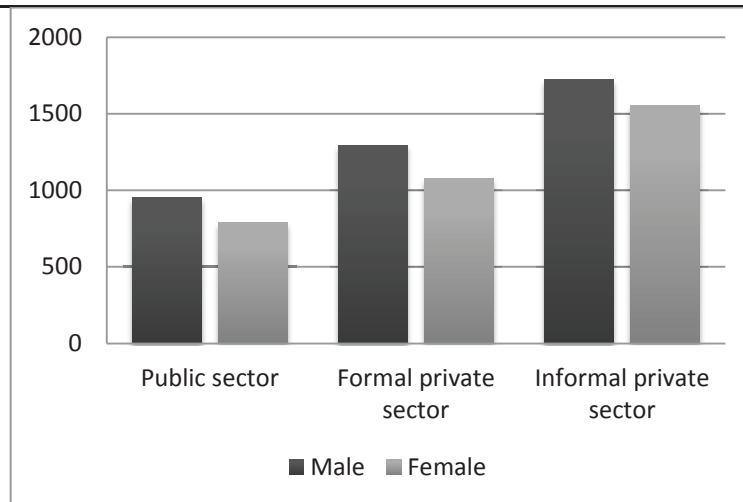
Source: ELMPS 2012.

If women are generally willing to accept wages 22 percent less than men, but are being offered 40 percent lower wages in the private sector as seen earlier, this may at least partly explain women's absence from the formal private sector. We explore this possibility by comparing the reservation wages of unemployed women with the average monthly wages of other women with their characteristics (age, education, and region) working in each sector and with the average monthly wages of men with their characteristics working in each sector (see Box 4.1 for more detailed methodology). We find that only 25% of unemployed women would be willing to accept a formal private sector job at the prevailing wage for women with her characteristics, but 61% would accept a job in the same sector at the average wage earned by a man with her characteristics. The acceptance rates for public sector job offers increase to 50% at the prevailing wages of similar women and to 71 percent at the prevailing wages of similar men.[72] In the informal private sector, only 9% would accept the prevailing female wage, while 33% would accept the prevailing male wage. This analysis suggests that the gender wage gap is, in and of itself, a powerful disincentive for women to work, especially in the formal private sector.

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[72] It should be noted that unemployed men were also likely to reject job offers at the prevailing wages: 50% would reject a public sector job, 46% would reject a formal private job, and 19% would reject an informal private job.

For each unemployed woman, we construct six "synthetic wage offers", one for both genders in each of the three relevant labor market sectors (public, formal private, and informal private). These synthetic offers are computed by taking the coefficients from sector-specific wage decompositions and applying them to each woman's characteristics (education, age, and location).

We then compare the woman's reported reservation wage in each sector to the corresponding "male" and "female" synthetic wage offers; if the synthetic wage offer exceeds the reported reservation wage we report that the woman would be willing to accept that synthetic wage offer. Since there is a gender wage gap as we have shown before, the "male" wage offers will generally be higher than the "female" offers.

The key question is what proportion of unemployed women would accept the "male" wage offer but reject the "female" wage offer in each sector. Those women are remaining unemployed specifically because of the gender wage gap: if they were offered the wages of a man with their characteristics, they would accept, but they would prefer to remain unemployed rather than work at the (lower) wage being offered to woman with their characteristics.

Limited mobility and fewer connections further inhibit economic participation

In addition to the pecuniary barriers to employment, women also face non-pecuniary barriers. In determining women's participation outside the home, certain aspects of the letter, interpretation, and implementation of the law are particularly salient. Some laws directly affect and limit women's agency within their households. Guardianship laws in many countries also restrict women's mobility and occupational choices. These laws require a woman to obtain permission from her husband or a male relative to obtain a passport, travel outside the country, apply for a job, and get married. Egypt's most recent constitution appears to have safeguarded some of the gains in women's rights. In Egypt, the legal minimum age of marriage is 18 years old for men and women. However, a married woman loses her right to alimony, if she leaves the marital house without her husband's permission, unless it is legally permitted, allowed for customs, or for urgent matters (Personal Status Law of 1920). A married woman also loses her alimony for pursing a legitimate profession without the permission of the husband, if she is deemed to have abused the right to work or the work is contrary to the interest of the family, and if the husband objected to her work. In Egypt, an unmarried woman over the age of 18 does not need permission to apply for a passport, but a married woman has to provide additional information and present additional documents than a married man. The application form to request a passport includes special fields on the marital status to be completed by women only. Furthermore, she is required to present official documents to prove her civil status, while married men do not have to present such documents. These laws can make work and travel more difficult for women than for men, and thereby constitute a non-pecuniary barrier to women's full participation in economic life.

A possibly related set of constraints have to do with bridging the physical and social distance to jobs. As highlighted in Assaad and Arnatz (2005) as well as in the 2010 Egypt Gender Assessment, women appear to find it more difficult to commute long distances than do men. This constraint could be due to a number of different factors. Women may have greater concerns about safety while commuting than men; as discussed in the 2010 Gender Report, the 2009 Survey of Youth Population in Egypt shows that a substantial

fraction of young Egyptian women report facing risks of sexual harassment and other crimes such as theft, with nearly a third of young women (aged 15-29) reporting that they face the risk of sexual harassment on the street. They are also significantly more likely to report other risks like theft, crowding and pushing on their commute. In addition, women may have additional domestic responsibilities that make it difficult for them to be away from home for prolonged periods during the day, and there may be social norms in place that restrict women's movement.

One reason women tend to be employed in the public sector is that those jobs are on average located closer to their homes and thus require shorter commutes. The employment module of the ELMPS asks workers the length (in minutes) of a one-way commute from their home to their workplace. We see women's preference for shorter commutes reflected in how commute times vary with gender across sectors (Table 4-3). We see that women's commute times are on average more than 25% shorter than men's. If women had an inherent preference for public sector jobs and these jobs happened to be located in closer proximity to their homes, we would expect to see that gender variations in commute times would occur between labor market sectors rather than within them. That is, women and men who work in the public sector should have equal commute times, and the overall variation in commute times should be due to more women working in (nearby) public sector jobs than men. However, this does not appear to be the case, as in the non-farm sectors women report 25-35% shorter commute times compared to men[73].

TABLE 4-3: AVERAGE TIME TO WORK, MINUTES ONE-WAY

	Men	Women
Formal private	41.5	30.5
Public	36.3	23.8
Informal private	28.2	19.4
Farm	19.0	19.5
OVERALL	31.5	23.1
Source: ELMPS 2012.		

Women's exclusion from high-quality private sector jobs is strongly related to the higher effective cost of commuting they face. As discussed in Chapter 3, formal private sector jobs in Egypt are overwhelmingly concentrated in metropolitan areas and commuting to these jobs is very common. The fact that women are unwilling or unable to commute as far as men means that only women who live very close to metropolitan areas will be able to work at formal private sector jobs. Thus a much larger number of women will be excluded from formal private sector employment, compared to men who can commute from further away. Indeed, we see that 16 percent of female labor force participants who live in metropolitan Egypt work in the formal private sector, compared to less than 4% of those who live in any other region. This is even more striking when we consider how the formal private sector employment rate varies with distance from metropolitan Egypt for men and women (Figure 4.11). Between 0 and 30km, the formal private employment rate is flat for both genders, and is actually reasonably high for women at around 16 percent. Near the 30km mark, the rate drops suddenly for both genders, but the drop is much more dramatic for women, and essentially no women who live more than 50km from the center of a metropolitan work in the formal private sector.

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[73] These results are qualitatively unchanged in multivariate regressions that control for personal and job characteristics (Annex Table 4.5).
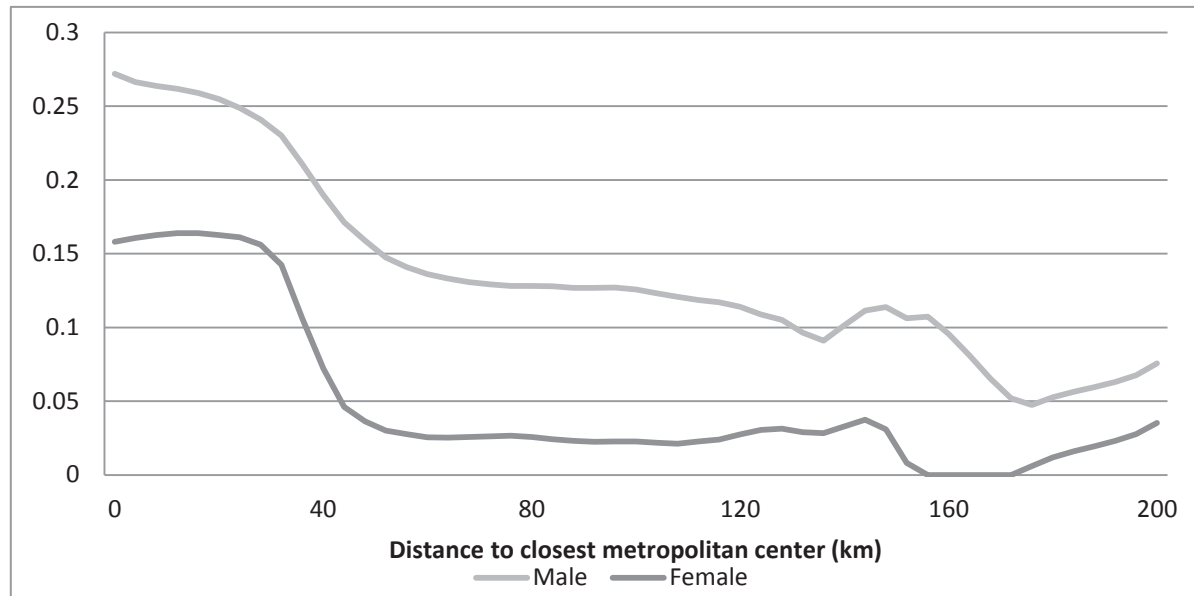
Source: ELMPS 2012.

Taken together, these results show that spatial mobility is a very large constraint on women's access to employment, and this is another explanation for their absence from the formal private sector. This suggests that policies that enhance women's ability to access jobs further from their homes could be an effective way of increasing women's participation in the labor force and their presence in the formal private sector, as also discussed in Asaad and Arnatz (2005). However, because there may be multiple constraints on women's spatial mobility – social norms, safety concerns, and the incompatibility of long commutes with women's domestic responsibilities – policy-makers should be careful to ensure that they are addressing the proper constraint. Improvements in safety will not increase women's representation in the private sector if the fundamental problem is that long commutes create inflexible work schedules that are unappealing to women.

Women may also face barriers to labor market entry because they lack the connections necessary to obtain high-quality employment. Unemployed women in 2012 are much less likely than men to report using contacts to search for jobs. Only 34% of women report asking friends and family for help compared to 54% of men. These contacts are also apparently of less use for acquiring high-quality jobs, because men employed in the formal private sector were more likely to report that they received their current job through contacts (48 percent) than women employed in that sector (28 percent). However, the opposite is true for informal private sector workers (46 percent for men and 54 percent for women). This suggests that women lack the valuable connections that would allow them to find jobs in the formal private sector.

C. Motherhood and work is a difficult act to balance

The compatibility between participating in the labor force and fulfilling family responsibilities play a very important role in women's labor market decisions. In this section, we investigate the relationship between fertility, marriage, and labor market decisions. As noted in the 2010 gender report, the compatibility between participating in the labor force and fulfilling family responsibilities play a very important role in women's labor market decisions. We can exploit the ELMPS panel data to see the labor market participation decisions of a particular woman in 2006 and 2012, allowing us to compare women who got married between 2006 and 2012 to those who did not. If women who married between 2006 and 2012 are more likely to exit the labor market, or less likely to enter, this supports the notion that married life and its accompanying responsibilities is at least somewhat incompatible with labor market participation.

There appears to be tension between married life and labor market participation for women, as marriage is strongly associated with labor market exit, but this incompatibility seems to be declining over time. We use the panel component of the ELMPS to track how women's labor force participation is impacted by marriage, by comparing the change in labor force status of women who were not married in 1998, but became married in 2006, to women who did not change in status between the two panel rounds (either because they were already married in 1998, or because they were unmarried in both 1998 and 2006)[74]. We then perform the same calculation for women who married between the 2006 and 2012 panel years. We find that marriage is strongly associated with labor market exit in both years. Accounting for differences in age, education, location, and prior sector of work, we find that between 1998 and 2006 women who got married were 16-17 percentage points less likely to be participating in the labor force[75] as compared to those women who did not get married (ANNEX TABLE 4.6, column 4-6). However, this effect does seem to be declining over time; the analogous regression results for women that were married between the 2006 and 2012 rounds found that they were 9-11 percentage points less likely to be participating in the labor force (ANNEX TABLE 4.6 column 1-3), noticeably smaller than the 1998-2006 estimate[76].

Today, the public sector does not appear to be inherently more compatible with married life than the formal private sector. We can examine the compatibility of married life with different sectors of work using a similar specification as before, but including interactions between marriage and initial labor force status and concentrating on those coefficients; the results are reported in Annex Table 4.7. Between 2006 and 2012, we find little difference in exit rate between the two formal sectors. However, women who were initially in the informal private sector *were* substantially more likely to exit the labor market upon marriage than those who were formally employed, and were indeed the most likely to leave the labor force upon

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[74] Strictly speaking, we look at changes in "ever-married" status rather than marital status, as it would seem illogical to force movements from "married" to "unmarried" (because of widowhood or divorce) to have the opposite impact as movements from "unmarried" to "married" as these are very different life events. We also restrict attention to women who were initially aged 15-49.

[75] Our estimates slightly different from the 2010 WB report because we restrict our attentions to women initially aged 15-49 (to avoid issues of mandatory public sector retirement) and as noted before we look at changes in "ever-married" status rather than "married" status.

[76] It is possible that this is because there was an 8-year lag between the 1998 and 2006 survey rounds and a smaller 6-year lag between the 2006 and 2012 rounds. However this would assume that women are much more likely to leave the labor force between their 6th and 8th years of marriage rather than between their 1st and 6th years of marriage, and it seems more likely that the converse is true, which would cause us to be understating the difference between the 1998-2006 results and the 2006-2012 results.

marriage overall. We therefore find no evidence that formal private sector jobs are inherently incompatible with married life, or in any case, are as compatible with public sector work. The fact that informality has become the key factor for women dropping out of the labor force may be related to the reduced rate of mobility between informal and formal jobs (as we show later in the report, see Chapter 6).

While marriage and fertility clearly have an effect on labor market outcomes, labor market opportunities may also have an impact on marriage and fertility decisions. Since women face trade-offs between marriage or fertility and labor force participation, they may delay marriage and delay or decrease fertility when they have better access to high-quality jobs. This link between labor market opportunities and fertility is a common element in economic explanations of the demographic transition (Galor and Weil 1996). There is also empirical evidence of this response from two very different contexts: Jensen (2012) shows that young Indian women in villages targeted by business process outsourcing recruiters were less likely to get married or give birth, and Schultz (1985) documents similar effects when examining gender wage fluctuations in late 19th century Sweden. Given the Egypt's recent demographic and labor market history, a link between the two is quite plausible.

It is likely that the declining labor market opportunities for young women is partially responsible for the rebound in fertility. We consider teen fertility (births before age 20 per 100 women) as it closely correlated with total fertility and allows us to consider the birth rate on a cohort-by-cohort basis. After a long-term decline from 42 teen births per 100 women in the 1965-1969 cohort to 24 teen births per 100 women among the 1975-1979 cohort, teen fertility has recently risen back to 28 teen births per 100 women for the 1985-1989 cohort. The change in fertility is all the more notable because it comes at a time of sharply rising educational attainment for women, and unsurprisingly, education is a very strong, negative predictor of fertility.[77] If we use regression analysis to control for education and region, the fall and subsequent rise in teen fertility becomes even sharper[78] (Figure 4.12), and it is possible to statistically reject the possibility that fertility rates were the same for the 1975-1979 and the 1985-1989 cohort, but not possible to reject the possibility that fertility rates have actually risen all the way back to 1965-1969 levels.

We find strong evidence for the link between labor market opportunities and fertility by examining the association between a woman's fertility decisions and her proximity to the formal private sector jobs available in metropolitan Egypt. As we have already seen, only women living within 40km of a metropolitan center have access to formal private sector employment. These women therefore had another source of high quality employment to them other than the public sector, which means that their labor market opportunities should have declined less after the employment guarantee was suspended. If the increases in fertility we have observed are related to declining labor market opportunities for young women, women within 40km of metropolitan Egypt should have had fertility rates lower than those outside that 40km radius. Figure 4.13 shows this very clearly: the average number of children that women born between 1980-1984 (with no access to guaranteed employment) had increases very sharply over the 30-60km range, almost exactly in the same range in which women's formal private sector employment sharply declines. But for the women born between 1962-1964, who had much better access to public sector employment, we see no such relationship between fertility and distance to metropolitan Egypt.

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[77] As noted in Heckman and Walker (1990), "The only strong empirical relationship concerning completed fertility is a negative association between mother's education and children ever born."

[78] Teen fertility is set based on results for illiterate women in metropolitan Egypt.

FIGURE 4.12: TEEN FERTILITY BY BIRTH COHORT NET OF CHANGES IN EDUCATIONAL ATTAINMENT
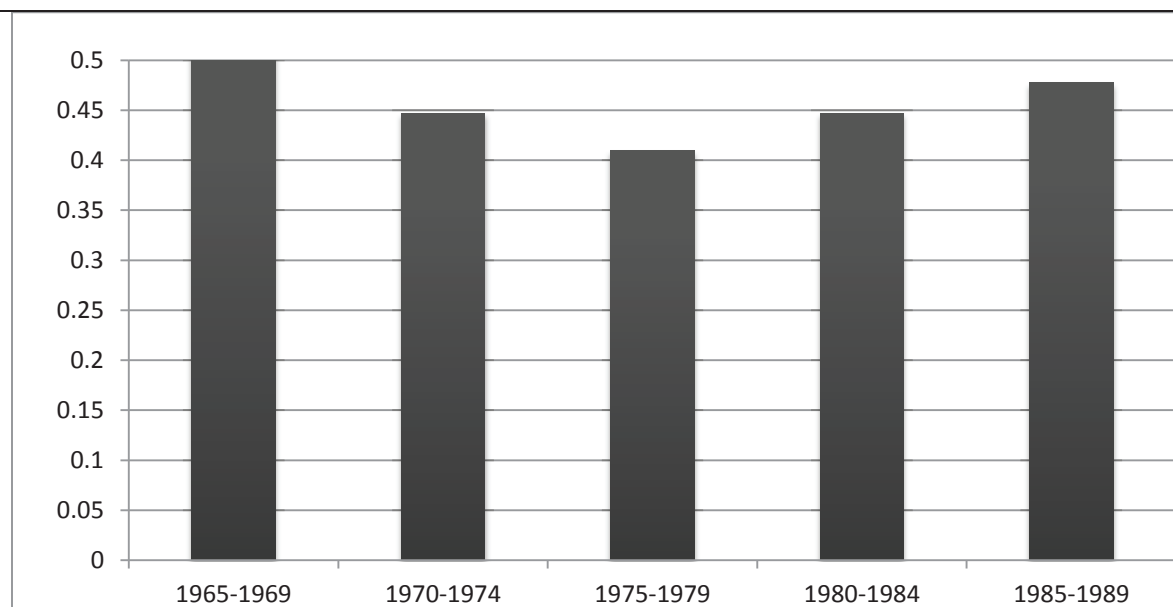
Source: ELMPS 2012.

FIGURE 4.13: FERTILITY BEFORE AGE 25 BY DISTANCE FROM NEAREST METROPOLITAN CENTER
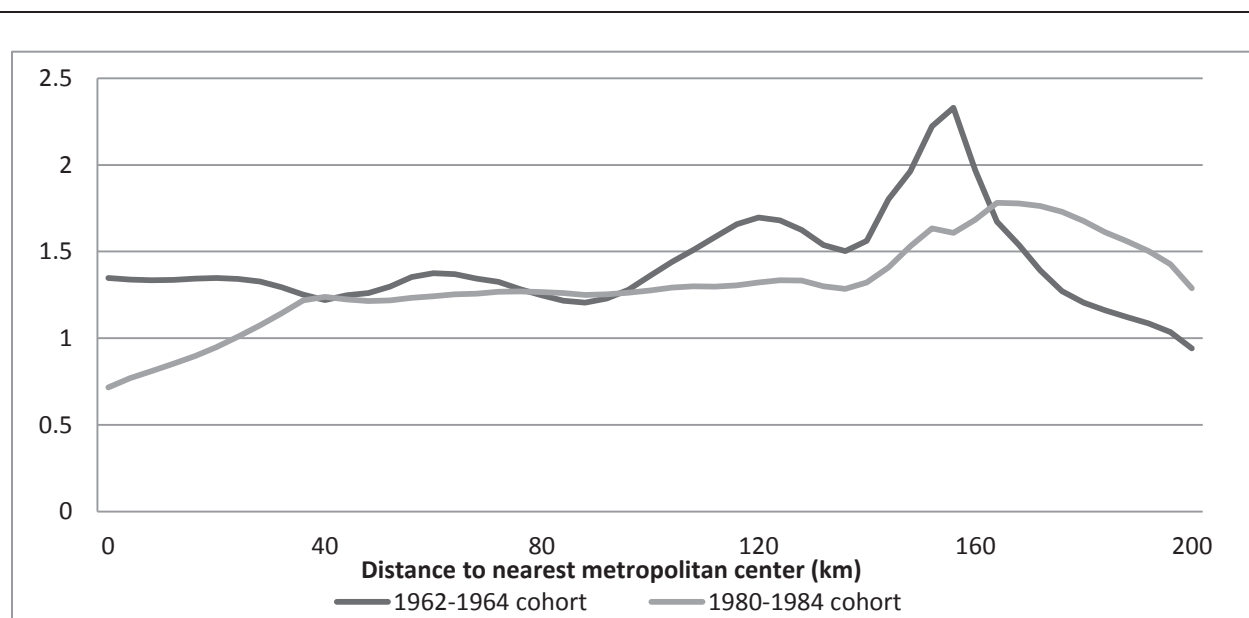
Source: ELMPS 2012.

The analysis in this chapter reveals several important findings for policy intervention. First, we see that the public sector plays an enormous role in women's economic lives, and especially for women seeking high quality employment; the formal private sector is essentially non-existent for women across much of Egypt. However, as public sector employment has leveled off, young educated women are finding few

economic opportunities in the private sector. One of the biggest barriers to women's work in the private sector is a staggering gender wage gap. In the private sector, a woman working in the same job in the same place as an equally educated and experienced man can expect to earn 40% lower hourly wage; in the public sector, the gap is a "mere" 20%. However, there are other non-pecuniary reasons why women are being excluded from the formal private sector: jobs are typically further away, and women seem to prefer shorter commutes. Connections play an extremely important role in finding work in the formal private sector, and women either lack valuable connections or are more reluctant to use them.

Finally, we examine the intersection between the labor market and marriage and fertility. One of the purported advantages of public sector work is that it is more compatible with women's "reproductive role" offering "shorter hours, more access to childcare, and greater tolerance for maternity leave" (Assaad and El-Hamidi, 2009). However, we find little definitive evidence that the rate of exit from formal private work differed from the rate of exit from public work as a result of marriage. From 2006-2012, though, we do find that women in informal employment were much more likely to leave upon marriage than women in either formal sector. Another important channel is that the grim labor market for women may be one fact driving the recent upturn in population growth and fertility. Egypt's long-run fertility decline may have been driven not only by declines in child mortality, but also by the expansion of women's labor market opportunities with the public sector. If work and fertility are difficult to combine, labor market opportunities give women an incentive to delay marriage and decrease or delay fertility. As women have discovered that these labor market opportunities are increasingly limited, this incentive to reduce fertility has become much weaker and this may have contributed to the recent uptick in fertility and possibly the revival of other "traditional" norms[79].

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[79] Binzel and Carvalho (2013) suggest that decreased social mobility among educated youth may be related to the recent Islamic revival in Egypt, which has been most pronounced in the same population.

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Annex 4

ANNEX TABLE 4.1: RETURNS TO EDUCATION BY AGE					
Outcome	Probability of formal employment		Probability of employment		Probability of labor force participation	
Sample	Women age 24-49	Women age 24-64	Women age 24-49	Women age 24-64	Women age 24-49	Women age 24-64
	(1)	(2)	(3)	(4)	(5)	(6)
Literate or elementary	0.030	0.026	-0.007	-0.003	0.019	0.022
	(0.048)	(0.040)	(0.038)	(0.037)	(0.045)	(0.042)
Secondary	0.165***	0.153***	0.037	0.034	0.213***	0.200***
	(0.052)	(0.052)	(0.032)	(0.031)	(0.038)	(0.037)
Post-secondary	0.491***	0.482***	0.298***	0.293***	0.487***	0.466***
	(0.081)	(0.083)	(0.040)	(0.039)	(0.038)	(0.038)
Age 30-34	-0.048	-0.038*	0.001	0.009	0.002	0.013
	(0.032)	(0.023)	(0.037)	(0.036)	(0.043)	(0.041)
Age 35-39	0.040	0.033	0.101**	0.133***	0.127***	0.153***
	(0.057)	(0.050)	(0.041)	(0.043)	(0.047)	(0.047)
Age 40-44	0.039	0.030	0.082*	0.134***	0.097**	0.136***
	(0.048)	(0.040)	(0.043)	(0.041)	(0.048)	(0.043)
Age 45-49	0.013	0.012	0.029	0.088**	0.045	0.088**
	(0.041)	(0.034)	(0.040)	(0.038)	(0.047)	(0.041)
Age 50-54		0.007		0.082**		0.082*
		(0.033)		(0.039)		(0.042)
Age 55-59		-0.028		-0.017		-0.025
		(0.023)		(0.033)		(0.038)
Age 60-64		-0.012		-0.062**		-0.076**
Age 30-34 interacted with education		(0.030)		(0.030)		(0.035)
Literate or elementary	0.138	0.118	0.023	0.022	0.004	0.006
	(0.133)	(0.119)	(0.060)	(0.058)	(0.066)	(0.062)
Secondary	0.128	0.111	0.033	0.040	0.045	0.055
	(0.101)	(0.092)	(0.048)	(0.047)	(0.053)	(0.051)
Post-secondary	0.127	0.106	0.043	0.042	0.006	0.010
Age 35-39 interacted with education	(0.103)	(0.092)	(0.050)	(0.048)	(0.053)	(0.050)
Literate or elementary	-0.039	-0.032	-0.074	-0.067	-0.099*	-0.086
	(0.029)	(0.023)	(0.048)	(0.048)	(0.055)	(0.053)
Secondary	0.052	0.043	0.019	0.014	-0.055	-0.047
	(0.071)	(0.061)	(0.048)	(0.046)	(0.046)	(0.043)
Post-secondary	0.058	0.044	0.058	0.050	-0.042	-0.029
Age 40-44 interacted with education	(0.074)	(0.062)	(0.057)	(0.055)	(0.054)	(0.051)
Literate or elementary	0.135	0.118	-0.006	-0.008	-0.017	-0.015
	(0.117)	(0.107)	(0.062)	(0.059)	(0.070)	(0.066)
Secondary	0.090	0.077	0.055	0.052	-0.042	-0.032
	(0.073)	(0.064)	(0.051)	(0.049)	(0.046)	(0.043)
Post-secondary	0.086	0.074	0.086	0.083	0.005	0.021
Age 45-49 interacted with education	(0.076)	(0.066)	(0.064)	(0.061)	(0.063)	(0.060)
Literate or elementary	0.147	0.127	0.015	0.014	0.016	0.013

	(0.111)	(0.100)	(0.061)	(0.061)	(0.071)	(0.067)
Secondary	0.391***	0.349***	0.344***	0.343***	0.182***	0.183***
	(0.127)	(0.122)	(0.065)	(0.065)	(0.064)	(0.062)
Post-secondary	0.248**	0.209*	0.265***	0.272***	0.128*	0.148**
Age 50-54 interacted with education	(0.119)	(0.107)	(0.078)	(0.077)	(0.076)	(0.074)
Literate or elementary		0.135		-0.041		-0.058
		(0.109)		(0.053)		(0.059)
Secondary		0.542***		0.508***		0.361***
		(0.132)		(0.065)		(0.071)
Post-secondary		0.214*		0.299***		0.178**
Age 55-59 interacted with education		(0.117)		(0.091)		(0.089)
Literate or elementary		0.104		-0.047		-0.073
		(0.118)		(0.055)		(0.060)
Secondary		0.692***		0.617***		0.486***
		(0.145)		(0.065)		(0.078)
Post-secondary		0.424**		0.453***		0.338***
Age 60-64 interacted with education		(0.179)		(0.092)		(0.096)
Literate or elementary		-0.001		-0.055		-0.084
		(0.053)		(0.064)		(0.071)
Secondary		0.015		-0.013		-0.121
		(0.065)		(0.106)		(0.081)
Post-secondary		-0.030		-0.008		-0.097
		(0.022)		(0.099)		(0.084)
Urban Lower	0.022*	0.023**	0.051**	0.068***	0.161***	0.154***
	(0.012)	(0.010)	(0.022)	(0.019)	(0.025)	(0.021)
Urban Upper	0.053***	0.045***	0.088***	0.099***	0.143***	0.144***
	(0.013)	(0.010)	(0.021)	(0.019)	(0.023)	(0.020)
Rural Lower	0.026***	0.024***	0.096***	0.112***	0.185***	0.184***
	(0.009)	(0.007)	(0.017)	(0.015)	(0.019)	(0.017)
Rural Upper	0.019	0.012	0.075***	0.095***	0.107***	0.125***
	(0.012)	(0.009)	(0.020)	(0.018)	(0.022)	(0.019)
Currently Married	-0.053***	-0.060***	-0.167***	-0.159***	-0.279***	-0.237***
	(0.017)	(0.012)	(0.029)	(0.022)	(0.030)	(0.023)
Widowed/divorced	-0.001	-0.019**	0.007	-0.048**	-0.069**	-0.101***
	(0.018)	(0.009)	(0.032)	(0.021)	(0.031)	(0.021)
Has child age 0-6	-0.013		-0.033**		-0.028*	
	(0.008)		(0.015)		(0.016)	
Has child age 6-18	-0.011		0.026*		0.054***	
	(0.008)		(0.014)		(0.015)	
Has child age 18+	-0.013		0.022		0.010	
	(0.012)		(0.022)		(0.025)	
Observations	7,811	10,400	7,818	10,407	7,818	10,407
Pseudo R-squared	0.310	0.376	0.123	0.152	0.144	0.171
Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$						
Source: ELMPS 2012.						

ANNEX TABLE 4.2: WAGE DECOMPOSITIONS, 2012									
Outcome	Log hourly wages								
Sample (wage-earners ony)	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Sector	All		Formal private		Public		Informal		All	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Experience	0.028***	0.048***	0.028***	0.082***	0.021***	0.038***	0.020***	0.016	0.022***	0.036***
	(0.003)	(0.006)	(0.009)	(0.027)	(0.005)	(0.007)	(0.004)	(0.016)	(0.003)	(0.006)
Experience squared	-0.000***	-0.001***	-0.000*	-0.002*	-0.000	-0.000*	-0.000***	-0.000	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Literate or elementary	0.058**	0.301**	0.076	-0.027	0.226***	0.454*	0.014	0.240	0.029	0.352***
	(0.027)	(0.121)	(0.102)	(0.261)	(0.070)	(0.224)	(0.032)	(0.196)	(0.027)	(0.131)
Secondary	0.244***	0.476***	0.250*	0.364	0.616***	0.752***	0.083***	-0.181	0.147***	0.451***
	(0.026)	(0.093)	(0.101)	(0.230)	(0.066)	(0.204)	(0.031)	(0.163)	(0.027)	(0.140)
Post-secondary	0.586***	0.794***	0.602***	0.637***	0.945***	1.013***	0.186***	0.072	0.289***	0.652***
	(0.031)	(0.093)	(0.104)	(0.230)	(0.069)	(0.200)	(0.052)	(0.187)	(0.038)	(0.144)
Urban Lower	-0.136***	-0.209***	-0.178**	0.113	-0.160***	-0.282***	-0.059	-0.066	-0.111***	-0.184***
	(0.032)	(0.055)	(0.081)	(0.226)	(0.052)	(0.062)	(0.042)	(0.164)	(0.030)	(0.055)
Urban Upper	-0.134***	-0.169***	-0.160*	-0.154	-0.214***	-0.220***	-0.020	-0.048	-0.113***	-0.177***
	(0.032)	(0.052)	(0.093)	(0.220)	(0.048)	(0.059)	(0.043)	(0.255)	(0.030)	(0.053)
Rural Lower	-0.218***	-0.212***	-0.338***	-0.509***	-0.302***	-0.196***	0.060*	-0.122	-0.193***	-0.214***
	(0.026)	(0.051)	(0.060)	(0.160)	(0.041)	(0.058)	(0.035)	(0.153)	(0.025)	(0.050)
Rural Upper	-0.083***	-0.141*	-0.203**	-0.521**	-0.268***	-0.209***	0.096***	-0.025	-0.076***	-0.201***
	(0.027)	(0.072)	(0.094)	(0.240)	(0.046)	(0.080)	(0.035)	(0.229)	(0.027)	(0.072)
Sector dummies	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
Industry dummies	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
Occupation dummies	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
Constant	1.080***	0.546***	1.188***	0.575*	0.887***	0.463*	1.132***	0.802***	1.704***	1.624***
	(0.037)	(0.104)	(0.118)	(0.260)	(0.083)	(0.205)	(0.052)	(0.196)	(0.140)	(0.187)

Observations	8,127	1,735	1,255	160	2,702	1,341	4,148	227	8,105	1,728
R-squared	0.131	0.275	0.125	0.351	0.195	0.231	0.032	0.064	0.208	0.347

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: ELMPS 2012.

ANNEX TABLE 4.3: WAGE DECOMPOSITIONS, 1998				
Outcome	Log Hourly wages			
Sample (wage earners only)	Men	Women	Men	Women
	(1)	(2)	(3)	(4)
Experience	0.036***	0.063***	0.038***	0.060***
	(0.003)	(0.007)	(0.004)	(0.007)
Experience squared	-0.000***	-0.001***	-0.000***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Literate or elementary	0.056	0.135	0.089**	0.034
	(0.037)	(0.159)	(0.037)	(0.176)
Secondary	0.236***	0.350***	0.261***	0.154
	(0.037)	(0.113)	(0.044)	(0.168)
Post-secondary	0.557***	0.733***	0.558***	0.358**
	(0.039)	(0.112)	(0.058)	(0.175)
Urban Lower	-0.154***	-0.107**	-0.124***	-0.038
	(0.029)	(0.045)	(0.029)	(0.045)
Urban Upper	-0.186***	-0.172***	-0.141***	-0.117***
	(0.029)	(0.043)	(0.029)	(0.042)
Rural Lower	-0.215***	-0.278***	-0.157***	-0.196***
	(0.031)	(0.074)	(0.032)	(0.074)
Rural Upper	-0.281***	-0.254***	-0.244***	-0.253***
	(0.033)	(0.078)	(0.034)	(0.075)
Sector dummies	NO	NO	YES	YES
Industry dummies	NO	NO	YES	YES
Occupation dummies	NO	NO	YES	YES
Constant	-0.244***	-0.799***	0.034	-0.461
	(0.049)	(0.115)	(0.119)	(0.353)
Observations	3,582	1,005	3,565	1,003
R-squared	0.230	0.466	0.315	0.531
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1				
Source: ELMPS 1998.				

	ANNEX TABLE 4.4: RESERVATION WAGE REGRESSION		
Outcome	Log reservation wage for public sector	Log reservation wage for formal private sector	Log reservation wage for informal private sector
Sample	All unemployed	All unemployed	All unemployed
	(1)	(2)	(3)
Female	-0.215***	-0.240***	-0.282***
	(0.043)	(0.040)	(0.060)
Literate	0.208*	0.208	0.135
	(0.115)	(0.133)	(0.168)
Elementary	0.325***	0.193**	0.222*
	(0.106)	(0.084)	(0.128)
Secondary	0.371***	0.335***	0.519***
	(0.078)	(0.060)	(0.105)
Post-secondary	0.509***	0.507***	0.631***
	(0.085)	(0.068)	(0.112)
Youth	0.034	-0.092	-0.000
	(0.073)	(0.075)	(0.154)
Young Adult	0.104	-0.039	0.004
	(0.076)	(0.078)	(0.155)
Early Prime	0.077	-0.057	-0.056
	(0.077)	(0.081)	(0.155)
Late Prime	0.389***	0.098	0.130
	(0.150)	(0.118)	(0.195)
Greying	-0.049	-0.321**	-0.560**
	(0.141)	(0.148)	(0.219)
Urban Lower	-0.160***	-0.167***	-0.212***
	(0.056)	(0.055)	(0.075)
Urban Upper	-0.350***	-0.426***	-0.339***
	(0.060)	(0.063)	(0.079)
Rural Lower	-0.243***	-0.152***	-0.256***
	(0.048)	(0.046)	(0.064)
Rural Upper	-0.290***	-0.345***	-0.222**
	(0.060)	(0.058)	(0.096)
Currently Married	-0.014	-0.020	0.094
	(0.045)	(0.043)	(0.065)
Widowed/divorced	-0.149	-0.102	-0.059
	(0.158)	(0.137)	(0.176)
Constant	6.376***	6.871***	6.836***
	(0.098)	(0.086)	(0.159)
Observations	1,533	1,530	1,521
R-squared	0.117	0.135	0.074
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1			
Source: ELMPS 2012.			

ANNEX TABLE 4.5: DISTANCE REGRESSIONS			
Outcome	Logged distance from job (one-way, in minutes)		
Sample	Employed age 15-64		
	(1)	(2)	(3)
Female	-0.245***	-0.188***	-0.128
	(0.025)	(0.027)	(0.087)
Sector: public		0.106**	0.123***
		(0.042)	(0.046)
Sector: informal private		-0.358***	-0.344***
		(0.036)	(0.038)
Sector: farm		-0.515***	-0.544***
		(0.052)	(0.054)
Female interacted with:			
Public			-0.103
			(0.091)
Informal private			-0.122
			(0.104)
Farm			0.132
			(0.101)
Literate	-0.050	-0.103**	-0.098*
	(0.054)	(0.051)	(0.051)
Elementary	0.076**	0.041	0.044
	(0.034)	(0.033)	(0.033)
Secondary	0.126***	0.034	0.039
	(0.028)	(0.029)	(0.029)
Post-secondary	0.226***	0.161***	0.166***
	(0.031)	(0.040)	(0.040)
Youth	0.218***	0.180***	0.177***
	(0.056)	(0.052)	(0.052)
Young Adult	0.273***	0.226***	0.224***
	(0.055)	(0.051)	(0.051)
Early Prime	0.197***	0.134***	0.131**
	(0.055)	(0.051)	(0.051)
Late Prime	0.173***	0.090	0.088
	(0.059)	(0.056)	(0.056)
Greying	-0.109	-0.053	-0.045
	(0.080)	(0.078)	(0.078)
Urban Lower	-0.327***	-0.239***	-0.238***
	(0.033)	(0.032)	(0.032)
Urban Upper	-0.266***	-0.173***	-0.173***
	(0.031)	(0.030)	(0.030)
Rural Lower	-0.091***	-0.019	-0.020
	(0.029)	(0.029)	(0.029)
Rural Upper	-0.090***	-0.042	-0.043
	(0.032)	(0.032)	(0.032)
Currently Married	0.003	-0.012	-0.013
	(0.031)	(0.030)	(0.030)

Widowed/divorced	0.027	0.008	0.014
	(0.066)	(0.064)	(0.065)
Occupation dummies	NO	YES	YES
Industry dummies	NO	YES	YES
Constant	2.821***	2.826***	2.828***
	(0.055)	(0.181)	(0.182)
Observations	13,025	12,982	12,982
R-squared	0.037	0.140	0.142
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1			
Source: ELMPS 2012.			

ANNEX TABLE 4.6: LABOR FORCE EXIT AFTER MARRIAGE						
Outcome	Labor force participation					
Sample	Women aged 15-49 in 2006			Women aged 15-49 in 1998		
Period	2006-2012			1998-2006		
	(1)	(2)	(3)	(4)	(5)	(6)
Marriage	-0.098***	-0.112***	-0.115***	-0.167***	-0.173***	-0.166***
	(0.017)	(0.017)	(0.017)	(0.026)	(0.026)	(0.026)
Post*labor force status dummies	YES	YES	YES	YES	YES	YES
Post*age dummies	YES	YES	YES	YES	YES	YES
Post*education dummies	NO	YES	YES	NO	YES	YES
Post*region dummies	NO	NO	YES	NO	NO	YES
Individual Fixed effects	YES	YES	YES	YES	YES	YES
Observations	15,295	15,289	15,289	8,848	8,836	8,836
R-squared	0.425	0.442	0.446	0.365	0.372	0.387
Number of individuals	7,662	7,659	7,659	4,433	4,427	4,427
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1						
Source: ELMPS 1998, 2006, 2012.						

ANNEX TABLE 4.7: LABOR FORCE EXIT AFTER MARRIAGE BY LABOR MARKET SECTOR						
Outcome	Labor force participation					
Sample	Women aged 15-49 in 2006			Women aged 15-49 in 1998		
Period	2006-2012			1998-2006		
	(1)	(2)	(3)	(4)	(5)	(6)
Marriage	-0.153***	-0.215***	-0.251***	-0.247***	-0.354***	-0.308***
	(0.032)	(0.048)	(0.049)	(0.047)	(0.065)	(0.069)
Marriage interacted with initial labor force status						
Formal private sector	-0.058	-0.112	-0.078	-0.233	-0.425**	-0.418**
	(0.128)	(0.126)	(0.126)	(0.208)	(0.199)	(0.191)
Public sector	0.026	-0.055	-0.035	0.067	-0.108	-0.113
	(0.072)	(0.082)	(0.075)	(0.084)	(0.106)	(0.107)
Informal private sector	-0.229***	-0.249***	-0.217***	0.001	-0.015	-0.031
	(0.062)	(0.064)	(0.066)	(0.110)	(0.106)	(0.109)
Farm sector	0.048	0.071	0.099	-0.329***	-0.305**	-0.344***
	(0.077)	(0.078)	(0.078)	(0.115)	(0.121)	(0.129)
Unemployed	0.120*	0.059	0.093	0.148	0.012	0.007
	(0.065)	(0.070)	(0.070)	(0.091)	(0.096)	(0.094)
Not in labor force (non-student)	0.153***	0.155***	0.188***	0.178***	0.201***	0.205***
	(0.041)	(0.042)	(0.042)	(0.060)	(0.065)	(0.066)
Post*labor force status dummies	YES	YES	YES	YES	YES	YES
Post*age dummies	YES	YES	YES	YES	YES	YES
Married*education dummies	NO	YES	YES	NO	YES	YES
Married*parents education dummies	NO	NO	YES	NO	NO	YES
Individual fixed effects	YES	YES	YES	YES	YES	YES
Observations	15,295	15,289	15,263	8,848	8,836	8,778
R-squared	0.430	0.431	0.434	0.370	0.374	0.378
Number of individuals	7,662	7,659	7,646	4,433	4,427	4,398
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1						
Source: ELMPS 1998, 2006, 2012.						

ANNEX TABLE 4.8: TEEN FERTILITY	
Outcome	Number of children before age 20
Sample	Women age 20-49
	(1)
Birth cohort	
1970-1974	-0.063*
	(0.037)
1975-1979	-0.098***
	(0.033)
1980-1984	-0.062*
	(0.032)
1985-1989	-0.031

	(0.032)
Literate	-0.112**
	(0.054)
Elementary	-0.043
	(0.035)
Secondary	-0.328***
	(0.023)
Post-secondary	-0.476***
	(0.023)
Urban Lower	0.035*
	(0.020)
Urban Upper	0.081***
	(0.021)
Rural Lower	0.049**
	(0.019)
Rural Upper	0.183***
	(0.026)
Constant	0.507***
	(0.038)
Observations	8,806
R-squared	0.138
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1	
Source: ELMPS 2012.	

5. Struggling for Growth: Labor Demand and Job Creation in Egypt

The pace of private sector job creation in Egypt has been inadequate to absorb the growing working age population. Employment is skewed towards small scale activities in low productivity services which are often part of the informal economy. The dominance of small scale activities has increased over time preceding the recent crisis. On the other hand, the share of employment in large establishments is very low relative to regional peers and has declined significantly reflecting stagnation in formal sector job growth. The skewed employment distribution and the existence of few dominant players in several markets are a reflection of stagnant firm dynamics and a lack of private sector competition. Egypt has low rates of entry into the formal economy which limits the pool of firms that could grow and put competitive pressure on the few large firms that do not create sufficient jobs. In fact, existing establishments in Egypt hardly grow over time, revealing a breakdown of the relation between firm age and job growth that exists in more competitive economies. Moreover, we find that capital in the industrial sector is misallocated towards a few large old firms due to their preferential access to energy subsidies and land. Therefore re-allocating capital from large to smaller industrial establishments would raise aggregate productivity. These distortions come at significant costs for labor. Overall, these stagnant firm dynamics are a symptom of an underlying more fundamental cause - the absence of a level playing field.

The analysis presented in the report so far highlights the importance of demand side factors, and in particular, the role of the formal private sector in employment creation, as key factors in explaining the patterns and trends characterizing the Egyptian labor market since 1998. We turn now to examining the nature Egypt's private sector and the determinants of private sector growth and job creation. We start by evaluating whether private sector job creation has indeed been low and, if so, which type of firms did not create sufficient jobs. Therefore, we look in detail at the distribution of employment across different types of firms, analyze how it changed over time, and benchmark the results to other countries. Thereafter, we summarize the evidence on economic dynamics associated with job creation from other countries in order to assess if comparable forces are also at work in Egypt. The analysis isolates characteristics of the Egyptian economy that hold back firm dynamics and private sector job growth. The approach enables us to review specific policies through the lens of these empirical stylized facts in order to identify policy constraints that distort the business environment, and in turn inhibit formal private sector job growth.

The analysis is based primarily on three different data sources, many of which have been comprehensively analyzed for the first time, in conjunction with rich analysis of supply side factors. First, we use establishment census data obtained from the department of statistics in Egypt (CAPMAS). The data cover information on employment and firm characteristics of over two million (non-farm) economic

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establishments in 1996 and 2006. The census covers all economic establishments with a fixed location independent of their size.[80] Second, we use the annual industrial production survey between 2007 and 2011 also obtained from CAPMAS.[81] It includes all establishments with at least 10 employees in manufacturing and mining as well as a representative sample of smaller establishments. The data are in panel format so that we are able to follow individual firms over time. Third, we use the World Bank Enterprise Survey data (WBES) for various years between 2004 and 2011. The WBES is a unique database containing firms' assessments of the implementation of various government policies and regulations.

A. Small scale, low productivity activities that do not grow dominate the private sector

Employment is skewed towards small scale activities in low productivity services which are often part of the informal economy. Figure 5-1 illustrates that 95 percent of all establishments in 2006 employed less than ten workers. These "micro" firms also accounted for 72 percent of total employment in 2006. On the other hand, small and medium size establishments (SMEs) employing between 10 and 100 workers accounted for only 13 percent of total employment while large firms with over 100 employees accounted for 16 percent. At the same time, around 70 percent of employment in 2006 is in the services sector compared to only 29 percent in manufacturing. The services sector, in turn, is dominated by retail trade which accounts for almost 50 percent of employment in services. The average firm size in the retail sector amounts to only 1.9 employees (the owner plus one wage worker). Thus, many micro firms operate in retail trade which is to a large extent part of the informal economy: in ELMPS data, 70 percent of employment in the retail trade sector is informal (Chapter 2).

FIGURE 5-1: SHARE OF EMPLOYMENT BY FIRM SIZE, 1996-2006

Source: Authors calculations based establishment census data in 1996 and 2006 from CAPMAS.

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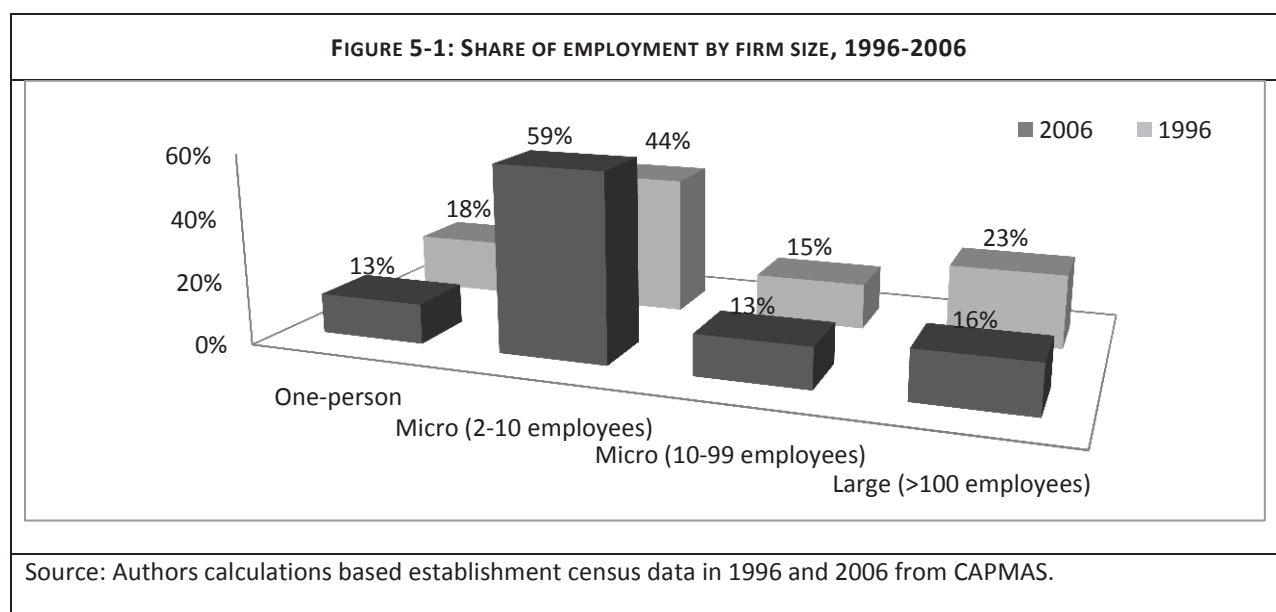
[80] Thus, the data do not cover street vendors. The sampling of the census is linked to the decadal population census.

[81] The analysis is based on a 20% random sample of establishments in 2010 which continuously operated since at least 2007. Thus, while information on exiting firms in 2011 is representative, we do not observe new entrants between 2007 and 2010.

The dominance of small scale activities has increased over time, and the trend towards informality precedes the recent crisis. Figure 5-1 shows that the share of employment in micro establishments has increased from 62 percent in 1996 to 72 percent in 2006. This trend is also reflected in the number of jobs created by the different economic sectors over the period from 1996-2006. Figure 5-2 highlights that net job creation in Egypt was highest in the low productivity retail trade sector which created more than 700,000 new, mostly informal jobs between 1996 and 2006. Likewise, the low productivity and typically informal social & personal service sector generated almost 400,000 new jobs over the same period. These trends are consistent with survey data from the ELMPS showing an increase in the share of Egyptians working in the informal economy: the share of jobs that neither provide social insurance nor a formal labor contract increased from 53 percent in 1998 to 61 percent in 2012. Thus, given the high likelihood that small-scale activities are overwhelmingly informal, the trend of informal employment and employers well precedes the recent crisis.

On the other hand, the share of employment in large establishments declined significantly reflecting stagnation in formal sector job growth. In particular, it declined from 23 to 16 percent between 1996 and 2006 (Figure 5-1). The share of jobs in SMEs, which had already been low in 1996, also further declined over time. These trends are again echoed in net job creation rates among different economic activities. In particular, the share of jobs in manufacturing, which typically provides formal employment, declined from 34 percent to 29 percent between 1996 and 2006.[82] Figure 5-2, illustrates that manufacturing industries such as basic metals, food, transport, or textiles generated some jobs in absolute terms while other industries such as chemicals or machinery actually lost jobs over time. Furthermore, net job creation was negative in some high productivity service sectors such as finance and real estate services. These suggest significant deterioration in the formal private sector.

FIGURE 5-2: JOB CREATION BETWEEN 1996 AND 2006 BY SECTOR

Source: Authors calculations based establishment census data in 1996 and 2006 from CAPMAS.

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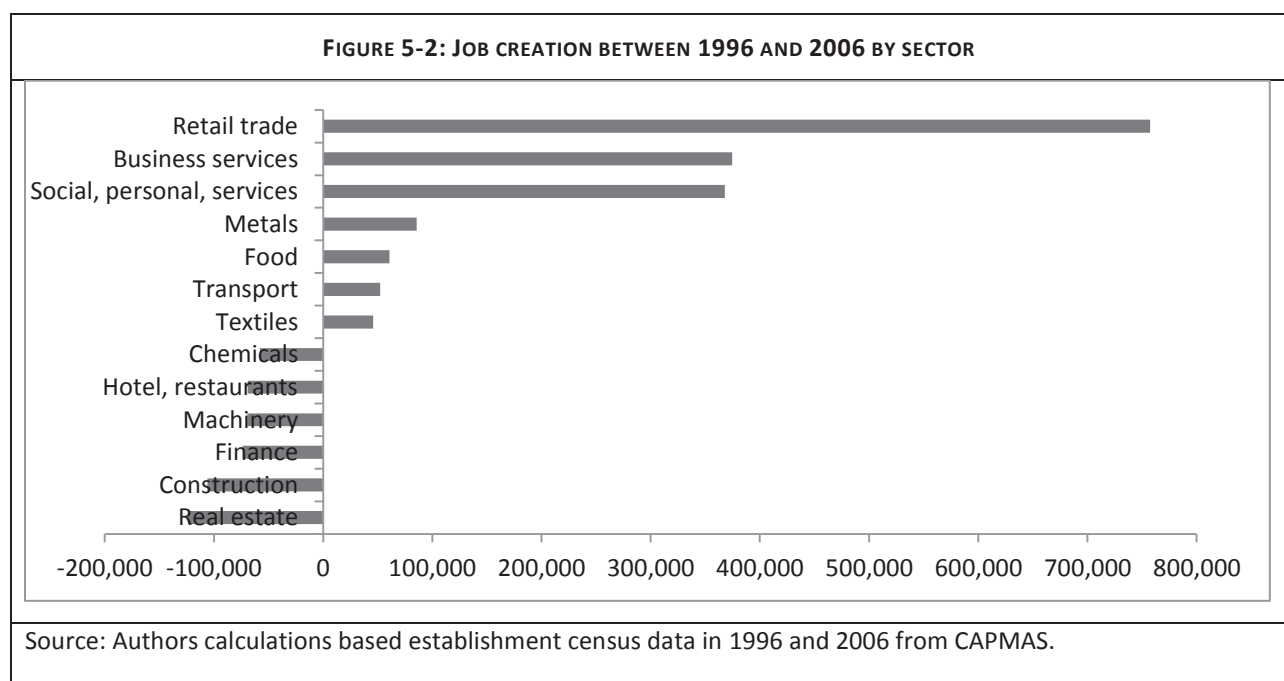
[82] According to the ELMPS, 65 percent of all manufacturing jobs were formal in 2006; i.e., they provided either social insurance or a formal labor contract.

Egypt's share of employment in large establishments is very low relative to regional peers. Figure 5-3 demonstrates a strong bias within the Egyptian private sector towards micro establishments compared to other developing countries in the region. For instance, the share of employment in micro establishments (1-9 employees) is 24 and 29 percent lower in Jordan and Tunisia, respectively, than that in Egypt. In contrast, large establishments in both neighboring countries have about 20 percent higher employment shares.

Egypt's employment distribution reveals a lack of growing younger medium-size or large firms. The high share of jobs in small old establishments is alarming as many of these firms might be forced to exit in a more competitive environment. Employment is concentrated in micro-establishments independent of their age as well as in the few very old and very large establishments (Figure 5-4). Even though some micro firms are very young (0-4 years), a significant share of employment is also concentrated in medium- to old-age micro firms: 20 percent of total jobs in Egypt are in old (>10 years) establishments that employ less than five workers. The concentration of jobs in small old establishments suggests that small firms do not grow over time. Either they remain small on purpose (e.g., to stay under the radar of scrutiny by public officials or large competitors) or they are unproductive and would have been forced to exit in a more competitive environment (up-or-out dynamics).

On the other hand, the several very old and very large firms that exist did not grow organically over time due to their higher productivity but rather were 'born' large in the era of state-led industrialization. The 206 largest establishments (>1,000 employees) are on average twice as old (27 years) as all other establishments. It is important to note that several of these very large establishments have been founded as state owned enterprises (SOEs), some of which were later privatized. For instance, out of the 206 largest establishments with more than 1,000 employees, 131 were founded in the period of state-led industrialization before 1976.

FIGURE 5-3: SHARE EMPLOYMENT BY FIRM SIZE
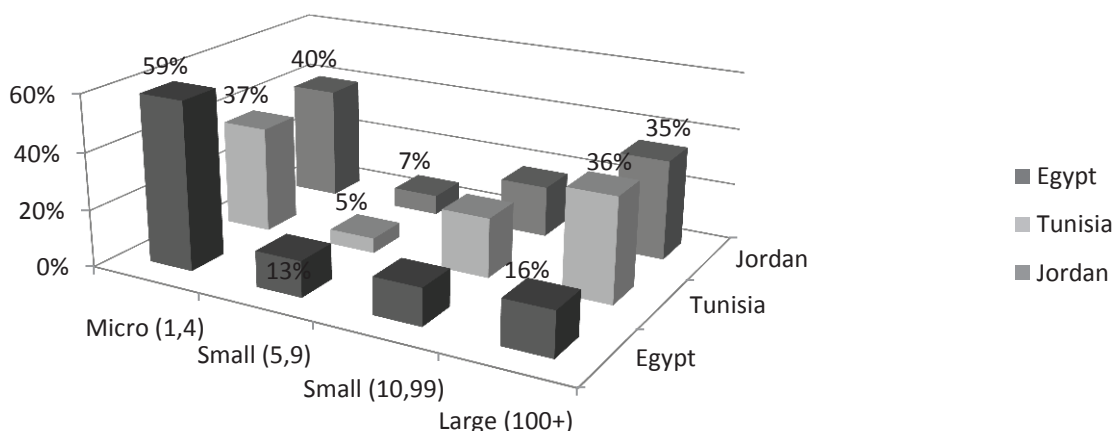
Source: Authors calculations based establishment census data in 2006 from CAPMAS; Jordan and Tunisia: World Bank (2014). Note: The data for Jordan are based on an establishment census in 2006; for Tunisia the figure shows average firm employment between 1999 and 2010.

FIGURE 5-4: EMPLOYMENT DISTRIBUTION BY ESTABLISHMENT SIZE AND AGE
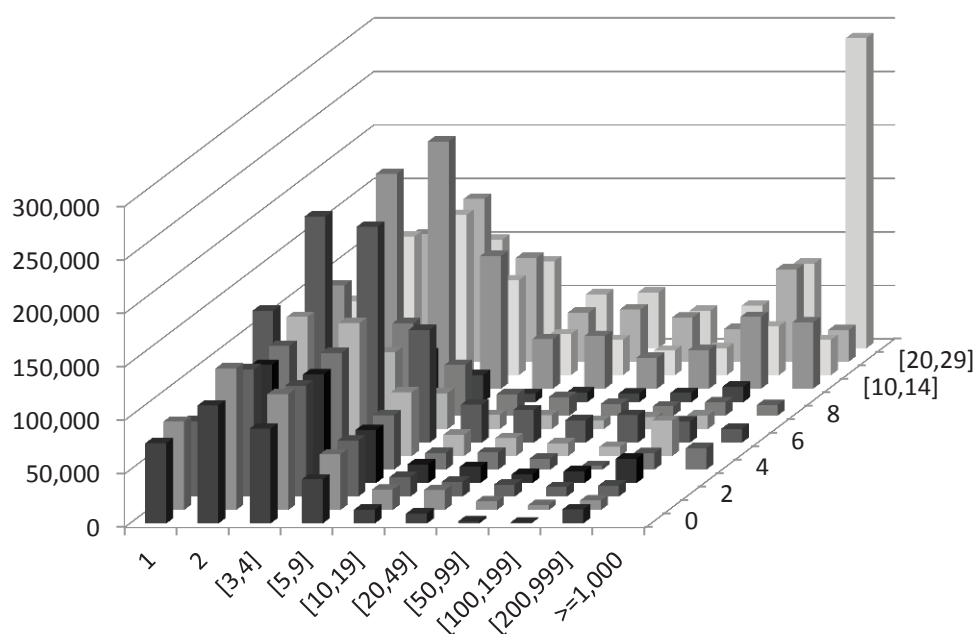
Source: Authors calculations based establishment census data in 2006 from CAPMAS.

The comparison with Turkey exemplifies Egypt's lack of growing younger medium-size or large firms that create jobs and put competitive pressure on the few large incumbents in dynamic emerging economies. Figure 5-5 illustrates the employment distribution by firm size and age categories in Egypt and Turkey. It is evident that in Egypt there are fewer jobs in young or medium-aged establishments that have more than 10 employees. In particular, establishments with more than 10 employees that started their business after 1986 (i.e., less than 20 years old) provide only 17 percent of all jobs in Egypt compared to 47 percent in Turkey. This group of younger growing SMEs or larger firms employs almost half of all workers in Turkey. These were in fact Turkey's engine of job creation in past decades. While the share of employment in large establishments (more than 100 employees) is also 10 percent higher independent of their age, the share of jobs in old micro or small establishments (less than 20 employees) is negligible in Turkey. These patterns suggest that establishments in Egypt stagnate over time so that the majority of the employment remains concentrated in micro establishments. In contrast, in more dynamic emerging economies such as Turkey, growing younger firms impose competitive pressure on the few large incumbents leading to up-or-out dynamics.

FIGURE 5-5: EMPLOYMENT DISTRIBUTION BY ESTABLISHMENT SIZE AND AGE (EGYPT VS. TURKEY)
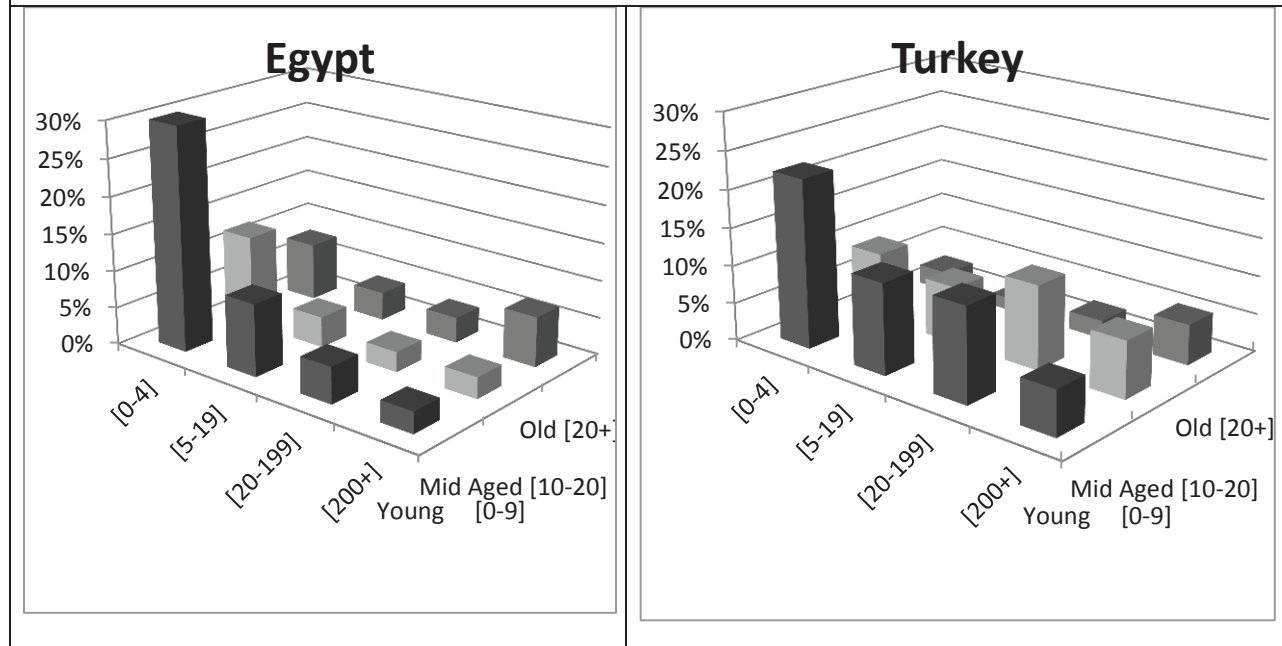
Source: Authors calculations based establishment census data in 2006 from CAPMAS; Turkey: World Bank (2014).
Note: The data in Turkey are also based on an establishment census in 2006.

Overall, the results suggest a trend towards employment in the informal sector in Egypt. Egyptian establishments are also older and more skewed towards small scale activities than their regional counterparts. While employment in service sector micro firms increased, larger firms stagnated. In the following, we study the patterns of job creation in more detail in order to identify characteristics of the Egyptian economy that hold back formal sector job growth. We start by describing the dynamics that lead to job creation in more competitive economies. This serves as a benchmark allowing us to identify characteristics of the Egyptian economy that impede job creation. We then look in more detail at firm productivity in order to uncover potential misallocations of resources, i.e. in capital and labor, among manufacturing and mining firms.

B. Young, growing firms are typically the engine of job creation, but in Egypt, the young firms and small firms age but do not grow

In competitive economies, young firms are the engine of job creation. There is a large and growing literature linking employment growth to firm dynamics. Studies typically find that younger and smaller firms have higher employment growth rates than older and larger firms (e.g., Mansfield, 1962, Hall, 1987, and Hart and Oulton, 1996, Ayyagari et al., 2011). Likewise, Davidsson and Delmar (2006) show that most of the growth of younger and smaller firms is organic, while for larger and older firms, employment growth mostly comes through acquisitions. Haltiwanger et al. (2010) have nuanced these findings showing that net employment growth is associated with firm age and not firm size in the U.S., implying that young firms and startups are the driver of job creation. Rijkers et al. (2013) confirm this finding for Tunisia. However, as young firms tend to be small, we observe a positive correlation also between firm size and net employment growth.

Hsieh and Klenow (2012) corroborate the importance of firm age for job growth showing that what matters for employment and productivity is how firms grow over their life cycle. The authors show that within the first 35 years in operation, U.S. firms increase their number of employees and total factor productivity (TFP) by a factor of 8. In contrast, Mexican firms only double and Indian firms do not increase their employees over the same period (both approximately double their TFP).[83] Again, the study shows the importance of firm age as a factor driving firms' potential to create jobs.

Among the pool of young firms, few fast-growing firms appear to create most new aggregate jobs. A recent stream of the literature linking employment growth to firm dynamics suggest that a small group of fast-growing firms, often referred to as *Gazelles*, are the main driver of aggregate job creation (e.g., Bottazzi and Secchi, 2007). In other words, a handful of firms experience a period of accelerated employment growth while most other firms hardly grow at all. For instance, empirical studies for various developed countries find that 5-10 percent of the firms deliver 50-80 percent of aggregate employment creation (e.g., Acs et al., 2008; Coad and Hoelzl, 2010). These fast-growing firms can be found in all industries and are usually young firms that are more innovative and take more risks (Henrekson and Johansson, 2010; Bars et al., 2006; Goedhuys and Sleuwaegen, 2009 and Box 5.1).

BOX 5.1: INNOVATION AND JOB GROWTH

Most microeconomic studies find a positive relation between innovation and employment creation (van Reenen, 1997; Blanchflower and Burgess, 1998; Piva and Vivarelli, 2004; Coad and Hoelzl, 2010; Vivarelli, 2012). In this regard, it is useful to distinguish between product and process innovation. Product innovation is generally found to increase labor demand and hence firm-level employment growth. Process innovation is associated with productivity growth which might, however, compensate labor. Indeed, the findings for process innovation are less clear-cut and also indicate job destruction in some cases, and especially in the short run (e.g., Harrison et al., 2005; Hall et al., 2008).

Among developing countries, studies suggest that the adoption of foreign technologies increases firms' demand for labor, in particular for skilled labor. Product and process innovation in developing countries take the form of diversification into new products and the adoption of foreign technologies (or organizational structures), respectively. Both processes have been found to increase the demand for labor in developing countries. In particular, foreign technology adoption has been found to increase the demand for skilled labor, referred to as "skill-biased technological change" in the literature (e.g., Berman and Machin, 2004). In fact, Conte and Vivarelli (2010), Hanson and Harrison (1999), and Fuentes and Gilchrist (2005) find that imported skill-biased technological change is an important determinant of the recent increase in the relative demand for skilled labor in developing countries.

Establishments in Egypt hardly grow over time, revealing a breakdown of the relation between firm age and job growth as compared to more competitive economies. Figure 5-6 shows the relation between employment and establishment age across all economic sectors in Egypt and Jordan, both based on

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[83] The fact that older plants in India and Mexico are small may not have a large effect on aggregate outcomes if there are fewer surviving old plants. The authors show, however, that exit rates in India and Mexico are generally not higher than in the U.S.

census data (cross-section) in 2006.[84] The horizontal axis categorizes different age-cohorts whereby the youngest group of establishments started operation between 2002 and 2006 and the oldest before 1966. The vertical axis shows the (weighted) average number of workers for each of the different age groups;[85] it is normalized to one for the youngest group of establishments. Figure 5-6 shows that older establishments in Egypt, on average, hardly employ more workers compared to younger establishments. Within the first 20-25 years in operation, establishments only double their average number of employees relative to the youngest age cohort; job creation even declines among older cohorts.[86] After 40 years or more in operation, establishments hire only 1.6 times more workers, on average, relative to the startup cohort (age 0-4). Given the relatively low exit rates among establishments in Egypt, the results reveal that (surviving) establishments hardly grow over time. In contrast, the results for Jordan show somewhat higher job creation over the life cycle of establishments; after 30-35 years in operation, surviving establishments in Jordan hire three times more workers relative to the startup cohort.

FIGURE 5-6: JOB CREATION OVER ESTABLISHMENTS' LIFE CYCLES: ALL NON-FARM SECTORS
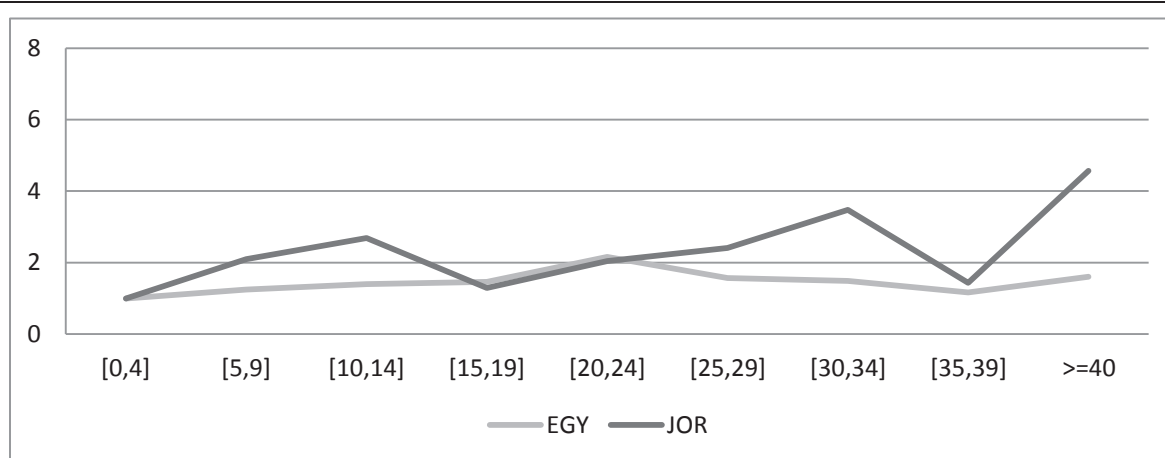
Source: Egypt: authors calculations based on CAPMAS establishment census; Jordan: World Bank (2014) "Jobs or Privileges: Releasing (potential) prosperity in MENA". Note: The figure shows the average number of employees for different age-cohorts across all establishments in 2006 (weighted by employment share of 4-digit sectors). The average number of employees in each age cohort has been normalized by the youngest age category (between 0 and 4 years in operation).

Aggregate employment would increase substantially if manufacturing establishments in Egypt grew over their lifecycle at the same rate as U.S. manufacturing firms. Figure 5-7 shows that, in the U.S., the average manufacturing plant at the age of 35-39 is almost five times larger than the average plant under the age of 5 (Hsieh and Klenow, 2012). In contrast, 35-39 year old manufacturing plants are no larger than new

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[84] The results on firm dynamics for comparator countries in MENA (and Turkey) are taken from World Bank (2014) which includes a detailed comparative analysis of firm dynamics in among MENA countries, Turkey, and other benchmark countries.

[85] We use a weighted average of establishment size across 4-digit sectors, whereby we use the employment share of each industry as weights. Thus, the employment-age relation shows within-industry patterns.

[86] The stagnation in the average number of workers hired among older establishments could, in principle, be explained by a large number of bankruptcies (exits); i.e., establishments grow with age but fewer are in older age cohorts. However, exit rates in Egypt are low by international standards. Among all establishments in 1996, 1,176,210 exited until 2006 corresponding to an annualized exit rate of 5.2 percent (or a survival rate of 35 percent after ten years).

plants in India while they are about twice as large in Mexico.[87] In Egypt, 20-25 years old manufacturing establishments are three times larger than new ones; however, older age cohorts hardly employ additional workers. At the age of 35-39, they are no larger than the average plant under the age of 5. The oldest cohort of establishments founded before 1966 again employs three times as many workers. However, this group of manufacturing establishments had been created during a period of state-led development in heavy industry. Thus, many of these plants were born large since they were founded as state owned enterprises in strategic capital intensive sectors. Even though these firms are now privately owned, their size reflects their initial size when founded by the state rather than organic growth the subsequent 40 years and more of their life cycles.

FIGURE 5-7: JOB CREATION OVER ESTABLISHMENTS' LIFE CYCLES: MANUFACTURING SECTOR
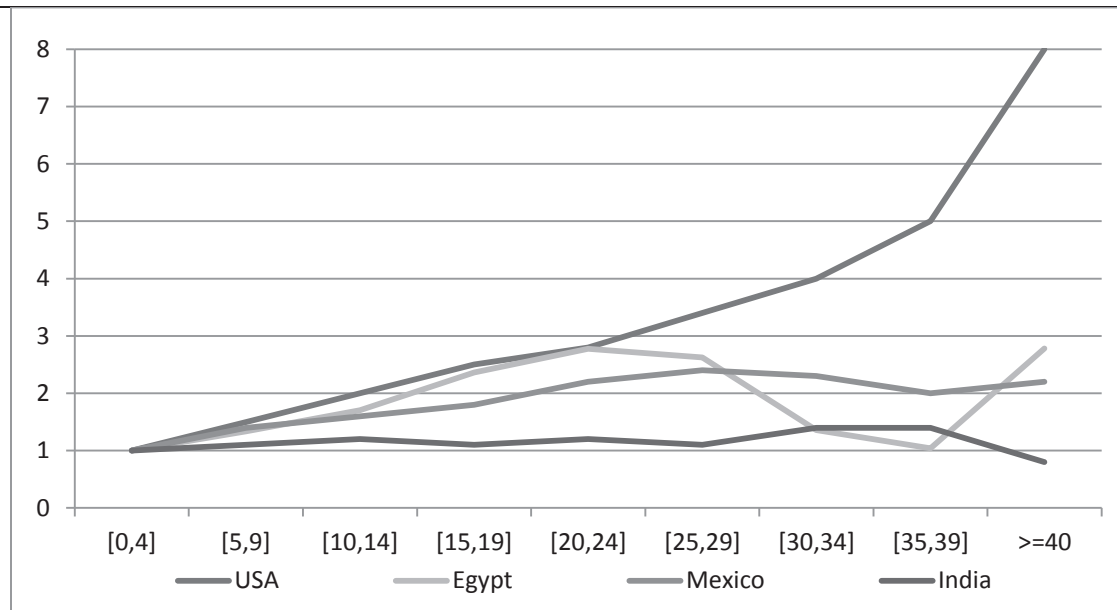
Source: Egypt: authors calculations based on CAPMAS establishment census; other countries from Hsieh and Klenow (2012). Note: The figure shows the average number of employees for different age-cohorts across manufacturing establishments (weighted by employment share of 4-digit sectors). The average number of employees in each age cohort has been normalized by the youngest age category (between 0 and 4 years in operation).

The majority of Egyptian manufacturing establishments is small and hardly grows over time. Table 5-1 presents employment transition matrices for different size categories among manufacturing establishments in Egypt.[88] What spurs job creation is the growth of small firms over time but in the case of Egypt we see that the probability of manufacturing firms that are micro or small to become medium or large after five years is very small. For instance, the probability that an establishment with 6-10 workers in 2007 has grown to employ more than 20 employees in 2011 is only 3.3 percent. The bottom part of Table 5-1 shows the probability that an establishment with 20-49 employees hires more than 50 workers five years

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[87] Hsieh and Klenow (2012) report the employment-age relation by age-cohort among manufacturing firms for the U.S., Mexico, and India weighted by the 4-digit industries, using value added by industry as weights. We do not observe value added in the establishment census in Egypt and use employment by industry as weights.
[88] The data in Egypt also include some mining companies.

later; it is 12 percent in Egypt and Morocco compared to 14 percent in Turkey. The matrix also reveals that larger firms are less likely to exit than smaller firms but regardless of the size exit rates are quite low in Egypt.

TABLE 5-1: PROBABILITY THAT MANUFACTURING ESTABLISHMENTS CHANGE THEIR SIZE AFTER 5 YEARS							
Egypt: 5 Year Employment Transitions							
Size in 2007	**Size in 2011**						
	Exit	[0,5]	[6,10]	[11,20]	[21,50]	[51,100]	>100
[0,5]	**16.7***	**50.0**	16.7	16.7	0.0	0.0	0.0
[6,10]	**9.1***	1.0	**69.1**	17.6	3.3	0.0	0.0
[11,20]	**9.9***	0.0	21.9	**51.5**	15.3	0.7	0.7
[21,50]	**8.1***	0.3	3.2	14.2	**62.3**	10.7	1.3
[51,100]	**8.8***	0.6	1.3	1.9	17.0	**53.5**	17.0
>100	**5.4***	0.0	0.0	0.7	1.7	7.4	**84.7**

*The 20% sample for the Industrial Survey panel only has representative data for firms exiting between 2010/2011 and thus the exit rate here reflects exit in one year and not the whole 5 year period.
Source: Egypt: authors calculations based on industrial production survey from CAPMAS.

FIGURE 5-8: PROBABILITY THAT [20,49] MANUFACTURING FIRMS GROW TO EMPLOY >50 WORKERS OVER A PERIOD OF 5 YEARS
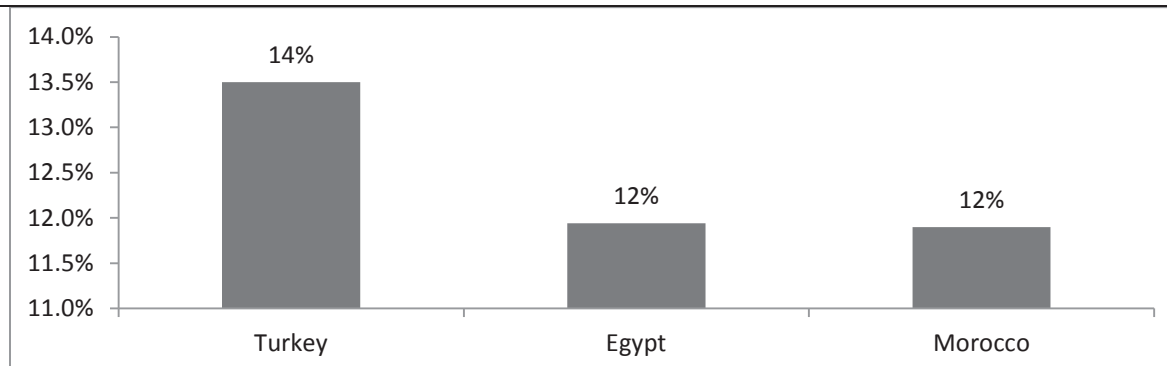
Source: Egypt: authors calculations based on industrial production survey from CAPMAS; Morocco: Sy (2013) and Turkey: World Bank (2014). Note: the 5-year period is 2007-2011 in Egypt; in Morocco, it refers to several periods between 1996 and 2006; in Turkey it refers to the period 2006-2010

The lack of manufacturing firm mobility between firm size categories leaves market shares of large firms uncontested, and severely limits competition. Table 5-1 also shows that establishments in Egypt are much less likely to have changed their size status after five years. For instance, the probability that a large establishment in Egypt remains large is 85 percent. This highlights the stagnation in job growth as well as job destruction among manufacturing firms in Egypt (i.e., in *firm churning*). The absence of mobility between firm size categories is a clear signal of a lack of competition between these firms: smaller firms do not grow leaving market shares of large firms uncontested. As a consequence of this lack of firm dynamics, employment in Egypt is concentrated in numerous micro establishments as well as in very few very old and very large establishments. In contrast to more competitive economies, the distribution of employment in

Egypt is characterized by the lack of younger small and medium size (SME) establishments (with 10-200 employees), which in turn limits competitive pressure on large, old establishments.

Over the period covered by the establishment census, job creation among large firms was negative. The privatization of state owned enterprises (SOEs) undertaken as part of the reform process contributed to the decline in employment among large establishments between 1996 and 2006; which was not (sufficiently) counterbalanced by the growth of formal sector jobs in new young private sector firms as in other transition economies. Figure 5-8 shows the change in number of employees between 1996 and 2006 among all large non-farm economic establishments (with more than 100 employees) working in SOEs and in the private sector. It reveals that the number of workers employed in SOEs declined by 348,000. In particular, 170 SOEs with at least 1,000 employees disappeared during that period. At the same time, the new large private establishments emerged which were, however, typically much smaller. As a result, the total number of employees (private and public) in large establishments declined by 267,000. The decline might reflect that privatized firms had to lay off redundant workers previously subsidized by the government's budget. While this is a common phenomenon in transition economies, the social impact in Egypt was not counterbalanced by new formal sector jobs in younger small or medium size firms.

FIGURE 5-8: JOB CREATION/DESTRUCTION AMONG SOES AND PRIVATE LARGE ESTABLISHMENTS

Source: Authors calculations based on establishment census data in 1996 and 2006 from CAPMAS.
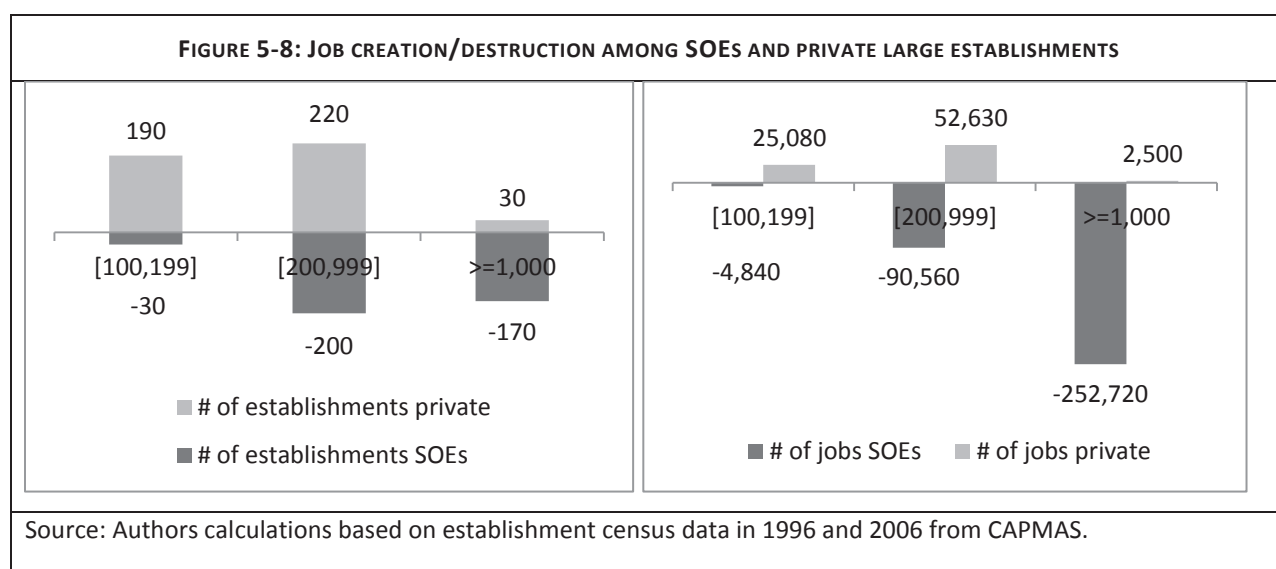
Egypt has low rates of entry into the formal economy. Error! Reference source not found. illustrates the average rate of entry (newly registered limited liability firms) into the formal sector between 2004 and 2009 normalized by the working age population across countries (Klapper and Love, 2010). It reveals that Egypt has one of the lowest entry densities in the sample of 80 countries with available data. For every 10,000 working age persons, only one registered limited liability firm is created. This compares to about ten firms in Morocco, Tunisia, or Turkey and over 200 in Brazil.
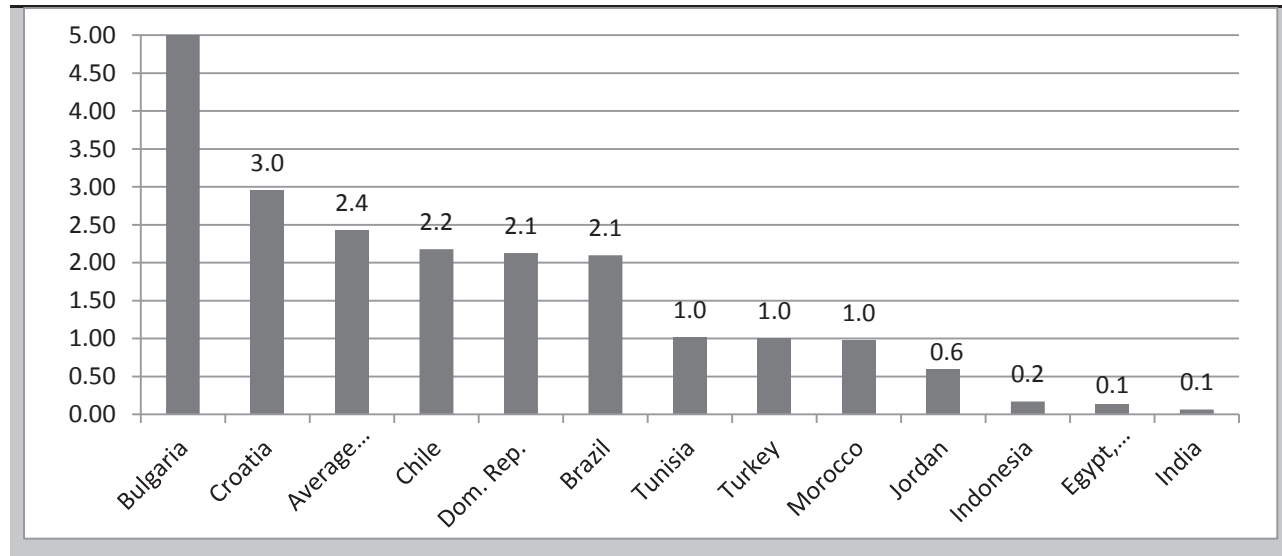
Source: Klapper and Love (2010).

FIGURE 5-10: INCIDENCE OF "GAZELLES"
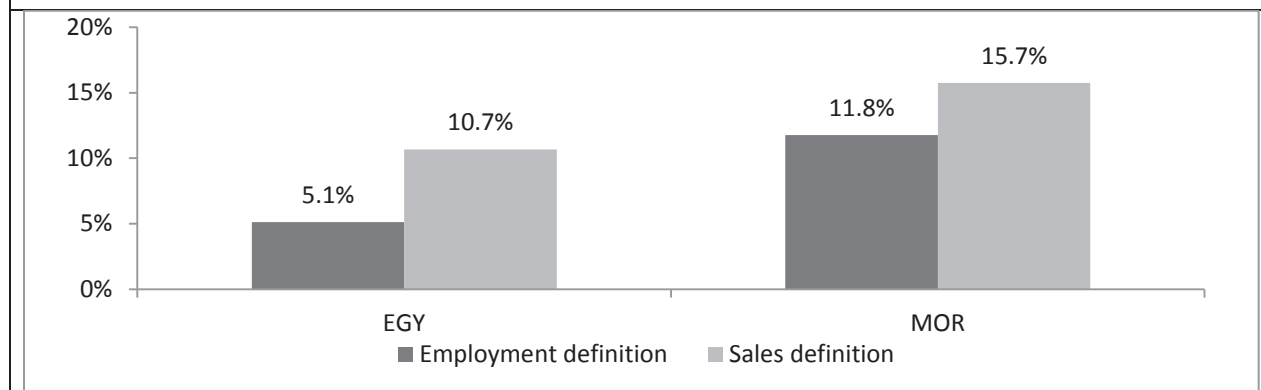
Source: Authors calculation based on industrial production survey from CAPMAS; Sy (2013, *Firm Dynamics, Employment and Productivity Growth in Morocco*, World Bank mimeo and World Bank (2014). Note: The findings for Egypt refer to the 4-year period from 2007-2010 (manufacturing and mining), in Morocco from 2003-2006 (manufacturing firms), and in Tunisia the average between 2000 and 2007 (all sectors).

In addition to limited entry of new firms, low firm turnover limits the pool of young firms with suitable characteristics to become one of the few fast-growing formal sector firms ("Gazelles") that typically generate most new jobs in other countries. Table 5-1 revealed low exit rates among industrial establishments in Egypt. The results for the establishment census which covers all economic sectors confirm low exit rates: 65.7 percent of all firms in 1996 exited by 2006 corresponding to an annualized exit rate of only 5.7 percent.[89] **Error! Reference source not found.** shows that Gazelles are less likely to emerge among Egyptian industrial establishments as compared to those in Morocco. We aim to capture firms that have

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[89] This annualized exit rate should be regarded as a lower bound as it does not capture the establishments that were created after 1996 but exited before 2006.

achieved high growth rates in either employment or sales specifically those in the formal sector; since we do not have information on ,for example, social insurance or labor contracts, we focus on firms with more than 10 employees that are much more likely to be formal than smaller firms. We define gazelles as either; (i) firms with over 10 employees in the base year[90] that double employment over any four year period; or (ii) firms that double their real sales over any four year period with base year sales exceeding US$100,000. **Error! Reference source not found.** shows that 5 percent of all industrial establishments (with at least 10 employees) in Egypt doubled their number of employees from 2007-2010; this compares to over 11.8 percent of manufacturing firms in Morocco from 2003-2006. Based on the sales definition, the incidence of fast-growing firms is 11 percent in Egypt and 16 percent in Morocco.

Despite the fact that they are few, the fast-growing firms account for all formal private sector net job creation in Egypt's industrial sector. Between 2007 and 2011, fast-growing industrial establishments created about 95,000 to 180,000 new net jobs (depending on the employment or sales definition). In contrast, net job creation among all other industrial establishments was negative; between 226,000 and 310,000 (net) jobs were eliminated. The results show that the very few fast-growing manufacturing and mining firms in Egypt accounted for far more than 100 percent of total net job creation in these sectors. Given that Gazelles are typically younger (and smaller), the low rate of entry, exit and firm churning reduces the probability that these fast-growing firms emerge in Egypt (Figure 5-11).

FIGURE 5-11: NET JOB CREATION AMONG "GAZELLES" AND "NON-GAZELLES" BETWEEN 2007 AND 2011

Source: Authors calculation based on industrial production survey from CAPMAS.
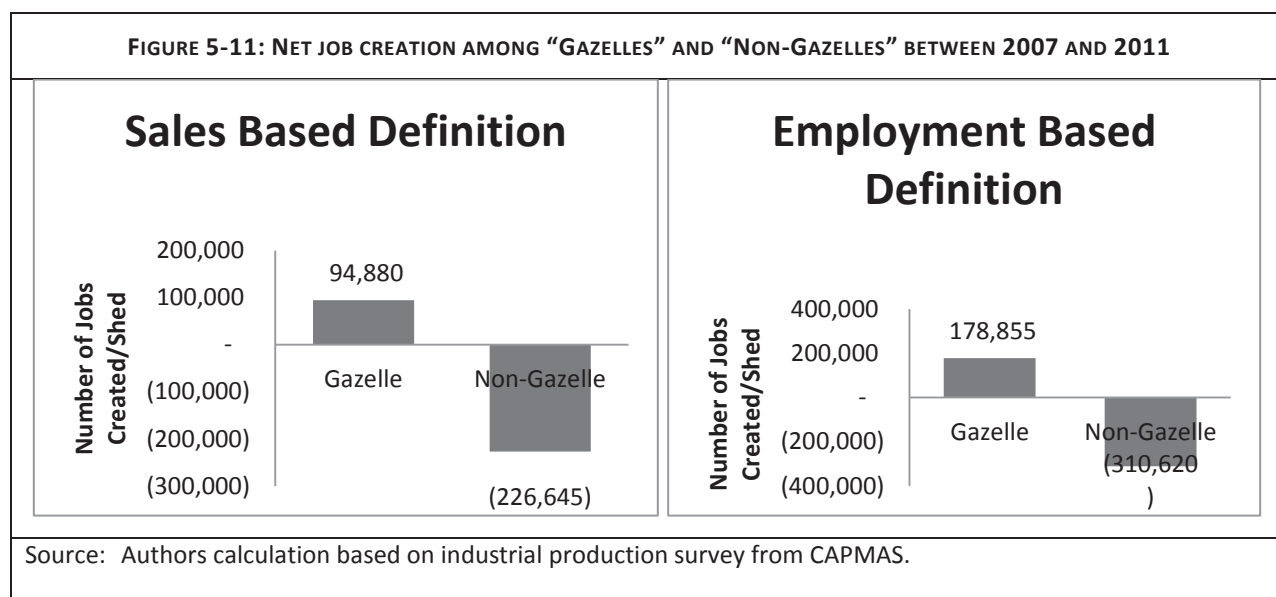
Overall, firm dynamics and job creation patterns in Egypt show that the low entry and limited firm churning reduces the pool of new firms that could contest the few large firms which do not create sufficient jobs. This lack of competitive pressure from new or growing young firms is also consistent with the fact that large firms as a group did not create many jobs. In the following sections, we analyze factors which could be impeding firm growth and employment creation potential. First, we investigate the relation between employment growth and productivity in the industrial sector; secondly we uncover distortions in the relative prices of capital and labor; and finally we examine policies that have inhibited labor demand.

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90 This definition excludes micro firms as gazelles who, for example, only increased employment from 2 to 4 by employieng more family members.

C. More productive establishments hire more workers but a misallocation of resources limits productivity and job growth

Competition ensures that capital and labor allocations are efficient over time in that more productive firms grow and hire more workers. A positive relation between employment growth and productivity indicates that resources are re-allocated over time to more productive firms through a process of creative destruction; i.e., the most productive firms grow while the less productive shrink or exit. Evidence from other developing countries also shows that higher productivity firms that invest in the adoption of foreign technologies are more likely to create jobs over time (see Box 5.1).

We observe frequent mobility from low to higher labor productivity quintiles among industrial establishments over time; yet firms are only occasionally forced to exit. Table 5-2 reports the productivity transition matrix for five productivity quintiles among manufacturing and mining establishments in Egypt between 2007 and 2011. It shows that lower productivity establishments are more likely to exit. However, the exit rates are very low by international standards. On the other hand, Table 5-2 also reveals relatively frequent transitions in productivity ranks among manufacturing and mining establishments over time. For instance, the probability of the 20%-least productive establishments in 2007 to transition to higher productivity quintiles in 2011 was 49 percent with a lower chance (38 percent) of remaining in the same least productive quintile.

TABLE 5-2: PROBABILITY ESTABLISHMENTS CHANGE THEIR RELATIVE PRODUCTIVITY RANKS AFTER 5 YEARS						
Egypt: Labor Productivity Transitions (industrial sectors)						
Productivity in 2007	*Productivity in 2011*					
	Exit	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile
1st Quintile	**13.2***	**38.0**	24.8	12.8	8.0	3.2
2nd Quintile	**8.7***	26.2	**32.5**	22.6	8.3	1.6
3rd Quintile	**7.5***	13.4	21.8	**31.0**	18.0	8.4
4th Quintile	**7.4***	9.5	11.2	16.9	**37.2**	17.8
5th Quintile	**3.3***	4.9	2.4	9.4	19.5	**60.6**

The 20% sample for the Industrial Survey panel only has representative data for firms exiting between 2010/2011 and thus the exit rate here reflects exit in one year and not the whole 5 year period.
Source: Authors calculation based on industrial production survey from CAPMAS. World Bank (2014).

Industrial establishments in Egypt with higher initial labor productivity tend to hire more workers in subsequent years. We use a regression framework to test if employment growth is driven by establishments' initial labor productivity level after controlling for their size, age, sector, and time dummies.91 We find evidence for higher job creation among more productive establishments in the

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[91] We use the Davis, Haltiwanger, and Schuh (1999) definition of job growth which is the change in employment between period *t-1* and *t* divided by the simple average of employment in *t-1* and *t*; this measure has the advantages of being symmetric around zero and better accounting for job creation by entering or exiting firms. In total we have more than 1,800establishment-time observations in the various regression specifications. TFP and labor productivity are included in logs.

industrial sector: a 1 percent increase in initial labor productivity raises the job creation rate by 7.1 percent over the period between 2007 and 2010 (see Table 1 in Appendix 5). Despite weak job creation over firms' life cycle, higher labor productivity manufacturing firms create more jobs indicating that competitive mechanisms are at work in parts of the economy.

A misallocation of capital limits productivity and job growth

Larger industrial establishments in Egypt are more capital intensive but less productive. Figure 5-12 illustrates that larger establishments in manufacturing and mining have higher labor productivity and higher capital intensities but lower total factor productivity (TFP). In fact, higher labor productivity accompanied by lower TFP implies higher capital intensity.[92] Thus, the significantly higher capital-to-labor ratios' of large firms over-compensate their lower TFP so that their labor productivity is higher.

Thus, capital in the industrial sector is misallocated towards few large old firms. In an efficient economy, competitive forces lead to a re-allocation of resources to more productive firms equating (marginal) productivities across different categories of firms over time. Thus, re-allocating capital from large to smaller industrial establishments would raise aggregate productivity in Egypt. This type of resource misallocation across firm size is striking since large establishments are typically found to be more productive in other countries (potentially reflecting past convergence in that more productive firms grow before marginal productivities equate).

It follows that few large old industrial firms have superior access to subsidized capital, for instance, by absorbing energy subsidies or cheap land. The fact that large establishments employ more capital per worker despite their lower total factor productivity implies that the price of capital (relative to labor) is lower for large establishments. Which factors distort the allocation of inputs among industrial establishments? Large establishments might benefit from access to subsidized capital relative to smaller ones through several channels. For instance, a few large firms appear to have superior access to energy subsidies (to industry) by means of exclusive licenses allowing them to benefit from the subsidies in energy (and capital) intensive sectors such as cement or steel. Reportedly, several large firms also have exclusive access to (cheap) land, again, subsidizing their marginal costs (i.e., the price) of capital (World Bank, 2009). Moreover, large firms absorb most corporate bank loans (Rocha et al., 2011) reducing their financing costs relative to smaller firms. However more importantly, their exclusive access to bank loans might simply be a reflection of their superior access to subsidized energy or land making them the more attractive borrowers for private banks due to their lower input costs; and land is also the main type of collateral for bank loans. We analyze the implications of these distortions for economic dynamics and employment in more detail later in this chapter.

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[92] At least for conventional production functions. For instance, in the case of a Cobb-Douglas production function, log labor productivity is the weighted sum of log TFP and log capital intensity; i.e.: $log\left(\frac{Y}{L}\right) = log(\text{TFP}) + (1-\alpha)log\left(\frac{K}{L}\right)$, where Y is output, L labor, K capital, and α the share of labor in output.
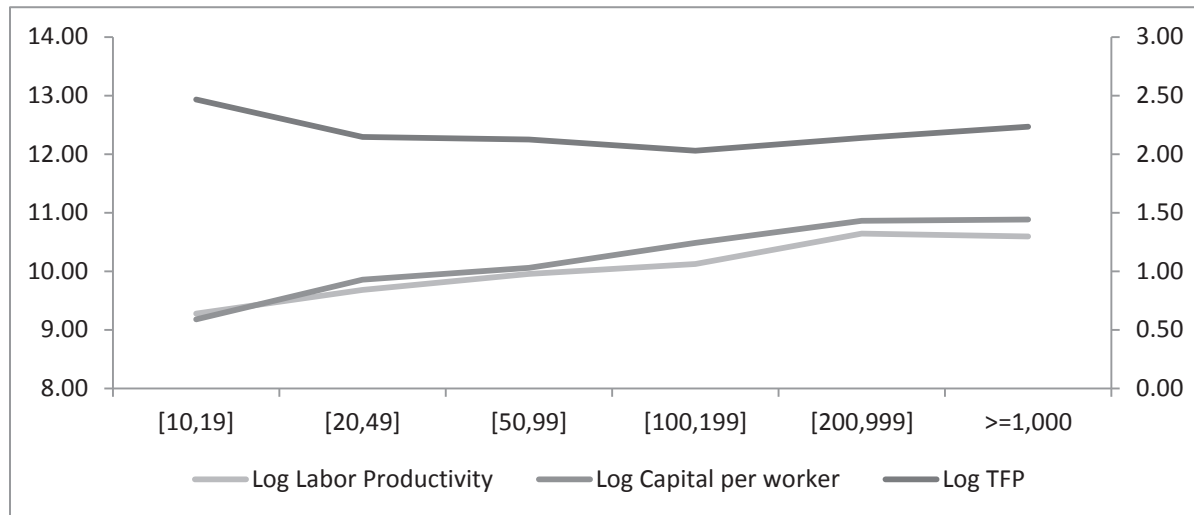
Source: Authors calculation based on industrial production survey from CAPMAS.

These distortions come at a significant cost to labor; the industrial sector in Egypt generates 1.4 million fewer jobs than in Turkey. Turkey serves as a good benchmark as both countries have a comparable population (74 million in Turkey relative to 81 million in Egypt in 2012) while total GDP (in US$) is about three times lower in Egypt. Moreover, Turkey's manufacturing sector grew strongly in the past 20 years benefitting also from integration into European value chains. This performance difference between manufacturing sectors in both countries is reflected in the total number of jobs: the industrial sector in Turkey employed 4.8 million workers in 2012 compared to 3.4 million in Egypt.[93]

Despite Egypt's relative comparative advantage in labor, the share of jobs in labor intensive manufacturing sectors among industrial establishments is lower than in Turkey; in total there are about 324,000 fewer jobs in labor intensive sectors. Figure 5-13 shows the number of jobs by factor intensity based on the 2006 establishment census for Egypt. The numbers here differ from the ELMPS number of industrial employment in 2012 in the previous paragraph as the census was conducted in a different year (2006) and does not cover all informal or part-time workers. Figure 5-13 reveals that Approximately 562,000 persons work in labor intensive manufacturing establishments in Egypt relative to about 886,000 in Turkey. The lower share in Egypt is striking given that Egypt's lower stage of development (GDP per capita is about 3.2 times lower than in Turkey) entails a relative comparative advantage in labor intensive sectors such as manufacture of textiles, garments, leather products, footwear, paper products, or publishing & printing.

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[93] The total number of employees working in the industrial sector in Egypt is based on the ELMPS and in Turkey on the yearly labor force survey from *Turkstat*.

FIGURE 5-14: EMPLOYMENT SHARE BY SECTOR FACTOR INTENSITY IN EGYPT (LEFT) AND TURKEY (RIGHT)
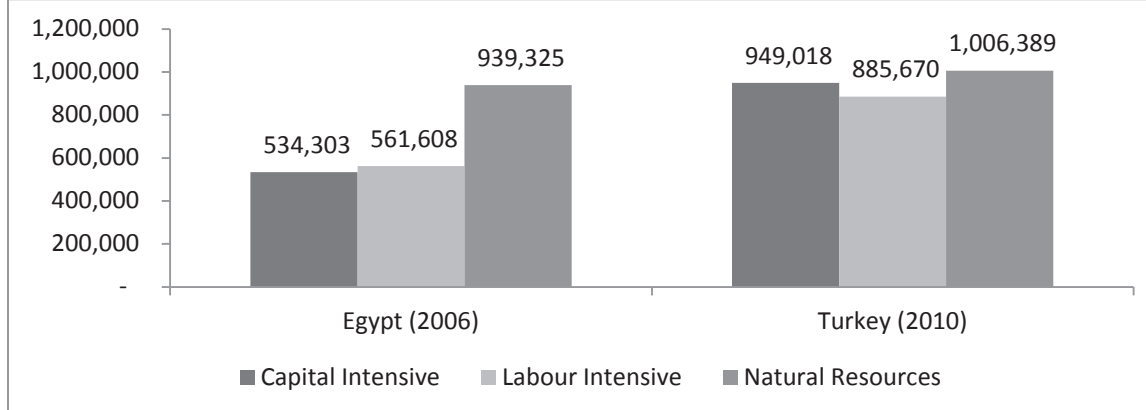
Source: Authors calculation based on industrial production survey (for the sector shares) and establishment census (total number of industrial employment) from CAPMAS for Egypt; and World Bank (2014) for Turkey.

It is the low- and not the high-productivity manufacturing sectors that underperform in terms of job creation in Egypt (relative to Turkey). Figure 5-13 illustrates the distribution of employment across low, medium, and high productivity manufacturing and mining sectors in Egypt and Turkey. It shows that Egypt's manufacturing sector failed to produce jobs in low productivity sectors. In particular, manufacturing establishments in Turkey created 748,000 more jobs in low productivity sectors than in Egypt; there are 283,000 more jobs in medium productivity sectors in Turkey, however, 225,000 fewer jobs in high productivity manufacturing and mining sectors. The latter include sectors such as pharmaceuticals, basic metals, fabricated metal products, or extraction of natural gas. This finding is also particularly striking given Egypt's lower stage of development relative to Turkey and thus its relative comparative advantage in lower productivity labor intensive sectors. Again, the results reveal the distortion in the relative prices of capital and labor in Egypt, for instance, due to energy subsidies to industry or access to cheap land as discussed later.

Once we control for the (mis-) allocation of capital, we also find a positive relation between industrial establishments' initial total factor productivity (TFP) and subsequent employment growth in Egypt. We find that employment growth is driven by establishments' initial TFP levels after controlling for their size, age, sector, and time dummies.[94] The TFP index already accounts for differences in the allocation of capital across establishments so that the regression coefficients measure the relation between productivity and job creation net of the variations in capital. A one percent higher initial TFP level in 2007 yields a 7.4 percent higher employment growth rate over the four year period between 2007 and 2010.[95]

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[94] We follow Caves et al. (1982) to construct an establishment level TFP index. In particular, we regress employment growth between 2007 and 2010 on establishments' initial TFP level as well as several control variables such as their size, age, and two-digit sector. See Appendix 5 for the regression results.

[95] We also run regressions for the impact of productivity on annual employment growth and find that a 1 percent increase in establishment TFP is associated with an increase in the job creation rate by 3.4 percent in the subsequent year.

FIGURE 5-13: EMPLOYMENT SHARE BY SECTOR PRODUCTIVITY IN EGYPT (LEFT) AND TURKEY (RIGHT)
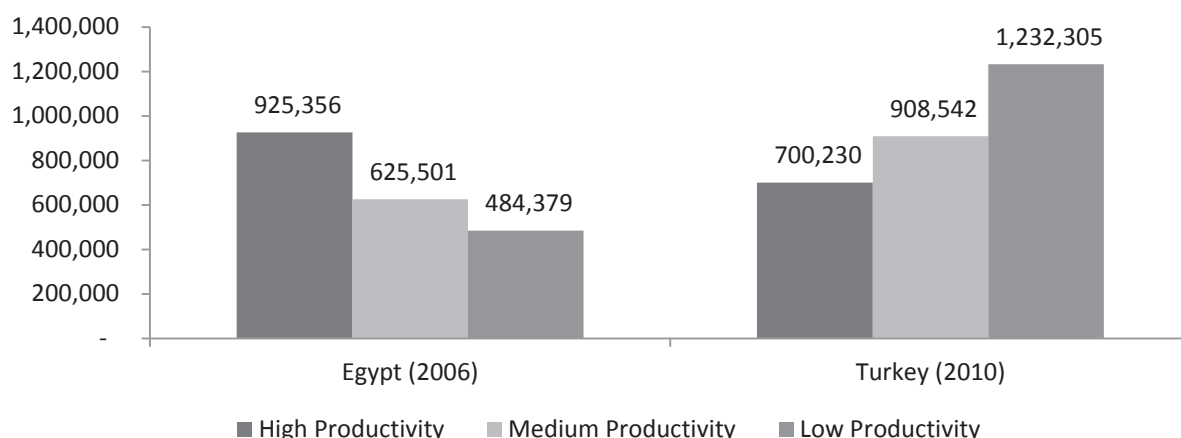
Source: Authors calculation based on industrial production survey (for the sector shares) and establishment census (total number of industrial employment) from CAPMAS for Egypt; and World Bank (2014) for Turkey.

Thus, reforms leading to higher productivity among establishments in the industrial sector in Egypt would also lead to higher job growth. Once the misallocation of capital (i.e., the large differences in capital intensities) among industrial establishments in Egypt is accounted for, higher productivity establishments do create more jobs over the longer term (measuring job growth over the four year period (2007-2010)). Nevertheless, the weak overall job growth in Egypt's industrial sector suggests that only a few establishments were able to increase their productivity. This finding has two important implications. First, inefficient capital allocations across industrial establishments distort competition and labor market outcomes. Second, reforms leading to higher productivity among establishments in the industrial sector will also lead to higher job growth since (total factor) productivity is an important determinant for job creation.

Overall, we find that stagnant firm dynamics, which are a symptom of the lack of private sector competition, come at a significant cost to employment. We observe low firm turnover (entry and exit) in the formal sector while existing firms do not grow over their life cycle. Instead, small firms stay small failing to contest the few large firms which do not create sufficient jobs. This market structure is a symptom of the lack of a level playing field. At the same time, distortions to the prices of capital relative to labor (e.g., due to energy subsidies) further depress the demand for labor and distort the process of creative destruction. In the following section, we highlight that these distortions are also part of the mechanisms that hold back private sector competition. Thus, a comprehensive approach to competition policy is required.

D. The absence of a level playing field limits private sector job creation

The factors holding back formal sector job growth, such as weak formal sector entry, low firm churning, stagnant growth over firms' life cycles, and the existence of a few dominant players in several markets, are all symptoms of an underlying, more fundamental source - the absence of a level playing field. An environment lacking competition reduces incentives to invest in new technologies or higher-productivity products in order to maintain a competitive edge over competitors, ultimately resulting in insufficient economic dynamism and employment creation. It is the role of antitrust or competition law, and

their uniform enforcement, to safeguard a level playing field among firms within and across sectors. The lack of a level playing field, however, also surfaces in various other policy areas. For instance, we find that the implementation of rules and regulations by government officials varies across firms within the same sector creating a de facto discriminatory business environment among competitors. Moreover, exclusive licenses restrict the entry of firms into energy intensive sectors such as cement or steel and thus channel the bulk of the generous energy subsidies to a few selected firms. The entry into energy intensive sectors is further de facto limited by variations in the access to credit which is required to finance the high initial fixed costs in many of these industries. In fact, only a few large firms absorb almost all bank loans in Egypt. The high concentration of credit further conceals an unequal access to land which is required as collateral for bank loans. In the following, we discuss how policies in these different areas distort private sector competition and thus job creation in Egypt.

Egypt recently amended the regulations for its Competition Authority granting it, on paper, more independence. However, the effectiveness of these changes and the true independence of this institution have yet to be validated in practice. Positive steps towards enhancing competition began with the enactment of a Competition Law in 2005 which established the Egyptian Competition Authority (ECA). However, the institution only acquired some independence in 2011 when a decree enabled the ECA's chairman to initiate criminal actions and to settle antitrust cases; the chairman is, however, still directly appointed by the Prime Minister, rather than being independent of political bodies. Previously, ECA did not have the right to hand over any violations to the public prosecutor and criminal lawsuits could only be initiated under a request issued by the Minister. Currently, it is too soon to evaluate ECA's effectiveness and independence. For instance, ECA is only now in the process of proposing further amendments to the competition law to enable more effective law enforcement.

However, the mere existence of a competition law and an independent competition authority are only components of an overarching competition policy that is needed in Egypt to institutionalize a competitive business environment. Competition policy involves all aspects of regulatory interventions that impact the level playing field in which firms compete. Trade policy, industrial policy, investment regulations, property rights, procurement laws, bankruptcy laws, subsidies, and privatizations; all fall under the umbrella of competition policy. Therefore, a 'culture of competition' needs to be fostered to reinforce the competition authority's legitimacy. Against this background, Dutz and Vagliasindi (2000) emphasize that, in addition to competition law and enforcement, an effective implementation of competition policy also requires competition advocacy and institutional effectiveness.

In fact, Egypt's rankings among the World Bank Governance Indicators, measuring government effectiveness, regulatory quality, the rule of law, and control of corruption, have fallen over time. Figure 5-14 reports the relative performance of Egypt, Tunisia, Lebanon, Morocco, and Turkey. Egypt's performance is in the bottom 40 percent worldwide in all four dimensions. Moreover, Egypt has the lowest rankings among these MENA countries for government effectiveness and regulatory quality; only Lebanon performs worse in terms of the rule of law and control of corruption.

Source: World Bank's Worldwide Governance Indicators

Poor regulatory quality is clearly manifested in Egypt's business environment. Table 5-3 reports the latest World Bank Doing Business Rankings. The indicators reveal that the costs of starting a business in Egypt are relatively low compared to other developing countries. However, they also show that, once a firm has been created, it still faces cumbersome regulations to conduct its business thereafter. The relative performance is worst in the areas of *dealing with construction permits* and *registering property*, *resolving insolvency*, and *enforcing contracts*. The low ranking in these areas conceal, for instance, a cumbersome and costly regulatory environment for bankruptcy, liquidation, and restructuring procedures which deter firms from the kind of risk-taking behavior that spurs investment and growth. Bankruptcy procedures are considered to involve fraudulent behavior in Egypt. 'Decriminalizing' bankruptcy would reduce the stigma of bankruptcy, encourage firms to reorganize, and strengthen creditors' incentives to lend.

Despite these deficiencies, Egypt's rankings are often at par with other emerging economies that had much faster growth over the past decade(s). For instance, India's overall rank is worse than Egypt's while China, Indonesia, or Brazil perform equally badly in most dimensions of the Doing Business Indicators. Thus, it is not clear to which extent the Doing Business Indicators can explain Egypt's lower growth and job creation. The Doing Business Indicators are considered to measure the legal (de jure) aspects of the business environment instead of their implementation which varies across firms in Egypt.[96] One exception might be the measurement of contract enforcement; i.e., it measures the number of official judiciary procedures, the time, and the costs involved in enforcing a sale-of-goods dispute from the moment the plaintiff files the lawsuit until the actual payment. Egypt's ranking in enforcing contracts is the worst among the different policy dimensions pointing at significant deficiencies in the implementation of rules and legislation.

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[96] The Doing Business Indicators measure the time and costs of official legal procedures for a representative domestic firm based in the capital or the largest business center of the country. The assessment is based on lawyers' identification of official legal procedures associated with the different areas of regulations.

	Ease of Doing Business Rank	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
TABLE 5-3: WORLD BANK DOING BUSINESS INDICATORS 2014											
Chile	34	22	101	43	55	55	34	38	40	64	102
Tunisia	51	70	122	55	72	109	52	60	31	78	39
Bulgaria	58	65	118	135	62	28	52	81	79	79	92
Turkey	69	93	148	49	50	86	34	71	86	38	130
Croatia	89	80	152	60	106	42	157	34	99	49	98
China	96	158	185	119	48	73	98	120	74	19	78
Costa Rica	102	102	82	47	46	86	170	136	44	130	124
Brazil	116	123	130	14	107	109	80	159	124	121	135
Jordan	119	117	111	41	104	170	170	35	57	133	113
Indonesia	120	175	88	121	101	86	52	137	54	147	144
Egypt, Arab Rep.	**128**	**50**	**149**	**105**	**105**	**86**	**147**	**148**	**83**	**156**	**146**
India	134	179	182	111	92	28	34	158	132	186	121

Perhaps more importantly, we find evidence that the implementation of regulations in Egypt is not the same for all firms even when they operate in the same sector. Larger and older firms are more experienced and well placed in dealing with the authorities and meeting regulatory requirements. Some of them might also have first-tier connections to politics potentially allowing them to influence rules and their enforcements. For instance, despite Egypt's relatively favorable ranking (3rd out of 20 countries in the MENA region) in the ease of starting a business indicator, we observe low entry into the formal economy. However, we also find evidence that the waiting time for operating licenses, construction permits and customs clearance procedures differs significantly among firms within the same industry, according to the World Bank Enterprise surveys (WBES). This predominance of discretion over rules discourages entrepreneurship and reduces competition.

Credit discrimination against smaller enterprises results from unequal access to cheaper inputs and assets suitable as collateral (such as land). Figure 5-15 shows that only five percent of loans in Egypt go to Small and Medium Enterprises (SMEs). SMEs have often been considered as the main source of employment growth and in fact, the evidence in this chapter confirms that the weak job growth in Egypt can be explained by the fact that firms do not grow over their life cycle. The limited access to finance may be therefore a key constraint to the growth of small firms, but as indicated earlier, the concentration of bank loans among large firms is closely related to the unequal access to land and other subsidies available to only a few large firms.

FIGURE 5-15: SME LOANS AS A PERCENTAGE OF TOTAL LOANS IN SELECTED ECONOMIES IN MENA, 2009
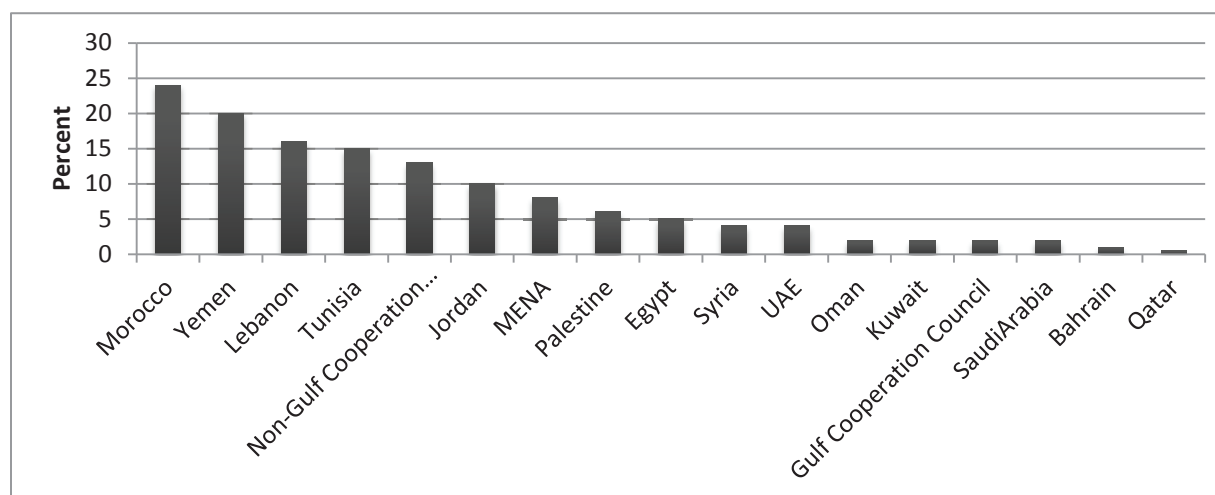
Source: World Bank (2011). Note: The data reflect different years for different countries between 2004 and 2008.

Another aspect of preferential treatment is evident in the allocation of energy subsidies. The value of energy subsidies targeted to heavy industry in Egypt is substantial. In 2010, subsidies to energy intensive sectors accounted for 2.9 percent of GDP or USD 7.4 billion (24.9 percent of total energy subsidies). Thus, energy subsidies to heavy industries accounted for the equivalent of almost half of total public investments in 2010 (amounting to 6.2% of GDP).

Energy subsidies to industry distort the price of capital relative to labor; i.e. they are an indirect tax on labor. An artificially low price of energy makes operating machinery more financially attractive than hiring workers. Thus energy subsidies distort price signals increasing the relative price of labor and leading investors to favor capital intensive at the expense of labor intensive industries. In fact, we show how such distortions in the price of capital relative to labor led to a relatively more capital-intensive manufacturing and mining sector than expected given Egypt's level of economic development. Thus, energy subsidies potentially defy Egypt's comparative advantage in abundant human resources; consequently depressing the demand for labor.

A few large firms disproportionally benefit from the generous energy subsidies to industry. Entry into energy intensive industries typically requires large upfront fixed investments which in turn demand access to land and credit. In addition, a government license is required to legally operate in energy intensive heavy industries (such as steel, cement, etc.). This license used to be issued by the Ministry of Industry and Trade or the Ministry of Investment and had to be renewed annually which meant that some firms could possibly be excluded from the energy subsidies. Figure 5-16 illustrates the distribution of employment classified by firm size and the intensity of industries' consumption of energy.[97] Note that this sample covers all establishments in the 2006 establishment census. It shows that large firms accounted for half of the employment in high-energy intensive industries in 2006. In contrast, large firms account for only about 20

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[97] The classification of industries in high, medium, and low energy intensities is based on the UNIDO (2010), "Compilation of Energy Statistics for Economic Analysis", *Development Policy And Strategic Research Branch Working Paper 01/2010*.

percent of employment in moderate or low energy intensive industries; i.e., employment is concentrated in small firms which employ more than 60 percent of all workers in these industries. Thus, we find that energy subsidies benefitted only a few large firms and the higher cost of labor (relative to capital) helps in explaining why they failed to contribute significantly to job creation in Egypt.

FIGURE 5-16: DISTRIBUTION OF EMPLOYMENT BY SIZE AND ENERGY INTENSITY
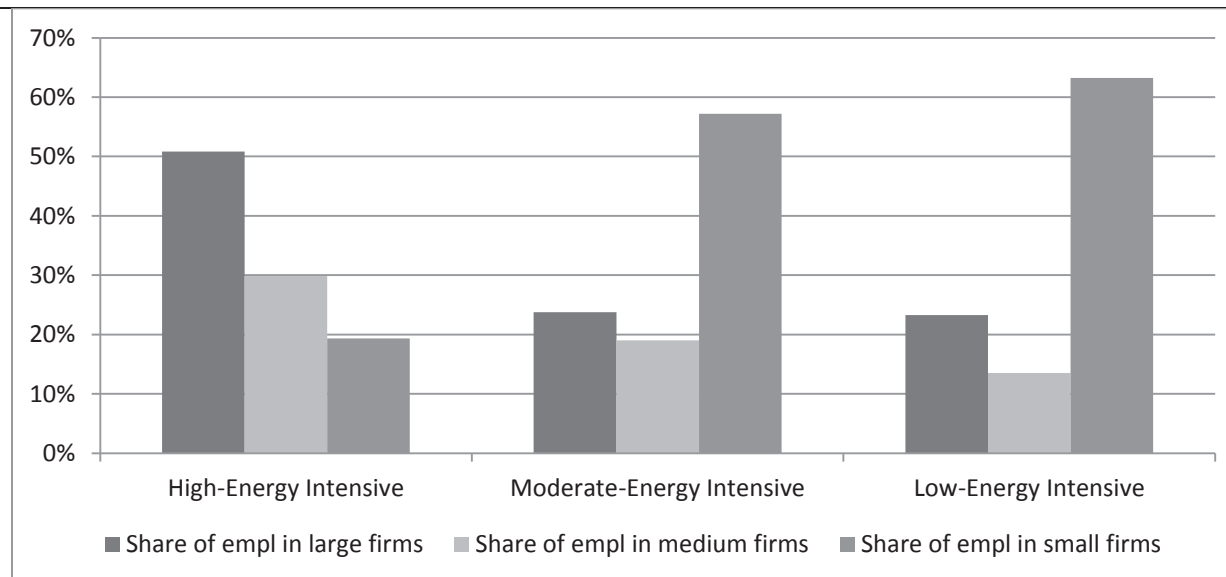
Source: Author's calculations based on establishment census data in 2006 from CAPMAS.

While these distortive policies could be removed relatively straightforward given political will, it needs to be emphasized that there is a reason why these are still in place- they benefit a small group of influential businessmen.

A recent World Bank (2014) report, Jobs or Privileges: Releasing (potential) prosperity in MENA, shows that the stagnant firm dynamics, which hold back private sector job creation in Egypt, are shaped by a lack of private sector competition due to closed deals between a small group of business elites and politics;[98] these political connections of a small group of businessmen led to firm specific privileges (industrial policy) that distort competition and limit growth opportunities of the majority of non-connected firms. The analysis in the report is based on a large novel dataset of politically connected firms which are managed or owned by businessmen with influential political posts in the government or the National Democratic Party (NDP) before the 2011 revolution. The report reveals that these few connected firms benefit from privileges which come at a significant cost for employment as they (i) lead to distortions in the regulatory framework and its implementation (which is skewed towards the protection of rents of connected firms) and (ii) suppress the growth opportunities of the majority of non-connected firms. In particular, the report illustrates that politically connected firms emerged in various economic sectors including modern formal manufacturing or service sectors; their organization appears to follow pyramid structures whereby few politically connected businessmen control multiple firms through a web of holding companies, subsidiaries, and investment of private equity funds. It is shown that manufacturing and mining goods produced by connected firms are more likely to be protected from import competition by non-tariff technical barriers to import as well as more likely to benefit from energy subsidies to industry. These privileges explain their larger profits relative to other non-connected formal firms. Even more importantly, it is shown that the presence of politically connected firms in modern economic sectors leads to more stagnant firm dynamics and job creation as the majority of non-connected firms in these sectors do not grow. In particular, there is lower firm entry, higher market concentration, and higher skewness in the firm size distribution across industries and over time when politically connected firms are present. Moreover, firms tend to report lower competition, higher inspection rates by government officials, and higher discretion in the implementation of regulations in industries where they firms are present. Finally, it is illustrated that employment growth over the medium term is negative after politically connected firms enter into previously non-connected sectors.

Overall, the findings highlight that several policy distortions hold back employment growth. For instance, the regulatory framework and its unequal enforcement in policy areas such as energy subsidies, land, procurement, or regulatory services often primarily benefit a small group of firms. In contrast, the majority of firms have inferior access to these services; these typically include young firms which have been found to be the engine of job creation in other countries. These policy distortions to competition reduce the scope for private sector job creation in Egypt.

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[98] The results are also summarized in detail in Diwan et al. (2014).

Annex 5

TABLE 1: IMPACT OF PRODUCTIVITY ON JOB CREATION OVER THE PERIOD 2007-2010 (USING BASE PERIOD CONTROLS)

	Productivity			TFP			Profitability		Productivity & Profitability
Productivity	0.071***	0.072***	0.072***						0.107***
TFP				0.081***	0.079***	0.074***	0.000***	0.000***	
Profitability									-0.000***
Size		-0.004			-0.011				
<=5			0.442			0.374		0.332	0.455
[6 , 9]			0.282			0.246		0.198	0.303
[10 , 19]			0.206***			0.127*		0.151**	0.206***
[20, 49]			0.084			0.026		0.032	0.087
[50 , 99]			0.047			0.004		0.006	0.056
[100 , 199]			0.039			0.005		0.007	0.047
[200 , 999]			0.077***			0.059**		0.059**	0.083***
Age		-0.018**			0.002				
[0-4]			-0.054			-0.037		-0.022	-0.044
[5-9]			-0.012			0.000		-0.022	0.003
[10-14]			0.038			0.028		-0.022*	0.040
[15-19]			0.054			0.063*		-0.022***	0.061
[20-29]			-0.055*			-0.039		-0.022	-0.048
Activity Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1880	1860	1880	1880	1858	1880	2024	2024	1880
R2	0.237	0.241	0.251	0.248	0.251	0.256	0.223	0.237	0.255

note: *** p<0.01, ** p<0.05, * p<0.1

6. Working to Cope: A Worsening Labor Market in Times of Crises

Informality in Egypt's labor market has deepened with a rising share of irregular workers, resulting in a labor force that is more vulnerable to shocks than in the past 15 years. The increase in informality has resulted from a large increase in jobless workers moving into informality, movements away from farming and manufacturing, higher wages in the informal sector for unskilled workers relative to formal sector wages, and a decline in public employment. During the 2006 to 2012 period, irregular work has increased significantly in magnitude and share; underemployment has increased; and the informal sector is increasingly becoming an employer of last resort. Many informal workers are employed in household microenterprises, and are highly vulnerable as few of these survive over time.

Since 2008, the Egyptian economy has been hit by a series of economic crisis, from the food price and financial crises in 2008 and 2010 to the crisis following the 2011 revolution. As we have shown so far, the trend towards informal employment in Egypt was in place preceding this crisis period. In this chapter, we try and identify signs of further deterioration in the labor market that may be attributable to this crisis period, which falls within the period covered by the last two rounds of the ELMPS from 2006 to 2012. We also examine the determinants of increasing informality during this period and shed some light on a particularly vulnerable set of non-farm microenterprises, which are run out of households and overwhelmingly informal.

This chapter discusses some of the factors associated with informalization. As discussed in Chapter 2, the male informal employment rate grew from 34% in 1998 to 38% in 2006 and 47% in 2012. Given that men make up the largest share of the workforce, the largest share of employment is now firmly concentrated in informal jobs. We find that four main elements contributed to the increase in informality between 2006 and 2012: (i) a large increase in less educated jobless workers moving into the informal sector; (ii) a decline in farm employment and movements away from manufacturing; (iii) higher wages in the informal sector for young less educated workers; and (iv) a decline in public sector employment for educated workers.

What is remarkable about the Egyptian labor market is not only the growing informalization, but also the growth in irregular employment between 2006 and 2012, reversing a small decline between 1998 and 2006. Among salaried informal workers, there are those workers who receive regular payments (including permanent and temporary workers), and those who have irregular jobs (including seasonal and casual workers). Between 2006 and 2012, the share of irregular work within the informal sector has significantly increased, which may be related to the crisis period.

There is also evidence that while informal employment can be a stepping-stone during periods of healthy economic growth, it becomes the employer of last resort when times are bad. We find that people who moved to formal or more regular jobs between 1998 and 2006 tended to be less educated than those who moved into informal or irregular jobs between 2006 and 2012.

Most informal jobs are in small informal enterprises, which are in turn mostly informal. In 2012, 66 percent of informal workers had jobs in household firms with 1 to 4 workers. Moreover, 80 percent of these work in firms with no license, registration or accounting books. As in other developing countries, this is of concern to the extent that informality is associated with inferior working conditions, low-productivity firms, and disrespect for the rule of law.

Household microenterprises, which are small firms run out of households, are a subset of small enterprises and are overwhelmingly informal, and workers in these firms are highly vulnerable. Only about 20 percent of the household enterprises identified in 2006 remained in operation in 2012. Even when they did survive, household micro-firms did not grow between 2006 and 2012. However, what is also clear is that informal household enterprises that managed to survive are heterogeneous, with about a third reporting that they have more than LE 5,000 in capital while about half have less than LE 1,000 in capital. Similarly, the characteristics of workers in these surviving firms are diverse, with a third having an illiterate main worker and another third with a main worker that has secondary education or more.

To facilitate our understanding of informality, in addition to the definition of informal sector *employment* **from Chapter 2, we separately define informality at the level of the firm**. Broadly following ILO guidance, we define a formal *firm* as one that has both a license and registration and informal firms as those lacking either[99]. Note that it is possible (and indeed quite common) for formal firms to hire informal workers. In 2012, 41% of wage-workers were employed at a formal firm, but only half of those were formally *employed*. While working for an informal firm almost always implied being informally employed (with neither a contract nor social insurance), working for a formal firm is far from a guarantee of formal employment: about half of all wage workers in formal firms are informally employed (Figure 6-1).

FIGURE 6-1: FORMAL FIRMS ARE NOT THE SAME AS FORMAL WORKERS

Worker	Wage workers			
Firm type **Formal firm: both license and registration**	Informal firm: 59%		Formal firms: 41%	
Job type **Formal job: either social insurance or written contract**	Informal job: 91%	Formal job: 9%	Informal job: 48%	Formal job: 52%

Source: ELMPS 2012.

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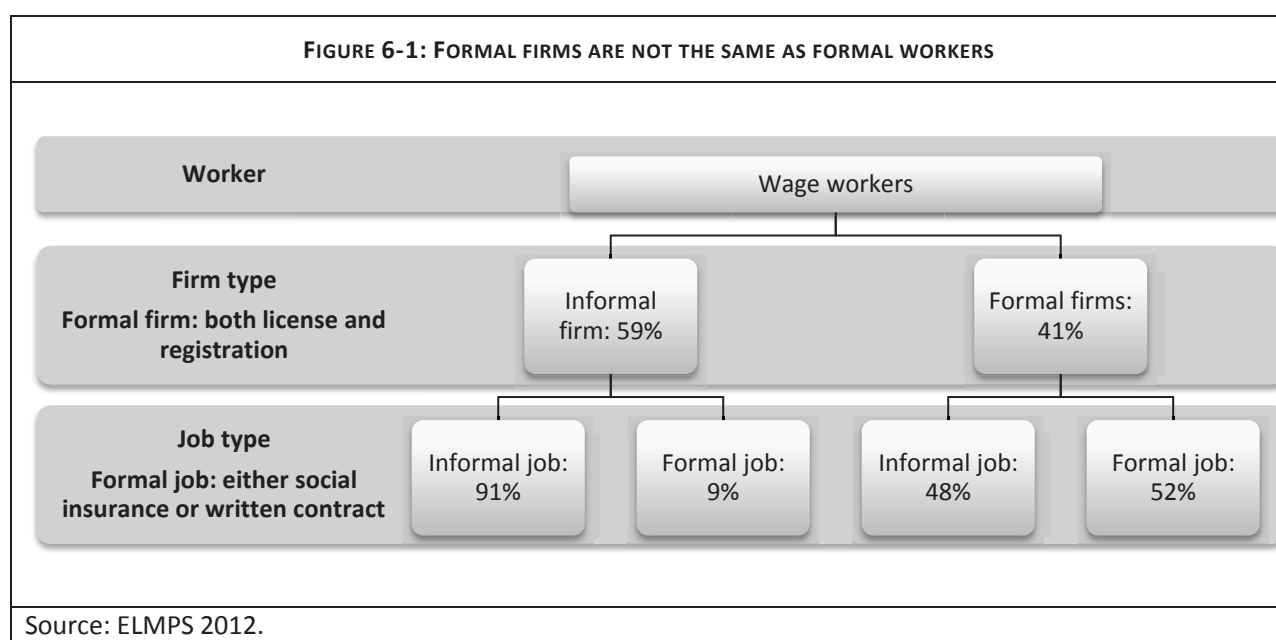
[99] There is a vast academic literature that attempts to define informality and to understand its role in the labor market. Despite this, informality remains a somewhat nebulous and ill-defined concept: assessing the literature, Guha-Khasnobis et al. (2006) conclude that "formal and informal are better thought of as metaphors that conjure up a mental picture of whatever the user has in mind at that time" (pp. 2-3). Kanbur (2009) argues that this lack of coherence leads to analytical and policy problems, in the form of inconsistent information and a related tendency to apply the same policy instrument to very different situations.

A. Employment is becoming more informal and more irregular, irrespective of education or industry of employment

Informal employment is of lower quality than formal employment along a number of dimensions: it is associated with lower wages, lower job satisfaction, and exclusion from other benefits. When asked how satisfied they were overall with their current job, 52 percent of formal private sector workers answered that they were "fully satisfied" compared to only 28 percent of informal workers. Informal workers were especially dissatisfied with their job security; 34 percent reported being fully or rather dissatisfied with their job security compared to 18 percent of formal private sector workers. The median hourly salary for formal private sector workers was EGP 4.7, substantially higher than the EGP 3.8 earned in the informal sector. Under 3% of informal workers get paid vacations, have the right to paid sick

FIGURE 6-2: JOB STATUS (EGYPTIANS AGED 15-64)

Source: ELMPS 1998, 2006, 2012.

leave, or have medical insurance, compared to the majority of formal private sector workers. In addition, the unemployed expressed a strong preference against informal work, claiming that it would require a much higher salary for them to accept an informal job than for a formal private sector or public sector job (this measure of sector preference is also discussed in Chapter 4).
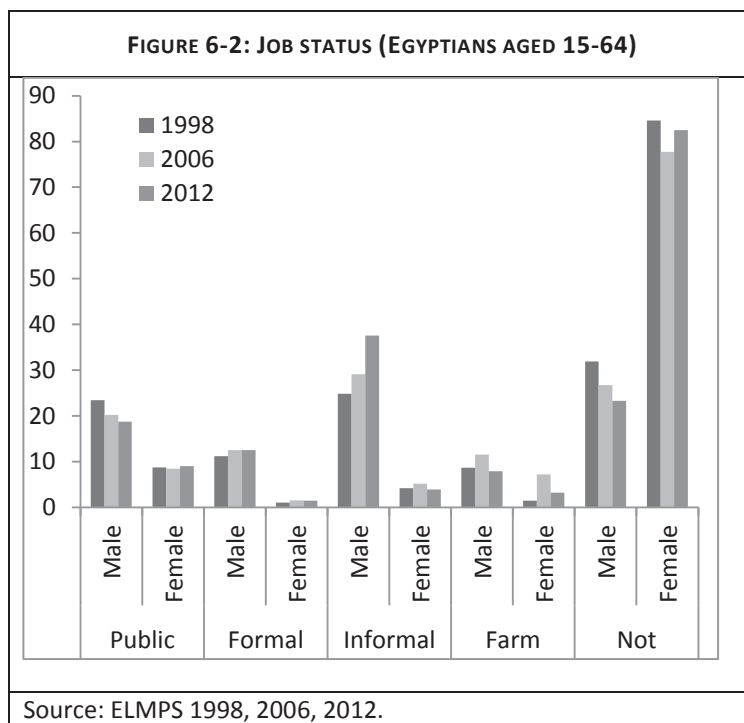
The trend towards informalization that was evident between 1998 and 2006 has continued unabated to 2012. Indeed, the informal employment to working age population ratio for men grew from 25% in 1998 to 29% in 2006 and further to 38% by 2012 (Figure 6-2). Some of the growth in informal employment has coincided with a decline in the share of men who were previously not employed, as well as a decline in public sector employment. For women, the slight increase in informality observed between 1998 and 2006 was reversed between 2006 and 2012, when many who were previously employed in formal and informal jobs left the labor force.

However the quality of employment is varied both in the formal and the informal sectors. First there is a distinction between non-wage[100] and salaried (or wage) workers. In addition, within the informal sector, there are wage workers who receive regular payments (including permanent and temporary workers), and those who have irregular jobs (including seasonal and casual workers). What is remarkable is that the share of informal irregular male wage workers increased substantially between 2006 and 2012, reversing a small decline between 1998 and 2006 (Figure 6-3).

FIGURE 6-3: JOB STATUS (MEN AGED 15-64)

Source: ELMPS 1998, 2006, 2012.
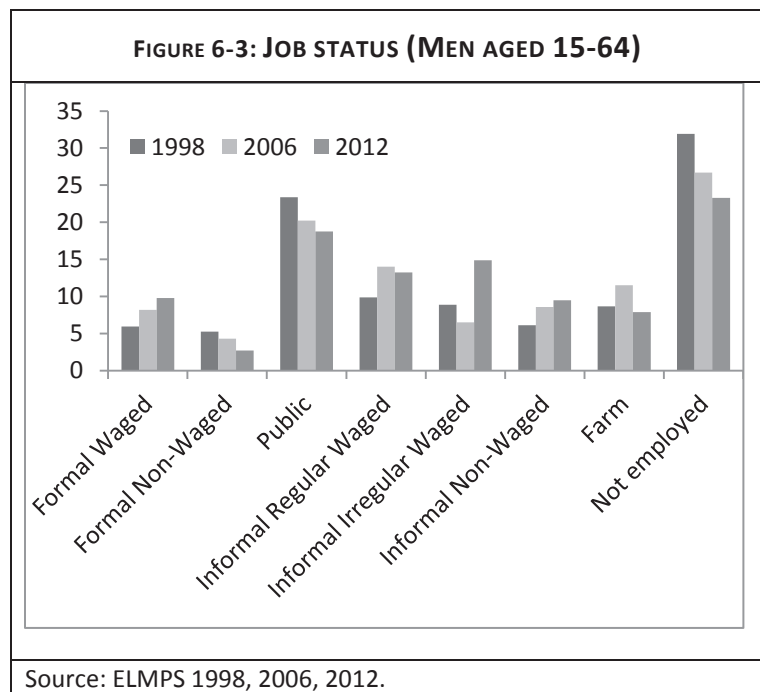
Informal employment has increased, while the quality of those informal jobs has declined. Although the informal employment to working age population ratio increased for all age categories, it is especially high among young men. For example, the informal employment to population ratio of men aged 25-29 increased from 36% in 1998 to 46% in 2006 and further to 55% in 2012 (Figure 6-4). The quality of those informal jobs has declined, particularly for the youth. While most informal workers had regular salaried jobs in 1998, by 2012 the majority had irregular jobs (Figure 6-4). In particular, the *irregular* employment to population ratio among young adults (ages 25-29), first declined slightly from 12 percent in 1998 to 10 percent in 2006, but then sharply rose to 24 percent in 2012.

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[100] Non-wage workers include self-employed and unpaid family workers.

FIGURE 6-4: EGYPT: INFORMAL MALE EMPLOYMENT BY AGE	
A. Informal employment to population ratio by age	B. Composition of Informal Employment by age

A. Informal employment to population ratio by age

Legend: 1998, 2006, 2012
Categories: Teen (15-19), Youth (20-24), Young adult (25-29), Early prime (30-49), Late prime and greying (50-64)

B. Composition of Informal Employment by age

Legend: Regular Waged, Irregular Waged, Non-Waged
Categories: 15-19, 20-24, 25-29, 30-49, 50-64 for years 1998, 2006, 2012

Source: ELMPS 1998, 2006, 2012.

The trend towards informalization is present irrespective of education. Although informal workers are less educated than their formal sector counterparts, the trend towards informalization is present at all levels of education (Figure 6-5). Similarly, there has been a sharp increase in the share of informal workers who have irregular jobs, regardless of the level of education. Although illiterate and those with less than secondary education have the highest rates of irregular employment, the share of irregular workers with vocational education has tripled between 1998 and 2012 (from 5 to 16 percent of men), while the share of irregular workers with secondary education has doubled from 7 to 15 percent over the same period (Figure 6-5). In contrast, among workers with post-secondary education, the increase in informality has been towards regular informal jobs. Finally, there is a clear increase in the share of informal nonwage or self-employed workers over the decade, but most prominently among workers with less than secondary education. In contrast, among formal sector workers, there was a decline in public sector employment across educational levels throughout the decade, but only a slight compensating increase in private formal waged employment, particularly among workers with post-secondary education.

FIGURE 6-5: INFORMALITY BY EDUCATION, MEN AGE 15-64	
A. Informal employment to working age population ratio by education	B. Composition of Informality by education

Source: ELMPS 1998, 2006, 2012.
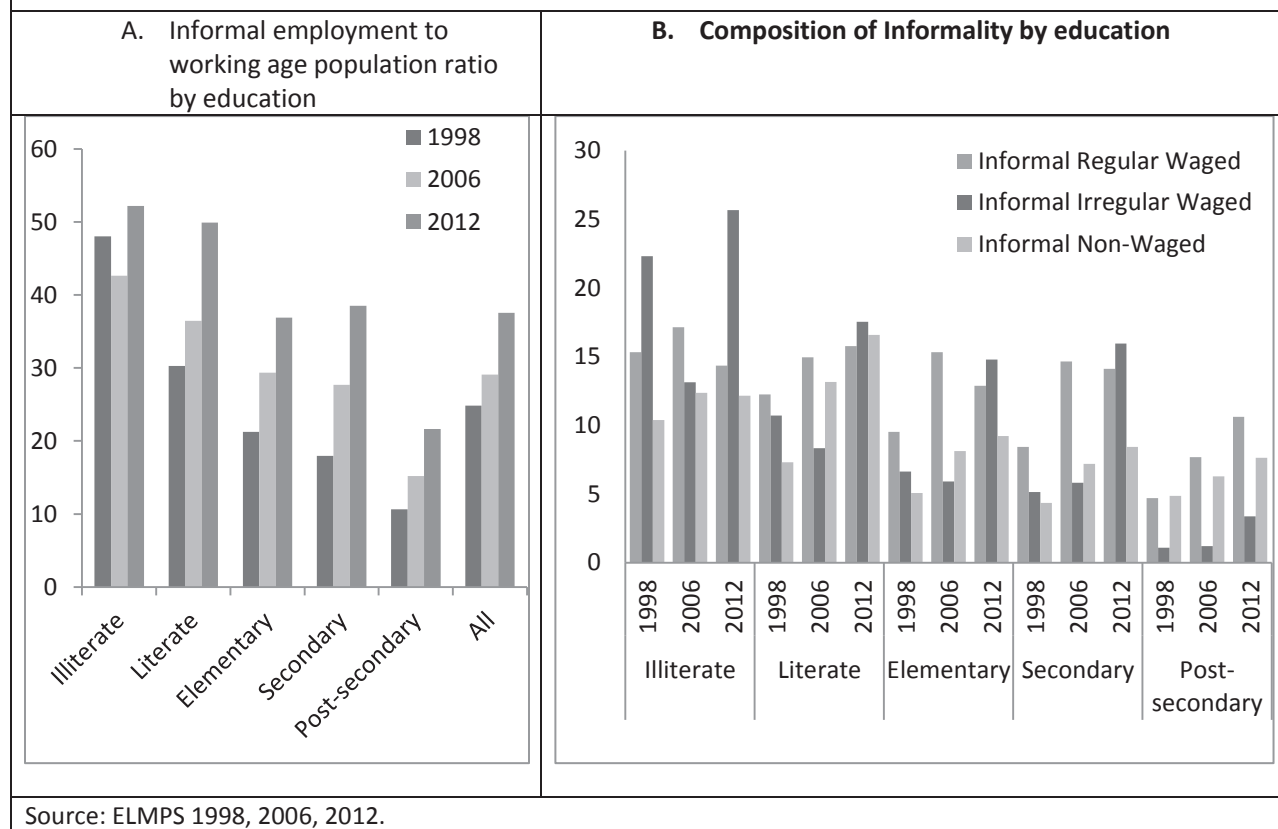
Rural regions have a higher concentration of informal workers; however informality is growing in both rural and urban areas. The informal employment to working age population ratio grew from 13 percent in 1998 to 19 percent by 2012 in urban areas and from 16 to 22 percent in rural areas. This growth has been led by an increase in irregular work, particularly in Rural Egypt (Figure 6-6). While there has been a continuous decline in the share of public sector and formal self-employed workers throughout the period, there seems to have been a reversal in terms of regular and irregular wage work. Informal regular employment increased slightly between 1998 and 2006, but then it declined substantially between 2006 and 2012. In contrast, informal

FIGURE 6-6: INFORMAL EMPLOYMENT TO WORKING AGE POPULATION RATIO BY REGION

Source: ELMPS 1998, 2006, 2012.

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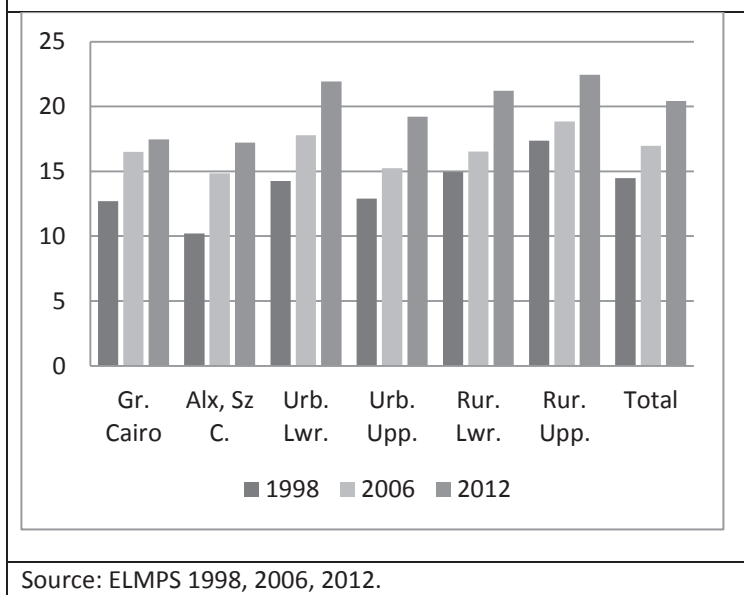
irregular wage work declined slightly between 1998 and 2006, but then increased dramatically between 2006 and 2012, particularly in rural regions (Figure 6-7). While informality of employment is a trend that has preceded the recent crisis, the shift towards irregular work is therefore, likely a cyclical response.

All industries have become more informal and there has been a shift towards irregular work in the second half of the 2000's. As described in Chapter 5, there has been an informalization of employment in some industries more than others. In line with the results of the census of economic establishments, household survey data show that almost all industries have become more informal, with the largest changes in construction, wholesale and retail, transportation and storage activities. This is important because together these activities made up close to 40 percent of the workforce in 2012. Interestingly, there has also been a marked shift towards irregular informal work between 2006 and 2012 compared to the first part of the decade, when there was substantial growth in regular informal wage work and nonwage or self-employed work, particularly in the wholesale and retail sector[101] (Figure 6-8). In contrast, the move towards irregular work cut across sectors between 2006 and 2012, but was especially true in the construction sector. In contrast, the trend towards informalization is much less pronounced in health, education and other services, and public administration, which are inherently public sector industries, throughout the decade.

FIGURE 6-7: CHANGES IN THE SHARE OF WORKERS BY REGION (PERCENTAGE CHANGE)

Source: ELMPS 1998, 2006, 2012.

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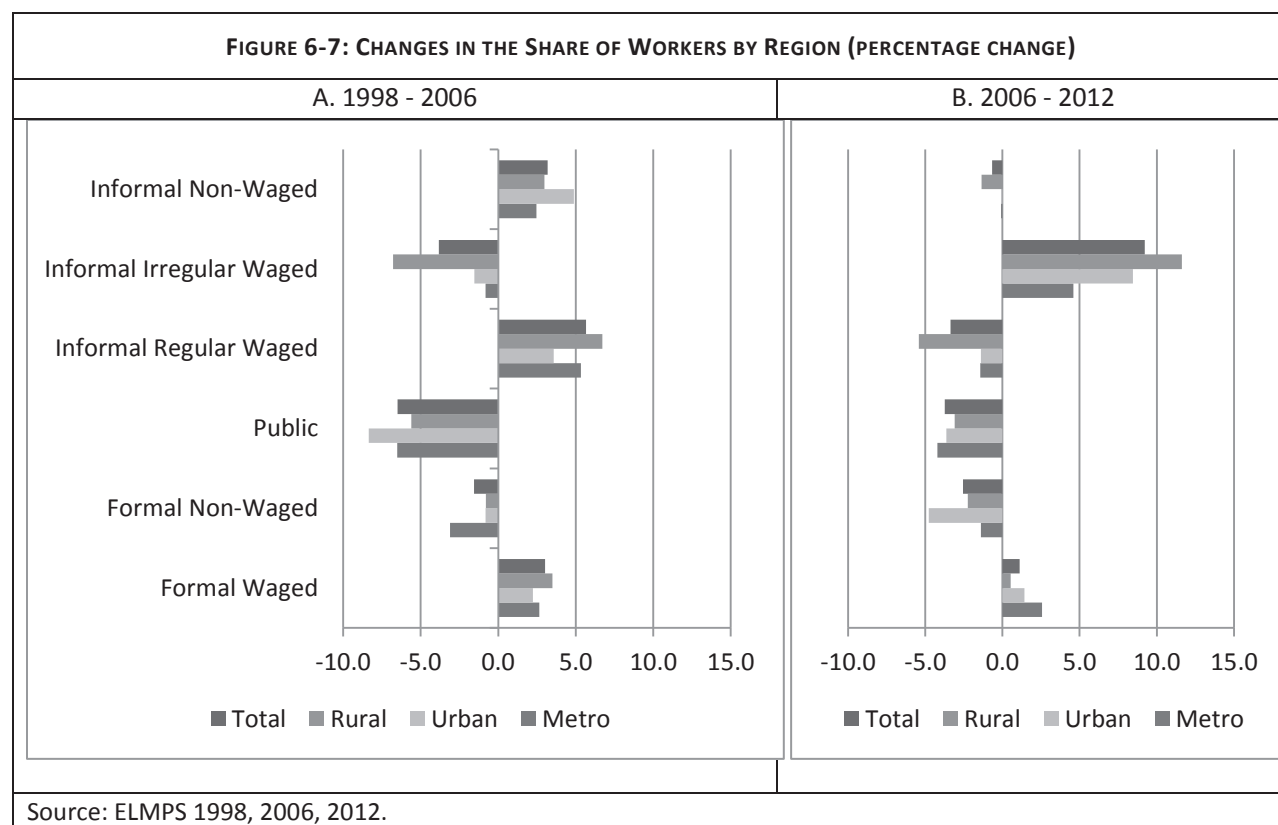
[101] This is consistent with the establishment census results which show that the majority of new jobs created between 1996 and 2006 were in wholesale & retail, where the average establishment employs only 1 wage worker (plus the owner).

FIGURE 6-8: GROWTH IN INFORMAL EMPLOYMENT BY INDUSTRY (PERCENTAGE POINT INCREASE IN SHARE OF WORKING-AGE POPULATION)

A. 1998-2006

B. 2006- 2012

Industries (top to bottom): Other services, Social services, Public administration, Professional services, Transporation and storage, Wholesale and retail, Construction, Manufacturing

Legend: Regular Waged, Irregular Waged, Non-Waged

Source: ELMPS 1998, 2006, and 2012.
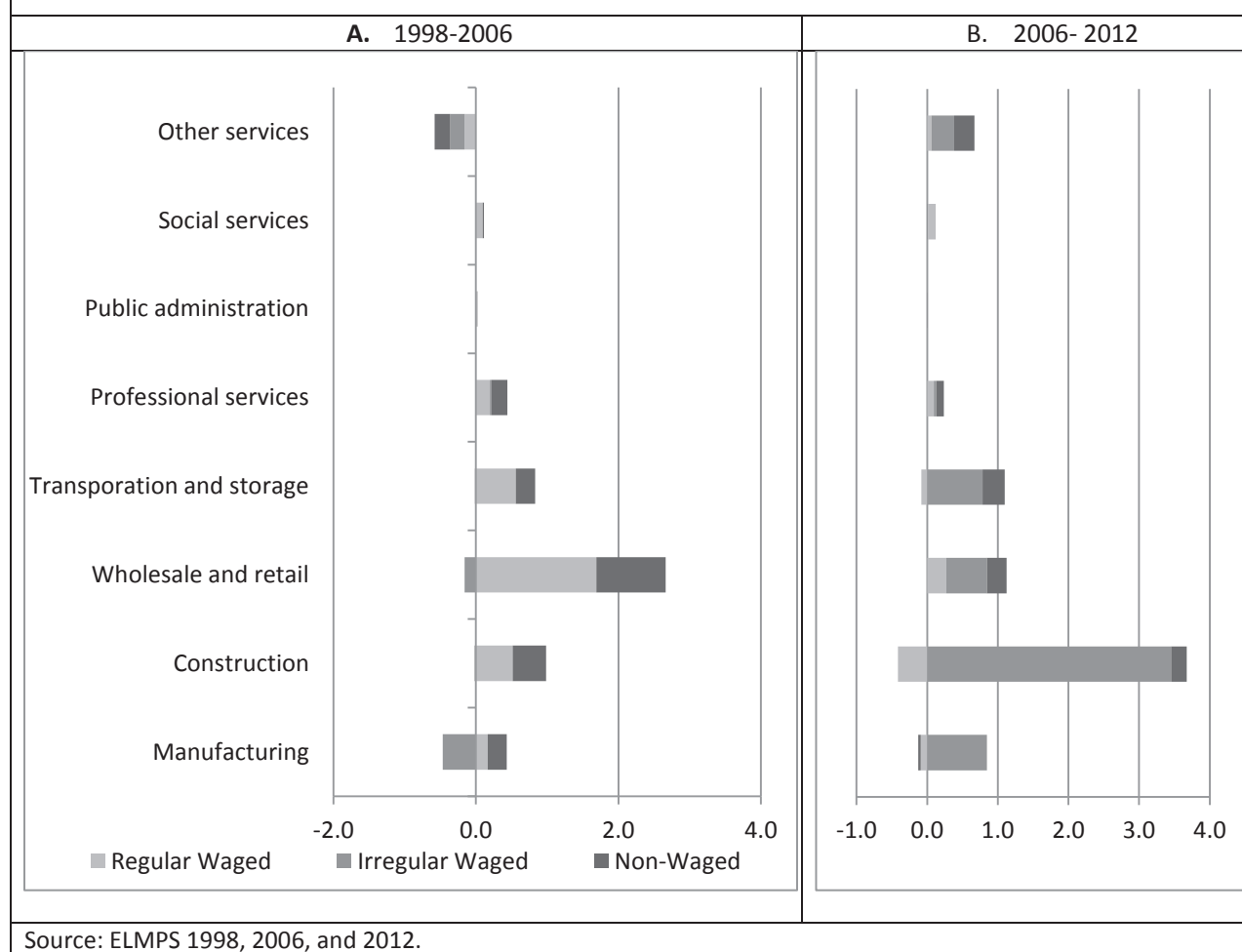
Cross sectional and longitudinal estimates of median hours worked per month also confirm a decline between 4 to 6 percent between 2006 and 2012 (Assaad, 2014). The most affected workers were those working in small private sector establishments and outside fixed establishments. Workers in medium sized private establishments also experienced a reduction in median hours.

B. Informal employment is a stepping stone to better jobs in good times but an employer of last resort in bad times

Although the general trend is one of increasing informality, there was quite a bit of movement from formal to informal employment and vice versa throughout the period. Did workers enter informality to wait until they find a formal job or did some workers choose informality because the benefits of doing so outweigh the costs? If workers were queuing for formal jobs by undertaking temporary informal employment, one would not expect to see formal workers move to informal jobs, particularly in "good times". However, if some workers prefer informal employment because employers offer wages that compensate them for the costs of informality, one would expect to see movements into informality even for high skilled, experienced workers. Using the ELMPS, we analyze transitions between 1998 and 2006 when

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there was relative macro and political stability, along with the introduction of reforms that led to strong GDP growth towards the end of the period. We then analyze transitions between 2006 and 2012, when economic growth declined substantially given the international financial crisis and the Egyptian revolution.

The evidence suggests four main elements contributed to the increase in informality by 2012: (i) a large increase in less educated jobless workers moving into the informal sector; (ii) a decline in farm employment and movements away from manufacturing; (iii) higher wages in the informal sector compared to the formal sector for young less educated workers; and (iv) a decline in public sector employment for educated workers. We describe each of these in turn.

First, the increase in less educated and vocational workers moving from being jobless into the informal sector was the most important reason for the increase in informal workers. Close to 40 percent of the previously jobless workers moved into informal jobs between 1998 and 2006. Indeed, 64 percent of illiterate men and 37 percent of vocational educated workers who were jobless in 1998 became informal workers by 2006. Similarly, 62 percent of illiterate men and 42 percent of vocational educated workers who were jobless in 2006 became informal workers by 2012 (Figure 6-9, Annex Table 6.1, **Error! Reference source not found.**). This pattern also holds for those with elementary and middle school, suggesting that for the previously jobless, informal work was the most important potential source of employment.

Second, the increase in informality among less educated workers coincides with a doubling in the share of men aged 18-50 moving from farm employment to the informal sector. Indeed, 35 percent of men who were farm workers in 2006 became informal workers by 2012, compared to 15 percent of men who made a similar transition between 1998 and 2006.

Third, for young illiterate workers and those with elementary school education, higher wages in the informal sector compared to their formal sector counterparts have led to movements into informality and less movement into formality. When we hold other individual characteristics constant, we find that wages for workers with low levels of education were higher in informal compared to formal sector jobs (Figure 6-10, Annex Table 6.3, Annex Table 6.2). It is therefore not surprising that less educated men were much *less* likely to move from the informal to the formal sector in the second part of the period (Figure 6-10). This is also consistent with the possibility that facing high costs of making workers formal, employers offer somewhat higher wages under informal employment to compensate workers.

Finally, when we focus on men with post-secondary education, we find that the trend towards informalization was partly driven by a decline in public employment. This was mainly due to a much lower share of previously jobless high-skilled workers (presumably students or those waiting for a public sector job) finding public sector employment in 2012 when compared to 2006 (Figure 6-9). At the same time, a smaller share of informal high-skilled workers was able to find formal jobs in 2012 compared to 2006 (Figure 6-9). These movements among high and less educated workers could go a long way in explaining the increase in informality in both urban and rural regions, as well as the informalization of jobs in certain industries that tend to employ less educated labor.

FIGURE 6-9: EGYPT: TRANSITIONS OF MALE WORKERS (PERCENT OF MEN AGES 18-50, OBSERVED FROM ONE PERIOD TO THE OTHER)
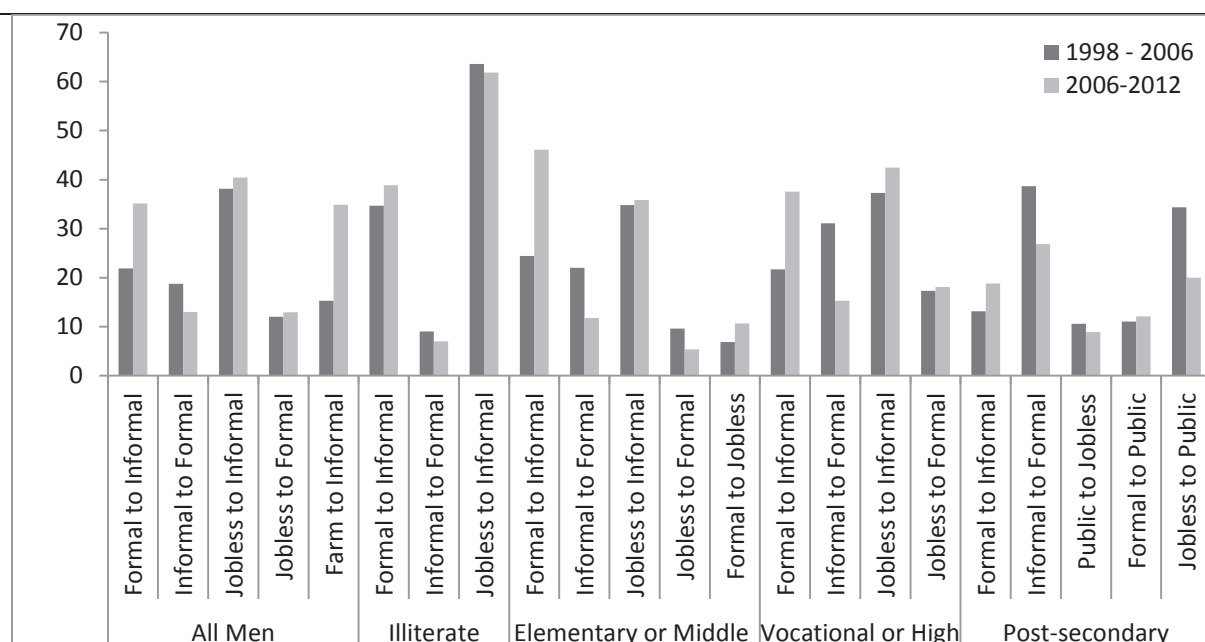
Source: ELMPS 1998, 2006, and 2012.

FIGURE 6-10: PREDICTED WAGES BY EDUCATION AND AGE, 2012 (2012 EGYPTIAN POUNDS)
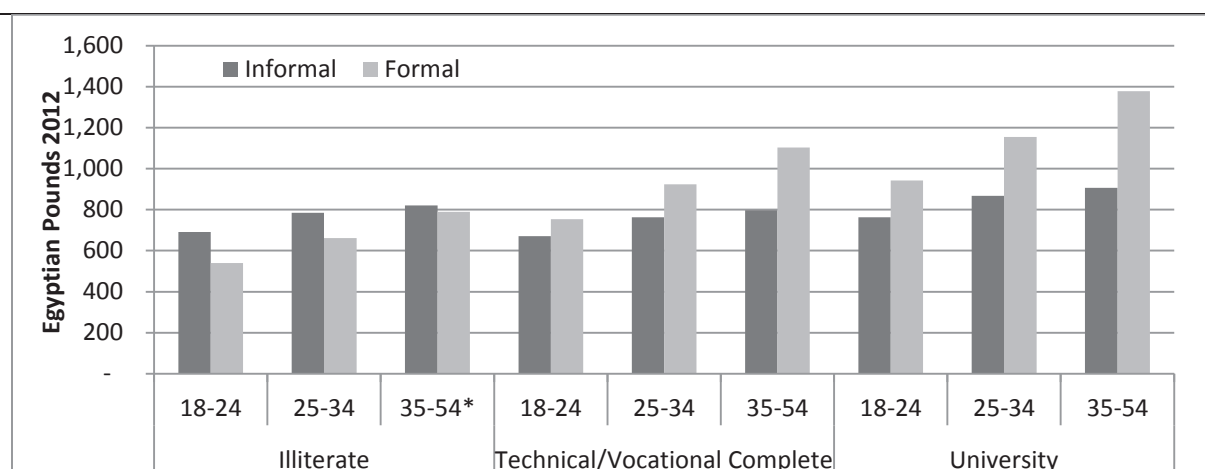
Source: ELMPS 1998, 2006, and 2012.

There is some evidence that the informal sector can serve as a stepping-stone to achieving a better job during good times, and as fallback job during bad times. For instance, between 1998 and 2006, 23 percent of irregular wage workers moved to regular informal jobs. Similarly 17 percent of regular informal wage workers moved to formal jobs (Figure 6-11, Annex Table 6.1). In contrast, between 2006 and 2012, there were larger movements from regular to irregular informal jobs and from formal to informal jobs. Indeed, 16

percent of formal wage workers became informal, more than twice what was observed earlier in the decade, while 21 percent of regular informal workers became irregular.

People who moved to more regular jobs between 1998 and 2006 were not the same as those who moved to less desirable jobs between 2006 and 2012. For instance, workers who moved from irregular to regular informal jobs between 1998 and 2006 had low levels of education, with nearly half being illiterate, three-quarters lived in rural areas, and close to 45 percent worked in the agricultural sector. In contrast, while 70 percent of workers that moved from regular to irregular jobs between 2006 and 2012 also lived in rural regions, they tended to be better educated, with more than a third having secondary education, with a fifth of them working in manufacturing and mining, and a fifth working in construction. This is a further sign of deterioration in the second period.

Movements into and out of a manufacturing job are associated with movements into and out of formal salaried jobs. In general, workers who moved from informal to formal jobs in the first period also had slightly different characteristics than those who moved the other way around between 2006 and 2012. However there is one important exception: their participation in the manufacturing sector. Workers moving from regular informal to formal jobs in the early period were educated, with nearly 18 percent having secondary education and 12 percent having post-secondary education. About 46 percent lived in metro areas, 31 percent in rural areas, and nearly 30 percent were in the manufacturing sector. In contrast, when we look at those who transitioned from formal to informal jobs between 2006 and 2012, we find that they were even better educated, with 40 percent having completed secondary school and 14 percent having post-secondary education, nearly 53 percent lived in rural areas while 37 percent lived in the metro areas. However, as in the previous period, nearly 34 percent of these workers were in the manufacturing sector, indicating that the loss of a manufacturing job was associated with movements into and out of formal salaried jobs.

Self-employed workers are heterogeneous but are increasingly informal. For nonwage or self-employed workers, we find that between 1998 and 2006 the share of workers moving from formal to informal status was more or less the same as the share of workers moving from informal to formal status. In contrast, between 2006 and 2012, the share of formal self-employed workers who became informal was three times higher than the share of informal self-employed workers becoming formal (Figure 6-11, Annex Table 6.1). Were these workers mostly subsistence workers or budding entrepreneurs? Both: workers who became informal were heterogeneous, with about 18 percent being illiterate, but another 47 percent being secondary or post-secondary graduates. Although in general these workers were in their mid-thirties, nearly half (46 percent) lived in urban areas, with another 26 percent living in metro areas. The majority (close to 60 percent) worked in wholesale and retail, but another 14 percent were initially in manufacturing. This suggests that between 1998 and 2006, informal employment acted as a stepping-stone to better quality employment, but with the recent crisis workers have shifted from formal to informal work and from regular to irregular work as employment of last resort in bad times.

FIGURE 6-11: TRANSITIONS FOR SALARIED AND SELF EMPLOYED MEN (PERCENT OF MEN AGED 18-50 IN INITIAL STATUS)

A. Wage Workers	B. Self-employed workers

Source: ELMPS 1998, 2006, and 2012.
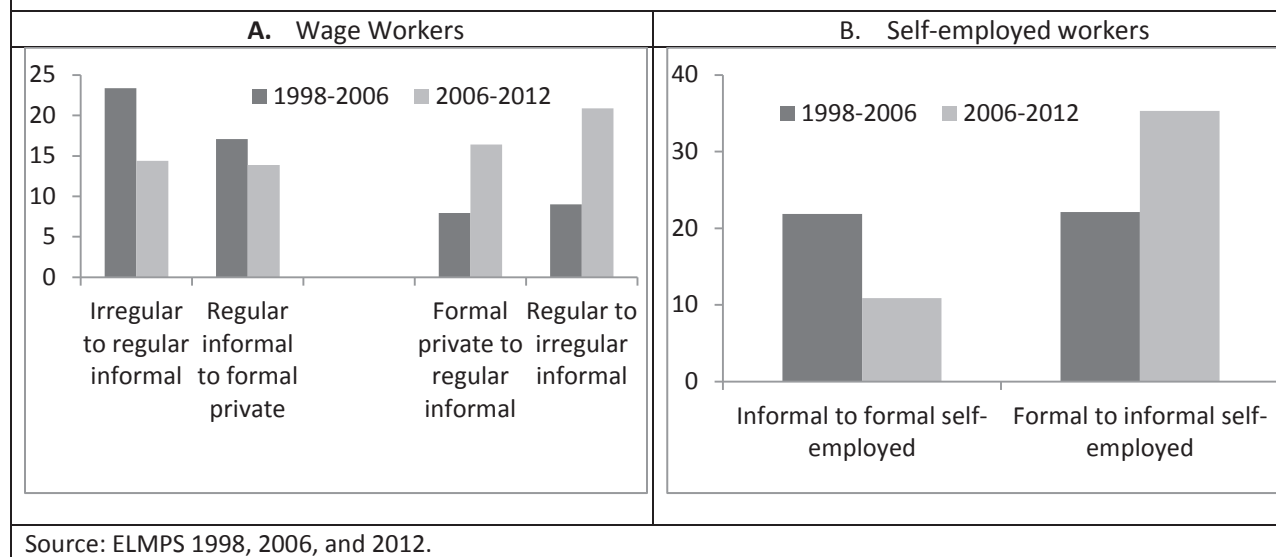
C. Household microenterprises are highly vulnerable

Most informal jobs are in small informal enterprises. For instance in 2012, 66 percent of all informal workers had jobs in firms with 1 to 4 workers and only 7 percent had jobs in firms with more than 50 workers. Moreover, 80% of informal workers (those without access to social insurance or a permanent contract) who report being the main worker in a household microenterprise (a subset of micro firms) work in firms with no license, registration or accounting books. In contrast, 70% of formal workers who report being the main worker in a household microenterprise work in a formal microenterprise (one with license and registration). Therefore, to understand the informal sector, it is important to understand small informal firms or microenterprises. This is no small portion of firms in Egypt. Indeed, microenterprises with less than 10 workers account for 95 percent of all business establishments according to the 2006 Establishment Census.

To complement the analysis presented earlier in the report, we take advantage of a detailed module on household enterprises in the ELMPS survey (Box 6.1**), which provides insights into a particular type of microenterprises, and is the only source of recent information on the micro firm sector.** We find that about 55 percent of family owned household microenterprises have neither a business license, are not registered and do not have accounting books. We find that only 15 percent of household microenterprises are formal by our definition, possessing both license and registration.

The ELMPS contains a rich module on household non-farm enterprises. The survey identifies the number of workers, workers within the household who work in that activity, ownership, the age of the enterprise, the place of work, the amount and source of capital, whether the business has a license, registration and whether it keeps accounting books. The survey also asks questions on the firm's assets, its revenue and expenditures, and asks questions about changes in employment and earnings over the last year. The 2012 sample contains 2,358 household microenterprises, of which 1,683 households had been previously interviewed in 2012.

However, it is important to note that the ELMPS is representative of households but not representative of all microenterprises, since the sample frame was constructed on the basis of households, not on the basis of economic establishments. Therefore the results are representative of household-based micro-firms, and should therefore be interpreted in that light. Wherever the results are consistent with results from the 2006 establishment census, we highlight this is the case.

Most informal household microenterprises are small: about 70 percent of household enterprises reported in the ELMPS were single-employment ventures; and another 29 percent had 2-5 workers in 2012 (Figure 6-12). Although there are far fewer formal household microenterprises, about 20 percent of them had more than 5 workers in 2012. Indeed, the probability of being formal for firms with 6 to 10 workers doubled relative to single-person firms between 2006 and 2012 (Annex Table 6.4).

Informal household microenterprises tend to employ more females than their formal counterparts. In addition, informal microenterprises have a higher share of female principal workers when compared with their formal counterparts. Despite low levels of labor force participation, 17 percent of informal firms had a female principal worker, while only 6 percent of firms with license, registration and accounting books did so in 2012. While firms where the main worker was male were more likely to be formal in 2006, gender was no longer statistically significant in determining the probability of being formal in 2012 (Annex Table 6.4), possibly due to the small number of firms with female main workers.

FIGURE 6-12: SHARE OF HOUSEHOLD MICRO ENTERPRISES IN EACH SIZE CATEGORY, BY FORMALITY STATUS
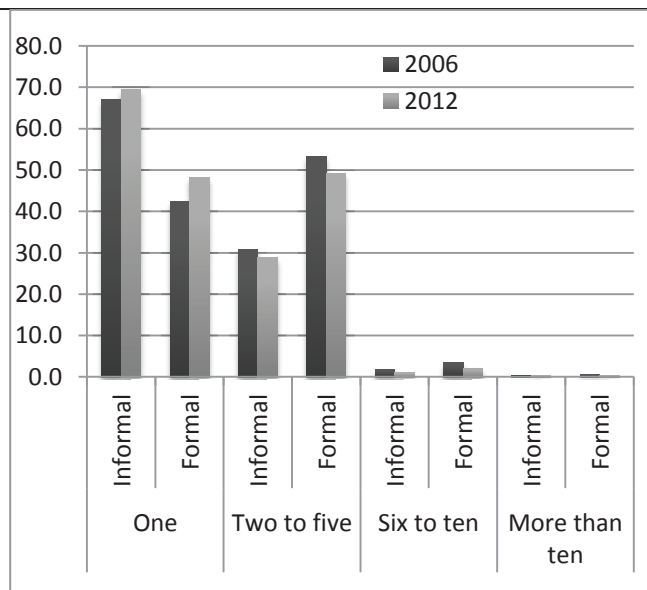
Source: ELMPS 2006 and 2012.

Another common feature of informal microenterprises is that the educational level of the main worker is lower than in their formal counterparts. Indeed, the probability of being formal increases with educational attainment of the main worker (Annex Table 6.4). However, it is also important to note the educational level of these principal workers has improved over the period (Figure 6-13). For instance, 29 percent of informal firms had an illiterate principal worker 2012, down from about 36 percent in 2006. Similarly, 42 percent of informal firms had a principal worker with secondary or post-secondary attainment in 2012, up from 34 percent in 2006.

FIGURE 6-13: EGYPT. EDUCATION OF MAIN WORKER (SHARE OF HOUSEHOLD MICROENTERPRISES)
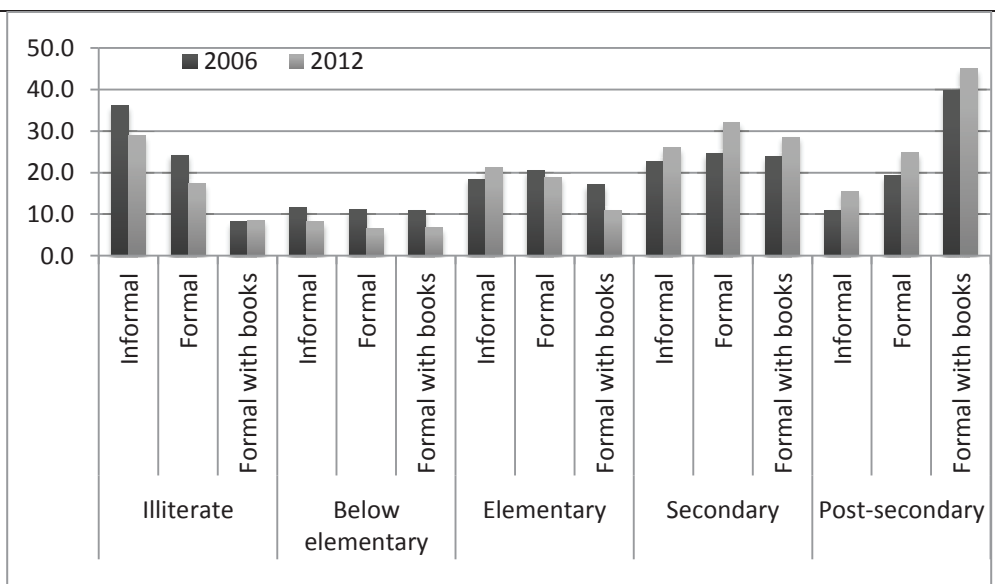
Source: ELMPS 2006 and 2012.

FIGURE 6-14: SHARE OF INFORMAL AND FORMAL HOUSEHOLD MICRO ENTERPRISES BY ECONOMIC SECTOR
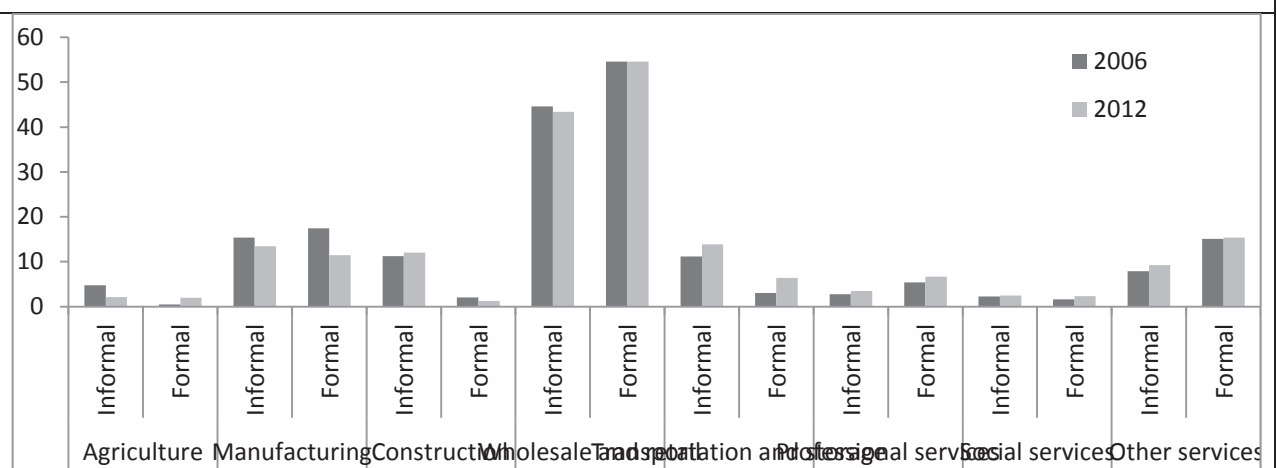
Source: ELMPS 2006 and 2012.

Most informal household microenterprises are located in rural areas, although there has been growth in informal household firms in Cairo over the last decade (ANNEX TABLE 6.5). Indeed, the probability of a firm being formal is higher in metro and urban regions when compared to rural regions. However, the metro region effect seems to have declined between 2006 and 2012 (Annex Table 6.4), which is consistent with other evidence presented in chapter 3 of relative stagnation in the core.

The vast majority of formal (license and registration) and informal household micro enterprises belong to the wholesale and retail sector and in manufacturing. However, there is a sizeable share of informal household firms in construction, and transportation and storage with steady growth over the last decade (Figure 6-14). In contrast, there has been some growth in information, communication and financial services (and other services) among formal micro firms (Annex Table 6.4). Informal household microenterprises mostly operate out of homes or as mobile workers, while firms with license and registration operate mostly out of shops (ANNEX TABLE 6.5).

Finally, the availability of capital is an important determinant of being formal among household microfirms. The evidence suggests that the probability of a firm being formal is higher with higher capital, when holding constant for other firm and main worker characteristics (Annex Table 6.4).

FIGURE 6-15: SHARE OF HOUSEHOLD MICROFIRMS THAT SURVIVED FROM 2006 TO 2012

Source: ELMPS 2006 and 2012.
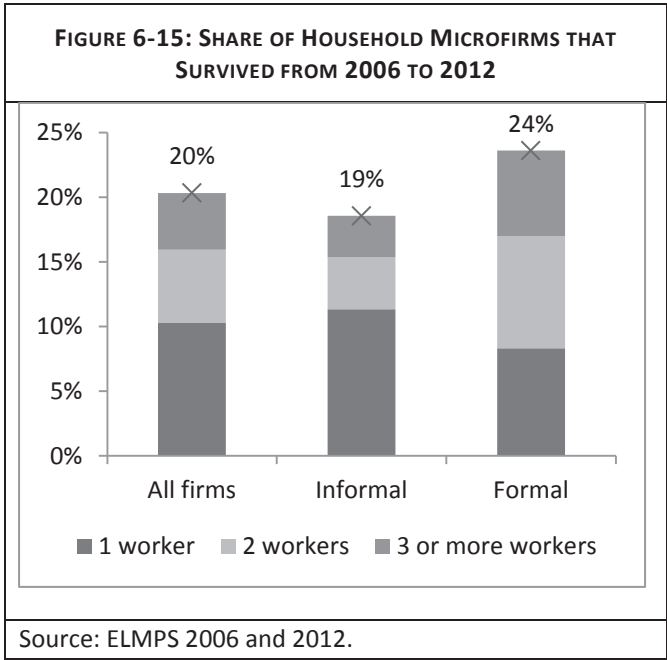
A critical issue for employment in Egypt, in so much as it is so closely related to small and micro firms, is whether firms grow over time. Chapter 5 presents detailed evidence from establishment census to show that between 1996 and 2006, firm dynamics were very sluggish, with low rates of entry, exit and growth. To supplement this analysis using more recent information on a specific type of microenterprise, we use data from a specialized module in the 2006 and 2012 ELMPS to follow microenterprises over time by constructing a panel of firms (see Annex 6 for details).[102]

The main result that emerges is the fact that households with microenterprises are incredibly vulnerable. Indeed, only 20 percent of the 1,683 household micro firms present in the 2006 survey survived into 2012. Although the chances of survival were slightly higher for formal firms where the principal worker was formal, the share of household firms that actually survived is very small in either case (Figure 6-15). What is also clear is that informal household firms that manage to survive are heterogeneous, with about a third having an illiterate main worker and another third with a main worker that has secondary education or more. Similarly, about a third of surviving firms report having more than LE 5,000 in capital for their firms while about half have less than LE 1,000 in capital (Annex Table 6.6). In contrast, household firms that did not survive on average had fewer workers than those that survived, were more likely to operate out of the worker's own home and in agriculture, had less capital or none at all, and were less likely to be in wholesale and retail. This evidence points to the vulnerability of workers whose main livelihood is derived from household microenterprises.

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[102] Unfortunately similar analysis for 1998-2006 was not possible because there is no information on (1) who the main worker in the identified microenterprises in 1998 is, and (2) the sector or industry the microenterprise engages in, both of which are needed to match microfirms over time.

FIGURE 6-16: SHARE OF SURVIVING HOUSEHOLD FIRMS WITH CHANGES IN NUMBER OF WORKERS BETWEEN 2006 AND 2012, BY FORMALITY AND ORIGINAL NUMBER OF WORKERS IN 2006.
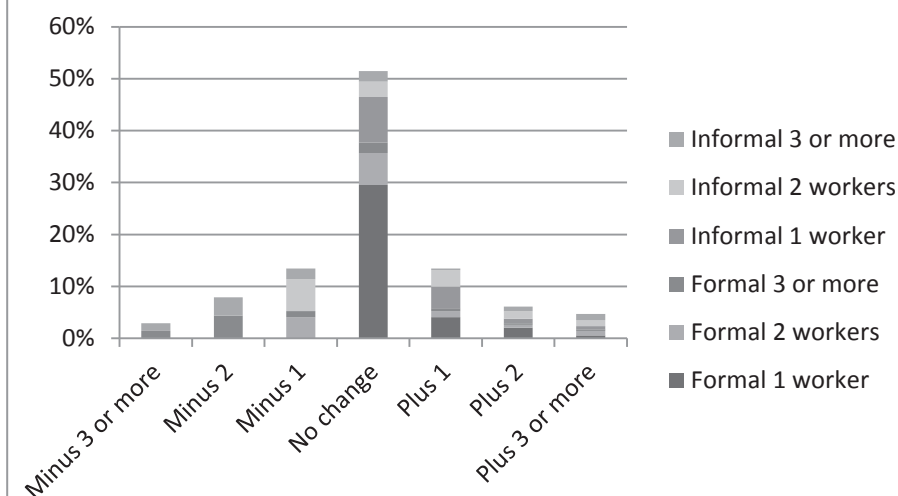
Source: ELMPS 2006, 2012.

Even when they do survive, similar to other firms in the private sector, Egyptian household microenterprises do not seem to grow, and this has become increasingly true over the last 6 years. Based on recall information, 11.4 percent of household microfirms reported increasing their number of workers in the three years to 2006, while only 5.4 percent did so in 2012. In contrast, 18 percent of microfirms reported a decrease in the number of workers in the three years to 2012, compared to 8 percent in the three years prior to 2006 and 5.8 in the three years to 1998.[103] When we focus on the panel of firms that survived between 2006 and 2012, we find that the large majority of firms did not increase the number of workers (Figure 6-16). Most were one person firms in 2006 and stayed that way through 2012. These results are in line with results from the Industrial Panel Survey for 2006, and point to no significant growth of firms between 2006 and 2012 [see Chapter 5].

FIGURE 6-17: JOBS FOR WORKER IN MICROENTERPRISES THAT DID NOT SURVIVE BETWEEN 2006 AND 2012

Reported job sector of main worker in 2006

Source: ELMPS 2006, 2012.

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[103] Rashed and Sieverding, 2013, p. 10.

An important factor that may limit the capacity for growth of microfirms is their financial viability. Egypt has implemented public sector programs to improve MSEs' access to finance, in addition to civil society and NGO programs that operate in this area. Despite public effort in programs and resources to promote small enterprise development, the overwhelming majority of MSEs are primarily financed by personal sources. The first source of start-up financing for over two-thirds of MSEs in 2012 was household savings, and an additional 10.8 percent used an inheritance. Loans from personal contacts or proceeds from a Rotating Savings and Credit Association (ROSCA) were the only the primary sources of financing for around two percent of MSEs.[104]

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[104] Ibid, p. 11.

Note that this is not very different from other middle income countries, for example, in the case of Mexico, the 2012 ENAMIN survey reports that 50 percent of microfirms used personal savings as their initial and main source of financing, and an additional 14 percent had loans from family or friends.[105] Asset holdings of household enterprises were also quite limited. The only two items held by more than ten percent of MSEs were a form of machinery, equipment or tool (39.8%), and buildings (17.7%).

Given the vulnerability of household microenterprises, workers are also vulnerable. What happened to workers in firms that did not survive? Although about a quarter of workers who were the main worker in a household micro-firm in 2006 continue to be self-employed in 2012, we also find that up to 18 percent of workers in informal firms that did not survive were either unemployed or out of the labor force in 2012. Those who worked in an informal household microenterprises were more likely to find informal work, however, 17 percent of workers who were the main worker in a formal micro-firm also ended up in an informal job by 2012 (Figure 6-17). These results highlight the vulnerability of workers in microenterprises.

The Egyptian labor market has been characterized by increasing informality and more recently, irregularity of jobs. The largest share of employment is now firmly concentrated in informal jobs. What is remarkable is not only the growing informalization, but also the growth in irregular employment (including seasonal and casual workers) between 2006 and 2012, reversing a small decline between 1998 and 2006.

We follow the movement of workers from formal to informal employment and vice versa throughout the period, and uncover primarily "push" factors. First, the increase in less educated and previously jobless workers moving into informal employment accounts for a significant share of those who are informally employed. The doubling in the share of men moving away from farming into informal work is another important trend. Both these trends suggest for certain types of workers informal employment is the only alternative to joblessness. Higher wages in the informal sector for young illiterate workers compared to the formal sector may have been a response on the part of employers to compensate less educated workers for the absence of a contract or insurance. For educated workers, who are a larger share of the working age population than ever before, the decline in public employment and the absence of formal jobs in the private sector may have pushed many into informality.

Moreover, there is evidence that while informal employment can be a stepping-stone during periods of healthy economic growth, it becomes the employer of last resort when times are bad. There is some evidence that the loss of a manufacturing job was associated with movements into and out of formal salaried jobs. We find that people who moved to formal or more regular jobs between 1998 and 2006 tended to be less educated than those who moved into informal or irregular jobs between 2006 and 2012. However, the movements into and out of the manufacturing sector coincided with movements into and out of formal salaried jobs.

The analysis of household microenterprises points to high vulnerability, low growth, and increasing informalization. Only about 20 percent of the households microenterprises identified in 2006 remained in operation in 2012. Even when they did survive, microfirms did not grow between 2006 and 2012. However, what is also clear is that informal firms that managed to survive are heterogeneous, with about a third of

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[105] See INEGI. Encuesta Nacional de Micronegocios 2012. ENAMIN. Indicadores estratégicos. Table 2.1, available at: http://www3.inegi.org.mx/sistemas/tabuladosbasicos/tabdirecto.aspx?s=est&c=33527

surviving firms report having more than LE 5,000 in capital for their firms while about half have less than LE 1,000 in capital. In terms of the characteristics of the main workers in these surviving firms, they are also heterogeneous, with about a third having an illiterate main worker and another third with a main worker that has at least secondary education.

Disentangling the structural and cyclical responses of the labor market requires a long time series, which is so far not available. However, the analysis in this chapter does suggest that over and above structural trends, some metrics of the labor market may have worsened in response to the recent crises. Informality has been a persistent feature of the labor market, and as shown in Chapter 2, demographic changes have acted in Egypt's favor, so that observed unemployment rates are actually lower than they might have been in their absence. Workers in the 2012 round of the ELMPS were asked if their employment conditions had changed between just before the revolution to the time of the survey. While a majority reported no change in conditions, private sector workers in the formal and informal sector were the most likely to report a fall in hours, wages and sales. That the brunt of the crisis was borne by the private sector, and in particular, the informal sector is evident in increasing irregularity of work and in the increasing movement of people into the informal sector from relatively better states between 2006 and 2012. At the same time, three times as many self-employed workers moved from the formal to the informal sector as the other way around.

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Annex 6.1: Construction of Panel of Microenterprises

Using the 2006 and 2012 ELMPS, and in order to keep track of dividing households and enterprises over time, we only consider households that have two or fewer microenterprises in 2006 and in 2012. If a household in 2006 divides into two or more households in 2012, we look for a match in all the divisions. If any of these (households in 2012 coming from the same household in 2006) has more than two enterprises, we exclude the original 2006 household and all its 2012 partitions from the exercise.

Steps followed to match enterprises

1) Step 1: we focus on the year that the enterprise started,
   - Years are reported by intervals in the 2006 survey, while they are reported by actual "year" in the 2012 survey. We recode the 2012 survey to match the 2006 intervals.
   - All enterprises that report in 2012 being founded in 2007 or after are considered as new.
   - For the rest, if the enterprise was founded in the same interval of years, they are considered potential matches and go to Step 2.
   - If not, we allow for potential recall errors, that is, if a household has in 2012 an enterprise founded in year '$t-x$', and the 2006 survey says the household has an enterprise started within the interval $[t … t+A]$, we allow for the two to still be potential matches if x is small enough. (Something similar occurs if the enterprise was founded in '$t+A+x$')
   - For older enterprises we allow for x to be higher; for example: If in 2006 a household has an enterprise started between 1960 and 1969, and in 2012 the same household reports an enterprise started in 1955, we still consider the 1955 enterprise as a potential match for the 1960-1969 enterprise observed in 2006.   However, if a household reports in 2006 an enterprise started between 2000 and 2006, and in 2012 reports an enterprise started in 1995, these two are not considered as potential matches.
   - Only the enterprises that are considered potential matches by the year they started go on to the second step.

2) Step 2: we focus on the economic activity,
   - Any potential match is considered a match if the economic activity reported in 2006 is the same as the reported in 2012.

3) Step 3: Use the residence of the household head and the residence of the household member who is the main worker in the enterprise (main worker) to solve conflicting matches.
   - In the survey there are no more than two potential candidates for a same 2006 enterprise in any of the 2012 households.
   - However there are cases were more than one 2012 household has a match for the same 'original' 2006 enterprise (by the year and economic activity criteria)
   - To solve this we look for: Where does the 2006 household head reside? In case the household is not in the 2012 panel, where does the main worker of the enterprise lives?
   - If one of the matches is in the household where the household head still lives, then the enterprise in his or her household is considered the final match.
   - If the conflicting matches are in households where the 2006 head does not live, then the enterprise in the household of the main worker is considered the final match.
   - Finally if the match is located in a household where neither the household head nor the main worker live, the enterprise is considered a match ONLY if the reported main worker in 2012 lived in the original 2006 household, this rule applies even in cases without conflicting matches.

Annex 6.2

	Transition rates between 1998 - 2006								
% of workers belonging to row category which moved into column category between 1998 - 2006									
	2006								
	Formal Private Waged	Formal Self-Employed	Public	Informal Regular Waged	Informal Irregular Waged	Informal Self-Employed	Farm	Jobless	Total
Formal Private Waged	59.9	4.5	10.6	7.9	2.2	10.3	0.6	4.0	100
Formal Self-Employed	7.1	53.1	3.4	3.4	0.0	22.1	5.6	5.2	100
Public	2.9	1.0	89.0	1.6	0.6	0.6	0.5	3.7	100
Informal Regular Waged	17.1	7.8	10.2	32.1	9.0	16.5	3.2	4.1	100
Informal Irregular Waged	4.8	4.7	9.7	23.4	28.2	10.4	14.7	4.1	100
Informal Self-Employed	4.2	21.9	6.4	8.3	3.6	46.7	4.2	4.7	100
Farm	3.5	1.9	11.2	7.0	4.6	3.6	65.1	3.2	100
Jobless	13.0	2.3	17.5	21.1	6.3	14.3	6.9	18.5	100
Total	10.9	6.9	33.3	12.9	6.4	11.6	10.7	7.4	100

(1998 is the row-category label for the block above.)

	Transition rates between 2006 - 2012								
% of workers belonging to row category which moved into column category between 2006 - 2012									
	2012								
	Formal Private Waged	Formal Self-Employed	Public	Informal Regular Waged	Informal Irregular Waged	Informal Self-Employed	Farm	Jobless	Total
Formal Private Waged	47.9	3.4	13.6	16.4	7.4	5.5	1.1	4.5	100
Formal Self-Employed	7.1	28.5	2.3	10.8	7.9	35.3	3.4	4.7	100
Public	4.4	0.8	87.3	1.7	1.1	1.2	0.9	2.4	100

(2006 is the row-category label for the block above.)

Informal Regular Waged	13.9	2.0	9.6	30.4	20.9	12.8	3.8	6.5	100
Informal Irregular Waged	5.1	0.8	6.0	14.4	47.6	10.7	9.1	6.2	100
Informal Self-Employed	5.7	10.9	6.5	14.3	14.9	37.1	3.5	7.1	100
Farm	3.1	1.5	6.7	11.1	22.0	5.2	46.5	3.9	100
Jobless	15.9	1.8	12.7	20.5	16.7	9.5	4.8	18.2	100
Total	12.6	3.7	26.5	15.0	15.4	11.2	8.4	7.2	100

Source: ELMPS 1998, 2006, 2012.

ANNEX TABLE 6.2: EQUATION FOR LOG(WAGES) IN 2012

	Simple	Interaction with education	Interaction with age	Interaction with age and education	Simple with controls	Interaction with age, education with controls
Elementary	0.0795	0.0596	0.0712	0.0422	0.0635	0.0263
	[0.0333]	[0.0385]	[0.0335]	[0.0389]	[0.0330]	[0.0387]
Preparatory	0.0914	0.0088	0.0826	-0.0078	0.0534	-0.0359
	[0.0395]	[0.0514]	[0.0396]	[0.0518]	[0.0405]	[0.0527]
Technical/Vocational Incomplete	0.0989	0.0768	0.0939	0.0454	0.094	0.0554
	[0.0320]	[0.0383]	[0.0320]	[0.0391]	[0.0353]	[0.0421]
Technical/Vocational Complete	0.1276	0.0071	0.1177	-0.0143	0.1105	-0.0268
	[0.0293]	[0.0391]	[0.0295]	[0.0392]	[0.0336]	[0.0423]
General Secondary	0.1686	0.0202	0.1604	-0.0086	0.1469	-0.024
	[0.0644]	[0.0903]	[0.0644]	[0.0905]	[0.0664]	[0.0902]
Post-Secondary	0.208	0.131	0.1999	0.1116	0.1593	0.0917
	[0.0536]	[0.0962]	[0.0535]	[0.0961]	[0.0569]	[0.0921]
University	0.388	0.1582	0.3819	0.1323	0.3415	0.1071
	[0.0340]	[0.0579]	[0.0341]	[0.0589]	[0.0417]	[0.0644]
Age	0.0266	0.0244	0.0324	0.0324	0.0051	0.0117
	[0.0075]	[0.0075]	[0.0079]	[0.0079]	[0.0085]	[0.0088]
Age squared	-0.0002	-0.0002	-0.0003	-0.0004	0	-0.0001
	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Formal Job	0.1473	-0.0913	-0.0713	-0.4336	0.1285	-0.4591
	[0.0223]	[0.0473]	[0.0821]	[0.1039]	[0.0226]	[0.1026]
Elementary x Formal Job		0.1019		0.127		0.1211
		[0.0738]		[0.0743]		[0.0726]

Preparatory x Formal Job		0.2857		0.3079		0.2808
		[0.0803]		[0.0808]		[0.0804]
Tech Incomplete x Formal Job		0.136		0.2098		0.1786
		[0.0649]		[0.0680]		[0.0676]
Tech Complete x Formal Job		0.3471		0.3789		0.3711
		[0.0605]		[0.0610]		[0.0605]
General Secondary x Formal Job		0.4247		0.4787		0.4664
		[0.1256]		[0.1264]		[0.1267]
Post-Secondary x Formal Job		0.2585		0.2913		0.2497
		[0.1184]		[0.1189]		[0.1134]
University x Formal Job		0.4442		0.4887		0.4623
		[0.0749]		[0.0765]		[0.0765]
Age x Formal Job			0.0063	0.0089		0.0096
			[0.0023]	[0.0024]		[0.0024]
Constant	5.9447	6.0512	5.9016	5.9993	2.8298	5.081
	[0.1317]	[0.1330]	[0.1335]	[0.1345]	[5.2978]	[5.2558]
Alx, Sz C.					-0.0008	0.0011
					[0.0393]	[0.0388]
Urb. Lwr.					-0.1909	-0.1937
					[0.0364]	[0.0360]
Urb. Upp.					-0.1902	-0.1956
					[0.0375]	[0.0373]
Rur. Lwr.					-0.2718	-0.2716
					[0.0321]	[0.0316]
Rur. Upp.					-0.1547	-0.1616
					[0.0359]	[0.0353]
Household Size					0.0009	-0.0003
					[0.0052]	[0.0052]
Son					-0.0867	-0.0844
					[0.0399]	[0.0396]
Other					-0.0598	-0.0574
					[0.0636]	[0.0634]
Married					0.087	0.0796
					[0.0406]	[0.0402]
Year of first job					0.0018	0.0007
					[0.0026]	[0.0026]
R2	0.1	0.11	0.1	0.11	0.12	0.14
F	51.09	32.83	47.12	31.71	32.34	25.75
N	7,658	7,658	7,658	7,658	7,657	7,657

Source: ELMPS 1998, 2006, 2012.

ANNEX TABLE 6.3: FORMAL AND INFORMAL WAGE DIFFERENCES, BY AGE AND EDUCATION LEVEL

Education Level	18 to 24		25 to 34		35 to 44		45 to 54	
					Age Range			
Illiterate	-24.59	*	-17.2	*	-7.85		2.19	
	[0.0626]		[0.0529]		[0.0486]		[0.0558]	
Elementary	-14.22	*	-6.83		2.51		12.55	
	[0.0620]		[0.0557]		[0.0562]		[0.0666]	
Preparatory	2.98		10.37		19.71	*	29.75	*
	[0.0756]		[0.0693]		[0.0681]		[0.0754]	
Technical/Vocational Incomplete	-7.34		0.05		9.39		19.43	*
	[0.0491]		[0.0449]		[0.0500]		[0.0652]	
Technical/Vocational Complete	11.69	*	19.08	*	28.42	*	38.46	*
	[0.0518]		[0.0433]		[0.0428]		[0.0548]	
General Secondary	21.86		29.25	*	38.6	*	48.64	*
	[0.1199]		[0.1178]		[0.1192]		[0.1256]	
Post-Secondary	0.12		7.51		16.85		26.89	*
	[0.1066]		[0.1037]		[0.1048]		[0.1116]	
University	21.17	*	28.56	*	37.9	*	47.94	*
	[0.0654]		[0.0608]		[0.0628]		[0.0737]	

Source: ELMPS 1998, 2006, 2012.

ANNEX TABLE 6.4: DETERMINANTS OF ENTERPRISE FORMALITY (ODDS RATIO SHOWN)

Outcome		Probability that enterprise is formal			
Sample		Households with enterprise in 2006		Households with enterprise in 2012	
		Weighted	Unweighted	Weighted	Unweighted
Household's region of residence	Metropolitan	2.5	3.1	1.8	1.8
		(5.16)**	(6.90)**	(3.53)**	(4.01)**
	Other Urban	2.3	2.5	2.3	2.1
		(5.44)**	(6.48)**	(6.00)**	(5.88)**
Education of main worker	Literate	1.3	1.4	1.2	1.3
		-1.07	-1.52	-0.79	-1.16
	Elementary	1.7	1.5	1.6	1.6
		(2.50)*	(2.07)*	(1.97)*	(2.47)*

	Secondary	1.7	1.8	2.4	2.2
		(2.60)**	(3.21)**	(4.14)**	(4.34)**
	Post-secondary	3.3	3.4	3.4	3.3
		(5.09)**	(5.86)**	(5.35)**	(6.12)**
Gender	Male	2.2	2.0	1.4	1.3
		(3.60)**	(3.33)**	-1.6	-1.47
Age of main worker	15 – 19	0.2	0.2	1.0	1.0
		(2.07)*	(2.09)*	-0.02	-0.05
	20 – 24	0.7	0.8	0.2	0.2
		-0.97	-1.03	(4.83)**	(4.59)**
	25 – 29	0.9	0.9	0.5	0.5
		-0.26	-0.44	(3.83)**	(3.55)**
	50 – 64	1.6	1.4	1.7	1.6
		(2.87)**	(2.30)*	(3.12)**	(3.10)**
	65 or older	1.8	1.8	2.5	2.1
		(2.02)*	(2.38)*	(3.34)**	(3.20)**
Number of workers	2 – 5	1.5	1.8	1.9	1.8
		(2.58)**	(4.37)**	(4.99)**	(5.09)**
	6 – 10	2	2.6	5.2	5.3
		-1.91	(2.60)**	(3.47)**	(4.47)**
	More than 10	11.8	9.9	8.2	7.3
		(3.73)**	(3.33)**	(3.16)**	(3.66)**
Capital	None	0.3	0.2	0.2	0.2
		(3.64)**	(4.52)**	(4.53)**	(4.41)**
	LE 1 – 499	0.2	0.2	0.2	0.4
		(5.35)**	(6.57)**	(5.12)**	(4.20)**
	LE 500 – 999	0.9	0.7	0.8	0.8
		-0.27	-1.49	-0.82	-0.85
	LE 5000 – 9999	2.9	2.6	2.2	2.2
		(5.43)**	(5.35)**	(3.85)**	(4.51)**
	LE 10000 – 49999	4.1	3.7	2.7	3.4
		(6.56)**	(6.85)**	(4.79)**	(6.86)**
	LE 50000 or more	5.0	4.9	5.2	5.4
		(5.00)**	(5.74)**	(6.98)**	(8.10)**
	Do not know	1.5	1.7	4.4	5
		-1.37	-1.95	(3.49)**	(4.11)**
Industry	Agriculture	0.1	0.1	0.4	0.1
		(3.93)**	(5.55)**	-1.27	(3.41)**
	Manufacturing	0.7	0.6	0.6	0.7
		(1.98)*	(3.00)**	(2.40)*	-1.89
	Construction	0.1	0.1	0.1	0.1
		(5.75)**	(6.00)**	(6.40)**	(6.89)**

Transportation and storage	0	0			0.1	0.1		
	(8.63)**	(9.86)**			(7.86)**	(9.08)**		
Professional services	0.7	0.6			0.9	0.9		
	(1.15)	(1.65)			(0.24)	(0.19)		
Social services	0.3	0.2			0.3	0.4		
	(3.76)**	(4.58)**			(2.52)*	(2.69)**		
Other services	1.5	1.6			1.1	1.2		
	-1.68	(2.14)*			-0.62	-0.84		
N	2,112	2,112			2,353	2,353		
Pseudo-R2	0.3207	0.3369			0.3173	0.304		

Source: ELMPS 2006 and 2012.

ANNEX TABLE 6.5: CHARACTERISTICS OF MICROENTERPRISES								
	2006				**2012**			
	Informal	Formal	Formal with accounting books	Total	Informal	Formal	Formal with accounting books	Total
Region								
Metropolitan	22.8	30.2	48.9	28.0	24.3	34.0	40.2	28.1
Urban Lower	13.6	24.0	15.0	15.8	12.4	20.8	19.1	14.6
Urban Upper	7.5	9.9	16.2	9.3	6.7	8.7	14.0	8.1
Rural Lower	30.6	20.5	13.6	26.2	34.1	24.6	19.4	30.5
Rural Upper	25.5	15.3	6.2	20.7	22.5	11.9	7.3	18.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of workers								
One	67.1	42.4	30.2	57.1	69.5	48.2	34.0	61.1
Two to Five	30.7	53.4	58.9	39.1	28.8	49.1	45.5	34.4
Six to Ten	1.9	3.5	7.3	3.0	1.2	2.2	15.3	3.4
More than 10	0.3	0.7	3.6	0.8	0.5	0.5	5.2	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Place of operation								
Own home	21.2	2.4	3.4	15.0	18.8	4.0	2.8	14.2
Shop	19.8	73.0	68.5	36.9	22.7	69.6	62.5	35.7
Office/flat/building	2.1	4.7	12.5	4.1	2.9	4.7	17.9	5.3
Workshop/factory	4.3	13.0	8.3	6.6	4.4	11.2	11.9	6.5
Street vendor	7.1	0.0	0.0	4.7	6.1	0.4	0.4	4.4
Mobile worker	22.5	1.2	0.9	15.3	18.0	0.5	1.3	12.9
Street vendor with mobile cart	2.1	0.0	0.0	1.4	1.1	0.0	0.0	0.8
Basket/table	2.8	0.2	0.0	1.9	3.2	0.0	0.0	2.3
Truck/pick-up truck	3.1	0.9	0.0	2.3	3.2	1.6	0.7	2.6

Taxi	4.4	1.2	0.0	3.2	4.5	4.0	0.6	3.9
Field/farm	5.0	2.3	4.1	4.4	1.0	0.3	0.0	0.7
Other	5.5	0.9	2.3	4.2	14.1	3.7	1.8	10.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Current Capital								
None	13.9	2.4	2.9	10.1	10.9	0.8	2.0	8.0
LE 1-499	26.1	4.4	2.7	18.6	22.1	4.2	1.5	16.3
LE 500-999	13.4	14.0	2.9	12.0	11.2	5.9	5.6	9.6
LE 1,000-4,999	19.3	22.6	9.2	18.5	19.9	19.1	9.2	18.2
LE 5,000-9,999	9.3	24.1	29.4	15.0	13.7	25.3	18.1	16.1
LE 10,000-49,999	10.8	23.7	34.8	16.7	13.8	26.4	26.4	17.6
LE 50,000 or more	3.7	5.0	13.2	5.3	6.8	13.1	34.9	11.9
Do not know	3.6	3.8	4.8	3.8	1.6	5.2	2.4	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Education of main worker								
Illiterate	36.2	24.3	8.2	29.9	29.0	17.5	8.6	24.3
Literate without diploma	11.6	11.3	11.0	11.5	8.2	6.6	6.8	7.8
Elementary	18.5	20.5	17.2	18.7	21.3	18.9	10.9	19.4
Secondary	22.7	24.6	23.9	23.2	26.0	32.0	28.6	27.3
Post-secondary	11.0	19.3	39.8	16.7	15.5	24.9	45.1	21.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sex of main worker								
Female	18.9	7.4	6.1	14.9	17.0	8.0	6.0	14.0
Male	81.1	92.6	93.9	85.1	83.0	92.0	94.0	86.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Main worker's age								
15 to 19	1.9	0.4	0.2	1.4	0.9	0.3	0.1	0.7
20 to 24	6.1	4.2	2.0	5.2	6.3	1.4	1.4	4.9
25 to 29	12.5	10.5	10.5	11.8	12.1	7.4	7.0	10.6
30 to 49	53.9	47.6	56.2	53.0	55.4	58.4	55.3	55.8
50 to 64	20.5	29.5	22.7	22.5	19.5	23.4	28.7	21.4
65 or older	5.1	7.8	8.4	6.1	5.8	9.2	7.4	6.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Economic Activity								
Agriculture	4.8	0.5	2.4	3.6	2.1	2.0	0.2	1.8
Manufacturing	15.4	17.5	14.9	15.7	13.4	11.5	14.3	13.2
Construction	11.2	2.0	3.0	8.3	12.0	1.2	2.3	9.0
Wholesale and retail	44.6	54.6	63.4	49.2	43.4	54.6	61.4	47.7
Transportation and storage	11.2	3.0	0.2	8.0	13.9	6.4	1.6	11.0
Professional services	2.7	5.4	5.6	3.7	3.5	6.7	11.2	5.1
Social services	2.2	1.6	3.4	2.3	2.5	2.4	2.1	2.4
Other services	7.9	15.1	7.0	9.1	9.3	15.4	6.8	9.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of household microenterprises	1,368	433	324	2,125	1,629	370	359	2,358
Source: ELMPS 2006 and 2012.								

	All Firms in 2006				All Surviving Firms in 2012			
	Informal	Formal	Formal with accounting books	Total	Informal	Formal	Formal with accounting books	Total
Number of workers								
One	66%	38%	31%	56%	61%	37%	32%	51%
Two to Five	32%	58%	58%	41%	37%	62%	57%	46%
Six or more	1%	4%	11%	3%	-.-	-.-	-.-	3%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Place of operation (2006)								
Own home	20%	-.-	-.-	14%	14%	-.-	-.-	10%
Shop	20%	71%	72%	38%	18%	77%	75%	42%
Office/flat/building	2%	5%	10%	4%	6%	-.-	-.-	7%
Workshop/factory	5%	14%	8%	7%	7%	12%	-.-	8%
Street vendor	6%	-.-	-.-	4%	10%	-.-	-.-	6%
Mobile worker	23%	-.-	-.-	16%	22%	-.-	-.-	13%
Taxi	5%	-.-	-.-	4%	7%	-.-	-.-	4%
Field/farm	5%	3%	4%	4%	3%	-.-	-.-	-.-
Total	100%	100%	100%	100%	100%	100%	100%	100%
Current Capital (2006)								
None	14%	3%	-.-	10%	12%	-.-	-.-	8%
LE 1-499	25%	5%	-.-	18%	23%	-.-	-.-	15%
LE 500-999	14%	12%	-.-	12%	14%	12%	-.-	12%
LE 1,000-4,999	19%	23%	11%	19%	18%	21%	-.-	18%
LE 5,000-9,999	10%	24%	27%	15%	12%	22%	23%	16%
LE 10,000-49,999	11%	22%	37%	17%	14%	28%	43%	22%
LE 50,000 or more	3%	6%	12%	5%	-.-	-.-	-.-	5%
Do not know	3%	6%	-.-	4%	-.-	-.-	-.-	4%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Education of main worker (2006)								
Illiterate	34%	24%	9%	28%	32%	24%	-.-	26%
Literate without diploma	12%	12%	9%	11%	15%	12%	-.-	13%
Elementary	19%	19%	16%	19%	19%	16%	-.-	18%
Secondary	24%	26%	25%	25%	19%	27%	25%	22%
Post-secondary	11%	19%	41%	17%	15%	21%	42%	20%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Sex of main worker (2006)								
Female	17%	7%	4%	13%	14%	-.-	-.-	11%
Male	83%	93%	96%	87%	86%	93%	96%	89%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Main worker's age								
15 to 19	2%	-.-	-.-	1%	1%	-.-	-.-	1%

20 to 24	6%	5%	-.-	5%	1%	-.-	-.-	1%
25 to 29	15%	13%	13%	14%	14%	12%	-.-	13%
30 to 49	53%	47%	55%	52%	62%	52%	66%	60%
50-64	19%	28%	20%	21%	18%	31%	21%	22%
65 or older	5%	7%	9%	6%	-.-	-.-	-.-	3%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Economic Activity (2006)								
Agriculture	5%	-.-	-.-	4%	-.-	-.-	-.-	1%
Manufacturing	16%	17%	15%	16%	17%	17%	-.-	16%
Construction	11%	-.-	-.-	8%	10%	-.-	-.-	7%
Wholesale and retail	44%	56%	66%	49%	43%	63%	70%	52%
Transportation and storage	12%	3%	-.-	8%	15%	-.-	-.-	9%
Professional services	3%	5%	5%	3%	6%	-.-	-.-	6%
Social services	2%	-.-	-.-	2%	-.-	-.-	-.-	3%
Other services	7%	15%	7%	9%	-.-	-.-	-.-	6%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Number of household microenterprises	1,093	354	235	1,682	203	86	53	342

Source: ELMPS 2006 and 2012.

Note: "-.-" denotes cases where the sample size is less than 10 household firms

7. Enhancing Efficiency, Equalizing Opportunity: A Delicate Balancing Act

> Demographic realities mean that Egypt must begin the process of policy reform sooner rather than later. There is scope for short-run policies such as public works projects and active labor market policies, but for maximum impact they must be spatially targeted to respond to differential needs and constraints. However, these policies will ultimately be ineffective absent medium and long term structural reforms that promote private sector job creation. Forcing formality at the firm level will not guarantee more formal sector jobs. Policy must focus instead on creating a competitive environment where rules dominate discretion. Firms will need to have fair access to land, capital, credit and other inputs and implementation of laws and procedures will need to be even and transparent.

A. Principles for a policy framework

Overwhelmingly, the analysis in the report points to a severe paucity of formal, full time employment in Egypt. Following a reform process where the government rightly began to curtail its role as a provider of jobs, the Egyptian private sector, for a multitude of reasons has been unable to step up to the plate and take its rightful position as the engine of job creation. This is evident in the secular trend towards informal and irregular work across different industries and across different parts of the country. This trend is the symptom of stagnation in the private sector's ability to generate employment and to grow. The latter in turn is caused by a multitude of distortions in the policy space that have on the one hand, preserved a preference for the public sector in the minds of workers; and on the other hand, created an uneven playing field where a few firms benefit at the expense of many. The absence of a level playing field is manifested in low rates of firm entry and exit, stagnant growth over firms' life cycles, the existence of few dominant players in several markets, and the long-term decoupling of employment growth and labor productivity**.**

The first principle for a policy framework is therefore to treat the underlying causes, not the symptom of informality. The focus must be on medium- and long-term policies to institutionalize a competitive environment for the private sector where rules dominate discretion. Firms will need to have fair access to land, capital, credit and other inputs; implementation of laws and procedures will need to be even and transparent; productivity rather than procedure will need to be the key determinant of entry, growth, and exit; and the true employment generating potential of the private sector will need to be unleashed.

Sequencing and complementarity of policies is critical, and is the second important principle for policy. The policy framework will need to carefully balance the sometimes competing claims of efficiency and social justice, between the long term and the short, and between a Cairo-oriented vision and one that spurs economic opportunities beyond. At any time of crisis, governments necessarily need to take action to address

immediate calls for social justice. Especially in the Egyptian context today, it is critical that such action not undermine economic efficiency, and for this to happen, certain elements must be kept in mind. For example, a public works program can provide relief in terms of immediately creating jobs, but such a program must be short term, with a clear exit clause, and at a wage that does not crowd out the private sector. Similarly, any policies that are implemented in the short term must go hand in hand with medium and long-term structural reforms. Absent that, they will end up being mere band-aids that leave little or no impact (see Box 7.1). Finally, a Cairo-focused vision may ignore the potential for growth in employment opportunities elsewhere, opportunities that are based on their particular comparative advantage; as well as address obstacles to accessing jobs across the country.

BOX 7.1: LESSONS FROM JORDAN

The Jordan New Work Opportunities for Women (NOW) pilot was designed explicitly to support a rigorous impact evaluation. The pilot randomly assigned 1,347 female community college graduates of the 2010 cohort to one of three labor market interventions: a 3-week soft-skills training course for 300 women, a 6-month job voucher offer for 300 women, a dual training and job voucher offer for 300 women, and a control group for 499 women. The job voucher offered a firm a 6-month wage subsidy conditional on hiring a graduate.

Early results from the midline survey indicated that employers responded to clear financial incentives: the job vouchers induced a 39 percent rise in female employment. Moreover, 57 percent of women expected to keep their jobs after their vouchers expired. In contrast, the training program had no significant effects on employment.

A detailed survey was then undertaken to verify and understand the long-term impacts of the pilot. While the pilot succeeded in its objective of increasing female labor force participation and helping young women accrue work experience, the majority of the jobs did not translate into permanent employment. In fact, while the program was ongoing, firms hired those who were benefiting from the program at the expense of those who were not, so that the program was almost entirely redistributive.

When the program ended, all short term impact disappeared. The pilot highlighted critical constraints to young job seekers in Jordanian labor market regulations: the minimum wage and the requirement to register workers in social security limited the willingness of many firms to retain these young graduates after the wage subsidy expired. Without the subsidy, firms were back in the same labor market they faced before, where the perceived productivity of workers was lower than the wage subsidy or a wage that workers were willing to accept.

To identify other effective alternatives to facilitate the school-to-work transition, an extension of the pilot was undertaken that targeted young men and women. This involved manual matching of firms who had vacancies with appropriately qualified candidates to reduce the search costs for employers, and connect jobseekers with employers. But even this failed to generate much new employment.

Why did this happen? The authors argue that these types of interventions were ineffective in the face of other features of Jordan's labor market, which are strikingly similar to that of Egypt. First, a relative oversupply of young, educated workers that do not always have the right skills or connections to get the few jobs going around. Second, worker productivity does not evidently justify the additional costs imposed by formalization of employment – paying the minimum wage and social security benefits- on the employer.

The third critical principle for policy makers and development partners is to think carefully on the potential ramifications of policy interventions beyond their immediate influence. In other words, the costs and benefits must be weighed to ensure that policies do no harm down the road. For example, the recent increase in the minimum wage for public sector employees, while an understandable response to popular discontent, has significant implications for the labor market as a whole (See Annex 7.2 for a detailed analysis). For one, it targets a small and relatively well-off segment of the population and will widen the already significant gap between wages in the public and private sector. Extending it to the formal private sector will not solve the problem, because it will still leave out 63% of employed Egyptians, who work in the informal sector or in self-employment and subsistence activities. On the contrary, it may strengthen incentives to firms to limit hours of work, cut employment and/or deformalize workers. Further, it will bias labor supply against sectors not covered by the legislation, and thereby limit the pool of talent available to a struggling private sector.

The final principle is to take action now. The state of the Egyptian labor market today allows little room for complacency, inaction, or shortcuts. Important economy wide reforms are necessary conditions for putting the labor market back on track, and they may involve difficult decisions. In addition, the demographic respite that has contributed to limiting unemployment is temporary; and a boom generation will soon enter the labor market. However, in rural Upper Egypt, there is no such temporary respite. More than 50 percent of its population is below the age of 25, and job opportunities, already scarce, will need to grow rapidly to absorb these new entrants into the workforce.

These principles underpin the specific policy recommendations outlined below. The overall objective of these policies is to boost private sector dynamism to expand the quality, quantity and distribution of jobs. In turn, this will expand opportunities for hitherto excluded groups including women, youth, and peripheral parts of Egypt. An important externality is the reversal of declining returns to education, and a restoration of a virtuous cycle between skills and employment for Egypt's young workforce.

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┌─────────────────┐        ┌─────────────────┐        ┌─────────────────────┐
│                 │        │                 │        │  Safeguarding and   │
│    Boosting     │        │  More jobs in   │        │ increasing returns  │
│  private sector │        │ the private     │        │    to education     │
│   productivity, │────────│    sector       │────────└─────────────────────┘
│   growth and    │        │                 │        ┌─────────────────────┐
│    dynamism     │        │ Spreading       │        │  Bringing Egyptian  │
│                 │        │ economic        │────────│  women and young    │
│                 │        │ activity        │        │  people into the    │
│                 │        │ across space    │        │     workforce       │
└─────────────────┘        └─────────────────┘        └─────────────────────┘
                                                      ┌─────────────────────┐
                                                      │ Better quality jobs │
                                                      │      for all        │
                                                      └─────────────────────┘
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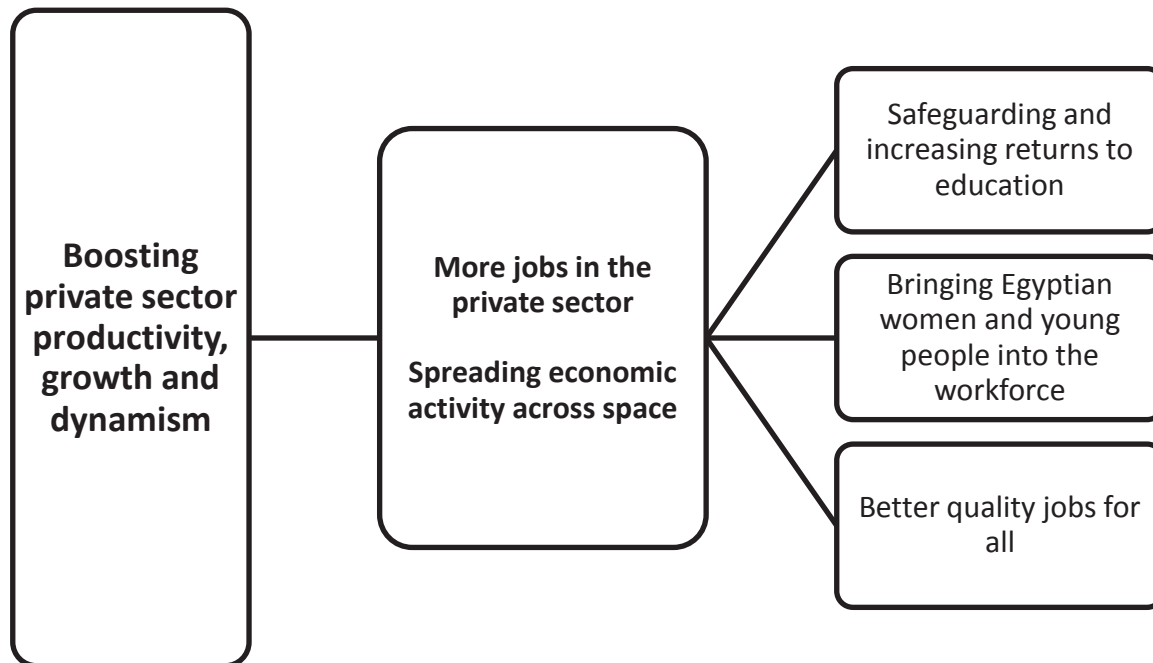
B. Spurring competition, entrepreneurship and job creation

Weak formal sector entrepreneurship, low firm churning, stagnant growth over firms' life cycles, the existence of few dominant players in several markets, and the long-term decoupling of employment growth and labor productivity, are all symptoms of an underlying more fundamental cause - the absence of a level playing field. That is, an environment lacking competition reduces incentives to invest in new technologies or higher-productivity products in order to maintain a competitive edge over competitors, ultimately resulting in insufficient economic dynamism and employment creation. It is the role of antitrust or competition law and their uniform enforcement to safeguard a level playing field among firms within and across sectors. The lack of a level playing field, however, also surfaces in various other policy areas. For instance, we find that the implementation of rules and regulations by government officials varies across firms within the same sector creating a de facto discriminatory business environment among competitors. Moreover, exclusive licenses restrict the entry of firms into energy intensive sectors such as cement or steel and thus channel the bulk of the generous energy subsidies to few selected firms. The entry into energy intensive sectors is further de facto limited by variations in the access to credit which is required to finance the high initial fixed costs in many of these industries. In fact, few large firms absorb almost bank loans in Egypt. The high concentration of credit further conceals an unequal access to land which is required as collateral for bank loans.

To actively promote the private sector as the engine of job creation, concerted efforts need to be undertaken on multiple fronts.

Provide credible signals to the private sector of transparency and accountability

Government policies carrying credible signals of transparency and accountability to restore broad-based private sector confidence can have an immediate impact on firm's perception of a more equal playing field reducing uncertainty and fostering investment. These measures have very low fiscal costs, with potentially high gains and can be implemented in a very short time, if political constraints allow. Examples include:

- Public access and full disclosure of all regulations governing the private sector.
- A transparent system for business license approvals and e-monitoring and disclosure of processing times.
- Removing legal barriers that hinder politically independent, inclusive and representative business organizations.
- Sector-by-sector regulatory audits to identify legal barriers to entry, exit and competition in preparation for medium-term reforms.

Institutionalize a competitive environment through competition policy

While Egypt has taken important steps towards strengthening and empowering its Competition Authority; its true independence must be guaranteed. Moreover, the existence of a competition law and an independent authority is a necessary but not sufficient condition to institutionalize a competitive business environment.

Authorities must engage in competition advocacy targeted at consumers and policymakers to help raise their awareness of the impact of economic policies on competition. The existence of competition law is ineffective in overcoming vested interests of powerful businesses in Egypt due to the lack of consumer awareness of competition (Dimgba 2006). In particular, some firms are able to secure preferential treatment from the government or influence the legislative process tailoring laws to their benefit, for instance, by granting exceptions. Competition advocacy raises the awareness of consumers and policymakers to counteract these influences.[106]

Even more importantly, the government needs to ensure institutional effectiveness in that the design of reforms in all policy areas signals transparency and accountability and is aligned with pro-competitive principles. Even if a comprehensive competition law were in place, the intensity of private sector competition is affected by variations in firms' access to land, public contracts, their waiting times to obtain required permits or licenses, etc. Thus the government must play an active role to ensure that policies are designed in a way that does not distort competition. Moreover, the successful enforcement of such policies depends on government effectiveness and institutional quality.

Promote accountability and efficiency in the public sector

Ensuring a more consistent implementation of rules and regulations also requires reforming the incentives in the public administration to promote accountability and to reorient the public sector towards its primary role in solving market and coordination failures. More generally, the public administration must be committed to a development strategy that fosters growth and job creation to ensure that the implementation of policies does not derail these objectives. To ensure it is not creating any obstacles for competition, strategic incentives for public agencies that reward efforts to increase private sector growth could be introduced, along with a performance tool that assesses the public sector's unwarranted involvement in the private sector. At the same time, the quality and skills of public administrators could be enhanced by basing recruitment and promotion schemes on merit rather than on tenure. Moreover, it is important to ensure that the instruments of trade and industrial policy do not conflict with pro-competition principles by introducing a transparent system for license approvals, e-monitoring, and public access to all regulations governing the private sector.

The modernization of the procurement law according to international best practices and its consistent and universal implementation in all government entities would be a major regulatory step to level the playing field. The main procurement law governing public tenders and auctions of government entities dates back to 1998. Moreover, several key government entities are exempted from the law including the Ministry of Defense, the Ministry of State for Military Production, and the National Security Organization. There have been considerations to revise the main procurement law in accordance with best practices following the UN-CITRAL model law and OECD guidelines. Such amendments would ensure comprehensive transparency and disclosure regimes in the legal framework following broad consultations with academia and

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[106] For instance, authorities can mobilize consumer groups to lobby for pro-competition reforms and the resolution of any anti-competitive practices. Moreover, empowering consumer protection builds trust in firms and allows consumers to actively engage in markets.

the private sector. They also include an independent monitoring system to ensure that all government agencies follow procedures such as the publication of bidding opportunities, contract awards, and technical or financial evaluations.

Ease bankruptcy, liquidation and restructuring procedures

'Decriminalizing' bankruptcy would reduce the stigma of bankruptcy, encourage firms to reorganize, and strengthen creditors' incentives to lend. Egypt's cumbersome and costly regulatory environment for bankruptcy, liquidation, and restructuring procedures deters firms from the kind of risk-taking behavior that spurs investment and growth. Bankruptcy procedures are also considered to involve fraudulent behavior in Egypt.

Reform energy subsidies

Removing costly energy subsidies to industry is likely to pay a triple dividend in terms of job creation: it reduces the relative costs of labor, it incentivizes investments in more energy efficient production, and it removes the burden of subsidies from the national budget making room for much needed infrastructure investment. Energy subsidies are another example of policies that distort the level playing field in Egypt as access to these subsidies are restricted to a few large firms (Chapter 5), and moreover, they artificially increase the cost of labor. It is important to note, however, that to harness the benefits of removal of these subsidies will require a restructuring of firms and investment in new technologies; and that a careful balance will need to be maintained between the short-term costs and long term benefits. In particular, complementary policies will be needed to mitigate the short-term employment impacts, in anticipation of the large medium term benefits of job creation, technological advancement, and growth are large. Moreover, their removal frees up public resources to incentivize broad-based access to technical assistance and credit that can help firms to successfully employ more energy efficient technologies.

Incentivize entrepreneurship and expand fair access to land, capital and credit

It is imperative to improve startup access to credit, as well as competitive regulatory services, and land. The majority of Egypt's small, young firms have very little access to land, capital, credit and other infrastructure, which severely limits their growth and job creation potential. Sixty percent of firms will less than 20 employees are found to be credit constrained, in comparison to large firms. SMEs have long been identified as the main source of employment growth, however, recent evidence highlights that young firms are in fact the engine of job creation (Haltiwanger et al 2013). Therefore, there is room for improving existing SME support programs in Egypt by targeting the subset of young firms among SMEs. For instance, the American University in Cairo (AUC) has established a new Venture Lab that encourages start-up companies to develop their projects and present them to investors and industry leaders helping to commercialize technologies and innovations. Some successful integrated programs from other countries include TechnoServe in Central America and Finca in Peru (Klinger and Schuendeln 2007, Jaramillo and Parodi 2003, Karlan and Valdivia 2009).

Given the sheer numbers of workers supported in the informal sector, support to self-employment and micro-entrepreneurship through business training, life skills training, mentoring, micro-franchising, and microfinance can help expand and protect jobs in this sector. These programs can be rolled out quickly where the institutional infrastructure exists. While these interventions may help support and expand existing business, little is known about their efficacy in terms of new job creation. Rigorous evaluations of business training programs show limited to no effects on actual firm outcomes and performance for interventions such as business training, greater access to capital, and mentorships.[107] Indeed, few studies find significant impacts on profits or sales (Annex Table 7.1). In contrast, experiments that have provided small firms with capital have found high returns to capital, particularly for businesses headed by men. Similarly, studies that have focused on intensive technical assistance and subsidized consulting services find positive and significant impacts on productivity and return on assets in the short run, and employment in the long run. Given this mixed evidence, pilot programs must test multiple alternatives, and it may be beneficial to target a few promising sectors before scaling up successful interventions. In addition, women entrepreneurs face additional constraints in terms of access to collateral and capital, and may need specific support in setting up and running a business, and linking up with input and output markets.

C. Addressing Informality

Given the size and growth of the informal sector in Egypt, there is need for a multifaceted approach, and to distinguish between the informality of employment and the informality of a firm. There are few benefits to enforcing formality on the private sector; instead efforts should be concentrated on providing a more equal playing field among all firms, allowing larger and more profitable informal firms to the formal system by making it attractive, and writing the law in a way which does not require subsistence enterprises to register.

One area that has received most attention from policymakers over the past decade has been the focus on making it easier to formally register a business. A recent survey of rigorous evaluations finds that efforts to dramatically lower the cost of registration and simplify the registration process have still left most small scale enterprises operating informally in many developing countries (Bruhn and McKenzie, 2013). In fact, it appears that most informal firms will not formalize unless forced to do so via increased enforcement, suggesting formality offers little private benefit to informal firms. In contrast, one-stop-shops have small impacts on firm registration, and on formalization of previously informal firms. Similarly, greater information were shown to have no impact on formalization, while subsidized or waived registration costs have had mixed results, with significant impacts in Peru, but not so in Brazil, and Sri Lanka (Annex Table 7.2).

There are several compelling reasons to try and bring larger and more profitable informal firms into the formal system, but formalizing only happens when its benefits outweigh the costs. First, collecting taxes from relatively well-off owners of informal firms would widen the tax base, while the revenue collected is likely to justify the costs of greater inspections to ensure that they do become formal. Secondly, these larger and more successful informal firms are more likely to be the ones competing with formal firms for customers,

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[107] For a recent review of the literature, see McKenzie and Woodruff (2012).

and so ensuring that such firms also become formal may cut back on unfair competition that prevents more efficient formal firms from growing faster. The challenge is then how to encourage formalization of such firms. Based on the evidence described above, lowering the cost and complexity of registration seems a necessary, but not sufficient, step.

Policymakers also need to increase enforcement of the simplified rules, and perhaps experiment with innovative approaches to encourage suppliers or customers to demand formality. One such example being tried in several countries is to link each tax receipt number to a lottery, so that customers have an incentive to demand a tax receipt on each transaction. Such a system has been used in Taiwan, China; Korea; China; and Puerto Rico. Wan (2010) compares changes in tax revenues in the districts in China that introduced this reform to those that did not, and finds the introduction of this tax receipt lottery increased sales tax revenue by 17 percent.

For subsistence enterprises, the existing evidence seems to suggest that such firms see no benefits from formalizing, and would typically contribute very little to taxes if they did formalize. They may still compete with larger firms, but in the absence of other job opportunities for these individuals, the government may prefer to leave them alone rather than have them close down. The only remaining public rationale for trying to bring them into the formal sector is that the presence of so many informal firms may send a message to the public that obeying the law is optional, and also dissuade more prosperous informal firms from formalizing. An alternative approach used in some countries is to write the law in a way which does not require such firms with income below some threshold to register, making them in compliance with the law. But unless such a threshold is set very high, there are still likely to be many firms above the threshold who choose not to register.

It is important to remember that firms choose to be formal or informal, i.e., it is a conscious decision weighing costs and benefits. Therefore, it is not surprising that efforts to induce firms to become formal have not been successful. Moreover, there is no evidence that formality provides greater access to finance or government programs to firms. Finally, the reasons that governments may benefit from greater firm formality – tax revenues and regulation- will only be relevant for relatively large and profitable enterprises. This is not the case for the majority of informal Egyptian firms, and a top-down approach to formalization may risk taking away the one means of earning a living left to some people. This is not to say that easing the regulatory burden is not important in and of itself, but that formality itself is not an end. Indeed, formality won't *cause* higher productivity, faster growth, and an expansion of the tax base; rather, formality is a natural consequence of a better business environment, a dynamic private sector, and when firms value the benefits over the costs. One way of demonstrating these benefits is a nationwide enterprise registry that involves no costs or penalties to firms irrespective of size and formality. This registry can provide timely information on the true scale and scope of the private sector in Egypt, which may not be detected through standard decennial establishment censuses, which typically underestimate micro and mobile activities. As trust in the system begins to build, firms who may otherwise be hesitant will join the registry, making it a truly useful instrument for policy formulation and for eventually delivering benefits and incentives.

On the other hand, job formality is important because formal jobs are stable and offer workers some protection, and arguably, these elements are important from a social justice perspective. Workers everywhere express a strong preference for these types of jobs; and so formal employment can attract more

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high skill workers to the private sector. However, forcing firms to formalize will not at all guarantee that workers have formal jobs.

There are several ways to improve job formality without targeting firm formality. Even within formal firms, and in general for wage workers, employers may hesitate from providing social insurance to avoid the relatively high costs. In Egypt, the employer pays around 26 percent of the worker's fixed wage and 15 percent of their varying wage, one of the highest rates in the world (Sieverding and Selwaness 2012). Another reason why formal firms may be hesitant to take on workers on formal contracts is the accompanying difficulty and costs involved in letting go of workers. As a result, even for formal firms, informal employment is the only available margin of adjustment to economic downturns. This is supported by Yassine's (2014) finding that "large formal employers did not resort to large-scale layoffs during the 2009 and 2011 crises" but instead reduced hours of employment.

In this context, policies that incentivize firms through tax breaks or reduced employer contributions for social insurance, especially for small firms, may help reduce these additional costs of formalizing workers. Alternately, worker protection can be extended through government supported efforts. These may for instance, be delivered through the national registry proposed above. In general, reducing the employer burden into a more broadly shared contribution can also have the same effect. For instance, in Jordan, social security reform transferred the financial burden of maternity benefits from solely employers to a shared employer-employee fund. Finally, coverage of health insurance and pensions can be extended to informal workers through other means: through membership in trade unions, non-governmental organizations, or through a public-private partnership (See Box 7.2). This may have the additional benefit of boosting entrepreneurship, as the risk to a worker of leaving their job to start a business is lower if they receive social insurance by a method other than through their employer; Olds (2014) found that entrepreneurship in the United States increased following an expansion of publicly-provided health insurance.

BOX 7.2: PUBLIC-PRIVATE PARTNERSHIPS FOR HEALTH INSURANCE IN INDIA

India's Rashtriya Swasthya Bima Yojana (RSBY) provides health insurance coverage for families below the poverty line, with hospitalization coverage upto Rs.30,000/- (approximately USD 500) annually. The scheme links beneficiaries with the public and the private sector and incorporates the profit motive for private sector stakeholders. The insurer (public or private) is paid a premium for each household enrolled for RSBY, and therefore is motivated to enroll as many eligible participants as possible. Hospitals are paid per beneficiary treated and so benefit from expanding coverage. Finally, families must also contribute a small registration fee while the central and state governments pay the premium to the insurer selected by the state government on the basis of a competitive bidding. The cash benefits associated with an enrolled household are transferred to a smart card; the latter is already in operation as a mode of delivering entitlements in Egypt, and can be easily adapted. (Basu 2011)

D. Jobs for all: Building an inclusive future

Equalizing opportunities for young people across Egypt
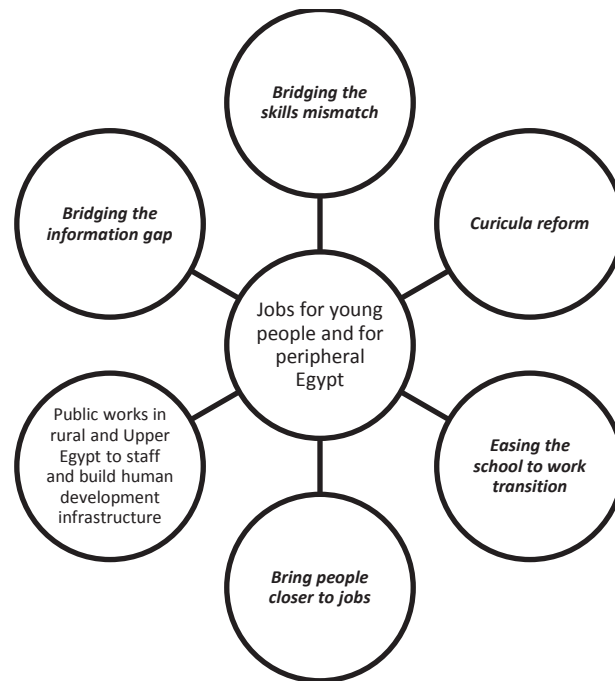
The slow growth of the formal private sector has driven the low rates of formal employment experienced by today's youth and its confinement to the core regions of Egypt has excluded workers in the periphery. The growth of the private sector will require structural reforms that level the playing field between large and small firms and create the opportunities for young, small firms to grow and compete with older, larger firms. Egypt should also undertake land use reform and investments in infrastructure to promote growth through agglomeration and manage density (World Bank 2012. Improving connective infrastructure will allow firms in the relatively robust metropolitan areas to expand outwards while simultaneously enhancing the ability of workers in rural and Upper Egypt to access high-quality jobs in the core, and investments in local public goods such as clean water, drains, and sewers will maintain a high quality of life for those living and working in the core.

Make sure that the broad reforms that encourage private sector growth take hold in peripheral as well as core areas. Egypt has had a long history of failure with spatially targeted industrial policy, which have resulted, by and large, in land speculation rather than employment growth (World Bank 2012). An alternative approach would be to work to ensure a level playing field between regions as well as between firms, so that the industries that do not benefit from agglomeration economies are willing to spread outside the metropolitan areas to take advantage of lower factor prices (in the form of

wages and land rents). Faster rates of firm creation will help this process, since existing firms are likely to be tied to their current locations. In addition, currently the incentives for firms to become formal and to hire formally appear to weaken substantially outside metropolitan Egypt. Strengthening rule of law and the primacy of rules over discretion may then be a potent measure for creating high-quality jobs in peripheral areas.

Egypt must also simultaneously engage in reforms that bridge the fundamental disconnect between the skills learnt in school and those required by the private sector, boosting both employment and productivity. In Egypt, as in many other countries in the region, firms often complain about the shortage of job market candidates with suitable skills. Despite improvements in educational attainment, questions remain about the quality of schooling and university education and its relevance to the modern workspace. Universities could also consider curricular reform that exposes students to specialized fields such as medicine, engineering, law, and information technology, in partnership and consultation with the private sector. An overhaul of the educational system is especially important in Egypt as there are signs of a complete disconnect between skills acquired in school and labor market outcomes; which are eroding the returns to education. Egypt has the potential to develop a significant advantage in a relatively low-cost, abundant, young and skilled workforce, which can in turn attract innovators and entrepreneurs to Egypt. At the same time, a dynamic private sector that rewards and incentivizes performance and expertise can provide the right signals and incentives to the education system to reform, thereby creating a virtuous cycle.

These important reforms will take time to show results, and other efforts are also needed in the immediate term.

Spatially-differentiated programs for youth in the short-term

In the areas that need it the most, a well-designed public works program can go a long way towards providing much-needed infrastructure, services, and immediate jobs. The problems facing core and peripheral Egypt are very different and effective public policy must recognize this fact and adjust accordingly. There is also substantial value in improving linkages between these areas.

Labor-intensive public works projects will be most effective in the more peripheral areas of Egypt, which face immediate demographic pressure and have a less educated labor force. Public works that concentrate on improving health and education services may be a viable method of addressing multiple problems at once while limiting potential negative consequences. Peripheral Egypt suffers from a dearth of schools and hospitals: while more than 80% of households in metropolitan Egypt report living within 20 minutes of a secondary school, this declines to less than 70% in rural Lower Egypt and less than 50% in rural Upper Egypt. For health care, access is even worse: more than 70% of households in metropolitan Egypt live within 20 minutes of a hospital, compared to less than 40% in rural Lower Egypt and *less than 30%* in rural Upper Egypt. Access to both forms of infrastructure has also deteriorated dramatically over the last 15 years. Reequipping peripheral Egypt with adequate

infrastructure would be a huge priority even in the absence of broader problems in the labor market. A public works program of constructing new hospitals and schools in remote areas could provide construction jobs for younger workers with lower levels of education. The positive externalities of added jobs can multiply the welfare impact of such a program.

In addition, this new infrastructure will need to be manned by a qualified set of staff- trained doctors, nurses, and teachers- which will generate jobs for young, educated people, especially for young women. In Bangladesh, a successful program that ran from 1978 to 1997 brought health services to the doorstep by training local women to distribute oral rehydration, immunization and family planning services (Lewis and Lockheed 2007). In India, a tutoring program used local young women to provide supplementary remedial education. This proved to be a very cost-effective way to improve educational quality using local women with middling levels of education (Banerjee et. al. 2007). This may be an effective instrument to bring less educated rural women into productive employment.

The core principles of well-designed public works program are that they should be *timely*, *targeted*, and *temporary*. Public works need to be "shovel-ready", "off-the-shelf" projects that can be rolled out quickly and serve important development goals. They must be designed to appeal to the correct demographic; wage setting is critical to avoid crowding out the private sector and to ensure that the most needy populations are being recruited for the positions. Finally, the programs should not guarantee permanent employment but rather give workers the skills necessary to find gainful employment in the private sector after the completion of the project.

Many countries have put in place large-scale public works programs for short-term job creation and may provide appropriate models and lessons for Egypt. One appropriate model may be India's NREGS public works program, which guaranteed 100 days of work per year for rural households, which significantly increased work among prime-aged, low-skilled people living in poorer districts and generated welfare gains for the poor (Imbert and Papp 2012). However, in some states NREGS has been shown to not be a cost-effective method of relieving poverty, mostly because relatively high-productivity workers moved to the public works project instead of working in the private sector (Murgai et al 2013) and this should be taken into account in program design. Another example of the use of public works to generate short-term employment at a time of crisis is Argentina's *jefes y jefes*, which was introduced in 2002 and benefitted roughly 2 million households, and estimated to increase employment by about 1.7 percent of the population and 2.6 percent of the labor force, of which about half of whom were previously inactive (Galasso and Ravallion 2004).

For educated youth in the core and the periphery, a public service program aimed at improving the quality of local services may be more appropriate and may build valuable labor market skills. Teach for America targets fresh graduates and connects them with short-term teaching positions in disadvantaged areas. This allows them to learn or apply new skills while engaging in community development and service delivery. No evaluations are available, but the program has become very competitive and enhances the employability of those who participate in the private and the non-

governmental sector. This could be a valuable opportunity for young and motivated Egyptians to contribute their skills to underserved communities.

Active labor market policies

For areas with larger educated populations and more developed formal private sectors, active labor market policies to connect firms and workers may be appropriate. Private sector firms have shown a willingness to hire qualified young workers. Expanding private sector-led job creation should therefore have an outsized effect on this excluded group. While inclusive prosperity will ultimately require structural labor market reform to grow the private sector, there is evidence that there are some problems that can be addressed with active labor market policies such as job mediation and training programs. However, evaluations of active labor market policies have shown that they have short-term effects at best, and are no substitute for structural reform.
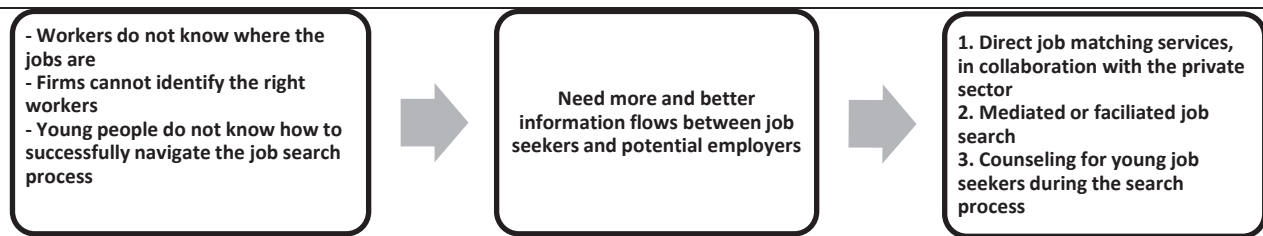
There is strong evidence that Egypt's formal private sector is experiencing substantial frictional unemployment. Despite the relatively high rates of unemployment, private sector firms cannot fill 600,000 vacancies.[108] Labor market "frictions" such as informational issues may be preventing firms from finding the qualified workers to fill these positions, especially given the heavy use of personal connections in job search discussed in Chapter 2. Young people with limited labor market experience and contacts will be especially disadvantaged by this process, which may lead to "traps" where those in informal work never make the connections necessary to break into a formal sector job. To the extent that it is informational problems that are causing frictional unemployment, active labor market programs focused on facilitating job search and counseling may be able to help interrupt this vicious cycle.

Active labor market programs need to be carefully designed and evaluated. The little evidence that does exist suggests that positive impacts are limited to the short run, and unless more fundamental reforms to boost employment creation are put in place, the effects will not be sustained. In this context, many studies have shown that training programs in isolation are not effective at creating long-term employment, especially, as in the case of Egypt, where private sector growth is sluggish. When carefully phased in and evaluated, however, they can be useful in informing the design and scale up of larger programs. Lessons from the Jordan NOW pilot program described below have been incorporated into the roll-out of an expanded project that will soon be implemented across Jordan.

Below we highlight three types of active labor market policies that focus on (a) facilitating sharing of information on both sides of the labor market, (b) bridging the physical distance between young men and women and opportunities for gainful employment, and, (c) providing productive stepping-stones to connect youth to their first jobs.

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[108] AfDB, OECD, UNDP, UNECA (2012) "African Economic Outlook"

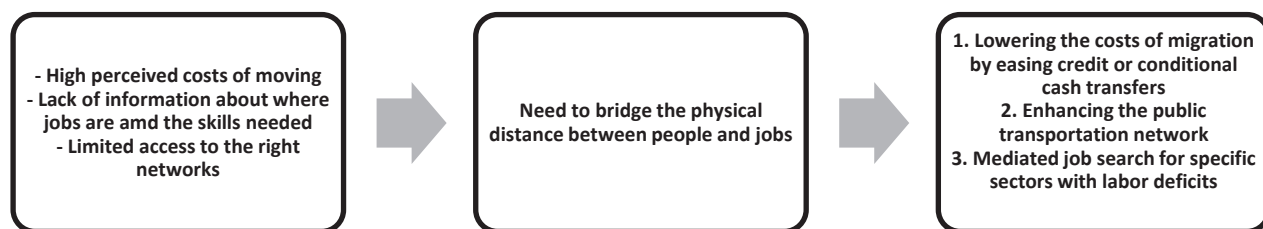| INFORMATION |
|---|
| - Workers do not know where the jobs are
- Firms cannot identify the right workers
- Young people do not know how to successfully navigate the job search process ➤ **Need more and better information flows between job seekers and potential employers** ➤ **1. Direct job matching services, in collaboration with the private sector**
2. Mediated or faciliated job search
3. Counseling for young job seekers during the search process |
| An example of a project that integrates several aspects of mediation is an ongoing IADB project in Bolivia. It aims at improving the quality of labor intermediation services provided at employment offices, along with a short term, on-the-job training and placement program. By improving the employment service, the project addresses the lack of a good intermediation system that provides information to both sides of the labor market – information about vacancies to job-seekers and information about qualified applicants to employers. In the future, the project will put in place a support system to guide workers through the job search process and address the lack of referrals to vouch for their credentials. In India, a study showed that giving young women information on job openings in business services outsourcing helped them find employment in that growing industry (Jensen 2012).

Recently some countries have begun to emphasize counseling services for young people as part of job mediation programs. For instance, a recent French program combined intensive counseling and job placement services for young graduates and found that it reduced job search duration but did not lead to permanent employment (Crepon et al 2013). In the Egyptian context, this may be useful in providing relevant job experience; by placing workers in the formal sector early on, it may boost their chances of sustained formal sector employment if the lack of experience and connections is a significant constraint. |

MOBILITY
- High perceived costs of moving - Lack of information about where jobs are amd the skills needed - Limited access to the right networks ➤ **Need to bridge the physical distance between people and jobs** ➤ **1. Lowering the costs of migration by easing credit or conditional cash transfers** **2. Enhancing the public transportation network** **3. Mediated job search for specific sectors with labor deficits**
An experiment in Bangladesh provided incentive grants and information for households to send a migrant to another region and found that the former increased migration and employment (Bryan et al 2013). The effective physical distance between metropolitan centers of job creation and outlying regions can reduced by improving transportation infrastructure, which can be incorporated into the public works projects. Particularly for women, access to safe and reliable transport can go a long way towards improving their participation and expanding the pool of potential employment opportunities.

FIRST JOBS

|		
- Emloyers are reluctant to hire workers with no previous experience - Young workers lack specific or general skills needed to succeed in the workplace	Need to encourage the private sector to take a chance on young workers through short-term incentives	1. Facilitated and subsidized internships 2. Short-term wage subsidies or tax breaks linked to net employment

Two successful models are the so-called Training "plus" and On-the-Job-Training programs. Examples include Jovenes in Latin America and Mexico's Probecat "on the job" training program.

Subsidizing labor costs for formal firms in the short term through direct wage refunds, credits on social security contributions, or lower labor/payroll taxes can encourage firms to expand hiring. A pilot in Jordan (Groh et al 2012) provided job vouchers or wage subsidies for six months to young graduates to encourage employers to hire them. In the short term, the wage subsidies increased employment and labor force participation, but when the program ended, these effects disappeared. The lessons from the evaluation pointed to the importance of cost sharing on the part of employers and the binding labor market regulations: while the former incentivizes firms to hire workers who are likely to be a good fit, the latter increases the costs of formal employment. Given long spells of unemployment and search in Egypt, a case can be made for speeding the school- to-work transition to minimize the risk of discouragement and dropout as well as provide an opportunity for accruing valuable experience and skills on the job. So even if the employment effects are relatively short-lived, the gains in terms of labor market experience and extending job search could make job vouchers a worthwhile policy option.

Equalizing opportunities for half the population
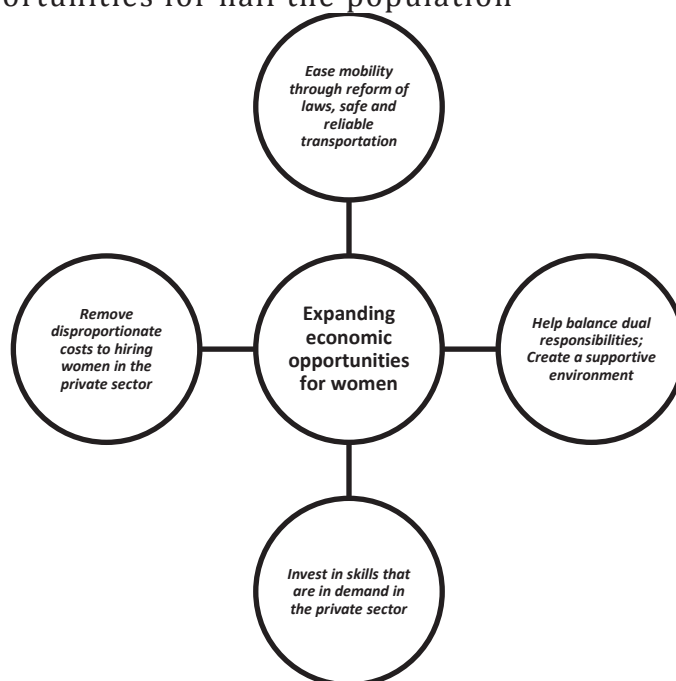
The most important pre-condition to expand economic opportunities for Egypt's increasingly educated female workforce is an increase in the supply and diversity of private sector jobs. Many of the targeted interventions discussed above will also ease constraints to female participation in the workforce. In addition, complementary interventions will be necessary to lower specific obstacles faced by women.

One of these obstacles is the significant degree of segregation in fields of study; and efforts are needed to redress this bias. In part, this is a legacy of women's dependence on the public sector for employment; but it is also related to norms about appropriate fields of study and work for women. As women increasingly look to the private sector for job opportunities, they may find themselves ill-equipped if they continue to pursue traditional educational specializations. Initiatives to encourage young women to seek training and experience in non-traditional fields including medicine, engineering, science and law can be important in this regards. Incentives such as scholarships and prizes to girls have successfully boosted educational outcomes for girls, for instance in Kenya (Kremer et al 2009). Other countries have successfully implemented admissions quotas for tertiary studies in non-traditional fields to boost enrollment, and can be phased out as more and more women enroll of their own volition.

More needs to be done to create an enabling environment for women to participate in the workforce. One important element is helping balance the competing the needs of work and family life. As a solution, many countries have put in place generous maternity leave policies; however, these may have unintended and adverse consequences by increasing the costs of hiring women disproportionately. Egypt has had a fairly liberal paid maternity leave policy in the private sector but this has evidently not boosted participation in the private sector. Given the extent of informality in the private sector, the majority of firms clearly do not have to comply with these regulations. Furthermore, mandating paid maternity leave may induce firms to reduce wages for women so that returning to the workforce after childbirth may not remain an attractive option.

Similarly, by lowering the costs of childcare while retaining the incentive to work, mothers can more easily continue to participate in the workforce. Many countries, notably European nations, provide access to daycare through publicly-run or publicly-subsidized private centers. While Egyptian law places a very small burden of contributing to childcare on working mothers, the majority of the burden falls on employers, which can substantially increase the costs of hiring women. To avoid these disincentives, in the Netherlands, employers, parents and the government share the costs of childcare. The United States has followed an alternative approach by combining childcare subsidies with tax incentives to encourage employment, particularly of mothers. The Child Care Credit, under which parents with two or more children can receive a substantial tax credit provided that both parents are employed, links the provision of the benefit to work.

Flexible working hours and home-based work are another way to facilitate the integration of non-working women into the labor force by making it less costly for them to combine work with family responsibilities. These types of arrangements are particularly suited to occupations in which

physical presence is not required and output is easy to monitor such as data entry, transcription and ICT based tasks. However it is also important to ensure that flexibility does not come at the cost of job security or work quality, and that firms are prevented from exploiting flexible arrangements to evade employee entitlements and protection.

Creating a safe and protected work environment, especially for young women, will also go a long way in increasing participation. The fear of harassment in the workplace, especially in the private sector, deters young women from seeking jobs in the private sector. Under the 2014 Constitution, the Egyptian state undertakes responsibility for protecting women from all forms of violence (Article 11). However, implementation and enforcement of these provisions remains key. Young women also have considerable safety concern in public spaces, which can also inhibit their mobility. In the 2009 Survey of Young People in Egypt survey, a third of young women reported facing the risk of sexual harassment on the street; young women were also significantly more likely to report other risks like theft, crowding and pushing on their commute. Provision of safe, reliable transport and an expansion in the public transportation network will have disproportionate benefits for women; as will ensuring that "women-only" spaces in public transportation in Egypt are genuinely safe spaces. Furthermore, monitoring and increasing awareness can also help build civic intolerance for harassment. A home-grown initiative, launched in 2010, Egypt's Harass Map, an SMS and mobile based reporting system of cases of sexual harassment in public spaces, is a good example.

This report demonstrates that the overarching policy priority for Egypt must be to vitalize the private sector and unleash its potential to create a large and diverse set of jobs. It also highlights the existence of stark inequities in labor market outcomes for women, young people and those living outside the large metropolitan areas of Cairo and Alexandria. These outcomes are compounded by differences in human capital endowments and access to services. As Egypt looks ahead to a more inclusive development path, these groups must not be left behind. Generating productive jobs at scale, and leveling the playing field, for firms and workers, is the surest way to sustained and shared prosperity for Egypt.

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Annex 7.1

ANNEX TABLE 7.1:SUMMARY OF STUDIES ON THE CAUSAL EFFECT OF POLICIES TO PROMOTE FIRM FORMALIZATION		
Study	*Policy or program studied*	*Main results*
Panel A: Effect of business entry reforms on number of firm registrations		
Bruhn (2011), Kaplan, Piedra, and Seira (2011)	One-stop-shop (combining municipal, state and federal business registration procedures) in urban areas in Mexico	Reform increased business registrations about 5 percent and also increased employment; Bruhn shows that the increase in registered businesses was mainly due to previous wage earners opening new businesses
Bruhn and McKenzie (2013)	One-stop-shop in less populous municipalities in Minas Gerais, Brazil	Program led to a reduction in number of firms registering during the first two months of implementation, with no subsequent increase
Cárdenas and Rozo (2009)	One-stop-shop in six major cities in Mexico	Reform increased business registrations by 5 percent
Panel B: Effect of business entry reforms on formalization of informal firms		
Bruhn (2013)	One-stop-shop in urban areas in Mexico	Some informal business owners become wage workers due the reform, some register their business, but these effects are small
Mullainathan and Schnabl (2010)	Municipal licensing reform in Lima, Peru	Reform increased number of provisional licenses issued to informal firms, but many firms don't renew their license later
Panel C: Effect of information, waived costs, and enforcement on formalization of informal firms		
Alcázar et al. (2010)	Offer a subsidy for the cost of obtaining a municipal license to informal firms in Lima, Peru	Subsidized cost offer led to 10 to 12 percent of informal firms obtaining a municipal license

Andrade et al. (2013)	Three interventions for informal firms in Belo Horizonte, Brazil (a) deliver brochures with information about registration process and potential benefits; (b) waive registration costs; (c) receive municipal inspector	Information and waived registration costs had no effect on formalization rate; municipal inspections increased formalization rate by 22 to 27 percentage points
de Mel et al. (2013)	Provide information and reimburse registration costs for informal firms in Sri Lanka	Information and cost reimbursement had no effect on formalization rate
Giorgi and Rahman (2013)	Deliver brochures with information to informal firms in Bangladesh	Information had no effect on formalization rate

Source: Bruhn and McKenzie, 2013.

ANNEX TABLE 7.2: SUMMARY OF STUDIES ON THE CAUSAL EFFECT OF POLICIES TO PROMOTE FIRM GROWTH		
Study	*Country*	*Main results*
Panel A: Training Only		
Berge et al (2011)	Tanzania	Training increases profits by 24 percent and sales by 29 percent for males in the short-run (5-7 months post-training), but this effect becomes insignificant in the long run (30 months post-training)
De Mel et al. (2012)	Sri Lanka	No impact of training alone on profits of existing firms over either the short or medium run. However, training significantly increases profits and sales of start-up businesses.
Karlan and Valdivia (2011)	Peru	Relatively modest impacts of training on survivorship of existing firms, but stronger evidence that training programs help prospective owners launch new businesses more quickly
Bruhn and Zia (2011)	Bosnia-Herzegovina	
Giné and Mansuri (2011)	Pakistan	
Panel B: Grants Only		
Woodruff et al (2011)	Ghana	While the average treatment effects of the in-kind grants are large and positive for both males and females, the gain in profits is almost zero for women with initial profits below the median, suggesting that capital alone is not enough to grow subsistence enterprises owned by women. Second, for women only in-kind grants lead to growth in business profits. The results for men also suggest a lower impact of cash, but differences between cash and in kind grants are less robust. The difference in the effects of cash and in-kind grants is associated more with a lack of self-control than with external pressure. As a result, the manner in which funding is provided affects microenterprise growth
De Mel et al (2008)	Sri Lanka	The average real return to capital in these enterprises is 4.6%–5.3% per year), substantially higher than market interest rates. Returns are found to vary with entrepreneurial ability and with household wealth, but not to vary with measures of risk aversion or uncertainty. Treatment impacts are also significantly larger for enterprises owned by males; indeed, we find no positive return in enterprises owned by females.
Mel et al (2012)	Sri Lanka	The combination of training and a grant leads to large and significant improvements in business profitability in the first eight months, but this impact dissipates in the second year.

Panel C: Technical Assistance, subsidized management consulting and mentoring services		
Valdivia (2012)	Peru	Significant impact of training and intensive one-on-one technical assistance on revenues, but no significant increase from training alone.
Bruhn et al (2013)	Mexico	Positive and significant impacts on productivity and return on assets in the short run, and employment in the long run for a program of partially subsidized consulting services for microenterprises in Mexico
Bloom et al. (2011)	India	Free consulting on modern management practices provided to large textile plants led to improvements in product quality, reductions in inventory and increased efficiency, raising profitability and productivity.

Source: McKenzie and Woodruff, 2012.

Annex 7.2

Analysis of the potential effects of the proposed minimum wage legislation on the Egyptian labor market[109]

Across the world, many countries have put in place minimum wages to guarantee formal workers a decent standard of living and to serve as a floor to set wages. However, this does not immediately guarantee improved employment prospects for those who seek employment or are currently employed at or near the minimum wage. The critical decision is the level at which the minimum wage is set: setting it too high may increase the cost to employers so much that they resort to cutting jobs. At the end of the day, the effect of the minimum wage on employment depends on how well the formal labor market is functioning: whether there are adequate workers with the appropriate skills for jobs at or near the minimum wage; and whether there are enough jobs to absorb these workers at the minimum wage. In the private sector, employers face a simple calculation: is the potential productivity of the worker at least as much as the minimum wage? If the additional costs do not match the productivity gains, firms will have little choice but to consider options that run counter to the intended objectives of such a policy.

In July 2011, the Government of Egypt mandated an increase in the minimum wage for public sector employees to EGP700, representing the first increase since 2003. On September 18 2013, Egypt's Prime Minister announced that the minimum monthly wage in the public sector would further increase to EGP 1200 ($174) starting January 2014. There are discussions underway on possibly extending this policy to cover the private sector.

This move is likely in response to increasing discontent and widespread pessimism about the future among the Egyptian people. A recent Gallup poll found the 80 percent of Egyptians believe that Egypt is worse off today than it was prior to the 25th January Revolution, and only 50% believe that it will recover in the next five years. A large part of this pessimism comes from a negative view of the labor market and its future prospects; roughly 70% of Egyptians believe that employment opportunities in both the public and private sectors have declined, and more than half believe it will take five years or more to improve, with 11% going so far as to say that it will never improve.

Over the last 15 years, the Egyptian labor market has characterized by a trend towards informalization and underemployment for workers, and limited growth and dynamism on the part of private firms. These are symptomatic of the limited job creation potential of the private sector. A deep-rooted preference for public sector work, combined with real and perceived inequality between public and private sector work, remains strong, even among young job seekers. In this context, a public sector minimum wage will serve to increase the bias against a small and struggling formal private sector, and absent significant reforms, may worsen the trend towards informalization.

Moreover, recent history suggests that prima facie, the wage increases from the new minimum wage will be distributed unevenly, even within the public sector. As of March 2012, more than a quarter of public sector employees were still making less than the current minimum wage of EGP 700. A bulk of the non-compliance

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[109] This topic note accompanies the Egypt Jobs Report, and has been prepared by the core team. It is part of a series of topic notes on the Egyptian labor market.

in the implementation of the minimum wage appears to be stemming from rural and non-metropolitan urban areas, which are already relatively disadvantaged. While in rural Egypt, a third of public sector employees are paid less than EGP 700, in metro Egypt less than 1 in 7 are paid below the minimum wage. If we assume that this pattern will continue to be true for such policies, the *de jure* increase in the minimum wage will more likely translate into a larger *de facto* wage increase for those in the metropolitan areas, who are already richer and better-off than those in rural areas.

Taking a broader view of the current Egyptian labor market, an increased minimum wage in the public sector is likely to have even more far-reaching deleterious consequences

a. It targets a narrow and relatively well-off segment of the population and will widen the already significant gap between wages in the public and private sector.

b. Expanding the minimum wage to cover the private sector will still leave out 63% of employed Egyptians, who work in the informal sector or in self-employment and subsistence activities

c. It will further bias labor supply towards the public sector by strengthening the preference for public sector work, especially among the educated, and thereby limiting the pool of talent available to a struggling private sector

d. If extended to the private sector, it will likely strengthen incentives to firms to limit hours of work, cut employment and/or deformalize workers.

We will make this case using data from the 1998, 2006 and 2012 rounds of the large scale, nationally representative Egyptian Labor Market Panel Surveys (ELMPS). The latest survey round was conducted in February and March of 2012, a few months after the implementation of the previous minimum wage.

The proposed public sector minimum wage implies a more regressive wage structure

Public sector employees currently make up 30% of the employed working-age (15-64) population and 14% of the total working age population. Public sector workers in Egypt are paid better than the private sector; according to recent CAPMAS release, the average Egyptian public sector worker is paid LE657 ($108) a week, around a third more than the LE397 ($65) earned by a private sector employee.[110] Wage data from the ELMPS, while measured differently, also shows a public sector wage premium.

More than 70 percent of wage workers in the public or formal private sectors currently earn more than EGP700, the current public sector minimum wage. In contrast, 41 percent of informal sector wage workers earn less than EGP700, and more than 75 percent earn less than EGP1200, the proposed public sector minimum wage. Figure 1 below shows the distribution of wage workers in these three sectors in three wage intervals – those earning less than EGP700, those earning between EGP700 and EGP1200, and those earning more. Workers in the formal sector in Egypt are already more likely to earn more. But they make up the

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[110] http://english.ahram.org.eg/NewsContent/3/12/52061/Business/Economy/Egypts-public-sector-still-pays-better-than-privat.aspx

minority of the workforce. The bulk of Egypt's male working age population is employed in the informal sector, in subsistence activities, or self-employed, or unemployed or out of the labor force. Any minimum wage legislation will not apply to this large share of the population, and the implementation of the proposed minimum wage in the public sector will only expand the gap between the privileged few and the rest of the working age population.

Figure 1: Wage distribution by sector of employment (%), ELMPS 2012

Wage intervals by employment type, 2012
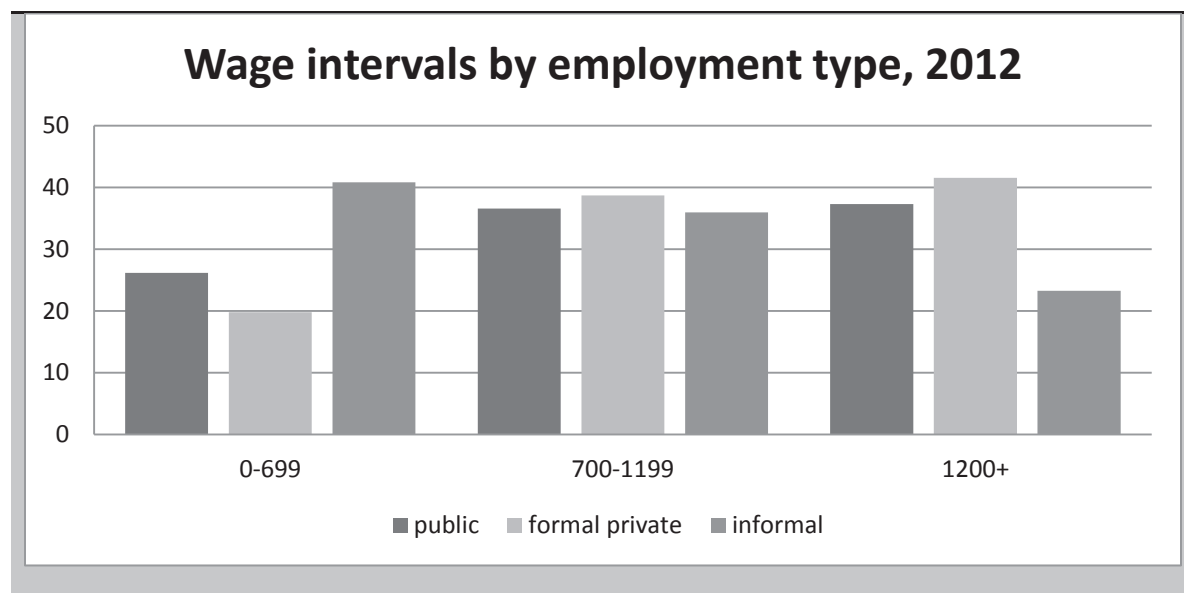
Over and above earnings and the job security and benefits associated with government employment, public sector employees already appear to be better off. This comparison is even starker with respect to the informal private sector. Public sector workers have higher education and greater experience than private sector workers: 83% of public sector workers are of prime working age (30-59) compared to 54% of private sector workers. Moreover, public sector workers have a post-secondary graduation rate more than three times as high as private sector workers. These attributes are associated with higher incomes in both the public and private sectors. Public sector workers are also more likely to have another earner in their household, and this is even truer of public sector workers earning less than EGP 1200. This is partially because many women work in lower wage public sector jobs, and tend to be secondary earners in their households. In addition, public sector workers are more likely to live in households with other public sector workers. The effect of an increase in public sector salaries will therefore be concentrated on a relatively small number of households.

Table 1: Worker characteristics in the public and private sectors, ELMPS 2012

Worker type	High school education	College education	% aged 30-59	% with second earner in the household	% with second earner in the public worker
Public sector	84%	47%	83%	56%	35%
Earning <EGP1200	79%	42%	79%	59%	34%
Private sector	46%	14%	54%	51%	12%
Formal only	70%	36%	65%	39%	17%

Finally, public sector employment is positively correlated with higher welfare, suggesting that the higher minimum wage is affecting those who are already better off. Even public sector workers making less than EGP 1200 come from wealthier-than-average households; the median public sector worker making less than EGP 1200 comes from a household wealthier than 64% of all households.

Expanding minimum wage coverage to the formal private sector will not solve the problem

An expansion of the minimum wage policy to cover the formal private sector will leave out at least a half of the employed male population, even if enforcement were perfect. Of those employed in the private sector, the majority work in the informal sector, including subsistence activities and self-employment. Moreover, the trend towards informal work for men has increased significantly over time, especially for young men, who are increasingly likely to find their first jobs in the informal sector. 27% of working-age Egyptian workers do not earn wages, either because they are self-employed or subsistence farmers. About half of all employed Egyptian males are either underemployed or work in informal jobs, and a minimum wage policy would be unenforceable for them. Not to mention workers who are unemployed or have left the labor force as a result of discouragement. All told, only 28% of working-age men are formal wage workers who could potentially be covered by a minimum wage. For women, whose labor force participation has been declining, the minimum wage policy will continue to be irrelevant to them, and by increasing the costs of labor, may stack the odds even further against them.

In addition to higher pay, formal sector jobs offer superior benefits and job security. For instance, over half of formal private sector wage workers enjoy paid vacation or paid sick leave, while essentially no (less than 3%) informal wage workers receive those benefits. A minimum wage policy that leaves out the informal sector will further expand the wedge in earnings and overall job quality within the labor market.
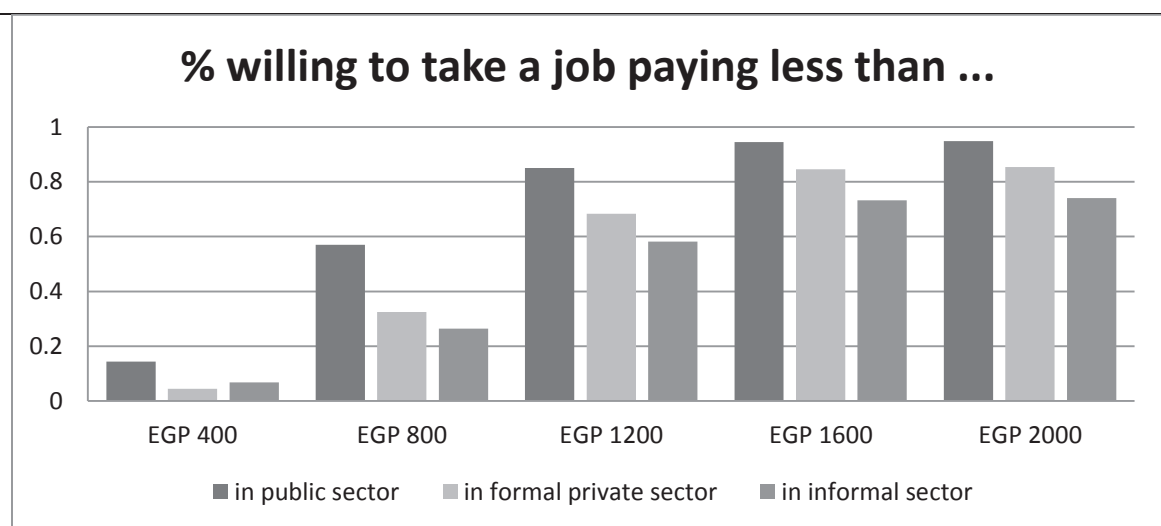
A higher minimum wage for public sector employees will increase the attractiveness of the public sector, risking higher rates of unemployment

An increase in the public sector minimum wage will increase the existing wedge between public sector and private sector labor supply. Both the public sector and the formal private sector draw from the same pool of potential workers. Because workers exhibit a strong preference for public sector jobs over formal private sector jobs at the same wages, many high-skill workers will prefer to remain unemployed and wait for a

public sector job rather than take an equally well-paying private sector job. The freezing of public sector hiring in Egypt in 2003 was, indeed, not accompanied by a commensurate increase in private formal sector hiring. Instead, employment shifted to the informal private sector for men, while women who could not get contractual public sector jobs dropped out of the labor force. With the proposed revision of the minimum wage and the regularization of contract work in the public sector, the incentives to queue for government jobs will be further strengthened.

A strong preference for public sector jobs is evident in the ELMPS 2012 where unemployed respondents were asked the minimum wage at which they would be willing to work in different sectors. Respondents were willing to accept a public sector job at a much lower wage than in either the formal or the informal private sector, signaling their clear preference for the former. The average wage required for an unemployed person to take a public sector job was EGP 849, well below the proposed EGP1200 minimum wage, while the corresponding numbers for the formal private sector and informal sector were EGP 1176 and EGP 1684 respectively. The differences across sectors in these wages thus represent the "compensating wage differential" and revealed preference for work across sectors (Figure 2).

Figure 2: Public sector preferences revealed through self-reported "compensating wage differentials"

% willing to take a job paying less than ...

EGP 400, EGP 800, EGP 1200, EGP 1600, EGP 2000

in public sector   in formal private sector   in informal sector

Box 1: Eliciting public sector preference in Egypt

There are a significant fraction of unemployed individuals in Egypt who are willing to take a public sector job at the typical public sector wage offered to an individual with similar characteristics, but who are unwilling to accept a formal private sector job at the typical formal private sector wage offered to an individual with similar characteristics.

Consider the typical Egyptian worker. He is a man with a secondary degree residing in rural Lower Egypt. If employed in the formal private sector, he would earn the median wage for his education and location, EGP 900. If employed in the public sector, he would earn the median wage of EGP 950.

If unemployed, and offered the median wage of EGP900 to work in the private sector, he would be willing to accept with a likelihood of less than 40 percent. In contrast, the willingness to accept a public sector job at the current minimum wage of EGP 700, almost 30 percent less than the private sector option, would be almost 60 percent. This willingness to work in the public sector increases rapidly as wages in the public sector rise – 75 percent at EGP 950 (the median wage for public sector workers of their education in rural Lower Egypt), and 90% at the proposed minimum wage of EGP 1200.

Thus, when the proposed minimum wage is implemented, an unemployed worker's preference for the public sector will be further strengthened, and this may cause them to prolong their job search, hoping to find the now even more coveted public sector job at EGP 1200. Some workers employed in the private sector may also seek employment in the public sector, even if they have to take a wage cut. Each of these responses will only contribute to rising unemployment and longer search durations.

Public sector preference also increases with education, which implies that a public sector minimum wage will adversely affect the pool of skilled workers applying for formal private sector jobs in a disproportionate manner. The average self-reported "compensating wage differential" to work in the formal private sector - the difference between the wage at which an unemployed worker is willing to work in the formal private sector and that needed for public sector work – is sharply increasing with education. Among men without secondary degrees the average differential is EGP 137, among those with only secondary degrees the average is EGP 336, and among those with post-secondary degrees it is EGP 490. The newly-increased public sector wages will draw even more of these high-quality workers into queuing for public sector jobs, increasing their unemployment rates, and deprive formal private sector firms of much-needed talent.

By increasing costs of employment for the private sector, the proposed minimum wage policy can adversely impact job quality, job security and further accelerate informalization

The most binding constraint in expanding earnings and job opportunities for Egyptians is the limited creation of well-paying, quality jobs in the private sector. The lack of dynamism exhibited by the private sector as well as the increasing tendency to employ workers informally suggests that an extension of the minimum wage to the formal private sector will adversely affect the already deteriorating labor market outcomes.

The vast majority of Egypt's private sector is informal; fewer than 1 in 5 private sector workers have either a formal contract or social insurance, and formality has been trending downwards for the last 15 years. This size of this informal private sector indicates that formalization is not a de facto status, one that firms naturally fall in to; instead it is a deliberate decision that few firms can afford to choose. Egypt's existing formal firms are those who can bear the higher costs of formalization and of hiring formal workers. Formal forms do not necessarily formally hire workers- 37 percent of informal workers report that they work at a formal firm[111].

Existing formal Egyptian firms therefore have a range of options available to them when faced with a minimum wage, some of which appear to be far more plausible given the current economic context. They can *comply* with the law by raising wages for their formal sector workers; they can fire formal workers, *evade* the law converting them into informal workers, or they can *exit* the formal private sector, either by becoming informal at the firm level or by shutting down entirely. Going forward, it is more likely that existing firms will choose to hire fewer formal workers, or cut hours of work, and potential entrepreneurs may choose to remain informal or refrain from starting new firms. During the 2006-2012 period, informalization of employment increased despite no increase in the minimum wage for most of that period and relatively healthy rates of economic growth. In the current period, with far slower growth rates and potentially higher minimum wages, this trend is most likely to worsen, stifling the already small and struggling formal private sector.

The reaction of employers to the implementation of a formal private sector minimum wage will also exacerbate the gap between the informal workers and formal workers. The "compensating wage differential" for informal sector work is the highest, perhaps because those who work in these jobs have no other recourse. The "relatively rich" formal workers with monthly salaries higher than EGP 800 or EGP 900 or EG 1000 could see their wages rise and become richer, while the relatively poor formal workers with lower monthly salaries could see those precious formal jobs disappear and effectively become much poorer. Those already in informal jobs in turn, will face stiffer competition to maintain their already precarious links to the labor market.

Whether firms choose to comply with the law will depend on the cost of compliance as well as their current margins of profit. For the firms who have significant profit margins and market power, higher labor costs implied by the minimum wage can be absorbed without altering employment. However, these are likely to be a minority of Egyptian firms.

In 2006, in fact, 95 percent of all Egyptian firms employed less than 10 workers. For this vast majority of firms, even if they belonged in the formal sector, they are very unlikely to be able to sustain increases in the wage bill while staying economically viable. Therefore, their response to a minimum wage law will likely be to give raises to their formal workers who earn close to EGP 1200, while firing or deformalizing their workers who currently earn much less. Unfortunately, the bulk of formal private sector workers (excluding joint ventures and foreign companies) are currently paid much less than EGP 1200, as shown in figure 3.

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[111] Defined as a firm in the public, non-profit, other sectors, or a joint stock company/limited liability company/company of individuals, or has a license or is register or keeps accounting books.

Figure 3: Formal private sector wage distribution, ELMPS 2012
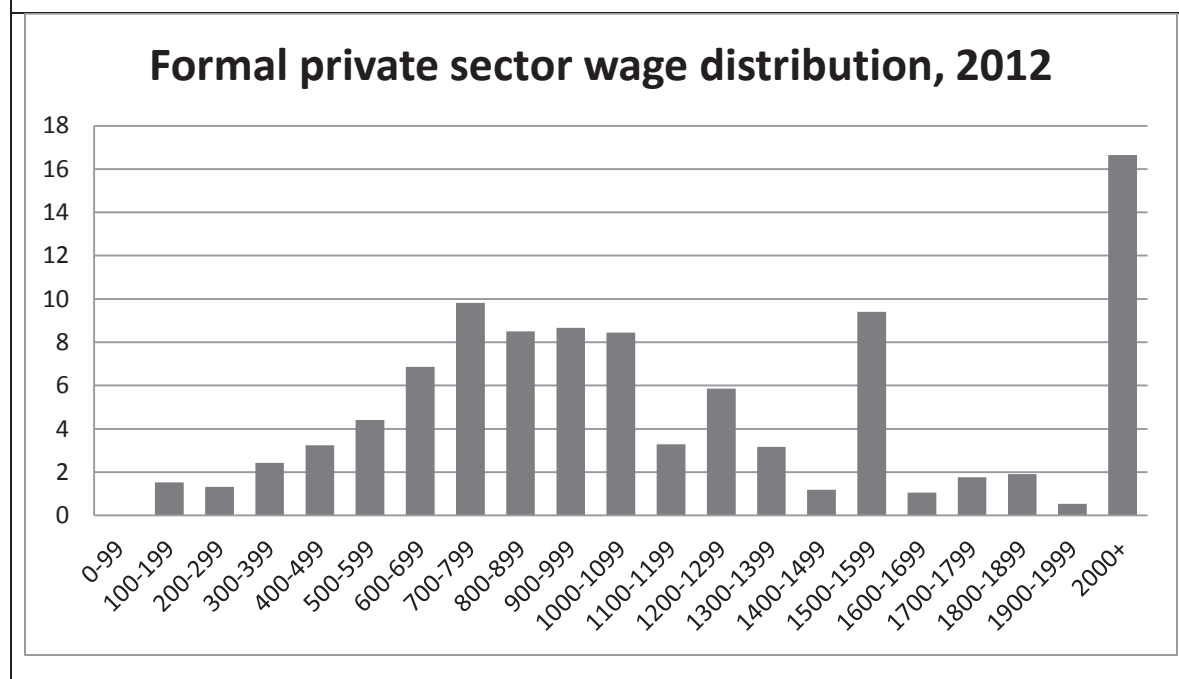
To illustrate the potential impacts of a minimum wage, consider how a single firm with limited profit margins might respond to the imposition of a minimum wage of EGP 1200. For each formal worker that makes less than EGP 1200 per month, the firm must choose whether to comply with or evade the minimum wage (by firing the employee, or replacing the formal hire with an informal hire). The cost of complying will be equal to the difference between EGP 1200 and the worker's current monthly wage. For a relatively high-wage worker making EGP 1100 a month, the cost of compliance is only EGP 100 a month, and the firm will more likely pay that cost rather than evade the regulation. However, for a relatively low-wage worker making EGP 400 per month, it would cost the firm twice his or her current wage to comply and so the firm will likely choose to deformalize the position in order to evade the regulation or fire the worker, or fire the worker altogether.

Suppose the single firm had 100 workers, with wages distributed similar to the overall wage distribution in figure 3, and that the firm will choose to deformalize a position if it would require more than EGP 300 per month to comply. Under an EGP 1200 minimum wage, the workers who earn between 900 and 1200 would see their wages rise and the workers who earn between 0 and 900 would have their jobs deformalized or will be at risk of being fired. This would result in 38 workers losing their formal jobs while 20 other workers see an average raise of EGP 177 per month. Given the strong preference for formal jobs expressed by respondents in ELMPS, this policy would significantly worsen outcomes for the workers of that firm.

A lower minimum wage would have a much less negative effect. For instance, if the same firm were dealing with a minimum wage of EGP 700, it would choose to deformalize 5 jobs and give 15 workers an average raise of EGP 125 per month. This is clearly a better outcome for firm's workers, although on the whole, the costs to workers are still likely to outweigh the benefits.

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Policy implications

Overall, the analysis in this note, the first of four topic notes accompanying the Egypt Jobs report, suggests that there are extremely limited gains from pursuing a minimum wage policy in the current state of the Egyptian labor market. An increase in the public sector minimum wage will increase inequality further as the primary beneficiaries will be public sector workers in metropolitan areas, who are well off relative to both private sector workers and public sector workers in rural and non-metropolitan urban areas. It will also stifle the private sector by increasing the competition for existing public sector jobs among high-quality workers, who may prefer to remain unemployed and "queue up" for a lucrative public sector job instead of accepting a job in the private sector. Furthermore, an extension of the EGP 1200 minimum wage to the private sector would be counter-productive. Few Egyptian firms could afford the huge required outlay in wages and maintain even a sliver of profitability, and many would be forced to shut down, downsize, or deformalize. The already small formal private sector would contract, exacerbating the long-run declining trend and causing increasing informalization.

Moreover, minimum wage legislation is very difficult to reverse. Given the likely negative effects on employment and informalization, which will particularly affect the less-well off, the substantial fiscal costs of such a policy are not likely to be worthwhile. Instead, resources could be channeled towards stimulating the labor market in the short run by focusing on the demand side and aiming to increase net employment. These efforts could also be targeted to those who are already vulnerable – young workers, rural areas, small and informal firms.

The options posed below are all short term interventions, which should be accompanied by clear exit clauses, and focus on protecting existing jobs and increasing temporary employment, and on the more vulnerable sections of the population. These interventions will need to clearly targeted or be self-targeting to the intended population or area. Implementation needs to be simple and transparent to be put in place in a timely manner, and must take into account local context.

The choice of interventions to implement must recognize the current state of the labor market. Policies that work well in a dynamic and growing economy may have unintended, adverse consequences when implemented in a sluggish and mostly informal private sector. For instance, evaluations of training programs across the world reveal mixed and modest results, but are likely to have no impact in an economy like Egypt's. In Jordan, a recently completed youth employment pilot offered a mix of employability skills training and short term incentives to firms to hire young graduates[112]. While firm incentives increased employment only in the short term, training had no effect at all.[113] The evaluation revealed that limited employment generation in the private sector combined with labor market regulations including the minimum wage were far more binding constraints to youth employment.

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[112] The pilot was rigorously evaluated and the full results are available at World Bank (2012). *"Soft Skills or Hard Cash? What works for female employment in Jordan?".*

[113] A review of six Jovenes programs in Latin America show that they can increase employment among participants by up to 5%, with women and younger participants exhibiting impacts of 6–12% in some countries, while estimates of unit costs range from USD 600 to USD 2,000 per participant.

We provide below a few examples of short-term measures to stimulate the labor market, which may be considered:

A. Publicly financed short-term job creation:

Short-term job creation will need to adopt a separate approach for urban areas with large numbers of skilled job seekers and rural areas where education levels are lower. Service programs focusing on community development and service delivery can provide employment opportunities for a limited period, especially for educated youth in urban areas. [114] On the other hand, a self-targeted labor-intensive public works program may be more appropriate in rural Upper and Lower Egypt. The challenge is to make these experiences valuable to longer term employment prospects and build skills during the process, perhaps through technical and soft skills training. [115]

B. Expanding and protecting job opportunities in the private sector

Given the sheer numbers of workers supported in the informal sector, support to self-employment and micro-entrepreneurship through business training, life skills training, mentoring, micro-franchising, and microfinance can help expand and protect jobs in this sector[116]. These programs can be rolled out quickly where the institutional infrastructure exists. While these interventions may help support and expand existing business, little is known about their efficacy in terms of new job creation, and it may be beneficial to target a few sectors at a time before scaling up. For the formal private sector, labor costs can be subsidized in the short term through direct wage refunds, credits on social security contributions, or lower labor/payroll taxes. Since the objective is to expand hiring and given their high costs, it is very important to condition these subsidies on the verification of higher net employment, and target them to vulnerable groups and to productive and growing sectors[117].

C. Connecting workers to jobs

In the short run, the number of jobs in the economy is relatively fixed but governments can intervene with integrated packages to help job-seekers find private sector jobs. Despite the relatively high rates of unemployment, there is some evidence that private sector firms are unable to fill vacancies, either

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[114] A quasi-experimental evaluation of Americore (US) showed that participants had a greater incidence of post-program civic engagement, more positive attitudes towards employment, and a higher likelihood of public service careers (Frumkin et al., 2009). Youth Service Canada was said to have had both positive impacts on post-program employment as well as further education. (http://www.hrsdc.gc.ca/eng/cs/sp/hrsdc/edd/reports/1999-000414/page00.shtml)

[115] A nationwide rural public works program in India guaranteed 100 days of work per year significantly increased work among prime-aged, low-skilled people living in poorer districts and generated welfare gains for the poor (Imbert and Papp, 2011)

[116] Some successful integrated programs include TechnoServe in Central America and Finca in Peru; Klinger and Schuendeln (2007); Jaramillo & Parodi (2003); Karlan and Valdivia (2009)

[117] See Phelps (1994) for a discussion of the rationale and OECD (2003) for a discussion of the evidence. Universal subsidies are not only more expensive and potentially more regressive but also subject to larger "dead-weight" losses, as they end-up subsidizing workers who would have stayed in their jobs anyway.

because of a skills mismatch or lack of information. In Egypt, where many jobs are found through networks and contacts, for example, private sector firms cannot fill 600,000 vacancies (AfDB et all, 2012) despite the large pool of relatively educated job seekers.[118] In this context, there may be scope to bridge the information gap in the immediate future through direct job matching services. For instance, programs that link private firms facing a shortage of skilled workers with appropriate vocational training institutions, along with a facilitated and subsidized internship program can bridge the skills mismatch. On the one hand, firms can train workers in the skills that they need without bearing the full cost, while job seekers can gain valuable technical skills and on-the-job experience.[119]

There are a few lessons that are evident from global evidence and experience with similar efforts targeted at the labor market. In labor markets such as Egypt's, these types of interventions may provide short-term relief but are no substitute for much-needed medium and long term reforms to improve the climate for business and job creation. An increase in the minimum wage that is being considered in the current sluggish Egyptian economy will likely have significant and adverse consequences on the quantity and quality of jobs, while increasing the precariousness of employment for those who are already vulnerable. A 2012 ILO-IMF-OECD-World Bank report argues that the purchasing power of the minimum wage be set at 30 to 40 percent of the median wage can sustain labor demand, but significantly higher minimum wages risk job losses, especially for the young and less skilled. The current proposed minimum wage is well above the recommended threshold, and two and half times the formal sector median wage. In Egypt's case, boosting the private sector's growth and employment generation remains the most significant policy challenge, and will require commitment and action towards concerted reform.

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[118] AfDB, OECD, UNDP, UNECA (2012) "African Economic Outlook"
[119] Two successful models are the so-called Training "plus" and On-the-Job-Training programs. Examples include Jovenes in Latin America and Mexico's Probecat "on the job" training program