THE AMERICAN UNIVERSITY IN CAIRO
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Canadian International Development Agency
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Labor Market Gender Discrimination under Structural Adjustment: The Case of Egypt

Amirah El-Haddad

Working Paper #003

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Preface:

The concern for women economic empowerment has been a priority in the agenda of many national, non-governmental as well as international stakeholders in Egypt. Despite the various efforts that were carried on by the government and the different stakeholders concerned with the women economic participation in Egypt, it is evident that there are still various challenges and gaps that still hinder women full participation in the labor market and economic life. These main gaps include: The low women economic participation (around 20%), high unemployment rate (around three folds that of males), and the poor working conditions of women particularly in the informal sector.

Moreover globalization was found to bring a mixed bless and curse for women; trade liberalization, rapid developments of information and communication technology, increased roles of Multinational corporations and many other manifestations of the global economy we are living in pose positive well as negative results for working women depending on their vulnerability in the labor market. This created the need to pursue thorough research to tackle how all these challenges are affecting women ability to participate, work, progress and be empowered.

In the frame of the Consortium (RPC) on Pathways of Women's Empowerment, the Social Research Center- the American University in Cairo with the funding from the CIDA have initiated the **SRC/CIDA research program for research policy papers and policy briefs on gender and work.**

The project aimed at producing policy research papers and policy briefs on the various factors affecting women and work at the four levels: the household level, the enterprise level, the economy level and the global economy level.

The SRC/CIDA research program on gender and work aimed at:

- Issuing policy research papers and policy briefs on women and work
- Producing guidelines and recommendations that are supported by empirical knowledge, for policies and actions to support women work as a tool for women economic and social empowerment.
- Encouraging evidence based debate on needed policies for women economic empowerment.
- Contributing to an open environment of data access and effective use of field surveys in policy research papers.

The project produced two outputs:

- ***Four Research Papers*** tackling different important aspects of women work in Egypt. These included examining work and women economic empowerment in the Egyptian context, the relation between education, women empowerment and work in Egypt. Another important aspect the project looked at is the evolution of wage and job quality for men and women in the Egyptian labor market in the formal private and public sectors over the period (1998-2006). The fourth research paper examined an important new topic which has emerged recently as a result of the increased technological development which is the information and communication technology (ICT). It aims at assessing the impact of ICT on gender equality in Egypt focusing on differentials in wage rates and employment opportunities.

- ***Based on the results of the research papers; four policy briefs*** were prepared that aimed at providing the policy maker with clear and concrete policy advice. The briefs were prepared in Arabic.

The most important results stressed on by the papers and the briefs included that although the constitution and the Egyptian labour law stress on gender equality, however, it seems important to have an equal pay act, ensuring equal pay for equal work, in a broader sense, one which prohibits discrimination at the entry points into the labor market, in job titles, in job ranks and in pay scales, is yet to be passed.

The analysis indicates that there is a significant change in various views and social values regarding the right of women to participate, however, there is still a need to adopt labour market policies that support women's participation. These policies include: flexible working time (for example part-time jobs), designing macro and micro economic policies to better address women's employment problems especially in the private sector, and providing accessible and affordable daycare centers and other services which are important. Supporting an effective women's entrepreneurship policy could be an effective way to increase female labor force participation and to face female unemployment

Regarding the impact of education on women economic empowerment, it is evident that education is found to have a powerful influence on women's labor market pathways in Egypt. However, it is also found that raising female education level is not enough to boost young women's economic empowerment. To strengthen education as a path to enhance women's economic participation and opportunity in Egypt, there is an urgent need to focus on improving education quality, and targeting girls from secondary and technical education as they are more vulnerable to unemployment and engagement in the informal sector.

Information and Communication technology sector appears to be a promising field for improving women engagement in labor market and the community in general, however more efforts should be devoted to increase their engagement. To be able to reap from the benefits of ICT, women must be equipped with skills to prepare them for a range of roles not only as ICT users, but also as creators and designers.

In preparing the research papers and the policy briefs; the SRC/CIDA research program on gender and work have benefited from various consultative group meetings where participants from academia, research, donor organizations offered advice and guide to the researchers in designing their research work as well as in formulating the policy advice.

The project benefited from the Egypt Labor Market Panel Survey of 2006 (ELMPS 06). ELMPS 06 is a follow-up survey to the Egypt Labor Market Survey of 1998 (ELMS 98), which was carried out in November-December 1998 by the Economic Research Forum (ERF) in cooperation with the Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS) – the main statistical agency of the Egyptian government . ELMS 98 was carried out on a nationally-representative sample of 4,816 households and was designed to be comparable to the special round of the Egyptian Labor Force Survey carried out in October 1988 (LFSS 88). The ELMPS 06 is the second round of what is intended to be a periodic longitudinal survey that tracks the labor market and demographic characteristics of the households and individuals interviewed in 1998, any new households that might have formed as a result of splits from the original households, as well as a refresher sample of households to ensure that the data continue to be nationally representative.

The final sample of 8,349 households is made up of 3,684 households from the original ELMS 98 survey, 2,167 new households that emerged from these households as a result of splits, and a refresher sample of 2,498 households. Of the 23,997 individuals interviewed in 1998, 17,357 (72 percent) were successfully re-interviewed in 2006, forming a panel that can be used for longitudinal analysis. The 2006 sample contains an additional 19,743 "new" individuals. Of these 2,663 individuals joined the original 1998 households, 4,880 joined the split households, and 12,200 were part of the refresher sample of households.

Labor Market Gender Discrimination under Structural Adjustment: The Case of Egypt[1]

Amirah El-Haddad[2]

Working Paper #003

Abstract

This paper examines the evolution of wage and job quality for men and women in the Egyptian labor market in the formal private and public sectors between 1998 and 2006. Analysis of labor market discrimination has to be located within the institutional context of the structural characteristics of the country being analyzed. In the case of Egypt, Assaad (1997 and 2002), Assaad and Arntz (2005), Assaad and Roushdy (2007), and Assaad et.al. (2009) have identified these characteristics, in particular the central role, and different nature, of the public sector. At the same time, there is no published Oaxaca (Oaxaca, 1973) decomposition of gender discrimination in Egypt. This paper combines these two aspects, applying a decomposition analysis which separates out the public and private sectors. Moreover, the paper applies the decomposition not just to wages but to an index of job quality, and uses data from two labor market surveys to analyze changes over the period of adjustment. Finally, Oaxaca decomposition is performed in order to quantify pure discrimination against women in the formal labor market.

Job quality has been consistently higher for women than men. However this difference is entirely an 'employment share effect' since women are disproportionately employed in the 'high-quality' public sector. Within each sector, gender differences in job quality are minor, being very slightly higher for men. But in the case of wages, pay is significantly lower for women than men with the gap widening between 1998 and 2006. Discrimination occurs when men and women with the same skills receive different pay. Oaxaca decomposition shows that a significant part of the differences in average real monthly wages between men and women are due to discrimination and not to their different characteristics. In 2006 women have received 37% lower wages on account of an unjustified difference owing to discrimination.

Eradicating these differences will require legislation to ensure equal pay in a broad sense including in hiring and pay scales, and other social protection measures for job quality in the private sector, though the latter should avoid being excessive to the extent that they discourage female employment.

[1]This paper has received financial support from the Canadian International Development Agency (CIDA) in the context of the "Small Research Grants Program for Research Policy Papers and Policy Briefs on Gender and Work". The views presented here are the personal views of the author and do not represent those of CIDA. The usual disclaimer applies. The author is thankful to Howard White for discussion of an earlier version of this paper. Thanks are also due to Angie Mounir and Alyaa Abdulkader for prompt provision of CAPMAS data. The author thankfully acknowledges comments and suggestions by participants of the "Pathways of Women's Empowerment RPC" – especially from Heba Nassar, Hoda Rashad, Hania Sholkamy and Ragui Assaad- held under the auspecies of the Social Research Center of the American University in Cairo in collaboration with the Population Council.

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Introduction

Labor market gender discrimination is mediated through the structural characteristics of the labor market. The key features in Egypt are a large public sector, including publicly-owned enterprises, a small but growing private sector and the informal sector. The role of the public sector was boosted by government's employment guarantee for every secondary and postsecondary graduate, lifetime job security and numerous other benefits such as public health insurance, associated with these jobs (Assad, 1997). All constituted part of the government's public employment drive in the early 1960s. Total public sector employment in the sixties was 20 to 30 percent above production requirements, and the public sector work force continued to grow by 5% per year over the period 1971-1976 (Waterbury, 1983).

These characteristics have changed in the context of the Economic Reform and Structural Adjustment Program (ERSAP) initiated in 1991. The government has removed public sector employment guarantees for graduates, rationed enrollment by the Ministry of Education and increased the waiting period for government appointments. As a result, public sector work force growth rate declined in 1977 to 3.6% (Handoussa, 1980). On the other hand privatization has further fueled private sector growth.

Consequent to the changing labor market structure, pay and work conditions have changed. These changes can be decomposed into two factors. First, the conditions within sectors have changed over time (i.e. pay and work conditions in the public sector have changed over time, and the same applies to the private sector). Second, there will be composition effects from the changing employment shares of different sectors (public sector employment shares have decreased and private sector shares have in turn increased). Hence, this paper will analyze both intra and inter-sectoral overall changes. In doing so it will explore both inter and intra-sectoral *gender* and inter-temporal differentials. Gender differentials are further investigated for possible discrimination effects.

The paper is organized as follows; the following section sheds some light on the evolution of employment by sector and gender over time. Section two discusses data and methodology employed by this paper after which the results are introduced. The last section concludes.

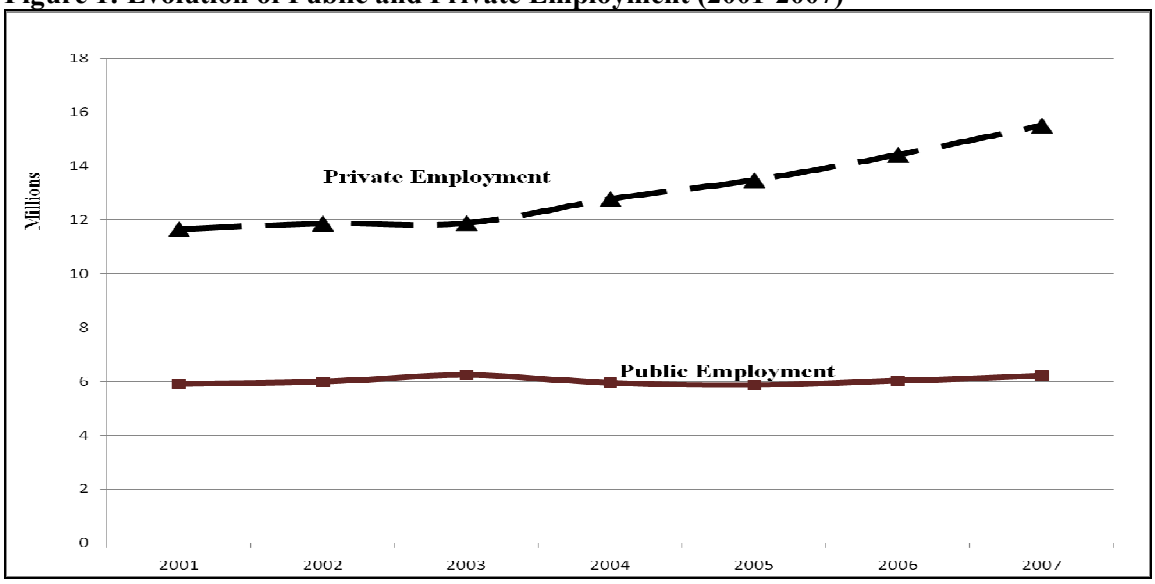
Evolution of Employment by Sector and Gender

Public and Private Sector Employment

The structural changes in the labor market described above resulted in more or less steady public[1] employment in the current decade (around 6 million workers), and steadily rising private employment. This rise, especially after 2003, came in response to new additions to the labor force and the surge in privatization in 1999-2000 when the privatization program started to pick up (Figure 1). Private employment has risen by 33% from around 12 million employees in 2001 to 16 million in 2007 whilst public sector employment has risen by 5% only throughout the same 6 year period from 5.9 million to 6.2 million employees.

[1] Refers to both publicly owned enterprise employment and government employment.

Figure 1: Evolution of Public and Private Employment (2001-2007)



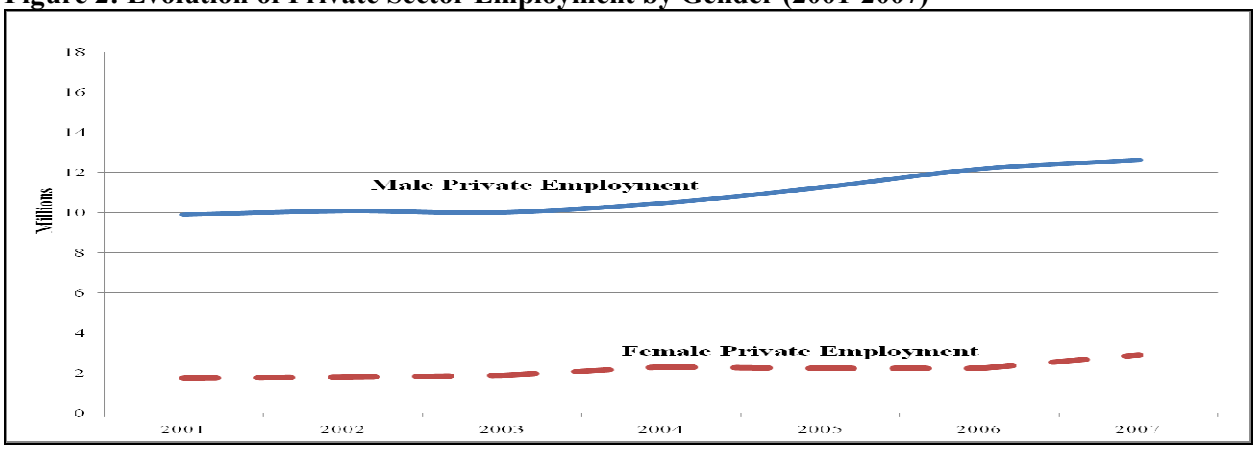
Source: Central Agency for Public Mobilization and Statistics (CAPMAS)

Data are collected based on the labor force survey. The survey which depends on two samples: 1) an urban sample of 25500 dwellings containing 150 area. 170 dwellings of each of the 150 areas were interviewed (i.e. 25500 dwellings or households were interviewed); and 2) a rural sample of 17000 dwellings containing 100 areas. 170 dwellings of each of the 100 areas were interviewed (i.e. 17000 household interviewed).

Employment by Gender and Sector

In the formal sector, female employment is much lower than that for men, a reflection of moderate female participation rates in the Egyptian (formal) labor market. On average throughout 2001-2007 overall female employment accounted for less than a fifth (19 percent) of total employment. But women are much more heavily represented in the public sector where 26 percent of employees are female, compared to just 16 percent in the private sector. Male private employment reached nearly 13 million in 2007 whilst there were fewer than 3 million (2.9 million) women (Figure 2 and Table 1). Despite faster growth of female employment in the private sector (65% compared to 28% for men through 2001-2007) this growth rate is generated from a much smaller base in the case of female employment.

Figure 2: Evolution of Private Sector Employment by Gender (2001-2007)



Source: Central Agency for Public Mobilization and Statistics (CAPMAS)

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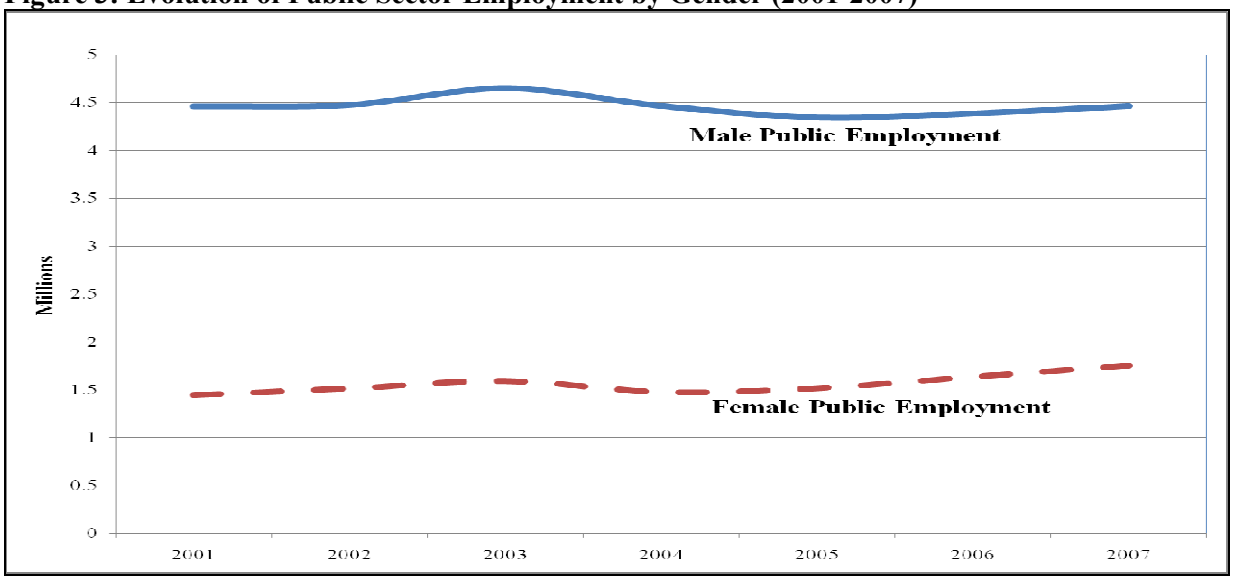
Table 1: Employment by Gender and Sector 2001, 2007 (in millions)

	2001		2007	
	Public Sector	**Private Sector**	**Public Sector**	**Private Sector**
Male	4.5	9.9	4.5	12.6
Female	1.4	1.7	1.8	2.9
Total	5.9	11.7	6.2	15.5
Grand Total	17.6		21.7	

Source: Author's Calculation based on Central Agency for Public Mobilization and Statistics (CAPMAS) data

The story is similar for the public sector (Figure 3 and Table 1): faster female employment growth of 26 percent in contrast to a stagnant male growth (0 percent) through 2001-2007. Yet again, this growth rate is starting from a much lower base of 1.4 million in 2001 compared to 4.5 million for men. By 2007 the 26 percent growth rate lifted female public employment to 1.8 million.

Figure 3: Evolution of Public Sector Employment by Gender (2001-2007)



Source: Central Agency for Public Mobilization and Statistics (CAPMAS)

Data are collected based on the labor force survey. The survey which depends on two samples: 1) an urban sample of 25500 dwellings containing 150 area. 170 dwellings of each of the 150 areas were interviewed (i.e. 25500 dwellings or households were interviewed); and 2) a rural sample of 17000 dwellings containing 100 areas. 170 dwellings of each of the 100 areas were interviewed (i.e. 17000 household interviewed).

It is generally the case that public sector wages in countries with large state sectors tend to be significantly higher than those of the private sector. This is true of Poland (Adamchick and Bedi, 2000), Haiti (Terrell, 1993), Zambia (Nielsen and Rosholm, 2001), and Cyprus (Christofides and Pashardes, 2002; all cited in Tansel, 2004). Private sector gender pay

discrimination on the other hand is prevalent even in the US with women earning 72% that of men of which 12% - that is nearly half of the gap- is pure or unjustified discrimination (Council of Economic Advisors, 1998).

Data and Methodology

Data Sources

This paper uses data from the first and third Egyptian Labor Market Survey conducted in 1998 and 2006 by the Economic Research Forum (ERF) in cooperation with the Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS). The 1998 Egyptian Labor Market Survey (ELMS) consists of a sample of 23,997 individuals and that of 2006 (The Egyptian Labor Market Panel Survey, ELMPS) of 37,144. Of the 1998 sample 17,357 were re-interviewed in 2006.

Sample

This analysis covers waged labor in the formal sector (which reduces the sample to 3,975 and 6,095 observations in 1998 and 2006 respectively). The increase in the sample size between the two years mirrors the rise in formal employment at the national level of around 5 million as indicated in the previous section. In both samples, around a quarter observations are female (1,000 and 1,511 in 1998 and 2006 respectively) (Table 2).

Table 2: Number of Observations in Sample

	1998	2006	Pooled
Male	2,975	4,584	7,559
Female	1,000	1,511	2,511
Total	3,975	6,095	10,070

Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.

The general downsizing of the public sector and the accompanied growth of the private sector have been reflected in the ELMPS sample data in reduced shares of public sector employment between 1998 and 2006. Of all employed men in 1998 63 percent were in the public sector, falling to 54 percent by 2006 (Table 3). The same is true for female employment. Most significantly, the public sector accounts for a much larger share of female employment than it does that of men (74% > 54% in 2006); the opposite of course being true of the private sector (26% < 46% in 2006).

Table 3: Sample Gender Shares by Sector

	Public Sector		Private Sector	
	1998	**2006**	**1998**	**2006**
Male	63%	54%	37%	46%
Female	82%	74%	18%	26%

Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.

Methodology

Structural changes in the Egyptian labor market resulted in changes in pay and in work conditions in the private and public sectors. The analysis proceeds in two stages. First, overall temporal and gender differentials in both job quality and in wage are decomposed into share (sectoral) and quality (intra-sectoral) effects, the former being driven by changing sectoral employment shares. The latter reflects changes in wage (or job) quality within a sector over time.

Second, gender differentials are further investigated for discrimination effects using Oaxaca decomposition. Oaxaca decomposition reveals whether differences in pay or work conditions between men and women are due to differing characteristics between them or alternatively due to discrimination (unjustified difference). Discrimination is present if pay differs for men and women with the same characteristics. The analysis will also test whether the discrimination effect – in case present – has changed over time.

Analysis of labor market discrimination has to be located within the institutional context of the structural characteristics of the country being analyzed. In the case of Egypt, Assaad (1997 and 2002), Assaad and Arntz (2005), Assaad and Roushdy (2007), and Assaad et.al. (2009) have identified these characteristics, in particular the central role, and different nature, of the public sector. At the same time, there is no published Oaxaca (Oaxaca, 1973) decomposition of gender discrimination in Egypt. This paper combines these two aspects, applying a Oaxaca decomposition which separates out the public and private sectors. Moreover, as indicated above the paper applies the decomposition not just to wages but to an index of job quality, and uses data from two surveys to analyze changes over the period of adjustment.

Mathematical Representation

Decomposition Analysis

The first part of the analysis undertakes fairly standard algebraic techniques, meaning that there are no behavioral relationships (theory) behind the analysis. The decomposition examination can be formally introduced as follows:

Work conditions are presented in this paper by a job quality index[1], and pay conditions by a real monthly wage.

$$I_m = S_{mg}I_{mg} + S_{mp}I_{mp}$$
$$I_f = S_{fg}I_{fg} + S_{fp}I_{fp}$$

Where,

I_m, I_f : either the male/female job quality index or the real monthly wage

I_{mg}, I_{mp} : male job quality index or real monthly wage in the public and private sector respectively

I_{mg}, I_{mp} : female job quality index or real monthly wage in the public and private sector respectively

S_{mg}, S_{mp} : male employment share in the public and private sector respectively

S_{fg}, S_{fp} : female employment share in the public and private sector respectively

$$I_m - I_f = S_{mg}I_{mg} - S_{fg}I_{fg} + S_{mp}I_{mp} - S_{fp}I_{fp}$$
$$= S_{mg}I_{mg} - S_{fg}I_{mg} + S_{mp}I_{mp} - S_{fp}I_{mp} + S_{fg}I_{mg} + S_{fp}I_{mp} - S_{fg}I_{fg} - S_{fp}I_{fp}$$
$$I_m - I_f = \underbrace{(S_{mg} - S_{fg})\, I_{mg} + (S_{mp} - S_{fp})I_{mp}}_{\text{Inter Sectoral Share Effect}} + \underbrace{(I_{mg} - I_{fg})S_{fg} + (I_{mp} - I_{fp})S_{fp}}_{\text{Intra Sectoral Quality Effect}} \quad (1)$$

Gender Gap in the Inter Sectoral Share Effect ıe Intra Sectoral Quality Effect :, can be decomposed into two components: an inter-sectoral share effect and an intra-sectoral quality

[1] Details of the construction of the job quality index are discussed in the following section.

effect. The first two terms on the right hand side of equation 1 capture the share effect, attributing part of the gender gap to differences in employment shares in the two sectors for men and women. The second two terms are the intra-sectoral component, measuring the gender gap in job quality (or real wages) within each sector (weighted by the sector shares). These results are presented in Tables 6 and 8 below, which report the results of the calculation for 1998 and 2006 separately.

The same approach can also be applied to analyze the components underlying the temporal change in the quality index (real wages) for men and women separately, as reported in Tables 7 and 9 below. In this case the share effect refers to the change over time in each sector's share in that gender's employment. The intra-sectoral component captures actual changes in job quality (or the real wages) for each gender over time within the two sectors.

A Variant of the Oaxaca Decomposition Model

Gender pay discrimination has been recently theoretically tackled via three distinct methodologies. Following Oaxaca (1973), traditional wage equations can be decomposed to show how differences in wages can be attributed to differences in skills, plus discrimination due to gender-differentiated returns to skills and a residual pure discrimination effect. In developed countries this approach has increasingly been replaced by other methods. First, an analysis of whether discrimination is evident within the same establishment or firm (cf. Ilkkaracan and Selim, 2007). However, these studies are limited in number due to their demanding data requirements, there being only a handful of such studies even for the US (Council of Economic Advisers, 1998). The second approach measures male/female productivities in order to link differences in pay to productivity. This approach is rarely implemented because of its even greater data requirements. The last approach is the indirect one utilizing experiments to prove discrimination by, for instance, sending out identical resumes with male and female names as job applications and thus discovering discrimination. A field experiment in the US has been conducted by concealing the identity of symphony orchestra candidates from their audition juries. As a result chances of hiring female musicians have noticeably increased in such competitions (*ibid*.). On account of data constraints, and the lack of such analysis having been done already, this paper uses the traditional Oaxaca Decomposition technique to measure gender pay discrimination.

Discrimination against women in the labor market exists when the ratio of the mean male and female wages does not equal the wage ratio in the absence of discrimination: $\frac{W_m}{W_f} \neq \frac{W_{m^0}}{W_f}$, where $\frac{W_{m^0}}{W_f}$ is the ratio in the absence of discrimination, and $\frac{W_m}{W_f}$ is the observed male/female ratio (Oaxaca 1973). However, $\frac{W_{m^0}}{W_f}$ is unobserved and so the observed wage difference is decomposed into two parts: a difference based on individual productivity traits (justified difference) and a difference based on market returns to those traits (unjustified difference or discrimination) (Borjas and Ramey, 2000). Thus, for the purposes of estimating the male-female wage differential, one may use the male wage structure as the base structure as follows:

$$RLMW = \beta_0 + \beta_1 SDUM + \beta_2 X + \beta_3 SDUM X + \varepsilon \quad (2)$$

Where RLMW is the real logged monthly wage, β_0 is the intercept, SDUM a sex dummy variable taking the value of 1 for women and 0 for men, so β_1 is the differential intercept for

men and women.[1] $\bar{X}$ is a vector of individual characteristics (age, education level, as well as a year dummy variable (1998=0 and 2006=1) to allow for a secular change in job quality and a sector variable that takes on the value of 1 for the public sector and 2 for the private. β_2 is the associated vector of coefficients. SDUM$\bar{X}$ is the product of SDUM and $\bar{X}$, so SDUM$\bar{X}$ takes the value $\bar{X}$ if SDUM=1 (i.e. women) and 0 for men; hence $|\beta_s|$ is the differential slope coefficient for men and women. Finally, ϵ is an additive error term.

On Job Quality

Job quality is a broad and multi-faceted concept. Decent work has been defined as "opportunities for women and men to obtain decent and productive work in conditions of freedom, equity, security and human dignity" (Anker et al., 2003 in Roushdy and Assaad, 2008). Various Decent Work Indices (DWIs) have been developed since (cf. Anker, 2002; Brown and Pintaldi, 2005; Anker *et al.,* 2003, Mehran, 2005; G Schmid, 2006). Anker (2002) has identified eight areas that account for the wide-ranging concept of job quality (Table 4).

Table 4: Sub-indicators of Job Quality

Category	Indicators	Reference
(1) Basic security Basic work and non-work aspects of people's lives	Basic needs (housing, education, safety/violence, health care, environment and food) Debt and Financial crises experienced Perceived sufficiency of income Excessive hours of work (more than 50 hours per week) and extreme hours (above 60 hours)	Anker (2002) Anker et al. (2003) Brown and Pintaldi (2005)
(2) Income security Presence of a sufficient income	Cash and non-cash wages/benefits Whether salary is below half the median national value Fluctuations in income and wage arrears Past income levels and future expectations Savings measured as cumulative income Availability of official income supports	Anker (2002) Anker et al. (2003) Mehran (2005)
(3) Labor market security Security of having income generating work	Unemployment experiences and presence of unemployment benefits Recent changes in number of people employed at the respondent's work place Consequences of the possible loss of current work.	Anker (2002)
(4) Employment security Security from loss of current work and the security/capability of keeping one's main job	Contract type (written, oral or absent) Occupation and place of work Paid sick and annual leave Employer's contributions to social security Regularity/tenure of employment Perceptions of work satisfaction	Anker (2002) Mehran (2005)

[1] This is so since for women: DUM=1 ➔ female intercept= $\beta_0+\beta_1$, for men: DUM=0 ➔ male intercept= β_0. It follows that the intercept differential (i.e. male intercept-female intercept) = - β_1. For the male intercept to be greater than the female β_1 has to be negative, i.e. $\beta_1 < 0$.

Category	Indicators	Reference
	Likelihood of pregnant women losing their job Effect of globalization on work.	
(5) Skills reproduction security Obtaining marketable skills	Formal/informal training received Mismatch between qualification and work content (skill-related underemployment) Use of qualifications at work Expectations for own children's education.	Anker (2002) Brown and Pintaldi (2005)
(6) Job security Career possibilities and advancements	Experiences with advances and setbacks in working life and future expectations Perceived importance of following a particular profession	Anker (2002)
(7) Work security Occupational safety and working conditions	Absence from work due to illness, stress and injuries Overwork Sexual harassment Discrimination Safety of working conditions Provision for occupational injury compensation Childcare availability.	Anker (2002)
(8) Voice representation security having a collective voice to represent one's rights and interests at work	Presence of trade unions Coverage by a collective wage bargaining coverage rate Employer's concern of employees	Anker (2002) Anker et al. (2003)

Source: Anker, 2002 in Assaad and Roushdy, 2008

The job quality index utilized here excludes wages, which are analyzed separately. Despite the grave importance of issues such as job and employment security and stability, wage considerations – or what is termed above as "Income Security"- are expected to be of greatest importance to most waged workers,[1] hence the decision to split the analysis into two. Following (Assad and Roushdy, 2008) the following variables are used to construct the job quality index, which is said to summarize the quality of one's job: presence of a legal contract, of medical insurance of paid vacations of paid sick leave; and the affiliation of the worker to a union. The first four indicators belong to Anker's (2002) notion of "Employment Security", and the last belongs to "Voice Representation Security" issues. These are all binary variables taking the value one if the indicator is satisfied and zero otherwise. Job stability, or what is termed by Anker (2002) as "Basic Security", indicates whether the job is regular (permanent and temporary) or irregular (seasonal and casual labor), hence it is a categorical variable.

Non-binary variables are all normalized or rescaled in the following manner: $\left(\frac{value\ of\ variable\ \ for\ observation - \min value\ of\ variable}{\max value\ of\ variable - \min value\ of\ variable}\right)^2$ to ensure scale equivalence and accurately compare respondents to each other. These normalized values are then

[1] The author plans to undertake a survey to verify this statement.

combined into a (job quality) index using factor analysis, a data reduction technique that statistically creates weights for the different indicators.[1] The higher the level of these indicators, the higher the value of the job quality index.

There are a few caveats to the job quality index applied above. Other than wage, how fulfilling a job is to a worker is likely to be a dominant factor in determining job quality. Mehran (2005) lumps this factor with "Employment Security" though one would argue that "Mismatch Absence" between the employee and the job occupied seems to fit more accurately. The 1998 ELMS survey contained a question that may be used as a proxy (would you like to change your job?). Unfortunately, this question has been removed from the 2006 ELMPS survey. Nevertheless, in the Egyptian context the loss seems slight since in 1998 87 percent of respondents "did not want to change their jobs", indicating limited variation in that indicator. Rather than job fulfillment, the response may imply that most Egyptians prefer job stability, meaning they are "risk averse" not wanting to frequently change their jobs or that they're content even if their jobs aren't necessarily fulfilling. Alternatively, they may just know their options on the labor market are very limited. All factors are probably interrelated.

In addition, hours of work are also dropped from the job quality index. Hours of work represent a "Basic Security" aspect of job quality (see for example Anker 2002; also Anker et al. 2003; Brown and Pintaldi 2005). Both too little and excessive hours of work reduce job quality, that is provided these hours are involuntary. Whilst a question inquiring about whether working less than 40 hours a week (underemployment) was voluntary, no similar question exists in case more than 40 hours a week were exerted on the job. In 2006 around 80% of all waged workers in the sample (4910) did in fact put in more than 40 hours a week. Hence, hours worked had to be dropped from the job quality index.

Moreover, indicators relating only to women (e.g. maternity leave, entitlement to childcare leave...etc.) do not apply to men and therefore cannot be used in the regressions. Finally, several indicators were not included either because corresponding questions did not exist in one or both of the two surveys or because the response rate was low and so jeopardized sample size (e.g. form of the work place, enterprise size...etc.).

Results

This section first presents job quality gender and inter-temporal decomposition effects. It then introduces the gender wage gap decomposition; and finally the Oaxaca decomposition results.

Job Quality Index (JQI) Decomposition Effects

In the pooled data (containing observations from 1998 and 2006) the sector effect is striking. Job quality lies[2] at the lower end (i.e. very close to 0) of the normalized index for the men (blue) and women (pink) employed by the private sector (Figure 4). The opposite is true of men and women employed by the public sector. That is, most public sector employees enjoy all the benefits listed in the job quality index, whereas in the private sector very few do so. It

[1] The optimal would be to average these scores by their true weight in the population or even the sample. However, no question in the survey conveys these weights or even allows for a ranking of the various job traits.
[2] Or more precisely 75% of the sample's JQI values, which are represented by the boxes, lie closer to the lower end of the index (i.e. close to 0).

is very clear that the inter-sectoral differences are far greater than the apparently small differences in job quality for men and women within each sector.

Figure 4: Male versus Female Job Quality Index by Sector (pooled data)

Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.

Job Quality Inter-temporal Gap Decomposition

The disparity in the job quality index between the two sectors explains most of the trend observed by the inter-temporal decomposition analysis. Mean job quality has deteriorated for both men and women between 1998 and 2006 (Table 5). However, the decline was slightly higher for women (9.6 %) than men (8.5%). This deterioration is mostly coming from movements between the two years toward the lower quality private sector[1] where there is less employment security as reflected by the absence of contracts, and/or social security coverage, and/or paid vacations and sick leaves…etc.; and less job stability as reflected by temporary contracts, for example.

Table 5: Inter-temporal JQI* Decomposition Effects

	Inter-temporal Gap = JQI_{2006}-JQI_{1998}	**Share Effect**	**Intra-sectoral Quality Effect**
Male	-0.085	-0.130	0.008
Female	-0.096	-0.052	-0.044

Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.
*JQI is normalized ➔ 0 < JQI < 1

Indeed the share effect -which reflects employment movements during the two years to superior or worse sectors- mostly, captures this deterioration. With respect to men it accounts for all of the deterioration and outweighs the slight positive effect from the increase in the value of the index of 0.8 percent. In other words, despite the fact that both men and women have moved away from the high quality public sector, reducing overall job quality, job quality has slightly become better for men within at least one of the sectors over the years whilst this is not the case for women (where there was a decline by 4.4 percent).

[1] Due to privatization and the gradual abandonment of the government public employment drive.

Job Quality Gender Gap Decomposition

Gender decomposition analysis reveals that women enjoy overall better job quality than men in both years, hence the negative gap (Table 6). However, this difference is entirely driven by the share effect: women are occupying public sector and government jobs relatively more than men. As shown above, job stability and employment security are greater in the public sector due to guaranteed employment benefits. The within sector differences are slight, favoring women in 1998 but men by 2006.

Table 6: Gender JQI* Decomposition Effects

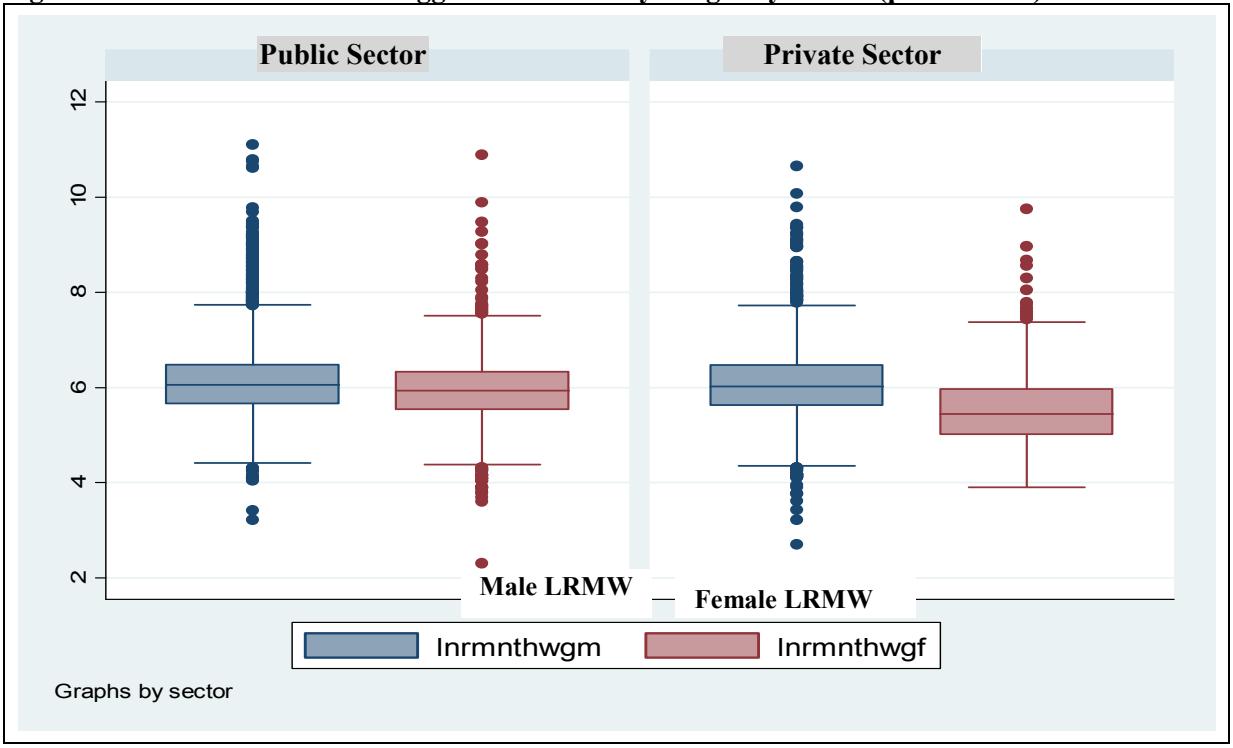
	Gender Gap= JQI_m-JQI_f	Share Effect	Intra-sectoral Quality Effect
1998	-0.128	-0.125	-0.003
2006	-0.117	-0.132	0.015

Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.
*JQI is normalized ➔ 0 < JQI < 1

Real Wage Decomposition Effects

Graphical representation of the pooled data (the two years) shows that real wages are lower for women compared to men in the two formal sectors of the economy (Figure 5) but more so in the private sector (75% of female observations are with a logged real monthly wage between 5-6 compared to 5.8-6.2 for men). The average difference in wages between the two sectors is not great, though women do earn more in the public sector than private.

Figure 5: Male versus Female Logged Real Monthly Wages by Sector (pooled data)



Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.

Real Wages Inter-temporal Gap Decomposition

Real wages have increased for both men and women between 1998 and 2006 (Table 7). The increase in real wages has been larger for men (26%) compared to women (19%). This rise is explained by a genuine increase in real wages in the two sectors over the years rather than by a share effect.

Table 7: Inter-temporal Log Real Monthly Wage Decomposition Effects

	Inter-temporal Gap = $LRMW_{2006}$-$LRMW_{1998}$	Share Effect	Intra-sectoral Quality Effect
Male	0.26	-0.01	0.27
Female	0.19	-0.04	0.23

Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.

Real Wages Gender Gap Decomposition

As shown earlier men enjoy overall higher monthly wages compared to women. Overall, there is a positive gap in (ln) real wages of 24% (Table 8). In fact the gender wage gap has widened by 7 per cent between the seven years from 20 percent in 1998 to 27 percent in 2006. This trend is exclusively driven by the intra-sectoral effect (i.e. pay differences), implying that the wage differential arises from higher male wages compared to women in any one sector rather than female versus male movements along the sectors throughout the years (share effect). For example, with respect to the 27 percent gap in 2006, more than the gap's value is explained by the intra-sectoral difference in wages (29%).

Table 8: Gender Logged Real Monthly Wage Decomposition Effects

	Gender (ln) Real Monthly Wage Gap = W_m-W_f	Share Effect	Intra-sectoral Effect
Pooled Data	0.24	-0.01	0.26
1998	0.20	-0.01	0.21
2006	0.27	-0.02	0.29

Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.

The expanding gender wage gap after privatization and the downsizing of the public sector suggests that formal sector female employees are more adversely affected than their male counterparts, by the enlarged role of the private sector in the Egyptian Economy. This result is in line with Assaad et al. (2009) finding that educated females being relatively harder hit from the reform toward a privately-led economy in Egypt. A Oaxaca decomposition is carried out in the following section to test whether these pay differences reflect differences in skills.

Oaxaca Decomposition Results: Wage Discrimination

Performing three regressions for the pooled sample and the two years separately, the regression results (Table 9) of equation (2) above confirm the presence of wage discrimination against women in the labor market.

The intercept, β_1, is highly significant ($p < 0.01$) and $\beta_1 < 0$ in all three regressions indicating persistent "pure discrimination" against women. The β_2s are all significant and take the expected sign, $\beta_2>0$, indicating that the higher the age (a proxy for years of experience), educational attainment, the year (as shown earlier) the higher the real monthly wage level. The positive "sector" coefficient also confirms the prediction that the private sector pays higher real wages. The results from the interactive variables show the absence of discrimination based on education levels (coefficient for Educ*Dum is insignificant in all three regressions). There is slight discrimination against men with respect to age (meaning that women with same experience levels as men are paid slightly higher wages) which would gradually cancel out the pure discrimination effect but only at unreasonable levels of age (over 70). Sample variable means are given in the Appendix.

Table 9: Oaxaca Decomposition Wage Discrimination Regressions

	Wage Regression Pooled (1)	Wage Regression 1998 (2)	Wage Regression 2006 (3)
SDUM	-0.485***	-0.473***	-0.636***
	(1.61e-06)	(0.00109)	(1.32e-06)
Sector	0.245***	0.202***	0.311***
	(0)	(0)	(0)
Year	0.238***		
	(0)		
Age	0.023***	0.022***	0.025***
	(0)	(0)	(0)
Education	0.172***	0.176***	0.166***
	(0)	(0)	(0)
SDUM*Sector	-0.167***	-0.225***	-0.04
	(1.83e-05)	(2.45e-05)	(0.471)
SDUM*Year	-0.062**		
	(0.0394)		
SDUM*Age	0.013***	0.014***	0.012***
	(0)	(8.90e-11)	(4.15e-09)
SDUM*Educ.	-0.007	-0.021	0.017
	(0.617)	(0.246)	(0.324)
Constant	4.369***	4.704***	4.230***
	(0)	(0)	(0)
N	9975	6028	3947
Ll	-9622	-6338.919	-3109.521
Aic	19263.999	12693.839	6235.043
p values in parentheses			
legend:	*** p< 0.01, ** p< 0.05, * p<0.1		

Source: Author's calculation based on CAPMAS and ERF ELMS 1998 and ELMPS 2006 surveys.

The significant gender wage discrimination effects are depicted in Table (10) and Figure (6). In 2006 on average real monthly wages amounted to LE557 for men but only LE448 for women. The regression results above imply that in the absence of discrimination given the characteristics and traits of the females in the sample their monthly wages should in fact amount to LE616, 11 per cent higher than sample males. In other words female workers are receiving LE168 less in real monthly wages on account of discrimination, a value representing 37 percent of the monthly average real wage they are actually receiving in that year.[1]

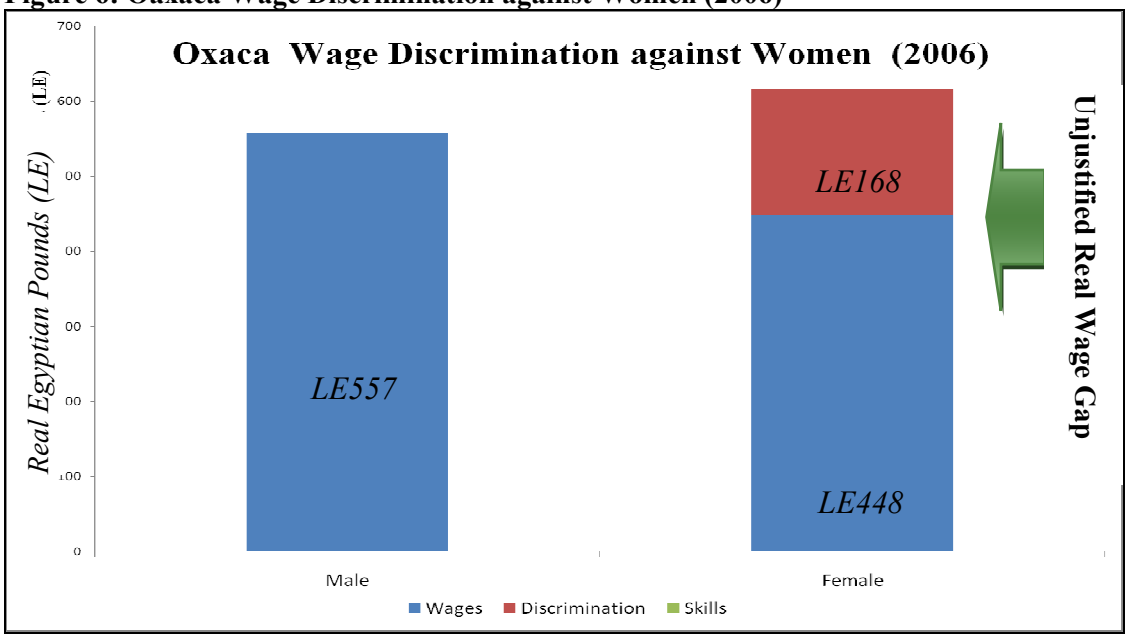
[1] With no discrimination and given their actual skill level in the sample women's wages would be LE616 giving gap due to discrimination of LE168. The actual gap is less (LE109 = 557-448) because it is partially offset by a skills effect (-59)- ensuing from sample females having better characteristics (e.g. education, experience…etc.) in comparison to their male counterparts.

Table 10: Oaxaca Decomposition Wage Discrimination 2006

	Male	Female
Real Monthly Wages	LE557	**LE448**
Discrimination		LE168
Skills		LE-59
Wage in the absence of discrimination		**LE616**

Source: Author's calculation based on CAPMAS and ERF ELMPS 2006 survey.

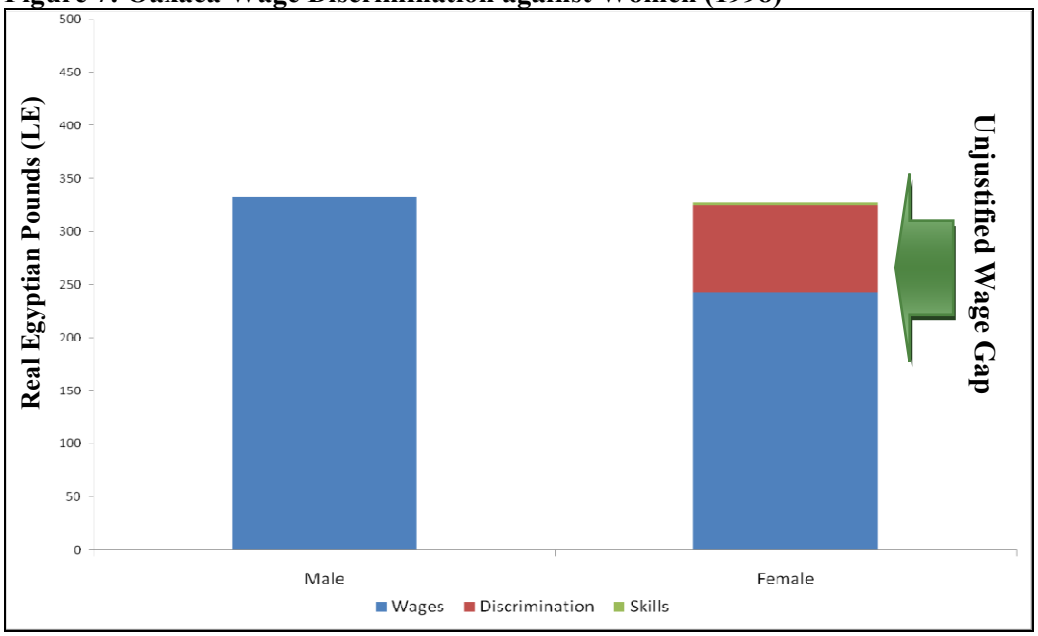
Figure 6: Oaxaca Wage Discrimination against Women (2006)



Source: Author's calculation based on CAPMAS and ERF ELMPS 2006 survey.

With the expansion of the private sector-led economy, discrimination has worsened from 24 percent of actual received female real monthly wages in 1998 (Figure 7) to 37 percent in 2006 as just shown. This means that in 1998 the same is true only discrimination was less.

Figure 7: Oaxaca Wage Discrimination against Women (1998)



Source: Author's calculation based on CAPMAS and ERF ELMS 1998 survey.

Conclusion

Egypt's labor market structure is dominated by the divide between the public and private sector. For many years, the public sector dominated and was the employment destination of choice, graduates queuing for public jobs rather than seek employment in the private sector. However, the country's labor market changed as a result of the Economic Reform and Structural Adjustment Program (ERSAP) in 1991. The public sector has been scaled down - notably the removal of public sector employment guarantees for graduates- and privatization has further fueled private sector growth. These structural shifts have brought about changes in both wage and work conditions.

This paper has shown that job quality in Egypt is higher for women than men due to their higher relative employment share in the public sector (government and publicly owned enterprises) - with its associated benefits of contracts, paid vacations and sick leave, provision of medical insurance…etc. (share effect). And so, with the relative decline of the public sector in Egypt, job quality has fallen for both men and women from 1998 to 2006, the reduction being slightly higher for women (9.6 % versus 8.5% for men). The reduction of job quality can be countered by government social safety nets, including unemployment benefits, but also national health service that reaches the needy whether employed within the informal sector or indeed unemployed.

Real monthly wages are consistently higher for men than women. This wage differential is on account of discrimination, as shown by the Oaxaca decomposition results. The decomposition breaks down differences in wage to those attributable to different characteristics of workers in a given category and differing returns to characteristics by category (i.e. a discrimination effect). Discrimination is said to have occurred if returns to the same characteristic differ according to gender. There has been a widening of the gender wage gap, with unjustified wage differentials between male and female wages growing from 24 percent of actual received monthly wages in 1998 to 37 per cent in 2006.

To narrow this gap; labor standards need to be promoted, especially in the private sector. Men and women are equal under the Egyptian constitution. However, an equal pay act,[1] ensuring equal pay for equal work, in a broader sense, one which prohibits discrimination at the entry points into the labor market, in job titles, in job ranks and in pay scales, is yet to be passed. Egypt has ratified the United Nations Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1981 and as such is committed to ensuring equal treatment of men and women. Nevertheless, there is no mention of the prohibition of unequal treatment such as specified, for example, in the Equal Pay Act of the United Kingdom. In the UK the Act was passed in 1970, coming into force by the end of 1975. The term pay is interpreted in a broad sense to include, on top of wages, things like holidays, pension rights, company benefits and some kinds of bonuses in addition to "hiring". Once the law is passed the judicial system handling cases of complaint of unequal pay becomes the main enforcement mechanism. What is integral to this process is that women are educated about their rights as given to them by law and are at the same time granted protection from any possible harassment if they actually step forward.

A more comparable case to that of Egypt today has been the experience of Turkey, which was among the first developing countries to undertake a Structural Adjustment Program (1981). Turkey's similar cultural traditions to Egypt are obvious and, like in Egypt, its public sector was substantial in size. It was only in 2003 that it passed the Equal Pay Act. In spite of

[1] The unified labor law of the year 2003 does indeed contain an article on the prohibition of wage discrimination based on gender (article 35).

declining gender wage differentials there remain a substantial gap (8%) (Ilkkaracan and Selim, 2007). But there is debate as to how to narrow this gap, some arguing against excessive protectionism, suggesting abandoning Turkey's social protection rhetoric in favor of more flexible labor regulations and promoting provisions for women as opposed to compelling and forcing by the power of law. Special provisions for working women can substantially increase the cost of female employment as opposed to men and so can backfire by discouraging the private sector from employing women (Süral, 2009).

What can Egypt learn from the Turkish experience? Passing an equal pay act including prohibition of discrimination at labor market entry points, in job titles, job ranks and in pay scales according to sex is vital; yet it is equally important to avoid excessive use of the law to impose social entitlements and fringe benefits for women. Such social burdens can negatively affect employers' incentives to create new female jobs.

There are a few caveats to the Oaxaca discrimination analysis in this paper some of which may be taken into account for further work. First, the study has not disaggregated the analysis by sector (private versus public,[1] but also industrial versus service sector, for example) nor by occupation. Doing so would not change the overall conclusion of this paper, but would identify in more detail which parts of the economy are most responsible for discrimination against women. Second, for purposes of precision disaggregation at the firm level may be necessary. In this case matched employer-employee data would be best, but firm size can serve as an acceptable proxy. It is possible that males in one firm are paid more than their exact (i.e. same title) female counterpart in another company of a smaller size, simply because the former can afford to pay more. Unfortunately, firm size data are only available for a small part of the sample, and so cannot be controlled for in the case of Egypt unless this information is subsequently obtained separately (and can be linked to the labor market employment data). Finally, the performed Oaxaca decomposition does not control for selection of labor market participants into the sectors and occupations they are currently holding nor does it accurately control for the years of experience.[2] Subsequent work may need to collect more data as well as use econometric techniques to tackle these issues.

[1] It is most likely that the gap would be even wider for the private sector but much less or even non-present for the case of the public sector.

[2] Age has been used as proxy for years of experience which is inaccurate since women, more so than men, often take career breaks to care for their children. Adjusting for this would in a narrowing of the wage gap.

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APPENDIX

Sample Variable Means

		Male	Female	Total
Real Monthly Wages (LE)	1998	448.28	387.01	435.11
	2006	776.68	576.01	735.09
	Pooled	648.87	500.36	617.64
In Real Monthly Wage	1998	5.89	5.71	5.85
	2006	6.24	5.93	6.18
	Pooled	6.1	5.84	6.05
Sex: Male=0 Female:1	1998	0	1	0.21
	2006	0	1	0.21
	Pooled	0	1	0.21
Sector: Public=1 Private=2	1998	1.37	1.17	1.32
	2006	1.45	1.25	1.4
	Pooled	1.42	1.22	1.37
Age	1998	36.1	35.51	35.97
	2006	35.13	35.85	35.28
	Pooled	35.51	35.71	35.55
Education Level	1998	1.85	2.63	2.02
	2006	1.97	2.68	2.12
	Pooled	1.92	2.66	2.08