Gender earnings discrimination in Jordan: Good intentions are not enough

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Abstract. *Jordan has long been a party to the main international instruments prohibiting discrimination against women, yet it still displays a significant gender pay gap. Using data from the 2002, 2006 and 2008 Household Expenditure and Income Surveys for decomposition analysis, while also accounting for the labour force participation decisions of women and men, the author finds that the pay gap is entirely explained by gender differentials in his estimated coefficients. The gap is initiated upon recruitment into wage employment through "screening discrimination", though it tends to narrow over time. Women's selectively low participation also contributes to a statistical improvement in their relative earnings.*

The problem of pay discrimination is a social problem where society does not see women's contribution to the labour market to be on the same level or importance as that of men.[1]

Jordan demonstrated precocious commitment to gender equity. After providing for equal pay in its Constitution, it ratified the ILO's Discrimination (Employment and Occupation) Convention, 1958 (No. 111), in 1963, the Equal Remuneration Convention, 1951 (No. 100), in 1966, and the United Nations Convention on the Elimination of All Forms of Discrimination against Women, in 1992. In 2011, in collaboration with the ILO, it set up its NSCPE with the mandate of developing a national strategy for pay equity. Despite all of these expressions of good intention, however, Jordan has yet to introduce anti-discrimination provisions in its domestic legislation and continues to display persistent and sizeable gender differentials in the monthly earnings of full-time workers, averaging 20 per cent in the public sector and 28 per cent in the private sector.

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[1] Statement by the Secretary General of the Jordanian National Commission for Women and co-chair of the National Steering Committee on Pay Equity (NSCPE). See "Gender pay discrimination in Jordan: A call for change", available at: http://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS_213754/lang--en/index.htm [accessed 7 November 2015].

Against this background – and given the general lack of empirical evidence on the composition of gender earnings differentials in the Middle East and North Africa (MENA) – this article applies a standard extension of the Oaxaca-Blinder decomposition technique to analyse gender pay differentials in Jordan using data for 2002, 2006 and 2008. It represents the most inclusive effort on this topic in Jordan to date, providing empirical evidence on a phenomenon that is much in need of regulation.

The remainder of the article is structured into five sections. The first briefly reviews the recent literature on countries of the region, and the second section describes the data set. The third section presents the methodology and the fourth reports the empirical results. The fifth section summarizes this article's conclusions and policy recommendations.

Selected literature

Gender differentials in earnings have been widely discussed in the labour economics literature. However, the majority of contributions focus on developed market economies, where earnings distributions are typically more dispersed and influenced by market returns, or on economies in transition from a centrally planned to a market system. Much less attention has been devoted to developing countries, particularly those whose cultural norms or institutional environments strongly influence the life choices of women and men, their economic opportunities and decisions. Jordan falls within this category: it is a progressive MENA market economy, characterized by a moderately conservative set of norms that influences – and often dictates – the social and economic decisions of individuals. The following overview focuses mainly on the literature on developing and MENA countries.

In their case study of Lebanon, Dah, Abosedra and Dahbourah (2010) find that women earn significantly less than men. Their analysis, however, does not provide an empirical explanation of their observations. El-Hamidi and Said (2005) investigate gender wage gaps in Egypt and Morocco over the 1990s. They conclude that the contribution of discrimination to the gender wage gap is sizeable in both countries, albeit with a declining trend over time. These results are confirmed by Biltagy (2014) and Kandil (2009), who conclude that the gender wage gaps in Egypt in 1988, 2006 and 2012 were mainly caused by discrimination. Using data from the occupied Palestinian territories, Daoud (2005) estimates the gender differential in returns to schooling, and finds that although women possess equivalent education as compared to men, their returns to schooling are lower. Razavi and Habibi (2014) report that a considerable part of the gender wage gap observed at the wage distribution mean in the Islamic Republic Iran is due to discrimination, and that the relative magnitude of wage discrimination is smaller at higher skill levels.

Neuman and Oaxaca (2005) analyse wage differentials in Israel in the 1990s, showing that gender differentials are larger than ethnic differentials, and that gender discrimination is more widespread. Miki and Yuval (2011) further

observe that Israeli women tend to seek higher levels of educational attainment than men in order to reduce the gender wage gap; they conclude that this strategy is effective for women with strong abilities. In Turkey, Akhmedjonov (2012) reports that the wage differential between men and women is almost entirely explained by discrimination.

The literature on Jordan is very limited indeed. Said (2012) estimates gender wage differentials by industry, using the 2010 Jordanian Labor Market Survey. She computes the gender difference in the natural logarithm of mean wages, estimated by means of traditional Mincer wage regressions, while correcting for workers' participation decisions. In contrast with the observed gender wage differentials she reports (ibid., p. 81), according to which men earned 1.07 and 1.25 times as much as women in the public and private sectors, respectively, her estimates show a mean wage premium for women in the public sector and no gender wage differential in the private sector.

Such inconsistency between the observed and estimated differentials may be due to the way this author computes the wage differential, being the sum of two terms. The first is the gender differential in average characteristics, weighted by the simple arithmetic mean of the gender wage regressions' coefficients. The second is the gender differential in the regressions' coefficients, weighted by the simple arithmetic mean of the average characteristics of men and women. Said (2012, p. 85) refers to the latter term as more accurately describing the upper bound estimate of gender discrimination. However, as emphasized by the traditional Oaxaca (1973) decomposition, for this term to be defined as such, the differential in the regressions' coefficients should be weighted by the average characteristics of the subordinate group, namely women, if discrimination is assumed to work against them. Moreover, simply averaging the mean characteristics of the samples of men and women assigns an equal weight to both sexes. Nonetheless, as the female sample of wage earners is considerably smaller than the male sample, this procedure can potentially bias the size of this second term and, consequently, the estimated wage differential.

Another source of deviation between the observed and estimated gender wage differentials can be the wage regressions themselves. Although corrected for selection bias, the specifications of the wage regressions reported by Said (2012, p. 95) only take into account experience, education and a selection term. This leaves the estimated coefficients – and therefore the estimated gender wage differential – prone to omitted-variables bias. Examples of such variables include workers' occupations, industries and migration status, to name but a few. This article takes these problems into account, thereby providing more consistent and reliable estimates.

Data and descriptive statistics

This study is based on cross-sectional data from the Jordanian Household Expenditure and Income Survey (HEIS) for 2002, 2006 and 2008. For the purposes of this article, the sample selected from this nationally representative

Figure 1. Women's earnings relative to the earnings distribution of men (percentiles)
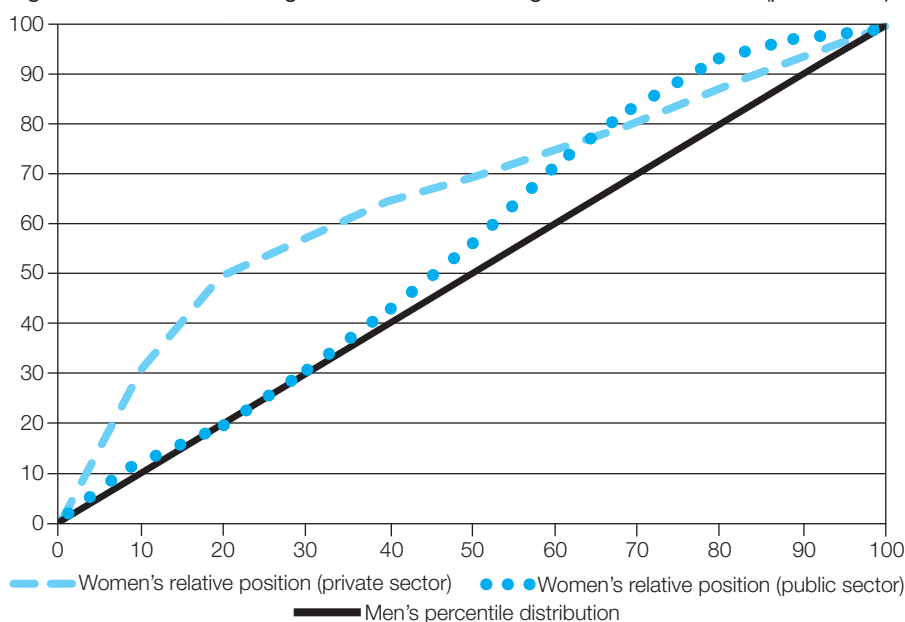
Source: Author's calculations based on pooled HEIS data for 2002, 2006 and 2008.

data set consists of men and women aged 18–64 years, who had completed their education and worked in public or private wage employment,[2] or chose not to participate in the labour force. Agricultural workers, military personnel, members of the police and civil defence forces and employees of international organizations are excluded. Applying these restrictions yielded an average sample of about 17,606 individuals per cross section, of whom 80.2 per cent of the men and 13.9 per cent of the women had decided to work. An individual is defined as choosing not to work when he/she is within the specified working-age range, is able to work, was not working during the week preceding the interview, was not actively looking for a job within the period of four weeks prior to the interview, and explicitly expressed unwillingness to accept a job offer during the period of one week before and two weeks after the interview.

The main variable of interest is real monthly earnings from employment.[3] This is defined as the sum of net wages/salaries and the value of non-cash compensation from employment at 2006 prices. The instruments for workers' participation decisions are marital status and real monthly non-labour income.

Considering women's position relative to the distribution of men's real monthly earnings, figure 1 shows no significant gender earnings gap in the

[2] The HEIS does not provide sufficient detail to distinguish between formal and informal employment in the private sector.

[3] Earnings are reported in Jordanian dinars. Jordan follows a fixed exchange rate regime, where JOD1 = US$1.41.

Table 1. Sample means and standard deviations

Variable	Public sector				Private sector			
	Men		Women		Men		Women	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Monthly earnings JODs (2006=100)	303.4	225.1	242.4	116.7	230.8	232.9	166.0	149.3
Monthly non-labour income JODs (2006=100)	75.2	190.8	28.1	99.2	53.6	123.2	9.3	47.1
Urban (%)	68.4	0.47	66.8	0.47	89.5	0.31	89.2	0.31
Migrant (%)	0.3	0.06	0.5	0.07	5.1	0.22	15.0	0.36
Age	37.4	10.27	33.8	7.91	33.1	10.63	29.4	7.38
Marital status (%)								
Single (reference group)	27.6	0.45	39.8	0.49	41.6	0.49	75.5	0.43
Married	72.0	0.45	55.9	0.50	58.0	0.49	19.8	0.40
Divorced or separated	0.3	0.05	2.2	0.15	0.3	0.06	3.4	0.18
Widowed	0.1	0.03	2.2	0.15	0.1	0.03	1.3	0.11
Educational attainment (%)								
Illiterate or basic reading and writing (reference group)	6.6	0.25	2.8	0.16	6.3	0.24	6.6	0.25
Primary school	33.6	0.47	7.8	0.27	54.4	0.50	25.6	0.44
Secondary school	12.1	0.33	6.4	0.25	16.2	0.37	14.8	0.36
Community college	15.1	0.36	33.9	0.47	9.2	0.29	22.7	0.42
Bachelor's degree	27.7	0.45	46.5	0.50	12.5	0.33	28.2	0.45
Post-graduate degree	5.0	0.22	2.5	0.16	1.4	0.12	2.2	0.15
Potential experience	18.6	11.12	13.0	8.47	16.0	11.06	10.6	8.09
Occupation (%)								
Management	0.7	0.08	0.3	0.06	1.3	0.11	0.6	0.08
Professional	34.5	0.48	59.0	0.49	11.9	0.32	31.5	0.46
Technical or paraprofessional	13.7	0.34	23.1	0.42	6.2	0.24	14.8	0.36
Administration and administrative support	11.2	0.31	7.8	0.27	5.8	0.23	12.2	0.33
Sales (reference group)	2.6	0.16	3.1	0.17	18.7	0.39	11.3	0.32
Industrial, construction or equipment	18.1	0.38	0.5	0.07	44.7	0.50	11.8	0.32
Manufacturing or utilities	19.2	0.39	6.3	0.24	11.4	0.32	17.8	0.38
Industry (%)								
Mining	4.8	0.21	0.2	0.04	1.3	0.11	0.0	0.02
Utilities	7.2	0.26	0.8	0.09	1.6	0.12	0.2	0.05
Construction	2.1	0.14	0.4	0.06	11.5	0.32	1.5	0.12
Manufacturing	1.3	0.11	0.5	0.07	23.2	0.42	19.7	0.40
Wholesale and retail trade (reference group)	1.9	0.14	1.0	0.10	25.8	0.44	8.7	0.28
Transportation or warehousing	10.9	0.31	1.9	0.14	13.4	0.34	3.6	0.19

(continued overleaf)

Table 1. Sample means and standard deviations *(concl.)*

Variable	Public sector				Private sector			
	Men		Women		Men		Women	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Industry (%)								
Finance or real estate	1.7	0.13	1.0	0.10	8.3	0.28	13.8	0.34
Education	37.9	0.49	68.8	0.46	3.5	0.18	23.1	0.42
Health care	32.2	0.47	25.5	0.44	6.2	0.24	28.4	0.45
Accommodation or catering services	0.1	0.03	0.0	0.00	5.4	0.23	1.1	0.10
Cross section (%)								
Year 2002 (reference group)	41.6	0.49	33.0	0.49	28.0	0.45	25.0	0.43
Year 2006	24.0	0.43	40.2	0.44	36.3	0.48	42.3	0.49
Year 2008	34.5	0.48	26.8	0.47	35.8	0.48	32.7	0.47
Number of observations	4 124		1 760		13 234		2 567	

Source: Author's calculations based on pooled HEIS data for 2002, 2006 and 2008.

public sector until about the 35th percentile. In the private sector, the relative position of women's earnings is quite different: here the earnings differential is at its largest between the 30th and the 70th percentiles and gradually narrows at the upper tail of the distribution.

Table 1 shows the sample means and standard deviations by employment sector and sex. On average, men earn 20 per cent more than women in the public sector and 28 per cent more in the private sector.[4] About two-thirds of public sector workers and 90 per cent of workers in the private sector live in urban areas. This difference may be due to the fact that many public employers provide transportation for their employees, thereby enabling them to move out of the more expensive urban residential areas into outlying suburbs. Another factor could be differences in workers' sector selection decisions, with urban residents possibly more likely to self-select into private employment than those living in rural areas.

Generally, men are more likely to be married: the male marriage rates were 72 per cent in the public sector and 58 per cent in the private sector, as compared with female rates of 55.9 and 19.8 per cent, respectively. The significantly lower marriage rates among women in both sectors clearly signal that women's employment declines with marriage.

When it comes to educational attainment, women are better endowed. The percentage of men who possessed at least a community college degree was 47.8 per cent in the public sector and 23 per cent in the private sector. Among women the proportions were 83 and 53 per cent, respectively. Although men

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[4] The gender earnings gap = [1 – Average earnings of women/Average earnings of men] x 100%.

and women in Jordan have equal access to education, men are still principally responsible for providing for their families. They are often compelled to enter the job market at a relatively younger age, at the expense of further education. This partly explains the higher average levels of educational attainment among women.

Regarding occupational distribution, most of the men and women in the sample worked either as (para)professionals or in industrial and manufacturing occupations. Also, most men and women in the public sector worked in education or health care. In the private sector, by contrast, men tended to work in manufacturing, trade, construction or transportation, whereas the majority of women still worked in education or health care or in the finance industry.

Methodology

This study follows the approach of Neumark (1988) and Oaxaca and Ransom (1994) in conducting a traditional two-fold Oaxaca (1973) and Blinder (1973) decomposition analysis, in which the coefficients from a pooled regression over both sexes are used to decompose the estimated gender earnings differential into explained and unexplained components. The merit of this approach is its neutrality, in the sense that it does not pre-impose which of men's or women's returns are to be considered discriminatory. The coefficients underlying the earnings decompositions are obtained via Mincer-type wage regressions that are corrected for workers' labour force participation decisions. Contrary to the common practice of correcting for selection bias only in the regressions for women, I do so for both women and men, considering that in the cultural environment from which the sample is drawn, marital status and non-labour income would influence their participation decisions differently.

The earnings equations for men (m) and women (w) are given by

$$\ln(E_i^g) = X_i^g \beta^g + e_i^g \tag{1}$$

where $g = m, w$ and $i = 1, \dots n^g$; E_i^g represents real monthly earnings of individual i of gender g; and X_i^g is a $(1 \times k)$ vector of human-capital and job-specific characteristics. This vector includes a dummy variable for whether the individual is a native or migrant (taking the value of zero for migrants), another for whether he/she resides in an urban or rural area (taking the value of zero for rural residents), and a categorical variable for the highest level of educational attainment, with six categories, namely: illiterate or basic reading and writing (reference group), completed primary schooling, completed secondary schooling, two-year community college degree, four-year bachelor degree and, finally, post-graduate degree. This vector also includes the individual's potential experience (i.e. age – years of schooling – 6) and its square, his/her occupation and industry of employment. Occupation has seven categories: management, professional, technical or paraprofessional, administration or administrative support, sales (reference group), industrial or construction or equipment, and, finally, manufacturing or utilities. Industry has ten categories: mining, utilities, construction, manufacturing, wholesale or retail trade (reference group),

transportation or warehousing, finance or real estate, education, health care, and, finally, accommodation or catering services. I also include dummies for cross sections 2002 (reference group), 2006 and 2008. Lastly, β^g is the (k x 1) vector of the regressions' intercepts and estimated coefficients, and e_i^g is the corresponding error term.

Earnings are observed only in case an individual has decided to participate in wage employment. As proposed by Heckman (1979), it is therefore necessary to introduce an equation that explains a worker's participation decision, namely:

$$P_i^* = Z_i \gamma + u_i \tag{2}$$

where $i = 1, \dots$ N, and P_i^* is a latent variable that reflects the individual's participation. This variable's observable counterpart P_i is a binary variable that takes the value of 1 if $P_i^* > 0$ and the value of 0 otherwise. Z_i is a (1 x k) vector of characteristics that explain the individual's participation decision. In addition to age,[5] this vector includes migration, area of residence and educational attainment, which are also featured in the earnings regressions. It also includes workers' marital status and real monthly non-labour income, which influence the individual's participation decision but not his/her earnings. Marital status has four categories, namely: single (reference group), married, divorced or separated, and widowed. γ is the (k x 1) vector of estimated coefficients, and u_i is the corresponding error term. The error terms of equations (1) and (2) above are assumed to be normally distributed and correlated $(e_i, u_i) \sim N(0,0, \sigma_e^2, 1, \rho_{eu})$ and independent of the set of explanatory variables.

First, equation (2) is estimated as a probit for men and women separately, whose coefficients are then used to calculate the inverse Mill's ratio, $\lambda_i(-Z_i\gamma) = \varphi(-Z_i\gamma)/[1 - \emptyset(-Z_i\gamma)]$ where $\varphi(-Z_i\gamma)$ denotes the standard normal density function and $\emptyset(-Z_i\gamma)$ denotes the standard normal cumulative distribution function. Then, the inverse Mill's ratio is included in equation (1) as a further predictor, expressed as:

$$\ln(E_i^g) = X_i^g \beta^g + \beta_\lambda^g \lambda_i^g + v_i^g \tag{3}$$

where $g = m, w$ and $i = 1, \dots, n^g$; $\beta_\lambda^g = \rho_{eu}^g \sigma_e^g$ is the covariance between the errors from the probit and earnings equations multiplied by the standard error of the earnings equation; and v_i^g is the error term of each sector's earnings equation after correcting for participation selection bias, such that $v_i^g \sim N(0, \sigma_v^g)$.

Given equation (3) above, the mean log gender earnings differential can be derived as

$$\overline{D} = [(\overline{X}^m - \overline{X}^w)\hat{\beta}^*] + [\overline{X}^m(\hat{\beta}^m - \hat{\beta}^*) + \overline{X}^w(\hat{\beta}^* - \hat{\beta}^w)]$$
$$[(\overline{\lambda}^m - \overline{\lambda}^w)\hat{\beta}_\lambda^*] + [\overline{\lambda}^m(\hat{\beta}_\lambda^m - \hat{\beta}_\lambda^*) + \overline{\lambda}^w(\hat{\beta}_\lambda^* - \hat{\beta}_\lambda^w)] \tag{4}$$

The $\hat{\beta}^*$ coefficients are the non-discriminatory coefficients obtained from a pooled regression including both sexes. The first term of equation (4) is the

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[5] The earnings regressions do not include age directly. Rather, they include "potential experience", calculated as described above.

part of the gender earnings differential that is due to gender differences in observable characteristics. The second term is the part due to differences in the returns to the observable characteristics, in addition to the difference in the regressions' intercepts. The latter difference represents the earnings gap that would still exist even if everything else were equal between women and men. As argued by Belzil and Hansen (2002), Heckman, Lochner and Todd (2003), Belzil (2006) and Woodcock (2008), Mincer regression intercepts are empirically affected by many factors, including workers' unobserved market ability and skills, firm and match heterogeneity, correlation between ability and schooling and "screening discrimination" (Pinkston, 2003). The third and fourth terms in equation (4) are the explained and unexplained components of selectivity, respectively.

Empirical results

This section begins by examining the gender differences in participation and the selection-corrected wage equations. It then goes on to discuss the composition of the gender earnings differentials.

Table 2 shows the estimation results of the gender participation probits and corresponding marginal effects. Women have a weaker labour market attachment than men, as shown by their lower probabilities of engaging in wage employment with respect to age, residing in economically active urban areas, marital status, the influence of non-labour income, and the much lower constant term in the probit for women. Participation increases with age at a decreasing rate for both sexes. As regards education, higher attainment generally increases the probability of participation, with the marginal effects being stronger for women.

The cultural effect on participation and the division of roles within households – i.e. women being the presumed caretakers and men, the family breadwinners – becomes quite clear with the introduction of marital status and the effect of non-labour income. These are the instruments used to control for workers' participation decisions, as they affect participation but do not affect workers' earnings from wage employment. Marital status is shown to influence male participation significantly: married men are 48.3 per cent more likely to participate in wage employment than single men. By contrast, the probability of women's participation decreases by 14 per cent if they are married, confirming the findings of Mryyan (2012) and Assaad, Hendy and Yassine (2012). Non-labour income decreases men's participation by 14.3 per cent through its likely effect on their reservation wages, whereas its influence on women's participation is quite negligible. These results support Kanazawa's (2005) argument that earnings are a stronger statement of "reproductive success" for men than they are for women.

Table 3 shows Heckman's (1979) two-step estimators for the male and female earnings regressions. It demonstrates that the returns to education are positive and increase with the level of educational attainment for both sexes.

Table 2. Participation probits and marginal effects

Variable	Men		Women	
	β	∂F/∂x	β	∂F/∂x
Age	0.141***	0.038***	0.192***	0.013***
	(0.012)	(0.003)	(0.011)	(0.001)
Age^2	−0.002***	−0.001***	−0.003***	−0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Urban	0.439***	0.131***	−0.199***	−0.015***
	(0.031)	(0.010)	(0.032)	(0.003)
Migrant	−0.409***	−0.128***	0.276***	0.023***
	(0.094)	(0.033)	(0.077)	(0.008)
Primary school	0.156***	0.042***	−0.033	0.002
	(0.043)	(0.012)	(0.056)	(0.004)
Secondary school	0.358***	0.086***	0.335***	0.027***
	(0.053)	(0.011)	(0.062)	(0.006)
Community college	0.544***	0.120***	1.153***	0.165***
	(0.059)	(0.010)	(0.057)	(0.013)
Bachelor degree	0.784***	0.161***	1.815***	0.390***
	(0.056)	(0.008)	(0.060)	(0.020)
Graduate degree	1.171***	0.176***	2.207***	0.588***
	(0.104)	(0.007)	(0.140)	(0.053)
Married	1.378***	0.483***	−1.119***	−0.140***
	(0.075)	(0.026)	(0.033)	(0.007)
Divorced or separated	0.186	0.046	−0.361***	−0.017***
	(0.265)	(0.060)	(0.096)	(0.003)
Widowed	1.225***	0.172***	−0.742***	−0.027***
	(0.262)	(0.012)	(0.088)	(0.002)
Non-labour income	−0.529***	−0.143***	−0.026***	−0.002***
	(0.021)	(0.004)	(0.010)	(0.001)
Year 2006	0.011	0.003	−0.078***	−0.005***
	(0.034)	(0.009)	(0.033)	(0.002)
Year 2008	0.060**	0.016**	−0.062**	−0.004**
	(0.034)	(0.009)	(0.033)	(0.002)
Constant	−0.744***		−4.224***	
	(0.230)		(0.204)	
Number of observations	14 923		28 955	
x^2 (k)	3 118.5		3 955.4	
Prob > x^2	0.000		0.000	
Pseudo R^2	0.360		0.350	

Notes: *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The values in parentheses are the robust standard errors of the estimated coefficients.

Source: Author's calculations based on pooled HEIS data for 2002, 2006 and 2008.

Compared with men, women in private-sector employment receive more favourable returns to education, whereas the opposite is true in the public sector, albeit to a lesser extent. A likely explanation is the lower relative supply of women in each educational category. Over the three cross-sections considered here, the women-to-men ratio averages 15.7 per cent in the educational

Table 3. Selectivity-corrected earnings regressions

	Public (Heckman)		Private (Heckman)	
	Men	Women	Men	Women
	β	β	β	β
Urban	0.041***	−0.001	0.097***	0.097
	(0.015)	(0.026)	(0.023)	(0.079)
Migrant	−0.17	0.148	−0.019	0.03
	(0.136)	(0.131)	(0.03)	(0.081)
Primary school	0.132***	−0.014	0.125***	0.28**
	(0.038)	(0.079)	(0.029)	(0.11)
Secondary school	0.28***	0.063	0.243***	0.402***
	(0.045)	(0.113)	(0.033)	(0.123)
Community college	0.426***	0.375***	0.304***	0.698***
	(0.051)	(0.111)	(0.037)	(0.145)
Bachelor degree	0.662***	0.572***	0.634***	1.292***
	(0.059)	(0.129)	(0.048)	(0.164)
Graduate degree	1.229***	0.927***	1.1***	1.995***
	(0.071)	(0.16)	(0.085)	(0.214)
Potential experience	0.029***	0.031***	0.039***	0.041***
	(0.002)	(0.005)	(0.003)	(0.008)
(Potential experience)^2	0.000***	−0.001***	−0.001***	−0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Management	0.241**	0.092	0.716***	0.554***
	(0.133)	(0.263)	(0.062)	(0.196)
Professional	0.001	0.195*	0.432***	0.338***
	(0.077)	(0.113)	(0.042)	(0.103)
Technical or paraprofessional	−0.009	0.213*	0.278***	0.309***
	(0.069)	(0.11)	(0.034)	(0.101)
Administration and administrative support	−0.025	0.148	0.26***	0.416***
	(0.063)	(0.11)	(0.032)	(0.093)
Industrial, construction or equipment	0.001	0.134	0.025	−0.195
	(0.061)	(0.164)	(0.023)	(0.121)
Manufacturing or utilities	−0.145**	0.112	−0.128***	−0.006
	(0.06)	(0.126)	(0.029)	(0.104)
Mining	0.57***	0.559***	0.491***	—
	(0.062)	(0.155)	(0.065)	—
Utilities	0.118**	−0.097	0.232***	0.163
	(0.049)	(0.131)	(0.039)	(0.181)
Construction	−0.168***	−0.367**	−0.059**	0.055
	(0.055)	(0.145)	(0.027)	(0.11)
Manufacturing	0.297***	−0.233	0.067***	0.222**
	(0.078)	(0.193)	(0.021)	(0.103)
Transportation or warehousing	0.187***	−0.013	0.026	0.288***
	(0.049)	(0.147)	(0.022)	(0.096)
Finance or real estate	0.109	0.167	0.152***	0.109
	(0.071)	(0.144)	(0.03)	(0.097)
Education	−0.014	−0.216**	−0.134***	−0.43***
	(0.043)	(0.098)	(0.033)	(0.09)

Table 3. Selectivity-corrected earnings regressions *(concl.)*

	Public (Heckman)		Private (Heckman)	
	Men	Women	Men	Women
	β	β	β	β
Health care	−0.002 (0.042)	−0.084 (0.092)	0.017 (0.03)	−0.159* (0.087)
Accommodation or catering services	−0.182 (0.169)	- -	0.077** (0.038)	0.382** (0.154)
Year 2006	−0.105*** (0.02)	0.045 (0.031)	0.153*** (0.018)	0.19*** (0.054)
Year 2008	−0.109*** (0.018)	0.063** (0.032)	0.16*** (0.018)	0.073 (0.063)
Lambda	−0.084** (0.043)	0.06 (0.04)	−0.081** (0.033)	0.131* (0.075)
Constant	4.856*** (0.077)	4.596*** (0.157)	4.323*** (0.049)	3.347*** (0.19)
Number of observations	3 414	1 415	7 008	891
F(k, N−1)	82.89	15.58	101.59	30.11
Prob > F	0.000	0.000	0.000	0.000
R^2	0.4467	0.1827	0.343	0.4181

Notes: *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The values in parentheses are the robust standard errors of the estimated coefficients.

Source: Author's calculations based on pooled HEIS data for 2002, 2006 and 2008.

attainment category of completed secondary school, and 40.8 per cent for two-year community college degree holders and above. Furthermore, the average women-to-men ratio is 30.5 per cent in the lower half of the private-sector earnings distribution, and as low as 11.8 per cent in the upper half. These ratios suggest that the higher private-sector returns to women may, indeed, be due to their relative under-supply and not to the fact that women with higher qualifications are hired in higher-paying jobs. The differential in male/female labour supply can partially be explained by the persistent perception that private sector employment is less "appropriate" for women than for men, as reflected in our data, which show that the women-to-men ratio is 19.4 per cent in the private sector, as against 42.7 per cent in the public sector. The underlying attitudes are influenced by several factors, such as the private sector's longer effective working hours and generally more liberal, yet less accommodating working conditions.

   The observation that men in public sector employment receive higher returns to education than those in the private sector deserves further investigation. A plausible explanation is that workers typically prefer public-sector employment, given its higher levels of job security and non-monetary benefits. Those with a better education might therefore self-select into public employment, whereas those with less education have more limited access to public employment opportunities and therefore accept lower-paying private-sector jobs.

With respect to experience, the returns are positive, for both sexes in both sectors, and diminishing, except for men in the public sector, for whom the returns are constant, at 3 per cent for each additional year of potential experience. The estimation results show that such returns otherwise decline at a rate of 0.2 per cent annually and are maximized in about 20 years. The results also show that employment in managerial positions increases earnings by about 24 per cent in the public sector and 72 per cent in the private sector for men, as against 9 and 55 per cent, respectively, for women. Interestingly, the estimated coefficients of the inverse Mill's ratios are negative and significant for men and positive for women in both sectors. This implies that gender participation decisions exert a negative price effect on men's relative earnings, potentially causing the earnings gap to narrow.

Table 4 shows an estimated gender earnings gap of approximately 16 per cent in the public sector and a much wider gap – of about 43 per cent – in the private sector. Collectively, gender differentials in estimated returns explain the entire gap in the former case, and over 90 per cent of it in the latter. The total explained gap, by contrast, is quantitatively negligible and statistically insignificant in both sectors. These estimates are much closer to the observed differentials than those reported by Said (2012).

However, the aggregate explained and unexplained components of the gap must be interpreted with caution because a small and insignificant total might be the result of several large and significant effects that cancel each other out. The negligible total explained gap is a case in point: women's relatively better educational endowments individually cause the gender earnings differential to shrink by 89 per cent in the public sector and by 35 per cent in the private sector, but this effect is cancelled out by other components, including the effect of potential experience. The result that higher educational attainment in Jordan reduces the gender earnings gap is consistent with the findings on Israel by Miki and Yuval (2011), who report that Israeli women with strong abilities benefit from the acquisition of more education.

With respect to the details of the unexplained part of the gap, gender differentials in the returns to education significantly improve women's relative earnings in the private sector (by 87 per cent). This means that not only do Jordanian women possess a higher average educational endowment, but they also receive higher returns to education than men. However, these favourable effects of education are completely neutralized by the differential in the regressions' intercepts. As mentioned earlier, the intercept of a Mincer wage regression captures a blend of unobserved factors, which may include the effect of screening discrimination at the point of hiring. Given the large differential in the gender regressions' intercepts shown at the bottom of table 4, it can be argued that screening discrimination at the point of entry into wage employment plays a significant role, as highlighted by Pinkston (2003).

In support of this argument, I decompose the gender earnings differential using the entire sample over both sectors, and compare the results with those of a parallel decomposition in which only new entrants into wage employment

Table 4. Decompositions of gender earnings differentials

	Public sector	%	Private sector	%
Estimated gender earnings gap	0.159*** (0.015)		0.433*** (0.028)	
Total explained gap	−0.007 (0.023)	−4.4	0.038 (0.034)	8.8
Details of explained gap	**Coefficient**	**%**	**Coefficient**	**%**
Urban	0.001 (0.001)	0.6	−0.002 (0.001)	−0.5
Migrant	0.000 (0.000)	0.0	0.000 (0.001)	0.0
Education	−0.141*** (0.014)	−88.7	−0.150*** (0.013)	−34.6
Potential experience	0.091*** (0.007)	57.2	0.160*** (0.011)	37.0
Occupation	−0.018* (0.010)	−11.3	−0.124*** (0.012)	−28.6
Industry	0.057*** (0.006)	35.8	0.070*** (0.010)	16.2
Year 2006	0.003** (0.001)	1.9	−0.001 (0.003)	−0.2
Year 2008	−0.001 (0.001)	−0.6	0.007*** (0.003)	1.6
Selectivity	0.001 (0.019)	0.6	0.078*** (0.025)	18.0
Total unexplained gap	0.166*** (0.027)	104.4	0.395*** (0.038)	91.2
Details of unexplained gap	**Coefficient**	**%**	**Coefficient**	**%**
Urban	0.028 (0.020)	17.6	0.001 (0.073)	0.2
Migrant	−0.001 (0.001)	−0.6	−0.004 (0.007)	−0.9
Education	0.100 (0.120)	62.9	−0.377*** (0.125)	−87.1
Potential experience	0.025 (0.040)	15.7	−0.020 (0.064)	−4.6
Occupation	−0.196 (0.124)	−123.3	0.011 (0.075)	2.5
Industry	0.16 (0.102)	100.6	0.065 (0.070)	15.0
Year 2006	−0.045*** (0.011)	−28.3	−0.014 (0.021)	−3.2
Year 2008	−0.065*** (0.014)	−40.9	0.028 (0.021)	6.5
Selectivity	−0.100** (0.049)	−62.9	−0.271*** (0.093)	−62.6
Constant	0.260 (0.173)	163.5	0.976*** (0.193)	225.4
Number of observations	4 829		7 899	
Men	3 414		7 008	
Women	1 415		891	

Notes: *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The values in parentheses are the robust standard errors of the estimated coefficients.

Source: Author's calculations based on pooled HEIS data for 2002, 2006 and 2008.

are included. New entrants are identified as workers with a maximum of one year of potential experience. The men and women in this category average 14 to 15 years of schooling. Moreover, 87 per cent of men and 91 per cent of women work in professional, paraprofessional, sales or industrial occupations, whereas 72 per cent of men and 75 per cent of women work in manufacturing, wholesale and retail, finance and real estate or education. Thus, since new male and female entrants display similar characteristics in terms of education and experience, and the majority of them work in fairly similar occupations and industries, the potential influence of skill differentials and occupational and industry heterogeneity on the earnings gap at entry is considerably reduced. Consequently, more weight is assigned to screening discrimination as a plausible cause of earnings differentials among this group of workers.

The specifications of the earnings regressions for this subset of the sample are the same as those underlying the decompositions reported in table 4, except that here I include a sector dummy as I pool over both sectors. Table 5 shows a statistically significant gender earnings differential of about 29 per cent among new entrants, compared with 20 per cent for the whole sample. As expected, the explained component is small and statistically indifferent from zero because of the almost identical characteristics of the women and men in this sub-sample.

The total unexplained component, by contrast, is statistically significant and accounts for over 80 per cent of the total differential. Moreover, it is about one-third of the size of the differential in the intercepts of the decomposition that includes the whole sample. These results provide evidence that a considerable

Table 5. Comparison of gender earnings differential decompositions:
New entrants vs whole sample

	All		Entrants	
	Coefficient	%	Coefficient	%
Estimated gender earnings gap	0.198*** (−0.015)		0.291*** (−0.092)	
Total explained gap	−0.053*** (−0.021)	−26.8	0.052 (−0.138)	17.9
Total unexplained gap	0.252*** (−0.023)	127.3	0.240* (−0.138)	82.5
Unexplained gap excluding constant	−0.498*** (−0.138)	−251.5	−0.04 (−0.835)	−13.7
Constant	0.750*** (−0.139)	378.8	0.28 (−0.811)	96.2
Number of observations	12 728		225	
Men	10 422		97	
Women	2 306		128	

Notes: *, ** and *** indicate significance at the 10, 5 and 1 per cent levels, respectively. The values in parentheses are the robust standard errors of the estimated coefficients.
Source: Author's calculations based on pooled HEIS data for 2002, 2006 and 2008.

part of the gender earnings differential in Jordan is initiated at entry, which is captured by the differential in the regressions' intercepts. One explanation is that, in employers' perceptions, hiring women comes with the risk of future labour market interruptions since their economic decisions are expected to be subordinate to their "primary roles" as mothers and wives. Employers may therefore offer lower entry wages to women than they do to men. This effect, however, diminishes with tenure, when employers begin to observe women's actual productivity at the workplace, as reflected in the estimated gap for the whole sample, which is 9 per cent smaller than the estimated gap for new entrants only.

Finally, the explained component of selectivity in table 4, which captures the total observed gender difference in participation behaviour (i.e. the third term in equation 3), causes the gender earnings differential to widen due to the lower participation rates of women. Moreover, the unexplained component of selectivity (i.e. the fourth term in equation 3) captures the total price effect of gender participation behaviour. This term shrinks the earnings gap by 62.9 per cent in the public sector and by 62.6 per cent in the private sector. This is explained by the fact that many lower skilled, less educated women who would potentially earn lower wages choose not to participate in the labour force, thereby having a positive effect on women's average relative earnings, ceteris paribus.

Concluding remarks

In the light of Jordan's long-standing commitment to gender equity and equal pay, this article has investigated the persistent gender earnings differentials in Jordan's public and private sectors, as well as the influence of labour market participation decisions on these differentials. It shows that the gender earnings differential is entirely attributable to the Oaxaca-Blinder total unexplained gap – the component that typically captures the effect of discrimination. It also shows that the relative participation decisions of women and men cause the gap to narrow significantly, as many women with lower levels of educational attainment have a much lower probability of participation, and thus appear to "avoid" potentially lower earnings by staying out of the labour force. Moreover, women's participation declines with marriage and is not affected by non-labour income, which further confirms the prevalence of their culturally assigned role as family caretakers. A carefully designed childcare programme, including a government-subsidized childcare allowance incorporated into women's wages, might succeed in increasing the labour force participation of mothers, though this could have unpredictable consequences for the observed gender earnings gap depending on uptake among women with low vs high educational attainment.

Where both women and men are recruited into fairly similar occupational categories and possess identical levels of educational attainment and experience, there is also evidence that a significant part of the earnings differential is initiated on entry into wage employment through screening discrimination.

This may be explained by the "noisier" signals regarding the productivity-related characteristics of women at the point of entry, when compared with men. Only after some time in employment does the real effect of such characteristics become more influential in regard to relative earnings, as reflected in the fact that the gender pay gap is actually wider among new entrants than across the whole sample, and in women's eventually higher relative returns to education in the private sector.

This finding highlights the urgency of introducing and enforcing anti-discrimination legislation in Jordan's labour market, not only at the workplace, during employment, but also at the recruitment stage. While ratification of the anti-discrimination Conventions of the ILO and the United Nations is a sign of good intentions, it is insufficient to eliminate the country's persistent gender earnings differentials.

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