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Islands through the glass ceiling? Evidence of gender wage gaps in Madagascar and Mauritius

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ISLANDS THROUGH THE GLASS CEILING?
EVIDENCE OF GENDER WAGE GAPS IN MADAGASCAR AND MAURITIUS[1]

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ABSTRACT

Using matched employer-employee data collected in Mauritius and Madagascar in 2005, we add new evidence on the magnitude of the gender wage gap and on the relevance of the glass ceiling hypothesis recently observed in developed countries. We focus more closely on the role of firm characteristics and job segregation across firms as potential factors explaining the gender wage gap. While the magnitude of the adjusted gender gap is almost insignificant in Madagascar and quite high in Mauritius, our results show that accounting for firm heterogeneity in the analysis is important for both islands. We highlight that these firm effects are the result of gender segregation across firms, i.e. the existence of high paying firms for men and low paying firms for women. In addition, there is no compelling evidence of a glass ceiling phenomenon in both islands. This comparative study then suggests that there is a high heterogeneity in Africa with respect to the situation of women in the formal labor market.

Key Words: Gender wage gap, glass ceiling, quantile regressions, matched worker-firm data, Africa.

RESUME

A l'aide de données appariées employeurs-employés du secteur formel collectées à l'île Maurice et à Madagascar en 2005, nous estimons l'ampleur de l'écart salarial selon le genre et testons la pertinence de l'hypothèse de plafond de verre récemment observée dans les pays développés. Nous nous intéressons particulièrement aux caractéristiques des entreprises et à la ségrégation professionnelle au sein des firmes en tant que possible déterminants de l'écart salarial entre les sexes. Alors que l'écart salarial ajusté des caractéristiques individuelles est faible à Madagascar, et relativement élevé à l'île Maurice, nos résultats montrent que la prise en compte de l'hétérogénéité des entreprises dans l'analyse est importante pour les deux îles. Nous mettons en évidence que ces effets d'entreprise sont le résultat d'une ségrégation de genre entre les entreprises, c'est-à-dire qu'il existerait des entreprises versant de hauts salaires pour les hommes et des entreprises à bas salaires pour les femmes. En outre, nous n'observons pas de phénomène de plafond de verre sur les revenus pour ces deux pays. Cette étude comparative suggère finalement qu'il existe une forte hétérogénéité en Afrique en ce qui concerne la situation des femmes sur le marché du travail formel.

Mots clés : Ecart salarial selon le genre, plafond de verre, régressions de quantiles, données appariées employeurs-employés, Afrique.

JEL Code: J24, J31, O12

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1. INTRODUCTION

Many empirical studies have shown that women and men face unequal treatment in the workplace, especially in terms of wages. Almost all developed countries' labor markets are characterized by a significant gender wage gap, whose explanation may be related to differences in the level of human capital between male and female employees or to discrimination from employers against the female workforce (Blau and Kahn, 2000). Furthermore, this gender wage gap is unlikely to remain constant throughout the wage distribution as revealed for Sweden, Spain or France (Albrecht *et alii*, 2003; de la Rica *et alii*, 2008; Jellal *et alii*, 2008). This is the so-called glass ceiling hypothesis according to which women face more difficulties than men in reaching top positions within the firm and thus benefiting from high wages[2].

Contrary to the case of developed countries, less is known about gender wage differences in developing countries, especially with respect to the possible varying magnitude of the gender gap across the wage distribution. In particular, gender-specific studies on Africa remain particularly scarce as it can be inferred from the meta-analysis of Weichselbaumer and Winter-Ebmer (2005). A few recent contributions are those of Mwabu and Schultz (1996) on South Africa, Said (2003) on Egypt, Nordman and Wolff (2007) on Morocco, Nordman and Roubaud (2009) on Madagascar, and Fafchamps *et alii* (2006) using data on the manufacturing sector among several African countries. This is somewhat puzzling as reducing gender inequality is usually recommended as an efficient tool in the combat against poverty in poor countries[3].

The purpose of this contribution is then to add new evidence on the magnitude of the gender wage gap in African countries and on the relevance of the glass ceiling hypothesis. In a context where wages and productivity remain usually low, it may be that employers tend to limit the use of discrimination against women. To investigate more closely the gender wage differences, we rely on a comparison between the Mauritius and Madagascar islands using recent Investment Climate Assessment (ICA) surveys carried out in 2005. The use of matched employer-employee data allows us to control accurately for firm unobserved heterogeneity in wage regressions through the inclusion of fixed effects and to study the role of the firm characteristics in the gender wage gap.

The selected islands are particularly interesting in a comparative perspective. First, beyond the fact that they are close neighbors in the Indian Ocean, Mauritius is perhaps the most interesting economic development success story of the decade of the 1980s. Its GDP per capita ($13,240 in 2005 in PPP) places it in the category of newly industrialized country. By contrast, Madagascar, in spite of the dynamism of its Export Processing Zones (EPZ) since the 1990s, remains one of the poorest countries in the world. According to the 2006 Human Development Indicator (HDI) ranking of the UNDP, Mauritius stands at the 63rd position while Madagascar appears far in the ranking, at only the 143rd place (out of 177 countries).

A comparative case study of both countries is then worthwhile to assess whether gender inequalities in paid are somehow linked to the level of economic development. The fact that these two close islands have quite distinct economic performance and labor market features may be helpful in the understanding of the roots of gender wage differences. In our empirical analysis, we focus more closely on the role of firm characteristics and job segregation across firms as potential factors explaining the gender wage gap (Meng, 2004). Do firms' characteristics matter when explaining wage differences between male and female employees? We also investigate the relevance of the glass ceiling hypothesis and measure the gender wage gap across the whole wage distribution using quantile regressions.

The remainder of this contribution is organized as follows. In Section 2, we briefly describe the functioning of the labor market in Mauritius and Madagascar. We describe the ICA surveys in

[2] For a review of the literature on the glass ceiling effect, see Barnet-Verzat and Wolff (2008).
[3] Note also that the decrease in gender inequalities is one of the Millennium Development Goals.

Section 3 and present descriptive statistics on workers, firms and wages. Our different econometric results based on both fixed-effect models, decomposition techniques and quantile regressions are presented in Section 4. Finally, concluding comments are in Section 5.

2. LABOR MARKETS IN MAURITIUS AND MADAGASCAR ISLANDS

Several characteristics of the labor markets are helpful to understand the pattern of wages in Mauritius and Madagascar. In fact, both countries face very different context. For instance, unit production costs in Madagascar are among the lowest in the world, much lower than levels in China, India or Mauritius (Cling *et alii*, 2005). In the meantime, work productivity is much lower in Madagascar than in Mauritius. Let us further describe the situation of both islands.

In Mauritius, the labor market has greatly evolved due to the fundamental structural changes of the economy over the last 30 years (English, 2002; World Bank, 2006). The rapid development of the manufacturing sector in the 1970s and 1980s led to the rapid expansion of relatively low-skilled jobs to meet the need of the fast growing EPZ sector. However, by the end of the 1980s and early 1990s, the emergence of new sectors, particularly in the field of tourism and financial services, required higher skilled manpower. Following the new millennium, the demand for high skilled labor was further accentuated as the Mauritian government moved forward to promoting new poles of growth in high value added services such as the ICT sector.

This economic transformation inevitably entailed some adjustment costs. Nowadays, the new sectors are service-oriented and therefore necessitate different input mix, generally more capital than labor intensive. However, these new emerging sectors have some potential to absorb labor, in particular skilled workers. Unfortunately, those workers who are being laid off from the traditional sectors are not technically prepared to be absorbed in the new sectors which require not only additional academic qualifications, but also generic skills such as language skills. This explains the steadily rise of the unemployment rate since 1991, about 10.4 percent in June 2005 which is the period covered by the ICA survey in this study.

In 2006, Mauritius had a total labor force of 546,200 individuals, 60.4 percent being males. Total employment represented 90 percent of the workforce, including 3.4 percent of foreign workers. The government of Mauritius administratively establishes minimum wages (through the National Remuneration Board, NRB hereafter), which vary according to the sector of employment. While minimum wage increases annually based on inflation, most trade unions negotiate wages higher than those set by the NRB[4].

The Malagasy labor market is very different in nature. During the 2001-2005 period covered by the household EPM surveys in Madagascar[5], the Malagasy economy was in instability as a result of experiencing several large scale shocks. Between 2001 and 2005, poverty declined more rapidly in rural areas than in urban areas[6]. According to the EPM 2001-2005, the workforce participation in Madagascar is high, more than 80 percent of 9.17 million individuals of working age 15-64, especially in rural areas. Employment growth was driven by greater participation among women who currently make up half the workforce.

The primary sector accounts for over 88 percent of rural employment and 45 percent of urban employment. However, over 85 percent of workers in Madagascar are employed in non-wage activities, predominantly agricultural. Therefore, the informal sector largely dominates the labor market. Although a high proportion of the working age population was gainfully employed in 2005, 65.4 percent of them live in poverty. Nevertheless, open unemployment is structurally low in Madagascar, though under-employment is problematic in urban areas.

[4] The NRB issues remuneration orders for more than 90 percent of the workforce in the private sector.
[5] *Enquêtes Périodiques auprès des Ménages* (see Stifel *et alii*, 2007; Nordman *et alii*, 2008).
[6] This is in contrast to the period 1997–2001 where the small poverty decline was mainly driven by economic improvement in towns.

It is important to note that wage workers in the private formal sector (the survey coverage in this paper) have median earnings that are 60 percent higher than for informal wage workers (Stifel *et alii*, 2007). Median earnings among employees in registered non-farm enterprises earn more than two and a half times more than those working in unregistered firms. Also, most workers in Madagascar have no formal education and uneducated workers are more likely to be employed in agriculture. This is because "good" jobs, i.e. non-agricultural waged employment, are found in the formal sector of the economy and access to these jobs depends crucially on educational attainment. In spite of equal access to the general workforce across gender, men have greater access to "good" jobs than women. However, Stifel *et alii* (2007) found no evidence of labor market segmentation between the private formal and informal wage sectors.

This brief description shows that the labor markets in Mauritius and Madagascar are really different. In a context where gender differences may be highly sensitive to the level of wages paid to workers, our surveys on both countries offer a unique opportunity to understand how the economic context affects the magnitude of the gender wage gap.

3. DATA AND DESCRIPTIVE STATISTICS

3.1 The ICA surveys

The matched employer-employee data for Mauritius and Madagascar stem from the Investment Climate Assessment (ICA) surveys conducted by the World Bank in 2005 in the framework of the African RPED program. The Africa Regional Program on Enterprise Development is an ongoing research project with the overall purpose of generating business knowledge and policy advice useful to private sector manufacturing development in Sub-Saharan Africa.

These surveys are based on the notion that the workplace is the micro-data unit where labor supply and labor demand meets. In that spirit, the ICAs collect data both on the firm characteristics and on a sample of employees in each workplace. The questionnaires addressed to both employers and employees are specifically adapted for each country, but they enable cross-country comparisons as they are made of very similar questions. In the cases of Madagascar and Mauritius, the 32 questions of the 'employee' questionnaires are identical.

In Mauritius and Madagascar, the firms have been randomly selected among the population of formal establishments, with no constraint on the size of the firms. These firms belong to the manufacturing sector in Mauritius[7] and to the following fourteen sectors of production in Madagascar: mining, food and beverage, tobacco, textiles, apparel, leather, wood, paper and plastics, publishing, chemicals, metals, machinery and equipment, furniture, and construction. The firm samples comprise 198 and 290 enterprises for Mauritius and Madagascar respectively. These firms have been randomly selected using a stratification based on sector, size and localization.

In each firm, up to ten employees have been randomly sampled following the idea advocated by Mairesse and Greenan (1999). Note that all the employees of small firms have been interviewed, while the sampling rate decreases with the size of the firms. In the Malagasy sample, there is no firm with less than 10 employees, while they are four in the Mauritian sample. The number of workers interviewed in Mauritius and Madagascar are respectively equal to 1,474 and 1,821. After deleting missing values, the sizes of the samples reduce to respectively 1,363 and 1,734 workers.

3.2 Description of the samples

Descriptive statistics concerning employees are in Table 1. The questionnaires of the surveys allow us to construct identical human capital indicators for the workers in both countries. For each respondent,

[7] At the time we write this paper, the ICA reports for these two countries have not been made available by the World Bank yet (except World Bank, 2006). Unfortunately, for Mauritius, we could not get more precise branch identification in the data set we have at hand. This is not an important drawback in our study as we can control for the firms' characteristics in a very precise way thanks to the availability of the firm level data.

we compute the number of years of completed schooling, the number of years of actual experience off the current firm and the number of years of tenure in the incumbent firm. These different covariates are then introduced into the wage regressions. We also add two demographic variables, i.e. a dummy for gender and a dummy indicating whether the individual is married or not.

Table 1: Descriptive statistics of the workers

Variables	Mauritius			Madagascar		
	Men	Women	All	Men	Women	All
Dependent variable: log hourly wage						
Mean	4.46	3.96	4.24	8.03	7.98	8.01
	(0.79)	(0.73)	(0.81)	(0.76)	(0.80)	(0.77)
Quartile 1	3.98	3.45	3.71	7.54	7.50	7.52
Quartile 2	4.37	3.89	4.19	7.96	7.90	7.94
Quartile 3	4.80	4.36	4.64	8.42	8.44	8.42
Individual characteristics						
Female	0.00	1.00	0.44	0.00	1.00	0.37
			(0.50)			(0.48)
Married	0.70	0.70	0.70	0.79	0.65	0.74
	(0.46)	(0.46)	(.46)	(0.41)	(0.48)	(0.44)
Years of completed education	10.15	9.85	10.02	11.63	12.34	11.89
	(3.93)	(! ,3.45)	(3.73)	(4.63)	(4.54)	(4.61)
Years of experience off the firm	7.12	5.17	6.26	5.75	3.70	4.99
	(7.62)	(6.32)	(7.14)	(6.36)	(4.95)	(5.96)
Years of tenure in the current firm	9.99	7.39	8.85	6.26	5.70	6.05
	(9.13)	(6.58)	(8.21)	(6.36)	(6.07)	(6.26)
Occupations						
Owners (as managers)	0.02	0.01	0.01	0.01	0.01	0.01
	(0.12)	(0.09)	(0.11)	(0.08)	(0.09)	(0.08)
Employed managers	0.05	0.01	0.04	0.02	0.02	0.02
	(0.23)	(0.11)	(0.19)	(0.13)	(0.13)	(0.13)
Professionals (University Degree)	0.07	0.06	0.06	0.07	0.09	0.08
	(0.25)	(0.23)	(0.24)	(0.26)	(0.28)	(0.27)
Technicians (with diploma or other	0.10	0.02	0.06	0.07	0.04	0.06
formal qualification)	(0.30)	(0.15)	(0.25)	(0.26)	(0.20)	(0.24)
Skilled foremen and supervisors	0.14	0.08	0.11	0.08	0.08	0.08
	(0.35)	(0.27)	(0.32)	(0.27)	(0.27)	(0.27)
Skilled machine maintenance and	0.15	0.07	0.11	0.07	0.02	0.05
repair workers	(0.36)	(0.25)	(0.32)	(0.26)	(0.14)	(0.23)
Unskilled production workers	0.24	0.29	0.26	0.47	0.40	0.44
	(0.43)	(0.45)	(0.44)	(0.50)	(0.49)	(0.50)
Health worker, office and sales	0.12	0.33	0.21	0.06	0.22	0.12
workers	(0.32)	(0.47)	(0.41)	(0.24)	(0.42)	(0.33)
Service workers (cleaners, guards)	0.12	0.14	0.13	0.15	0.13	0.14
	(0.32)	(0.35)	(0.33)	(0.36)	(0.34)	(0.35)
Number of observations	764	599	1363	1093	641	1734

Source: ICA Madagascar and Mauritius 2005.
Note: standard deviations are in parentheses.

The female proportion in each sample is 44 and 37 percent for Mauritius and Madagascar respectively. A first point worth mentioning is that the Malagasy workers are the most educated, 11.9 years on average versus 10 years. Given Madagascar's level of economic development with regard to that of Mauritius, this result could be surprising. However, Madagascar has been one of the few low income countries to early recognize the importance of developing its educational system, and this country has made rapid progress in the development of public primary schools. Madagascar is also one of the few African countries to have achieved equal access to schooling between boys and girls, at least at low levels of the education system (World Bank, 2001). This situation is clearly reflected in our data as women exhibit a higher level of education than men in Madagascar (12.3 years versus 11.6 years)[8].

Mauritian workers offset the gap in education as compared to their Malagasy counterparts against higher levels of labor market experience, both in terms of years of experience off the firm (6.2 years against 5 years) and tenure in the incumbent firm (8.8 versus 6 years). These gaps are partly explained

[8] In Mauritius, the education gap is hardly in favor of men (10.1 against 9.8 years).

by age difference of the workers in the two samples (36.5 against 34.6 years). For both countries, the gender experience gap is in favor of males, often reaching two years as for tenure and experience off the firm in Mauritius and for experience in Madagascar.

According to Table 1, the proportions of workers on top of the occupational distribution (owners, managers, professionals) are roughly similar across the two islands. The noticeable difference stems from a higher share of women in the category of professionals in Madagascar (with university degree or equivalent), which is conform to the previous finding of a greater education level for females in the Malagasy sample. Similarly, a higher proportion of male Malagasy managers is observed. In the middle of the occupational distribution, there is a higher share of skilled workers in the Mauritian sample (such as technicians, foremen and supervisors, machine maintenance and repair workers). Interestingly, men exceed women in these categories of skilled workers for both countries. Finally, unskilled production workers are prevalent in Madagascar (44 percent against 26 percent) and almost equally distributed across gender in the two islands.

We describe in Table 2 the main characteristics of the selected firms for Mauritius and Madagascar. The average numbers of total employees in the Malagasy and Mauritian firms amount respectively to 174 and 192 salaried workers. Similar average proportions of females in each firm are found for both countries, about 35 percent. More firms are owned by a woman in Madagascar, 19 versus 10 percent. This may affect the measure of the gender wage gap if female owners are less likely to offer lower wages to women than male ones.

Table 2: Descriptive statistics of the firms

Variables	**Mauritius**			**Madagascar**		
	Number of observed firms for the variable	Mean	Standard deviation	Number of observed firms for the variable	Mean	Standard deviation
Total number of employees	183	174.191	424.886	281	191.911	446.067
Share of female employees	182	0.375	0.299	281	0.332	0.310
Principal owner is female (1 if yes)	189	0.101	0.302	281	0.196	0.397
Share of Managers/Executives in the permanent employees	173	0.099	0.169	270	0.057	0.054
Share of Executives in the permanent employees	170	0.029	0.054	269	0.059	0.068
Share of unionized employees	180	0.114	0.242	263	0.095	0.226
Labor intensity (labor costs / total costs)	149	0.560	3.767	228	0.629	6.617
Highly labor intensive firms (1 if labor costs > 75% total costs)	189	0.254	0.436	281	0.217	0.413
Firm provided (on- or off-the-job) formal training (1 if yes)	189	0.587	0.494	281	0.484	0.501
Exporting firm (1 if yes)	189	0.640	0.481	281	0.302	0.460
Sector dummies						
Mining				281	0.007	0.084
Food & Beverages				281	0.157	0.364
Tobacco				281	0.014	0.119
Textiles				281	0.103	0.305
Apparel				281	0.174	0.380
Leather				281	0.021	0.145
Wood				281	0.132	0.339
Paper & Plastics				281	0.064	0.245
Publishing				281	0.110	0.314
Chemicals				281	0.060	0.239
Metals				281	0.043	0.203
Machinery & Equipment				281	0.025	0.156
Furniture				281	0.085	0.280
Construction				281	0.004	0.060

Source: ICA Madagascar and Mauritius 2005.

While Mauritian firms display a higher share of managers and executives (10 versus 6 percent), the reverse pattern holds for executives (only 6 percent for Madagascar, 3 percent for Mauritius). More generally, these proportions are low as compared to those observed in developed countries. The ratio of labor costs to total costs exceeds fifty percent in both firm samples and is slightly higher in Madagascar (63 versus 56 percent), but the proportions of highly labor intensive firms look alike (22 and 25 percent). Also, the share of unionized employees is similar in both firm samples (about 10 percent). The proportion of firms providing workers with formal training schemes is found to be

higher in the Mauritian sample (58 versus 48 percent) and the share of exporting firms is more than twice higher in Mauritius (64 percent). Mauritian firms are thus more concerned with international competition on their product market.

To summarize, the firm samples are somewhat different, with particularly distinct vocation to export and sectors of activity. The Malagasy firm sample seems notably more heterogeneous. On the contrary, the two firm samples look alike regarding the personnel used, especially the firms' average number of employees and their proportion of females. It thus matters to account for firm heterogeneity in the empirical analysis[9]. As we have matched employer-employee data, we are able to control for both the characteristics of the workers and the firms. There are several ways to proceed.

A first possibility would be to include in the regressions a large set of explanatory variables related to the firm in wage equations. Another way is to control for both observed and unobserved heterogeneity at the firm level using fixed effect models, which is easy to implement with linear wage regression. This implementation is more difficult in the context of quantile regressions. We then turn to an alternative, more parsimonious approach following Muller and Nordman (2004) and Jellal *et alii* (2008). It consists in summarizing the main statistical information of the firms using a principal component analysis, and the different factors are then introduced as additional covariates in the quantile regressions[10].

3.3 How large are gender wage differences?

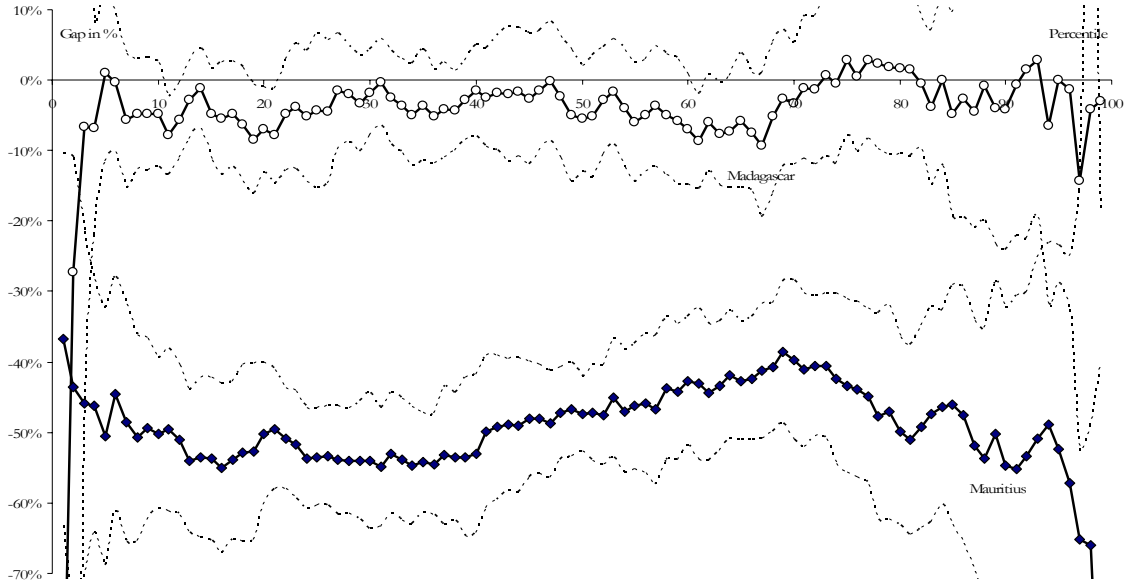
Before turning to the econometric analysis, we begin with a descriptive analysis of the wage distributions by gender in both countries. As shown in Table 1, we evidence higher wages for men in the two countries. Our measure of earnings is based on hourly wage. While the gap is important in Mauritius at the mean point of the worker sample (the difference in log wages between men and women reaches 50 percentage points of log), the gender gap seems rather insignificant in the case of Madagascar. This result holds true for that country across the three different wage quartiles considered, whilst the gap diminishes as we move up from the first to the third quartile in Mauritius (0.53 log points at the first quartile, 0.48 at the second quartile, and 0.44 at the third quartile).

In Figure 1, we plot the value of the gender wage gap throughout the wage distribution. The gap is obtained by estimating quantile regressions at each percentile with only the female dummy as covariate. The different coefficient estimates for the gender dummy are then identical to the statistical log wage gaps.

[9] However, as we only have cross-sectional data, controlling for unobserved heterogeneity at the worker level is impossible.

[10] More specifically, we use a PCA including a wide range of firm characteristics to summarize the information about the surveyed firms. In a PCA, a set of variables is transformed into orthogonal components, which are linear combinations of the variables and have maximum variance subject to being uncorrelated with one another. We use 15 components (called firm factors) as they account for a large proportion of the total variance of the original variables. These factors are then used to summarize the original data. As long as the computed factors account for most of the firm heterogeneity bias, this approach allows us to obtain consistent estimates close to those of the fixed effect estimates.

Figure 1: The gender gap in Mauritius and Madagascar Islands



Source: ICA Madagascar and Mauritius 2005.
The dotted lines correspond to confidence intervals at 95 percent.

Clearly, we obtain very different profiles for the two countries and the corresponding confidence intervals do not overlap. In Madagascar, the gap remains almost constant along the wage distribution and its magnitude is very low. We even observe that women slightly outearn men in the upper part of the distribution (at least around the third quartile). By contrast, for Mauritius, we find that the gender gap is much higher, comprised between 40 and 50 percent along the wage distribution. Nevertheless, the gender profile is somewhat striking. In particular, the gender wage gap is slightly decreasing from the 30th to the 70th percentile and then strongly increasing, especially above the 90th percentile.

Albeit preliminary, these findings suggest that the gender wage gap observed in the formal sectors of Mauritius and Madagascar is very different. To further understand the factors that influence the magnitude of this gender gap, we turn in the next section to an econometric analysis using OLS, fixed effects and quantile regression models. We also rely on decomposition methods to examine whether the gender wage gap stems from differences in endowments between men and women or from differences in the returns to these characteristics.

4. ECONOMETRIC RESULTS

4.1 The magnitude of the gender wage gap

We begin our empirical analysis by assessing the magnitude of the gender wage gap in both countries at the mean wage level. For that purpose, we turn to basic OLS regressions with the log hourly wage as dependent variable. The different covariates introduced into the regressions are respectively marital status, the completed years of education, years of experience off the firm and years of tenure in the firm[11]. For the three last explanatory variables, we rely on quadratic profiles. To account for gender differences, we add a gender dummy variable, so that the model we estimate is (i and j as subscripts standing respectively for the employee and the firm):

$$\ln w_{ji} = \beta X_{ji} + \gamma F_{ji} + \varepsilon_{ji} \qquad (1)$$

[11] We choose to use actual experience off the firm instead of the years of potential experience as the measurement of potential experience may lead to gender-specific measurement errors (the latter being more likely for women). See the results of using potential versus actual experience in Nordman and Roubaud (2009) for the case of Madagascar.

with $\ln w_{ji}$ the log hourly wage, X_{ji} the set of covariates, F_{ji} the gender dummy variable, β and γ are parameters to be estimated, and ε_{ji} is a residual. Since we have several employees per firm in many cases, we obtain robust standard errors using a clustering correction at the firm level. As we account for both male and female workers when estimating model (1), this means that the returns to the different explanatory variables are supposed not to be gender-specific. The relevance of this assumption is tested later on.

The OLS estimates are respectively reported in columns (1) for Mauritius and (5) for Madagascar of Table 3. In Mauritius, we find a negative coefficient for the gender dummy variable, significant at the 1 percent level. On average, wages received by women in Mauritian firms are 35.3 percent lower than wages earned by men. The gender gap is then large and may stem from discrimination between male and female employees. The gender pattern is really different in Madagascar. Although the coefficient associated to the gender dummy is negative, its magnitude is much lower and insignificant. Thus, male workers do not outearn female workers in these Malagasy firms.

Table 3: Linear regressions of the log hourly wage rate

Variables	**Mauritius**				**Madagascar**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	3.461***	3.692***	3.319***	3.480***	7.065***	7.033***	7.158***	7.240***
	(32.29)	(35.52)	(33.95)	(36.56)	(52.47)	(52.95)	(82.10)	(86.19)
Female	-0.353***	-0.397***	-0.227***	-0.223***	-0.056	-0.098**	0.011	-0.047
	(7.98)	(9.26)	(7.04)	(7.08)	(1.29)	(2.19)	(0.36)	(1.59)
Married	0.084**	0.070*	0.125***	0.107***	0.094**	0.118***	0.040	0.052*
	(1.98)	(1.74)	(3.67)	(3.43)	(2.21)	(2.82)	(1.26)	(1.79)
Years of completed schooling	-0.033*	-0.054***	-0.009	-0.027*	0.047**	0.028*	0.041***	0.015
	(1.72)	(3.28)	(0.57)	(1.71)	(2.18)	(1.67)	(3.35)	(1.33)
(Years of completed schooling)^2/100	0.620***	0.494***	0.501***	0.359***	0.096	0.050	0.087*	0.063
	(6.03)	(5.67)	(6.62)	(4.95)	(1.12)	(0.73)	(1.94)	(1.53)
Years of experience off the firm	0.028***	0.020**	0.017***	0.010**	0.003	0.005	0.004	0.004
	(3.26)	(2.46)	(3.06)	(2.04)	(0.36)	(0.76)	(0.68)	(0.68)
(Years of experience off the firm)^2 /100	-0.052	-0.038	-0.005	0.002	0.030	0.010	0.028	0.017
	(1.46)	(1.10)	(0.25)	(0.09)	(0.93)	(0.34)	(1.17)	(0.76)
Years of tenure in the current firm	0.056***	0.050***	0.056***	0.048***	0.034***	0.031***	0.033***	0.027***
	(7.25)	(6.90)	(10.68)	(9.80)	(3.11)	(2.87)	(4.63)	(4.17)
(Years of tenure in the current	-0.091***	-0.084***	-0.098***	-0.089***	-0.064	-0.072**	-0.056**	-0.059**
firm)^2/100	(3.72)	(3.72)	(6.49)	(6.36)	(1.62)	(1.98)	(2.20)	(2.57)
Dummies for occupation	NO	YES	NO	YES	NO	YES	NO	YES
Firm fixed effects	NO	NO	YES	YES	NO	NO	YES	YES
Observations	1363	1363	1363	1363	1734	1734	1734	1734
R-squared	0.36	0.43	0.38	0.48	0.21	0.32	0.22	0.38

Source: ICA Madagascar and Mauritius 2005.
Significance levels are respectively equal to 1% (***), 5% (**) and 10% (*).

This difference between both Islands may lie in the composition of occupations, which are not controlled for in columns (1) and (5). A difficulty with occupations is that they may be endogenous if employers discriminate between male and female workers on the basis of the type of job they do. Despite of this shortcoming, we add in columns (2) and (6) a set of nine dummy variables related to occupations. Both in Mauritius and Madagascar, we note a slight increase (in absolute value) of the gender estimate. The gender wage gap is now around 40 percent in the former island, while it is around 10 percent in the latter. The point of interest here is that the gender term is now significant in Madagascar. An interpretation of this finding is that gender discrimination does not necessarily lead to differences in wage in Madagascar, but it seems more closely related to the type of job held by male and female workers.

In the above linear models, we only include individual characteristics. In so doing, we neglect the role of heterogeneity at the firm level. This is problematic as there may exist some factors that influence wages of men and women in a different way. A female manager may for instance be more reluctant to give lower wages to women than a male boss. Similarly, it may be that the gender wage gap arises as a result of gender-specific sorting of workers across firms that pay different wages. As we have matched employer-employee data, we can easily control for such observed and unobserved heterogeneity by estimating fixed effect models. The corresponding specification becomes:

$$\ln w_{ji} = \beta X_{ji} + \gamma F_{ji} + \delta_j + \varepsilon_{ji} \qquad (2)$$

where δ_j is a firm fixed effect. In the fixed effect formulation, the firms' residuals are supposed to be correlated with the exogenous explanatory variables X_{ji} [12]. By definition, the workplace is the same for all the workers belonging to a given firm. All the firm characteristics, which are by definition constant for all the workers in a same place, are picked up by the fixed effect.

The fixed effect estimates are in columns (3) and (7) of Table 3. Interestingly, accounting for firm heterogeneity strongly reduces the magnitude of the gender wage gap. In Mauritius, it now amounts to 22.7 percent, while it was around 35 percent with a regression based on employees' characteristics only. That the gap is divided by almost two suggests that working with individual data would lead to a significant over-estimation of the adjusted gender wage gap. In Madagascar, the gender gap is no longer negative but, again, it turns out to be insignificant. Finally, these results are fairly robust to the inclusion of occupational dummies (columns (4) and (8) of Table 3). Such controls do not affect the gender gap in Mauritius (around 22 percent), while the fixed effect specification with occupations leads to a gender gap of around 5 percent, hardly significant. For Mauritius, and to a lesser extent for Madagascar, this suggests that most occupational heterogeneity across gender may be captured at the firm level since adding dummies for occupation does not affect the gender dummy coefficient in a firm fixed effect model.

Let us briefly discuss the role of the other covariates. As shown in Table 3, married employees tend to receive slightly higher hourly wages. The most important factor is undoubtedly education. As evidenced in other studies related to the determinants of wages in Africa (see Schultz, 2004; Söderbom *et alii*, 2006; Kuepie *et alii*, 2009), we find a convex profile for the years of completed schooling. Years of experience off the firm have a positive influence on the hourly wage rate, but this effect is only significant in Mauritius. Finally, years of tenure in the current firm follow an expected concave profile.

4.2 The role of the firm in the gender earnings gap

Our results suggest that gender matters to understand differences in wages (at least in Mauritius), but that firm effects are also important. To assess the relative impact of these various explanatory factors, we first follow the regression-based decomposition approach proposed in Fields (2004). The explained portion of the regression is decomposed into weights for each of the regressors. From the regression $\ln w = \beta X + \gamma F + \varepsilon$, and assuming that there are K regressors in X indexed by k (with $k = 1,...,K$), then the variance of $\ln w$ can be decomposed such as:

$$\text{var}(\ln w) = \sum_k \text{cov}(\beta_k X_k, \ln w) + \text{cov}(\gamma F, \ln w) + \text{cov}(\varepsilon, \ln w). \quad (3)$$

Let us define $s(X_k) = \text{cov}(\beta_k X_k, \ln w)/\text{var}(\ln w)$, $s(F) = \text{cov}(\gamma F, \ln w)/\text{var}(\ln w)$ and $s(\varepsilon) = \text{cov}(\varepsilon, \ln w)/\text{var}(\ln w)$. It follows that:

$$\sum_k s(X_k) + s(F) + s(\varepsilon) = 100\% \quad (4)$$

The first two terms on the left-hand side of (4) will sum exactly to the R-squared, meaning that the *s* terms give the weights of each of the regressor.

Table 4 presents the corresponding decomposition results. In columns (1) and (3), the weights are obtained from coefficients of OLS regressions without controls for firm characteristics. In Mauritius, we learn that 18.5 percent of the variation in the log wages is explained by gender while the contribution of gender only amounts to 0.5 percent in Madagascar. The other covariates indicate that marital status and years of experience off the firm accounts for a very low proportion of what is explained, less than 5 percent. In Mauritius, the largest percentage contribution to hourly wages is

[12] Nevertheless, it could be argued that the firm effects are not correlated to the explanatory variables (exogeneity assumption). We have then estimated random effect models and performed Hausman tests. For both countries, we find that the fixed effect specification (endogeneity assumption) is the most appropriate one.

made by education (51.8 percent). This influential role of education is even more pronounced in Madagascar, where it amounts to 84 percent.

Table 4: Decomposition analysis of the factors contributing to the log wage (in %)

Variables	Mauritius		Madagascar	
	(1) No firm effects	(2) Fixed effects	(3) No firm effects	(4) Fixed effects
Female	18.52	6.18	0.52	0.00
Married	1.71	1.32	2.32	0.32
Years of completed education	51.84	25.91	83.98	23.61
Years of experience off the firm	3.40	1.59	1.33	0.45
Years of tenure in the current firm	24.52	11.95	11.85	3.92
Fixed effects		53.05		71.70
Total	100.0	100.0	100.0	100.0

Source: ICA Madagascar and Mauritius 2005.

Decomposition results are different once firm heterogeneity is controlled for. To get the results reported in columns (2) and (4), we have estimated OLS regressions with firm dummy variables, which is equivalent to the fixed effects regressions. We find that these firm fixed effects account for a large proportion of what is explained. Their weight is 53 percent in Mauritius, and even 71.7 percent in Madagascar. At the same time, inclusion of fixed effects strongly reduces the importance of gender in explaining variation in wages. The weight of the gender dummy is now three times lower in Mauritius, 6.2 percent instead of 18.5 percent, and is null in Madagascar. The contribution of education in both countries is also strongly reduced with fixed effects.

How then can we explain these results? An explanation could be related to the presence of gender segregation across firms. If there exist in a country high paying firms that hire more men than women and at the same time low paying firms hiring more women than men, then firms' characteristics would deeply influence the gender differences in wage. One thus would expect a lower wage gap once firm heterogeneity is controlled for. The results reported in Table 3 and 4 suggest that gender segregation is likely to be at hand, as the magnitude of the gender effect is significantly reduced in the fixed effects regressions.

It thus matters to know whether the role of the firm is still so important once the issue of gender segregation is taken into account. To properly answer this question, we choose to rely on Oaxaca-Blinder decompositions. Let us first neglect the role of firm characteristics. Let $\ln w^H$ and $\ln w^F$ be the log hourly wage of men and women respectively. From separate regressions $\ln w^H = \beta^H X^H + \varepsilon^H$ and $\ln w^F = \beta^F X^F + \varepsilon^F$ performed on the male and female samples, we deduce that the gender wage gap is $\ln w^H - \ln w^F = \beta^H X^H - \beta^F X^F + \varepsilon^H - \varepsilon^F$. This gap can be decomposed in the following way (Oaxaca and Ramson, 1994)[13]:

$$\ln w^H - \ln w^F = \beta^H (X^H - X^F) + (\beta^H - \beta^F) X^F + (\varepsilon^H - \varepsilon^F) \qquad (5)$$

In (5), the first term on the right-hand side $\beta^H (X^H - X^F)$ is due to differences in labor market characteristics between men and women. It is usually called endowment effects or the explained part of the gender wage gap. The second term $(\beta^H - \beta^F) X^F$ is due to the difference in the price that the market pays to male and female workers for their personal characteristics, i.e. price effects. This basic Oaxaca-Blinder decomposition can easily be extended to account for firm fixed effects. Following Meng (2004), we deduce from $\ln w^H = \beta^H X^H + \delta^H + \varepsilon^H$ and $\ln w^F = \beta^F X^F + \delta^F + \varepsilon^F$ that:

$$\ln w^H - \ln w^F = \beta^H (X^H - X^F) + (\beta^H - \beta^F) X^F + (\delta^H - \delta^F) + (\varepsilon^H - \varepsilon^F) \qquad (6)$$

[13] In (5), the chosen counterfactual distribution is female workers paid as men.

On the right-hand side of (6), the first two terms are respectively the endowment and price effects. The third term $(\delta^H - \delta^F)$ is the portion of the gender gap that is due to firms paying different premia to the male and female employees[14]. Although (6) is informative about firm effects, it does not account for the possibility of gender segregation across firms. To control for gender segregation, we estimate gender-specific earnings equations with both individual and firm covariates, along with the proportion of female workers measured at the firm level. In so doing, we then purge the effect of the gender employment ratio and get estimated wages net of gender segregation across firms. These adjusted wages are subsequently used for the decomposition (6).

Results from various decompositions using linear regressions are in Table 5. As a benchmark, we indicate in columns (1) and (4) the standard Oaxaca-Blinder decompositions using OLS regressions. We again find a large gender wage gap in Mauritius, as it amounts to 36.9 percent. Interestingly, the gender gap in this country is mainly due to differences in the returns to the labor market characteristics. Endowments effects account for about 11.8 points of percentage of the total gender gap, the rest being due to discrimination. Endowed with the same characteristics, female employees would earn on average 25.1 percent less than male employees. The gender gap is strongly reduced in Madagascar. With the adjusted wages and estimates of gender-specific regressions, we now find that women earn slightly more than men (7.4 percent).

Table 5: Decomposition of the gender wage gap using OLS and fixed effects regression

Effects	**Mauritius**			**Madagascar**		
	OLS	Fixed effects		OLS	Fixed effects	
	(1)	(2)	(3)	(4)	(5)	(6)
Endowments effects	0.118	0.157	0.200	0.032	0.013	0.013
Price effects	0.252	0.254	0.276	-0.106	-0.101	0.042
Firm effects	-	-0.010	-0.061	-	0.018	-0.009
Total difference	0.369	0.369	0.415	-0.074	-0.074	0.066

Source: ICA Madagascar and Mauritius 2005.
Gender segregation across firms is corrected only in models (1), (2), (4) and (5).

Both in Mauritius and in Madagascar, we find little impact of the characteristics of the firm. As shown in columns (2) and (5) of Table 5, the weights attached to the firm effects are very low. Results from a decomposition based on fixed effect regressions indicate for instance that the endowment effects account for 15.7 points, the price effects for 25.4 points and the firm effects for 1 point in Mauritius. Then, the decomposition of the fixed effects model shows that Mauritian firms tend to narrow the gender earnings gap. Indeed, the negative sign on the firm effects component indicates that firms pay, on average, a higher premium to their female employees than they do to their male workers. The gender gap would have then been higher without this narrowing influence of the firm. In Madagascar, the pattern is reversed as firms seem to increase the gender earnings gap. Nevertheless, the role of the firms remains extremely low in comparison with the role of individual characteristics.

A last finding is about gender segregation across firms. In columns (3) and (6), we perform the same decomposition using fixed effect regressions, but do not adjust the hourly wage. As expected, the gender gap is now higher in Mauritius, around 41.5 percent instead of 36.9 percent (and also in Madagascar). This finding indicates that gender segregation across firms is an explanation of the wage gap observed in the two countries, such that high paying and low paying firms tend to hire gender-specific employees disproportionately.

4.3 Does the gender wage gap vary along the wage distribution?

The ICA surveys indicate that wages are significantly different for men and women, at least in Mauritius. That we do not observe any gender wage gap for Madagascar using OLS regressions does not necessarily mean that there is no discrimination against women on the labor market. Indeed, as evidenced by Albrecht *et alii* (2003), the gender gap is unlikely to remain constant throughout the log

[14] The firm specific premium paid to the employee is given by the corresponding firm fixed effect (Meng, 2004).

wage distribution. Then, we now turn to quantile regressions that allow us to investigate the magnitude of the gender wage gap along the wage distribution.

Quantile wage regressions consider specific parts of the conditional distribution of the hourly wage and indicate the influence of the different explanatory variables on wages respectively at the bottom, at the median and at the top of the log hourly wage distribution (Koenker and Hallock, 2001). Using our previous notation, the model that we seek to estimate is:

$$q_\theta(\ln w_{ji}) = \beta(\theta) X_{ji} + \gamma(\theta) F_{ji} \qquad (7)$$

where $q_\theta(\ln w_{ji})$ is the θ^{th} conditional quantile of the log hourly wage[15]. The set of coefficients $\beta(\theta)$ provides the estimated rates of return to the different covariates (gender being excluded) at the θ^{th} quantile of the log wage distribution and the coefficient $\gamma(\theta)$ measures the intercept shift due to gender differences. If there is a glass ceiling in a given country, then a huge rise in the estimate associated to the gender dummy is expected as higher percentiles of the log hourly wage are considered. Results from these different quantile regressions based on the male-female pooled samples are in Table 6.

Table 6: Quantile regressions of the log hourly wage rate

Percentile	10th	25th	50th	75th	90th	Mean (OLS)
Mauritius Island						
(1): Basic control variable	-0.320***	-0.359***	-0.346***	-0.368***	-0.381***	-0.353***
	(5.97)	(8.47)	(10.15)	(7.24)	(4.80)	(7.98)
(2): (1) + firm factors	-0.347***	-0.299***	-0.312***	-0.350***	-0.428***	-0.349***
	(5.48)	(6.63)	(6.98)	(6.55)	(5.70)	(7.54)
(3): (1) + occupation	-0.342***	-0.365***	-0.406***	-0.430***	-0.478***	-0.397***
	(5.48)	(7.79)	(9.31)	(8.88)	(5.64)	(9.26)
(4): (3) + firm factors	-0.324***	-0.332***	-0.399***	-0.409***	-0.454***	-0.393***
	(4.65)	(5.85)	(10.77)	(7.23)	(5.82)	(8.29)
(5): (1) + control for gender segregation across firms	-0.245***	-0.251***	-0.238***	-0.209***	-0.181***	-0.266***
	(10.34)	(19.12)	(11.84)	(10.51)	(6.33)	(14.90)
Madagascar Island						
(6): Basic control variable	-0.048	-0.036	-0.004	-0.061	0.014	-0.056
	(1.43)	(0.96)	(0.09)	(1.19)	(0.17)	(1.29)
(7): (6) + firm factors	-0.026	-0.013	-0.078*	-0.093**	-0.015	-0.078*
	(0.59)	(0.34)	(1.86)	(1.98)	(0.22)	(1.85)
(8): (6) + occupation	-0.049	-0.080**	-0.054	-0.124***	-0.130*	-0.098**
	(1.40)	(2.11)	(1.22)	(2.99)	(1.77)	(2.19)
(9): (8) + firm factors	-0.043	-0.045	-0.088**	-0.168***	-0.154**	-0.115***
	(1.21)	(1.07)	(2.46)	(3.57)	(2.57)	(2.64)
(10): (1) + control for gender segregation across firms	0.032*	0.062***	0.097***	0.122***	0.136***	0.097***
	(1.77)	(4.55)	(4.65)	(3.62)	(6.30)	(5.63)

Source: ICA Madagascar and Mauritius 2005.
Gender segregation across firms is corrected in models (5) and (10). Significance levels are respectively equal to 1% (***), 5% (**) and 10% (*).

Let us first focus on the results for Mauritius. In panel (1), we only control for gender, marital status, education, experience off the firm and years of tenure in the firm. We find that the magnitude of the gender wage gap does not remain constant along the wage distribution. For instance, the gender wage gap amounts to 32 percent at the first decile, around 35 percent at the median, 37 percent at the third quartile and 38 percent at the ninth decile. Hence, the gap is increasing throughout the conditional wage distribution, but the acceleration is not so sharp in the upper part of the distribution. In comparison, the mean gap was around 35 percent. With a rise of only 3 points when moving from the median to the ninth decile, it seems hazardous to interpret these findings as evidence of a glass ceiling effect[16].

We run several additional specifications to further investigate the magnitude of the gender wage gap. First, as firm characteristics may play a role, we add a set of firm factors obtained through a Principal

[15] In a quantile regression, the distribution of the error term is left unspecified. The quantile regression method provides robust estimates, particularly for misspecification errors related to non-normality and heteroskedasticity.

[16] We also have a look at the confidence intervals associated to the gender dummy variable and find that these intervals overlap when considering two succeeding deciles.

Component Analysis (PCA) into the quantile regressions. According to the estimates reported in panel (2) of Table 6, the role of these firm factors varies across the distribution. Adding firm factors leads to a slight increase in the magnitude of the gender gap, but only in the lower and the upper parts of the wage distribution. In panels (3) and (4), we perform the same regressions, but with controls for occupations in the firm. In that case, we observe much more differences in the magnitude of the gender wage gap. For instance, it is equal to 34.2 percent at the first decile, and 47.8 percent at the ninth decile. But again, the difficulty is to know whether occupations within the firm are not subject to gender discrimination themselves.

We then estimate the same regressions using the data from Madagascar. Two comments are in order. First, when the regression only includes the basic control variables, there is no evidence of gender differences in wage. The estimate associated to the gender dummy remains insignificantly different from zero along the different percentiles of the conditional wage distribution. Second, accounting for occupational dummies and firm factors matters when measuring the gender gap. As shown in panels (7), (8) and (9), the gender gap appears to be larger and significant in the upper part of the distribution. For instance, once occupations and firm factors are controlled for, the gender gap amounts to 9 percent at the median, but it is around 16 percent at the third quartile and ninth decile.

It is also interesting to consider the issue of gender segregation across firms. In panels (5) and (10), we reestimate the quantile wage regressions with the adjusted log hourly wage as the dependent variable (see Section 3.2). If women are more likely to work in low-paying jobs, then controlling for gender segregation should reduce the magnitude of the gender gap especially in the upper part of the distribution. Our findings for Mauritius show that gender segregation really matters for high-paid occupations since the gender gap obtained with the adjusted wage is now slightly lower at the top than at the bottom of the wage distribution. While the gap is equal to 25 points at the first decile, it is around 21 points at the third quartile and 18 percent at the ninth decile. The situation is even 'worse' in Madagascar. We now evidence a positive gender gap in the Malagasy firms, meaning that women tend to earn slightly more than men once we control for the fact that women are more likely to be over-represented in low-pay firms[17].

Finally, we perform a quantile decomposition to know whether differentiated returns to labor market characteristics matter more on top of the wage distribution. We follow the method described in Machado and Mata (2005) and estimate a set of 300 randomly chosen quantile regressions. We perform the decomposition twice, once with the log hourly wage measured from the survey and once with the adjusted wage. These decompositions are reported in Table 7. Our results are twofold.

[17] All these results remain valid when we add firm factors and occupational dummies in the regression. In Madagascar, the gender wage gap is positive and comprised between 9 and 12 points of percentage. In Mauritius, the gap is again slightly lower in the upper part of the wage distribution.

Table 7: Quantile decomposition of the gender wage gap

Decomposition		Mauritius		Madagascar	
		No gender segregation accounted for	With gender segregation accounted for	No gender segregation accounted for	With gender segregation accounted for
Machado-Mata decomposition					
Percentile 10th	Difference in characteristics	-0.048	-0.113	-0.008	-0.014
	Difference in coefficients	-0.382	-0.282	-0.050	0.043
	Total difference	-0.430	-0.395	-0.058	0.029
Percentile 25th	Difference in characteristics	-0.089	-0.113	0.012	-0.018
	Difference in coefficients	-0.326	-0.280	-0.049	0.061
	Total difference	-0.416	-0.393	-0.037	0.044
Percentile 50th	Difference in characteristics	-0.466	-0.125	0.001	-0.026
	Difference in coefficients	-0.333	-0.283	-0.019	0.103
	Total difference	-0.467	-0.408	-0.018	0.077
Percentile 75th	Difference in characteristics	-0.150	-0.130	0.005	-0.017
	Difference in coefficients	-0.386	-0.271	-0.048	0.130
	Total difference	-0.536	-0.391	-0.043	0.113
Percentile 90th	Difference in characteristics	-0.160	-0.114	0.017	-0.011
	Difference in coefficients	-0.462	-0.264	-0.035	0.142
	Total difference	-0.622	-0.378	-0.018	0.131

Source: ICA Madagascar and Mauritius 2005.

First, we find that when gender segregation across firms is not taken into account, the gender wage gap is mainly due to differences in coefficients rather than differences in characteristics. In Mauritius, the discrimination effect amounts to around 40 percent above the third quartile, differences in characteristics being much lower (as is the case in Madagascar). Second, the role of individual labor market characteristics becomes more important in the decomposition once we pick up the effect of gender segregation across firms. In Mauritius, the weight of differences in characteristics in the explanation of the gender gap at the first decile is more than one quarter, while it was less than 10 percent without control for gender segregation. Nevertheless, in Madagascar, the gap remains mainly explained by differences in the returns to labor market characteristics.

5. CONCLUDING COMMENTS

Based on the matched employer-employee ICA surveys, our comparative analysis of the gender wage gap clearly highlights contrasted situations in Mauritius and Madagascar. Before turning to an explanation of these differences, let us briefly summarize our main findings.

First, wages received by women in Mauritian firms are on average 35 percent lower than wages earned by men. Conversely, in Madagascar, the effect of the gender dummy in OLS regressions is very low and insignificant. Adding controls for occupations in the regressions leads to an increase in the gender dummy coefficients in both countries. This suggests that gender discrimination practices will not necessarily be reflected in differences in wages, but they may also arise as a result of the existence of gender-specific occupations. This is what Bourdieu (1998) called “male domination”, a phenomenon which prevents women from having access to certain well-paid segments or professions.

Second, accounting for firm heterogeneity in the wage regressions through the use of firm fixed effects strongly reduces the magnitude of the gender wage gap, a finding also observed in developed countries (Meng, 2004). In fact, insights from regression-based decompositions of wages indicate that firm effects account for a large proportion of what is explained in wage differentials across workers. This may be the result of gender-specific sorting of workers across firms that pay different wages, i.e. the existence of high paying firms for men and low paying firms for women. Interestingly, gender segregation across firms is indeed at hand in Mauritius and Madagascar. The use of adjusted wages, net of the effect of the firm-specific gender employment ratio, reveals that the role of the firms is weak in comparison with that of individual characteristics.

Third, it is difficult to evidence a gender wage pattern consistent with the glass ceiling phenomenon recently observed in developed countries. The gender gap remains almost flat in both islands across the wage distribution, at least when occupations or firms characteristics are not controlled for in the quantile regressions. Furthermore, results from wage decompositions at different quantiles show that, at the top of the distribution, the gender wage gap is mainly explained by differences in returns to endowments rather than by differences in these mean characteristics.

This comparative study leads to two main conclusions with respect to the measurement of the gender gap in African countries. A first point is that there seems to be much more heterogeneity with regard to the situation of women in African labor markets than in developed countries. For instance, the gender gap is significant in Mauritius and is not in Madagascar, and there is no clear glass ceiling effect in these islands contrary to what is observed in Morocco (Nordman and Wolff, 2007). How can we explain the difference between the two selected islands? From our perspective, it seems that the gender differences in wages may stem from the differentiated level of economic development of these countries. In Madagascar, wages remain much lower than in Mauritius and this certainly prevents employers from paying some kind of discriminating premium according to gender. At the same time, the higher gender wage gap observed in Mauritius may be the result of the emergence of more capital-intensive sectors that offer higher wages, in particular if these sectors mainly turn to a male workforce.

This possibility is clearly linked to our second result, which concerns the role of gender segregation across firms when explaining the gender wage gap. According to our regressions, firms' characteristics are important, but this is mainly due to the fact that men are more likely to be hired in firms paying high wages and women in firms paying low wages. This means that a close look at the hiring process in African firms is needed. Unfortunately, such empirical analysis cannot be conducted with cross-sectional matched employer-employee data[18]. It would then be useful to estimate the magnitude of the gender wage gap using OLS and quantile regressions in a setting where selectivity issues of employees would be controlled for. Detailed surveys on the labor force in African countries may undoubtedly help better understand the selection of female employees in paid jobs, a topic that we leave for future research.

[18] By definition, we only have information on the workers currently employed in the firms.

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