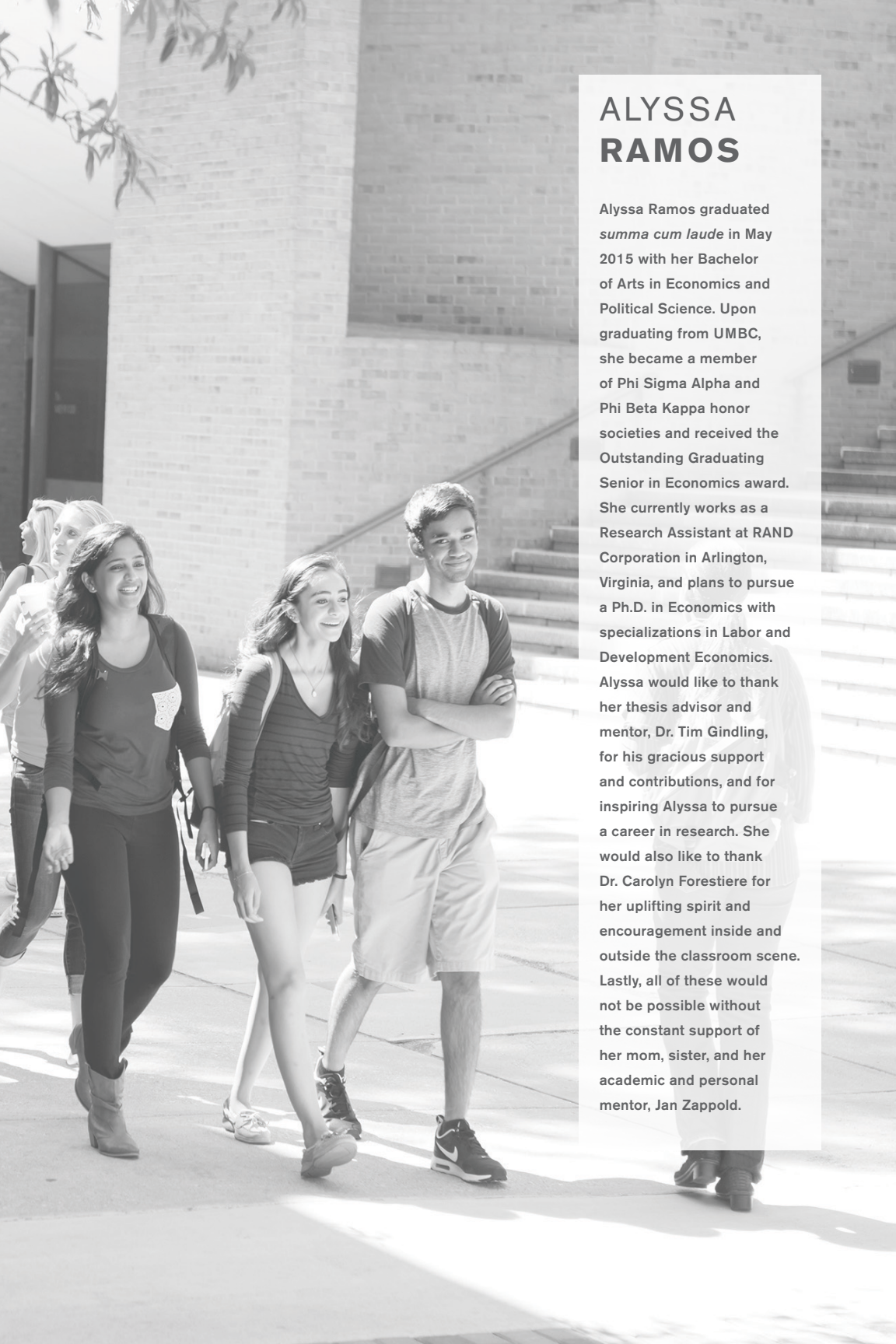

ALYSSA **RAMOS**

Alyssa Ramos graduated *summa cum laude* in May 2015 with her Bachelor of Arts in Economics and Political Science. Upon graduating from UMBC, she became a member of Phi Sigma Alpha and Phi Beta Kappa honor societies and received the Outstanding Graduating Senior in Economics award. She currently works as a Research Assistant at RAND Corporation in Arlington, Virginia, and plans to pursue a Ph.D. in Economics with specializations in Labor and Development Economics. Alyssa would like to thank her thesis advisor and mentor, Dr. Tim Gindling, for his gracious support and contributions, and for inspiring Alyssa to pursue a career in research. She would also like to thank Dr. Carolyn Forestiere for her uplifting spirit and encouragement inside and outside the classroom scene. Lastly, all of these would not be possible without the constant support of her mom, sister, and her academic and personal mentor, Jan Zappold.

GENDER WAGE DISCRIMINATION IN THE PHILIPPINE LABOR MARKET

In summer 2014, I asked my professor, Dr. Tim Gindling, a Development Economist, to become my mentor for a Fulbright grant proposal based on the Philippines. Under his guidance, I developed and submitted a qualitative research proposal that focused on the informal labor market of the Philippines. During that time, I realized that a quantitative aspect of the project could be carried out during my senior year at UMBC. I contacted the National Statistic Office of the Philippines to gather the 2008 Labor Force Survey data. Unfortunately, the informal sector data was not available for analysis. Dr. Gindling suggested that I focus my empirical research on the gender wage gap, a feasible project under the limitations of the data and also a great learning opportunity, as I was unfamiliar with the topic and the methodologies required. This study identifies the extent to which the wage gap can be explained by differences in human capital investments, such as education and experience versus differences in the returns that women and men receive to the investments; the latter is associated with gender wage discrimination. The results of this project were presented in the 2015 URCAD.

[LEFT] Summer Students, 2015. Photograph by Marlayna Demond, '11.

[RIGHT] Students walking through campus, circa 1970-1979, University Archives, Special Collections, University of Maryland, Baltimore County (UMBC).

ABSTRACT

This research seeks to quantify the extent that discrimination can explain the gender wage gap in the Philippine labor market. Today, it is fairly well established that women trail behind men in many domains in developing countries, and that this can potentially have far-reaching impacts on human and economic development. On average, women earn significantly less than men in the Philippines. It is uncertain, however, whether this wage gap is due to different levels of productive skills, or if employers discriminate based on gender. Using the 2008 Philippine Labor Force Survey, this research adopted the Oaxaca-Blinder decomposition method to separate out the portion of the gender wage gap that is due to labor market discrimination from that due to differences in productive skills. The variables used to assess the portion that is attributed to differences in productive skills include education and experience. The results of this study suggest that although working women have a higher average level of education and are more likely to work in higher paying occupations, they still earn significantly less than men because of high levels of discrimination. Discrimination against women in the Philippine labor market is more intense in the rural than in the urban sector. The results of this study suggest that legislation to promote equal pay for women and men in the same jobs could be an effective way to reduce labor market discrimination against women in the Philippines.

INTRODUCTION

It is generally well-known that women lag behind men in many domains. An often-cited differential occurs in the labor market where the global average gender wage gap is 15.6 percent, according to the recent report by the International Trade Union Confederation (2008). Wage inequality between men and women exists in almost every region of the world. In Europe, the average wage gap is an estimated 14.5 percent. A significantly wider gap is evident in Asia, with an average wage gap of 21.2 percent (excluding Bahrain). The gender wage gap

is even greater in East Asia with an average wage gap of 32 percent (Horton, 1996). As wages provide means for survival, especially in developing countries, it is important to identify determinants of the wage gap. A growing body of research on gender wage inequalities relies on the human capital model and attributes part of the wage gap to differences in productive skills, namely unequal human capital investment in education and experience. Controlling for these differences, the remaining gap is attributed to wage discrimination. That is, wage discrimination against women exists because employers reward productive skills differently based on the gender of the worker (Oaxaca, 1973; Blinder, 1973).

Empirical studies of wage discrimination in recent years have progressed in multiple directions. Studies often compare wage discrimination among different rural and urban markets (Ahmed and Maitra, 2010; Loureiro et al, 2004; Deininger et al, 2013), sectors (Razavi & Habibi, 2014; Langton and Konrad, 1998), or public and private realms (Seshan, 2013; Zhang & Dong, 2008). A common finding among these studies is that discrimination against women in the labor market is present even after controlling for human-capital characteristics. In the U.S., Langton and Konrad (1998) found that 25 percent of the wage gap occurs because men and women are differentially rewarded despite similar human capital characteristics in the same institutions and labor markets. They also concluded that discrimination is more profound when there is an oversupply of labor, and such occurance leads to greater negative effects on women's wages relative to men. Horton (1996) conducted a seven-country study of women in East Asian labor markets, and found that at least half of the gender wage gap was due to labor market discrimination. South Asia also witnessed similar results. In India, estimated discrimination is close to 65 percent of the wage gap (Deininger et al., 2013), whereas in Bangladesh, discrimination is nearly 63 percent of wage gap in the urban sector (Ahmed & Maitra, 2010).

In the Philippines, where labor-force participation for women is among the lowest in Southeast Asia, the government is slowly progressing towards greater gender equality in the labor market. Despite major strides in policies and programs, as well as high educational investments among the female population, male and female wage and occupational differences persisted (ADB, 2013). In 2011, the employment gap between men and women was 26 percentage points, while women's annual earnings were only an estimated 60 percent of men's annual earnings (ADB, 2013). Once human-capital attributes were taken into account, the adjusted wage

gap was estimated to range from 24 percentage points to 30 percentage points (Sakellariou, 2004; Rodgers & Menon, 2012). Sakellariou (2004) conducted a decomposition analysis of the gender wage gap based on quantile regressions, and discovered that much of the discrimination occurred in the lowest quantile of earnings. Additionally, Cabegin (2012) found that women exhibit a higher average level of education and increasingly so over time, and in the absence of discrimination, women should have received higher reward for better human-capital attributes.

This study seeks to estimate the gender wage gap among urban and rural workers in the Philippines using the 2008 Labor Force Survey. After controlling for differences in relative endowments in productive factors such as education and experience, wage discrimination is determined through further analysis using the Blinder-Oaxaca decomposition. The analysis identifies the extent to which the wage gap can be explained by differences in human-capital investments versus differences in the returns that women and men receive for these investments; the latter is associated with discrimination.

This study contributes to the understanding of gender wage gap in the Philippine labor market in the following ways. First, this study considers rural and urban markets to determine if any differences exist between the two markets, leading to a better understanding of the overall labor market. Second, this study relies on individual-level data collected for the whole country and recorded in the 2008 Labor Force Survey, providing a nationally representative sample of the population.

THEORY

The human-capital model has played an influential role in the estimation of labor market discrimination based on gender. Since the model posits that workers' earnings are directly related to their investments in productive skills (Mincer 1974), scholars have argued that one needs to control for these differences in investment when analyzing the gender wage gap (Stanley & Jarrell, 1998). After controlling for these differences in productivity skills, gender discrimination has a significant explanatory power in the male-female wage differences. Becker (1971) introduced the idea of utilizing economics to determine discrimination, and argues that the market discrimination coefficient, the proportional differences between wage rates of perfectly substitutable labor, occurs due to employers' taste-based discrimination, where employers prefer workers of certain demographics over others. Thus, labor market discrimination in

economics is said to exist if individuals who have identical productive characteristics are treated differently due to the demographic groups to which they belong. In this study, taste-based discrimination based on gender differences is explored. The decomposition of the observed wage gap into the explained portion, human-capital investments, and the unexplained portion, indicative of discrimination, is the primary method for examining wage gaps among different demographic groups (Oaxaca, 1973). Before the discriminatory portion of the wage gap is explored, it is important to address the human-capital inputs that provide a crucial link to the compensation differences.

One of the main arguments of the human capital approach to gender wage gap is that the wage gap exists because women often specialize in household production and thereby accumulate less labor market experience than men (Mincer and Polachek, 1974; Polachek, 1975; Becker 1985). The human capital approach assumes that skill build-up for a particular activity is positively related to time spent at that activity (Becker, 1964). Married women are especially vulnerable to this as, according to numerous studies, women participate less in the workforce once they enter marriage, and thereby earn significantly less over time than their male counterparts (Oaxaca, 1973; Mincer and Polachek, 1974). Traditional divisions of labor have led women to anticipate shorter and more discontinuous work lives, investing more hours in housework than in market-oriented formal education and on-the-job training. Child-bearing activities, for example, limit women's years of experience in the workforce. Traditional divisions of labor such as these reduce women's productivity and wages (Becker, 1985).

While differences in experience between men and women may explain part of the gender-wage gap, education does not directly influence wage gap. In developed societies, women's increasing levels of education have rapidly closed the education gap between men and women (Lips, 2012). The Philippines has nearly achieved educational parity between men and women for primary and secondary education, and interestingly, there are more women enrolled in tertiary education than men. There is, however, the significant gender specialization in training and tertiary education (ADB, 2012). Women are underrepresented in fields that amass higher market returns, such as engineering, law or information technology. This has led some to conclude that it may not be the level of education but the subject or specialty that accounts for the wage gap (Machin & Puhani, 2003). In this regard, occupational segregation, a related source of gender wage gap, may also explain the

wage disparity in the country. In recent decades, the concentration of women in lower-paying jobs and has been found to explain a large proportion of the gender-wage gap (Kunze, 2005). This issue poses even more trouble as Blau and Kahn (2007) suggest a recent shift in the wage structure that favors male-dominated occupations, increasing the gender wage gap. The increased demand for skilled workers relative to unskilled workers due to technological changes and international trade have also increased rewards in male occupations and industries. Women may choose to be in lower paid occupations as these occupations provide the flexibility required for household production, or women may also be denied access to higher-paid occupations; the latter provides evidence for labor market discrimination. As occupation may or may not be an indicator of labor market discrimination, the following analysis provided an upper (education, experience and occupation) and lower (education and experience) bound for wage disadvantage.

After controlling for tangible inputs such as experience, education and occupation, which represented the explanatory factor of the observed wage gap, the remaining unexplained gap, or residual, is said to represent discrimination (Oaxaca, 1973). However, after thorough examination of these factors, it was revealed that discrimination is inextricably intertwined with many, if not most, of these variables (Lips, 2012). Women are often confronted by systematic biases and poor alternatives that results in obtaining lower-paying jobs and scarce opportunities for skill-building investments. As such, educational and occupational choices are generally limited by gender stereotypes that society places upon women, and the case is also similar for the traditional roles that women play in household production. It is then important to remember that the controlled human capital inputs may also be mired in pre-market labor discrimination. While this study focuses on wage discrimination in the labor market, the true extent of wage discrimination must also account for pre-market labor discrimination. Therefore, the results of this study may underestimate the discriminatory portion of the wage gap.

EMPIRICAL METHODOLOGY

There are two quantifiable measures of discrimination performed in this study. The first method used is a single regression analysis with one dichotomous factor — gender. The wage equation has the following form:

$$\ln Y_i = \alpha + \beta X_i + \gamma D_i + \varepsilon_i \; ; \quad i = 1,...,n \tag{1}$$

$$Di = \begin{cases} 0 \text{ for female} \\ 1 \text{ for male} \end{cases}$$

Equation (1) is estimated using the ordinary least squares (OLS), where $\ln Y_i$ is the natural log of hourly wages, α is an intercept term, X_i is a vector of human capital attributes including potential experience and education for individual i, β is a vector of coefficients to be estimated, D_i is the dummy-variable regressor — a binary variable coded 0 for female and 1 for male- and ε_i is the error term.

The coefficient γ for the dummy regressor provides the difference in intercepts for men and women and is the measure of labor market discrimination in this wage equation. Thus, for female, when γ (0)

$$\ln Y_i = \alpha + \beta X_i + \varepsilon_i \tag{2}$$

and for male, when γ (1)

$$\ln Y_i = (\alpha + \gamma) + \beta X_i + \varepsilon_i \tag{3}$$

In both of the above regressions, this study assumes that human capital inputs are held constant between the two groups, and therefore the model can be interpreted as the expected wage advantage of male workers compared to female workers with the same level of human capital. If women are paid lower wages relative to men with the same level of human capital, then γ would be positive. This would be evidence of labor market segmenation against women. The model is strictly limited to the assumption that men and women have equal returns to human capital endowments. For example, this model assumes that returns to education, measured by the coefficient on the education variable, is the same for men and women. Yet discrimination in the labor market could take the form of women being paid less for each additional year of education than men.

The second method used in this study is the Oaxaca-Blinder decomposition model, the most commonly used technique for wage discrimination studies, developed by Oaxaca (1973) and Blinder (1973). The Oaxaca-Blinder model allows returns to human capital to differ between men and women. Returns to human capital are measured as the coefficieints on the human capital variables. In the Oaxaca-Blinder decomposition model, equation (1) is estimated seperately for male and female groups. They begin by estimating the natural log of hourly wage equations for males (m) and females (f) in the following equation:

$$\ln Y_{ij} = \alpha_j + \beta_j X_{ij} + \varepsilon_{ij} \; ; \quad i = 1,..., n; \quad j = m,f \tag{4}$$

They then proceed to decompose the wage differential into two components, namely the *endowment effect* and the *wage discrimination* effect, in the following equation:

$$\overline{\ln Y_m} - \overline{\ln Y_f} = \Sigma_j [\beta_m (\overline{X_m} - \overline{X_f})] + [(\alpha_m - \alpha_f) + \Sigma_j (\beta_m - \beta_f) \overline{X_f}] \tag{5}$$

On the right hand side of equation (5), the first term is the endowment component or the explained portion of the gender wage gap explained by differences in observable characteristics at the mean between male and female, evaluated by the male wage equation. The second term is the wage discrimination component or the unexplained portion. It is determined by the sum of the differences in the return to each wage determinant received by males and females, evaluated at the mean set of women's human capital inputs, and the difference between the constant.

$$\overline{\ln Y_m} - \overline{\ln Y_f} = \Sigma_j [\beta_f (\overline{X_m} - \overline{X_f})] + [(\alpha_m - \alpha_f) + \Sigma_j (\beta_m - \beta_f) \overline{X_m}] \tag{6}$$

Alternatively, equation (5) can be written to take the female wage structure as the non-discriminatory norm, where it is implied that women are appropriately compensated and that men bare the wage discrimination, displayed in equation (6). As both equations (5) and (6) do not yield the same estimate for the discrimination component, Cotton (1988) and Neumark (1988) suggested the use of β, assuming the wage structure without discrimination falls between the pure male and female structure, from the OLS estimation of the pooled male-female sample in equation (1), or a population weighted average of β_m and β_f, respectively. For this study, we utilized the population-weighted average β_m and β_f as the non-discriminatory norm, and appropriately, we add and subtract $(\beta X_m - \beta X_f)$ to realize:

$$\overline{\ln Y_m} - \overline{\ln Y_f} = \Sigma_j [\beta (\overline{X_m} - \overline{X_f})] + [(\alpha_m - \alpha_f) + \Sigma_j (\beta_m - \beta) \overline{X_m} - \Sigma_j (\beta - \beta_f) \overline{X_f}] \tag{7}$$

Although the first component, the explanatory portion, remains the same, the second component, the discrimination portion, in equation (5) is further decomposed into two terms, the "advantage of being male" and the "disadvantage of being female." The sum of all the elements in the second component is considered to be an indicator of the extent of discrimination. Again, this study estimates two sets of regression that do and do not include occupation to calculate an upper and lower bound of the discriminatory portion of the wage gap.

TABLE 1-A. Cross-tabulation of Gender and Urban-Rural Classification (All Wage Employed)

			Gender		
			Males	**Females**	**Total**
	Urban	Count	**11,038**	**8,121**	**19,159**
		% of Total	33.6%	24.8%	58.4%
	Rural	Count	**8,728**	**4,925**	**13,653**
		% of Total	26.6%	15.0%	41.6%
Total		Count	**19,766**	**13,046**	**32,812**
		% of Total	60.2%	39.8%	100.0%

Data Source: Philippine National Statistic Office, Labor Force Survey Oct. 2008

TABLE 1-B. Cross-tabulation of Gender and Urban-Rural Classification (Government and Private Sector)

			Gender		
			Males	**Females**	**Total**
	Urban	Count	**10,605**	**6,255**	**16,860**
		% of Total	36.5%	21.5%	58.0%
	Rural	Count	**8,517**	**3,679**	**12,196**
		% of Total	29.3%	12.7%	42.0%
Total		Count	**19,122**	**9,934**	**29,056**
		% of Total	65.8%	34.2%	100.0%

Data Source: Philippine National Statistic Office, Labor Force Survey Oct. 2008

DATA

The data set used for this study was obtained from the October 2008 Philippine Labor Force Survey conducted by the National Statistics Office (NSO). The survey gathered relevant information of labor market activities of individuals in a sample population during the previous quarter (July-September). For this study, the estimating sample is restricted to individuals age 15 years and above, and since this study focuses on employer discrimination, the sample is restricted to those who are wage-employed. As a result, the sample excludes self-employed and unpaid family workers. Any indication of discrimination in the male-female wage gap among the self-employed can be attributed to consumers (customers) who were willing to pay more for products or services sold by a male compared to a female (Becker). Additionally, military personnel are also excluded. The resulting sample population totals to 32,812 workers.

The sample of this study includes four different classes of workers: domestic servants, private sector employees, government employees and paid family workers. Table 1-A provides the sample size of the all the wage employed that includes all four classes of workers. This study also provides a separate analysis that excludes domestic servants and paid family workers, with the assumption that these workers are also paid 'in-kind', as in the case of room and board, and can potentially have underestimated wages. Table 1-B represents a separate sample that only includes government and private sector workers. The resulting sample population totals to 29,056 workers.

In the regressions, important variables include log of hourly wages, education, experience, region and occupation. The dependent variable, log of hourly wage, is derived by dividing total earnings by total hours worked. Education and experience are human capital variables. Education is measured by the dummy variables of three main subsets: Primary (elementary school graduate), Secondary (high school graduate), and Tertiary (college graduate); the excluded education category is no education. Potential experience is computed using the Mincerian way: age minus years of schooling minus six. This variable is then squared and presented as an additional variable to ascertain whether experience has a diminishing return in the long run. Because standard of living varies by region in the Philippines, the regressions also control for the 16 regions, each as dummy variables, in the Philippines with the assumption that standard of living varies by region. Occupational groups are additionally controlled in separate regressions and each are also presented as dummy variables.

RESULTS

RESULTS FROM THE SINGLE REGRESSION

Table 2-A shows results from the simple wage regression including domestic servants and paid family workers. The male wage advantage is around 30 percentage points in the urban sector and 33 percentage points in the rural sector after controlling for education (primary, secondary, and tertiary), experience (and experience squared), region, and occupation. The positive direction of the male coefficient indicates that female workers are paid lower wages relative to male workers with the same level of human capital. This is evidence of labor market discrimination against women in the Philippines. The results reveal that female wage disadvantage is present in both urban and rural sectors. The difference in return to male workers when

TABLE 2-A. Single Regression Coefficients (All Wage Employed)

Model	Urban (1)	Urban (2)	Rural (1)	Rural (2)
(Constant)	2.4560	2.6843	2.4457	2.7146
Male	0.3009***	0.2985***	0.3365***	0.3348***
Primary	0.1134***	0.0647***	0.1318***	0.0902***
Secondary	0.4172***	0.2479***	0.3701***	0.2573***
Tertiary	1.2210***	0.6520***	1.3039***	0.7556***
Experience	0.0291***	0.0234***	0.0272***	0.0216***
Experience Squared	-0.0004***	-0.0003***	-0.0003***	-0.0003***
Region	YES	YES	YES	YES
Occupation	NO	YES	NO	YES
R2	0.4533	0.5381	0.4216	0.4854

*Notes: ***= significant at 1%; **=significant at 5%; *=significant at 10%.*

Data Source: Philippine National Statistic Office, Labor Force Survey Oct. 2008

TABLE 2-B. Single Regression Coefficients (Government and Private Sectors, excluding domestic servants)

Model	Urban (1)	Urban (2)	Rural (1)	Rural (2)
(Constant)	2.5242	2.6330	2.4704	2.6931
Male	0.1227***	0.1629***	0.1910***	0.2075***
Primary	0.1406***	0.1054***	0.1480***	0.1101***
Secondary	0.3847***	0.2897***	0.3850***	0.2992***
Tertiary	1.0605***	0.6664***	1.2148***	0.7855***
Experience	0.0266***	0.0218***	0.0254***	0.0197***
Experience Squared	-0.0003***	-0.0003***	-0.0003***	-0.0003***
Region	YES	YES	YES	YES
Occupation	NO	YES	NO	YES
R2	0.4359	0.5063	0.4150	0.4763

*Notes: ***= significant at 1%; **=significant at 5%; *=significant at 10%.*

Data Source: Philippine National Statistic Office, Labor Force Survey Oct. 2008

controlling for occupation and not controlling for it is marginal, possibly indicating that the presence of occupational segregation is small in magnitude. Female workers in the rural sector experience a slightly higher disadvantage than female workers in the urban sector. Overall, there are higher returns to education in the rural sector, and an almost equal return to experience in both sectors.

TABLE 3-A. Decomposition of the gender wage gap (All Wage Employed)

	Urban (1)	Urban (2)	Rural (1)	Rural (2)
Observed Wage Gap	0.1586	0.1586	0.1109	0.1109
Adjusted Wage Gap	0.2963	0.2841	0.3207	0.3117
Endowment Effects (Differences in Human Capital)				
Education	-0.1710	-0.0883	-0.2182	-0.1274
Experience	0.0395	0.0324	0.0115	0.0095
Region	-0.0063	-0.0052	-0.0031	-0.0022
Occupation	N/A	-0.0644	N/A	-0.0807
Total	-0.1378	-0.1256	-0.2098	-0.2008
Discrimination Effects (Differences in Return)				
Constant	0.4552	0.0248	0.4127	-0.1698
Education	-0.2530	-0.0119	-0.0689	0.0431
Experience	-0.0171	-0.0053	-0.0278	-0.0344
Region	0.1113	0.0435	0.0048	-0.0407
Occupation	N/A	0.2330	N/A	0.5135
Total	0.2963	0.2841	0.3207	0.3117

Data Source: Philippine National Statistic Office, Labor Force Survey Oct. 2008

When the sample is restricted only to government and private sector workers in Table 2-B, male wage disadvantage is around 12 percentage points to 16 percentage points in the urban sector and around 19 percentage points to 21 percentage points in the rural sector. The decline in the magnitude of the male wage disadvantage can be attributed to the exclusion of domestic servants. The excluded sample consists of primarily female workers with low wages due to the nature of the occupation. In addition to the wages domestic servants receive, they are also paid in-kind with amenities such as room and board. Therefore, in the previous regression, the male advantage may have been overestimated as it includes domestic servants, of primarily female workers with low human capital, with underestimated incomes.

These simple regression analyses do not account for possible differences in human capital endowments and may therefore misrepresent female wage discrimination. These regressions assume that men and women have similar levels of human capital; however, based on our theoretical findings, this is not the case.

TABLE 3-B. Decomposition of the gender wage gap (Government and Private Sector)

	Urban (1)	Urban (2)	Rural (1)	Rural (2)
Observed Wage Gap	-0.0922	-0.0922	-0.1144	-0.1144
Adjusted Wage Gap	0.1255	0.1654	0.1772	0.1988
Endowment Effects (Differences in Human Capital)				
Education	-0.2493	-0.1487	-0.2972	-0.1940
Experience	0.0424	0.0335	0.0101	0.0080
Region	-0.0107	-0.0098	-0.0045	-0.0032
Occupation	N/A	-0.1326	N/A	-0.1241
Total	-0.2177	-0.2575	-0.2916	-0.3133
Discrimination Effects (Differences in Return)				
Constant	0.2754	0.1166	0.1898	-0.1794
Education	-0.2620	-0.1662	-0.0997	-0.0525
Experience	0.0184	0.0452	0.0056	0.0401
Region	0.0937	0.0357	0.0814	0.0671
Occupation	N/A	0.1341	N/A	0.3235
Total	0.1255	0.1654	0.1772	0.1988

Data Source: Philippine National Statistic Office, Labor Force Survey Oct. 2008

RESULTS FROM THE DECOMPOSITION

The decomposition results are displayed on Table 3-A and Table 3-B. The results reveal that, on average, female workers are paid lower wages than male workers. In Table 3-A, the observed wage gap is 15.9 percentage points in the urban sector and 11.1 percentage points in the rural sector, indicating that wages of male workers dominate over wages of female workers, unadjusted for differences in human capital. The decomposition of the wage gap further reveals that the differential did not occur due to the superiority of male productive characteristics. Interestingly, the endowment effects suggest that women should receive higher wages as a result of greater productive characteristics. On average, women have higher endowments in education and are more likely to work in higher paying occupations. Endowment effects are negative for both rural and urban areas at around -0.13 and -0.20, respectively. Based on the human capital theory then, women should earn more than men. The endowment

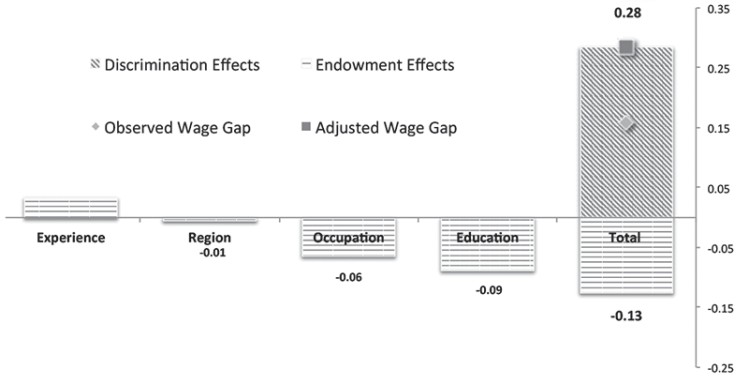

FIGURE 1-A. The relative contributions to the human capital effects, and the wage disadvantage of women due to discrimination (Urban areas)

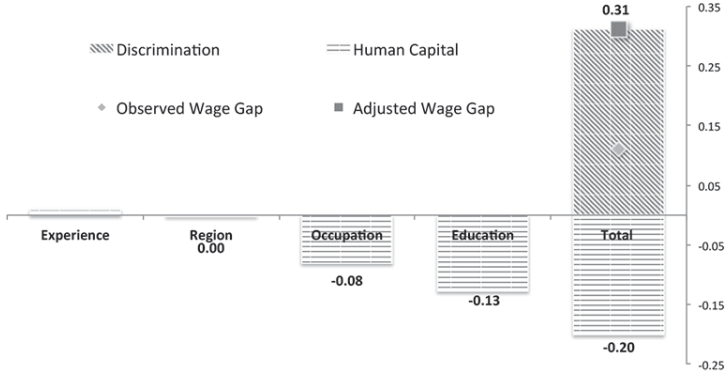

FIGURE 1-B. The relative contributions to the human capital effects, and the wage disadvantage of women due to discrimination (Rural Areas)

effects indicate that women should earn around 13 percentage points more than men in the urban area and 20 percentage points more than men in the rural area. The difference between the actual wage gap and the suggested wage gap due to endowment effects implies labor market discrimination. In Table 4-A, the total discrimination effects indicate that women's wages are from 29 percentage points (in the urban areas) and 32 percentage points (in the rural areas) lower than they would be if there were no labor market discrimination. These estimates are specified as the adjusted wage gap after controlling for human capital. The adjusted wage gap is greater in magnitude than the observed wage gap, suggesting that even greater discrimination exists after accounting for education and occupation. Figures 1-A

and 1-B demonstrate that endowment effects heavily favor women but the existence of wage discrimination places female workers at a disadvantage relative to male workers.

Education contributes the most towards the overall negative endowment effects, while occupation closely follows. Women have greater leverage, overall, in years of education and level of occupation. The effects of education and occupation overpower the opposite effect of experience, one that favors higher male wages due to higher levels of experience for men than women. The major implication of this decomposition is that the differences in productive characteristics do not provide an explanatory power to the observed wage gap; rather, the differences reinforce the existence of wage discrimination.

Further decomposition of the discrimination effects reveals that women's wages are lower than men's wages mostly due to the differences in return to occupation; given the same level of human capital, women are not rewarded as well as men in similar occupations. In Table 3-A, it is evident that prior to controlling for occupation, the intercept terms were the most explanatory for discrimination, indicating that the differences in the wages between men and women are due to unidentifiable factors. After accounting for occupation, the effect of the constant terms diminished substantially, suggesting that the previous effects of the intercepts carried the explanatory power of occupation. On the other hand, education (in the urban areas) and experience reveals a stark contrast; women have greater returns to education and experience than men, indicated by the negative direction of the variables in the discrimination effects. Once occupation is taken into account, the negative magnitude of return to education declined, hinting that the two variables are highly correlated, but also demonstrating that the difference in return to occupation is the primary driver for the gender wage gap. It is possible to assume then that women's higher returns to education (negative discrimination effects of education in the urban areas) increased their access to higher paying occupations (positive endowment effects of occupation). Within occupations, however, and given the same level of human capital, women earn less than men (positive discrimination effects of occupation). The weight of occupational wage discrimination is greater in the rural sector, 51.35 percentage points, than in the urban, 23.30 percentage points. Although the observed wage gap is smaller in the rural sector, the decomposition reveals that women in the rural sector compared to the urban sector enjoy greater human capital (education and occupation) but receive lower returns to such endowments, relative to men.

TABLE 4-A. Average Natural Logarithm of Wages by Occupation and Gender (Urban Area)

Occupational Group	Average Natural Log of Wage	Average Natural Log of Wage for Men	Proportion of Men	Average Natural Log of Wage for Women	Proportion of Women
Domestic Servants	2.5722	3.0906	0.03	2.4669	0.23
Laborers	3.3474	3.3877	0.73	3.2263	0.31
Administrative Personnel	3.7473	3.7862	0.08	3.7255	0.18
Professional and Technical	4.0602	4.1157	0.11	4.0299	0.23
Directors and Managers	4.3431	4.3388	0.05	4.3488	0.05

Data Source: Philippine National Statistic Office, Labor Force Survey Oct. 2008

TABLE 4-B. Average Natural Logarithm of Wages by Occupation and Gender (Rural Area)

Occupational Group	Average Natural Log of Wage	Average Natural Log of Wage for Men	Proportion of Men	Average Natural Log of Wage for Women	Proportion of Women
Domestic Servants	2.3594	2.6842	0.02	2.3151	0.25
Laborers	3.0587	3.1077	0.88	2.9530	0.42
Administrative Personnel	3.4380	3.4748	0.03	3.4187	0.10
Professional and Technical	3.8383	3.9045	0.04	3.7990	0.21
Directors and Managers	3.9767	3.9284	0.02	4.0678	0.02

Data Source: Philippine National Statistic Office, Labor Force Survey Oct. 2008

Table 4-A and 4-B present the male-female wage differential for each occupational group, and the proportion of men and women in each group. The occupational structure presented in these tables supports the assumptions made from Table 4-A. Women are more likely to work in higher paying occupations than men in groups such as Professional and Technical and Administrative Personnel. Men, on the other hand, dominate in one of the lowest paying group Laborers, and there are equal proportions of men and women in the highest paying group Directors and Managers. Women are also overrepresented as domestic servants, the lowest paying occupational group. The part of the wage differential attributable to occupation

using the decomposition for all wage employed is negative, indicating that women, on average, work in higher paying occupations. Evident from Table 4-A and 4-B, women receive lower average wage rates than men in the least paid and lowest skilled occupations, Laborers and Domestic Servants, in both urban and rural areas. As the occupational level increases, the differences in wages between men and women decrease, signifying that among higher occupational groups, which require more years of education and experience, men and women are compensated at near equal rates. The greatest male-female wage differential then occurs among those in the lowest paying occupations that require fewer human capital attributes, a finding consistent with Sakellariou's 2004 study, which shows that discrimination against women in the Philippines is greater among low-paid workers than among high-paid workers.

Table 4-B presents a decomposition restricted to government and private sector workers, excluding domestic servants and paid family workers. This decomposition reveals that, on average, women earn more than. In the urban sector, women earn wages 9.2 percentage points higher, and in the rural sector, women earn wages 11.4 percentage points higher. By eliminating domestic servants and paid family workers, sectors primarily composed of women with underestimated wages, we see that government and private sectors female workers are compensated at higher rates than men. Conclusions about domestic servants and paid family workers still hold, however. The observed wage advantage of women over men does not eliminate the existence of wage discrimination. Endowments and discrimination effects are still negative and positive, respectively. According to the endowment effects, women should earn from 21 percentage points to 31 percentage points higher wages than men, indicating that women in this sample have even higher education and occupation levels than men, and thus deserve greater corresponding wage rates. The discrimination effects of the decomposition then suggest that women's wages are from 13 percentage points to 17 percentage points lower than men in the urban sector and from 18 percentage points to 20 percentage points lower in rural sector due to employers' wage discrimination towards women. Similar to the previous results in Table 4-A, the biggest contributor to wage discrimination is the differences in return to occupation.

CONCLUSIONS

This study analyzed the determinants of the gender wage gap in the Philippine labor market using the 2008 Labor Force Survey. Through the Oaxaca-Blinder decomposition, this study found that, on average, there is a large gap between male and female wage rates. Speculations in the literature suggest that the gender wage gap is attributed to differences in productive characteristics; yet the results of this study indicate that a large portion of the wage gap in the Philippines is due to labor market discrimination. Accounting for human capital endowments, women should earn more than men, as this study found that women have greater educational investments and are more likely to work in higher paying occupations. The adjusted wage gap indicates that men earn more than women despite lower levels of human capital. The difference in the observed wage gap and the adjusted wage gap due to the endowment effects is attributable to the existence of discrimination. This study found greater discrimination in the rural sector than in urban sector. Women in the rural sector have higher human capital investments but experience lower returns to those investments. This is also the case for women in the urban sector to a lesser degree. In addition, despite evidences that women from government and private sectors earn more than men, these female workers are also not paid wage rates that correspond to their high level of human capital, and are therefore also subject to labor market discrimination. By further decomposing the discrimination effects, this study also found that the difference in return to occupation is the biggest contributor to the gender wage gap. Although men and women in higher paying and higher skilled occupations receive nearly equal wage rates, those in lower paying and lower skilled occupations such as Laborers and Domestic Servants do not receive an equal level of compensation. In turn, this indicates wage discrimination, due to the absence of equal pay for equal work (in equal occupations). There appears to be no evidence of occupational segregation and educational discrimination towards women.

Important limitations of this study must be addressed. First, the experience variable, which promoted higher wages for men, is potentially flawed due to the inability of this study to account for possible absence of the population from the labor force. The measurement of this variable assumes that workers enter the labor force as soon as they exit the education system, but this may not be the case for all workers. For example, previous discussions in the literature indicate that women tend to exit the labor force to focus

solely on household production. Unfortunately, this study does not have adequate data to measure years spent outside of the labor force. Second, the estimates found in this study are also vulnerable to the self-selection bias: the possibility that women self-select themselves into the labor force, and those who are in the labor force may have characteristics that are not representative of the whole female population. A significant portion of the female population may not be in the labor force, and thus cannot be accounted in the analysis. Previous literatures indicate that a high portion of women in the Philippines generate income from vulnerable employment in the informal sector, and this share of the population is not represented in this study. Therefore, the estimates of this study may be subject to potential bias. Most studies address the self-selection problem by applying the Heckman two-step correction (Heckman, 1979). In order to apply this model, we must find a vector of factors known to influence a women's decision to work but do not also influence wages. This study, however, does not have adequate data to address this issue. Finally, as this study found that wage gaps exist among the lowest paid and lowest skilled occupations, questions arise whether this gap exists due to wage discrimination towards women or that men are more highly favored in these physically demanding occupations, and in the case of the latter, it is difficult to argue for the existence of discrimination. Further studies focusing on the lowest skilled occupations are needed to identify whether wage discrimination exists.

Despite its shortcomings, the analysis of this study is able to provide important policy implications. The Philippine government must strive to persuade employers to compensate women on comparable pay for equal work in lower paying occupations. Affirmative action policies must also start in the rural sector where a greater magnitude of wage discrimination can be found.

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