Wage inequality associated with job status: Evidence from Indonesia and the Philippines

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Abstract

This research investigates the wage differentials between temporary and permanent workers in Indonesia and the Philippines, based on their national Labour Force Survey data. The estimates show evidence of wage penalties in both countries. Moreover, Quantile Regression Estimates report that wage gaps could greatly vary across the wage distribution. The wage gap is smaller at the lower tails and becomes wider at the upper tails of the wage profile in Indonesia, suggesting the presence of a glass ceiling *effect. On the other hand, no distribution effect is observed in the Philippines.*

JEL Classification: J71, J31, J80.
Keywords: Indonesia, the Philippines, temporary employment, wage distribution, wage penalty.

1. Introduction

Non-standard employment is not new but has risen over several decades and has become more common in many parts of developed and developing worlds (Serrano *et al* 2014, ILO 2015, among others).[2] One important category of non-standard employment is temporary employment, which refers to jobs with a finite length of time, namely fixed-term contracts (FTCs), project or task-based contracts, and seasonal or casual work, including day labour.

There are many reasons encouraging firms to use temporary jobs, as they could provide firms with significant adjustment and flexibility (Harrison and Kelley 1993; Debrah and Smith 2002; Ko 2003, among others). Most importantly, temporary jobs might allow firms to avoid costs and other protection associated with standard jobs, including labour regulations (Lee and Eyraud 2008). For example, taxes and mandatory contributions on labour paid by businesses in Vietnam constitute up to 19.2 per cent of their commercial profits. In China, the figure reaches 68 per cent (World Bank 2009). Consequently, temporary jobs are often associated with lower wages and non-wage costs for enterprises (von Hippel *et al* 1997; Nesheim *et al* 2007).

Thus, studying the wage gap between temporary and permanent jobs is of great importance for better understanding the challenges associated with

temporary employment and developing policy proposals. Indeed, there is a rich literature on wage differentials related to job status, and most find evidence of a wage penalty against temporary workers. Furthermore, the penalty extent depends to a considerable degree on the relative position in the wage distribution. However, almost all empirical studies focus on developed countries. For instance, Comi and Grasseni (2012) find a common *sticky floor* effect for a sample of nine European countries. Accordingly, the temporary-permanent employment wage gap is more significant at the bottom, becoming smaller at the top paid positions of the wage profile. Such a *sticky floor* phenomenon is also found in Italy (Bosio 2014). However, the wage penalty is almost absent for high-wage jobs.

Another study by Mertens *et al* (2007) points out that, despite both being regarded as 'rigid' economies, Germany and Spain had different experiences of fixed-term jobs. In West Germany, the wage is similar among high-wage workers, but becomes dissimilar for low-wage workers, exhibiting a *sticky floor* effect. In Spain, however, the wage penalty shows only slight variation across the wage distribution.

In developing Asian countries, evidence on temporary-permanent wage differentials is extremely limited, possibly because of the scarcity or lack of appropriate data. Evidence of wage penalties is found in India (Panchanan 2018; Menon 2019) and Turkey (Duman 2019). Notably, there is a non-monotonic pattern in Turkey, implying the existence of both *sticky-floor* and *glass-ceiling* effects.[3]

The present research tries to address this gap by focusing on the case of Indonesian and Filipino temporary workers. Given the scarcity of estimates of the wage differential and their distribution pattern associated with temporary employment in developing Asian countries, this paper would contribute considerably to the limited literature. In addition, there is an interest in focusing on these two countries because of their economic and socio-demographic similarity. First, they are the biggest countries in Southeast Asia in terms of population size. Second, they share some common points in terms of labour market regulations, such as the minimum wage, equal opportunity, and anti-discrimination laws. Third, the share of temporary jobs in total wage employment appears to be similar between the two countries. Lastly, their social factors index and life expectancy are nearly the same, and are among the lowest in South-East Asia.[4]

The research is based on the National Indonesian Labour Force Survey (LFS) 2007 and the Filipino LFS 2009 provided by the ILO. Evidence of a wage penalty against temporary employees is found in both countries. Moreover, the wage gaps in Indonesia follow a *glass ceiling* phenomenon, while in the Philippines, wage differentials are similar along the pay ladder.

The paper is structured as follows. Section 2 provides data description and empirical strategies. Results derived from econometric models are analysed in Section 3, followed by concluding remarks in the last section.

2. Data and methodology

2.1. Data and descriptive statistics

This research relies on the Indonesian National LFS 2007 (August round) and the Filipino LFS 2009. In the Philippines, the question associated with the nature of employment only enables us to distinguish permanency in terms of jobs rather than contracts. Nonetheless, the 'Class of Worker' question identifies wage workers. A worker is called a 'wage worker' if she/he works for a private household, a private establishment, or the government. The Indonesian questionnaire includes a single question concerning both workers' employment status and job permanency. Moreover, wage workers can only be classified into two groups: casual and non-casual employees. Fortunately, in Indonesia, the concept of casual work might include the entirety of temporary jobs.[5] Consequently, in both countries, a worker is called a 'permanent worker' if he/she is a wage worker and his/her employment is not temporary.

To ensure comparability between the two countries, the dependent variable in this research is the hourly wage. The Filipino data provide both daily wage and daily working hours. Hence, we get an hourly wage by dividing the daily wage by daily working hours. In Indonesia, only monthly wages and weekly working hours are available. Since each month has, on average, 4.3 weeks, the hourly wage is computed by dividing the monthly wage by 4.3.[6]

Table A2 in the Appendix shows descriptive statistics for the two countries. They share a similar incidence of temporary jobs among wage employment: 27 per cent in Indonesia and 24 per cent in the Philippines. Some divergences between the two countries occur by breaking down temporary work (per cent of wage employment) into different categories.

From a gender perspective, the rates of temporary employment for men and women are roughly equal in both countries. As for the age cohort, while older Indonesian workers (aged between 55–64) are more likely to engage in temporary employment (45 per cent), this type of employment becomes more popular among the youngest in the Philippines, but to a lesser extent (40 per cent). A higher level of education is associated with a lower incidence of temporary work, but the situation is more pronounced in Indonesia. Indeed, without schooling, Indonesian workers have a significant chance of temporary work (72 per cent). In comparison, the incidence is only 0.5 per cent for those holding a university degree (or higher). In the Philippines, education seems to have a weaker effect on job status. Only 39 per cent of non-educated Filipino workers are engaged in temporary jobs, with the rate declining to 14 per cent for those having a university degree (or higher).

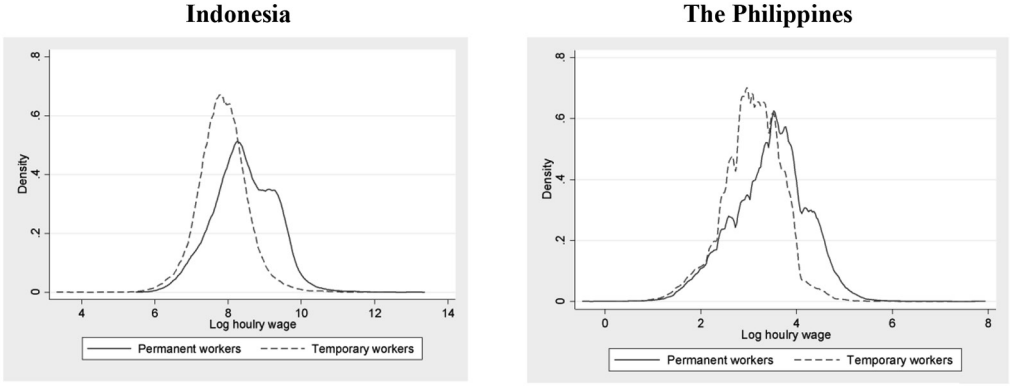
Indonesia and the Philippines are also different in terms of business sectors. Indonesian temporary workers are mostly in agriculture (71 per cent), with few in services (seven per cent) or trade sectors (eight per cent). Meanwhile, temporary jobs were the second most prevalent in the manufacturing industry (24 per cent). By contrast, there is no noticeable difference in the incidence of temporary employment across various sectors in the Philippines. Such

incidence ranged from 18 per cent in services to 45 per cent in the agriculture sector.

As for occupations, there is a common tendency in both countries: workers in high-skilled positions as professionals, legislators, or managers are weakly engaged in temporary jobs. The incidence is less than one per cent in Indonesia. Divergence occurs when it comes to the low- and medium-skilled groups. In the Philippines, lower-end occupations such as 'elementary occupations,' 'craft and related trade workers' are more likely to work temporarily. Meanwhile, 'skilled agriculture and fishery workers' in Indonesia often work as temporary employees (65 per cent). Nonetheless, this incidence is likely consistent with the high rate of temporary jobs in the agriculture sector.

Table A2 also provides preliminary results for temporary-permanent workers' hourly wage differentials. Consistent with the empirical literature findings, the results show general remuneration disadvantages for Indonesian and Filippo temporary employees compared to their permanent counterparts. Indeed, the former earned only 65 per cent of permanent workers in the Philippines, while the ratio is 49 per cent in Indonesia. Figure 1 then provides a more in-depth insight into the wage gaps by giving the hourly wage distribution in both countries, considering job status. Nonetheless, the picture remains the same. Since the temporary wage distribution is on the left of the permanent wage distribution, temporary workers get a lower hourly wage than their permanent counterparts, in both countries.

Figure 1: Distribution of hourly wage in Indonesia and the Philippines



Source: Indonesian LFS 2007, Filipino LFS 2009.

2.2. Estimation strategies

This sub-section investigates the wage gaps between temporary and permanent employment after controlling for different covariates as personal, job, and geographical characteristics. As in the standard Mincerian earnings equation, the wage equation is given by:

$$y = Z\alpha + X\beta + \varepsilon \quad (1)$$

where y denotes the logarithm of the hourly wage, Z is the dummy variable representing temporary employment, α accordingly captures the temporary employment's wage gap to be estimated. X is a set of explanatory variables considered as determining the wage rates, and β are their associated parameters. Finally, ε is the error term.

X systematically includes three groups of variables:

i. *Individual characteristics* and *Human capital*: gender, marital status, age and its square, education level (with 'No education' as the reference group).
ii. *Job characteristics*: occupations (a category variable), industries (with 'Agriculture' as the reference group), public sector (only for the Philippines).
iii. *Geographical characteristics*: rural area (= 1 if the worker lives in a rural area), province (a category variable).

In the function of data availability in each country, Equation (1) would include as many different control variables as possible in a typical Mincerian equation seen in the literature (see, for example, Edin and Richardson 2002; Albrecht *et al* 2003; Arulampalam *et al* 2007; Bosio 2014, among others). For instance, a large part of the wage gap could be explained by differences in human capital, such as schooling, work experience, or tenure. Meanwhile, controlling for job characteristics is vital as they might reflect unmeasured human capital. In this research, age is used as a proxy for potential experience.[7] Unfortunately, information on job tenure is unavailable in both countries.

Equation (1) could be performed with an ordinary least squares (OLS) estimator. However, estimates might suffer from so-called self-selection into wage employment. Indeed, the wage rate can only be observed for wage workers, who might not represent the whole labour force. The Heckman selection model could correct this bias if some identifying variables strongly affect the probability of being a wage worker, but not the wage level. Practical examples include household variables such as the income of the spouse, household wealth, non-labour household income, children, whether parents live together or live in the same neighbourhood, and marital status (Puhani 2000; Nawata and Ii 2004). Given the available dataset, this research relies on marital status and whether the individual is head of their household, as identifying variables. Married household heads may bear more pressure to work than others.

In addition to measuring wage gaps at the mean wage level, quantile regression estimations are also performed to investigate the wage gaps between temporary and permanent jobs throughout the wage distribution. This method

is relevant to identifying distributional effects that permit finding evidence for two opposite phenomena, namely, *sticky floor* and *glass ceiling*. Indeed, the temporary wage penalty might vary across the wage profile of workers. If it is greater in the lower tiers of the wage distribution, a *sticky floor* effect is at work. On the other hand, a *glass ceiling* effect implies that the wage gap widens in the upper tail of the wage distribution.[8] The *Sticky floor* effect can be measured by three indicators: (i) 10^{th} percentile-all gaps, (ii) 10^{th}–25^{th} percentiles difference, or (iii) 10^{th}–50^{th} percentiles difference. Likewise, three criteria can be applied to determine the existence of the *glass ceiling* phenomenon: (i) 90^{th} percentile -all gaps, (ii) 90^{th}–75^{th} percentiles difference, or (iii) 90^{th}–50^{th} percentiles difference.

The general quantile regression model can be written as

$$q_\varsigma(y) = Z\alpha(\varsigma) + X\beta(\varsigma) + \varepsilon, \varsigma \in [0,1] \quad (2)$$

where $q_\varsigma(y)$ is the ς^{th} conditional logarithm of hourly wage quantile. The set of coefficients $\beta(\varsigma)$ provides the estimated rates of return to the different covariates at the ς^{th} quantile of the log wage distribution and the coefficients $\alpha(\varsigma)$ measure the parts of the wage differentials that are the result of job-form difference at the various quantiles. In a quantile regression, the distribution of the error term is left unspecified.

3. Econometric analysis of wage differentials

This section aims to analyse the wage gaps in the two selected countries, focusing on those associated with job status. OLS analysis is reported in Subsection 4.1, followed by a quantile regression analysis in Subsection 4.2. Subsection 4.3 explains wage gaps between temporary and permanent workers.

3.1. OLS analysis

We start with the estimation of Equation (1). The OLS model findings are represented in column 1 of Tables 1–2 (detailed estimations are reported in column 1 of Tables A3–4).

The two selected countries share some common tendencies. First, temporary workers suffer, on average, a wage penalty. The incidence is five per cent in Indonesia, two per cent in the Philippines. Second, females earn less than males (23 per cent in Indonesia and 25 per cent in the Philippines), *ceteris paribus*. Being head of the household could positively affect the wage rate (around two-three per cent in both countries). Third, human capital is highly correlated with the wage rate. On the one hand experience, approximated by age, appears to be positively correlated with individual wage. One more year of age is associated with an around two-three per cent increase in the wage rate, other things being equal. Further, the higher the education level, the higher the wage, although the wage impact of education seems to be more important in Indonesia. In the Philippines, while high schooling is associated with a 25 per cent increase in individual wages, university-and-above graduates could earn

Table 1. Temporary-Permanent Workers' Wage Gap: Indonesia

Dependent variable		lhwage				
Estimator	OLS	Quantile regression				
Estimation point	Mean	QR .10	QR .25	QR .50	QR .75	QR .90
	(1)	(2)	(3)	(4)	(5)	(6)
Temporary employment	–0.047***	–0.040***	–0.038***	–0.050***	–0.070***	–0.059***
	(0.004)	(0.008)	(0.006)	(0.005)	(0.005)	(0.007)
Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Job characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Geographic characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Observations	163,584	163,584	163,584	163,584	163,584	163,584

Source: Indonesian LFS 2007. Robust standard errors in parentheses: ***p<0.01, **p<0.05, *p<0.1.

Table 2. Temporary-Permanent Workers' Wage Gap: the Philippines

Dependent variable		lhwage				
Estimator	OLS	Quantile regression				
Estimation point	Mean	QR .10	QR .25	QR .50	QR .75	QR .90
	(1)	(2)	(3)	(4)	(5)	(6)
Temporary employment	–0.016**	–0.042***	–0.035***	–0.024***	–0.027***	–0.022***
	(0.007)	(0.010)	(0.008)	(0.006)	(0.006)	(0.008)
Individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Job characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Geographic characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,392	33,392	33,392	33,392	33,392	33,392

Source: Indonesian LFS 2007. Robust standard errors in parentheses: ***p<0.01, **p<0.05, *p<0.1.

half as much again as the uneducated, *ceteris paribus*. In Indonesia, compared to a no-educated situation, holding a high-school degree could increase the wage rate by 28 per cent, while getting a 'university-and-above' degree could boost the wage rate by 60 per cent.

Divergences between the two countries occur regarding business sectors and geographical location. In Indonesia, manufacturing wage jobs are likely the best remunerated among all industries, while in the Philippines, the best-remunerated is the trade sector. In terms of geographical location, working in rural areas is unsurprisingly associated with a wage penalty (about eight per cent) in the Philippines. Interestingly, working in rural areas in Indonesia yields a higher wage, albeit small (three per cent), than in urban areas. This surprising outcome could be because of a high incidence of rural employees in the agriculture sector (39.6 per cent), where the wage is higher than in the services sector, in which there is a high incidence of urban workers (about half of those workers work in the services sector). However, it must be borne in mind that these results onlyarise from Indonesia's 2007 LFS.

Comparing the public and private sectors, in the Philippines workers in the public sector earn a wage rate 25 per cent higher than in the private sector, *ceteris paribus*. In Indonesia, members of trade unions tend to obtain, on average, a higher wage than non-members, by ten per cent. In addition, Indonesian workers having social security, an indicator for formal jobs, are much better remunerated than their uncovered counterparts (by 40 per cent).

The question of self-selection into wage employment and the reliability of OLS estimates are addressed with Heckman procedure.[9] In general, the 'corrected' estimates remain similar to those of the OLS models. Further, all control variables have the same signs and close magnitudes, despite the presence of sample selection in the two selected countries. These outcomes highlight that controlling for marital status and household head in OLS regression yields similar results from applying the Heckman method, with marital status and household head serving as identifying variables in the first stage. These findings assure the relevance of the OLS models used above.

In what follows, Quantile Regression estimators, without Heckman correction, are performed to investigate the wage inequality alongside the wage profile in Indonesia and the Philippines. These regressors are suitable for testing for a *sticky floor* and a *glass ceiling* effect in the two countries.[10]

3.2. Quantile regression analysis

Tables A3–4 (columns 2–6) in the Appendix provide detailed quantile estimation results for each country. Before focusing on the wage gaps between temporary and permanent employment, We consider the covariates having high impacts on the wage rate. There is a wage penalty against female employees in both countries, regardless of their position on the pay ladder. The penalty is highest at the 10th quantile (28 per cent in Indonesia and 29 per cent in the Philippines) and lowest at the 90th quantile (18 per cent in Indonesia and 16 per cent in the

Philippines) of the wage profile, implying a *sticky floor* phenomenon in both countries.

The sticky floor effect against female Filipino workers could be related to their less favourable access to employment opportunities than their male counterparts. They seem to engage in insecure jobs with less skill and lower-income, such as house cleaners, cooks, caretakers, or babysitters (Riguer 2008). That said, higher-paid female workers possess superior characteristics, such as being highly educated (about 80 per cent of them reach the university level or above) or occupational (as professional workers). Similarly, Indonesian female workers at the bottom of the pay ladder mostly engage in less skilled and low-income elementary occupations. Moreover, they are more active in the informal sector (ILO 2011). In sum, these factors would generate wider gender wage gaps at the bottom and lower gender wage gaps across the paid ladder in both countries.

Tables A3–4 also display a wage premium associated with educational level throughout the wage distribution. In Indonesia, workers holding a university-and-above degree might earn at least 55 per cent more than those with no degree. The wage gaps jump to more than 60 per cent for workers at the lower tails of the pay ladder. Such skill wage differentials are also found in the Philippines, but to a lesser extent.

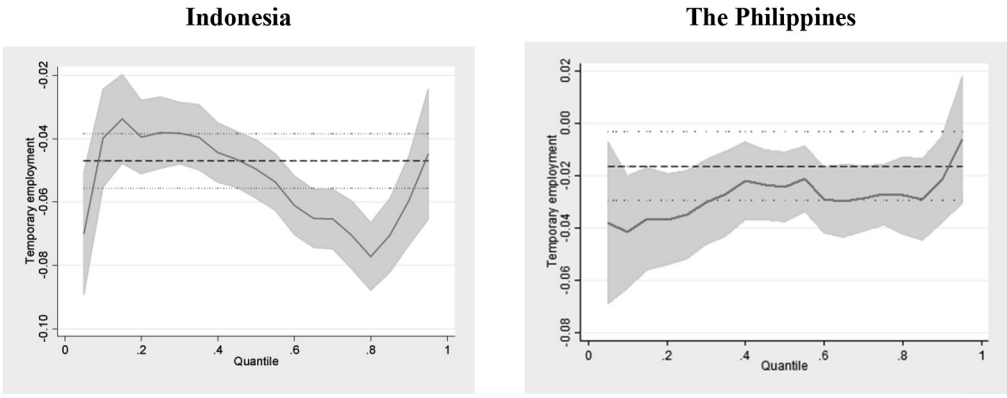
Considering the particularity of each country's LFS, Tables A3–4 report some specific issues. In Indonesia, having a formal job (e.g. engaging in a job with social security) seems vital for low-paid workers because they could earn about 47–57 per cent less without this protection. In the Philippines, the public sector provides better remuneration. The wage gaps, as compared to private sectors, might vary from 20 per cent to 30 per cent, depending on the worker's position in the wage distribution.

As for the wage gaps associated with job status, the variation of temporary-permanent workers' wage differentials along the wage distribution is illustrated in Figure 2. Interestingly, there are diverse distribution patterns of temporary-permanent workers' wage gaps. A *glass ceiling* effect seems to be relevant in Indonesia. Although there is a wage penalty against temporary workers in the Philippines, the wage gaps are broadly stable across different percentiles of the wage profile.

In the Philippines, no clear distributional effects of the penalty associated with temporary employment status can be found along the pay ladder. Although the point estimates seem to exhibit an upward trend graphically, the confidence intervals are so large that no significant distributional effect could be present. These findings indicate, in other words, that Filipino temporary workers suffer financially similar levels of penalty (around two-four per cent) at any position in the wage distribution.

By contrast, the temporary workers' wage penalty in Indonesia gradually increases from 3.5 per cent (20^{th} percentile) to eight per cent (80^{th} percentile) before falling to five per cent (95^{th} percentile). A *glass ceiling* is therefore visible in this country. However, three indicators mentioned in Arulampalam *et al*

Figure 1: Temporary-permanent wage gaps in Indonesia and the Philippines



Source: Indonesian LFS 2007, Filipino LFS 2009.

(2007) and Christofides *et al* (2013) (90th percentile -all gaps, 90th–75th percentiles difference, or 90th–50th percentiles difference) are not present in Indonesia. The *glass ceiling* phenomenon in this country has a 'J-sharp' form and seems to be associated with the '75th percentile-all gap'. This implies that the wage penalty is greater at the 75th percentile, but narrower at both the bottom and the top of the conditional wage distribution.

These mixed results arise even though the two countries have a minimum wage law and labour unions. Mertens *et al* (2007) also point out different experiences of wage penalty associated with FTCs between Germany and Spain, even though they are both considered 'rigid' economies. Many other institutions and socioeconomic factors might be at work. What follows attempts to provide an interpretation and discussion of the wage inequality associated with job status, by considering these factors.

3.3. Discussion and interpretation

From a theoretical point of view, different factors contribute to the existence of a *sticky floor* effect. Since most temporary workers who belong to the disadvantaged labour segment, are found in the lower tiers of the wage distribution, they are likely to face a more significant wage penalty at the bottom of the wage distribution (Comi and Grasseni 2012). Likewise, excessive labour protection for permanent workers resulting from unions could widen the wage penalties at the lower end of the wage distribution (Salvatori 2009). A *sticky floor* effect might also come from the absence of a minimum wage law, leaving new temporary entrants unprotected from severe wage discrimination. Analogous statements could be found in Ge *et al* (2011) and Agrawal (2013) regarding the gender wage gap.

By contrast, the presence of equal opportunity, anti-discrimination laws, and minimum wage laws would effectively reduce the wage gap in the lower tail of the wage distribution, possibly bringing about a *glass ceiling* effect. If unions also represent temporary workers, their effort to equalise wages, particularly for low-income earners, could have a similar impact as the minimum wage law. For instance, in the gender wage gap context, Albrecht *et al* (2003) argue that parental leave policy and the daycare system could explain the glass ceiling effect between men and women in Sweden. Such equal opportunity policies protect and encourage Swedish women to participate in the labour force. However, such policies can lead employers to anticipate less career commitment from their female workers. Further, relatively high wages at the bottom of the wage profile make it challenging for oriented-career women to meet childcare assistance, leading them to choose less demanding jobs. All of these reasons explain why the Swedish gender wage gaps are lower at the bottom and wider at the top of the wage distribution.

In the same vein, Arulampalam *et al* (2007) assert that gender-specific policies (equal opportunity, parental leave positions, and childcare availability) and wage-setting institutions (proxied by union membership rates) would favour the presence of a glass ceiling phenomenon. Consequently, European countries providing more 'generous' work-family policies (for example, Denmark and the Netherlands) also experience a large gap at the upper and a small gap at the lower tail of the wage profile. Christofides *et al* (2013) provide similar assessments when discussing the presence of glass ceiling or sticky floor effects on gender wage gaps in Europe. Although empirical evidence on the glass ceiling phenomenon mostly concerns gender wage gaps, the main arguments remain relevant in the context of temporary-permanent wage differentials.

Consistently, the *glass ceiling* effect observed with Indonesian data might be related to the presence of equal opportunity and anti-discrimination laws. The Manpower Protection Act in 2003,[11] for example, emphasises the protection of workers, defined as 'every person who works for a wage or other forms of remuneration', which is intended to 'secure the implementation of equal opportunity and equal treatment without discrimination on whatever basis to realise the workers' welfare. Indonesia also introduced a three-pillar social security system, including publicly funded social assistance, which benefits the old and poor. The National Social Security Law (2004)[12] mandates the extension of social security coverage to the whole population, applying non-contributory schemes for the poor. Indonesia also strives to provide forms of protection and assistance to disadvantaged groups through programmes such as the National People Empowerment Program and the Conditional Cash Transfer scheme.

The temporary job wage penalty in the Philippines is modest and stable across the wage distribution. Such high remuneration equality might be related to their labour market institutions, regulation, and trade union strategy. Indeed, the Filipino Labour Code promotes equal benefits for workers, regardless

of their contractual status. In addition, the Supreme Court protects employees' rights, with many decisions in favour of temporary workers, such as minimum wage, cost-of-living allowance, sick leave, holiday pay, etc. For instance, the Department of Labour and Employment (Order N° 18-A) ensures temporary employees enjoy the same benefits and privileges as permanent workers. These benefits include service incentive leave, rest days, overtime pay, holiday pay, 13th-month pay and separation pay, social security and welfare benefits, etc. In the same vein, Article 82 of the Labour Code requires the application of the benefits on working conditions to all employees, covering work hours, weekly rest periods, holidays, and service charges.

Meanwhile, under Article 279 of the Labour Code, when being unjustly dismissed (and later conferred with regular status), temporary workers shall get the same rights and benefits as their permanent counterparts. These rights and benefits contain total back wages, including allowances and other monetary benefits (ITUC 2014). Filipino trade unions also contribute to the small wage gaps between temporary and permanent jobs. For example, unionised firms get a lower rate of dismissed temporary workers than their non-unionised counterparts. By contrast, those workers have a lower rate of retrenchment in unionised firms than in non-unionised firms (ITUC 2014). Moreover, Filipino trade unions have also employed complementary strategies at the enterprise, industry, and national levels to protect non-regular workers (Serrano *et al* 2014).

In sum, although the Philippines and Indonesia have some common labour laws and regulations (minimum wage, freedom to join a collective association, equal opportunities at work, etc.), there is a difference in wage gaps associated with job status in both countries. This is possibly shaped by the respect of labour laws and regulations in practice. For instance, in the Philippines, the Supreme Court protects the rights of temporary workers, as they must have the same rights as their regular counterparts. Indonesian employers, however, frequently violate the laws and regulations on contractual employment. For example, to avoid the change of job status from temporary to permanent employment, many Indonesian employers decide to terminate the contract before its end without any compensation (ITUC 2014).

4. Concluding remarks

This research investigates the wage differentials associated with job status in Indonesia and the Philippines. We find evidence of wage penalties against temporary workers in both countries. Nevertheless, the wage gaps are mostly small, and there is no distributional effect in the Philippines. On the other hand, a *glass ceiling* effect seems to be present in Indonesia. Gender and skill wage inequalities are other issues in both countries.

There are important policy implications from the findings of this research. In the Philippines, although trade unions contribute to reducing the wage gaps, they only represent a low share of temporary workers (ITUC 2014). The latter

fear they might lose their job or their employers will not extend their contracts, hence trade unions should pay more attention to temporary workers. Moreover, training temporary workers so that they understand their rights is important. Policies such as providing funds or training that help temporary workers to enhance their skills are also essential. In addition, the Filipino government could provide more social and monetary aid for temporary low-income jobs.

Several measures could be implemented to reduce Indonesia's temporary-permanent employment wage gaps. First, the above propositions for the Philippines could also be suitable for Indonesia. Second, as the Indonesian social security system provides very little coverage for temporary workers, this coverage could be extended to all. Most importantly, there should be measures to improve the efficiency of labour laws and regulatory compliance. For instance, more frequent policing of the respect of the law in enterprises or increasing the amount of forfeiture in the case of non-respect seem to be helpful.

This study opens some lines for further research. First, given the wage inequality against temporary workers, it would be interesting to investigate factors driving wage workers to engage in temporary jobs in both countries. Consequently, one could provide some policy implications to help them hold a permanent contract more easily. Second, searching for factors that explain the wage gaps is also essential to reduce wage inequality.

Data Availability Statement:
The data used in this research is available upon request.

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Endnotes

1. EM Normandie Business School, Métis Lab, 20 Quai Frissard – 76600 Le Havre. Email: tnguyenhuu@em-normandie.fr. The author shows his special gratitude to the associated editor, two anonymous referees, Mariya Aleksynska, Cuong Le-Van, Huu-Chi Nguyen, Thi-Thuy-Linh Le for sharing their valuable comments and expertise. The author also thanks the ILO for their provision of data and feedback that greatly assisted this research.

2. According to the ILO definition, non-standard employment is a job that does not conform to the criteria of standard employment (i.e., full-time, indefinite, with a direct relationship between employer and employee). Non-standard employment includes temporary, part-time, multi-party, disguised, and dependent self-employment.

For a definition of these types of non-standard employment, please refer to the following: https://www.ilo.org/infostories/Stories/Employment/Non-Standard-Employment#what-is-non-standard-employment/four-categories-of-non-standard-employment.

3. A *glass-ceiling* phenomenon occurs when the wage differentials are smaller at the lower tails before becoming wider at the upper tails of the wage distribution. Please refer to Section 2.2 and Section 3.3 for a more in-depth discussion.

4. The social factors index is computed by weighting multiple critical social indicators, including health (45%), Education (25%), and Employment (30%). It measures the nation's relationship with its citizens, population, workers, and communities. The social factors index is 80.8 in the Philippines and 78.8 in Indonesia. In Southeast Asia, their rankings are respectively fifth and sixth after Singapore, Malaysia, Thailand, and Vietnam. Life expectancy is 71 years in both countries, ranking them sixth and seventh amongst the countries of the Association of South East Asian Nations. Source: worldeconomics.com.

5. Please refer to Table A1 in the Appendix for each country's wage and temporary employment definition based on their LFS questionnaire.

6. A month has, on average, 30 days. Hence, it has about 4.3 (=30/7) weeks.

7. Note that data on actual work experience are usually rare. Consequently, the worker's potential experience in the labour market can be computed by the difference between the year when the LFS was conducted and the year when he/she got his/her last diploma. However, in this research, we could not introduce 'age' and 'experience' in estimation because of their high correlation.

8. The literature on such effects are mostly dedicated to gender wage or earnings gaps (see, for example, Albrecht *et al*, 2003; Arulampalam *et al* 2007; Ge *et al* 2011; Agrawal 2013; Christofides *et al* 2013; Fang and Sakellariou 2015). However, important lessons could be drawn and applied in the context of temporary-permanent wage differentials.

9. Please refer to Table A5 in the Appendix for the estimation results of the Heckman method.

10. There is scarce literature on quantile selection models (Arellano and Bonhomme, 2017). For instance, Buchinsky (2001) provides an additive approach to control for sample selection in a quantile estimator. Arrelano and Bonhomme (2017) develop a non-additive quantile model to explain changes in gender wage inequality in the United Kingdom. For technical reasons, we could not apply this method to our data. Indeed, performing the Arrelano and Bonhomme (2017) estimator requires estimating a Compula Parameter . The authors argue that, for a low-dimensional as in their application, one may apply grid search. However, with a higher-dimensinal as in our data, the estimation is not straightforward.

Given the above similar results between an OLS and a Heckman correction estimator in the two studied countries and a high number of control variables, we believe that quantile regressions, with or without sample correction, would provide similar results.

11. Source: http://www.ilo.org/dyn/travail/docs/760/Indonesian%20Labour%20Law%20-%20Act%2013%20of%202003.pdf

12. Source: https://www.ituc-csi.org/the-reform-of-social-security-in?lang=en

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APPENDIX

Table A1. Definition of wage and temporary employment in national Labour Force Surveys

	Indonesia (2007)	**Philippines (2009)**	
Survey question to define temporary employment	What is the status of (NAME) in his/her main job in the last one week?	Nature of employment (1)	Classe of worker (2)
	1. Self employed	1. Permanent job/business/unpaid family work	1. Work for private household
	2. Self-employed assisted by temporary/unpaid worker	2. Short-term or seasonal or casual job/business/unpaid family work	2. Work for private establishment
	3. Employer with permanent/paid workers	3. Worked for different employer on day to day or week to week basis	3. Work for government
	4. Employee		4. Self-employed without any paid employee
	5. Casual employee in agriculture		5. Employer in own family-operated farm or business
	6. Casual employee in non-agriculture		6. Worked with pay on own family-operated farm or business
	7. Unpaid worker		7. Worked without pay on own family-operated farm or business
Wage workers	4, 5, 6	1, 2, 3 of (2)	
Temporary Employment	5, 6	2, 3 of (1) and 1, 2, 3 of (2)	

Source: Indonesian LFS 2007, Filipino LFS 2009.

Table A2. Temporary employees in Indonesia and the Philippines: Statistical Description

	Indonesia	Philippines
Wage workers, as % of total employment	38.45	53.19
Temporary workers, as % of wage workers	27.01	24.25
Temporary workers, as % of wage workers, by sex		
Male	28.35	25.54
Female	24.07	22.12
Temporary workers, as % of wage workers, by age		
15–24	22.1	39.63
25–54	26.32	19.63
55–64	45.44	16.39
Temporary workers, as % of wage workers, by level of education		
No education	71.87	39.3
Elementary	47.66	32.49
High school and vocational	14.8	28.37
University and more	0.47	14.22
Temporary workers, as % of wage workers, by sector		
Public	N.A.	10.34
Private	N.A.	26.76
Temporary workers, as % of wage workers, by industry		
Agriculture	71.37	44.57
Manufacturing	24.25	21.78
Trade	8.15	37.68
Services	7.35	17.86
Temporary workers, as % of wage workers, by occupational groups		
Legislators, senior officials and managers	0.06	4.58
Professionals	0.52	6.64
Technicians and associate professionals	1.69	15.44
Clerks	0.45	15.27
Service workers and shop and market sales workers	7.14	23.64
Skilled agricultural and fishery workers	65.19	22.52
Craft and related trades workers	29.46	25.48
Plant and machine operators and assemblers	9.23	17.67
Elementary occupations	48.49	35.85
Temporary/permanent wage ratio (hourly, in %)	49.12	64.73

Source: Indonesian LFS 2007, Filipino LFS 2009. Author's calculation

Table A3. Temporary-Permanent Wage Gap in Indonesia

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	OLS	QR .10	QR .25	QR .50	QR .75	QR .90
Temporary Employee	–0.047***	–0.040***	–0.038***	–0.050***	–0.070***	–0.059***
	(0.004)	(0.008)	(0.006)	(0.005)	(0.005)	(0.007)
Individual characteristics						
Female	–0.225***	–0.280***	–0.266***	–0.222***	–0.187***	–0.175***
	(0.004)	(0.007)	(0.006)	(0.005)	(0.005)	(0.007)
Head of household	0.027***	0.037***	0.027***	0.027***	0.025***	0.027***
	(0.005)	(0.008)	(0.006)	(0.005)	(0.005)	(0.007)
Marital status (reference: single)						
Married	0.080***	0.073***	0.079***	0.072***	0.067***	0.075***
	(0.005)	(0.009)	(0.007)	(0.005)	(0.006)	(0.008)
Widowed	–0.048***	–0.063***	–0.062***	–0.047***	–0.052***	–0.010
	(0.013)	(0.020)	(0.017)	(0.014)	(0.015)	(0.022)
Divorced	–0.019	–0.026	–0.028**	–0.039***	–0.044***	–0.003
	(0.012)	(0.017)	(0.014)	(0.012)	(0.013)	(0.019)
Human capital						
Age	0.028***	0.031***	0.031***	0.027***	0.024***	0.021***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age squared	–0.000***	–0.000***	–0.000***	–0.000***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education (reference: no education)						
Primary and secondary	0.137***	0.122***	0.135***	0.145***	0.135***	0.147***
	(0.011)	(0.014)	(0.012)	(0.011)	(0.012)	(0.016)
High school	0.281***	0.269***	0.287***	0.292***	0.269***	0.262***
	(0.012)	(0.014)	(0.013)	(0.011)	(0.012)	(0.017)
University and above	0.603***	0.608***	0.626***	0.595***	0.553***	0.579***
	(0.013)	(0.018)	(0.015)	(0.013)	(0.014)	(0.019)
Job characteristics						
Industry (reference: agriculture)						
Manufacturing	0.129***	0.130***	0.153***	0.155***	0.125***	0.087***
	(0.006)	(0.011)	(0.008)	(0.006)	(0.007)	(0.009)
Trade	0.009	0.037**	0.033***	0.025***	0.004	–0.023
	(0.009)	(0.015)	(0.011)	(0.009)	(0.011)	(0.014)
Services	0.011*	–0.033***	–0.001	0.038***	0.056***	0.062***
	(0.007)	(0.011)	(0.009)	(0.007)	(0.008)	(0.010)

Trade union membership	0.109*** (0.005)	0.084*** (0.010)	0.097*** (0.007)	0.105*** (0.006)	0.099*** (0.006)	0.102*** (0.008)
Formal employment (Social security)	0.400*** (0.004)	0.569*** (0.007)	0.468*** (0.005)	0.370*** (0.004)	0.304*** (0.005)	0.266*** (0.006)
Occupation	Yes	Yes	Yes	Yes	Yes	Yes
Geographical characteristics						
Rural area	0.026*** (0.003)	0.013** (0.006)	0.020*** (0.005)	0.032*** (0.004)	0.036*** (0.004)	0.023*** (0.005)
Region	Yes	Yes	Yes	Yes	Yes	Yes
Constant	8.021*** (0.023)	7.329*** (0.040)	7.645*** (0.032)	8.041*** (0.025)	8.393*** (0.026)	8.689*** (0.033)
Observations	163,584	163,584	163,584	163,584	163,584	163,584
R-squared	0.485					

Source: Indonesian LFS 2007. Robust standard errors in parentheses; ***p<0.01, **p<0.05, *p<0.1.

Table A4. Temporary-Permanent Wage Gap in the Philippines

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	OLS	QR .10	QR .25	QR .50	QR .75	QR .90
Temporary Employee	–0.016** (0.007)	–0.042*** (0.010)	–0.035*** (0.008)	–0.024*** (0.006)	–0.027*** (0.006)	–0.022*** (0.008)
Individual characteristics						
Gender Female	–0.249*** (0.007)	–0.290*** (0.012)	–0.283*** (0.009)	–0.231*** (0.008)	–0.161*** (0.007)	–0.149*** (0.009)
Head of household	0.017** (0.008)	0.037*** (0.012)	0.019** (0.009)	0.015** (0.007)	0.010 (0.006)	0.020** (0.009)
Marital status (reference: single)						
Married	0.094*** (0.008)	0.106*** (0.012)	0.095*** (0.010)	0.063*** (0.008)	0.060*** (0.007)	0.052*** (0.009)
Widowed	0.031 (0.020)	0.010 (0.028)	0.003 (0.022)	0.015 (0.016)	0.011 (0.022)	–0.005 (0.023)
Divorced	0.024 (0.022)	–0.026 (0.061)	–0.014 (0.024)	–0.004 (0.031)	0.009 (0.011)	0.020 (0.029)

Human capital						
Age	0.022***	0.025***	0.022***	0.020***	0.014***	0.014***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Age squared	–0.000***	–0.000***	–0.000***	–0.000***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education (reference: no education)						
Primary and secondary	0.155***	0.163***	0.144***	0.138***	0.147***	0.166***
	(0.039)	(0.037)	(0.043)	(0.047)	(0.037)	(0.053)
High school	0.250***	0.258***	0.231***	0.229***	0.231***	0.230***
	(0.039)	(0.038)	(0.043)	(0.047)	(0.037)	(0.052)
University and above	0.533***	0.515***	0.501***	0.487***	0.433***	0.470***
	(0.040)	(0.039)	(0.044)	(0.047)	(0.037)	(0.053)
Job characteristics						
Industry (reference: agriculture)						
Manufacturing	0.014	–0.144***	–0.064***	0.068***	0.140***	0.162***
	(0.011)	(0.018)	(0.015)	(0.011)	(0.011)	(0.016)
Trade	0.108***	0.147***	0.123***	0.148***	0.136***	0.064***
	(0.010)	(0.014)	(0.012)	(0.009)	(0.011)	(0.013)
Services	–0.186***	–0.397***	–0.329***	–0.145***	–0.004	0.065***
	(0.010)	(0.015)	(0.012)	(0.010)	(0.011)	(0.014)
Public sector	0.253***	0.240***	0.302***	0.292***	0.264***	0.202***
	(0.010)	(0.018)	(0.013)	(0.010)	(0.008)	(0.011)
Occupation	Yes	Yes	Yes	Yes	Yes	Yes
Geographical characteristics						
Rural area	–0.075***	–0.070***	–0.070***	–0.062***	–0.067***	–0.074***
	(0.007)	(0.010)	(0.008)	(0.006)	(0.006)	(0.008)
Region	Yes	Yes	Yes	Yes	Yes	Yes
Constant	3.124***	2.562***	3.050***	3.190***	3.517***	3.708***
	(0.065)	(0.111)	(0.085)	(0.062)	(0.060)	(0.099)
Observations	33,392	33,392	33,392	33,392	33,392	33,392
R-squared	0.566					

Source: Filipino LFS 2009. Robust standard errors in parentheses; ***p<0.01, **p<0.05, *p<0.1.

Table A5. Heckman estimation of Temporary-Permanent Wage Gap in Indonesia and the Philippines

	Indonesia		The Philippines	
	(1)	(2)	(3)	(4)
VARIABLES	First step	Second step	First step	Second step
Temporary Employee		–0.042***		–0.018***
		(0.010)		(0.007)
Individual characteristics				
Gender Female	–0.238***	–0.238***	0.013	–0.251***
	(0.004)	(0.004)	(0.015)	(0.007)
Human capital				
Age	–0.006***	0.038***	0.022***	0.029***
	(0.001)	(0.001)	(0.002)	(0.001)
Age squared	–0.000***	–0.000***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Education (reference: no education)				
Primary and secondary	–0.004	0.147***	0.096*	0.151***
	(0.013)	(0.011)	(0.052)	(0.034)
High school	0.054***	0.285***	0.068	0.248***
	(0.014)	(0.011)	(0.053)	(0.034)
University and above	0.507***	0.593***	0.319***	0.514***
	(0.019)	(0.012)	(0.054)	(0.035)
Job characteristics				
Industry (reference: agriculture)				
Manufacturing	–0.067***	0.133***	0.616***	–0.032**
	(0.013)	(0.006)	(0.023)	(0.015)
Trade	–1.388***	0.080***	1.783***	0.015
	(0.013)	(0.011)	(0.038)	(0.023)
Services	–0.788***	0.044***	0.222***	–0.211***
	(0.012)	0.133***	(0.019)	(0.011)
Public sector			1.001***	0.211***
			(0.025)	(0.013)
Trade Union membership	1.515***	0.086***		
	(0.032)	(0.006)		
Formal employment (Social security)	1.079***	0.369***		
	(0.012)	(0.005)		
Occupation	Yes	Yes	Yes	Yes

Geographical characteristics				
Rural area	–0.184***	0.037***	–0.216***	–0.062***
	(0.006)	(0.004)	(0.014)	(0.007)
Region	Yes	Yes	Yes	Yes
Selection variables				
Head of household	0.094***		0.421***	
	(0.008)		(0.017)	
Marital status (reference: single)				
Married	–0.322***		–0.197***	0.063***
	(0.008)		(0.017)	(0.008)
Widowed	–0.111***		–0.175***	0.015
	(0.019)		(0.036)	(0.016)
Divorced	–0.230***		–0.118***	–0.004
	(0.016)		(0.044)	(0.031)
Constant	3.379***	7.858***	–0.320**	3.132***
	(0.097)	(0.023)	(0.138)	(0.064)
Mill Ratio		–0.105***		–0.119***
		(0.009)		(0.025)
Observations	495,295	495,295	76,430	76,430

Source: Indonesian LFS 2007 and Filipino LFS 2009. Robust standard errors in parentheses: ***p<0.01, **p<0.05, *p<0.1.