

Wage Differentials between Temporary and Permanent Workers in Developing Asian Countries*

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Abstract

This paper is the first research work that systematically examines the temporary-permanent wage gap in selected Asian countries, based on their national Labor Force Survey data. Our estimates indicate the presence of a temporary employment's wage penalty in Indonesia, Pakistan, the Philippines and Vietnam, and contrarily, a wage premium in Cambodia. Moreover, Quantile Regression Estimates show that wage differentials could greatly vary across the wage distribution. The wage gap is wider at the bottom of the wage distribution suggesting a sticky floor effect in Vietnam and Pakistan whereas the glass ceiling effect in Indonesia prevents temporary workers from approaching high wages.

Keywords: Temporary Employment, Wage Gap, Glass ceiling, Sticky floor

JEL Classification Numbers: J30, J31, J80

1 Introduction

The past several decades have witnessed the rise of non-standard forms of employment (NSFE), understood as jobs that do not conform to criteria of standard employment (that is full-time and indefinite), in many parts of both the developed and the developing worlds (Serrano et al., 2014; ILO, 2015b among others). One important category of NSFE is temporary employment, referring to jobs with limited duration, namely fixed-term, project or task-based contracts, seasonal and casual work, including day-laborers (ILO, 2015b). In Europe, for example, temporary employment rate increased from nine percent in 1987 to 15.2 percent in 2006 (ibid).

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Temporary jobs, on the one hand, could provide firms as well as workers with greater adjustment and flexibility. On the other hand, they are often associated with poor job quality, in terms of lower earnings, higher level of labor market insecurity and higher job strain (OECD, 2014). Existing literature has usually raised the question of whether temporary workers being discriminated against in terms of payment or not, the extent and distribution pattern of such discrimination; since most of the theories, such as Human Capital, Efficiency Wage, Labor Market Duality or Insider-outsider models put forward various reasons why the former may receive lower wages, and available empirical evidence also supports this wage penalty. However, there is still a possibility that temporary employees are better remunerated to compensate for other non-wage disadvantages (the theory of Equalizing Difference).

Therefore, empirical studies on the wage gap between temporary and permanent jobs are of great importance for better understanding challenges associated with temporary employment as well as developing policy proposals. Yet, in developing Asian countries, evidence on temporary-permanent wage differential is extremely limited. Most available studies on Asia have been for Japan and the Republic of Korea or on the formal-informal wage gaps in less-developed nations. Moreover, existing evidence on temporary-permanent employment's wage differential mainly relies on simple 'raw' wage gaps, while little is known about the 'pure' wage gaps derived from empirical wage equations. Furthermore, although studies in developed economies suggest that wage penalties highly depend on the relative position in the wage distribution, to the best of our knowledge, such evidence is non-existent for Asian developing countries.

This paper makes an important contribution to the literature as the very first systematic research work examining the wage gap between temporary and permanent workers in developing Asian economies. The analyses are based on the national Labor Force Survey (LFS) data of Cambodia, Indonesia, Pakistan, the Philippines and Vietnam provided by the ILO. Interestingly, evidence for both temporary workers' wage penalty and premium is found. On the one hand, temporary workers suffer from wage penalties of at least two percent in Indonesia, Pakistan, the Philippines and Vietnam; on the other hand, they benefit from a wage premium of five percent in Cambodia. Vietnam and Pakistan are the countries where the wage penalty is the most severe. In addition, Quantile Regression results show that temporary wage differentials highly depend on the relative position in the conditional wage distribution, except in the Philippines and Cambodia, where temporary workers encounter similar levels of wage penalty/premium at any positions in the pay ladder. Both sticky floor and glass ceiling effects occur. The temporary employment's wage gap is wider in the lower tiers of the wage distribution in Vietnam and Pakistan, suggesting that the penalty of being in temporary jobs could be more severe for disadvantaged workers, whereas the glass ceiling effect in Indonesia prevents temporary workers from approaching high wages.

The paper is structured as follows. Section 2 provides an overview of theoretical and empirical literature on the wage differentials related to NSFE and temporary jobs, with a primary focus on Asian evidence. Section 3 presents the economic and labor market contexts of the studied countries, data description and empirical strategies. Results derived from econometric models are analyzed in Section 4, followed by concluding remarks (section 5).

2 Literature review

2.1 Theoretical background

To facilitate research on temporary employment, an accurate and comparable definition of this concept should be established. According to ILO (2015b), temporary employment refers to jobs with limited duration, namely fixed-term, project or task-based contracts, seasonal and casual work, including day-laborers. Temporary employment is one important category of NSFE, which is understood as jobs that do not conform to criteria of standard employment

(that is full-time and indefinite). This section aims to provide background theories on the motivations of engaging in NSFE in general and on the temporary-permanent workers' wage gap in particular.

Why workers and firms seek NSFE?

Firms and workers seek NSFE for different purposes. On the demand side, there are three main reasons explaining the use of NSFE: cost advantages, flexibility, and technological changes.

First, NSFE are often associated with lower wage and non-wage costs for enterprises (Courtney von et al., 1997; Nesheim et al., 2007). It is believed that NSFE are the result of too much protection for standard jobs, including rigid labor regulations (Lee and Eyraud, 2008). For example, the amount of taxes and mandatory contributions on labor paid by the business in Vietnam constitute up to 19.2 percent of their commercial profits. In China, the figure reaches 68 percent (Business, 2009). Thus, using NSFE could be a way that employers evade the mandatory contribution burden. Employing workers managed by third parties can also save firms the expenses in screening, administering and supervising workers (Kalleberg et al., 2003).

Second, non-standard employment offers firms greater flexibility, numerically or functionally. Debrah and Smith (2002) assert that the expansion of NSFE is driven largely by demands for flexibility of employers in the context of deregulated labor markets and intense market competition. Temporary work has always existed to cope with seasonal demand (Harrison and Kelley, 1993) and labor supply fluctuations (Ko, 2003). Since the rise of Toyotism with just-in-time production in the latter part of the twentieth century (Edgell, 2012), organizations are able to hire workers for short time periods, allowing them to control the size of their workforce rather rapidly. Moreover, NSFE can help organizations handle specific, typically short-term tasks, which require special skills unavailable in-house (Kalleberg et al., 2003).

Third, technological changes have facilitated non-standard forms of work. The development of online services has enabled employees to contact with each other and with the employer, regardless of space and time distances. Consequently, administrative and physical attachment to the organization is limited.

On the supply side, NSFE is either a voluntary or involuntary choice of workers. On the one hand, workers voluntarily seek NSFE to accommodate family, school or other obligations, to acquire extra income, skills, experience and network. Part-time jobs, for instance, are often taken by women who are bound with family responsibilities. A further example is in Australia, where the highest level of job satisfaction is recorded for fixed-term workers (Lee and Eyraud, 2008). On the other hand, NSFE could be an involuntary, situational solution of workers when they are unable to obtain standard jobs immediately. For instance, about a half of non-regular workers in Korea declared that being this kind of workers is an involuntary choice because they need money instantly or they cannot find any satisfactory jobs other than this (Lee and Lee, 2007). A number of studies in Asia have found high transition densities of workers from NSFE into regular paid jobs (Esteban-Pretel et al., 2011; Ghose, 2004; Kim and Lee, 2014).

Temporary workers: wage penalty or wage premium?

Given the above-mentioned particularities and motivations of NSFE, it is likely that non-standard workers suffer a penalty in terms of working conditions, particularly wages, compared to their standard counterparts. Various theories have been established to explain the underlying reasons for wage differentials between temporary and permanent workers. Although temporary jobs are often considered lower paid, associated with less favorable working conditions than permanent ones, a temporary work' wage premium is yet justified in the theory.

On the one hand, there are numerous theories indicating a temporary workers' wage penalty, including Human Capital theory, Efficiency Wage theory, Labor Market Segmentation theory and Insider-Outsider model (Comi and Brasseni, 2012; Pacheco and Cochrane, 2015). The Human Capital theory attributes wage differentials to the amount of 'human capital' that

workers obtain. According to the Becker view, the Gardener view and the Schultz/Nelson-Phelps view, human capital is awarded in the labor market because it raises firms' profit.¹ Meanwhile, the Bowles-Gintis view asserts that higher educated workers would be better paid because they are more obedient to the orders and more reliable members of the firm. The Spence view argues that human capital might be rewarded as they reveal other workers' characteristics. When it is unlikely that temporary workers can finally obtain a permanent contract, they tend to invest in, or be provided with, a smaller amount of firm-specific training, and thus receiving lower wages (Booth et al., 2002). Alternatively, if employers have to invest in higher levels of specific training for temporary workers, this additional cost would unavoidably lead to a temporary wage penalty (Pacheco and Cochrane, 2015).

The Efficiency Wage theory asserts that high monitoring costs and uncertain product demand might induce profit maximizing firms to hire both temporary and permanent workers, with the former receiving a lower wage, even if they are homogeneous and perfect substitutes (James B. Rebitzer, 1991). Guell (2000) argues that the opportunity of contract renewal may be used as a 'carrot' to incentivize higher productivity from workers instead of wages.

According to Labor Market Segmentation (or Dual Labor Market) theory, the labor market is composed of two segments. The primary segment typically includes permanent and well paid jobs, particularly in large businesses with a stable work environment and various employment benefits, while the secondary segment is characterized by temporary and badly paid jobs under poor working conditions with high turnover rates (Doeringer and Piore, 1971; Reich et al., 1973).

The Insider-outsider model emphasizes the importance of high firing costs due to rigid labor market regulations. Consequently, firms prefer having a buffer stock of workers (the 'outsider') on fixed-term contracts (FTCs) and with limited employment rights, who can easily be laid off in case of adverse shocks. The risk of dismissal is therefore reduced for permanent employees (the 'insider') (Bentolila et al., 1994), who can then bargain for higher wages. In particular, if a union mainly represents the insiders, firms would employ cheaper temporary workers to cope with union wage pressure. Therefore, the presence of workplace unions is also responsible for the contract duality (Salvatori, 2009).

On the other hand, temporary jobs might offer better wages than permanent counterparts to compensate for their less attractive characteristics. According to the theory of Equalizing Differences, or Compensatory Differences, the total monetary and non-monetary advantages or disadvantages among work activities and among workers themselves could be equalized by the observed wage differentials. As a result, workers could possibly receive compensating wage premiums in doing jobs with undesirable non-wage characteristics (Brown, 1980; Rosen, 1986). In the context of temporary-permanent workers' wage differentials, first, the inconsistent nature of some forms of temporary employment such as seasonal jobs implies times of unemployment, thus temporary workers should be compensated for this. Second, favorable working conditions associated with long-term jobs such as job security, paid leave and other fringe benefits, could lead permanent workers to accept lower wages, as they are compensated in a non-pecuniary form.

In summary, the extent to which temporary workers are remunerated in comparison with permanent workers is still controversial theoretically. Although a majority of existing theories are in favor of a temporary job wage penalty, such a temporary-permanent workers' wage gap deserves thorough examination in the context of Asian developing countries before any conclusion is made.

¹Lectures in Labor Economics-MIT Economics. Source: economics.mit.edu/files/4689.

Sticky floor versus glass ceiling effects

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. Reversely, a glass ceiling effect means that the wage gap widens in the upper tail of the wage distribution. The literature on such effects are mostly dedicated to gender wage or earnings gaps (Albrecht et al., 2003; Arulampalam et al., 2007; Ge et al., 2011; Christofides et al., 2013; Agrawal, 2013; Fang and Sakellariou, 2015); however, important lessons could be drawn and applied in the context of temporary wage differentials.

The above-mentioned theories of labor market duality and unions in fact imply the sticky floor effect. Since a majority of temporary workers, who belong to the disadvantaged labor segment, is found in the lower tiers of the wage distribution, temporary workers are likely to face a larger wage penalty at the bottom of the wage distribution (Comi and Brasseni, 2012). Likewise, excessive labor protection for permanent workers resulting from unions could possibly widen the wage penalties at the lower end of the wage distribution (Salvatori, 2009).

A sticky floor effect could also come from the absence of minimum wage law, and/or labor markets being more flexible and less regulated, leaving new temporary entrants unprotected from serious wage discrimination. Analogous statements could be found in (Ge et al., 2011; Agrawal, 2013)) in the context of gender wage gap. By contrast, the presence of equal opportunity, anti-discrimination laws and minimum wage law effectively reduces the wage gap in the lower tail of the wage distribution, which possibly bring about a glass ceiling effect. If unions also represent temporary workers, their effort to equalize wages, particularly for low-income earners, could have a similar impact as the minimum wage law.

2.2 Empirical evidence on temporary-permanent workers' wage gap

Generally, existing evidence relies on two types of statistics, one is simply 'raw' wage gap, or in other words, the ratio (or its inverse) of temporary employment wage to permanent employment wage, and the other is the wage gap derived from empirical wage equations ('pure' wage gap) in which worker's personal and household characteristics are taken into account. Based on both types of statistics, temporary jobs are generally discriminated in terms of remuneration (McGinnity et al., 2005; ILO, 2008, 2015b; Jahn and Pozzoli, 2013; OECD, 2014 among others).

The empirical evidence on 'pure' wage penalties associated with temporary employment is extremely limited in developing Asian countries. Most of the available evidence has been referred to the informal-formal wage differentials or 'raw' temporary wage gaps.² Hasan and Jandoc (2009) find that in the Philippines in 2006, permanent workers earned on average 51 percent higher than casual workers did. In Indonesia, wage ratios are reported respectively 83.3 percent for FTC workers and 73.8 percent for outsourced workers compared to their permanent counterparts (Akatiga Foundation et al., 2010; cited in Serrano et al., 2014). In Bangladesh, the average wage ratio between casual and regular workers was reported no less important, of around 40 percent in 2010 (ILO, 2013). Among Asian developing economies, India is probably the only country with available 'pure' estimates. Based on wage equations constructed for workers in organized manufacturing sector in India, Bhandari and Heshmati (2008)) find that permanent workers earned on average 45.5 percent more than non-permanent workers after controlling for different individual human capital as well as job related characteristics.

Regarding the distributional pattern of the temporary wage penalties, to the best of our knowledge, no evidence exists for Asian developing countries. Yet, studies in developed economies suggest that such penalties highly depend on the relative position in the wage distribution. Comi and Brasseni (2012) find out a common sticky floor effect among nine European countries. Sim-

²In Asia, the statistics on 'pure' NSFE-SFE wage gap exist only for the OECD members like Japan, Korea.

ilarly, in Italy, the temporary employment’s wage gap is significantly larger at the bottom of the wage profile and is almost absent for high-wage jobs (Bosio, 2014). Another study by Mertens et al. (2007) points out that despite being both regarded as ‘rigid’ economies, Germany and Spain had different experiences of fixed term jobs. Whereas the sticky floor effect is observed in West Germany, the wage penalty shows little variation across the wage distribution in Spain.

In explaining the related factors to the permanent-temporary wage gap, decomposition techniques based on wage equations, such as Oaxaca-Blinder, Neuman-Oaxaca or Machado-Mata procedures (Oaxaca, 1973; Blinder, 1973; Neuman and Oaxaca; Machado and Mata, 2005), are largely applied. Again, this type of analysis has been conducted more in the studies for the developed economies such as European countries and New Zealand (Mertens et al., 2007; Comi and Brasseni, 2012; Bosio, 2014 for example), whereas very little evidence can be found for Asia and especially for Asian developing countries. In India, wage gap decomposition conducted by Bhandari and Heshmati (2008) has shown that, controlling for various observed characteristics, experience plays the most important role in explaining the pay difference between permanent and FTC workers. An explanation for its effect would be that FTC workers cannot stick to a particular job for a long enough period to be able to reap the benefit of significant wage return like that of a permanent worker.

Given the scarcity of estimates of the wage differential and their distribution pattern associated with temporary employment in developing Asian countries, this paper would make a considerable contribution to the literature. On the one hand, we provide systematic and comparable ‘pure’ estimates of temporary-permanent workers’ wage gaps in emerging Asian economies. On the other hand, this is also the very first research work that applies a distributional approach to assess the temporary wage penalties in these countries.

3 Country context, data and methodology

3.1 A brief introduction of the economy and labor market context in selected Asian countries

This section aims at describing some salient features of the economy and labor market in Cambodia, Indonesia, Pakistan, the Philippines and Vietnam, which might be relevant to the findings of this paper. In general, all of the five selected countries are fast-growing developing economies in Southeast and South Asia, despite some fluctuations caused by the recent crises. They all have an expanding labor force with a large informal sector in parallel with the presence of unions in the formal economy. Yet, they are diverse in terms of political regime, economic situation, population size, labor market regulations and so on. Indonesia emerged as the wealthiest nation among them with a GDP per capital reaching 10,517 dollars in 2014, followed by the Philippines at 6,969 dollars. Cambodia, Pakistan and Vietnam appeared to have the lowest living standards among five selected countries, at 3,263, 4,811 and 5629 dollars, respectively.³

Cambodia was one of the world’s fastest-growing economies prior to the economic crisis. Its economic reforms in the transition process from central planning to a market-based economy has brought about political stability, unprecedented economic growth and structural change, although little progress on poverty alleviation and rising inequality was observed (ILO, 2012). Cambodia’s real growth estimate has reached seven percent in 2015, and the poverty rate was 17.7 percent in 2012.⁴ Since the 1990s, Cambodia’s labor force and labor force participation rate have been growing, the employment-to-population ratio has increased in recent years and unemployment rate was notably low and on a downward trend (ILO, 2012). ILO (2012) considers these as ‘a symptom of the necessity to work than the economy’s ability to create decent

³GDP per capita (2014 PPP, current international dollar). Source: data.worldbank.org

⁴Source: worldbank.org/en/country/cambodia/overview. Accessed on 17 June 2016.

jobs.’ Indeed, the income level and social protection is generally low for a majority of the population, with a dominant share of workers in vulnerable (or informal) employment (73 percent, *ibid*). The Cambodian Labor Law covers all employees and employers who have an employment contract, either written or oral, including casual workers, thus excluding the bulk of informal sector workers who barely have an employment contract (*ibid*). Minimum wage exists only in the textile, garment and footwear industry, a main driver of the Cambodian economy, which accounted for 16 percent of national GDP and 70-80 percent of Cambodia’s exports.⁵ This sector is featured by a broad use of FTCs.

Indonesia is one of the fastest-rising economies in Asia and the biggest economy in ASEAN with average annual growth rate of 5.8 percent in the 2004-2012 period ([Serrano et al., 2014](#)).⁶ Indonesia also has a large and increasing labor force, with a working age population of 174 million in 2012. Indonesian economy is characterized by a large informal sector, simply defined as own-account workers, self-employed workers assisted by temporary member, casual employees and unpaid workers. Accordingly, about 66 percent of Indonesian workers belong to the informal sector. Despite favorable conditions for union registration, Indonesia witnesses a very fragmented labor movement, low union membership and decreasing union density. The Indonesian Manpower Act (Article 51) allows employment contracts to be either written or verbal agreements, and a majority of Indonesian workers have no written proof of employment, which makes them more inclined to abuse. Most outsourced workers are exposed to vulnerability and discrimination in the labor market: They can be easily dismissed, are not covered by social security or pension benefits, earn wages lower than the minimum level, older workers are discriminated and married or pregnant workers are retrenched. Companies employ various tactics to hinder the organization of workers, such as requiring workers not to join unions or transferring them to another agency to prevent regularization. Observing many cases of violations of labor regulations, the Indonesian trade unions have been jointly undertaking legislative and political action as well as mobilizations to improve the protection of contract, outsourced and other types of NSFE in Indonesia.

Pakistan is one of the least developed countries in Asia, with a growing semi-industrialized economy that depends on manufacturing, agriculture and remittances.⁷ International development indicators of Pakistan are among the lowest in the world ([ILO, 2015a](#)).⁸ The average annual growth rate of five percent since 2005 seems insufficient for a fast-growing population (population growth rate was about 1.5 percent per year) and poverty reduction. Since 2008, Pakistan’s economy has encountered macroeconomic instability, fiscal contraction, external account weaknesses and rising inflation. Their recovery from the 2005 earthquake was threatened by the adverse situation in the global market and the war on terrorism. The perceived job volatility further pushes downward pressure on wages. Despite improvements in job opportunities as shown in labor force participation rate (32.8 percent, according to LFS 2008-09), most of Pakistani workers lack decent and productive employment. The informal economy, characterized by low paid and poorly protected jobs, constitutes over 70 percent of non-farm jobs in Pakistan and is largely unorganized. The organized representation of employees and employers mainly exists in the formal economy, but remains low.

The Philippines economy has experienced resilient growth in the past decade, and remarkably recovered after the global economic crisis ([ILO, 2015c](#))⁹. In parallel, a fast growing labor force (64.4 percent of the working age population in 2014) challenges the creation of sufficient jobs and decent jobs. In 2014, 6.8 percent were unemployed and 38.6 percent the employed were

⁵Source: <https://www.cleanclothes.org/resources/publications/factsheets/cambodia-factsheet-february-2015.pdf>

⁶The information in this paragraph is synthesized from [Serrano et al. \(2014\)](#).

⁷Source: tradingeconomics.com/pakistan/gdp-growth. Accessed on 17 June 2016.

⁸The information in this paragraph is synthesized from [ILO \(2015a\)](#).

⁹The information in this paragraph is synthesized from [ILO \(2015c\)](#)

in vulnerable employment, a proxy for the informal economy in the Philippines. To reduce risks and vulnerabilities in the labor market due to changing skill demand, global crises and natural disasters, in 2012, the Philippines adopted the Social Protection Operational Framework and Strategy, which particularly targets at increasing employment opportunities and improving protection of workers' rights and welfare. Although service or labor contracting is allowed, the Labor Code imposes their conditions to be legitimate, including the rights to the contractor's employees such as safe and healthy working conditions, labor standards (for example service incentive leave, rest days, overtime pay, holiday pay, 13th month pay and separation pay), social security and welfare benefits, the right to self-organization, collective bargaining and security of tenure. The union density and collective bargaining coverage in the Philippines followed a downward trend, which could be attributed to the expansion of the informal economy (ILO, 2012 as cited in [Serrano et al., 2014](#)). Fortunately, the Filipino trade unions have employed complementary strategies at the enterprise, industry and national levels to accord more protection to non-regular workers in spite of existing difficulties ([Serrano et al., 2014](#)).

Vietnam is one of the most populated countries in the world with an estimated population of nearly 90 million in 2012 as well as a large and increasing labor force at about 53 million in 2012 ([Serrano et al., 2014](#)). After the crises in the 1970s and 1980s, Vietnam has undergone a period of growth, openness and international integration thanks to the economic reform ('Doimoi'). Its annual GDP growth rate ranged between eight percent and 9.5 percent from 1986 to 1997 and despite the recent global crisis, remained relatively high at around five percent. The number of enterprises in Vietnam increased annually by 21 percent on average over the 2006-2011 period. Yet, micro, small and medium sized businesses remained the most predominant in the economy with a prevailing informal sector. In 2007, nearly half of non-farm jobs in Vietnam were found in the informal sector ([Cling et al., 2010](#)), and 75 percent of temporary jobs were also informal. This sector generally provides low-income jobs with precarious working conditions, without any protection such as labor contract, minimum wage, social security and so on ([Cling et al., 2014](#)). A majority of Vietnam's labor force is characterized by a lack of skills. The 2011 Labor Force Survey shows that 84.4 percent of the entire labor force had never attended any technical training. Only 54 percent of workers in foreign invested enterprises were capable to read and understand their labor contract. The unemployment rate in Vietnam was remarkably low, decreasing from 2.9 percent in 2009 to 1.96 percent in 2012. The Vietnam General Confederation of Labor (VGCL) is the sole trade union in Vietnam, gathering wage workers and all legal freelancers who want to participate. Referring to dispatch workers as temporary workers, Tung (2013, as cited in [Serrano et al., 2014](#)) highlights that it is difficult for trade unions to include and support these employees as they only sign contracts with the agency, and that if agencies have trade unions, they are unable to protect temporary workers as they do not operate there.

3.2 Data and descriptive statistics

Data and variables

While cross-country statistics for NSFE is available for OECD countries ([OECD, 2014](#)), there is a scarcity of such evidence on non-standard work in Asia. Provided a various range of country definitions and of measurement methods, NSFE terms in different studies on different countries are unlikely comparable ([Tucker, 2002](#)). In emerging economies and developing countries, non-standard work mainly takes the form of informal employment, particularly in Asia ([Rani, 2008](#); [ILO, 2008](#); [Serrano et al., 2014](#)).¹⁰ In this paper, temporary employment in each country's

¹⁰Informal employment is regarded as 'workers in very small firms (fewer than five workers), self-employment, unpaid family work and salaried employment without a proper work contract in the formal sector' ([ILO, 2008](#)). In this paper, informal employment refers to unprotected jobs, typically lacking social security as seen in formal employment. In reality, some permanent jobs may be informal, while temporary work could be found in formal

context is defined following as much as possible the ILO definition as mentioned in section 2.1 to ensure maximum comparability of the results.

This research work relies on national LFS of Vietnam (2007), the Philippines (2009), Pakistan (2008-2009), Indonesia (2007-2008) and Labor Force and Child Labor Survey of Cambodia (2012). Only wage workers are included in our analyses. In practice, questions concerning employment status and types of labor contract are used to define employees and distinguish those having permanent jobs from those who work temporarily. However, these questions are not similarly compiled in the LFS of the selected countries (Table 1 of Online Appendix). Vietnamese, Cambodian, and Pakistan’s data allow a computation of temporary employment defined as all jobs with impermanent duration. The questionnaires for these countries include a separate question on labor contract providing information to define permanent wage workers (‘indefinite-term labor contract’ for Vietnam; ‘unlimited duration’ for Cambodia; ‘Permanent/pensionable job’ for Pakistan) and temporary wage workers. An ambiguity arises since there are wage workers who do not have written contract or in other words, they work based on an oral agreement. Cambodia data provide the most detailed information on both type of contractual engagement (labor contract/verbal agreement) and the associated duration, therefore employees can be distributed into four sub-groups, namely ‘limited/unspecified duration oral contracts’, ‘oral and unlimited contracts’, ‘limited/unspecified duration written contracts’, and ‘unlimited duration written contracts’. Vietnamese and Pakistan questionnaires integrate information on both types of contract and on duration in one unique question. As a consequence, no detailed information can be available to distinguish unlimited and limited employment among those who engaged in oral contracts or did not know anything about the contract/agreement. In these cases, permanent employment is approximately defined as ‘unlimited duration written contracts’ without taking into account employees engaging in (unrecognizable) unlimited oral contracts.

Philippines and Indonesian surveys can only provide proxies of temporary employment. In the case of the Philippines, the question on the nature of employment enables only to distinguish permanency in terms of jobs rather than contracts. Indonesian questionnaire includes a one-for-all question providing both workers’ employment status and job permanency. Moreover, wage employees can only be classified into two groups, namely, casual and non-casual. Fortunately, in the Indonesia’s context, the concept of casual work might approach the entire temporary jobs. [Serrano et al. \(2014\)](#) indicate that FTCs are considered casual jobs, and that FTC and temporary workers might be directly hired for a specific time period by the principal company, or outsourcing some parts of work or services to other companies.

In this paper, hourly wage is chosen as the dependent variable to assure the comparability among studied countries. In fact, while Indonesian survey has a question directly asking about hourly wage, the Filipino and Vietnamese data only provide daily wage and monthly wage, respectively. Therefore, in the Philippines, hourly wage is computed by dividing daily wage by daily working hour. In case of Vietnam, since the data on monthly working hour is unavailable, hourly wage is proxied as follows:

$$hwage_i = \frac{7 * mwage_i}{30 * wwhours_i}$$

where *mwage* and *wwhours* are respectively the monthly wage, and weekly working hour of the related individual.

Particularly, Pakistani survey provides the information on either weekly wages or monthly wages. In other words, for those whose weekly wage is available, their monthly wage rate is absent and *vice versa*. For workers with available information on weekly wage, their hourly wage is directly computed by dividing their weekly wage by their weekly working hour. For

enterprises.

those with monthly wage information, their hourly wage is approximated following the above equation.

Statistical description

In general, temporary work accounted for an important proportion of wage employment in these Asian countries, with great variation across nations. It spanned from 24 percent in the Philippines to 74.6 percent in Pakistan (Table 2, Online Appendix), which far exceeded OECD's and Japan's temporary employment rate at around 12 percent and 14 percent, respectively (OECD, 2014). The incidence of temporary employment greatly varied across genders, ages, education levels, institutional sectors, industries and occupations in Vietnam, the Philippines, Pakistan and Indonesia, while distributing rather evenly among different groups in Cambodia. Simple statistics indicate a significant temporary employment's wage penalty in the former, but shows no noticeable difference in terms of wage rates between temporary and permanent Cambodian workers. These first observations suggest the particularity of temporary employment in Cambodia, which deserves further in-depth investigation.

From a gender perspective, except in Pakistan, males were more likely to engage in temporary jobs relative to females. In Cambodia, the incidences of temporary employment for men and women are roughly equal. Temporary employment was most popular among the youngest (Vietnam, the Philippines and Pakistan) and the oldest workers (Indonesia and Cambodia, to a lesser extent). It constituted up to 86 percent and 92 percent among youth in Vietnam and Pakistan, respectively. In the Philippines, the proportion of young workers engaging in temporary jobs was twice as much as for prime-aged workers, reaching 40 percent by 2009. By contrast, in Indonesia, older workers were twice more engaged in temporary employment than the youth (45 percent versus 22 percent).

In all cases except Cambodia, higher level of education was associated with lower probability of involving in temporary work. Vietnam serves as a typical example. Whereas only one quarter of highly qualified employees were working temporarily, almost all workers with no education were temporary (96 percent). Likewise, in Indonesia, workers with tertiary education and above virtually never took part in casual jobs (0.5 percent). In contrast, the most educated Cambodian employees were also the most engaging in temporary work, at 63 percent.

Public sector was less likely to recruit temporary workers than private one in Vietnam, the Philippines and Pakistan, while the reverse was true in Cambodia. In Pakistan, for instance, whereas almost all wage workers in the private sector were temporarily employed (93 percent), temporary workers accounted for only 12 percent of wage employees in the public sector. In all cases except Cambodia, the incidence of temporary employment was the highest in agriculture and lowest in services. In Indonesia, for example, 71 percent of agricultural salaried jobs were temporary. Meanwhile, only seven percent of service wage workers engaged in a temporary job. Manufacturing is the second employer of temporary labor in Indonesia, at 24 percent. In Vietnam, the Philippines and Pakistan, temporary jobs were the second most prevalent in trade sector, followed by manufacturing sector. Meanwhile, the presence of temporary employment was more or less the same across different industries in Cambodia, though appearing slightly more prevalent in the service sector (57 percent).

Not surprisingly, lower-end occupations such as 'elementary occupations', 'plant and machine operators and assemblers', 'craft and related trade workers' tended to work temporarily than superior occupations such as 'legislators, senior officials and managers' and 'professionals' in all studied countries excluding Cambodia. In the Philippines, 'elementary occupations' was the number-one temporary job provider, followed by 'craft and related trade workers'. The reverse was true for Pakistan. Meanwhile, 'skilled agricultural and fishery workers' in Indonesia were most inclined to temporary employment among all occupations. As expected, there was no remarkable differences in the incidence of temporary jobs among various occupations

in Cambodia. In consistence with the literature, wage workers in the informal economy were widely working temporarily. Notably, in Vietnam and Pakistan, almost all of informal sector wage jobs were also temporary (99 percent and 98 percent, respectively). This figure shows a close interrelation between informality and impermanence. The question of wage discrimination associated with temporary employment is therefore relevant to the dominant informal sector in these economies.

Table 2 (Online Appendix) also provides preliminary results on the temporary-permanent workers' wage differentials. In consistence with the findings in the empirical literature, the results show general remuneration disadvantages of temporary employment compared to permanent jobs. The raw wage gap appeared the most severe in Pakistan, where temporary workers earned only 42 percent as much as permanent ones did. In Indonesia, on average, temporary hourly wage was about half of permanent wage rate. Yet, the penalty appeared trivial in Cambodia, with a wage ratio of up to 98 percent.

In summary, temporary employment emerged as a noteworthy important phenomenon in a number of Asian countries, as a large proportion of wage workers derived all or part of their earnings from it. Descriptive statistics have revealed contrasting results in line with the aforementioned theoretical controversy: while in most of the cases, the disadvantaged in the labor market, such as youth, the less educated, those doing 'inferior' jobs, agricultural workers, workers in the private sector, were more likely to work temporarily; there was also evidence that temporary employment was not less favorable than permanent one. Given their prevalence across Asia, their diverse characteristics suggested by the statistical description, it is of great importance to finely evaluate the wage differentials associated with temporary employment relationships. In this attempt, the next section will present the empirical results derived from wage equations.

3.3 Estimation strategies

This section aims to refine and to assess if temporary jobs are suffering or benefiting in financial terms after controlling for various personal, job characteristics and geographical location. As in the standard Mincerian earnings equation, the general form of the wage equation for all workers is set up as:

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

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

X systematically includes four groups of variables as follows:

- (i) **Individual characteristics:** gender, head of household, marital status¹¹ (all countries), migration¹² (Pakistan and Cambodia), ethnicity (Vietnam).
- (ii) **Human capital characteristics:** age and its square, education level¹³ (all countries), training¹⁴ (Pakistan), and occupations (Cambodia, Indonesia, the Philippines and Pakistan).

As underlined in the literature (see for example [Edin and Richardson, 2002](#); [Albrecht et al., 2003](#)), the existence of wage gap is mostly caused by differences in human capital such as schooling, work experience, or tenure.

¹¹Single is selected as the reference group

¹²No migrant is selected as the reference group

¹³No education is taken as the reference group

¹⁴No training is used as the reference group

- (iii) **Job characteristics:** industries (all countries), public sector (Vietnam, the Philippines, Pakistan, and Cambodia), informal sector (Cambodia, Vietnam and Pakistan), union member (Indonesia), and business size¹⁵ (Vietnam).

According to [Arulampalam et al. \(2007\)](#), it is important to control for job characteristics as they might be endogenous. In addition, job controls could also reflect unmeasured human capital.

- (iv) **Geographical characteristics:** rural area, provinces/regions (all countries).

To assure the cross-country comparability, in the first step, the benchmark model includes only mutual variables that exist in all national LFS of selected countries. Extended models including additional country-specific information are then implemented for more information.

To account for the self-selection into wage employment as well as to assess the stability of the estimation results across different econometric models, Heckman procedure is applied. By definition, the wage rate can only be observed for wage workers, who might not be representative for the whole labor force. The Heckman selection model could correct for this bias if there are some identifying variables which strongly affects one's probability of being a wage worker but not their wage level. Practical examples include household variables such as income of the spouse, household wealth, non-labor household income, children ([Puhani, 2000](#)), whether parents are living together or are living in the same neighborhood ([Nawata and Ii, 2004](#)) and marital status.¹⁶ Given the available dataset, marital status and whether the individual is head of their household are chosen as identifying variables in our model. Married household heads, for example, possibly bear more pressure to work than the others, but the fact that they are married and heads of household hardly has a significant impact on their offered wage.

Although Heckman selection model is widely applied in economics, one should keep in mind its drawbacks. First, it is quite sensitive to the specification of the model, much more so than ordinary estimation.¹⁷ Second, excluded variables are difficult to find, and in reality there is no such variables since anything that determines the working decision would also affect the wages through the labor supply ([Bagheri and Kara, 2008](#)). Without such identifying variables, the model is only identified through the non-linearity of the inverse Mills ratio lambda, which leads to non-robust results in most of the cases due to collinearity problems ([Puhani, 2000](#)). If the collinearity problem cannot be solved in empirical studies, standard OLS is recommended (*ibid*). Moreover, although Heckman procedure is sometimes considered indispensable whenever sample representativeness is questionable, Heckman himself acknowledged that his estimator is only to 'provide good starting values for maximum likelihood estimation' and 'exploratory empirical work' ([Heckman, 1979](#)). In fact, evidence suggests that sample selection bias is typically modest ([Hyclak et al., 2005](#)). Therefore, the results obtained from the Heckit method in this paper are primarily used to examine the robustness of OLS estimates.

Besides measuring wage gaps at mean wage level, estimation of quantile regression is also provided in order to allow the wage gaps between temporary and permanent jobs to differ along the wage distribution. Quantile wage regressions consider specific parts of the conditional distribution of the hourly wage and indicate the influence of the different explanatory variables on conditional wage respectively at the bottom, at the median and at the top of the distribution. Using the aforementioned notation, the general quantile regression model can be written as:

$$q_{\varrho}(y) = Z\alpha(\varrho) + X\beta(\varrho) + \epsilon, \forall \varrho \in [0, 1] \quad (2)$$

¹⁵Small business (firm less than 10 labors are selected as the reference group

¹⁶Source: `stata.com`

¹⁷Source: `stata.com`

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

Using quantile regression method provides robust estimates, particularly for misspecification errors related to non-normality and heteroscedasticity. Another important advantage of quantile regression applied in wage gap analysis concerns the identification of distributional effects, allowing testing two opposite hypotheses, namely, sticky floor and glass ceiling. Sticky floor effect can be measured by three indicators: (i) 10-all gaps, (ii) 10-25 difference, or (iii) 10-50 difference. Likewise, three criteria can be used to determine the existence of glass ceiling phenomenon: (i) 90-all gaps, (ii) 90-75 difference, or (iii) 90-50 difference.

4 Econometric analysis of wage penalty

4.1 Estimates at mean: OLS and Heckman models

Table 3 (Online Appendix) presents the estimation results of benchmark OLS model with a similar set of covariates in all selected countries. Diverse results appear, in consistence with controversial predictions in the aforementioned theories. On the one hand, in Indonesia, Pakistan, the Philippines and Vietnam, temporary workers face a wage penalty compared to their permanent counterparts. Temporary workers' wage penalty is the most severe in Pakistan (45 percent) and Vietnam (31 percent), and fairly modest in Indonesia (16 percent) and the Philippines (seven percent). On the other hand, Cambodia shows a temporary workers' wage premium, at six percent.

In general, the included individual characteristics, human capital, job and geographical variables are significantly correlated with workers' wage. In all countries, females seem to earn less than males, *ceteris paribus*, and the gender wage gap is the most pronounced in Pakistan (33 percent). Being head of household could have a small positive relation with wage rate in Indonesia and Vietnam (nearly four and two percent, respectively). In general, married workers earn a higher wage than the single; whereas, in some cases, widowed and divorced workers are probably remunerated less. Experience and seniority, approximated by age, appear to be positively correlated with individual wage. One more year of age is associated with an around three to four percent increase in the wage rate, other things equal. In line with Human Capital theory, obtaining some kind of education/qualification instead of nothing could raise individual wage. Moreover, the higher the education level, the higher wage. In the Philippines, for example, while elementary schooling is associated with an 18 percent increase in individual wages, university-and-above graduates could earn twice as much as the uneducated do, *ceteris paribus*. In all selected countries, manufacturing wage jobs are the best remunerated among all industries. On average, rural workers are worse paid than urban counterparts in Cambodia, Pakistan, the Philippines and Vietnam. The opposite is observed in Indonesia, but the wage difference between two groups is modest (two percent).

The first columns of Tables 6, 7, 8, 9 and 10 (Online Appendix) describe OLS estimates of temporary-permanent wage differentials in extended models which further include country-specific explanatory variables. In Cambodia, the extended model introduces additional controls for migration, occupation, institutional sector, business size and trade union membership. Compared to the benchmark model, the estimated wage gap slightly decreases (from six percent to five percent). There also appears a relationship between migration status and individual wage. In comparison to the non-migrants, migrated workers from other provinces tend to achieve a higher wage level (eleven percent). Notably, the coefficient associated with manufacturing sector turns into non-significant, while trade coefficient becomes positively significant. Public sector

jobs seem to offer remarkably lower wages than comparable jobs in the private sector (minus 21 percent). On average, there is no significant relationship between trade union membership and workers' wage.¹⁸

In Indonesia, by including occupation, trade union membership and social security in the regression model, the estimated wage penalty drops threefold, from 16 percent to five percent. Members of trade unions tend to obtain a higher wage than non-members by ten percent, *ceteris paribus*. Indonesian workers who are covered by social security, as an indicator for formal jobs, are much better remunerated than the uncovered counterparts (34 percent). In Pakistan, the temporary worker's wage penalty is reduced by half (from 45 percent to 26 percent) when migration, training, occupation and institutional sectors are further controlled for. Compared to the non-migrants, on average, workers who have migrated less than one year receive a nine percent higher wage rate, and those who have migrated for at least ten years are better paid by six percent. This is perhaps because migration decision is principally determined by wages, mainly for those who have just moved and those who have settled down in a new place. Attending job training is associated with a higher wage rate, and on-the-job training appears to have a larger impact than off-the-job training. In contrast to Cambodia, public sector jobs in Pakistan are generally better remunerated than private sector employment by 28 percent. Other things equal, jobs in the informal sector bring a slightly lower wage than those in the formal sector.

In the Philippines, by controlling for occupational categories and institutional sector, the wage differential between temporary and permanent workers is greatly attenuated from seven percent to two percent. Notably, the impact of tertiary education on individual wage is reduced by half, possibly due to the inclusion of occupation and working sectors. In addition, manufacturing modality turns into non-significant while service sector jobs become significantly less remunerated than farming work. On average, workers in the public sector earn a wage rate of 25 percent higher than in the private sector, *ceteris paribus*. By contrast, there is no noticeable change in the estimated wage gap in Vietnam when additional demographic and job characteristics are included in the model (from 31 percent to 29 percent). Foreign sector, interestingly, provides lower paid jobs than the domestic private sector on average.

A summary and comparison of benchmark and extended models is also provided in Table 4 (Online Appendix). The different changes between the benchmark OLS model and the extended OLS model in different countries could be attributed to different sets of additional variables from country to country. The stable results in Vietnam are possibly related to the fact that there is no available information on occupation in Vietnam, which serves as an important explaining factor of individual wages and could be highly correlated with employment status as in other countries' extended models. By contrast, in Pakistan, where the difference in the estimated wage gap between two models is the largest, both occupation and training are controlled for. Whether a worker obtains a training, whether this is an on-the-job training or off-the-job training is very likely to be strongly related with their employment status, for that the inclusion of training may further exaggerate the difference between two estimates. Likewise, in Indonesia, the presence of trade union membership in the extended model could be partially responsible for the drastic fall in the estimated wage differential.

The question of self-selection into wage employment as well as the reliability of OLS estimates are addressed with Heckman procedure as presented in Table 5, using a same set of covariates for all studied countries. 'Stage 2' means the main equation and 'stage 1' indicates the selection equation. In general, the 'corrected' estimates almost stay the same as what obtained from the benchmark OLS models, and all control variables keep the same signs and close magnitudes despite the presence of sample selection in Indonesia, Pakistan, the Philippines and Vietnam. In Cambodia, in fact, no such sample selection exists (λ is not significant).

¹⁸When detailed quantiles are considered, significant estimates appear

This highlights that controlling for marital status and household head in OLS regression yields not much different results from applying the Heckit method with marital status and household head serving as identifying variables in the first stage. Therefore, the next section does not apply Heckman correction method in the Quantile Regression framework.

4.2 Quantile estimation analysis

Table 4 (Online Appendix) summarizes the quantile regression estimates from the benchmark and extended models in five selected countries. Tables 6, 7, 8, 9 and 10 (Online Appendix) provide detailed quantile estimation results using the extended set of control variables in each country. The variation of temporary-permanent workers' wage differentials along the wage distribution is illustrated in Figures 1 and 2. Interestingly, both benchmark (Figure 1) and extended models (Figure 2) show that there are diverse distribution patterns of temporary-permanent workers' wage gap in the selected Asian countries. In Vietnam (Figures 1(e) and 2(e)) and Pakistan (Figures 1(c) and 2(c)), the wage penalty is greater in the lower tiers of the wage distribution, suggesting a *sticky floor* effect. Meanwhile, a *glass ceiling effect* seems to be relevant in case of Indonesia (Figures 1(b) and 2(b)). The temporary workers' wage penalty in the Philippines (Figures 1(d) and 2(d)) and the temporary worker's wage premium in Cambodia (Figures 1(a) and 2(a)) are fairly stable across different percentiles of the wage profile. In what follows, we particularly focus on interpretations of Figure 2 where different characteristics of temporary employment in each country are taken into account.

In Vietnam, the wage gap continuously decreases from 32 percent in the 10th quantile to 18.5 percent in the 90th quantile. Pakistan experiences the same tendency, with the gap smoothly decreasing from 31 percent at the bottom to 14 percent at the top of the wage distribution. The results for Vietnam and Pakistan support the *sticky floor* hypothesis and the 10-all gap criterion is relevant in both countries. This suggests that the penalty of being in temporary jobs could be more severe for disadvantaged workers in Vietnam and Pakistan, who are in the lower tiers of the wage distribution, than for high wage earners.

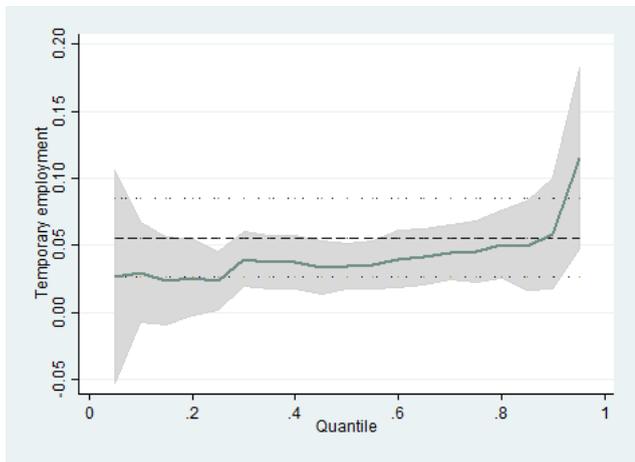
By contrast, the temporary workers' wage penalty in Indonesia gradually increases from three percent (10th percentile) to seven percent (80th percentile), before falling to five percent in the remaining percentiles of the wage distribution. The hypothesis of *glass ceiling* is therefore relevant in case of Indonesia. However, three indicators mentioned in Arulampalam et al. (2007) and Christofides et al. (2013) (90-all gaps, 90-75 difference and 90-50 difference) are no longer satisfied in Indonesia. The *glass ceiling* phenomenon in this country seems to be associated with the '75-all gap', that is the wage penalty wider at the 75th and narrower at both the bottom and the top of the conditional wage distribution.

In the Philippines and Cambodia, no clear distributional effects of the penalty/premium 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 assured. This indicates, in other words, that temporary workers in the Philippines and Cambodia suffer/benefit financially similar levels of penalty/premium at any positions in the wage distribution.

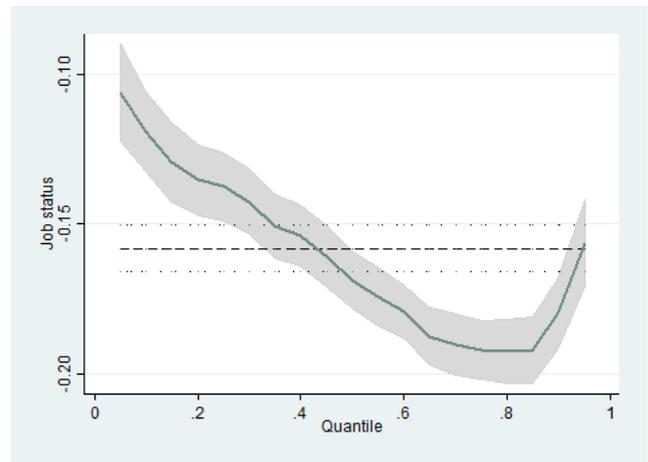
These diverse results appear despite the fact that the five studied countries all have a minimum wage law and labor unions. Mertens et al. (2007) also point out different experiences of wage penalty associated with fixed term jobs between Germany and Spain, although they are both considered as 'rigid' economies. In fact, there are many other institutional as well as socioeconomic factors being at work. The following paragraphs attempt to provide an interpretation and discussion of the results by taking into account these relevant factors as much as possible.

On the one hand, 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

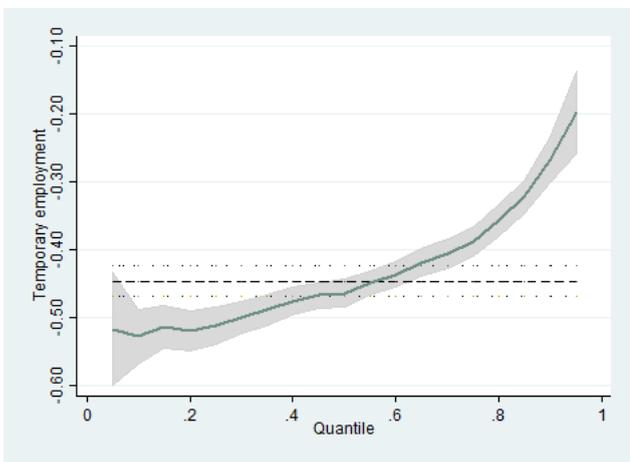
Figure 1: Temporary-permanent workers' wage differentials in selected Asian countries. Common set of explanatory variables



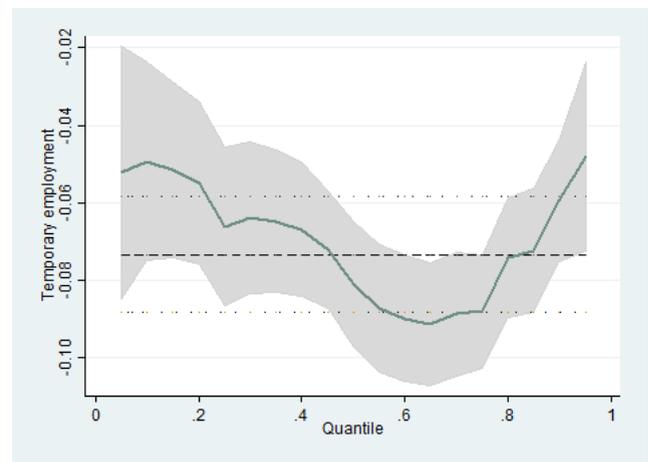
(a) Cambodia



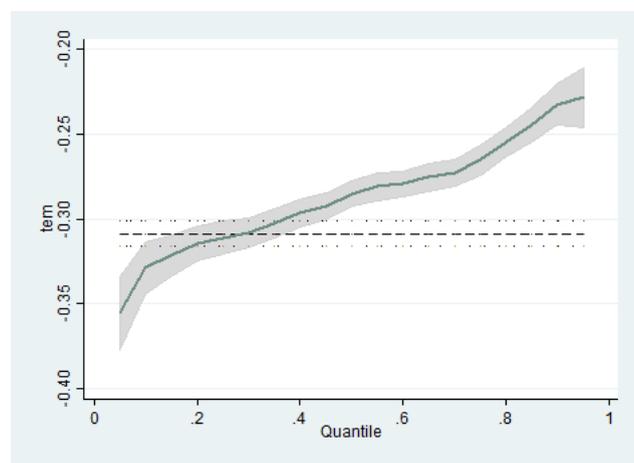
(b) Indonesia



(c) Pakistan



(d) Philippines

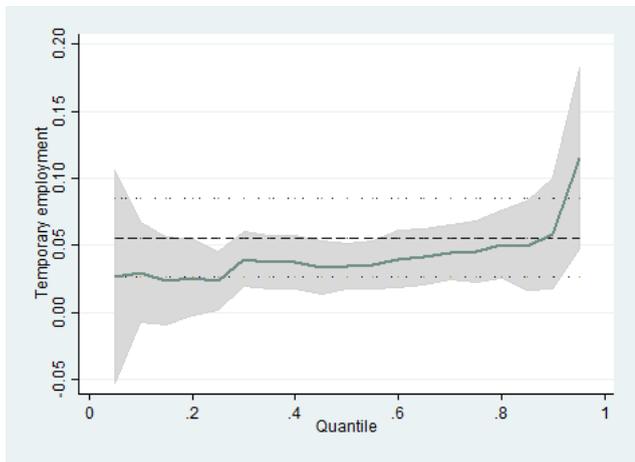


(e) Vietnam

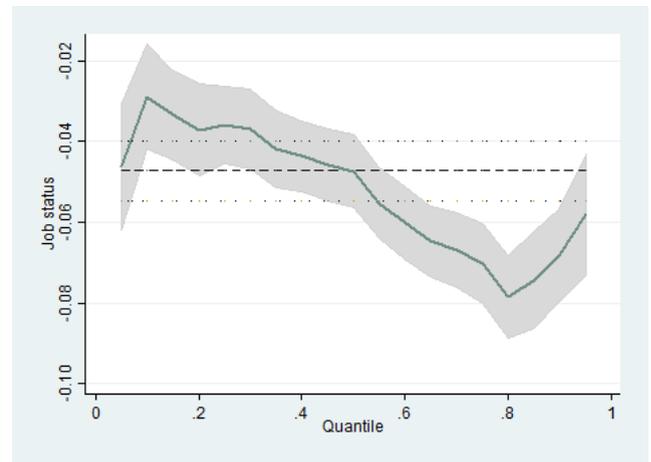
in 2003,¹⁹ for example, emphasizes the protection of workers, defined as ‘every person who works for a wage or other forms of remuneration’, which is intended to ‘secure the implementation of

¹⁹Source: <http://www.ilo.org/dyn/travail/docs/760/Indonesian%20Labour%20Law%20-%20Act%2013%20of%202003.pdf>

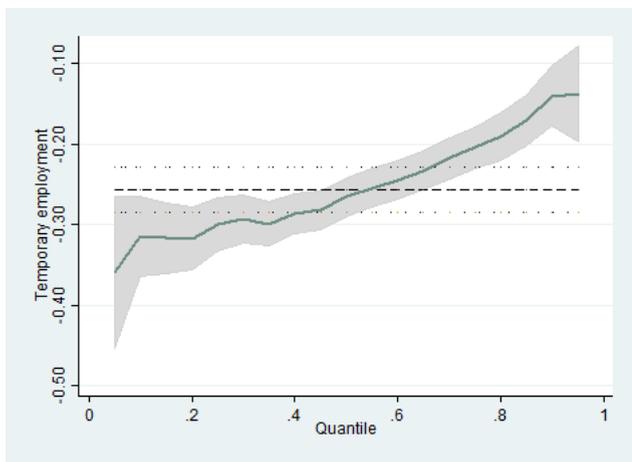
Figure 2: Temporary-permanent workers' wage differentials in selected Asian countries. Extended set of explanatory variables



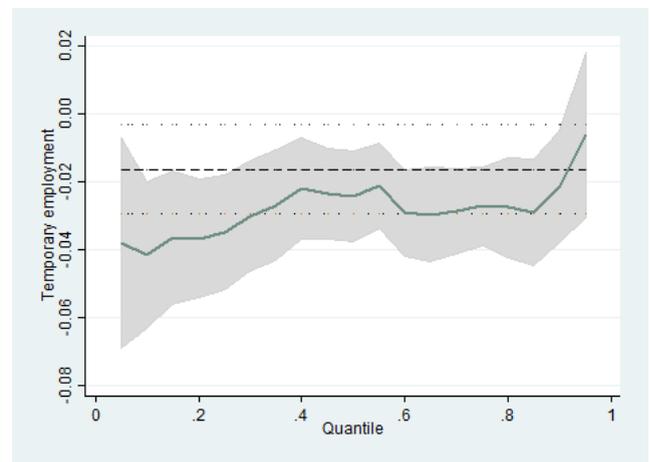
(a) Cambodia



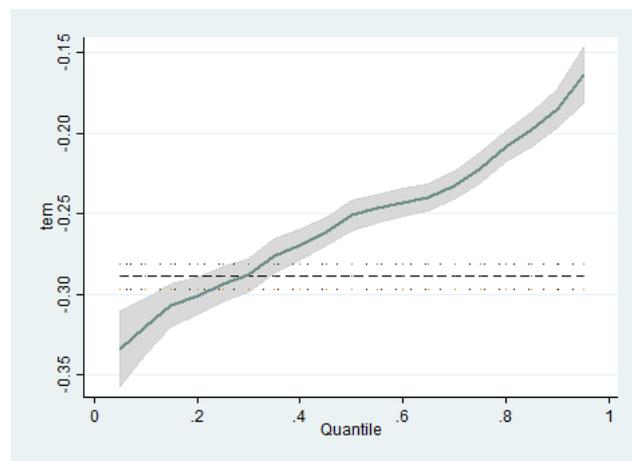
(b) Indonesia



(c) Pakistan



(d) Philippines



(e) Vietnam

equal opportunity and equal treatment without discrimination on whatever basis in order to realize the welfare of workers'. Indonesia also introduced a three-pillar social security system, including a publicly-funded social assistance, which benefit the old and poor. The National

Social Security Law (2004)²⁰ 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 the disadvantaged groups through the programs such as National People Empowerment Program and Conditional Cash Transfer scheme.

On the other hand, the sticky floor effect found in Vietnam and Pakistan could be possibly linked to the predominance of the informal economy and the difficulty to include temporary workers in trade unions. First, as far as the informal economy's concerned, in 2007, nearly half of non-farm jobs in Vietnam located in the informal sector (Cling et al., 2010) and 75 percent of temporary jobs were also informal. This sector is generally made up of low-income jobs with precarious working conditions, lacking protection such as labor contract, minimum wage, social security and so on (Cling et al., 2014). Effectively, Nguyen et al. (2013) report that informal wage workers earn, on average, 23 percent lower than their formal counterparts. The incidence shrinks to 11 percent if unobserved individual characteristics are taken into account.

Similarly, Pakistan also witnesses a prevalence of the informal sector. In 2009, this sector accounted for about 70 percent of employment in main job (ILO, 2015a). Although informal sector employees suffer longer working hours than their formal sector counterparts (60 hours versus 45 hours), the former are poorly remunerated and receive smaller fringe benefits (Kermal and Mahmood, 1998). Overall, the informal economy is characterized by poor working conditions, particularly for female employees who are not covered under legal protection. As reported in ILO (2015a), one of the main challenges of the country is the 'weak application of nation labor legislation and regulations to increasingly formalize the large and growing informal economy'. In summary, although Vietnam and Pakistan do have a minimum wage law, it does not benefit the numerous informal temporary wage workers. As a result, those disadvantaged workers are left unprotected, vulnerable and highly discriminated against in terms of payment, particularly in the lower tiers of the wage distribution.

Second, Vietnamese and Pakistani trade unions find it difficult to include temporary workers. The Vietnam General Confederation of Labor (VGCL) is the sole trade union in Vietnam, gathering wage workers and all legal freelancers who want to participate. Referring to dispatch workers as temporary workers, Tung (2013, as cited in Serrano et al., 2014) highlights that it is difficult for trade unions to include and support these employees as they only sign contracts with the agency, and that if agencies have trade unions, they are unable to protect temporary workers as they do not operate there. Likewise, ILO (2015a) indicates that in Pakistan, the organized representation of employees and employers mainly exists in the formal economy but remains at a low level.

In the Philippines, the temporary job's wage penalty is not only modest but also stable across the wage distribution. Such a high remuneration equality might be related to their labor market institution and regulation as well as trade union's strategy. The Filipino Labor Code defines legitimate contracting and subcontracting with a number of requirements, including the rights to the contractor's employees such as safe and healthy working conditions, labor standards (for example service incentive leave, rest days, overtime pay, holiday pay, 13th month pay and separation pay), social security and welfare benefits, the right to self-organization, collective bargaining and security of tenure. In addition, the Philippines adopted the Social Protection Operational Framework and Strategy (SPOFS) in 2012, which particularly aims at increasing employment opportunities and enhancing protection of workers' rights and welfare. Moreover, Filipino trade unions have also employed complementary strategies at the enterprise, industry and national levels to bring more protection to non-regular workers (Serrano et al., 2014).

Cambodia is the only country among the list with a wage advantage enjoyed by temporary employees. Recall that, based on Cambodia Labor Force and Child Labor Survey 2012, this study defines temporary employment as all wage jobs that have either 'limited duration' or

²⁰Source: <http://www.ituc-csi.org/the-reform-of-social-security-in?lang=en>

‘unspecified duration’ or ‘don’t know’. Meanwhile, the Cambodian Labor Law indicates that ‘Fixed-term contracts may have an unspecified finishing date when they are drawn up for replacing a worker who is temporarily absent; seasonal work; occasional periods of extra work or a non-customary activity of the enterprise’. Evidently, what is referred as temporary employment in this paper mostly coincides with FTC jobs. The temporary work’s wage premium is, therefore, very likely to be relevant to the particularity of Cambodia’s FTC jobs.

On the one hand, FTC jobs in Cambodia are characterized by a number of ‘superior’ characteristics. In 2012, over half of FTC workers in Cambodia were employed under a written contract while the rate for the whole wage workers was only 29 percent. The proportion of formal jobs among FTC workers (20 percent) was greater than the proportion of formal jobs among all wage workers (14 percent). Moreover, a majority of FTC lasted 12 months or more (73 percent), making them very close to a long-term stable employment. In Cambodia, FTC jobs are also authorized for permanent tasks.²¹ Cambodia is the only country in which both public and private sector firms employed more temporary than regular wage workers, and the use of temporary employees was even more prevalent in the public sector.

Recall that the textile, footwear and garment industry is the main driving force of Cambodia’s economy. Data show that 65 percent of wage workers in garment and related pattern-makers and cutters were of FTC. [ITUC \(2014\)](#) asserts that many garment factories have built an entire workforce of workers hired on repeatedly-renewed short-term FTCs and this trend is increasingly popular. This practice disobeys the Labor Law but it is broadly permitted in practice. The textile, footwear and garment industry is the only sector covered with a minimum wage rate. Better Factories Cambodia reports show a very high compliance rate of minimum wage payment in this sector, at 99 percent for regular workers and 89 per cent for casual workers ([ILO, 2012](#)). Consequently, an important share of FTC work - those in the textile, footwear and garment industry - could possibly receive higher wages than an average permanent wage worker does.

On the other hand, Cambodian workers under a limited duration contract enjoy fewer rights and benefits than their unlimited-term counterparts - including paid annual leave, seniority rights and maternity leave ([ITUC, 2014](#)). It is also much easier to fire FTC workers than permanent ones (*ibid*). In order to compensate for these disadvantages, FTCs might offer a more competitive wage rate (Compensating Differentials theory). Anecdotal evidence also suggests that workers in Cambodia receive a five percent payment at the end of the contract, rendering such contracts attractive to workers, and hence possibly leading to positive self-selection of workers in these types of contracts. Indeed, the best educated workers, including those having completed university education, as well as other high skilled labors such as managers and professionals engaged the most in temporary work. This compensatory mechanism is likely to explain the wage premium attributed to limited-term written contract workers in this country.

The above differences in the distribution patterns of temporary employment’s wage gap in selected Asian countries are possibly associated with their current stage of development (except the very special case of Cambodia). According to the literature explaining the *sticky floor* or *glass ceiling* wage gaps in gender context, *glass ceiling* effect is almost present in high income-low inequality regions/countries (Europe, North America, and Australia) while in developing countries, it seems that *sticky floor* effect is the norm ([Albrecht et al., 2003](#); [Arulampalam et al., 2007](#); [Fang and Sakellariou, 2015](#)). Our results on temporary-permanent workers’ wage gaps are consistent with this phenomenon. Indeed, *sticky floor* effect appears in the least developed among the studied countries (Vietnam, Pakistan) where the wage penalty is also the most severe. By contrast, *glass ceiling* phenomenon exhibits in Indonesia, the most developed among the studied countries. In the Philippines - a medium income country, the wage gap is stable

²¹Source: ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_357403.pdf

across the wage distribution.

4.3 Robustness checks: How we define ‘temporary employment’ matters

The cross-country analyses of temporary employment’s wage gap raises the issue of comparability. As above-mentioned, ‘temporary employment’ is not homogeneously defined in the five national surveys. With Vietnamese and Pakistani data, permanent jobs are characterized by both unlimited term and a written contract (Table 1, Online Appendix), leaving permanent jobs without a written contract to also be considered as temporary employment. Meanwhile, Cambodia’s survey provides detailed information on both duration and type of contract, allowing to include ‘unlimited duration oral contracts’ in the permanent employment category. Thus, temporary employment in Cambodia includes only ‘limited/unspecified duration written contracts’, and ‘limited/unspecified duration oral contracts’.

This section aims to assess how the estimates on temporary workers’ wage differentials would change in response to the modification in temporary employment’s definition. Certainly, the previously stated main results are based on the most accurate and appropriate ways to define temporary employment given available survey information. First, to make the concept of temporary employment in Cambodia closer to that of Vietnam and Pakistan, a job would be considered permanent only if it has unlimited duration and a written contract. Second, temporary workers in Vietnam are re-defined as those with fixed term or undefined contract but precarious duration and without social security coverage. This new definition narrows the scope of temporary employment in Vietnam, to be more detailed, makes it an even more ‘inferior’ job category. Third, in Pakistan, only jobs with contracts equal or shorter than one year or without contract/agreement would be considered as temporary employment. This one year threshold comes from Pakistani regulation that imposes the maximum duration of FTCs, including renewals, to be one year and less (Aleksynska and Muller, 2015). In addition, an alternative question is used to determine temporary employment (question 5.8 instead of question 7.1). According to this question, permanent wage workers are defined as ‘regular paid employee with fixed wage’, and temporary workers as ‘casual paid employee’, ‘paid workers by piece rate or work performed’, or ‘paid non-family apprentice’. The estimation results are presented in Table 11 (Online Appendix).

Interestingly, the wage premium in Cambodia has faded away once the new definition of temporary employment is adopted (OLS coefficient is small and no longer significant). This is possibly because this modified definition has enlarged the scope of temporary jobs by imposing more ‘superior’ criteria on permanent employment, making the former less advantageous relative to the latter. However, considering the wage premium along the wage distribution, significant estimates have re-appeared for certain percentiles. Particularly, the estimated wage differential for the 10th quantile in the benchmark model has turned into negative (minus 5.7 percent), implying that the impact of ‘written contract’ criterion is the strongest on workers at the bottom of the pay ladder.

By contrast, the results in Vietnam do not change much when social security is taken into account. This could be explained by the fact that up to three quarters of initially defined temporary workers already lacked social security. Adding this criterion to temporary employment thus does not cause significant change in the estimated wage gaps.

Meanwhile, imposing one year duration threshold on temporary jobs slightly reduces the estimated wage penalty in Pakistan (from 45 percent to 38 percent in benchmark model and from 26 percent to 18 percent in extended model). In fact, limited term contracts longer than one year constituted merely under six percent of all wage jobs, so excluding them from temporary employment does not change the estimated results very much. By contrast, when temporary employment is re-defined using question 5.8, the estimated wage gaps drop enor-

mously (from 45 percent to five percent in the benchmark model and from 26 percent to 10 percent in extended model). Actually, the concept of permanent wage workers defined using this question coincides with regular wage workers. According to [Ahmad and Ahmad \(2006\)](#), in Pakistan, ‘a regular worker is enrolled on the labor register of the firm, has job security, is paid wages even when there is no work and receives benefits and facilities such as social security, medical care, education cess, pension, housing, transport, ...’ The Resolution concerning the International Classification of Status in Employment (ICSE-93) also states that ‘It is also recommended to distinguish regular employees from other *employees with stable contracts* on the basis of the extent to which these contracts oblige the employer to pay regular social security contributions and/or are subject to national labor legislation’. This definition is closer to formal wage employment rather than permanent wage employment, without any explicit mentioning about duration. Meanwhile, the original definition of permanent employment (that is the one used for the main analyses) implies both permanency and formality (‘permanent/pensionable job’). Data show that only 45 percent of permanent workers defined with question 5.8 could be considered as permanent workers defined as ‘permanent/pensionable job’. Therefore, it is reasonable that the temporary-permanent wage penalty is more narrow than before.

To sum up, the robustness checks have illustrated that definitions of temporary employment do matter, particularly when cross-country comparisons are to be made. In cases of Indonesia and the Philippines, there is no second way to define temporary employment due to limited questionnaire. Pakistani data, by contrast, offer several alternative definitions, which might lead to more or less different results. Therefore, it is recommended to interpret these results keeping in mind the exact scope of the so-called ‘temporary employment’ in different country contexts.

5 Concluding remarks

This study investigates the temporary-permanent workers’ wage differentials in some selected Asian countries. Our review of literature has shown that though some Asian-country evidence on temporary employment exists, no systematic comparative research has been conducted focusing on this topic. There is, indeed, a scarcity of cross-nation statistical evidence on this employment form in Asia. Such a shortage of Asian cross-country statistics and studies on temporary employment could be attributed to the fact that this form of employment has been less of a concern as compared to informal employment, that there has been a lack of awareness of the phenomenon, or also because of lacking the data to study this phenomenon properly. This study manages to provide first-time-ever empirical evidence, shedding light on this neglected research area for some developing countries in Asia, including Cambodia, Indonesia, Pakistan, the Philippines and Vietnam.

In the theories, the wage gap associated with temporary employment is still inconclusive. On the one hand, Human Capital theory, Efficiency Wage theory, Labor Market Segmentation theory and Insider-Outsider model all indicate a wage penalty suffered by the temporary workers. On the other hand, the theory of Equalizing Differences, or Compensatory Differences, predicts that temporary workers could receive wage premiums to compensate for undesirable non-wage characteristics associated with their jobs. Our analyses of temporary-permanent workers’ wage gaps actually find supporting evidence for both wage penalty and wage premium. On average, temporary workers suffer from wage penalties of at least two percent in Indonesia, Pakistan, the Philippines and Vietnam but benefit from a wage premium of five percent in Cambodia. Vietnam and Pakistan are the countries where temporary workers face the severest wage penalty. Temporary wage differentials highly depend on the relative position in the conditional wage distribution, except in the Philippines and Cambodia, where temporary workers encounter similar levels of wage penalty/premium at any positions in the pay ladder. Both sticky floor and glass ceiling effects emerge. The temporary employment’s wage gap widens in the lower tiers of the

wage distribution in Vietnam and Pakistan, suggesting that the penalty of being in temporary jobs could be more severe for disadvantaged workers, while glass ceiling effect impedes Indonesian temporary workers from approaching high wages.

Different temporary-permanent workers' wage gaps in the five selected Asian countries are related to their specific institutional and socioeconomic contexts. While smaller wage discrimination among low wage earners in Indonesia might be a result of their equal opportunities and anti-discrimination laws; the predominance of the informal economy and the difficulty to include temporary workers in trade unions in Vietnam and Pakistan are probably relevant to greater wage penalty suffered by workers at the bottom of the wage distribution. Meanwhile, the temporary employment's wage penalty is modest and stable along the wage distribution in the Philippines, where the labor market institution and regulation as well as trade unions highly protect non-regular workers. In the special case of Cambodia, temporary worker's remuneration advantage seems to be in line with Compensatory Wage theory: there is anecdotal evidence that Cambodian FTC workers receive a five percent payment at the end of the contract, in compensating for fewer rights and benefits such as paid annual leave. In addition, FTC has become increasingly popular in the textile, footwear and garment industry, which is the main driving force of Cambodia's economy and the only sector applying minimum wages.

This general inequality between permanent and temporary workers is a challenge to be addressed, notably as temporary employment accounts for an even higher proportion in these developing Asian countries than in many other developed economies. Thus, reinforcement of the legal framework of labor contracts could be a central measure to improve employer-employee relationship and prevent the existence of loosely contractual engagement which leads to poor labor conditions and poorly paid jobs. However, as regulation is said to be working for the insiders but not the outsiders, social protection schemes should be delinked from employment status and extended to the informal sector usually on a non-contributory basis. Moreover, country-specific measures should be applied as different distribution patterns of wage penalties emerge. In Vietnam and Pakistan, as temporary workers possibly face rigorous pay discrimination when they first enter the labor market, assistance and protection policies should be focused on these individuals. Meanwhile, a further enhancement of labor protection such as minimum wage law might not be appropriate to narrow the pay gap at the upper tiers of the wage distribution in Indonesia.

Due to some limits of data sources, the current study leaves some issues to be further addressed. First, the heterogeneous definitions and classifications of temporary employment forms applied in LFS across selected countries hinder, to a certain extent, the comparability of the obtained results. Second, further investigation focusing on demand side should be conducted to provide more evidence explaining the nexus between wage gaps and the wide use of temporary employment. It is necessary to understand if the importantly negative temporary wage gap (or permanent workers' wage premium) explains the popular use of temporary labor as a way to restrain wage bill, or if flexible use of employment through short-term contracts, casual jobs and so on is simply the norm in these developing countries.

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Table 1. Definition of temporary employment in national Labor Force Surveys

| | <u>Cambodia (2012)</u> | <u>Indonesia (2007)</u> | <u>Pakistan (2008-09)</u> | <u>Philippines (2009)</u> | <u>Vietnam (2007)</u> |
|---|--|---|--|---|-----------------------------------|
| | <u>Is the contract or agreement of...?</u> | <u>What is the status of (NAME) in his/her main job in the last one week?</u> | <u>What was the status of job's written contract/ agreement between the employee and the employer?</u> | <u>Nature of employment</u> | <u>Type of contract</u> |
| Survey question to define temporary employment | 1= Limited duration | 1. Self employed | 1. Permanent/ pensionable Job With contract/ agreement | 1-Permanent job/business/unpaid family work | 1- Indefinite-term labor contract |
| | 2= Unlimited duration | 2. Self-employed assisted by temporary/unpaid worker | 2. Less than 1 year | 2-Short-term or seasonal or casual job/business/unpaid family work | 2- Definite-term labor contract |
| | 3= Unspecified duration | 3. Employer with permanent/paid workers | 3. Up to 3 years | 3-Worked for different employer on day to day or week to week basis | 3- Verbal agreement |
| | 4= Don't know | 4. Employee | 4. Up to 5 years | | 4- No contract |
| | | 5. Casual employee in agriculture | 5. Up to 10 years | | |
| | | 6. Casual employee in non-agriculture | 6. 10 Years and more | | |
| | | 7. Unpaid worker | 7. Without contract/agreement | | |
| Temporary | 1, 3, 4 | 5, 6 | 2, 3, 4, 5, 6, 7 | 2, 3 | 2, 3, 4 |

Source: Cambodia's Labor Force and Child Labor Survey 2012, Indonesia's LFS 2007-2008, Pakistan's LFS 2008-2009, the Philippines' LFS 2009, Vietnam's LFS 2007.

Table 2. Temporary employees in selected Asian countries: Statistical Description

| | Cambodia | Indonesia | Pakistan | Philippines | Vietnam |
|--|-----------------|------------------|-----------------|--------------------|----------------|
| Wage workers, as % of total employment | 46.03 | 38.45 | 36.83 | 53.19 | 30.86 |
| Temporary workers, as % of wage workers | 53.22 | 27.01 | 74.6 | 24.25 | 67.34 |
| Temporary workers, as % of wage workers, by sex | | | | | |
| <i>Male</i> | 53.82 | 28.35 | 74.14 | 25.54 | 71.39 |
| <i>Female</i> | 52.36 | 24.07 | 77.8 | 22.12 | 61.37 |
| Temporary workers, as % of wage workers, by age | | | | | |
| <i>15-24</i> | 52.67 | 22.1 | 91.6 | 39.63 | 85.64 |
| <i>25-54</i> | 53.2 | 26.32 | 67 | 19.63 | 62.01 |
| <i>55-64</i> | 57.2 | 45.44 | 69.37 | 16.39 | 60.18 |
| Temporary workers, as % of wage workers, by level of education | | | | | |
| <i>No education</i> | 52.6 | 71.87 | 91.94 | 39.3 | 95.84 |
| <i>Elementary</i> | 49.3 | 47.66 | 86.84 | 32.49 | 86.24 |
| <i>High school and vocational</i> | 59.35 | 14.8 | 57.28 | 28.37 | 55.28 |
| <i>University and more</i> | 63.08 | 0.47 | 30.67 | 14.22 | 25.69 |
| Temporary workers, as % of wage workers, by sector | | | | | |
| <i>Public</i> | 56.87 | N.A. | 14.52 | 10.34 | 28 |
| <i>Private</i> | 52.52 | N.A. | 93.01 | 26.76 | 89 |
| Temporary workers, as % of wage workers, by industry | | | | | |
| <i>Agriculture</i> | 52.59 | 71.37 | 97.93 | 44.57 | 89.86 |
| <i>Manufacturing</i> | 51.11 | 24.25 | 89.71 | 21.78 | 79.92 |
| <i>Trade</i> | 50.18 | 8.15 | 93.91 | 37.68 | 81.82 |
| <i>Services</i> | 56.47 | 7.35 | 48.16 | 17.86 | 41.13 |
| Temporary workers, as % of wage workers, by occupational groups | | | | | |
| <i>Legislators, senior officials and managers</i> | 53.87 | 0.06 | 42.16 | 4.58 | N.A. |
| <i>Professionals</i> | 63.42 | 0.52 | 48.67 | 6.64 | N.A. |
| <i>Technicians and associate professionals</i> | 49.9 | 1.69 | 38.08 | 15.44 | N.A. |

| | | | | | |
|--|-------|-------|-------|-------|-------|
| <i>Clerks</i> | 62.67 | 0.45 | 25.16 | 15.27 | N.A. |
| <i>Service workers and shop and market sales workers</i> | 54.48 | 7.14 | 75.12 | 23.64 | N.A. |
| <i>Skilled agricultural and fishery workers</i> | 52.01 | 65.19 | 62.83 | 22.52 | N.A. |
| <i>Craft and related trades workers</i> | 47.51 | 29.46 | 92.49 | 25.48 | N.A. |
| <i>Plant and machine operators and assemblers</i> | 53.31 | 9.23 | 83.14 | 17.67 | N.A. |
| <i>Elementary occupations</i> | 51.16 | 48.49 | 87.82 | 35.85 | N.A. |
| Temporary workers, as % of informal wage workers | 49.02 | N.A. | N.A. | N.A. | 95.87 |
| Temporary workers, as % of informal sector wage workers | 46.57 | N.A. | 97.69 | N.A. | 99.28 |
| Temporary/permanent wage ratio (hourly, in %) | 98.09 | 49.12 | 42.3 | 64.73 | 60 |

Source: Cambodia's Labor Force and Child Labor Survey 2012, Indonesia's LFS 2007-2008, Pakistan's LFS 2008-2009, the Philippines' LFS 2009, Vietnam's LFS 2007. Authors' calculation.

Table 3. Temporary workers' wage gap in selected Asian countries – Benchmark OLS model

| VARIABLES | (1) Cambodia | (2) Indonesia | (3) Pakistan | (4) Philippines | (5) Vietnam |
|-------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Temporary Employee | 0.056*** (0.015) | -0.158*** (0.004) | -0.446*** (0.012) | -0.073*** (0.007) | -0.309*** (0.004) |
| Individual characteristics | | | | | |
| Gender Female | -0.122*** (0.015) | -0.197*** (0.004) | -0.327*** (0.016) | -0.224*** (0.008) | -0.144*** (0.003) |
| Head of household | 0.004 (0.025) | 0.039*** (0.004) | 0.001 (0.012) | 0.007 (0.009) | 0.019*** (0.004) |
| Marital status (reference: single) | | | | | |
| <i>Married</i> | 0.023 (0.022) | 0.101*** (0.005) | 0.044*** (0.013) | 0.107*** (0.009) | 0.021*** (0.004) |
| <i>Widowed</i> | -0.060 (0.055) | -0.096*** (0.010) | -0.090** (0.038) | -0.015 (0.023) | -0.058*** (0.013) |
| <i>Divorced</i> | -0.101* (0.058) | -0.080*** (0.010) | -0.016 (0.066) | -0.021 (0.025) | -0.008 (0.011) |
| Human capital | | | | | |
| Age | 0.034*** (0.004) | 0.039*** (0.001) | 0.030*** (0.003) | 0.029*** (0.002) | 0.042*** (0.001) |
| Age squared | -0.000*** (0.000) | -0.000*** (0.000) | -0.000*** (0.000) | -0.000*** (0.000) | -0.000*** (0.000) |
| Education (reference: no education) | | | | | |
| <i>Primary and secondary</i> | 0.062*** (0.015) | 0.169*** (0.009) | 0.090*** (0.010) | 0.184*** (0.039) | 0.061*** (0.006) |
| <i>High school</i> | 0.247*** (0.031) | 0.492*** (0.009) | 0.284*** (0.011) | 0.359*** (0.039) | 0.226*** (0.007) |
| <i>University and above</i> | 0.583*** (0.058) | 1.163*** (0.010) | 0.831*** (0.017) | 1.070*** (0.039) | 0.576*** (0.008) |
| Job characteristics | | | | | |
| Industry (reference: agriculture) | | | | | |
| <i>Manufacturing</i> | 0.066*** (0.018) | 0.151*** (0.004) | 0.210*** (0.016) | 0.123*** (0.012) | 0.050*** (0.006) |
| <i>Trade</i> | 0.080 (0.053) | -0.038*** (0.006) | -0.089*** (0.021) | 0.224*** (0.010) | 0.036*** (0.008) |
| <i>Services</i> | 0.017 (0.023) | 0.200*** (0.005) | 0.109*** (0.017) | 0.011 (0.010) | 0.023*** (0.007) |
| Geographical characteristics | | | | | |
| Rural area | -0.132*** (0.031) | 0.023*** (0.003) | -0.063*** (0.008) | -0.067*** (0.008) | -0.062*** (0.004) |
| Region | Yes | Yes | Yes | Yes | Yes |
| Constant | 7.172*** | 7.029*** | 2.829*** | 2.081*** | 0.936*** |

| | | | | | |
|--------------|---------|---------|---------|---------|---------|
| | (0.078) | (0.017) | (0.048) | (0.050) | (0.020) |
| Observations | 9,050 | 154,074 | 25,460 | 33,530 | 117,968 |
| R-squared | 0.099 | 0.497 | 0.393 | 0.435 | 0.366 |

*Source: Cambodia's Labor Force and Child Labor Survey 2012, Indonesia's LFS 2007-2008, Pakistan's LFS 2008-2009, the Philippines' LFS 2009, Vietnam's LFS 2007. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.*

Table 4. Temporary-Permanent Workers' Wage Gap: OLS and Quantile Regression

| Variables | Benchmark model | | | | | | Extended model | | | | | |
|-------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| | OLS | QR .10 | QR .25 | QR .50 | QR .75 | QR .90 | OLS | QR .10 | QR .25 | QR .50 | QR .75 | QR .90 |
| Cambodia | 0.056*** (0.015) | 0.030** (0.014) | 0.024** (0.010) | 0.035*** (0.009) | 0.046*** -0.011 | 0.059*** (0.019) | 0.047*** (0.015) | 0.025** (0.011) | 0.036*** (0.010) | 0.028*** (0.009) | 0.046*** (0.010) | 0.054*** (0.019) |
| Indonesia | -0.158*** (0.004) | -0.119*** (0.007) | -0.138*** (0.005) | -0.169*** (0.005) | -0.192*** (0.005) | -0.180*** (0.006) | -0.047*** (0.004) | -0.029*** (0.007) | -0.036*** (0.005) | -0.047*** (0.004) | -0.070*** (0.005) | -0.068*** (0.006) |
| Pakistan | -0.446*** (0.012) | -0.527*** (0.017) | -0.511*** (0.012) | -0.464*** (0.009) | -0.388*** (0.010) | -0.268*** (0.013) | -0.256*** (0.016) | -0.314*** (0.016) | -0.300*** (0.015) | -0.265*** (0.010) | -0.204*** (0.012) | -0.140*** (0.015) |
| Philippines | -0.073*** (0.007) | -0.049*** (0.011) | -0.066*** (0.009) | -0.081*** (0.007) | -0.088*** (0.008) | -0.060*** (0.008) | -0.016** (0.007) | -0.042*** (0.010) | -0.035*** (0.008) | -0.024*** (0.006) | -0.027*** (0.006) | -0.022*** (0.008) |
| Vietnam | -0.309*** (0.004) | -0.329*** (0.007) | -0.311*** (0.005) | -0.285*** (0.004) | -0.265*** (0.004) | -0.233*** (0.006) | -0.289*** (0.005) | -0.320*** (0.007) | -0.293*** (0.005) | -0.251*** (0.004) | -0.221*** (0.005) | -0.185*** (0.007) |

Source: Cambodia's Labor Force and Child Labor Survey 2012, Indonesia's LFS 2007-2008, Pakistan's LFS 2008-2009, the Philippines' LFS 2009, Vietnam's LFS 2007. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5. Temporary-Permanent Workers' Wage Gap: Heckman correction for sample selection

| | Cambodia | | Indonesia | | Pakistan | | Philippines | | Vietnam | |
|-------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (9) | (10) | (7) | (8) | (5) | (6) | (3) | (4) |
| | Stage 2 | Stage 1 |
| Temporary employment | 0.055*** (0.015) | | -0.160*** (0.004) | | -0.448*** (0.011) | | -0.076*** (0.008) | | -0.312*** (0.004) | |
| Individual characteristics | | | | | | | | | | |
| Female | -0.139*** (0.016) | -0.190*** (0.026) | -0.250*** (0.004) | -0.139*** (0.006) | -0.391*** (0.022) | -0.246*** (0.019) | -0.231*** (0.007) | 0.087*** (0.013) | -0.114*** (0.004) | -0.220*** (0.006) |
| Head of household | | | | 0.130*** (0.007) | | 0.066*** (0.017) | | 0.093*** (0.014) | | -0.008 (0.007) |
| Marital status (reference: single) | | | | | | | | | | |
| <i>Married</i> | | -0.490*** (0.034) | | -0.301*** (0.008) | | -0.137*** (0.020) | | -0.276*** (0.015) | | -0.190*** (0.009) |
| <i>Widowed</i> | | -0.133* (0.074) | | -0.213*** (0.018) | | 0.037 (0.053) | | -0.213*** (0.030) | | -0.140*** (0.020) |
| <i>Divorced</i> | | -0.310*** (0.087) | | -0.274*** (0.015) | | 0.062 (0.101) | | -0.148*** (0.039) | | -0.082*** (0.022) |
| Human capital | | | | | | | | | | |
| Age | 0.033*** (0.004) | -0.031*** (0.005) | 0.051*** (0.001) | 0.010*** (0.001) | 0.040*** (0.003) | 0.035*** (0.004) | 0.037*** (0.001) | 0.004 (0.002) | 0.047*** (0.001) | 0.007*** (0.001) |
| Age squared | -0.000*** (0.000) | 0.000 (0.000) | -0.000*** (0.000) | -0.000*** (0.000) | -0.000*** (0.000) | -0.001*** (0.000) | -0.000*** (0.000) | -0.000*** (0.000) | -0.000*** (0.000) | -0.000*** (0.000) |
| Education (reference: no education) | | | | | | | | | | |
| <i>Primary and secondary</i> | 0.062*** (0.016) | -0.038 (0.023) | 0.195*** (0.010) | 0.045*** (0.012) | 0.061*** (0.014) | -0.134*** (0.015) | 0.211*** (0.039) | 0.121*** (0.044) | 0.092*** (0.007) | -0.158*** (0.010) |
| <i>High school</i> | 0.260*** | 0.266*** | 0.537*** | 0.234*** | 0.276*** | -0.037** | 0.388*** | 0.100** | 0.160*** | 0.368*** |

| | | | | | | | | | | |
|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | (0.030) | (0.047) | (0.011) | (0.012) | (0.012) | (0.017) | (0.039) | (0.044) | (0.008) | (0.011) |
| <i>University and above</i> | 0.619*** | 0.979*** | 1.285*** | 1.418*** | 0.879*** | 0.282*** | 1.136*** | 0.506*** | 0.359*** | 1.532*** |
| | (0.055) | (0.106) | (0.017) | (0.015) | (0.022) | (0.024) | (0.041) | (0.045) | (0.015) | (0.014) |
| Job characteristics | | | | | | | | | | |
| Industry (reference: agriculture) | | | | | | | | | | |
| <i>Manufacturing</i> | 0.122** | 1.172*** | 0.255*** | 1.100*** | 0.761*** | 2.020*** | 0.195*** | 0.542*** | -0.310*** | 1.642*** |
| | (0.050) | (0.028) | (0.015) | (0.006) | (0.173) | (0.018) | (0.020) | (0.017) | (0.021) | (0.008) |
| <i>Trade</i> | 0.044 | -0.646*** | -0.055*** | -0.242*** | 0.084 | 0.523*** | 0.416*** | 2.131*** | -0.037*** | 0.173*** |
| | (0.048) | (0.040) | (0.007) | (0.008) | (0.059) | (0.020) | (0.046) | (0.032) | (0.008) | (0.010) |
| <i>Services</i> | 0.071 | 1.090*** | 0.281*** | 0.807*** | 0.658*** | 2.010*** | 0.081*** | 0.542*** | -0.275*** | 1.267*** |
| | (0.049) | (0.031) | (0.012) | (0.006) | (0.173) | (0.018) | (0.020) | (0.014) | (0.018) | (0.008) |
| Geographic characteristics | | | | | | | | | | |
| Rural area | -0.124*** | 0.186*** | 0.009** | -0.226*** | -0.063*** | -0.007 | -0.086*** | -0.193*** | -0.050*** | -0.057*** |
| | (0.028) | (0.042) | (0.004) | (0.005) | (0.009) | (0.014) | (0.009) | (0.012) | (0.004) | (0.006) |
| Region | Yes |
| Constant | 7.125*** | 0.700*** | 6.682*** | -0.588*** | 1.990*** | -1.741*** | 1.765*** | -0.330*** | 1.363*** | -0.966*** |
| | (0.072) | (0.111) | (0.027) | (0.025) | (0.245) | (0.058) | (0.063) | (0.063) | (0.032) | (0.028) |
| Lambda | 0.086 | 0.086 | 0.137*** | | 0.388*** | 0.388*** | 0.173*** | 0.173*** | -0.318*** | -0.318*** |
| | (0.069) | (0.069) | (0.018) | | (0.121) | (0.121) | (0.040) | (0.040) | (0.018) | (0.018) |
| Observations | 18,546 | | 485,785 | | 69,493 | | 78,932 | | 334,445 | |

Source: Cambodia's Labor Force and Child Labor Survey 2012, Indonesia's LFS 2007-2008, Pakistan's LFS 2008-2009, the Philippines' LFS 2009, Vietnam's LFS 2007. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6. Temporary-Permanent Workers' Wage Gap: Extended OLS and Quantile Regression - Cambodia.

| VARIABLES | (1) OLS | (2) QR .10 | (3) QR .25 | (4) QR .50 | (5) QR .75 | (6) QR .90 |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Temporary Employee | 0.047*** (0.015) | 0.025** (0.011) | 0.036*** (0.010) | 0.028*** (0.009) | 0.046*** (0.010) | 0.054*** (0.019) |
| Individual characteristics | | | | | | |
| Gender Female | -0.146*** (0.016) | -0.111*** (0.015) | -0.086*** (0.013) | -0.104*** (0.010) | -0.103*** (0.011) | -0.188*** (0.022) |
| Migration (reference: non migrant) | | | | | | |
| <i>Migrant from another village in this province</i> | -0.003 (0.024) | 0.010 (0.023) | 0.037** (0.018) | 0.018 (0.015) | 0.024 (0.016) | 0.046 (0.032) |
| <i>Migrant from another province</i> | 0.105*** (0.026) | 0.023 (0.026) | 0.066*** (0.023) | 0.074*** (0.014) | 0.102*** (0.024) | 0.207*** (0.039) |
| <i>Migrant from another country</i> | 0.109 (0.140) | 0.180** (0.079) | 0.111 (0.131) | 0.223 (0.254) | 0.121 (0.084) | -0.020 (0.079) |
| Marital status (reference: single) | | | | | | |
| <i>Married</i> | 0.022 (0.022) | -0.003 (0.017) | 0.018 (0.016) | 0.025* (0.013) | 0.037*** (0.014) | 0.069** (0.029) |
| <i>Widowed</i> | -0.047 (0.054) | -0.123 (0.103) | -0.012 (0.058) | -0.034 (0.028) | -0.016 (0.033) | -0.003 (0.049) |
| <i>Divorced</i> | -0.100* (0.056) | -0.047** (0.022) | -0.070 (0.057) | -0.054** (0.026) | -0.020 (0.024) | 0.008 (0.040) |
| Head of household | 0.017 (0.025) | 0.075*** (0.023) | 0.026 (0.018) | 0.017 (0.014) | 0.023 (0.018) | -0.016 (0.034) |
| Human capital | | | | | | |
| Age | 0.027*** (0.004) | 0.025*** (0.004) | 0.021*** (0.003) | 0.016*** (0.003) | 0.012*** (0.003) | 0.008 (0.005) |
| 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) | | | | | | | |
| | <i>Primary and secondary</i> | 0.052*** | 0.082*** | 0.067*** | 0.036*** | 0.027*** | 0.031 |
| | | (0.015) | (0.012) | (0.011) | (0.009) | (0.010) | (0.020) |
| | <i>High school</i> | 0.199*** | 0.218*** | 0.200*** | 0.134*** | 0.127*** | 0.146*** |
| | | (0.033) | (0.043) | (0.023) | (0.017) | (0.032) | (0.049) |
| | <i>University and above</i> | 0.528*** | 0.528*** | 0.490*** | 0.553*** | 0.620*** | 0.459*** |
| | | (0.061) | (0.074) | (0.069) | (0.044) | (0.067) | (0.064) |
| Occupation | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Job characteristics | | | | | | | |
| Industry (reference: agriculture) | | | | | | | |
| | <i>Manufacturing</i> | 0.022 | 0.089*** | 0.065*** | 0.066*** | 0.029** | -0.022 |
| | | (0.022) | (0.023) | (0.018) | (0.013) | (0.014) | (0.033) |
| | <i>Trade</i> | 0.126** | 0.033 | -0.025 | 0.065 | 0.149*** | 0.311*** |
| | | (0.055) | (0.060) | (0.052) | (0.043) | (0.054) | (0.114) |
| | <i>Services</i> | 0.028 | -0.086*** | -0.059** | 0.047* | 0.160*** | 0.184*** |
| | | (0.029) | (0.025) | (0.027) | (0.024) | (0.025) | (0.048) |
| Public sector | | -0.209*** | -0.119*** | -0.113*** | -0.162*** | -0.173*** | -0.213*** |
| | | (0.039) | (0.031) | (0.031) | (0.025) | (0.030) | (0.045) |
| Business size | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Trade union membership | | -0.019 | 0.039*** | 0.018 | 0.017 | -0.018 | -0.085*** |
| | | (0.020) | (0.013) | (0.013) | (0.014) | (0.014) | (0.028) |
| Geographical characteristics | | | | | | | |
| Rural area | | -0.120*** | -0.052*** | -0.080*** | -0.079*** | -0.051** | -0.107*** |
| | | (0.031) | (0.020) | (0.020) | (0.016) | (0.024) | (0.040) |
| Region | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | | 7.349*** | 6.647*** | 6.996*** | 7.530*** | 7.732*** | 8.259*** |

| | | | | | | |
|--------------|---------|---------|---------|---------|---------|---------|
| | (0.102) | (0.095) | (0.097) | (0.074) | (0.082) | (0.165) |
| Observations | 9,050 | 9,050 | 9,050 | 9,050 | 9,050 | 9,050 |
| R-squared | 0.129 | | | | | |

Source: Cambodia's Labor Force and Child Labor Survey 2012. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7. Temporary-Permanent Workers' Wage Gap: Extended OLS and Quantile Regression – Indonesia

| VARIABLES | (1) OLS | (2) QR .10 | (3) QR .25 | (4) QR .50 | (5) QR .75 | (6) QR .90 |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Temporary Employee | -0.047*** (0.004) | -0.029*** (0.007) | -0.036*** (0.005) | -0.047*** (0.004) | -0.070*** (0.005) | -0.068*** (0.006) |
| Individual characteristics | | | | | | |
| Gender Female | -0.227*** (0.004) | -0.268*** (0.006) | -0.258*** (0.005) | -0.219*** (0.005) | -0.189*** (0.005) | -0.181*** (0.005) |
| Head of household | 0.023*** (0.004) | 0.028*** (0.006) | 0.026*** (0.005) | 0.026*** (0.005) | 0.024*** (0.005) | 0.021*** (0.006) |
| Marital status (reference: single) | | | | | | |
| <i>Married</i> | 0.079*** (0.004) | 0.083*** (0.007) | 0.077*** (0.006) | 0.071*** (0.005) | 0.068*** (0.005) | 0.076*** (0.006) |
| <i>Widowed</i> | -0.047*** (0.010) | 0.071*** (0.010) | -0.007 (0.014) | -0.051*** (0.013) | -0.102*** (0.012) | -0.164*** (0.010) |
| <i>Divorced</i> | -0.040*** (0.009) | 0.041*** (0.012) | -0.007 (0.013) | -0.056*** (0.012) | -0.086*** (0.012) | -0.116*** (0.015) |
| Human capital | | | | | | |
| Age | 0.030*** (0.001) | 0.031*** (0.001) | 0.031*** (0.001) | 0.028*** (0.001) | 0.027*** (0.001) | 0.028*** (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) | | | | | | | |
| | <i>Primary and secondary</i> | 0.139*** | 0.033*** | 0.114*** | 0.145*** | 0.162*** | 0.230*** |
| | | (0.008) | (0.012) | (0.012) | (0.010) | (0.010) | (0.009) |
| | <i>High school</i> | 0.317*** | 0.234*** | 0.292*** | 0.313*** | 0.320*** | 0.385*** |
| | | (0.009) | (0.012) | (0.012) | (0.011) | (0.011) | (0.010) |
| | <i>University and above</i> | 0.705*** | 0.682*** | 0.689*** | 0.664*** | 0.652*** | 0.753*** |
| | | (0.010) | (0.014) | (0.014) | (0.012) | (0.012) | (0.012) |
| Occupation | | Yes | Yes | Yes | Yes | Yes | Yes |
| Job characteristics | | | | | | | |
| Industry (reference: agriculture) | | | | | | | |
| | <i>Manufacturing</i> | 0.145*** | 0.172*** | 0.168*** | 0.163*** | 0.134*** | 0.098*** |
| | | (0.005) | (0.009) | (0.007) | (0.006) | (0.006) | (0.008) |
| | <i>Trade</i> | 0.014* | 0.043*** | 0.038*** | 0.031*** | 0.002 | -0.039*** |
| | | (0.008) | (0.012) | (0.009) | (0.009) | (0.009) | (0.012) |
| | <i>Services</i> | 0.062*** | 0.041*** | 0.042*** | 0.071*** | 0.086*** | 0.097*** |
| | | (0.006) | (0.009) | (0.007) | (0.007) | (0.007) | (0.009) |
| Trade union membership | | 0.099*** | 0.097*** | 0.095*** | 0.098*** | 0.089*** | 0.087*** |
| | | (0.005) | (0.008) | (0.006) | (0.005) | (0.005) | (0.007) |
| Formal employment (Social security) | | 0.343*** | 0.453*** | 0.412*** | 0.336*** | 0.274*** | 0.223*** |
| | | (0.004) | (0.006) | (0.005) | (0.004) | (0.004) | (0.005) |
| Geographical characteristics | | | | | | | |
| Rural area | | 0.027*** | 0.013** | 0.022*** | 0.032*** | 0.036*** | 0.024*** |
| | | (0.003) | (0.005) | (0.004) | (0.004) | (0.004) | (0.004) |
| Provinces | | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | | 7.873*** | 7.262*** | 7.572*** | 7.951*** | 8.239*** | 8.392*** |
| | | (0.020) | (0.038) | (0.027) | (0.024) | (0.023) | (0.025) |

| | | | | | | |
|--------------|---------|---------|---------|---------|---------|---------|
| Observations | 154,074 | 154,074 | 154,074 | 154,074 | 154,074 | 154,074 |
| R-squared | 0.568 | | | | | |

Source: Indonesia's LFS 2007-2008. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8. Temporary-Permanent Workers' Wage Gap: Extended OLS and Quantile Regression – Pakistan

| VARIABLES | (1) OLS | (2) QR .10 | (3) QR .25 | (4) QR .50 | (5) QR .75 | (6) QR .90 |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Temporary Employee | -0.256*** (0.016) | -0.314*** (0.016) | -0.300*** (0.015) | -0.265*** (0.010) | -0.204*** (0.012) | -0.140*** (0.015) |
| Individual characteristics | | | | | | |
| Gender Female | -0.343*** (0.017) | -0.554*** (0.027) | -0.498*** (0.020) | -0.339*** (0.017) | -0.228*** (0.016) | -0.153*** (0.019) |
| Head of household | -0.008 (0.011) | 0.007 (0.012) | 0.012 (0.012) | 0.001 (0.009) | -0.005 (0.010) | -0.021* (0.011) |
| Marital status (reference: single) | | | | | | |
| <i>Married</i> | 0.039*** (0.013) | 0.065 (0.000) | 0.022 (0.013) | 0.017 (0.011) | 0.038*** (0.012) | 0.019 (0.015) |
| <i>Widowed</i> | -0.067* (0.037) | -0.056 (0.051) | -0.043 (0.034) | -0.066* (0.037) | -0.041 (0.042) | -0.094*** (0.019) |
| <i>Divorced</i> | -0.013 (0.066) | 0.011 (0.134) | 0.075* (0.045) | -0.030 (0.046) | -0.020 (0.032) | -0.144*** (0.021) |
| Migration (reference: non migrant) | | | | | | |
| <i>Migrant less than 1 year</i> | 0.085** (0.043) | 0.001 (0.041) | 0.052 (0.050) | 0.091*** (0.026) | 0.065 (0.068) | 0.158** (0.064) |
| <i>Migrant from 2-4 years</i> | 0.028 (0.027) | 0.024 (0.042) | 0.068** (0.030) | 0.040** (0.019) | -0.001 (0.025) | 0.007 (0.045) |

| | | | | | | | |
|----------------------------|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | <i>Migrant from 5- 9 years</i> | 0.032 (0.027) | 0.030 (0.035) | 0.032 (0.024) | 0.040*** (0.014) | 0.014 (0.023) | 0.012 (0.037) |
| | <i>Migrant since 10 years and over</i> | 0.064*** (0.014) | 0.053** (0.024) | 0.068*** (0.017) | 0.078*** (0.011) | 0.050*** (0.010) | 0.029* (0.015) |
| Human capital | | | | | | | |
| | Age | 0.030*** (0.003) | 0.041 (0.000) | 0.033*** (0.003) | 0.027*** (0.002) | 0.023*** (0.002) | 0.021*** (0.003) |
| | 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) | | | | | | |
| | <i>Primary and secondary</i> | 0.064*** (0.010) | 0.075*** (0.015) | 0.070*** (0.010) | 0.075*** (0.008) | 0.059*** (0.009) | 0.065*** (0.011) |
| | <i>High school</i> | 0.191*** (0.013) | 0.180 (0.000) | 0.162*** (0.013) | 0.176*** (0.009) | 0.166*** (0.010) | 0.196*** (0.015) |
| | <i>University and above</i> | 0.595*** (0.020) | 0.452*** (0.026) | 0.530*** (0.020) | 0.577*** (0.015) | 0.575*** (0.016) | 0.635*** (0.019) |
| | Training (reference: no training) | | | | | | |
| | <i>On-the-job training</i> | 0.070*** (0.017) | 0.093*** (0.028) | 0.085*** (0.019) | 0.059*** (0.013) | 0.065*** (0.019) | 0.041** (0.018) |
| | <i>Off-the-job training</i> | 0.029* (0.017) | 0.001 (0.021) | 0.014 (0.021) | 0.010 (0.016) | 0.052*** (0.017) | 0.080*** (0.018) |
| | Occupation | Yes | Yes | Yes | Yes | Yes | Yes |
| Job characteristics | | | | | | | |
| | Industry (reference: agriculture) | | | | | | |
| | <i>Manufacturing</i> | 0.190*** (0.018) | 0.302 (0.000) | 0.286*** (0.019) | 0.250*** (0.016) | 0.169*** (0.018) | 0.081*** (0.025) |
| | <i>Trade</i> | -0.068*** (0.024) | -0.013 (0.030) | -0.008 (0.027) | -0.008 (0.021) | -0.062*** (0.023) | -0.101*** (0.029) |
| | <i>Services</i> | 0.050** | 0.093*** | 0.119*** | 0.114*** | 0.070*** | 0.021 |

| | | | | | | |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | (0.020) | (0.013) | (0.021) | (0.017) | (0.019) | (0.027) |
| Public sector | 0.275*** | 0.338 | 0.287*** | 0.243*** | 0.204*** | 0.157*** |
| | (0.017) | (0.000) | (0.016) | (0.011) | (0.013) | (0.016) |
| Informal sector | -0.048*** | -0.043*** | -0.057*** | -0.053*** | -0.039*** | -0.055*** |
| | (0.010) | (0.015) | (0.012) | (0.009) | (0.010) | (0.012) |
| Geographical characteristics | | | | | | |
| Rural area | -0.046*** | -0.009 | -0.036*** | -0.032*** | -0.052*** | -0.054*** |
| | (0.008) | (0.000) | (0.009) | (0.007) | (0.007) | (0.009) |
| Region | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | 3.114*** | 1.899 | 2.683*** | 3.225*** | 3.773*** | 4.183*** |
| | (0.054) | (0.000) | (0.057) | (0.050) | (0.046) | (0.064) |
| Observations | 25,459 | 25,459 | 25,459 | 25,459 | 25,459 | 25,459 |
| R-squared | 0.419 | | | | | |

Source: Pakistan's LFS 2008-2009. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 9. Temporary-Permanent Workers' Wage Gap: Extended OLS and Quantile Regression – The Philippines

| VARIABLES | (1) OLS | (2) QR .10 | (3) QR .25 | (4) QR .50 | (5) QR .75 | (6) 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) | | | | | | | |
| | <i>Married</i> | 0.094*** | 0.106*** | 0.095*** | 0.063*** | 0.060*** | 0.052*** |
| | | (0.008) | (0.012) | (0.010) | (0.008) | (0.007) | (0.009) |
| | <i>Widowed</i> | 0.031 | 0.010 | 0.003 | 0.015 | 0.011 | -0.005 |
| | | (0.020) | (0.028) | (0.022) | (0.016) | (0.022) | (0.023) |
| | <i>Divorced</i> | 0.024 | -0.026 | -0.014 | -0.004 | 0.009 | 0.020 |
| | | (0.022) | (0.061) | (0.024) | (0.031) | (0.011) | (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) | | | | | | | |
| | <i>Primary and secondary</i> | 0.155*** | 0.163*** | 0.144*** | 0.138*** | 0.147*** | 0.166*** |
| | | (0.039) | (0.037) | (0.043) | (0.047) | (0.037) | (0.053) |
| | <i>High school</i> | 0.250*** | 0.258*** | 0.231*** | 0.229*** | 0.231*** | 0.230*** |
| | | (0.039) | (0.038) | (0.043) | (0.047) | (0.037) | (0.052) |
| | <i>University and above</i> | 0.533*** | 0.515*** | 0.501*** | 0.487*** | 0.433*** | 0.470*** |
| | | (0.040) | (0.039) | (0.044) | (0.047) | (0.037) | (0.053) |
| Occupation | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Job characteristics | | | | | | | |
| Industry (reference: agriculture) | | | | | | | |
| | <i>Manufacturing</i> | 0.014 | -0.144*** | -0.064*** | 0.068*** | 0.140*** | 0.162*** |
| | | (0.011) | (0.018) | (0.015) | (0.011) | (0.011) | (0.016) |
| | <i>Trade</i> | 0.108*** | 0.147*** | 0.123*** | 0.148*** | 0.136*** | 0.064*** |
| | | (0.010) | (0.014) | (0.012) | (0.009) | (0.011) | (0.013) |
| | <i>Services</i> | -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) |
| 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: The Philippines' LFS 2009, Vietnam's LFS 2007. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 10. Temporary-Permanent Workers' Wage Gap: Extended OLS and Quantile Regression – Vietnam

| VARIABLES | (1) OLS | (2) QR .10 | (3) QR .25 | (4) QR .50 | (5) QR .75 | (6) QR .90 |
|------------------------------------|------------|---------------|---------------|---------------|---------------|---------------|
| Temporary Employee | -0.289*** | -0.320*** | -0.293*** | -0.251*** | -0.221*** | -0.185*** |
| | (0.005) | (0.007) | (0.005) | (0.004) | (0.005) | (0.007) |
| Individual characteristics | | | | | | |
| Gender Female | -0.156*** | -0.150*** | -0.146*** | -0.157*** | -0.164*** | -0.171*** |
| | (0.003) | (0.005) | (0.004) | (0.003) | (0.004) | (0.005) |
| Ethnic minority | 0.001 | -0.033*** | -0.003 | 0.003 | 0.013* | 0.025*** |
| | (0.006) | (0.011) | (0.008) | (0.006) | (0.007) | (0.009) |
| Head of household | 0.022*** | 0.035*** | 0.032*** | 0.025*** | 0.014*** | 0.016*** |
| | (0.004) | (0.006) | (0.005) | (0.004) | (0.004) | (0.005) |
| Marital status (reference: single) | | | | | | |
| <i>Married</i> | 0.020*** | 0.038*** | 0.031*** | 0.019*** | 0.011** | 0.005 |

| | | | | | | | |
|----------------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|
| | | (0.004) | (0.007) | (0.005) | (0.004) | (0.005) | (0.007) |
| | <i>Widowed</i> | -0.055*** | -0.010 | -0.068*** | -0.063*** | -0.050*** | -0.031 |
| | | (0.013) | (0.011) | (0.017) | (0.014) | (0.017) | (0.022) |
| | <i>Divorced</i> | -0.007 | 0.032 | -0.011 | -0.017 | -0.005 | -0.019 |
| | | (0.011) | (0.021) | (0.014) | (0.013) | (0.012) | (0.017) |
| Human capital | | | | | | | |
| | Age | 0.043*** | 0.050*** | 0.044*** | 0.037*** | 0.035*** | 0.033*** |
| | | (0.001) | (0.002) | (0.001) | (0.001) | (0.001) | (0.002) |
| | Age squared | -0.000*** | -0.001*** | -0.001*** | -0.000*** | -0.000*** | -0.000*** |
| | | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| | Education (reference: no education) | | | | | | |
| | <i>Primary and secondary</i> | 0.049*** | 0.016 | 0.061*** | 0.062*** | 0.057*** | 0.070*** |
| | | (0.006) | (0.012) | (0.007) | (0.007) | (0.008) | (0.011) |
| | <i>High school</i> | 0.204*** | 0.162*** | 0.208*** | 0.215*** | 0.209*** | 0.214*** |
| | | (0.007) | (0.013) | (0.008) | (0.007) | (0.009) | (0.012) |
| | <i>University and above</i> | 0.550*** | 0.615*** | 0.592*** | 0.531*** | 0.470*** | 0.477*** |
| | | (0.008) | (0.013) | (0.009) | (0.008) | (0.009) | (0.013) |
| Job characteristics | | | | | | | |
| | Industry (reference: agriculture) | | | | | | |
| | <i>Manufacturing</i> | 0.028*** | 0.112*** | 0.053*** | 0.015** | -0.011 | -0.072*** |
| | | (0.007) | (0.011) | (0.009) | (0.006) | (0.008) | (0.012) |
| | <i>Trade</i> | 0.049*** | 0.102*** | 0.057*** | 0.028*** | 0.018* | -0.019 |
| | | (0.008) | (0.013) | (0.010) | (0.008) | (0.009) | (0.014) |
| | <i>Services</i> | 0.045*** | 0.048*** | 0.030*** | 0.042*** | 0.061*** | 0.035*** |
| | | (0.007) | (0.012) | (0.009) | (0.007) | (0.009) | (0.013) |
| | Institutional sector (reference: domestic private sector) | | | | | | |
| | <i>Public sector</i> | 0.001 | -0.031*** | -0.018** | 0.006 | 0.015 | -0.007 |
| | | (0.007) | (0.010) | (0.007) | (0.007) | (0.011) | (0.018) |
| | <i>Foreign sector</i> | -0.044*** | -0.112*** | -0.053*** | 0.013* | 0.035*** | 0.009 |
| | | (0.008) | (0.010) | (0.008) | (0.007) | (0.011) | (0.018) |

| | | | | | | |
|-------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Informal sector | 0.003 (0.005) | 0.031*** (0.009) | 0.033*** (0.006) | 0.011** (0.005) | -0.018*** (0.006) | -0.038*** (0.007) |
| Business size | Yes | Yes | Yes | Yes | Yes | Yes |
| Geographical characteristics | | | | | | |
| Rural area | -0.056*** (0.004) | -0.062*** (0.006) | -0.038*** (0.004) | -0.037*** (0.004) | -0.044*** (0.004) | -0.060*** (0.005) |
| Region | Yes | Yes | Yes | Yes | Yes | Yes |
| Constant | 0.876*** (0.022) | 0.269*** (0.036) | 0.577*** (0.027) | 0.914*** (0.021) | 1.225*** (0.025) | 1.564*** (0.036) |
| Observations | 117,915 | 117,915 | 117,915 | 117,915 | 117,915 | 117,915 |
| R-squared | 0.372 | | | | | |

Source: Vietnam's LFS 2007. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 11. Temporary-Permanent Workers' Wage Gap: OLS and Quantile Regression – Modified Definitions of Temporary Employment

| VARIABLES | Benchmark model | | | | | | Extended model | | | | | |
|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | (1) OLS | (2) QR .10 | (3) QR .25 | (4) QR .50 | (5) QR .75 | (6) QR .90 | (7) OLS | (8) QR .10 | (9) QR .25 | (10) QR .50 | (11) QR .75 | (12) QR .90 |
| Cambodia | 0.025 (0.023) | -0.057*** (0.022) | -0.011 (0.014) | 0.025** (0.012) | 0.051*** (0.017) | 0.061** (0.028) | 0.037 (0.023) | 0.022 (0.020) | 0.004 (0.012) | 0.020 (0.013) | 0.045*** (0.015) | 0.042** (0.021) |
| Pakistan (1) | -0.381*** (0.011) | -0.401*** (0.018) | -0.395*** (0.011) | -0.388*** (0.009) | -0.358*** (0.010) | -0.291*** (0.013) | -0.178*** (0.015) | -0.189*** (0.020) | -0.188*** (0.014) | -0.180*** (0.010) | -0.144*** (0.011) | -0.114*** (0.012) |
| Pakistan (2) | -0.052*** (0.010) | -0.062*** (0.017) | -0.067*** (0.011) | -0.059*** (0.009) | -0.030*** (0.010) | 0.024* (0.013) | 0.103*** (0.011) | 0.055*** (0.016) | 0.101*** (0.011) | 0.121*** (0.009) | 0.146*** (0.010) | 0.143*** (0.014) |
| Vietnam | -0.302*** (0.004) | -0.303*** (0.007) | -0.277*** (0.005) | -0.275*** (0.004) | -0.279*** (0.004) | -0.291*** (0.006) | -0.290*** (0.005) | -0.301*** (0.008) | -0.277*** (0.006) | -0.252*** (0.005) | -0.241*** (0.006) | -0.237*** (0.007) |

Source: Cambodia's Labor Force and Child Labor Survey 2012, Vietnam's LFS 2007, the Philippines' LFS 2009, Pakistan's LFS 2008-2009, Indonesia's LFS 2007-2008. Authors' calculation. Robust standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Note: Pakistan (1) defines temporary workers as those with contracts equal or shorter than one year (question 7.1); Pakistan (2) defines temporary workers as regular paid employees with fixed wage (question 5.8).

Data

Data used in the study obtained from national LFS provided by ILO. Further details for individual countries are as follows:

Cambodia

The Labor Force and Child Labor Survey (LF-CLS) was conducted by the National Institute of Statistics, Ministry of Planning in 2011-2012. This survey provides data on labor force, employment, unemployment, and other data for monitoring and assessing progress on decent work of population aged 15 years and above.

Indonesia

The survey's name abbreviates SAKERNAS. Since 2005, SAKERNAS has been conducted biennially (in February and in August) to reflect seasonal labor force variations. The dataset in the current study come from the 2007 round conducted in August.

Pakistan

Since the LFS 2005-2006, the questionnaire has been being articulated for undertaking quarterly representative results reflecting not only labor force characteristics but also important related attributes of literacy, migration, occupational safety, etc. at national level. The data used in this study is extracted from 2008-2009 wave.

The Philippines

Data come from the 2009 round of the annual LFS in the Philippines.

Vietnam

The dataset is obtained from LFS 2007 conducted by the Vietnam General Statistics Office (GSO). The 2007 LFS marked the transfer of the LFS from the Ministry of Labor, Invalids and Social Affairs to the GSO to build up an improved scheme providing more complete labor market indicators meeting international standards.

Table 12. Types of non-standard workers and terms used referring to non-standard employment in the formal sector

| Country | Types of non-standard workers/ Terms used | Non-standard employment involving triangular employment relations |
|-----------|--|---|
| Indonesia | Short/fixed-term contract workers Casual workers Outsourced workers Apprentices Part-time workers Piece rate workers On-call workers | Outsourced work |

| | | |
|-------------|--|--|
| Malaysia | Fixed-term contract Contract of service Contract for service Casual paid employee Contract/piece paid worker | Outsourced work, contractor or subcontractor for labor, agency-hired work |
| Philippines | Short-term contract work (i.e., casual, contractual/project-based, seasonal, probationary, apprenticeship/learnership) Outsourcing or subcontracting of work, agency hired and third-party managed work | Agency-hired work, manpower supply, service or labor contracting |
| Singapore | Term contracts Casual/on-call employment Part-time work | Outsourced workers |
| Thailand | Hire of service employment contract Hire of work contract Informal employment Dispatched, outsourced and agency employment | Contracting/subcontracting, labor contracting |
| Vietnam | Seasonal work Labor dispatch or employee subleasing | Labor dispatch or employee subleasing |

Source: Serrano et al., 2014