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# **Impact of the Global Financial Crisis on the Rural Labour Market: Evidence from Nine Villages in Cambodia**



**HING Vutha**

**Working Paper Series No. 76**

**March 2013**

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*Responsibility for ideas, facts and opinions presented in this research paper rests solely with the authors. Their opinions and interpretations do not necessarily reflect the views of the Cambodia Development Resource Institute.*

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## ACRONYMS

CDRI	Cambodia Development Resource Institute
ILO	International Labour Organization
OECD	Organisation for Economic Co-operation and Development
USD	United States Dollar

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## ABSTRACT

This report presents new work on the impacts of the global financial crisis on the rural labour market in Cambodia. The analysis uses a combination of descriptive statistics and econometric modelling with data from household surveys in nine rural villages to track labour market changes before, during and after the crisis and then assesses the magnitude of associated impacts. The study produces a number of interesting findings.

Perhaps the most important result was that, because of the global financial crisis, employment participation in rural Cambodia increased; the employment structure shifted towards agriculture and informal sectors; real wages decreased; and migration reversed from overseas and urban areas to rural villages. In other words, the crisis put pressure on many households to involve more family members in income earning. This situation, an increasing supply of labour with constant or declining demand, put downward pressure on real wages and caused incomes to fall.

Second, the rural labour market is the last resort for returning migrants and laid-off urban workers in difficult economic times. This could also imply that rural areas served as a safety net for a highly vulnerable workforce affected by the crisis.

Third, although the analysis hasn't been able to use full panel data due to the fact that the survey in 2009 involved 90 households, the report makes a significant contribution to existing case study literature on the global financial crisis and its impacts on Cambodia's rural labour market, especially via using quantitative household data.



## INTRODUCTION

Cambodia enjoyed dramatic economic progress for more than a decade before the global financial crisis struck in late 2008. Annual GDP growth during 1994–2008 averaged 8.5 percent, while per capita income increased from USD248 to USD700. This rapid development led to significant changes in the country’s labour market, especially in increased employment, changed employment structure and improved outcomes for workers. In 2008, approximately 6.8 million people aged 15 or older were employed, reflecting employment growth of 43.3 percent or annual average growth of 3.6 percent since 1998 (NIS 2010). In the same year, the employment-to-population ratio was 77 percent, up from 73 percent in 1998, and the employment-to-labour force ratio was 98.3 percent (*ibid*). The employment structure changed, with major shifts of workers from agriculture to industry and services in urban areas. Agriculture employed 81.4 percent of the labour force in 1995, but this had shrunk to 55.9 percent by 2007 (IMF 2009). Employment in industry increased from 2.9 percent of the total employed workforce in 1995 to 15.4 percent in 2007, while employment in services nearly doubled from 15.7 percent in 1995 to 28.7 percent in 2007. This shift happened in parallel with increasing labour migration; 2.5 million internal migrant workers were recorded in 2008 (NIS 2010); 89541 migrants were officially sent to work abroad, and around 180,000 persons are working unofficially overseas (commonly known as informal migration).<sup>2</sup>

With the onset of the global financial crisis, Cambodia’s growth stalled. Key drivers of growth—garments and footwear, tourism, construction and real estate—took a hard blow; economic growth registered a record low of 0.1 percent in 2009. Apart from impacts on economic outputs, the crisis had a spillover effect on Cambodia’s labour markets in terms of job losses, worsening work conditions, declining real wages and reverse migration. Kang *et al.* (2009) estimated that approximately 27,000 jobs in the textile and clothing sector were cut in 2008; an additional 19,000 job cuts were due to factory closure<sup>3</sup> or production slowdown in 2009; an estimated 36,500 construction jobs were cut in 2008 and another 25,600 in 2009. Further, many garment factories resorted to other measures such as overtime bans and reduced working hours in a bid to ride out the economic downturn. Before the crisis, garment workers normally had an extra two to four hours of overtime per day, but during the crisis overtime was abolished and on some days, factories sent workers home after just three or four hours of work (*ibid*).

Wages also declined in many sectors. Since 2008, the income of 34 percent of garment workers had fallen by an average of USD16 per month, a decrease of about 20 percent (Kang *et al.* 2009). Before the crisis, tuk-tuk drivers in Siem Reap earned around USD15 per day during the high season, but in 2009 garnered only USD5 per day. Real daily income of vulnerable workers decreased on average by 21 percent between November 2008 and November 2009.<sup>4</sup>

<sup>1</sup> The data was derived from department of statistics of Ministry of Labour and Vocational Training.

<sup>2</sup> Informal migration, sometimes known as undocumented migration, is defined as movement that takes place outside the regulatory norms of sending, transit and receiving countries. It is the predominant mode of migration among Cambodian migrant workers, who largely come from Prey Veng, Svay Rieng, Kompong Cham, Banteay Meanchey, Battambang and Pursat provinces.

<sup>3</sup> According to the Garment Manufacturers Association of Cambodia (cited in Kang *et al.* 2009), 60 factories had closed since 2008.

<sup>4</sup> These figures are taken from the fourth round of CDRI’s survey to assess the impact of the global financial crisis on vulnerable worker groups, conducted every quarter from May 2009 to May 2010.

The most affected groups were rice-field workers, cyclo drivers and moto-taxi drivers, whose real incomes fell by 44 percent, 43 percent and 40 percent, respectively. These findings are consistent with those of Turk (2009), who reported that in some regions (Siem Reap, Phnom Penh and Sihanoukville), tuk-tuk and cyclo drivers' daily earnings dropped significantly.

There was a marked trend of reverse migration and declining remittances as a result of decreasing demand for labour in both local markets and migrant receiving countries. Turk (2009) found that some laid-off workers returned to rural areas, reflected in the number of "room to let" signs on advertisement boards in areas where migrants formerly worked. CDRI (2009) reported a sharp decline in money received from children and spouses working (or waiting to work) in urban areas. Turk (2009) went further, arguing that the drop in income as a proportion of household income was dramatic, up to 75 percent for high remittance-dependent households.

All the above-cited studies were conducted at the onset of the crisis. None of them examined the effects of the crisis on the rural labour market. This gap is the prime reason for this study, which attempts to answer the question: To what extent has the global financial crisis affected the rural labour market in Cambodia?

The rest of the paper is structured as follows. Section 2 reviews the literature summarising the crisis, its impacts on labour markets and empirical findings. Section 3 presents the hypotheses, while section 4 elaborates on the data sets used. Section 5 discusses findings by looking at the changes in the employment participation rate, employment structure, real wages and migration and remittances. Section 6 concludes.

## LITERATURE REVIEW

In contemporary economic history, financial crisis often initially affects the banking system and financial markets and then spreads to investment, business confidence, trade and economic outputs, ultimately resulting in economic recession. The effects trickle down to the labour market through changes in labour demand and supply. The labour market reacts to such shocks in a number of ways.

First, when the demand for labour—especially in the formal sector—falls, there is a shift away from formal, higher value-added waged employment to less productive and informal employment. Formal employment contracts, whereas informal and vulnerable employment expands. The labour market outcome is a change in employment structure. Second, a falling demand for labour can put downward pressure on wages, which leads to disincentive to participate in the labour market. The outcome is likely to be a decline in the employment participation rate. Third, retrenched workers who are unable to find a job in urban areas are likely to seek rural work, especially in agriculture, where the cost of entering the labour market is very low. This movement, known as reverse migration, leads to reduced remittances and lower rural wages. Fourth, as a result of falling wages and dwindling remittances, many households, especially the poorest and most vulnerable, are forced to increase their labour supply by working more hours, sending children out to work or having married women enter the labour market. Crisis affects different segments of labour markets disproportionately: youth, women, low-skilled, older workers and immigrants are particularly vulnerable to worsening labour markets.

### 2.1 Reduced Labour Demand and Increased Unemployment

Plummeting investment and trade and large-scale closure of production units adversely affect the demand for labour. The inevitable outcome is job losses and increased unemployment. The 1997 Asian financial crisis, for example, adversely affected employment in several Asian countries: the rise in unemployment was huge in South Korea (6.3 percent) and Thailand (5.2 percent) but modest in Indonesia (3.65 percent) and the Philippines<sup>5</sup> (World Bank 2001), while unemployment rates, primarily in urban areas, also rose in Vietnam and Cambodia (Development Analysis Network 1999).

In the 2008 global financial crisis, the effect on unemployment has been far greater than during the 1997 Asian crisis. The International Labour Office's projection indicates that global unemployment increased by between 29 million and 51 million between 2007 and 2009 (ILO 2009a). The global unemployment rate reached 6.5 percent to 7.4 percent in 2009. The unemployment rate in the US jumped to a 15-year high by the end of 2008, reaching 6.7 percent and leaving 2.8 million workers unemployed (OECD 2008). Unemployment in the OECD was projected to increase to 6.3 percent by the end of 2008 (*ibid*), while employment in the 27 EU member states contracted by 1.9 percent (Hijman 2009). The impact on employment in Asia has been less intense. In China, although large-scale factory closures led to more than 20 million jobless (Sziraczki *et al.* 2009), the unemployment rate barely changed because retrenched workers returned to the countryside (Kong *et al.* 2010). Between 2008 and 2009, job losses in Indonesia, mostly in electronics and manufacturing, exceeded 40,000 (*ibid*), whereas

<sup>5</sup> Unemployment rate in the Philippines before the Asian financial crisis was already high at 7.75 percent and it rose to 8.42 percent after the crisis.

in Cambodia 28,819 garment sector and 36,500 construction jobs were cut in 2008 (Kang *et al.* 2009).

Youth and women were more seriously affected by the crisis. The global number of unemployed youth was projected to increase by between 4.9 million and 17.7 million from 2008 to 2009, while women's unemployment rates were expected to increase more than men's (ILO 2009a). In south-east Asia, the youth unemployment rate in 2008 stood at 15 percent, while the number of unemployed women was projected to rise by 5.7 percent compared to 4.9 percent for men (Sziraczki *et al.* 2009).

## 2.2 Reduced Real Wages

Real wages are expected to fall in the formal sector when labour demand contracts. This dynamic then spreads to the informal sector, where the labour supply expands due to the entry of displaced formal sector workers. Some empirical studies have attempted to test this hypothesis. The World Bank (2001), the Development Analysis Network (1999) and Beegle *et al.* (1999) assessed the impact of the Asian financial crisis and found that real wages decreased in South Korea, Thailand, Malaysia, Indonesia, the Philippines and Cambodia. The decline was particularly dramatic in Indonesia, where real wages fell by 41 percent (World Bank 2001), and in Cambodia, where the real earnings of vulnerable workers in Phnom Penh (scavengers, cyclo drivers, vegetable traders and porters) plunged substantially (Development Analysis Network 1999).

The ILO's annual study of global wages shows that their growth slowed dramatically in 2008 as a result of the economic crisis and was expected to drop even further in 2009 despite signs of a possible economic recovery (ILO 2009b). In a sample of 53 countries for which data are available, growth in real average wages in the median country declined from 4.3 percent in 2007 to 1.4 percent in 2008 (*ibid*). In Asia, the overall impact of the crisis on real wages was almost invisible; growth of average real monthly wages fell from 7.2 percent in 2007 to 7.1 percent in 2008 (ILO 2010). China, which accounts for more than half of total waged employment in Asia, was the best performer, being able to maintain positive wage growth, but real wages in Japan fell by almost 2.0 percent in 2008 and by another 2 percent in 2009. In the Philippines and Malaysia, real wages fell by more than 4 percent in 2008, and in Thailand by almost 2 percent in 2009 (*ibid*).

## 2.3 Changed Employment Structure

During the Asian financial crisis, waged employment declined substantially in Indonesia, South Korea and Thailand and more modestly in Malaysia, whereas non-waged employment (employers, self-employed, unpaid family workers) increased (World Bank 2001). In Indonesia and Thailand, urban to rural migration was an important response to the crisis (*ibid*). Many Thai overseas migrant workers returned, and many who had lost jobs in urban areas sought rural work (Development Analysis Network 1999).

The ILO (2009a) projects that workers in vulnerable employment, defined as own-account workers and contributing family workers, will be between 48.9 percent and 52.8 percent of the total global workforce in 2009 (1.49 billion to 1.6 billion workers). In China, no fewer than 15 million rural migrants (more than 10 percent of total migrants) returned to their villages in 2009, about 80 percent of whom went back to farming (Kong *et al.* 2010). In Cambodia it was estimated that the flow of labour into subsistence farming would increase as retrenched workers returned to family farms; this would likely have resulted in increased agricultural production but reduced household per capita income (Kang *et al.* 2009).

## HYPOTHESES

This paper's analytical framework is adapted from a general concept of the impacts of the global financial crisis on the labour market. It examines the evolution of key labour market indicators: (1) employment participation rate, (2) employment structure, (3) wage rate and (4) urban to rural (reverse) migration over three periods: 2008, 2009 and 2011. The study compares labour market outcomes in 2008 to those in 2009 and 2011. The hypotheses for these indicators are as follows:

***Employment participation rate:*** Falling demand for labour is likely to result in lower employment. Rural labour market conditions, however, could be slightly different in that the rural employment participation rate is likely to remain unchanged or even increase. This is because the rural labour market, characterised by predominantly agricultural employment, is often only minimally affected by crisis. Second, many rural households are poor and during crises are forced to increase their labour supply by sending children out to work or having married women enter the waged labour market.

***Employment structure:*** When labour demand decreases in the formal sector, displaced workers have few options other than to seek jobs in agriculture and informal sectors where the costs of entry are low. In addition, migrants are often the first workers to be laid off, leaving them no choice but to return to their villages, where they engage in agriculture and informal work. Therefore, formal or waged employment is expected to fall, whereas non-waged or agricultural employment is expected to rise.

***Wage rates:*** Falling demand for labour puts downward pressure on wages; therefore, wages are expected to fall during a crisis.

***Reverse migration:*** During and after a crisis, migration is expected to reverse as workers leave urban areas and return from overseas to rural areas. Remittances are also likely to fall, reducing household income.

## DATA

Data for this study come from three household surveys conducted by CDRI in 2008 for the Poverty Dynamics Study, in 2009 for the Rapid Assessment of Global Financial Crisis Study and in 2011 for the Global Financial Crisis and Vulnerability Study. Nine study villages were selected from the country's four main rural agro-ecological regions: the Mekong plains (Ba Baong and Prek Kmeng), the Tonle Sap (Krasang, Andoung Trach and Khsach Chi Ros), the upland plateau (Dang Kdar, Kanhchor and Trapeang Prei) and the coastal region (Kompong Tnaot). The household was the unit of survey and a structured questionnaire the survey tool. In total, 1005 households were interviewed in 2008, 90 households were surveyed in 2009, and the same 1005 households selected for the 2008 survey were re-interviewed in 2011.

The best way to assess the impact of the global financial crisis is by comparing indicators across all three periods using a panel data set. However, because the 2009 survey used a small sample, it does not allow us to extract full panel labour market outcomes. To resolve this dilemma, we constructed labour market indicators for two different scenarios. Scenario 1, called the “balanced panel”, compares panel data on indicators extracted from the 2008 and 2011<sup>6</sup> surveys with data on the indicators for the 2009 survey of 90 households. Scenario 2, called the “90 household panel”, comprises panel data on the same 90 households across the three periods. In the absence of full panel data, the comparison of labour market outcomes between the two scenarios allows us to check the consistency and accuracy of data. Ideally, the outcomes of each scenario's data set should not vary significantly.

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<sup>6</sup> Not all the households interviewed in the 2008 survey were available for the 2011 survey, causing attrition bias in the panel data. We addressed this problem by applying inverse probability weighting, which reduced the number of panel households for 2008 and 2011 to 956.

## FINDINGS

### 5.1 Employment Participation Rate

Table 1 presents statistics on the employment participation rate, defined as the ratio of economically active persons to total population.<sup>7</sup> The data show that employment participation in the rural labour market during the crisis increased from 82.5 percent in the pre-crisis period to 85.6 percent, and then fell back below the pre-crisis level, reaching 81.0 percent in 2011. The outcomes derived from the 90 household panel show a similar trend, enabling us to argue that people in rural villages tend to engage more in the labour market during a crisis but relax a little during recovery. Men tend to be more active than women in seeking employment during pre-crisis and recovery periods, but the opposite trend is apparent during the crisis period. The difference, however, is not statistically significant.

Table 1: Employment Participation Rate

	Balanced panel (%)			90 household panel (%)		
	2008	2009	2011	2008	2009	2011
Labour participation rate, by sex						
Both sexes	82.5	85.6	81	82.4	85.6	80.7
Males	84.2	84.4	81.6	86.0	84.6	81.2
Females	80.8	86.7	80.4	78.9	86.5	80.1
Labour participation rate, by age						
Children (10-14 years old)	45.5	47.3	36.7	38.1	47.2	39.7
Youth (15-24 years old)	87.0	92.5	83.4	88.2	92.4	84.3
Adults (25-65 years old)	93.7	97.1	94.3	94.3	97.1	93.5
Family work/house work	7.8	6.8	3.9	8.4	6.7	4.7

Note: Inverse probability weight is applied.

Source: CDRI household survey in nine villages in 2008, 2009 and 2011

The increased employment participation rate during the crisis period can be explained by three trends. First, there is a tendency for married women to quit unpaid household work to earn income. Women's participation in household work fell from 7.8 percent in 2008 to 6.8 percent in 2009 and then to 3.4 percent in 2011; the 90 household panel data set points to a similar trend. Second, more children<sup>8</sup> joined the labour market, reflected by the rise in children's employment participation rate from 45.5 percent in 2008 to 47.3 percent in 2009; the 90 household panel data reveal an even higher increase, from 38 percent in 2008 to 47 percent in 2009. Third is reverse migration as workers move from urban centres and return from abroad to engage in rural economic activities, reflected by the declining share of migrant workers in the total labour force. This movement is explored in more detail in section 5.4.

<sup>7</sup> The employment participation rate was extracted from responses to the question put to individual household members; its possible answers were: 1) active labourer, 2) can do some work, 3) study and work, 4) only study, 5) disabled, 6) too old to work, 7) too young to work and 8) family/house work; answers 1, 2 and 3 were classified as participating in employment.

<sup>8</sup> Children here is defined as aged between 10 and 14.



In contrast to the findings in the literature on financial crises and youth employment (for example, ILO 2009a; Sziraczki *et al.* 2009; World Bank 2001), this study found that the youth labour force share of the rural labour market was not affected by the crisis. The youth employment participation rate during the crisis even increased from its pre-crisis base by about 5 percentage points. The marginal effect on youth employment is not surprising in the context of rural labour markets. First, a large share of the youth labour force is employed in less affected sectors like agriculture and services. Table 2 shows that more than half of the youth labour force was engaged in agriculture for the duration of the crisis. Also, youth employment in the hard-hit manufacturing and construction sectors did not decline significantly. Youth employment in manufacturing barely changed across the three reference periods whereas the balanced panel and 90 household panel data identify different trends for the proportion of youth working in construction. The balanced panel data indicate an increasing share of youth working in construction during the crisis, but the 90 household panel data show no significant variation across the three periods. Second, unlike in urban areas, the cost of entry to rural labour markets is usually low, making it easier for workers to move from one job to another. This particularly enables youth to enter the labour market, resulting in a stable employment participation rate among youth.

Table 2: Youth Employment by Sector

Sector	Balanced panel (%)			90 household panel (%)		
	2008	2009	2011	2008	2009	2011
Agriculture, forestry and fishing	53.4	55.2	59.8	49.4	55.2	57.5
Manufacturing	11.9	11.5	10.8	12.1	11.5	15.1
Construction	5.5	10.3	4.8	10.8	10.3	13.7
Services	10.0	13.8	21.8	9.6	13.8	12.3
Government services	1.1	1.1	1.3	1.2	1.1	0

Note: Inverse probability weight is applied.

Source: CDRI's household surveys in nine villages in 2008, 2009, 2011

To explore empirically the impact of the economic crisis on employment participation rates, we estimated the probability of participating in employment using a logistic regression model. The dependent variable is the employment participation rate, which takes the value 1 if the individual,  $i$ , is engaged in economic activity and zero otherwise. The independent variables are age, marital status, household size and education. Household size is decomposed into five variables: children aged 0 to 6 (*child06*); children aged 7 to 14 (*child14*); male adults (*adultma*); female adults (*adultfe*); elderly household members (*adult64*). Education was captured by two dummy variables (no education or primary education was omitted): lower secondary education (referred to as medium education) and upper secondary education and above (referred to as high education). To capture the effects of the crisis, the model includes a year dummy in the equation. Year 2008 is the omitted category, year 2009 is the crisis period, and year 2011 is the recovery period.

The equation used to estimate employment participation rates is:

$$EPR = \beta_0 + \beta_1 age + \beta_2 agesqr + \beta_3 married + \beta_4 child\ 06 + \beta_5 child\ 14 + \beta_6 adultma + \beta_7 adultfe + \beta_8 adult\ 64 + \beta_9 educ\ 1 + \beta_{10} educ\ 2 + i.year + \mu$$

where:



*EPR* = employment participation rate (1 for economically active; 0 otherwise)  
*age* = age of individual member  
*agesqr* = square of age of individual members  
*married* = marital status (1 if married; 0 otherwise)  
*child06* = number of children (0- 6 years)  
*child14* = number of children (7-14 years)  
*adultma* = number of male adults (15-64 years)  
*adultfe* = number of female adults (15-64)  
*adult64* = number of elderly (>64 years)  
*educ1* = medium education (1 for lower secondary education; 0 otherwise)  
*educ2* = high education (1 for upper secondary/tertiary education; 0 otherwise)  
*year* = 2008-omitted category; 2009-crisis period; 2011-recovery period

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}$  are parameters to be estimated.

Due to differences in employment participation between women and men, we estimated the rates separately for male and female using two data sets: balanced panel and 90 household panel. The regression results are presented in Table 3. The tables show the marginal effects.<sup>9</sup>

The estimated marginal effects for men and women indicate that a range of individual and household characteristics drive employment participation. An additional year of age from the mean (men's average age is 29 and women's is 30) increases the likelihood of being active in the labour market for both men and women. The likelihood of engaging in employment increases for married men but decreases for married women.

There is some correlation between household size and employment participation, especially in the case of women. While regression results from the 90 household panel show statistically insignificant variation between men's and women's employment participation rates across various household sizes, some results from the balanced panel highlight significant differences. Having young children (0 to 6 years) does not affect men's employment participation, but it decreases the likelihood of women taking up employment. This trend is particularly strong in the rural labour market, where, having no maid or babysitter, women have little choice but to stay at home to look after infants. Having a man in the family decreases the likelihood of women being in employment, whereas the absence of a man means that women are more likely to go out to work.

Education has modest marginal effects on the probability of being in the labour force for both men and women. Having medium or high education (compared to low education) reduces the likelihood of participating in employment. Although the variation in employment participation rates between individuals with low education and medium education is not significant, the difference between individuals with low education and high education is. This is explained by two facts. First is the dominance of a low educated labour force in the rural labour market; data across the three periods suggest that 18 percent of the workforce is illiterate, 56 percent completed primary school, 20 percent completed lower secondary school, and just 5 percent completed higher secondary school. Second, the scarcity of skilled workers

<sup>9</sup> Marginal effects are based on marginal change for continuous variables and change from 0 to 1 for dummy variables using the command *margeff* in STATA.

in the rural labour market serves as a push factor, driving highly educated individuals to other labour markets.

Table 3: Drivers of Employment Participation Rate (logit model, marginal effects)

Dep. Variables: EPR	Balanced panel		90 household panel	
Variables	Male	Female	Male	Female
age	0.650*** (0.0300)	0.397*** (0.0206)	0.873*** (0.114)	0.381*** (0.0618)
agesqr	-0.00874*** (0.000413)	-0.00515*** (0.000276)	-0.0105*** (0.00144)	-0.0045*** (0.000841)
married	1.447*** (0.373)	-0.113 (0.147)	-1.983 (1.401)	-1.246*** (0.452)
child06	0.0509 (0.0597)	-0.0961** (0.0477)	0.0438 (0.173)	-0.138 (0.132)
child14	0.0328 (0.0538)	0.0170 (0.0455)	0.0811 (0.156)	0.105 (0.129)
adultma	0.0451 (0.0448)	-0.0785** (0.0390)	-0.00233 (0.122)	-0.0993 (0.0972)
adultfe	-0.0708 (0.0544)	0.0917** (0.0442)	-0.110 (0.155)	-0.00579 (0.115)
adult64	-0.268** (0.106)	0.00572 (0.0937)	0.480 (0.407)	0.186 (0.290)
educ1 (ref: low education)	-0.0617 (0.139)	-0.110 (0.112)	-0.890* (0.511)	-0.381 (0.511)
educ2 (ref: low education)	-1.682*** (0.194)	-1.071*** (0.178)	-1.469** (0.698)	-1.283** (0.569)
year 2009 (ref: 2008)	0.215 (0.275)	0.614** (0.248)	0.0319 (0.417)	0.783** (0.316)
year 2011 (ref: 2008)	-0.297*** (0.105)	-0.0632 (0.0902)	-0.648 (0.396)	0.137 (0.303)
_cons	-6.724*** (0.388)	-4.066*** (0.295)	-9.207*** (1.404)	-3.907*** (0.902)
Observation	4257	4311	531	539

Standard errors in parentheses

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

Note: Inverse probability weight is applied.

Source: CDRI's household survey in nine villages in 2008, 2009, 2011

To understand the impact of the crisis on employment participation rates, we included a year dummy in the regression, fixing 2008 as the reference period. As expected, the regression results show that rates increased in the crisis period and decreased during recovery. Both men and women tended to engage more in employment during the crisis, though the magnitude of engagement for women was greater than for men. Employment participation dropped markedly as the economy started to recover. This empirical result confirms our hypothesis that the rural employment participation rate is likely to increase during a crisis.

## 5.2 Employment Structure

The crisis shifted labour market structure in favour of agriculture and services. Employment in agriculture expanded from 52.7 percent in 2008 to 56.6 percent in 2009 and then to 56.9 percent in 2011 (Table 4). Manufacturing employment shrank during the crisis period as garment production and exports were hard hit by lower orders but later increased to above pre-crisis levels. This jump is largely explained by the quick recovery of garment production and exports (during January-October 2011, garment and textile exports increased by USD880 million or 30 percent compared to the same period of the previous year). Somewhat surprisingly, employment in construction almost doubled during the crisis. The impact of the crisis on services appears to have been mixed, with employment falling from 21.1 percent in 2008 to 20.4 percent in 2009 and then rising to 24.6 percent in 2011; a similar trend is observed in the 90 household panel data. Overall there was a shift in employment structure during and after the crisis, but the magnitude of change was not significant.

The questionnaire design prevented us from collecting information on informal employment and thus limited our assessment of whether some adjustment (including the extent of such adjustment) may have occurred in the informal labour market. However, women's share of family work is a useful indicator. Since 2008 more women have quit unpaid household work to engage in earning income, leading to a decline in women's participation in family, i.e. informal work.

Table 4: Employment by Sector

	Balanced panel (%)			90 household panel (%)		
	2008	2009	2011	2008	2009	2011
Agriculture, forestry & fishing	52.7	56.6	56.9	52.05	56.7	56.8
Manufacturing	7.7	6.2	10.1	7.8	6.3	12.7
Construction	3.8	7.5	3.6	4.6	7.6	5.5
Services	21.1	20.4	24.6	21.0	20.1	20.9
Government services	2.4	2.2	3.1	1.8	2.2	2.3
Others	12.2	7.1	1.6	12.8	7.1	1.8

Note: Inverse probability weight is applied.

Source: CDRI's household survey in nine villages in 2008, 2009, 2011

## 5.3 Wages

Average daily wages across all sectors were adversely affected by the crisis; pre-crisis average nominal daily earnings of USD4.01 decreased to USD2.90 in 2009 before recovering to USD3.54 in 2011 (Table 5). Compared to the pre-crisis period, the decline during the crisis was 28 percent, which later recovered to around 10 percent. In real terms, the magnitude of the decrease in daily earnings is less but nonetheless substantial; the 90 household panel data demonstrate a similar trend though the effect is smaller.

Disaggregating the data by type of employment reveals that wages did not decline in every sector (Table 6). The real daily earnings of agricultural workers fell by just 4 percent between 2008 and 2009; they then jumped by 17 percent, from USD3.02 in 2008 to USD3.53 in 2011. For garment and construction workers, the finding is rather surprising; the real daily wages of garment and construction workers have increased steadily since 2008.

Table 5: Average Daily Earnings

	Balanced panel			90 household panel		
	2008	2009	2011	2008	2009	2011
Daily earning in normal terms (USD)	4.01	2.90	3.54	3.61	2.84	2.94
% change compared to 2008	-	-27.7%	-11.7%	-	-21.3%	-18.6%
Daily earning in real terms (USD)	4.01	3.14	3.46	3.61	3.08	2.86
% change compared to 2008	-	-21.7%	-13.7%	-	-14.7%	-20.8%

Note: Exchange rate: 1USD=4077 riels in 2008; 1USD=4165 riels in 2009; 1USD=4100 riels in 2011.

Inverse probability weight is applied.

Source: CDRI household survey in nine villages in 2008, 2009, 2011

Table 6: Real Daily Wage in Selected Sectors

Sector	Balanced panel			90 household panel		
	2008	2009	2011	2008	2009	2011
Agricultural worker (USD)	3.02	2.89	3.53	2.51	2.89	3.44
Garment worker (USD)	2.01	2.39	2.55	1.99	2.39	2.02
Construction worker (USD)	2.48	2.90	3.77	2.27	2.90	3.32
<i>% change compared to 2008</i>						
Agricultural worker	-	-4.2	17.0	-	17.9	37.9
Garment worker	-	18.9	26.8	-	22.8	2.1
Construction worker	-	16.7	51.9	-	30.2	47.0

Exchange rate: 1USD=4077 riels in 2008; 1USD=4165 riels in 2009; 1USD=4100 riels in 2011

Note: Inverse probability weight is applied.

Source: CDRI's household survey in nine villages in 2008, 2009, 2011

## 5.4 Migration

The data do not allow us to capture directly the effect of the financial crisis on migration. However, the decline in both cross-border migration and remittances can be used as proxies to assess reverse migration.

Table 7 illustrates the decline in cross-border migration between the pre-crisis and post-crisis periods. Migrant workers were 6.05 percent of the domestic labour force in 2008 and then fell to 3.61 percent in 2009 and further to 2.76 percent in 2011. Although the decrease can be partly attributed to political tension between Cambodia and Thailand, which is the largest host country for Cambodian migrants, it was also partly due to declining labour demand and job availability in migrant receiving countries caused by the global financial crisis. In Thailand, it is projected that foreign workers in manufacturing—particularly factory work and food processing—and in agriculture—especially crop farming and animal husbandry—are the most vulnerable to being laid off (Abella and Ducanes 2009). It was also estimated that some 330,000 jobs in these sectors would be lost as a consequence of the global financial crisis (*ibid*). Data from the 90 household panel indicate similar trends, allowing us to affirm that while the crisis discouraged emigration, migrants who had been laid off temporarily returned to their home villages.

Table 7: Share of Migrant Workers in Labour Force

	Balanced panel			90 household panel		
	2008	2009	2011	2008	2009	2011
Number of migrants to overseas	216	12	117	19	12	8
Labour force	3569	332	4241	313	325	308
% of migrants to labour force	6.05	3.61	2.76	6.07	3.69	2.60

Note: Inverse probability weight is applied.

Source: CDRI household survey in nine villages in 2008, 2009 and 2011

The sharp decline in remittances is illustrated in Table 8. The share of remittances in total income fell from 6.6 percent in 2008 to 1.8 percent in 2009 and 2.0 percent in 2011. The decline during and after the crisis is clearly explained by the falling number of migrant workers.

Table 8: Remittances Received by Migrants' Households

	Balanced panel			90 household panel		
	2008	2009	2011	2008	2009	2011
Remittance from migration (USD)	83.66	14.69	38.41	68.19	14.67	13.95
% change in remittance (compared to 2008)	-	-82.4	-54.1	-	-78.0	-79.4
Total income (USD)	1270.7	835.4	1878.6	970.2	835.4	1133.6
% of remittance in total income	6.6	1.8	2.0	7.0	1.8	1.2

Exchange rate: 1USD=4077 riels in 2008; 1USD=4165 riels in 2009; 1USD=4100 riels in 2011

Note: Inverse probability weight is applied

Source: CDRI's household survey in nine villages in 2008, 2009, 2011

## CONCLUSION

Descriptive and empirical evidence presented in the preceding analysis supports the hypotheses that, as a result of the global financial crisis, rural employment participation in Cambodia increased; the employment structure shifted towards agriculture and informal sectors; real wages decreased; and migration reversed from overseas and urban labour markets to rural labour markets. The crisis put pressure on many households to involve more family members in earning income. Agriculture is the last resort for laid-off external and internal migrant workers. This situation of an increasing supply of labour and constant or declining demand for it puts downward pressure on real wages and causes incomes to fall.

There are at least three important lessons from Cambodia's experience of the impacts of the global financial crisis on its rural labour market. First is that, while the national labour market was adversely affected in such aspects as job cuts, abolition of overtime work and decline in real wages, the spillover effect onto the rural labour market seems to have been minimal. Except for the decline in real wages and higher child employment participation rate, other labour market outcomes tended to be neutral. It is encouraging to see an increasing employment participation rate, the slight shift in employment structure and the return of some workers. The latter point relates to the second lesson, that the rural labour market is the last resort for returning migrants and laid-off urban workers in difficult economic times. This could also imply that rural areas served as a safety net for highly vulnerable workers affected by the crisis. The final lesson from this study is that the data used in the analysis were drawn from survey information, which could not capture in-depth dynamics of reverse migration or how returnees were absorbed into the rural labour market during the crisis. Future research should investigate these aspects to redress this knowledge gap.

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