The Impact of Minimum Wage Hikes on Employment and Wages in Cambodia

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WORLD BANK GROUP

Social Protection and Jobs Global Practice
May 2019

Abstract

Using an event-study framework, this paper examines the impact of four minimum wage hikes between 2008 and 2015 on the Cambodian labor market. The analysis finds that, except for immediate adjustments around the time of the hikes, the minimum wage hikes did not affect participation rates in the affected sector—garments and footwear—or the unaffected sectors. However, the minimum wage hikes increased wages modestly (3 percent) for workers in the affected sectors and modestly decreased wages (1.5 percent) for workers in the unaffected sectors. The gains for the affected sectors are slightly larger at higher quantiles than at lower quantiles. This is suggestive of a change in compensation structure within the affected firms as a result of the hikes..

THE IMPACT OF MINIMUM WAGE HIKES IN EMPLOYMENT AND WAGES IN CAMBODIA

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1. Introduction

Minimum wages are an extremely common policy instrument across the world. Consequently, there is an extensive literature that studies the consequences of minimum wage hikes, particularly in developed countries. In the United States, research has been inconclusive on the impact on employment, with results largely depending on the methodology used.[1] The debate in the developing countries is further complicated by the fact that there is a large informal sector where minimum wage regulations are difficult to enforce.[2] Or, in other cases, minimum wages are sector specific, and do not bind in other sectors. Hence, it is extremely important to understand how the minimum wage hike affects labor markets under various conditions.

This paper studies the impact of four minimum wage hikes between 2008 and 2015 on employment and wage earnings in Cambodia. Cambodia has a peculiar minimum wage regulation in that the national minimum wage only applies to wage workers in the garment and footwear industries. There are no other minimum wage regulations at a sub-national level, or in other sectors of the economy, except for public administration. Studying the impact of the minimum wage in Cambodia is akin to studying the impact of wage restrictions on a two-sector economy where the restrictions bind in only one sector.

Using an event study framework to examine the impact of these minimum wage hikes, ranging from 20-33 percent hike during the study period, I find that these hikes did not affect employment. Labor force participation, as well as participation in the garment and footwear sector, wage employment, and non-wage employment remain unaffected by these hikes. However, there are interesting dynamics in the quarters just before the hike and in the two subsequent quarters. Employment in the affected sectors jumps up in the preceding quarter and falls in the subsequent two quarters following the hike, but the participation rates fall back to their usual pre-hike levels in the subsequent quarters.

The observed lack of impact on participation is consistent with the mixed results observed in other contexts. In developed countries, where the level of minimum wages is lower than market wages, the impact on overall employment tends to be small or nonexistent (see Machin, Manning and Rahman (2003) and Stewart (2004) for the UK; Dube, Lester and Reich (2010) in the US, for instance).[3] In developing countries, where the minimum wage levels are high, studies find mixed results. Many studies often find negative effects on employment, at least in the covered formal sectors, and no effect or a positive impact on

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[1]Studies that rely on across-state variation seem to find a negative impact (for example, Neumark, Salas and Wascher, 2014), whereas those that rely on local-level variation seem to find no impact on employment (see Card and Krueger, 1994; Dube, Lester and Reich, 2010; Jardim et al., 2018). See Neumark, Wascher et al. (2007) for a review of the literature.

[2]However, Dinkelman and Ranchhod (2012) find that a minimum wage hike can have large impacts even in settings where formal enforcement is weak; Khamis (2013) finds larger effects in the informal sectors.

[3]However, as mentioned earlier, there is still a debate about the employment effects in the US.

the uncovered and/or informal sector (see Ham (2018) for Honduras; Millea et al. (2017) for South Africa; Maloney and Mendez (2004) for Colombia, among many others). While, unsurprisingly, many others find no employment effects, or even positive employment effects (see Lemos (2009) for Brazil; Magruder (2013) for Indonesia; Bell (1997) for Mexico, as examples).[4] The lack of employment effect in Cambodia is unsurprising, particularly given that an overwhelming share of workers in the covered sectors are already earning a wage higher than the post-hike wages. One distinguishing aspect of this study, due to its empirical design, is that I can isolate the immediate adjustments made right around the time of the minimum wage hikes.

The impact on wages is more interesting. In the affected sectors, average hourly wages increase by 3 percent in the affected sector with a slight fall in working hours. In the non-affected sectors, hourly wages fall by 1.5 percent with the fall concentrated among households with an affected-sector worker. This finding is consistent with a dual-sector model of the economy where jobs in the valued sector are limited and wages are regulated. Furthermore, the impact is heterogeneous at various quantiles of the wage distribution. Somewhat unexpectedly, the impacts at the lower quantiles of the affected sectors are actually *lower* than the impacts at higher quantiles. Together with the specific nature of compensation schemes in the garment and footwear industry – that compensation is anchored at the minimum wage with performance bonus for higher productivity – the findings suggest that the hikes also change the structure of compensation in the affected sectors. This finding was corroborated in discussions with garment firm owners.

The positive wage impacts on the affected sector is to be expected and is widely reflected in the literature. Where this study stands out is on the distribution of the impact. Many studies, in the United States and elsewhere find that gains are concentrated in the bottom without much change at the top, leading to a compression of the wage distribution (see Lee, 1999; del Carpio, Messina and Sanz-de Galdeano, 2018; Lemos, 2009, for a few examples). This study finds an opposite distributional effect in the affected sector. The literature often posits a lighthouse mechanism – where minimum wage hike serves as a signal that induces bargaining and wage setting even for the unaffected – or, potential sorting or demand effects that can increase wages at higher points of the wage distribution (Maloney and Mendez, 2004; Boeri, Garibaldi and Ribeiro, 2011; Magruder, 2013). However, these mechanisms would predict similar impacts on the uncovered sector, opposite of what I find.

The impacts on wages are small in magnitude relative to the magnitude of the hikes in minimum wages. As a result of this, and the offsetting effect coming from other household members working in non-affected sectors, total household income from wage earnings do not change significantly. Affected households, those with someone working in the affected

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[4]Cunningham (2007), Del Carpio and Pabon (2014), and Broecke, Forti and Vandeweyer (2017) provide a comprehensive review of the literature in Latin American, East Asia, and other emerging countries.

sector, work slightly fewer hours, and hence earn the same wage income as before the hike. Households without anyone working in the affected sectors also do not observe any changes to the total wage income. This result is similar to what Neumark, Cunningham and Siga (2006) find in Brazil.

The remainder of the paper is organized as follows: Section 2 provides the context of the minimum wage scheme in Cambodia, Section 3 provides a simple theoretical framework motivating the analysis, Section 4 describes the data, Section 5 lays out the empirical strategy, 6 discusses the results, and Section 7 concludes.

2. Context

The minimum wage scheme in Cambodia has two features that distinguish it from minimum wage schemes in most other countries. First, minimum wages in Cambodia only apply to employment in the garment and footwear sector, the two largest manufacturing exports of the country.[5] About 90 percent of the garment sector wage employment is provided by foreign-owned enterprises operating in Cambodia. Second, minimum wages are set at the national level with no sub-national minimum wage schemes. The legal basis for the minimum wage was set forth in 1997 with the promulgation of Cambodia's labor law. In the same year, the regular minimum wage was set at US$ 40 per month and applied nationally to the garment and footwear industries.

Minimum wage hikes have been more frequent in the recent past. Minimum wages increased only once before 2007, but between 2007 and 2018, the regular minimum wage increased eight times. The prevailing minimum wage, effective from January 2018, is at US$ 170.[6] Though the nominal minimum wage has increased by over 425 percent in the past 19 years, the real value of the minimum wage was below its 1997 real value until the change in January 2015 (Figure 1).

This paper studies the impact of four minimum wage hikes between January 2008 and December 2015.[7] The minimum wage increased from US$ 50 to US$ 60 in October 2010, to US$ 80 in May 2013, to US$ 100 in February 2014, and to US$ 128 in January 2015. It terms of proportional hikes, these changes are 20-33 percent increases in minimum wages with an average hike of 26 percent. The subsequent changes have been proportionally smaller than the period studied in this analysis.

Garment and footwear represents a sizable and increasing share of wage employment in Cambodia, particularly for females. The Cambodian labor force is characterized by high level of labor force participation for both men and women. The participation rates for both

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[5]Since over 90 percent of employment in the 'garment and footwear' sector is in the garment sector, I use the terms 'garment' and 'garment and footwear' interchangeably in this paper.

[6]There have been few other revisions to the minimum wage regulation pertaining changes in allowances and bonuses. See ILO (2016) for details on these revisions.
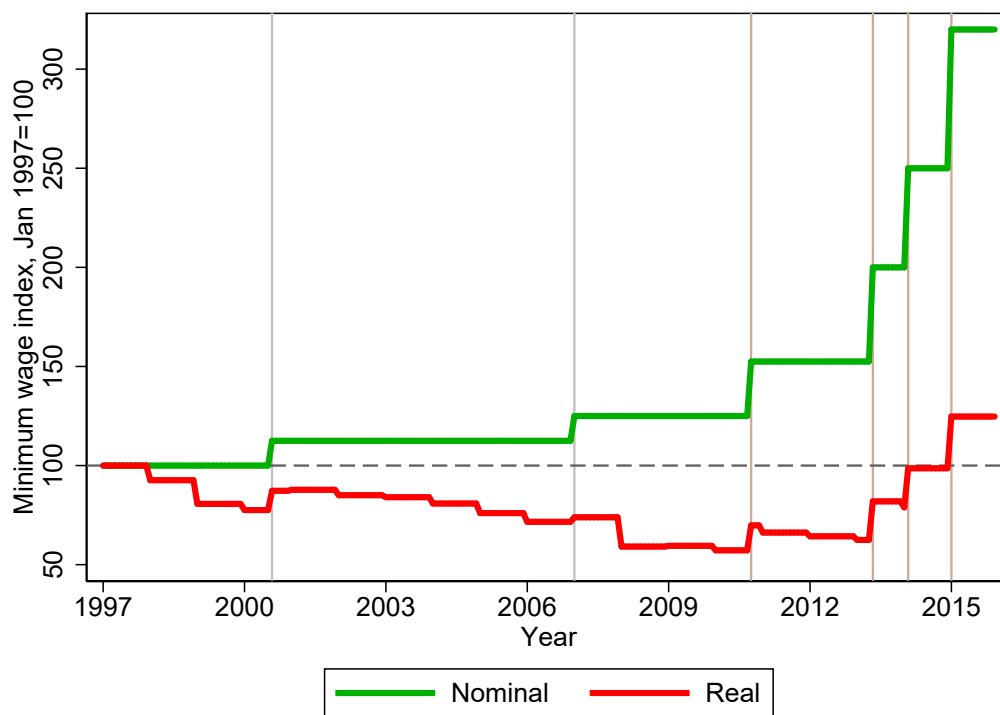
[7]See Section 4 for more details.

FIGURE 1. Nominal and real minimum wage index in Cambodia

Source: Nominal minimum wage data from Ministry of Labor and Vocational Training.
Note: Vertical lines represent times of minimum wage hikes. This paper studies the change represented by brown vertical lines.

men and women hovered around 80 percent over the study period. Wage employment as a share of total employment increased from 25 percent in 2007 to 49 percent by 2015 (Figure 2). Particularly for females, garment sector also grew in prominence. Garment sector wage jobs were 30 percent of female wage employment in 2007, which increased to 42 percent by 2015. In contrast, garment jobs are less than 10 percent of male wage employment.

Increased employment in the garment sector has translated to higher wage earnings for the workers. Average monthly earnings in the garment sector are higher compared to other private sectors (Figure 2). The sectoral earnings gap is particularly pronounced for females, which is suggestive of lack of better opportunities for women outside garments. For instance, for male workers with other options, the sectoral gap in earnings is non-existent.

However, higher monthly earnings in the garment sector does not necessarily translate into higher productivity (measured by hourly wages). As the dashed lines in Figure 2 show, hourly wages for workers in the private sector is higher than that of the garment sector. For women wage workers, hourly wage in the garment sector are statistically indistinguishable from other private sectors. The discrepancy in hourly and monthly wage earnings arises due
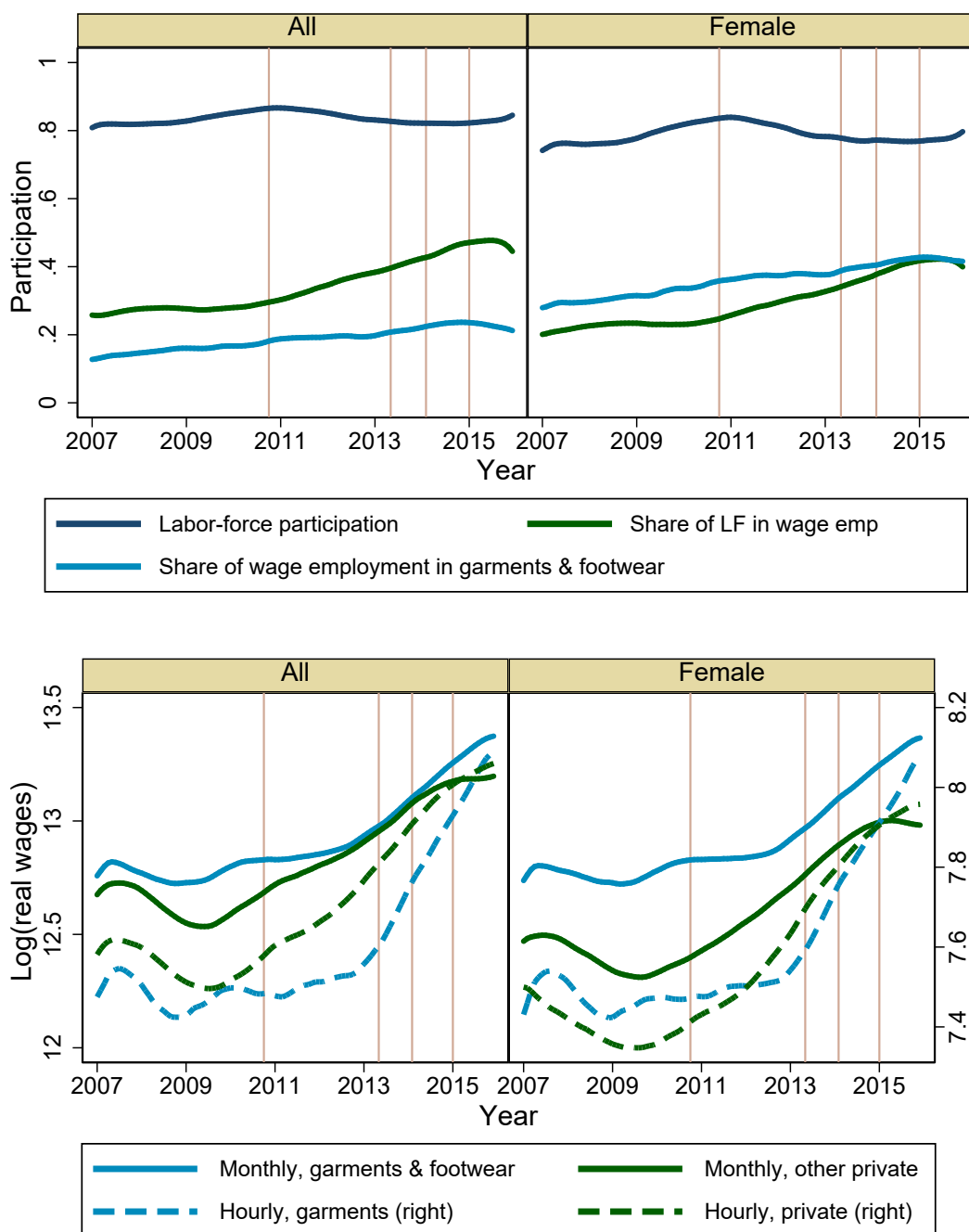
FIGURE 2. Trends in participation rates (top panel) and wages (bottom panel) for male and female workers

Source: Author's calculations from Cambodia SES 2007-2015.

Note: Vertical lines represent times of minimum wage hikes. Sample restricted to the working age population. Sample for wage figures (bottom panel) further restricted to those who work at least 20 hours in the week preceding the survey and have wage-work as their primary employment.

to differences in hours worked. Workers in the garment sector, particularly women, work longer hours per day, and work more days in a month.[8]

In addition to the differences in the levels, Figure 2 illustrates that that are strong trends in participation rates, as well as in earnings. Between 2007 and 2015, monthly wages increased by 7.7 percent per year in the garment sector and by 8 percent per year in non-garment sector, slightly lowering the earnings gap. The gap in hourly earnings also seems to be narrowing over time during this period. Furthermore, monthly wages in the other private sectors seems to have been adversely affected by the global recession and the resulting currency appreciation during July 2008 - November 2010.[9] This shock flattened the monthly wages in the garment sector, but hourly wages in both of these sectors seem to have been negatively affected by the shock.

This suggests that any impact of minimum wage change will be affected by these sectoral trends in wages and earnings as well as trends in participation in various sectors of the economy. The empirical specification used in this paper allows the identification of the impact of minimum wage hike even after controlling for the sector specific time trends and shocks.

3. Theoretical framework

The dual sector model of the economy presented in Harris and Todaro (1970) provides a useful framework to understand the impact of minimum wage hikes on employment and wages in Cambodia.[10] In this model, wages are artificially high in one sector (urban sector in the original model, garment and footwear in the current sector) due to minimum wage policies. This implies that while workers can move from the garment sector to other sectors, mobility in the opposite direction is difficult due to reduced demand at higher wages. In such a context, a hike in minimum wage in the garment sector will have the obvious impact of a fall in employment and an increase wages in the garment sector. However, the excess labor shed from the garment sector can freely move to non-garment sector, pushing out the labor supply. This will reduce wages and increase employment in the other sector.

The magnitudes of these changes depend on the elasticities of the respective labor demand curves. The fall in employment in the garment sector will be smaller if labor demand in the garment sector is relatively inelastic to price changes. This could also lead to higher wage-bill (wage earnings) in the garment sector. Similarly, if the labor demand is elastic to price changes in the non-garment sector, the fall in wages (and wage earnings) will be higher.

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[8]On average, women in garment sector work 45 minutes more per day, and work 0.84 additional days in a month compared to women in the other private sectors who work 7 hours per day, 26.4 days per month.
[9]The Cambodian Riel is 'softly-pegged' with the USD at a rate of about 4040 KHR/US$ (The World Bank, 2017). Following the global financial crisis, the exchange rate rose to an average of 4150 KHR/US$.
[10]See Ham (2018) for a recent empirical examination studied using this framework.

In practice, the changes in employment can manifest in both the extensive margin, through participation rates, as well as intensive margin, through hours devoted to work. If hiring and firing costs are high, then the effect might manifest more in the intensive margin than the extensive margin.

Furthermore, if hiring and firing costs are low, then jobs in the garment sector become more desired. Garment firms could use the opportunity to replace low-productivity workers with higher productivity workers. This could manifest in terms of changed (skill-)composition of those who are employed in the garment sector.

4. Data

For this analysis, I use data from the annual Cambodia Socio-Economic Surveys (CSES) from years 2007 to 2014.[11] The CSES are nationally representative surveys that collect data or each month of the survey year. Hence, the annual series provides a picture of how the labor market has evolved month to month for the study period. This feature of the survey design will be extremely important in identifying how the outcome measure evolves after a minimum wage increase is enacted.

Since minimum wage regulations is only applied for the garment and footwear industries, the expected share of workers paid above minimum wage should be higher for workers in garment and footwear relative to other jobs in the private sector. Indeed, as Figure 3 indicates, the share of workers earning above the monthly minimum wage is higher for the garment sectors. The proportion of workers earning higher than minimum wages increased from about 87 percent in 2007 to about 95 percent in 2014, though there may have been a decline in 2015. The comparative proportions were 62 and 74 in other private sectors. The share of female workers in other private sector is even lower at 48 percent in 2007 to 62 percent in 2014.

As Figure 3 shows, compliance to minimum wages is quite high in the garment sectors. Before the minimum wage change in Oct 2010, 95 percent of the workers in the garment and footwear sectors were paid above the prevailing minimum wages. This compliance rate was at slightly higher level of 96 percent before the changes in May 2013, and February 2014. There was some bunching of monthly earnings at the minimum wage value, particularly for the latter rounds, but the share of the individuals at the minimum wage level was quite small. Furthermore, a large share of the workers in the garment and footwear sector had wages that are higher than the minimum wages that would be enacted in the subsequent months. The share of worker getting paid above the future minimum wage is between 76 and 83 percent. If minimum wage legislation had only a mechanical impact, it would affect

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[11]Survey data are not regularly available for earlier years. However, given that most of the (large) increases in minimum wages occurred during this period, the lack of data availability for earlier is unlikely to affect the interpretation of the results.
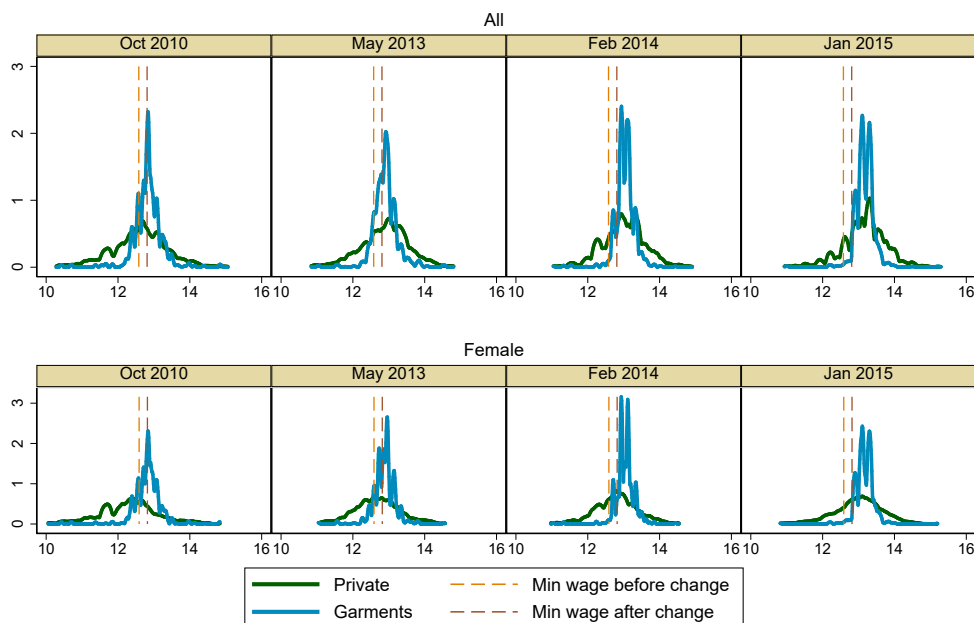
FIGURE 3. Wage densities 12 months before minimum wage change

Source: Author's calculations from Cambodia SES 2007-2015.
Note: Densities of logarithm of real monthly wages of 12 months preceding each minimum wage hike. Sample restricted to working age population, whose main employment is wagework in the private sector, and have worked at least 20 hours in the past week.

only the bottom quarter of the monthly earnings distribution in the garment and footwear sector. These shares are similar across genders and locality as well.

In all of these cases, the monthly earnings distribution is more widespread in the other private sectors. Particularly for female workers, the bottom tail of the earnings distribution is particularly large. During the 8-12 months preceding these minimum wage changes, a quarter to a third of the wage workers in the private sector were getting paid lower than the prevailing minimum wage. The shares of private sector wage-workers getting paid below the minimum wage are higher for women and for rural workers. If minimum wages in garment and footwear pulled the private sector wages, then one would expect a lower proportion of workers getting paid below the minimum wage levels in the private sector. However, it could be possible that the garment and footwear sector attracts high productivity workers among individuals with similar characteristics. In that case, an increase in minimum wages in the garment and footwear sector would depress wages in the private sector.

5. EMPIRICAL STRATEGY

The key empirical strategy in this paper is a difference-in-difference method around the minimum wage hikes of October 2010, May 2013, February 2014, and January 2015. To avoid the problem of multiple changes, I re-center each observation around each of these

four changes and stack the data. If q represents the number of quarters from any minimum wage change, then individuals surveyed in October 2013 would have a value of $q = 11$ relative to the minimum wage change in October 2010, $q = 1$ relative to the minimum wage change in May 2013, a$q = -2$ relative to the minimum wage change in Feb 2014, and $q = -6$ relative to the minimum wage change in January 2014. That is, the final dataset would have four replications of the observations with four different values of q. However, as the minimum wage changes are fairly close to each other, I limit the sample to a 8-quarter window around the minimum wage changes.[12] That is, the observation in the example will be repeated thrice in the final data-set with values of $q = -6, -2$ and 1. Each sample is then inversely weighted by the number of times the observation appears in the dataset. That is, the observation in the example will have a weight of their sampling weight divided by 3.

On this transformed data, I estimate the following event-study regression specification to study the impact on participation rates:

$$(1) \qquad Y_{ijytq} = \sum_{w=-T}^{T} \alpha_w \cdot \mathbf{1}(q = w) + \delta_y + \delta_m + \delta_j + t \cdot \delta_j + X \cdot \xi + \chi_{shock} + \varepsilon_{ijytq}$$

where Y is the outcome (labor force participation, participation in wage income, and participation in garment and footwear sectors) for individual i, observed in survey year y, at time (in year-month) t, which is q quarters away from a minimum wage hike. δ_y, δ_m, δ_j indicate year, month of survey, and location fixed effects. The term $t \cdot \delta_j$ allows for linear time trends in outcome for each location. X is a vector of controls which includes gender, completed education, age, age-squared, marital status, indicator for ethnic minority, household size, number of females, adults, and children in the household, and wealth index of the community. All of these controls are interacted with gender to allow separate effects by gender. χ_{shock} indicates whether time period of survey was during the global financial crises, and currency shock in Cambodia. ε are the idiosyncratic errors assumed to be clustered at the community level for each year of the survey. Then α_w is the impact on outcome w quarters from the minimum wage increase. For most of the specifications, I examine the impacts in a 8 quarters and 4-quarter window.

A more compact form of the specification is used to summarize the results succinctly.

$$(2) \qquad Y_{ijytq} = \alpha A + \delta_y + \delta_m + \delta_j + t \cdot \delta_j + X \cdot \xi + \chi_{shock} + \varepsilon_{ijytq}$$

where A indicates whether the time is 8 quarters after the minimum wage change ($q \geq 0$). The coefficient α indicates the change in outcomes after the minimum wage rise relative to the T months period before the change.

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[12]I also explore heterogeneity by changing the window to 2 and 4 quarters around these minimum wage hikes.

While Equation (1) is useful in visually displaying the results, and Equation (2) is succinct, I estimate the following specification to succinctly capture the adjustments made immediately around the time of minimum wage hikes:

$$(3) \qquad Y_{ijytq} = \alpha_0 B_1 + \alpha_1 A_1 + \alpha_2 A_2 + \delta_y + \delta_m + \delta_j + t \cdot \delta_j + X \cdot \xi + \chi_{shock} + \varepsilon_{ijytq}$$

Where B_1 indicates the quarter just before the minimum wage change happens ($q = -1$), A_1 indicates the subsequent two quarters after the change ($q = 0, 1$), and A_2 indicates the following quarters. With this specification, α_0 indicates any changes in outcomes just before the change. As the increases in minimum wages are known beforehand, this captures the short-run adjustment immediately before the change. Similarly, α_1 estimates the changes in the immediate months following the change, and α_2 estimates the 'long-run' changes that last beyond the first few months of the change.

To estimate the impact on wages, we exploit the fact that the minimum wage only binds in the garment & footwear sector. Hence, we estimate:

$$(4) \quad Y_{ijytq} = \sum_{w=-T}^{T} \alpha_w \mathbf{1}\left(q = w\right) + \gamma G + \sum_{w=-T}^{T} \beta_w \cdot \left(G \cdot \mathbf{1}\left(q = w\right)\right) + \delta_y + \delta_m + \delta_j$$
$$+ t \cdot \delta_j + (t \cdot G) \cdot \delta_j + X \cdot \xi + \chi_{shock} + \left(\chi_{shock} \cdot G\right) + \varepsilon_{ijytq}$$

$$(5) \quad Y_{ijytq} = \alpha A + \gamma G + \beta\left(A \cdot G\right) + \delta_y + \delta_m + \delta_j + t \cdot \delta_j + (t \cdot G) \cdot \delta_j$$
$$+ X \cdot \xi + \chi_{shock} + \left(\chi_{shock} \cdot G\right) + \varepsilon_{ijytq}$$

$$(6) \quad Y_{ijytq} = \gamma G + \alpha_0 B_1 + \beta_0\left(B_1 \cdot G\right) + \alpha_1 A_1 + \beta_1\left(A_1 \cdot G\right) + \alpha_2 A_2 + \beta_2\left(A_2 \cdot G\right)$$
$$+ \delta_y + \delta_m + \delta_j + t \cdot \delta_j + (t \cdot G) \cdot \delta_j + X \cdot \xi + \chi_{shock} + \left(\chi_{shock} \cdot G\right) + \varepsilon_{ijytq}$$

where G indicates whether the worker is in the garment & footwear sector. These specifications are difference-in-difference equivalent of equations (1) and (3). In these specification, αs tests whether private sector wages change after the increase in minimum wage, γ tests whether wages in the garments & footwear were different in the period before the minimum wage change, and βs tests whether the change in wages in garment & footwear sector is different from the change in wages in the private sector after the minimum wage change. That is, β is the difference-in-difference estimator of the changes in outcome. The impact within the garment sector is then given by $\alpha + \gamma$.

In addition to these, we estimate quantile regression variant of equation (5). While the OLS specification is informative on how the average wages behave after a minimum wage increase, the quantile regressions can be informative on how the entire distribution of wages evolve following the rise in minimum wage.

6. Results and discussion

6.1. **Impact on participation.**

Increases in minimum wages do not change overall participation rates in economic activities, that is, the labor force participation rates. The top-left plot on both panels of Figure 4 shows how the participation rates evolve in the 8 quarters preceding and following the minimum wage hike. As seen in the figure, labor force participation in the quarters preceding the change, particularly, for women, is virtually the same as in the quarters following the change. Point estimates of Equation (3) confirm no statistically significant changes the labor force participation rates immediately before, immediately after, or later (column (1) of Table 1). The results are robust to shrinking the window to 6 or 4 quarters around the minimum wage hike.[13]

A minimum wage hike temporarily reduces wage employment for two quarters, after which the wage employment rates returns to its pre-change level. In the quarter of the hike and the following quarter, wage employment rates drop by 2.4 percentage points, which is 6 percent of the average wage employment rate of 38 percent (column (2) of Table 1). The magnitude of the change is slightly larger for all workers due to larger effect on male workers, but the impact on female workers is also statistically significant. However, wage employment rates rise back to its pre-change levels in the third quarters and beyond.

The impact on garment sector employment shows further short-run adjustments around the time of the minimum wages changes. As seen in the bottom-left plot in both panels of Figure 4, wage employment in the garment sector increases in the quarter preceding the change, but falls in the two subsequent quarters. The change is even more drastic for females. However, the garment employment rate bounces back to its pre-change level almost immediately in the third quarter and beyond. Quantitative, the spike in the quarter before the change is 1.1 percentage points for all workers (14 percent), and 2 percentage points for females (17 percent). The drop in garment employment in the quarter of and the quarter following the minimum wage hike is also similar in magnitude: a 0.9 percentage points fall for all workers, 1.4 percentage points for females (column (3) of Table 1). Compared to the pre-hike levels (defined as the period at least 2 or more quarter before the hike), garment sector wage employment is only 0.2 percentage points higher, a much smaller and statistically insignificant impact.

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[13]See Table A1 for robustness with 6 quarter window.
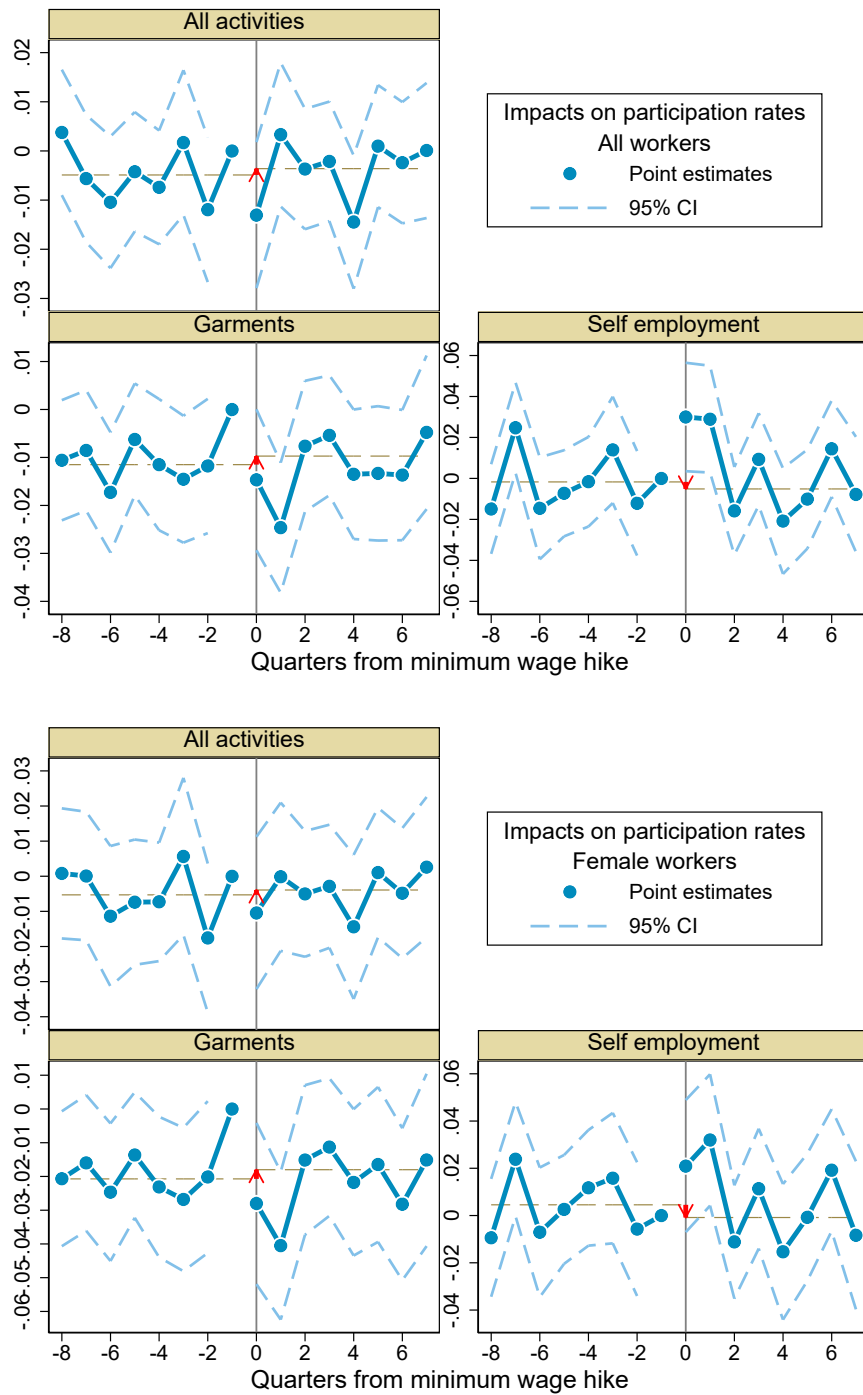
FIGURE 4. Impact of minimum wage hikes on participation rates

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The figure plots the estimate of α_w from Equation (1), with $q = -1$ being the reference group. The brown lines show the average of the coefficients 1-8 quarters before the change, and 2-8 quarters after the change. Sample restricted to working age population, and those observations surveyed within 8 quarters of any of the minimum wage hikes. See notes of Table 1 for a full list of controls used in estimation.

TABLE 1. Impact of minimum wage on participation rates

	LFP (1)	Wage (2)	Garment wage (3)	Self-emp (4)	Agric self-emp (5)
All workers					
1 quarter before	0.006	-0.005	0.011**	0.001	0.020*
	(0.005)	(0.011)	(0.006)	(0.010)	(0.011)
0-1 quarters after	0.000	-0.024***	-0.009**	0.030***	0.025***
	(0.004)	(0.008)	(0.004)	(0.008)	(0.008)
2+ quarters after	0.001	0.001	0.002	-0.004	0.003
	(0.002)	(0.004)	(0.002)	(0.003)	(0.003)
Average	0.822	0.373	0.073	0.502	0.310
Female workers					
1 quarter before	0.007	0.005	0.020**	-0.005	0.018
	(0.008)	(0.012)	(0.009)	(0.011)	(0.012)
0-1 quarters after	-0.000	-0.017**	-0.014**	0.022***	0.022**
	(0.006)	(0.008)	(0.006)	(0.008)	(0.010)
2+ quarters after	0.001	0.004	0.003	-0.006	0.004
	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)
Average	0.775	0.318	0.117	0.548	0.324

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The table presents the estimate of α_0, α_1, and α_2 from Equation (3). The sample is restricted to working age population, and those observations surveyed within 8 quarters of any of the minimum wage hikes. The sample is further restricted to women in the bottom panel. Each column in each panel is a separate regression estimate which controls for location (province $\times$ rural/urban) fixed effects and allows linear time trend for each location, as well as individual characteristics (age, gender, education, marital status, household size, numbers of females, adult, and children in the household, community wealth index) and their interactions with gender, in addition to fixed effects for survey month and year. Each panel is a separate regression estimate. Standard errors, clustered by survey year $\times$ psu shown in parentheses. ***: p<0.01; **: p<0.05; *: p<0.1.

This suggests that garment firms do some employment adjustments just around the time of minimum wage hike, hiring more workers in the months preceding the change, presumably to finish the orders committed to their clients, and take an employment cut in the first few months of the increased minimum wage regime. Within the third quarter, however, they are able to maintain the same level of employment as before.

The spike in garment sector employment is offset by opposing changes in self-employment, particularly in the agricultural sector. In the two quarters of the hike, self-employment goes up by about 3 percentage points (6 percent) for all workers, and 2.2 percentage points (4 percent) for female workers (column (4), Table 1). Self-employment also falls back to its pre-hike levels after the third quarter.

The self-employment results are mostly driven by changes in agricultural self-employment which, arguably, provides an easy default employment for those seeking to work. Participation in agricultural self-employment increases by about 2 percentage points in the quarter before the minimum wage change, and increases by 2.5 percentage points in the two quarters following the minimum wage increase (column (5), Table 1). These changes are about 6 to 8 percent of the agricultural self-employment rate in the earlier quarters.

As seen in Table A1, these short-run adjustment results are not driven by the choice of longer window around the hike.

6.2. **Impact on worker composition, compensation, and hours of work.**

To examine the impact on worker composition, compensation, and working hours, I estimate Equation (4) and Equation (6) among a pool of private-sector workers. The αs measures how the private sector outcomes evolve compared to the omitted period. Similarly, the βs, the difference-in-difference estimates measure the change in the garment sector *relative* to the change in other private-sectors.

There is no strong evidence of compositional changes in garment employment. After 2+ quarters of minimum wage hike, average age of workers in non-garment sector increases by a statistically insignificant 0.03 years, and for those in the garment sector increases further by another insignificant 0.03 years (column (1), Table 2). For females, the direction of impact for the garment sector worker is opposite, but also statistically insignificant. Similarly, completed education of the work-force decreases insignificantly for the non-garment sector workers, but increases for the garment sector workers. However, the difference-in-difference estimates are, at best, marginally significant, and the impact for the garment sector (which is the sum $\alpha_2 + \beta_2$ in Equation 6) is also not statistically significant (column (2), Table 2).

Minimum wage hike results in lower monthly wage earnings in the non-garment sectors, particularly for female wage-workers. There are some short-run adjustments in wage earnings as well, particularly for male workers. In the quarter preceding the minimum wage hike, monthly wage earnings in non-garment sector goes up by 4.7 percent (column (3), Table 2), with most of the effect coming from male workers. However, in the quarters following the hike, average monthly earnings falls in non-garment private sector. For all workers, the fall is less than 1 percent and is statistically insignificant. For female workers, monthly wages fall by 2.7 percent in the immediate two quarters of the hike, and by 4.1 percent in the subsequent quarters. Interestingly, the drop in wages for non-garment workers is concentrated among non-garment workers in household with a female garment sector worker. Households with a female garment sector worker account for 75 percent of the total impact on non-garment female monthly earnings.

Minimum wage hike slightly increases monthly wage earnings in the garment sectors for female workers. There are some adjustments in the quarter preceding the hike, where monthly
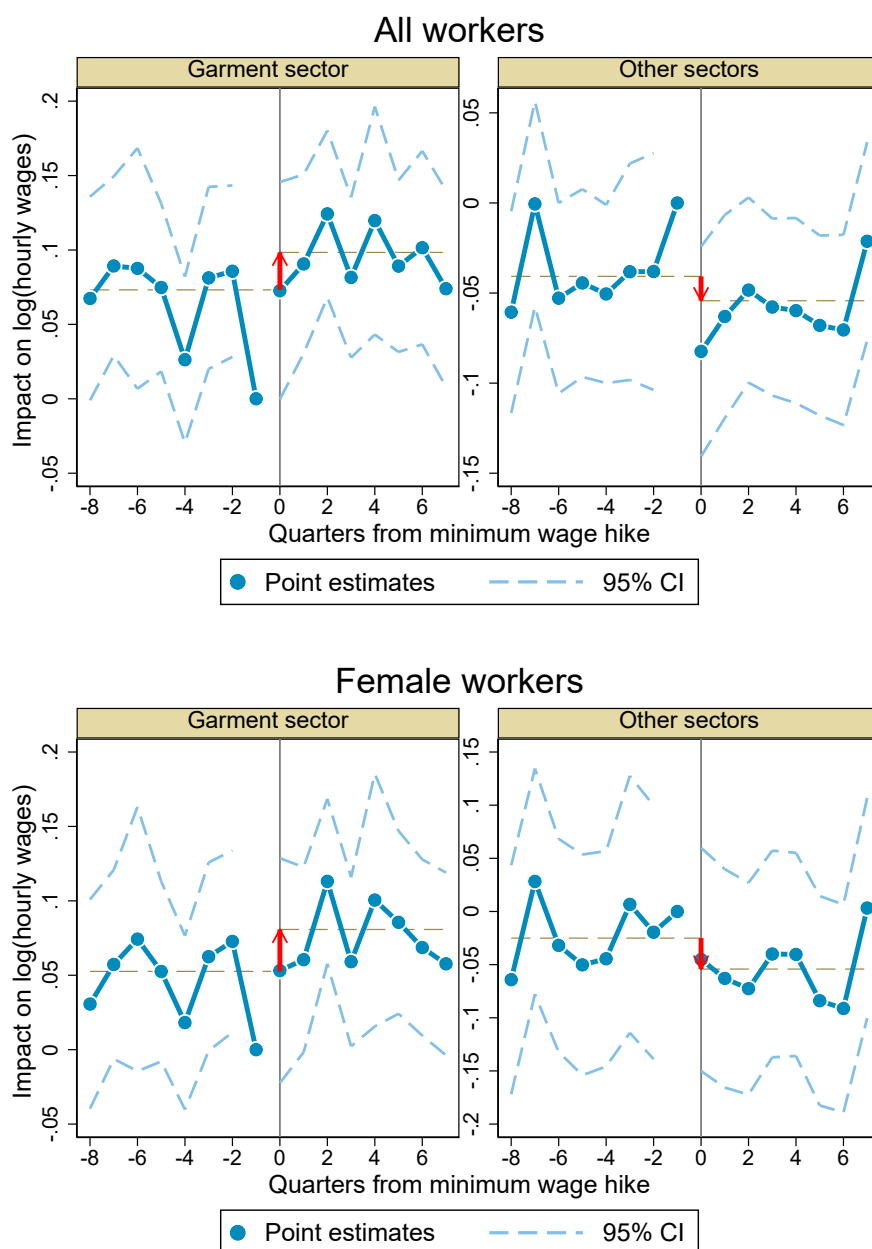
FIGURE 5. Impact of minimum wage hikes on hourly wage rate

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The figure plots the estimate of $\alpha_w + \beta_w$ (left panel), and α_w (right panel) from Equation (4), with $q = -1$ being the reference group. The brown lines show the average of the coefficients 1-8 quarters before the change, and 2-8 quarters after the change. Sample restricted to working age population, and those observations surveyed within 8 quarters of any of the minimum wage hikes. In addition to controls mentioned in the notes for Table 1, the estimates also control for garment sector specific time trend for each location, and garment sector specific global recession shock.

TABLE 2. Impact of minimum wage on worker composition and compensation

	Age (1)	Educ-ation (2)	Log(mthly wage) (3)	Log(hrly wage) (4)	Log(hours) (5)	over-time (6)
All workers						
1 quarter before	0.111	-0.012	0.047*	0.042*	0.001	0.005
	(0.190)	(0.093)	(0.025)	(0.024)	(0.022)	(0.018)
1 quarter before x	0.066	-0.135	-0.090***	-0.113***	0.022	0.059
Garments	(0.373)	(0.136)	(0.033)	(0.032)	(0.029)	(0.038)
0-1 quarters after	-0.117	-0.144**	-0.011	-0.032**	0.020	-0.002
	(0.149)	(0.071)	(0.017)	(0.015)	(0.015)	(0.014)
0-1 quarters after	0.243	0.091	0.018	0.041	-0.021	-0.008
x Garments	(0.267)	(0.120)	(0.028)	(0.025)	(0.018)	(0.027)
2+ quarters after	0.026	-0.034	-0.008	-0.015*	0.004	0.003
	(0.067)	(0.031)	(0.009)	(0.008)	(0.008)	(0.007)
2+ quarters after	0.034	0.146	0.018	0.044***	-0.024	-0.038*
x Garments	(0.196)	(0.091)	(0.017)	(0.016)	(0.015)	(0.020)
Average	34.699	5.523	12.906	7.802	5.100	0.407
Female workers						
1 quarter before	0.388	-0.041	-0.026	0.024	-0.052	-0.033
	(0.269)	(0.097)	(0.046)	(0.051)	(0.036)	(0.021)
1 quarter before x	-0.320	-0.180	0.016	-0.078	0.092**	0.120***
Garments	(0.479)	(0.153)	(0.053)	(0.058)	(0.042)	(0.042)
0-1 quarters after	-0.250	-0.120	-0.027	-0.030	0.001	-0.016
	(0.199)	(0.079)	(0.025)	(0.022)	(0.022)	(0.017)
0-1 quarters after	0.314	0.026	0.038	0.033	0.008	0.027
x Garments	(0.330)	(0.130)	(0.033)	(0.030)	(0.024)	(0.030)
2+ quarters after	0.035	-0.041	-0.041***	-0.031**	-0.012	-0.002
	(0.091)	(0.034)	(0.015)	(0.013)	(0.013)	(0.011)
2+ quarters after	-0.168	0.148	0.057**	0.064***	-0.006	-0.029
x Garments	(0.237)	(0.096)	(0.023)	(0.021)	(0.020)	(0.022)
Average	35.686	4.792	12.695	7.668	5.023	0.356

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The table presents the estimate of $\alpha_0, \beta_0, \alpha_1, \beta_1$ and α_2, β_2 from Equation (6). The sample is restricted to working age population, and those observations surveyed within 8 quarters of any of the minimum wage hikes. Columns (3)-(5) restrict the sample to wage-workers. The sample is further restricted to women in the bottom panel. In addition to controls mentioned in the notes for Table 1, the estimates also control for garment sector specific time trend for each location, and garment sector specific global recession shock. Individual and household level controls omitted from the first two columns. Standard errors, clustered by survey year × psu shown in parentheses. ***: p<0.01; **: p<0.05; *: p<0.1.

wages falls by 4.3 percent.[14] However, in the subsequent sectors, as Table 2 (column (3))

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[14]I refer to $\alpha_t + \beta_t$, the sum of the coefficients reported in the tables, while referring to the impact on the garment sector. The diff-in-diff estimates are always referred to as an impact relative to non-garment sector.

shows, relative to the non-garment sector, female wages in the garment sector go up by 5.7 percent after a hike in minimum wage. This suggests that, compared to the wages in the garment sector before the hike, wages increase by 1.7 percent. This effect is, however, statistically insignificant.

The impacts on hourly wages, which could reflect productivity, are much stronger for both garment and non-garment workers. For the non-garment sector, hourly wage increases drastically by 4 percent in the quarter before the hike, and falls by 3 percent in the subsequent two quarters. The fall moderates after two quarters of minimum wage hike to 1.5 percent. The spike in the preceding quarter is driven by male workers, as the effect is much lower and statistically insignificant for women. In non-garment sector, female wages fall by 3 percent in the subsequent quarters and stays about this same for the latter period as well (Figure 5 and column (4), Table 2). Here as well, the bulk of the effect is driven by households with a female garment sector worker. These households account for 85 percent of the impact of minimum wage hike on non-garment sector workers.

The impact on hourly wages in the garment sector is exactly the opposite. In the preceding quarter, hourly wages in the garment sector falls by 7 percent, but bounces back up by 3 percent by the third and subsequent quarter of minimum wage hike. Female garment sector wage also exhibits this pattern: it falls by about 5.4 percent in the preceding quarter of the hike, and rises up by 3.2 percent after 3+ quarters of minimum wage hike (column (4), Table 2). As Figure 5 shows, the spike in the preceding quarter is anomalous and is not a result of pre-existing trends.[15] Similarly, changing the window of analysis does not affect these results (Table A2).

The impact on the hours worked and over-time is also consistent with short-run adjustments in the preceding quarter of the hike. Hours worked in the garment sector increases by 2 percent (statistically insignificant) and share of workers working over-time increases by 6.4 percentage points, or 16 percent of the average rate of overtime work (column (5) and (6), Table 2). For females, the probability of working overtime in the garment sector increases by 8.7 percentage points, and hours worked in the garment sector increases by 4 percent. These results are consistent with the increased participation in the garment wage work in the preceding quarter. In the subsequent quarters, both hourly wage and over-time work falls slightly in the garment sector.

Impact on wage distribution.

The estimates in the previous section describe the impact of minimum wage hikes on average monthly wages, and average hourly earnings. However, minimum wage policies can

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[15]A simple diff-in-diff specification without stacking up the data around the time of the minimum wage hike would miss this result. As seen in Table A3, such a specification would give similar results but is underpowered to detect impacts in, for instance, non-garment sectors.

often have differential impacts at different points of the distribution. For instance, in the United States, the impact is limited to those at the low end of the distribution.[16] In the contexts of other developing countries as well, the impact of minimum wages are likely to be different based on different parts of the wage distribution (see del Carpio, Messina and Sanz-de Galdeano, 2018, for example). In this section, I estimate Equation (6) using quantile regressions to characterize the impact in various points of the wage distribution.

Indeed, minimum wage hike affects wage earnings differently at various quantiles of the garment and non-garment wage distributions. The estimates for the garment sector shows positive and increasing impact at the 60th or higher quantiles with magnitudes ranging from 2-6 percent (Figure 6). At lower quantiles, the impact is statistically insignificant with some point estimates below zero for the bottom 40th quantiles. The impact on female wage earnings distribution display a similar, but muted, pattern. Impacts above the 60th quantiles are statistically significant with impacts ranging between 2-4 percent. Impacts at lower quantiles are lower and statistically insignificant, but with positive magnitude of impact.

The impact on hourly wages in the garment sector also mimics the patter of monthly wage earnings, but are more precisely estimated. The impact in the distribution of hourly wages range from 1 to 6 percent with statistically significant impact above the 30th quantile (Figure 7). At lower quantiles, the impacts are lower and statistically insignificant. For females as well, the impact ranges from 1.5 - 4 percent with higher, and statistically significant, impacts at higher quantiles.

The pattern of the quantile treatment effects of minimum wage hike in the garment sector suggests that the impacts are far from a mechanical effect of price change at the bottom of the wage distribution. One possible explanation is that minimum wage hike changes the compensation scheme of garment sector workers in addition to raising the price floor. Typically, garment firms in Cambodia use the minimum wage as an anchor for the entire wage distribution of its workers. Lowest-skilled workers typically receive the minimum wage and get a performance bonus based on their individual productivity. A hike in minimum wages also changes pay structure so that the target to receive performance bonus becomes tougher. Hence, for the least-productive workers, a hike in minimum wage does not increase their take-home pay as they can no longer receive the performance bonus. But for more productive workers, they receive the higher minimum wages as well as the bonus. The wages

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[16]In fact, many studies of minimum wages are limited to employment and wage impact in low-wage labor markets defined by certain sectors (like Card and Krueger, 1994; Addison, Blackburn and Cotti, 2012, for restaurant workers), or age (for instance Card, 1992; Neumark, Salas and Wascher, 2014, for teens), or those earning below a threshold level of wage (like Jardim et al., 2018). Studies in other developed countries also focus on specific low-wage sectors (like Machin, Manning and Rahman, 2003, for home care sector).

FIGURE 6. Quantile treatment effect of minimum wage hikes on monthly wage earnings

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The figure plots the estimate of $\alpha_2 + \beta_2$ (left panel), and α_2 (right panel) from quantile treatment effect estimation of Equation (6) for monthly wages. Quantiles are indicated by the horizontal axis. Sample restricted to working age population, and those observations surveyed within 8 quarters of any of the minimum wage hikes. In addition to controls mentioned in the notes for Table 1, the estimates also control for garment sector specific time trend for each location, and garment sector specific global recession shock.

for garment sector employees not directly linked with production line may also need to be increased in order to minimize worker discontent within the firm.[17]

The impact on non-garment monthly wage distribution are also different at different points of the earnings distribution. Point estimates remains negative, but insignificant at most quantiles (Figure 6). The magnitudes range from 1.3 percent to 4.7 percent with slightly larger impacts at higher quantiles. Only the impact at the 65th and higher quantiles are statistically significant. For females, the impacts are slightly larger (2.6 - 7.8 percent) and are statistically significant at the 25th and lower quantiles as well as at 60th and higher quantiles.

Impact on the quantiles of hourly wages follow slightly different pattern and are more precisely estimated. Impacts range from 1.3 percent to 4.7 percent with higher impacts at lower quantiles. The estimates are statistically significant almost throughout the distribution. For females as well, impacts remain lower and statistically significant at all but the top quantiles (Figure 7). These impacts are consistent with impacts on average wages and of similar magnitudes.

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[17]In qualitative interviews, garment firm owners agreed that they change the compensation scheme when minimum wage increases. They also agree that wages of non-production workers also gets revised after minimum wage hike.
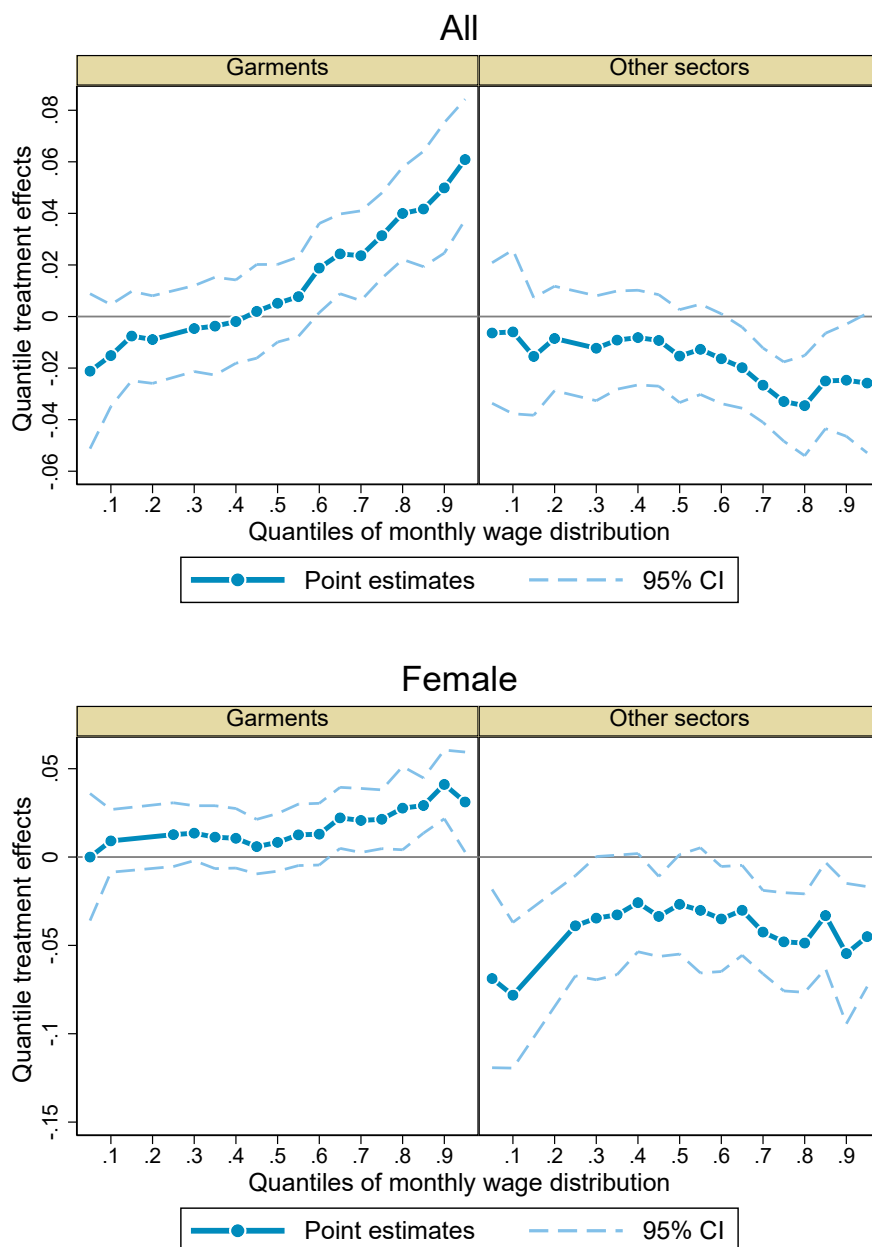
FIGURE 7. Quantile treatment effect of minimum wage hikes on hourly wage rate

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The figure plots the estimate of $\alpha_2 + \beta_2$ (left panel), and α_2 (right panel) from from quantile treatment effect estimation of Equation (6) for hourly wages. Quantiles are indicated by the horizontal axis. Sample restricted to working age population, and those observations surveyed within 8 quarters of any of the minimum wage hikes. In addition to controls mentioned in the notes for Table 1, the estimates also control for garment sector specific time trend for each location, and garment sector specific global recession shock.

6.3. **Impact on household occupation and earnings.**

In this section, I use the same empirical framework to examine the impact of minimum wage hikes on participation and wage earnings at the household level.

Similar to the impact at the individual level, participation rates exhibit some adjustments just around the time of minimum wages hike, but the effect disappear in 2 quarters. In the quarter preceding the change, the probability of a household having a garment sector worker increases by 1.6 percentage points – 12 percent of the average participation rates (column (2), Table 3). But in the subsequent two quarters, participation in garment employment falls by 1.7 percentage points and participation in wage employment falls by 2.5 percentage points. These changes are consistent with the individual level results in Table 1. But, as with individual level participation, household participation in wage employment, and garment employment return to its pre-hike levels in the latter quarters.

For households with a garment sector worker, the number jobs performed by its member slightly increases and the total hours worked slightly falls. After 2+ quarters of minimum wage hike, number of jobs performed by members of household with a garment sector worker

TABLE 3. Impact of minimum wage hikes at the household level

	HH has wage worker (1)	HH has garment worker (2)	num. of jobs (3)	Log(hours in priv. sector) (4)	Log(HH wage) (5)
1 quarter before	-0.005	0.016*	0.127	0.062**	0.080**
	(0.015)	(0.009)	(0.083)	(0.029)	(0.034)
1 quarter before x Garment HH			-0.010	-0.044	-0.107**
			(0.120)	(0.034)	(0.047)
0-1 quarters after	-0.025**	-0.017**	0.023	0.001	-0.026
	(0.011)	(0.007)	(0.057)	(0.021)	(0.022)
0-1 quarters after x Garment HH			0.041	-0.000	0.017
			(0.081)	(0.026)	(0.035)
2+ quarters after	0.006	-0.002	-0.011	0.014	0.000
	(0.007)	(0.005)	(0.033)	(0.013)	(0.015)
2+ quarters after x Garment HH			0.145*	-0.048**	-0.021
			(0.085)	(0.020)	(0.026)
Average	0.533	0.131	3.275	5.667	13.317

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The table presents the estimate of $\alpha_0, \beta_0, \alpha_1, \beta_1$ and α_2, β_2 from Equation (3) – for columns (1), (2) – and Equation (6) – for columns (3) -(5) – estimated at the household level. The sample is restricted to households surveyed within 8 quarters of any of the minimum wage hikes. The sample is further restricted to households with at least one primary wageworker in the household for the last column. In addition to controls mentioned in the notes for Table 1, the estimates also control for garment sector specific time trend for each location, and garment sector specific global recession shock. Standard errors, clustered by survey year × psu shown in parentheses. ***: p<0.01; **: p<0.05; *: p<0.1.
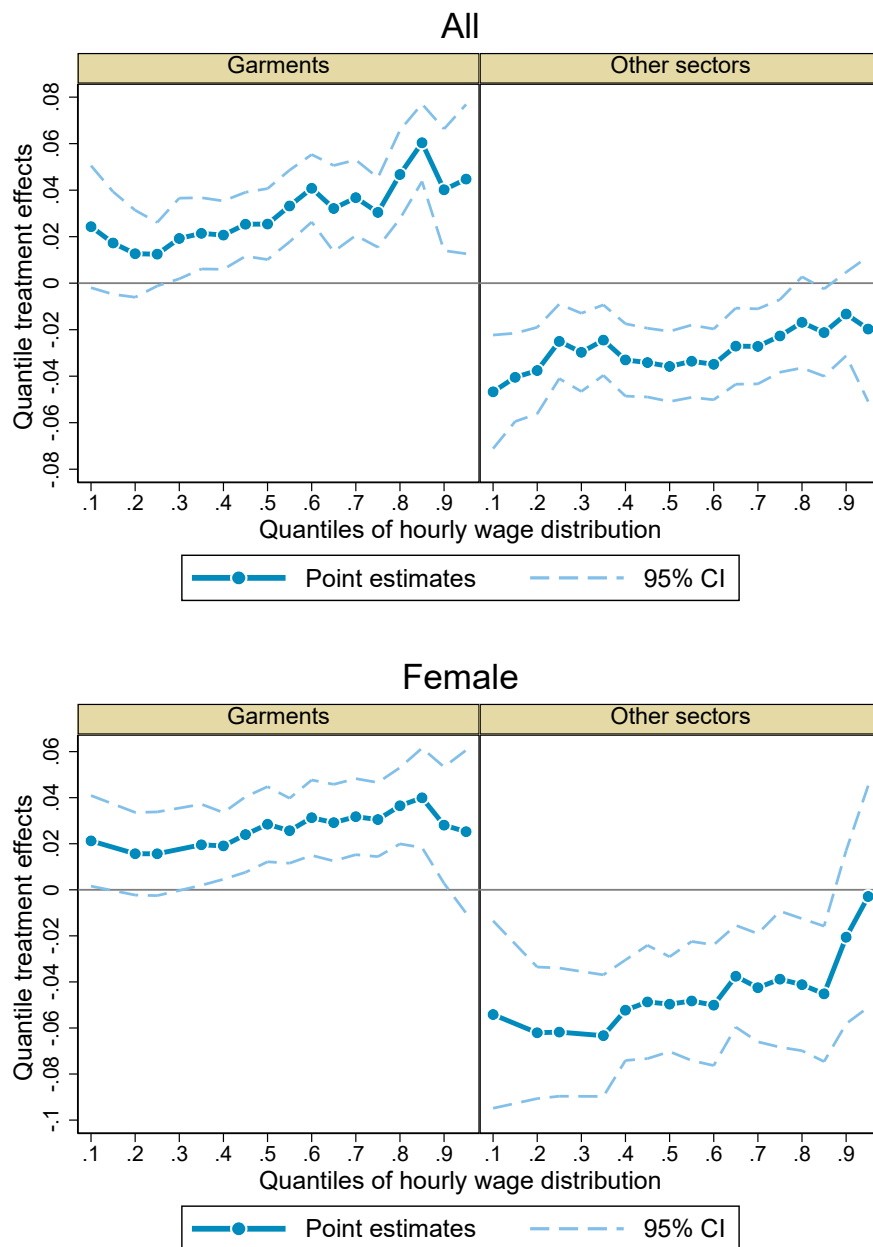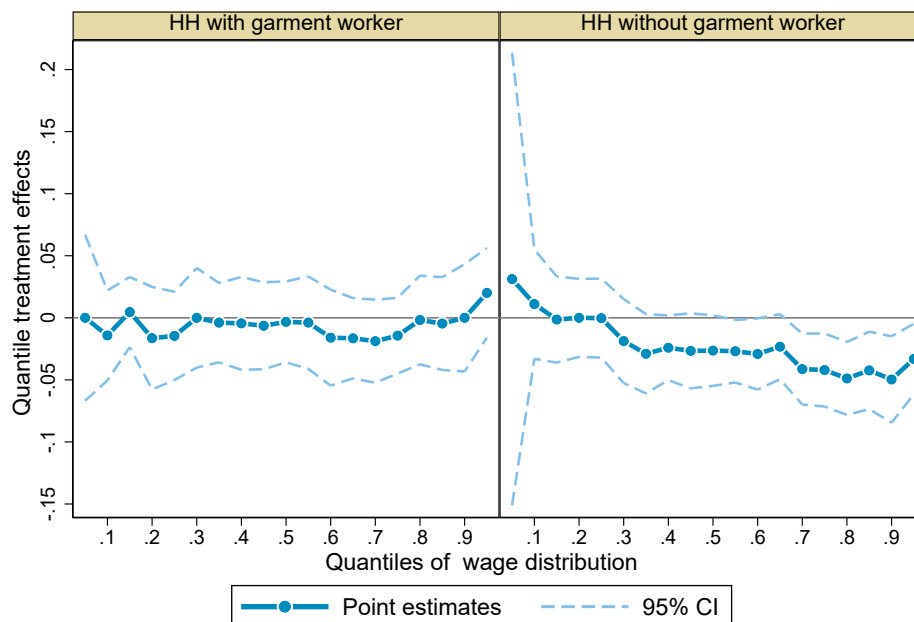
FIGURE 8. Quantile treatment effect of minimum wage hikes on hourly wage rate

Source: Author's calculations from Cambodia SES 2007-2015.

Note: The figure plots the estimate of $\alpha_2 + \beta_2$ (left panel), and α_2 (right panel) from from quantile treatment effect estimation of Equation (6) for total wage earnings at the household level. Quantiles are indicated by the horizontal axis. Sample restricted to those households with some wage income. Sample further restricted to households surveyed within 8 quarters of any of the minimum wage hikes. In addition to controls mentioned in the notes for Table 1, the estimates also control for garment sector specific time trend for each location, and garment sector specific global recession shock.

slightly increases by 0.14 (4 percent) and the hours worked by all its members fall by 3.6 percent (columns (3) and (4), Table 3). For household without a garment sector worker, there are no changes in either the number of jobs, or on hours worked by its members.

On the other hand, minimum wage hike does not significantly change total household wage earnings. In the 2+ quarters after the hike, total household wage earnings are not significantly different from their pre-hike levels for households with or without garment sector workers (column (5), Table 3). Households without a garment-worker do not observe any change in total wages, whereas households with a garment-worker observe a statistically insignificant decline of 2 percent. This is again, consistent with individual level results which show that the gains in earnings from the garment sector workers are negated by the loss of wage earnings from non-garment sector workers in the same households. This suggests that though minimum wage hikes changes wages and earnings at the individual levels, the overall gains at the household level is insignificant due to labor supply and earnings response of other household members.

These effects are not just the impact on the average, but also throughout the distribution of household wage earnings. Quantile treatment effect estimates suggest that for households

with a garment sector worker, the impact of minimum wage hike is close to zero throughout the entire distribution (left plot, Figure 8). For households without a garment sector worker, the estimates are statistically insignificant throughout the distribution except at the top quarter of the quantiles where the impacts are negative (right plot, Figure 8).

7. Conclusion

This study highlights a few things about minimum wage hikes that can be informative to future minimum wage policy in Cambodia and elsewhere. First, the direct impact on employment is nil and on earnings is small relative to the magnitude of the hikes. The concerns for large dis-employment effect does not, at least for the period studied, hold true. Furthermore, the overall wage earnings by households do not seem to change following a hike in minimum wage. Second, the minimum wage hike affects earnings throughout the distribution and not just at the bottom where workers are earning wages close to the level of minimum wage. This suggests that the nature of compensation schemes, or the wage-negotiation process matter for the distributional consequences of minimum wage policy. Third, the minimum wage hike in a particular sector may have unintended negative impacts on workers in the unaffected sectors unlike a positive *lighthouse effect* often described in the literature.

However, it is important to be cautious in extrapolating these results for future hikes in minimum wages. For instance, the impact might be starker (more negative) as the level of the minimum wage keeps increasing relative to the distribution of garment sector wages. Second, and more importantly in the context of Cambodia, it is important to understand how the changes in minimum wages factor into the production function of the foreign enterprises that employ most of the wage employment in the garment sector. If foreign enterprises are elastic on their Cambodian garment labor demand at higher levels of minimum wages, the impacts of future hikes could lower garment employment. The evidence in this study shows that, at least at the current levels of minimum wages, the elasticity does not seem to be too high.

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APPENDIX A. ADDITIONAL RESULTS

TABLE A1. Impact on participation rates with 18 months window

	LFP (1)	Wage (2)	Garment wage (3)	Self-emp (4)	Agric self-emp (5)
		All workers			
1 quarter before	0.005	-0.004	0.010*	0.001	0.017
	(0.005)	(0.011)	(0.006)	(0.010)	(0.011)
0-1 quarters after	-0.002	-0.024***	-0.008**	0.027***	0.024***
	(0.004)	(0.008)	(0.004)	(0.008)	(0.008)
2+ quarters after	-0.001	-0.003	0.000	-0.005	0.003
	(0.003)	(0.007)	(0.003)	(0.006)	(0.007)
Average	0.821	0.380	0.075	0.504	0.314
		Female workers			
1 quarter before	0.005	0.003	0.021**	-0.002	0.018
	(0.008)	(0.012)	(0.009)	(0.011)	(0.012)
0-1 quarters after	-0.003	-0.015*	-0.011*	0.018**	0.020**
	(0.006)	(0.009)	(0.006)	(0.008)	(0.009)
2+ quarters after	-0.003	0.001	0.004	-0.007	0.003
	(0.005)	(0.008)	(0.005)	(0.007)	(0.007)
Average	0.772	0.326	0.121	0.552	0.329

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The table is identical to Table 1 except that it restricts the observations to those surveyed within 6 quarters of the minimum wage hike. Standard errors, clustered by survey year × psu shown in parentheses. ***: p<0.01; **: p<0.05; *: p<0.1.

TABLE A2. Impact on worker composition and compensation with 18 months window

	Age (1)	Education (2)	Log(mthly wage) (3)	Log(hrly wage) (4)	Log(hours) (5)	over-time (6)
All workers						
1 quarter before	0.057	-0.005	0.040*	0.039*	-0.003	0.002
	(0.186)	(0.091)	(0.024)	(0.023)	(0.022)	(0.018)
1 quarter before x	-0.106	-0.109	-0.075**	-0.110***	0.037	0.078**
Garments	(0.362)	(0.138)	(0.031)	(0.031)	(0.029)	(0.037)
0-1 quarters after	-0.206	-0.136*	-0.018	-0.027*	0.009	-0.006
	(0.148)	(0.070)	(0.017)	(0.014)	(0.015)	(0.014)
0-1 quarters after	0.098	0.144	0.030	0.050**	-0.018	0.001
x Garments	(0.277)	(0.124)	(0.027)	(0.025)	(0.019)	(0.028)
2+ quarters after	-0.122	-0.015	-0.022	-0.015	-0.009	0.002
	(0.113)	(0.052)	(0.014)	(0.012)	(0.013)	(0.011)
2+ quarters after	-0.246	0.174	0.026	0.053***	-0.026	-0.031
x Garments	(0.242)	(0.109)	(0.021)	(0.020)	(0.020)	(0.028)
Average	34.835	5.598	12.950	7.830	5.118	0.411
Female workers						
1 quarter before	0.376	-0.038	-0.029	0.021	-0.051	-0.031
	(0.265)	(0.096)	(0.043)	(0.047)	(0.034)	(0.022)
1 quarter before x	-0.523	-0.151	0.015	-0.081	0.095**	0.128***
Garments	(0.459)	(0.150)	(0.050)	(0.053)	(0.039)	(0.041)
0-1 quarters after	-0.265	-0.126	-0.035	-0.022	-0.014	-0.024
	(0.195)	(0.079)	(0.025)	(0.022)	(0.022)	(0.018)
0-1 quarters after	0.092	0.075	0.048	0.035	0.015	0.042
x Garments	(0.338)	(0.134)	(0.033)	(0.030)	(0.025)	(0.031)
2+ quarters after	0.017	-0.047	-0.061***	-0.031*	-0.031	-0.007
	(0.159)	(0.058)	(0.020)	(0.019)	(0.020)	(0.016)
2+ quarters after	-0.567*	0.193	0.069**	0.069**	0.000	-0.012
x Garments	(0.292)	(0.118)	(0.028)	(0.027)	(0.026)	(0.030)
Average	35.810	4.867	12.740	7.699	5.039	0.358

Source: Author's calculations from Cambodia SES 2007-2015.
Note: The table is identical to Table 2 except that it restricts the observations to those surveyed within 6 quarters of the minimum wage hike. Standard errors, clustered by survey year × psu shown in parentheses. ***: p<0.01; **: p<0.05; *: p<0.1.

TABLE A3. Impact of minimum wage hikes at the household level

	log(monthly wage)	log(hours)	log(hourly wage)
	(1)	(2)	(3)
All workers			
Log(minimum wage)	-0.086	-0.039	-0.048
	(0.249)	(0.241)	(0.186)
x garment	0.241***	-0.032	0.293***
	(0.069)	(0.070)	(0.071)
Female workers			
Log(minimum wage)	-0.221	-0.371	0.128
	(0.263)	(0.250)	(0.252)
x garment	0.222**	0.056	0.181**
	(0.091)	(0.092)	(0.092)

Source: Author's calculations from Cambodia SES 2007-2015.

Note: The table presents the estimates of β and δ of estimating: $Y_{ijyt} = \alpha G + \beta \log(\text{minwage}) + \delta \left(G \cdot \log(\text{minwage}) \right) + \delta_y + \delta_m + \delta_j + t \cdot \delta_j + (t \cdot G) \cdot \delta_j + X \cdot \xi + \chi_{shock} + (\chi_{shock} \cdot G) + \varepsilon_{ijyt}$. Sample restrictions and additionals covariates are identical to Table 2. Standard errors, clustered by survey year $\times$ psu shown in parentheses. ***: p<0.01; **: p<0.05; *: p<0.1.