Thailand and The World Economy
P-ISSN: 2630-0931
E-ISSN: 2651-0529
Homepage : https://www.tci-thaijo.org/index.php/TER
Vol. 42, No.1, January - April 2024 **Page [1-21]**

Minimum Wage Effects on Labor Market Outcomes: Evidence from Thailand

Warut Samart
University of the Thai Chamber of Commerce
Weerachart T. Kilenthong[*]
University of the Thai Chamber of Commerce

Received 26 December 2021, Received in revised form 6 December 2022,
Accepted 26 December 2022, Available online 8 January 2024

Abstract

This paper estimates the contemporaneous effects of the real minimum wage on wage, labor income, total compensation, overtime income, working hours, and disemployment using individual-level panel data, created from the matched-outgoing rotation group (matched-ORG) of the Labor Force Survey of Thailand between 2002 and 2013. We found that real wage and real total compensation were positively correlated with real minimum wage for both the gradual decline period (2002-2011) and the big jump period (2012-2013). Working hours were negatively correlated for the first period but positively correlated for the second one, while the opposite was true for the disemployment effect.

Keywords: Minimum Wage; Earnings; Disemployment; Matched ORG

JEL Classifications: E24, J42, J48

[*] **Corresponding author**: Email: tee@ riped.utcc.ac.th

1. Introduction

The minimum wage has been one of the most debated issues in labor economics. One group argues that labor markets are sufficiently competitive (competitive equilibrium model) and, therefore, raising the minimum wage would reduce employment (e.g., Stigler, 1946; Machlup, 1946; Neumark & Wascher, 1992, 1994; Neumark et al., 2004). On the other hand, the other group argues that employers hold market power regarding employment and wage setting (monopsony model). Therefore, raising the minimum wage could potentially increase employment and employees' welfare (e.g., Lester, 1946; Card, 1992; Katz & Krueger, 1992; Card & Krueger, 2015; Dickens et al., 1999; Okudaira et al., 2019).

For Thailand, the existing literature mostly supports the monopsony model (e.g., Ariga, 2015; Strobl & Walsh, 2016; Lathapipat & Poggi, 2016; Del Carpio et al., 2019). Most of them found a small, sometimes positive, effect of the minimum wage on employment. Importantly, their empirical estimations rely on either cross-sectional or provincial-level panel data. This paper contributes to the existing studies by re-examining the empirical evidence on the effect of minimum wages on changes in labor market outcomes using individual-level panel data.

Specifically, we use the matched-outgoing rotation group (matched-ORG) constructed from the Thai Labor Force Survey (LFS). From the year 2002 onward, the survey has implemented the outgoing rotation group (ORG) sampling procedure. This procedure allows researchers to match individuals in the Outgoing Rotation Group (ORG) between the two consecutive years. This matching produces longitudinal data where individuals appear for two years. The panel data allow researchers to perform fixed-effect estimations to account for individual-level, time-invariant, unobserved heterogeneity.

This paper evaluates several dimensions of labor market outcomes, including wage, labor income, total compensation, overtime income, working hours, and disemployment. By considering a wide range of labor market outcomes, we should be able to understand better how the Thai labor market responded to changes in the minimum wage. One possibility is that firms may respond to an increase in real minimum wage by reducing demand for overtime work instead of laying off workers, if that is still possible (Stewart & Swaffield, 2008). Another possibility is that firms may choose to keep relatively high-skilled workers but lay off low-skilled workers. This potential channel guides us to consider the effect of a real minimum wage on dis employment for foreign workers, as most of them (but not all) may be considered low-skilled workers.

This study covers two distinct periods. The first one is a period when the real minimum wage gradually decreased from 2002 to 2011, while the second one is a period when the minimum wage substantially increased from 2012 to 2013 (see Figure 1). Considering the effects of both periods is critical for the interpretation of the results. In fact, some estimation results from both periods are similar, while others are notably different.

The remainder of the paper is organized as follows: Section 2 presents the data sources and historical data of the minimum wage in Thailand. Empirical specifications are explained in Section 3 while empirical results are presented in Section 4. Section 5 concludes and discusses the paper.

2. Matched-ORG Data and Minimum Wage in Thailand

This paper uses the matched-outgoing rotation group data (matched-ORG), which is part of the Labor Force Survey (LFS). The National Statistical Office (NSO) initially designed the LFS data as cross-sectional data. From the year 2002 onward, the survey has implemented an outgoing rotation group (ORG) sampling procedure for a subset of the sample. The survey is first repeated on the same household for two consecutive quarters. It then pauses for the next two consecutive quarters before re-interviewing the same household again for two consecutive quarters. This procedure is called a 2-2-2 pattern. So far, there are two distinct sample sets. The first one is for 2002 - 2011 and the second one is for 2012 - 2021.

The ORG procedure provides an opportunity to match the same individuals across time and create individual-level panel data. To do so, we first link the same household across survey rounds using the household identification number. However, the same individual may be mistakenly assigned different member IDs in different rounds. Therefore, we also use some individual characteristics, including gender, age, years of schooling, and marital status, to identify individuals across rounds[1].

The ORG procedure generally allows us to link each individual for up to two years only. The number of ORG samples started in odd years (e.g., 2003) is much smaller than the one started in even years. Therefore, we keep only samples, who were first interviewed in even years. Therefore, our panel data set consists of the following pairs of years: 2002-2003, 2004-2005, 2006-2007, 2008-2009, 2010-2011, and 2012-2013. Recall that each individual in the ORG was interviewed at most four times, resulting in two pairs of two-year panels. To utilize all available data, we treat the same individual who was interviewed in different quarters of the same year as two separate observations. In the analysis below, we denote the first year interviewed as year t = 1 and the latter year as year t = 2 regardless of the calendar year.

Our sample is restricted to individuals aged 15 to 65 who worked in the private sector. It excludes those in government and state enterprise[2]. The matched-ORG data also include foreigners who worked in the country during the first quarter only. We identify foreigners by asking whether they had registered for a work permit. Unfortunately, the question was for employed workers only, and, therefore, we cannot identify foreign workers who were unemployed. This question is available only from 2010 onward. As a result, we cannot perform analysis on foreign workers separately in earlier periods.

All nominal variables, minimum wage included, were transformed into real value using the regional consumer price index (CPI) with 2015 as the base year. The minimum wage in Thailand is officially set as a daily rate[3]. Figure 1 illustrates the nominal and real

[1] We would like to thank Wasinee Juntorn and the research staff at RIPED, who worked tirelessly to create this matched-ORG data set.

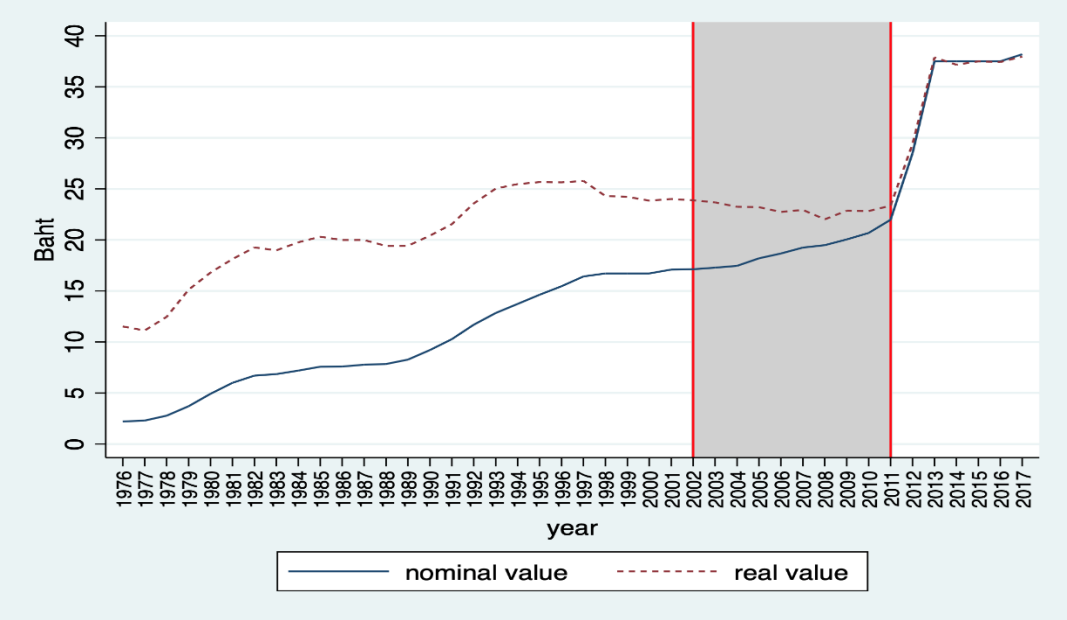
[2] Our sample includes workers in the agricultural and fishing sectors. Agricultural and fishing sectors are exempt from the coverage of the minimum wage law. However, the two sectors share a significant portion of workers in the Thai labor market (12.89 to 13.96 percent by our Matched-ORG sample). We decided to keep workers in the two sectors in order to account for a potential spillover effect of the minimum wage across all private sectors.

[3] Thailand has implemented a minimum wage policy since 1973. The minimum wage (daily rate) is determined by a ``wage committee'', consisting of representatives from three parties, including the government, employers, and employees. The committee takes socio-economic factors into account in determining the minimum wage rate. These include national and regional indicators for the cost of living,

daily minimum wages in Thailand from 1976 to 2017. It is evident that the nominal rates have been increasing over time, but the real value have been gradually declining from 2002 to 2011.

We transformed the daily rate into an hourly rate by dividing it by 8 hours. Figure 2 presents the average of the real hourly minimum wage by region in Thailand from 1976 to 2017. There are three distinguishable periods. The first period is when the average real minimum wage has steadily increased between 1976 and 1994. The second period is between 1994 and 2011 when the average real minimum wage has gradually declined. The third one is between 2011 and 2013, when the average real minimum wage has dramatically increased. This is the product of the 300 Baht policy, which the nominal minimum wage in each province was raised to 300 Baht nationwide in 2013.

Figure 1: Nominal and Real (2015 as the base year) Daily Minimum Wage in Thailand from 1976 to 2017



Source: Authors' calculation

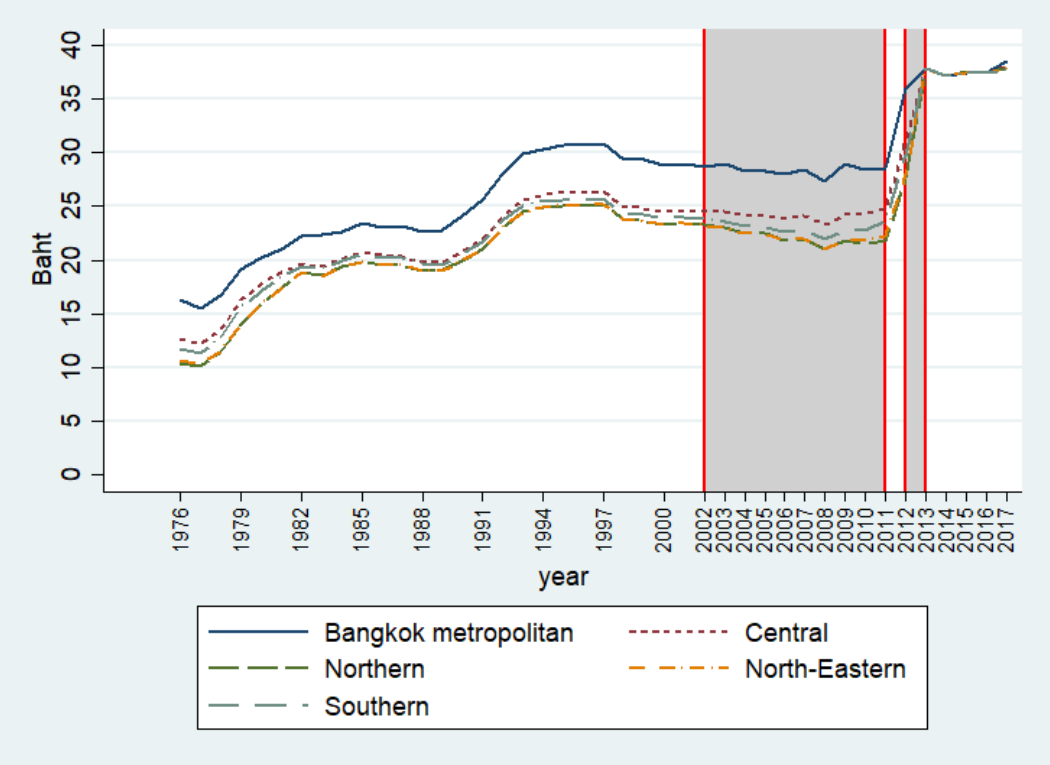
The last period is between 2014 and 2017, when the average minimum wage has been relatively constant. Due to the availability of the matched-ORG data, this paper cannot estimate the effects of the minimum wage for the first period (1976-1994) and the last period (2014 onward). It focuses on two separate periods; gradual-decline period (2002 - 2011), and the big-jump period (2012 - 2013).

This paper takes advantage of the big jump in the minimum wage. This is the largest increase in the minimum wage in the history of Thailand. Some provinces had real minimum wage increased by 86%. The average increase in the real minimum wage across all provinces from 2011 to 2013 was about 62%. It would be ideal if we could utilize all the changes that have occurred since 2011. Unfortunately, the first matched-ORG data ended in 2011, and the new one began in 2012. Therefore, this paper can only utilize the change in minimum wage between 2012 and 2013. The average increase in the real minimum wage across all provinces from 2012 to 2013 was about 29%, which is still considerably large.

---

workers' standard of living, labor productivity, prices of goods and services, the cost of production, business capacity, socio-economic conditions, inflation, and gross domestic product. The minimum wage applies to all workers except government employees, government enterprise employees, part-time employees, and agricultural workers.

Figure 2: Average Real (2015 as the base year) Hourly Minimum Wage by Region in Thailand from 1976 to 2017



Source: Authors' calculation

3. Empirical Models

Following Neumark et al. (2004), the main empirical specification in this paper is as follows:

$$\frac{Y_{i,s,2}-Y_{i,s,1}}{Y_{i,s,1}} = \alpha + \sum_{j=1}^{12}\left(\frac{MW_{s,2}-MW_{s,1}}{MW_{s,1}}\right)R_j\beta_j + \sum_{j=1}^{12}\left(\frac{MW_{s,1}-MW_{s,0}}{MW_{s,0}}\right)R_j\,\psi_j + \sum_{j=1}^{12}\frac{W_{i,s,1}}{MW_{s,1}}R_j\phi_j + \sum_{j=1}^{12}R_j\,\gamma_j + X_{i,s,1}\delta + \left(D^s_{i,1}\times D^y_{i,1}\right)\pi + D^m_{i,1}\lambda + \epsilon_{i,s,t}, \quad (1)$$

where $MW_{s,t}$ is real hourly minimum wage for province s in year t = 0, 1, 2; $W_{i,s,1}$ is real hourly wage[4] of individual i for province s in year t = 1; $X_{i,s,1}$ is the vector of control variables including a dummy for being female, years of schooling, years of potential working experience and its square, and industry dummies; $D^s_{i,1}\times D^y_{i,1}$ and $D^m_{i,1}$ are province-surveyed-year and surveyed-month dummies, respectively.

This specification represents wage distribution by 12 ranges of wage position relative to minimum wage, $\frac{W}{MW}$ (see Table 1). We define R_j as a dummy variable

[4] Since the original LFS data reported monthly wages (excluding overtime and bonuses) for all employed workers, we then divided the monthly wage of each worker by 4.3 times the number of weekly working hours to get the corresponding hourly wage, except for one worker whose reported wage rate is already on the hourly scale.

indicating if an individual's wage position is in the j^{th} range. For example, an individual whose real hourly wage in the first period (t = 1) is in the range of, MW - 0.01MW ≤ W ≤ MW + 0.01MW, will have $R_2 = 1$ and $R_j = 0$ for all $j \neq 2$.

Key parameters of interest in this paper are β_j for j = 1, …, 12, which represent the contemporaneous effects of the minimum wage at every wage positions. We also estimate one-lagged effects of the minimum wage (ψ_j). In principle, we could calculate the total effects of the minimum wage using both the contemporaneous and lagged effects, as in Neumark et al. (2004). But, as presented and discussed in Section 4, the lagged effects are rarely statistically significant, and therefore, we focus only on the contemporaneous effects.

Another key variable is the outcome $Y_{i,s,t}$. This specification is applied to five outcomes, including wage, overtime income, labor income, total compensation and working hours. We transformed all five variables to the common weekly scale by the following convention: (1) wage is obtained by multiplying the computed hourly rate with weekly working hours[5]; (2) overtime income is obtained by dividing (reported monthly overtime income) by 4.3; (3) labor income is the sum of wage, overtime income and bonuses (dividing reported annual bonuses by 12 times 4.3); (4) total compensation is the sum of labor income and all in-kind compensations[6]. Note that we include overtime income, bonuses, and in-kind compensations because these are non-trivial features of the compensation package received by employees, and, therefore, employers may respond to minimum wage changes by adjusting these dimensions above and beyond the wage. Working hours in this paper is the number hours per week that a worker spent on his/her main job.[7]

Another important outcome variable is disemployment, defined following Neumark et al. (2004). An individual i is dis-employed in year t = 2 if he/she was employed in year t = 1 but is unemployed in year t = 2.[8] As in earlier cases (wage, labor income, total compensation and working hours), we defined disemployment status for workers who were employed in year t = 1 only. Therefore, we can use a similar specification to (1) but with disemployment status as the outcome variable. In addition, we estimate a similar specification to (1) but without wage position dummies for all outcome variables, including wage, overtime income, labor income, total compensation, working hours and disemployment.

4. Empirical Results

Table 2 and Table 3 present the sample's descriptive statistics for the first period from 2002 to 2011 and the second period from 2012 to 2013, respectively. The two tables show that the big jump in the minimum wage may result in an increase in non-compliance, as evident in the small increase in the proportion of workers in the ORG, whose wage was below the minimum wage. In particular, approximately 24 and 26 percent of workers in the ORG earned below the minimum wage during the first and second periods, respectively. Another interesting fact is that working hours have been slightly lower after the big jump in the minimum wage, from 48.46 to 47.97 hours per

[5] In this sense, the weekly wage represents 'money' that workers received rather than the price of labor.
[6] In-kind compensations include food, clothing, housing, other goods, and other money income.
[7] We decided not to use total working hours per week because all compensations are from the main job only. Therefore, it is possible that our compensations and working hours are underestimated, at least for workers with multiple jobs.
[8] This paper uses the standard definition of unemployment. That is, a worker is considered unemployed if the person is without work while actively searching for employment or in the labor force.

week. Table 3 also shows that foreign workers comprised about 24 percent of the sample (from 2012 to 2013), and importantly, they were concentrated below or near the minimum wage level (accounting for 36.57 percent of all foreign workers). This implies that most of the foreign workers in the data were low-skilled workers.

We next present and discuss the estimation results from two separate periods: the period of gradual decline of the real minimum wage (2002 - 2011), and the big-jump period (2012 - 2013). We mainly focus on the contemporaneous effect of minimum wage, β_j in specification (1)[9].

4.1 Period of Gradual-Decline of Real Minimum Wage (2002-2011)

The contemporaneous effects of the real minimum wage on real wage, real labor income and real total compensation during the period of gradual decline of the real minimum wage are presented in column (1), (3) and (5) of Table 4. It is clear that the estimated coefficients for real wage, real labor income and real total compensation are all positive and statistically significant for workers who earned below minimum wage. In particular, the elasticities of real wage, real labor income and real total compensation with respect to real minimum wage for workers who earned below minimum wage are approximately 1.783, 1.563 and 1.607, respectively. On the other hand, the contemporaneous effects are significant for real wages at most wage positions but are not significant for real labor income except in one position. This is not surprising since the contemporaneous effects on real overtime income are negative and significant at most wage positions (see column (7)). This suggests that firms responded to a change in the real minimum wage by adjusting overtime compensation. For example, firms would increase overtime labor demand if the real minimum wage had decreased as it has in this period. This is consistent with the estimation results for weekly working hours shown in column (9), where the estimated coefficients are negative and significant at most wage positions. Interestingly, the contemporaneous effects for real total compensation are similar to the effects for real wages. We believe that this results from the fact that in-kind compensations are more difficult to adjust compared to overtime and bonuses. Furthermore, in-kind compensations account for the same portion of labor compensation as overtime and bonuses in Thai labor markets as shown in Table 2 and Table 3.

To put this period in context, we discuss the results of a gradually declining real minimum wage. With a lower real minimum wage (still higher nominal minimum wage, of course), firms would comply with the law by paying employees at the lower real wage. With a lower labor price, a competitive firm would increase labor demand through overtime and extra work that was reflected in bonuses. We, therefore, should observe a negative relationship between real overtime income and the real minimum wage. That prediction is confirmed in the seventh column of Tables 4 and 5, where all significant estimated coefficients are negative.[10] The negative relationship is evident throughout the wage distribution (except at the very bottom and top). This finding is in line with the effect on weekly working hours, where all significant estimations are negative. See Table 4 for the distributional effects and Table 7 for the overall effect. To put it another way, labor demand (including overtime) has been increasing (at least on the intensive margin) while the real minimum wage has been gradually declining.

This paper also estimates the lagged effects for all outcome variables. The estimation results presented in Table 4 indicate that the lagged effects are rarely

[9] We apply the methodology in Neumark and Washer (2004) to estimate the contemporaneous effect but not include the total effect since our empirical results on lagged effect are not statistically significant.

[10] This estimation is only for workers who received an overtime income at the base year. That is the reason why the number of observations is much smaller in this case.

insignificant except at one wage position. This is different from Neumark et al. (2004) where the lagged effects are negative and significant in most wage positions. This insignificant result is also found for the big-jump period, presented in the next section. As a result, this paper focuses only on the contemporaneous effects of a real minimum wage.

The empirical results so far support a simple model of a competitive firm. This conclusion is also consistent with the effect of the minimum wage on disemployment. The estimated coefficients, shown in the first column of Table 6, are mostly positive (except for wage position 1.3 to 1.5) and significant at some wage positions. The same pattern can be observed from the overall effect of minimum wage on disemployment, as shown in Table 9. Recall that a worker is disemployed if he/she, who was employed in the earlier period, is now unemployed. We can, therefore, conclude that workers are more likely to lose their jobs when the real minimum wage is gradually raised.

To sum up, the estimation results in this section are consistent with competitive labor markets, i.e., higher labor costs lead to lower labor demand. However, changes in the real minimum wage during this period were minuscule. But it is possible to observe different behaviors of firms when the changes are large, as happened in Thailand under the 300 Baht minimum wage policy during 2011-2013, when the real minimum wage dramatically jumped by 62% on average.

4.2 Period of Big-Jump of Real Minimum Wage (2012-2013)

The distributional effects of the real minimum wage on real weekly wage in this period are similar to those in the preceding section. See the first column of Table 5. The result is noticeably stronger than the previous one. Estimated coefficients for real weekly wage, weekly labor income and weekly total compensation are positive and significant at all wage positions. In particular, the elasticities of real wage, real labor income, and real total compensation with respect to real minimum wage for workers who earned below minimum wage are approximately 1.152, 1.002, and 0.981, respectively. This implies that changes in the minimum wage affected all workers, with a slightly stronger impact for workers whose wages are close to the minimum wage. A similar pattern can be seen in the fifth column of the Table for the effect of minimum wage on real weekly total compensation.

The first distinct pattern can be seen in the effect of the real minimum wage on real labor income. During this big-jump period, real labor income moved in tandem with the real minimum wage, as shown in Table 5 for the distributional effects and Table 8 for the overall effect. The distributional effects are significant throughout the wage distribution. This may result from the fact that the change in this period is so large that firms cannot simply adjust by reducing overtime. In fact, the distributional effects of the real minimum wage on real overtime income are not statistically significant except at a few wage positions (See Table 5). The same conclusion is confirmed with the overall effect in Table 8. In other words, an increase in the real minimum wage in this big-jump period did not affect overtime income (at least it was not consistently statistically significant).

One might imagine that firms would do business as usual except for paying higher wages. But that is not totally true either. The distributional effects of real minimum wage on working hours are positive and significant at all wage positions, and the overall effect also shows a positive and significant effect. That is, workers supplied more labor (at least on the intensive margin) but did not receive more overtime income or bonuses. This suggests that firms may comply with the law by paying the new minimum wage rate as if workers worked for 8 hours a day. On the other hand, firms may negotiate with workers

to work for extra hours without receiving an overtime income. This mechanism should help firms reduce labor costs to some degree.

We now turn to the disemployment effect. The estimation result is clearly different from the previous one. The distributional effect of the real minimum wage on disemployment for all workers is now negative and significant almost throughout the wage distribution, as shown in the third column of Table 6. A similar conclusion can be drawn from the overall effect, presented in the third column of Table 9. A big jump in the real minimum wage does not seem to cause unemployment. This is clearly inconsistent with competitive labor markets.

However, the analysis so far applied to all samples in the data, both Thais and foreigners. Would there be different effects on different groups of workers? The answer is yes. The estimation result for Thai workers only is similar to the one with the whole sample. That is, the estimated coefficients are all negative and significant (except at a few wage positions). See the fifth columns of Tables 6 and 9. However, the estimation result for foreigners reveals a different picture. Estimated coefficients are all positive for all wage positions, although not statistically significant[11]. (See the seventh columns of Tables 6 and 9). In other words, a large jump in the real minimum wage during this period caused foreign workers to lose their jobs. This suggests that a hike in the real minimum wage discourages firms from employing foreign workers since they may be endowed with lower skills relative to Thai workers (at least in Thai language and literacy skills). On the other hand, to compensate for losses of foreign workers, firms kept and perhaps hired more Thai workers and requested them to work for longer hours, as discussed earlier.

To sum up, the empirical results for wage and total compensation are similar to the ones in the preceding section, while the others are the opposite. First, a large jump in the real minimum wage had a positive effect on labor income but no impact on overtime income. Second, it had a positive impact on working hours. Third, it did not cause disemployment for Thai workers.

The last two results suggest that a simple economic model with competitive labor markets may not be sufficient to explain the effect of a large jump in the real minimum wage in Thailand. On the other hand, a positive disemployment effect for foreign workers suggests that a simple monopsony model would not be suitable either.

5. Conclusion and Discussion

This paper estimates the effect of the real minimum wage on wage, labor income, total compensation, overtime income, working hours and disemployment using individual level panel data, created from the matched-outgoing rotation group (matched-ORG) of the Labor Force Survey of Thailand. The data ranges from 2002 to 2013, covering the periods of gradual decline (2002-2011) and big-jump (2012-2013) in the real minimum wage.

The estimation results for wages and total compensation from both periods are qualitatively similar. That is, a hike in the real minimum wage was accompanied by an increase in the real wage and total compensation. The effects on the other variables are different across periods, however. During the gradual-decline period, the effects of real minimum wage on real labor income, real overtime income, working hours and disemployment are not significant, negatively significant, negatively significant, and

[11] We also estimate an alternative specification for the robustness check where the model does not include industry as a control variable. The results show that the coefficients are positive and statistically significant.

positively significant, respectively. On the other hand, during the big-jump period, the effects of the real minimum wage on real labor income, real overtime income, working hours and disemployment are positively significant, not significant, positively significant, and negatively significant, respectively.

The empirical results indicate that firms responded differently to a gradual change and a large jump in the minimum wage. During the period of gradual-decline of the real minimum wage, firms reduced their labor demand at both the intensive (working hours) and extensive margins (disemployment). On the other hand, during the big-jump period, we found suggestive evidence that firms may demand fewer foreign workers and requested workers to work longer hours. Disemployment effect for foreign workers could result from the fact that foreign workers have lower skills and, therefore, are more dispensable. This result is consistent with recent literature that found an adverse effect of the minimum wage on low-skilled groups (e.g., Lordan & Neumark, 2018; Clemens & Wither, 2019).

Compensation and labor demand adjustments are not the only ways firms can respond to a hike in the minimum wage. In fact, many studies found that firms may employ both internal and external adjustments to combat a surge in labor costs, such as cutting non-labor costs, improving productivity, and substituting labor with capital (e.g., Bodnár et al., 2018; Caliendo et al., 2018; Harasztosi & Lindner, 2019; Hirsch et al., 2015). Unfortunately, we have no data regarding all these interesting mechanisms. We have to leave these issues to future research.

For the debate between competitive and monopsony models, this paper provides a mixed message. The empirical results from the gradual-decline period consistently suggest that Thai labor markets are sufficiently competitive. On the other hand, most of the relevant empirical evidence from the big-jump period points to the monopsony model. However, a positive disemployment effect for foreign workers makes it difficult to be conclusive.

The policy implications drawn from our study should be relevant to the fact that firms tend to adjust various margins to mitigate minimum wage shocks. The empirical evidence from this study suggests that the design and implementation of minimum wage policy should take into account firm's responses to avoid unintended adverse effects on workers. Also, policymakers should consider implementing alternative policies alongside the minimum wage, such as training and skill development, especially for workers with low skills.

Acknowledgement

The authors would like to thank the Research Institute for Policy Evaluation and Design (RIPED), especially Wasinee Juntorn, for the source of data. We also thank Nuarpear Lekfuangfu, Krislert Samphantharak, and PIER Research Workshop 2019 participants for their valuable comments. This is an extensively revised version of an earlier paper under the title "Effect of Minimum Wage on Changes in the Thai Labor Market", which was disseminated in May 2020.

References

Ariga, K. (2015). Minimum wage through the looking glass. *KIER Discussion Paper Series* No. 927. Retrieved form http://hdl.handle.net/2433/199601.

Bodnár, K., Fadejeva, L., Iordache, S., Malk, L., Paskaleva, D., Pesliakaitė, J., Jemec, N. T.,10 Tóth, P., & Wyszyński, R. (2018). How do firms adjust to rises in the minimum wage? Survey evidence from Central and Eastern Europe. *IZA Journal of Labor Policy*, 7(1), 1-30.

Caliendo, M., Fedorets, A., Preuss, M., Schröder, C., & Wittbrodt, L. (2018). The short-run employment effects of the German minimum wage reform. *Labour Economics*, *53*, 46-62.

Card, D. (1992). Using regional variation in wages to measure the effects of the federal minimum wage. *Industrial and Labor Relations Review*, *46*(1), 22-37.

Card, D., & Krueger, A. B. (2015). *Myth and measurement: The new economics of the minimum wage* (20th-Anniversary Ed). New Jersey: Princeton University Press.

Clemens, J., & Wither, M. (2019). The minimum wage and the great recession: Evidence of effects on the employment and income trajectories of low-skilled workers. *Journal of Public Economics, 170*, 53-67.

Del Carpio, X. V., Messina, J., & Sanz-de-Galdeano, A. (2019). Minimum wage: Does it improve welfare in Thailand?. *Review of Income and Wealth*, *65*(2), 358-382.

Dickens, R., Machin, S., & Manning, A. (1999). The effects of minimum wages on employment: Theory and evidence from Britain. *Journal of Labor Economics*, *17*(1), 1-22.

Harasztosi, P., & Lindner, A. (2019). Who pays for the minimum wage?. *American Economic Review*, *109*(8), 2693-2727.

Hirsch, B. T., Kaufman, B. E., & Zelenska, T. (2015). Minimum wage channels of adjustment. *Industrial Relations*, *54*(2), 199-239.

Katz, L. F., & Krueger, A. B. (1992). The effect of the minimum wage on the fast-food industry. *Industrial and Labor Relations Review*, *46*(1), 6-21.

Lathapipat, D., & Poggi, C. (2016). From many to one: Minimum wage effects in Thailand. *PIER Discussion Papers* No. 41. Retrieved from http:// https://www.pier.or.th/

Lester, R. A. (1946). Shortcomings of marginal analysis for wage-employment problems. *The American Economic Review*, *36*(1), 63-82.

Lordan, G., & Neumark, D. (2018). People versus machines: The impact of minimum wages on automatable jobs. *Labour Economics*, *52*, 40-53.

Machlup, F. (1946). Marginal analysis and empirical research. *The American Economic Review*, *36*(4), 519-554.

Neumark, D., Schweitzer, M., & Wascher, W. (2004). Minimum wage effects throughout the wage distribution. *Journal of Human Resources*, *39*(2), 425-450.

Neumark, D., & Wascher, W. (1992). Employment effects of minimum and subminimum wages: Panel data on state minimum wage laws. *Industrial and Labor Relations Review*, *46*(1), 55-81.

Neumark, D., & Wascher, W. (1994). Employment effects of minimum and subminimum wages: Reply to Card, Katz, and Krueger. *Industrial and Labor Relations Review*, *47*(3), 497-512.

Okudaira, H., Takizawa, M., & Yamanouchi, K. (2019). Minimum wage effects across heterogeneous markets. *Labour Economics, 59*, 110-122.

Stewart, M. B., & Swaffield, J. K. (2008). The other margin: Do minimum wages cause working hours adjustments for low-wage workers? *Economica, 75*(297), 148–167.

Stigler, G. J. (1946). The economics of minimum wage legislation. *The American Economic Review*, *36*(3), 358-365.

Strobl, E., & Walsh, F. (2016). Monopsony, minimum wages and migration. *Labour Economics*, *42*, 221-237.

Table 1: Wage Position of an Individual Described by an Individual's Real Hourly Wage and Real Hourly Minimum Wage

Index of wage position, *j*	**Individual real hourly wage compared to real hourly minimum wage**
1	$W < MW - 0.01MW$
2	$MW - 0.01MW \leq W \leq MW + 0.01MW$
3	$MW + 0.01MW < W \leq 1.1MW$
4	$1.1 < W/MW \leq 1.2$
5	$1.2 < W/MW \leq 1.3$
6	$1.3 < W/MW \leq 1.5$
7	$1.5 < W/MW \leq 2$
8	$2 < W/MW \leq 3$
9	$3 < W/MW \leq 4$
10	$4 < W/MW \leq 5$
11	$5 < W/MW \leq 6$
12	$6 < W/MW \leq 8$

Note: [1/] W/MW is the ratio between real hourly wage and real hourly minimum wage.

[2/] Wage positions are account for round up in number of wages reported from various scale. The wage position also extends up to 8 times of minimum wage to observe the effect of minimum wage to higher wage position.

Source: Authors' calculation

Table 2: Mean and Proportion by Overall and Wage Distribution from 2002 to 2011

Year 1 Variable	**Mean**					**Proportion (%)**				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
Overall mean and proportion (By year 1 wage)	1,844.13	1,938.51	2,067.43	589.18	48.46	100	34.93	65.07	13.96	86.04
W < MW - 0.01MW	904.79	932.31	1,045.64	510.34	50.27	24.35	26.46	73.54	29.16	70.84
MW - 0.01MW ≤ W ≤ MW + 0.01MW	1,289.15	1,425.90	1,494.90	472.94	51.08	5.11	72.24	27.76	7.28	92.72
MW + 0.01MW < W ≤ 1.1MW	1,283.64	1,391.21	1,499.31	491.87	50.53	9.58	48.85	51.15	12.45	87.55
1.1 < W/MW ≤ 1.2	1,383.39	1,467.63	1,587.41	505.83	50.23	8.22	37.11	62.89	10.77	89.23
1.2 < W/MW ≤ 1.3	1,463.38	1,542.46	1,648.88	492.96	49.31	7.30	36.12	63.88	10.67	89.33
1.3 < W/MW ≤ 1.5	1,624.49	1,701.37	1,811.97	568.01	48.92	10.65	29.84	70.16	9.27	90.73
1.5 < W/MW ≤ 2	1,981.05	2,067.19	2,197.38	618.20	47.72	15.06	31.50	68.50	7.96	92.04
2 < W/MW ≤ 3	2,685.01	2,815.36	2,989.73	749.80	45.07	10.3	34.38	65.62	8.19	91.81
3 < W/MW ≤ 4	3,756.28	3,947.71	4,172.66	919.23	43.15	4.12	33.34	66.66	7.55	92.45
4 < W/MW ≤ 5	4,795.69	5,034.60	5,258.42	1021.61	42.11	2.32	31.91	68.09	6.60	93.40
5 < W/MW ≤ 6	5,944.29	6,230.61	6,443.42	1453.04	41.89	1.42	28.42	71.58	4.52	95.48
6 < W/MW ≤ 8	7,417.16	7,774.93	7,966.49	1811.26	41.54	1.56	28.37	71.63	4.66	95.34
Number of Observations	115,089	115,089	115,089	13,371	115,089	115,089	40,198	74,891	16,068	99,021

Note: The numbers in parentheses denote texts as follows, (1): weekly wages, (2): labor income, (3): total compensation, (4): overtime income, (5): working hours, (6): full sample, (7): manufacturing, (8): non-manufacturing, (9): agricultural and fishery, (10): non-agricultural and fishery.

Source: Authors' calculation

Table 3: Means and Proportion by Overall and Wage Distribution from 2012 to 2013

Year 1 Variable	**Mean**					**Proportion (%)**						
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
Overall mean and proportion (By year 1 wage)	2206.59	2304.42	2442.23	706.92	47.97	100	31.49	68.51	12.89	87.11	23.94	76.06
$W < MW - 0.01MW$	1165.31	1228.05	1357.12	682.13	50.23	26.48	27.61	72.39	23.14	76.86	25.98	74.02
$MW - 0.01MW \leq W \leq MW + 0.01MW$	1701.60	1876.31	1948.12	579.41	51.51	5.56	65.04	34.96	4.88	95.12	33.74	66.26
$MW + 0.01MW < W \leq 1.1MW$	1594.31	1696.99	1808.27	587.10	50.10	9.07	36.05	63.95	11.13	88.87	25.37	74.63
$1.1 < W/MW \leq 1.2$	1668.12	1754.93	1873.42	583.93	49.04	8.25	32.60	67.40	12.15	87.85	23.48	76.52
$1.2 < W/MW \leq 1.3$	1779.83	1856.61	1950.37	612.39	48.10	8.77	27.92	72.08	9.54	90.46	23.29	76.71
$1.3 < W/MW \leq 1.5$	1962.60	2058.92	2188.45	708.32	48.24	8.58	28.62	71.38	9.57	90.43	22.20	77.80
$1.5 < W/MW \leq 2$	2378.82	2464.84	2608.31	716.92	46.73	14.45	26.84	73.16	10.21	89.79	20.73	79.27
$2 < W/MW \leq 3$	3281.89	3404.82	3570.26	928.15	43.99	9.87	30.05	69.95	9.00	91.00	23.01	76.99
$3 < W/MW \leq 4$	4736.04	4881.34	5101.65	881.34	43.17	4.25	30.14	69.86	5.67	94.33	22.08	77.92
$4 < W/MW \leq 5$	5916.10	6160.42	6512.28	1324.16	42.36	2.01	64.79	64.79	4.87	95.13	20.97	79.03
$5 < W/MW \leq 6$	6873.21	7013.67	7360.97	1333.90	40.64	1.34	31.46	68.54	3.93	96.07	20.79	79.21
$6 < W/MW \leq 8$	8448.33	8629.07	8795.65	1490.34	38.88	1.39	32.61	67.39	4.89	95.11	17.20	82.80
Number of Observations	13,280	13,280	13,280	1,713	13,280	13,280	4,182	9,098	1,712	11,568	3,215	10,135

Note: The numbers in parentheses denote texts as follows, (1): weekly wages, (2): labor income, (3): total compensation, (4): overtime income, (5): working hours, (6): full sample, (7): manufacturing, (8): non-manufacturing, (9): agricultural and fishery, (10): non-agricultural and fishery, (11): foreigner, (12): Thai.

Source: Authors' calculation

Table 4: Distributional Effect of Minimum Wage on Real Weekly Wages, Real Weekly Labor Income, Real Weekly Total Compensation, Real Weekly Overtime Income, and Weekly Working Hours from 2002 to 2011

Percent Change in the minimum wage x dummy variable for	**Effect of minimum wage on**									
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
	Weekly Wages		**Weekly Labor Income**		**Weekly Total Compensation**		**Weekly Overtime Income**		**Weekly Working Hour**	
	Current	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**
W < MW - 0.01MW	1.783***	0.436	1.563***	0.340	1.607***	0.281	0.288	-9.536*	-0.462	0.0662
	(0.577)	(0.422)	(0.591)	(0.433)	(0.594)	(0.432)	(5.036)	(5.189)	(0.288)	(0.198)
MW - 0.01MW ≤ W ≤ MW + 0.01MW	0.425	0.0852	0.0382	-0.206	0.159	-0.272	-8.520***	-8.142***	-0.630*	0.406
	(0.480)	(0.458)	(0.538)	(0.602)	(0.544)	(0.608)	(2.785)	(3.027)	(0.337)	(0.325)
MW + 0.01MW < W ≤ 1.1MW	0.180	-0.277	-0.0734	-0.370	0.126	-0.350	-5.391***	-0.926	-0.821***	-0.0771
	(0.371)	(0.233)	(0.394)	(0.252)	(0.387)	(0.247)	(1.977)	(1.188)	(0.278)	(0.183)
1.1 < W/MW ≤ 1.2	1.060**	-0.366	0.556	-0.332	0.552	-0.294	-6.887***	-1.458	-0.231	-0.353
	(0.422)	(0.357)	(0.436)	(0.361)	(0.427)	(0.359)	(1.813)	(1.488)	(0.313)	(0.257)
1.2 < W/MW ≤ 1.3	1.032**	-0.236	0.812	-0.208	1.053*	-0.230	-3.898*	-0.694	0.399	-0.609
	(0.525)	(0.329)	(0.537)	(0.338)	(0.547)	(0.341)	(2.003)	(1.407)	(0.840)	(0.527)
1.3 < W/MW ≤ 1.5	0.917**	0.235	0.610	0.252	0.855**	0.217	-6.887***	-1.115	-0.642**	0.0218
	(0.367)	(0.267)	(0.378)	(0.272)	(0.378)	(0.269)	(1.781)	(1.317)	(0.281)	(0.213)
1.5 < W/MW ≤ 2	-0.0958	0.496**	-0.352	0.391*	-0.148	0.272	-7.191***	0.360	-0.840***	0.228
	(0.354)	(0.205)	(0.361)	(0.212)	(0.361)	(0.219)	(2.647)	(1.303)	(0.222)	(0.148)
2 < W/MW ≤ 3	-0.123	0.184	-0.257	0.166	-0.0899	0.176	-7.670***	-3.628**	-1.215***	0.459*
	(0.304)	(0.222)	(0.312)	(0.230)	(0.315)	(0.229)	(2.087)	(1.556)	(0.280)	(0.260)
3 < W/MW ≤ 4	0.935**	-0.442	0.741*	-0.423	1.016**	-0.386	-11.12**	-2.877	-0.225	-0.504
	(0.401)	(0.316)	(0.414)	(0.322)	(0.417)	(0.315)	(5.407)	(3.259)	(0.445)	(0.389)
4 < W/MW ≤ 5	0.939*	0.169	0.793	0.157	0.955*	-0.0228	-10.37	-3.112	-2.083***	-0.749
	(0.496)	(0.453)	(0.515)	(0.466)	(0.508)	(0.459)	(7.307)	(4.304)	(0.621)	(0.462)
5 < W/MW ≤ 6	0.290	0.716	0.0592	0.637	0.0273	0.634	-3.493	11.79	-1.395***	0.682
	(0.574)	(0.490)	(0.638)	(0.536)	(0.708)	(0.541)	(13.35)	(15.12)	(0.529)	(0.497)
6 < W/MW ≤ 8	-0.656	0.0781	-0.420	0.300	-0.0963	0.239	3.622	-2.526	1.061	-0.908
	(0.690)	(0.510)	(0.683)	(0.514)	(0.677)	(0.514)	(7.553)	(3.831)	(0.767)	(1.004)
Number of observations	115,089		115,089		115,089		13,371		115,089	
Adjusted R-Square	0.105		0.102		0.088		0.138		0.041	

*Notes: superscript *, **, and *** denote p < 0.1, 0.05, and 0.01 respectively.*

Source: Authors' calculation

Table 5: Distributional Effect of Minimum Wage on Real Weekly Wages, Real Weekly Labor Income, Real Weekly Total Compensation, Real Weekly Overtime Income, and Weekly Working Hours from 2012 to 2013

Percent Change in the minimum wage x dummy variable for	**Effect of minimum wage on**									
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
	Weekly Wages		**Weekly Labor Income**		**Weekly Total Compensation**		**Weekly Overtime Income**		**Weekly Working Hour**	
	Current	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**
W < MW - 0.01MW	1.152***	-0.00584	1.002***	0.0247	0.981***	0.0285	-2.382	-0.367	0.640***	-0.00521
	(0.319)	(0.0743)	(0.306)	(0.0696)	(0.314)	(0.0691)	(1.743)	(0.497)	(0.197)	(0.0353)
MW - 0.01MW ≤ W ≤ MW + 0.01MW	1.293***	-0.00986	1.051***	-0.0269	1.100***	-0.0161	-2.487	-0.0306	0.468**	-0.0310
	(0.338)	(0.0826)	(0.330)	(0.0856)	(0.334)	(0.0852)	(1.733)	(0.294)	(0.223)	(0.0571)
MW + 0.01MW < W ≤ 1.1MW	1.133***	0.0137	0.935***	0.0743	0.913***	0.0941	-2.485	0.456	0.616***	-0.0474
	(0.300)	(0.0699)	(0.294)	(0.0737)	(0.301)	(0.0746)	(1.586)	(0.288)	(0.197)	(0.0422)
1.1 < W/MW ≤ 1.2	1.174***	0.0957	0.972***	0.127*	1.005***	0.159**	-3.335**	0.237	0.675***	0.0846*
	(0.297)	(0.0682)	(0.293)	(0.0669)	(0.298)	(0.0674)	(1.580)	(0.411)	(0.196)	(0.0444)
1.2 < W/MW ≤ 1.3	1.024***	-0.0241	0.832***	-0.000793	0.797***	0.0296	-2.823	0.264	0.691***	0.00751
	(0.305)	(0.0729)	(0.298)	(0.0697)	(0.299)	(0.0773)	(1.810)	(0.438)	(0.212)	(0.0530)
1.3 < W/MW ≤ 1.5	1.004***	0.0455	0.833***	0.0565	0.825***	0.0910	-2.176	0.0368	0.622***	0.0249
	(0.294)	(0.0931)	(0.289)	(0.0859)	(0.295)	(0.0853)	(1.701)	(0.491)	(0.199)	(0.0631)
1.5 < W/MW ≤ 2	1.007***	-0.0227	0.806***	-0.0284	0.810***	-0.00786	-3.942**	0.780	0.682***	0.00363
	(0.307)	(0.0523)	(0.302)	(0.0518)	(0.307)	(0.0543)	(1.915)	(0.686)	(0.204)	(0.0394)
2 < W/MW ≤ 3	0.799***	0.00286	0.631**	0.0244	0.700**	0.00305	-2.918	0.543	0.669***	0.0490
	(0.301)	(0.0573)	(0.298)	(0.0586)	(0.306)	(0.0598)	(2.081)	(0.349)	(0.207)	(0.0509)
3 < W/MW ≤ 4	0.776**	0.108	0.594*	0.0799	0.660**	0.0877	-3.033*	0.245	0.825***	0.0850
	(0.312)	(0.0816)	(0.307)	(0.0840)	(0.314)	(0.0828)	(1.715)	(0.690)	(0.223)	(0.0726)
4 < W/MW ≤ 5	0.787**	-0.124	0.660**	-0.132	0.682**	-0.112	-4.189**	-1.175*	0.574**	0.0416
	(0.344)	(0.112)	(0.335)	(0.109)	(0.342)	(0.113)	(1.939)	(0.685)	(0.260)	(0.125)
5 < W/MW ≤ 6	1.058***	-0.0518	0.835**	-0.0262	0.813**	-0.0703	-7.39***	2.516**	0.949***	0.124
	(0.334)	(0.125)	(0.331)	(0.122)	(0.334)	(0.109)	(2.321)	(1.246)	(0.365)	(0.145)
6 < W/MW ≤ 8	0.863***	-0.0346	0.731**	-0.0169	0.787**	-0.00164	-0.485	1.748	1.196***	0.166
	(0.320)	(0.115)	(0.318)	(0.111)	(0.323)	(0.110)	(2.167)	(1.572)	(0.283)	(0.115)
Number of observations	13,280		13,280		13,280		1,713		13,280	
Adjusted R-Square	0.194		0.179		0.165		0.166		0.073	

*Notes: superscript *, **, and *** denote p < 0.1, 0.05, and 0.01 respectively.*

Source: Authors' calculation

Table 6: Distributional Effect of Minimum Wage on Dis-Employment

Percent Change in the minimum wage x dummy variable for	**Dependent variable: Dis-employment**							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	2002-2011		**2012-2013**					
			Overall		**Thai Workers**		**Foreign Workers**	
	Current	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**
W < MW - 0.01MW	0.0218	0.0591	-0.160*	0.0216	-0.172*	0.0327*	3.611	0.0181
	(0.0674)	(0.0488)	(0.0960)	(0.0161)	(0.0948)	(0.0198)	(3.641)	(0.0358)
MW - 0.01MW ≤ W ≤ MW + 0.01MW	0.175*	-0.0107	-0.165	-0.00213	-0.178*	0.00939	3.538	0.0124
	(0.102)	(0.0842)	(0.103)	(0.00930)	(0.103)	(0.00876)	(3.631)	(0.0187)
MW + 0.01MW < W ≤ 1.1MW	0.0631	-0.0339	-0.183*	-0.00176	-0.196**	-0.00486	3.501	0.0185
	(0.138)	(0.0935)	(0.0940)	(0.0131)	(0.0943)	(0.0114)	(3.635)	(0.0314)
1.1 < W/MW ≤ 1.2	0.0615	0.207	-0.174*	-0.0120	-0.191**	-0.00846	3.562	-0.0213
	(0.143)	(0.145)	(0.0906)	(0.0109)	(0.0877)	(0.0133)	(3.634)	(0.0266)
1.2 < W/MW ≤ 1.3	0.223**	0.109	-0.209**	-0.0188*	-0.232**	-0.00544	3.444	-0.0616**
	(0.110)	(0.0819)	(0.0941)	(0.0111)	(0.0945)	(0.0131)	(3.648)	(0.0286)
1.3 < W/MW ≤ 1.5	-0.00621	-0.0255	-0.162*	0.0126	-0.176*	0.0281	3.545	0.0261
	(0.0727)	(0.0508)	(0.0926)	(0.0193)	(0.0904)	(0.0231)	(3.648)	(0.0253)
1.5 < W/MW ≤ 2	0.0807	-0.0750	-0.159*	-0.000703	-0.181**	-0.00513	3.557	-0.00212
	(0.0692)	(0.0503)	(0.0815)	(0.0120)	(0.0811)	(0.0172)	(3.640)	(0.0180)
2 < W/MW ≤ 3	0.0517	0.101	-0.185*	-0.0116	-0.198**	0.00586	3.510	-0.0327
	(0.0824)	(0.0639)	(0.0953)	(0.0207)	(0.0930)	(0.0253)	(3.617)	(0.0336)
3 < W/MW ≤ 4	0.0881	0.0603	-0.202**	-0.0401	-0.221**	-0.0465	3.438	0.0115
	(0.0715)	(0.0532)	(0.102)	(0.0309)	(0.0999)	(0.0408)	(3.625)	(0.0210)
4 < W/MW ≤ 5	0.273*	0.163	-0.0892	0.00464	-0.0978	0.0259	3.503	0.00999
	(0.142)	(0.163)	(0.129)	(0.0158)	(0.132)	(0.0207)	(3.632)	(0.0497)
5 < W/MW ≤ 6	0.131	-0.0437	-0.194*	0.00611	-0.224**	0.0258	3.492	-0.0421
	(0.191)	(0.116)	(0.106)	(0.0115)	(0.107)	(0.0166)	(3.643)	(0.0338)
6 < W/MW ≤ 8	0.165	0.0207	-0.156	0.00347	-0.167	-0.0220	3.511	0.00715
	(0.115)	(0.0889)	(0.113)	(0.0236)	(0.115)	(0.0295)	(3.645)	(0.0260)
Number of observations	115,089		13,280		10,082		3,198	
Adjusted R-Square	0.024		0.084		0.108		0.192	

*Notes: superscript *, **, and *** denote p < 0.1, 0.05, and 0.01 respectively.*
Source: Authors' calculation

Table 7: Overall Effect of Minimum Wage on Real Weekly Wages, Real Weekly Labor Income, Real Weekly Total Compensation, Real Weekly Overtime Income, and Weekly Working Hours from 2002 to 2011

Percent Change in the minimum wage x dummy variable for	**Effect of minimum wage on**									
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
	Weekly Wages		**Weekly Labor Income**		**Weekly Total Compensation**		**Weekly Overtime Income**		**Weekly Working Hour**	
	Current	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**
Min. Wage	0.681**	0.157	0.430	0.0985	0.586**	0.0593	-5.937***	-2.525***	-0.630***	0.00810
	(0.265)	(0.118)	(0.274)	(0.123)	(0.271)	(0.121)	(1.397)	(0.939)	(0.184)	(0.0826)
Female	-0.0525***		-0.0517***		-0.0452***		-0.0510		0.0143***	
	(0.00748)		(0.00771)		(0.00767)		(0.0542)		(0.00478)	
Years of Sch.	0.0267***		0.0256***		0.0234***		0.00686		-0.0117***	
	(0.00174)		(0.00177)		(0.00178)		(0.00871)		(0.00106)	
Experience	0.0111***		0.0106***		0.00963***		1.99e-06		-0.00345***	
	(0.00110)		(0.00114)		(0.00113)		(0.00717)		(0.000681)	
Exp. Sq.	-0.000155***		-0.000151***		-0.000135***		-5.45e-05		3.42e-05***	
	(1.98e-05)		(2.05e-05)		(2.04e-05)		(0.000140)		(1.30e-05)	
Number of observations	115,089		115,089		115,089		13,371		115,089	
Adjusted R-Square	0.105		0.101		0.087		0.138		0.040	

*Notes: superscript *, **, and *** denote p < 0.1, 0.05, and 0.01 respectively.*

Source: Authors' calculation

Table 8: Overall Effect of Minimum Wage on Real Weekly Wages, Real Weekly Labor Income, Real Weekly Total Compensation, Real Weekly Overtime Income, and Weekly Working Hours from 2012 to 2013

Percent Change in the minimum wage x dummy variable for	**Effect of minimum wage on**									
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
	Weekly Wages		**Weekly Labor Income**		**Weekly Total Compensation**		**Weekly Overtime Income**		**Weekly Working Hour**	
	Current	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**
Min. Wage	1.183***	0.00706	0.995***	0.0275	0.946***	0.0393	-2.952*	0.167	0.622***	0.0129
	(0.291)	(0.0308)	(0.283)	(0.0294)	(0.288)	(0.0296)	(1.634)	(0.134)	(0.188)	(0.0192)
Female	-0.0181		-0.0146		-0.00719		0.0641		0.00677	
	(0.0148)		(0.0150)		(0.0151)		(0.0964)		(0.00989)	
Years of Sch.	0.0271***		0.0270***		0.0260***		-0.0286		-0.00596***	
	(0.00307)		(0.00294)		(0.00302)		(0.0221)		(0.00190)	
Experience	0.00370		0.00328		0.00227		-0.00665		-0.00149	
	(0.00236)		(0.00230)		(0.00227)		(0.0140)		(0.00157)	
Exp. Sq.	-1.32e-05		-7.83e-06		1.31e-05		6.48e-05		2.13e-05	
	(4.64e-05)		(4.48e-05)		(4.44e-05)		(0.000298)		(2.97e-05)	
Number of observations	13,280		13,280		13,280		1,713		13,280	
Adjusted R-Square	0.193		0.179		0.165		0.157		0.070	

*Notes: superscript *, **, and *** denote p < 0.1, 0.05, and 0.01 respectively.*

Source: Authors' calculation

Table 9: Overall Effect of Minimum Wage on DisEmployment

Percent Change in the minimum wage x dummy variable for	**Dependent variable: Disemployment**							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	2002-2011		**2012-2013**					
			Overall		**Thai Workers**		**Foreign Workers**	
	Current	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**	**Current**	**Lagged**
Min. Wage	0.0728	0.0315	-0.179**	0.00211	-0.197**	0.00967	4.313	-8.93e-05
	(0.0459)	(0.0251)	(0.0839)	(0.00685)	(0.0844)	(0.00863)	(3.639)	(0.0161)
Female	0.000343		-0.000818		-0.00153		0.00965	
	(0.00125)		(0.00355)		(0.00390)		(0.00859)	
Years of Sch.	-0.000478*		-0.00109*		-0.00102		-0.000668	
	(0.000261)		(0.000640)		(0.000731)		(0.000978)	
Experience	-0.000836***		-0.00167***		-0.00151**		-0.00153	
	(0.000200)		(0.000579)		(0.000660)		(0.00103)	
Exp. Sq.	1.31e-05***		2.54e-05**		2.41e-05*		2.36e-05	
	(4.05e-06)		(1.08e-05)		(1.25e-05)		(1.77e-05)	
Number of observations	115,089		13,280		10,082		3,198	
Adjusted R-Square	0.023		0.083		0.106		0.194	

*Notes: superscript *, **, and *** denote p < 0.1, 0.05, and 0.01 respectively.*
Source: Authors' calculation