Minimum Wage and Labor Market Transitions

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April 24, 2022

Abstract
This study tests the effects of a change in the binding real minimum wage on the likelihood of hiring and separation. The findings suggest an increase in the real minimum wage is associated with a reduced likelihood of hiring. This is mediated by a reduced likelihood of separation. The final result is a statistically and economically insignificant change in the likelihood of employment. I also found evidence for a reduction in the likelihood of quits. These empirical conclusions support a theoretical job-ladder search model.

Keywords: *Minimum Wage, Employment Dynamics, NLSY*

1. Introduction

A classic question of labor economics deals with the relationship between employment and minimum wage. Does an increase in the minimum wage decrease employment? Despite extensive research into this question, empirical work has yielded contradictory results. This study takes a different approach and uses a sample from the National Longitudinal Survey of Youths 1997 (NLSY97) to examine the effects of an increase in the binding real minimum wage on labor market transitions and status.

The effects on the labor market transitions are the main contribution of this paper. It estimates the effects of a change in the real minimum wage on the likelihood of an individual being hired and the likelihood a worker is separated from an employer. To my knowledge, this is the first paper to examine employment transitions using a longitudinal and representative sample of the U.S. population. In the last few years, few studies have emphasized the importance of employment transition using samples from Canada (Brochu 2013) and Portugal (Portugal and Cardoso 2006). Brochu and Green (hereafter referred to as BG) collected a sample from the Canadian Labour

Force Survey (LFS), which is similar to the American Current Population Survey (CPS). The LFS follows individual participants over six consecutive months but does not provide the ability to track individuals over different periods. Therefore, the authors cannot identify changes in the individual outcomes over time and instead rely on averages in the entire sample. In addition, the variations in the minimum wage in Canada are smaller than in the U.S.

The study in Portugal analyzes a substantial change in the minimum wage that occurred in the mid-80s when the minimum wage increased only for young workers (teenagers). Adults' outcomes were used as the control group, which might bias the estimates because other differences between adults and teenagers could confound results. In addition, the labor market in the U.S. is very different from the labor markets in Canada and Portugal. There are many states in the U.S. with a much more volatile minimum wage, and the social network and the labor market regulations are very different.

The closest research to this paper is by Dude, Lester, and Reich (2016) (hereafter referred to as DLR). DLR extends their earlier work in Dude, Lester, and Reich (2010) and compares the effects of changes in the minimum wages across adjacent counties in different states. DLR uses a sample from the Quarterly Workforce Indicators (QWI), which is an extensive dataset that matches employers and workers. However, the QWI does not identify the worker's status after separation because the employers report the employment statuses. Therefore, in DLR's sample, the authors cannot identify the reason for a job separation, which is an important variable to support different theoretical explanations for the empirical outcomes. This research complements DLR's work by using a representative sample of the U.S. population and extends it to get a wider picture of the effects of an increase in the real minimum wage on the labor market. Specifically, the analysis accurately identifies a separation and types of separations (different employers or non-

employment).

The second contribution of this study looks at the effect of the real minimum wage on the likelihood of employment. It relates the estimates to the results of the dynamic effects. Status variables, such as employment level, have been analyzed extensively in the literature, but with different datasets. The effect on employment level is probably the most analyzed labor market variable in the literature concerning the minimum wage. Still, the qualitative conclusions are contradictory (see a review of the findings through 2008 in Neumark and Wascher (2008), and, more recently, Hoffman (2009), Even and Macpherson (2014), Popescu (2014), Allegrretto et al. (2017), and Wang (2019)). The lack of consensus among economists regarding the conclusion of a fundamental question in labor economics leaves policymakers hamstrung. Most of the literature uses data from CPS and the Quarterly Census of Employment and Wages (QCEW). This paper provides additional evidence using a representative sample of the U.S. population not previously well studied concerning this question.[1]

The results show that changes in the real minimum wage have significant effects on employment flows, but not employment stocks. The employment dynamics' estimates indicate that a 10 percent increase in the real minimum wage reduces the likelihood of hiring by about 8 percent and reduces the likelihood of separation by about 3 percent. The net effect is a statistically insignificant effect on the likelihood of employment. In Section 5, I show that the decrease in the likelihood of hiring is mainly caused by a decrease in the likelihood of a transition from non-employment to employment (hereafter referred to as NE) rather than from one employer to another.

[1] There are two papers that test related questions using the same data source. Currie and Fallick (1996) test whether the increase in the federal (and not state) minimum wage affects the likelihood an individual is employed. They use the previous NLSY survey (NLSY79), which includes different responders about two decades before the years used in this study. (Pabilonia 2002) uses the same data source (NLSY97) but to answer a different question. How does the change in minimum wage affect formal versus informal teenagers' employment between the ages 14 and 16? Neither of the two papers test the questions analyzed in this study.

In addition, the reduced likelihood of separation is explained equally by a reduction in the likelihood of a transition from employment to non-employment (hereafter referred to as EN) and a reduction in the likelihood of a job-to-job transition. Therefore, the likelihood of employment reduction is caused mostly by a decrease in the flow from NE. These estimates might explain why economists cannot seem to agree on the answer to the effect of the minimum wage on employment. Specifically, as the minimum wage goes up, the employment level is affected positively by (the reduction of) the flow out of employment and negatively by the (reduction of the) flow into employment.

Further estimations show evidence that the effect of the real minimum wage on the likelihood an employee quits their job is negative, and no evidence suggests an effect on the likelihood of a layoff. The distinction between layoffs and quits is important because it helps relate the empirical conclusions in this study to two distinct theoretical models DLR and BG developed. The first theoretical model is a job search model. Specifically, it is a job-ladder model developed by DLR concerning the minimum wage. In their model, workers search for new jobs on and off the job. Separation occurs if the worker receives a job offer that is preferred over the current job. Therefore, if the minimum wage increases, the likelihood of receiving a better job offer reduces. As a result, workers are less likely to quit, and the likelihood of separation and hiring reduces.

The second model is developed by BG. In their model, BG assumes that the worker's productivity at hiring is uncertain and that it is a function of the quality of the match between the employer and the worker (BG's model is built on the work of Mortensen and Pissarides (1994), and Pissarides (2000)). In BG's model, employers pay a stochastic sunk cost to learn the worker's productivity. Therefore, an increase in the minimum wage makes it more expensive for employers to replace a low-quality match worker with a new unknown quality match worker. As a result,

increasing the minimum wage decreases the likelihood of layoff, separations, and hiring.

Both models predict a reduction in separation and hiring through different channels. DLR's model predicts a decrease in quits, while BG's model predicts a decrease in layoffs. DLR pointed out this distinction but cannot test it directly, as the sample they used does not contain information about the non-employed and the reason for job separation. However, the sample used in this studydoes include specific information about the type of separation. Given the empirical estimates about the effect of the minimum wage on the likelihood of quits and layoffs, I conclude that the evidence reported in this study primarily supports the model developed by DLR.

The rest of the paper is organized as follows: Section 2 explains how the sample was constructed and describes the sample. Section 3 goes over the empirical methodology and the specifications. Section 4 reports the empirical estimations. Section 5 provides additional empirical results exploiting the detailed dataset used in this study. Finally, Section 6 concludes.

2. Data

This section describes how the sample was composed and reports the summary statistics of key variables. The sample is taken from the National Longitudinal Survey of Youths 1997 (NLSY97). The NLSY97 collected annual data on individuals born between 1980 and 1984. The responders were surveyed annually starting in 1997. Starting on January 1, 1994, the survey included their weekly employment statuses. . I converted the weekly survey to a quarterly panel, starting from the first quarter of 1997.[2]

[2] Although the employment status is available for the years 1994 to 1996, other key variables, such as the state of residency, are not reported. Therefore, the sample used in this study starts in the year 1997. The first quarter is week 13, the second is week 26, the third is week 39, and the fourth quarter is week 52.

The publicly available NLSY97 sample does not contain information about the responders' state of residency. This is a key variable to determine the binding minimum wage -, the maximum between the state and federal minimum wage levels. The restricted access Geocode part of the NLSY97 does contain geography information, such as the responders' state of residency. In this study, I use the restricted Geocode and the public version of the NLSY97.

The related literature uses samples at the state or county levels. That is partially because the samples do not report responders over time. The NLSY97, however, is a longitudinal survey. Therefore, the sample in this study is at the micro level. Each observation is of one respondent (as opposed to a county or state average). The sample contains responders between 16 and 19 years of age. This group of workers is sensitive to changes in the minimum wage, so they are primarily used in the related literature. I include observations of individuals who reported their state of residency and have a maximum of 12 years of education. College graduates and responders with some college education are excluded from the sample since the minimum wage is less likely to affect them. The final sample size is 103,371 observations from 8,707 individuals. NLSY97 includes 8,984 responders of both genders during the first year.

The key independent variable is the log of the real minimum wage. I deflate the nominal minimum wage by the national consumer price index (CPI), taken from the Bureau of Labor Statistics, where the base period is December 2010. Figure 1 displays the average real minimum wage over time using the sample used in this study. The real minimum wage fluctuates greatly, where the pattern increases during 1997, and then declines. This is mainly because of the (nominal) federal minimum wage increase in September of 1997. The variability of the U.S. minimum wage (as shown in Figure 1) and across states improves the overall identification.

[Figure 1 about here]

The two main dependent variables, which are the focus of the analysis, are separation and hiring. Separation is a dummy variable equal to one if the responder separated from their employer in the last quarter. That is, the worker either stopped working in period t or is employed in period t with an employer other than in the previous quarter (job-to-job transition). Hiring is a dummy variable equal to one if the responder is hired at period t. Again, the transition could be a job-to-job transition or a NE transition. I exploit the detail in the dataset to test whether a change in the real minimum wage explains changes in other transitional dependent variables - specifically, the job-to-job, EN, and NE variables.

Table 1 reports the summary statistics of the entire sample. As expected, the teenage turnover rate is faster than that for other groups in the labor market. The hiring rate is 15 percent, and the separation rate is 12.6 percent. The rate of EN in the sample is 8.8 percent. The rate of NE in the sample is 11.6 percent. These two statistics are smaller than the related hiring and separation variables because they do not identify job-to-job transitions.

[Table 1 about here]

A worker might separate from their employer due to many reasons. I analyze three specific reasons: quit, layoff, and job-to-job transitions. These three reasons, and especially the first two, are the focus of DLR and BG's models. Therefore, the conclusions from the analysis of these three reasons could provide evidence to support the two theoretical models. In the sample, workers' quitting rate is 21.7 percent, the layoff rate is 1.1 percent, and the job-to-job rate is 12.6 percent.

As for the employment levels in the sample, 49.2 percent are employed. Figure 2 plots the sample's employment level by age. The employment rate increases with the responder's mean age, as expected. All of these means are close to the means reported in the Bureau of Labor Statistics for the population of 16 to 19 years of age.

[Figure 2 about here]

About 21.2 percent of the sample are Hispanics, and about 27.3 percent are blacks. These proportions exceed the population ratios because blacks and Hispanics are oversampled in the NLSY97. The NLSY97 consists of 26 percent black responders and 21 percent Hispanic responders. There are slightly more black and Hispanic responders in the sample because of the education restriction. Since the sample consists of responders with less than 12 years of education, nonblack-non-Hispanic responders are slightly more likely to be dropped.

The sample consists of about 48.6 percent females. On average, 22.1 percent have 12 years of education. The sample's average real wage per hour (in 2010 $) is $11.5 per hour. About 2 percent of the responders are married, and about 64 percent are in school. As expected, given the age restriction, these averages are much different than the general labor force averages. For the same reason, the average job tenure is only about 0.77 years or a little more than 9 months.

The two related papers by BG and DLR use extensive datasets. This improves the statistical estimations but comes at the cost of fewer labor market variables. Although the NLSY97 is not as large as the samples in BG and DLR, it is still substantial, with almost 9,000 individuals. In addition, since NLSY is longitudinal, as opposed to the samples used in BG and DLR, I can identify individuals' status over time.

3. Empirical Model

The empirical estimations follow the ones in Allegretto et al. (2011). There are eight dependent variables: hiring, separation, employment, quit, layoff, job-to-job transition, EN, and NE transitions. For each dependent variable, I estimate four fixed effect specifications as follows:

$$(1) \quad y_{ist} = \alpha_0 + \beta \cdot ln(MW_{st}) + \gamma X_{ist} + \psi_s + r_t + \varepsilon_{ist}$$

$$(2) \quad y_{ist} = \alpha_0 + \beta \cdot ln(MW_{st}) + \gamma X_{ist} + \psi_s + r_t + \psi_s \cdot t + \varepsilon_{ist}$$

$$(3) \quad y_{ist} = \alpha_0 + \beta \cdot ln(MW_{st}) + \gamma X_{ist} + \psi_s + r_{dt} + \varepsilon_{ist}$$

$$(4) \quad y_{ist} = \alpha_0 + \beta \cdot ln(MW_{st}) + \gamma X_{ist} + \psi_s + r_{dt} + \psi_s \cdot t + \varepsilon_{ist}$$

here y_{ist} is the dependent variable outcome for individual *i* in state s at time t, $ln(MW_{st})$ is the log of the real minimum wage. Therefore, β is the main coefficient of interest. X_{ist} is a vector of the following individual characteristics: a high school graduate indicator, an indicator for whether the individual is enrolled in school, an indicator for whether the responder is married, an indicator of whether the responder is employed in a big firm (500+ employees), and tenure in quadratic form. ψ_s captures the state fixed effects and r_t captures the time (quarters) fixed effects. The last variable is specification (1), ε_{ist} is the idiosyncratic error term. In specification (2), the product variable $\psi_{is} \cdot t$ represents a linear state trend. In specification (3), the time-fixed effects vary across different regions (r_{dt}). The last specification (4) includes state trends and division time-fixed effects. The variations in the controls are added to account for a situation where different regions in the U.S. are subject to different macroeconomic shocks at different points in time. They also account for situations where change in the minimum wage affects state-employment trends differently. In the literature, these controls are referred to as "spatial heterogeneity" (see, for example, Allegretto, Dube, and Reich (2011), Addison, Blackburn and Cotti (2009), Kalenkoski

and Lacombe (2008), and, more recently, UK Dolton (2015)).

All the specifications are regressed using fixed effects estimation to remove individual unobserved heterogeneity. In all the reported regressions, the standard errors are robust and clustered at the individual level.

4. Estimations

This section presents the empirical estimations. Each dependent variable is regressed four times. The preferred regression is equation 4, as it controls for spatial heterogeneity. For conciseness, I report only the estimated coefficient on the log real minimum wage.

Table 2 reports the estimated marginal effects of log real minimum wage on the likelihood an individual is hired, the likelihood an individual is separated from the employer, and the likelihood an individual is employed. The results suggest that an increase in the minimum wage is associated with a reduced probability of hiring. The estimates are statistically significant at the 5 percent significance level. The estimates are also economically significant. In the preferred regression, a 10 percent increase in the real minimum wage reduces the likelihood a responder is hired by about an absolute 1.21 percent. The average hiring rate is 15 percent, suggesting that a 10 percent increase in the minimum wage is associated with a relative hiring likelihood reduction of about 8.07. The estimates in the other specifications show that the qualitative conclusion about the effect of the minimum wage on the likelihood of being hired is robust to spatial heterogeneity.

As for the likelihood of separation, the effect of an increase in the real minimum wage is statistically and economically significant. The estimate in the preferred regression suggests that a 10 percent increase in the real minimum wage is associated with an absolute decrease of 0.388 percent in the likelihood a worker separates from the employer. This also suggests an estimated

relative reduction in the separation proportion by 3.08 percent. The results indicate that an increase in the real minimum wage is associated with a reduction in the likelihood of being hired and the likelihood of being separated from an employer. These two effects drive the likelihood of being employed in opposite ways.

The third row in Table 2 reports the estimates of the effect of *ln(real minimum wage)* on the likelihood of employment. The estimate in the preferred regression is statistically and economically insignificant. The estimates in the third row also demonstrate the importance of controlling for spatial heterogeneity, as was documented in previous literature (see DLR (2016) and Allegretto et al. (2011, 2017)). These conclusions are not surprising; they complement the conclusions from the analysis of the likelihoods of hiring and separation.

Table 3 reports the impact of the minimum wage separately on the likelihood of layoffs, quits, and job-to-job transitions. These estimates are critical for comparing the results to the two distinct theoretical models that predict different outcomes for these dependent variables, as discussed in the Introduction Section. The estimates of the likelihood of quits are statistically and economically significant. In the preferred regression, a 10 percent increase in the minimum wage is associated with about a 0.6 percent absolute decrease in the likelihood of a worker quitting their job. The average quit variable in the sample is 21.7 percent, which suggests that a 10 percent increase in the minimum wage is associated with a 2.76 percent relative decrease in the proportion of quits.

[Table 3 about here]

The second row in Table 3 reports the estimates for the likelihood of layoffs. The estimates are volatile and statistically insignificant. In addition, the estimates are positive, as opposed to the theoretical outcome in BG's model. Hence, there is no evidence that the real minimum wage is associated with worker layoffs. The third row reports the estimates of the likelihood of a job-to-job transition. Here, the estimates are statistically and economically significant. Specifically, a 10 percent increase in the minimum wage is associated with an absolute reduction of 0.388 percent in the likelihood a worker transfers from one job to another. This translates to a relative reduction of about 3.08 percent.

To summarize, the estimates in Table 2 indicate that an increase in the minimum wage reduces the likelihood of separation and hiring, as both theoretical models in BG and DLR suggest. As noted earlier, however, the channels where these reductions occur are quite different in these two papers. Specifically, DLR's model predicts a reduction in quits, while BG's model predicts a reduction in layoffs. Since the analysis in Table 3 provides evidence for a reduction in quits only, I conclude the data supports the theoretical model in DLR. That does not mean that the theoretical model in BG is not accurate. It could be that the model better fits other subpopulations, such as young adults who earn closer to the minimum wage.

5. Additional Estimates and Discussion

The theoretical models and the empirical estimations in DLR, BG, and Section 4 of this paper do not distinguish between separation due to transition from one employer to another (job-to-job transition) and separation resulting in non-employment (EN transition). Similarly, the variable hiring does not distinguish between job-to-job and NE.

The datasets used in DLR and BG do not allow the authors to identify the flows between employment and non-employment. The NLSY97, however, does include detailed information

about the nature of the transition. The exact transition is important because it tells us about the effect on the employment level. A reduction in separation and hiring could be because of a reduced likelihood of a transition from one employer to another, as the estimates in Table 3 indicate. In that case, the likelihood of employment does not change.

Table 4 reports the estimates of an increase in the real minimum wage on the likelihood of transitions in EN and NE. The first row reports the estimates of an increase in the real minimum wage on the likelihood of EN. The estimates are statistically and economically significant. The estimate in the preferred specification indicates that a 10 percent increase in the real minimum wage is associated with an approximately 0.2 percent absolute reduction in the likelihood of EN. This estimate translates to a relative decrease of about 2.2 percent.

The second row reports the estimates for the likelihood of NE. The estimates are statistically and economically significant. Specifically, a 10 percent increase in the minimum wage is associated with an absolute reduction in the likelihood of NE by 0.8 percentage points (equivalent to a 6.8 percent relative change).

The estimations regarding effect of an increase in the real minimum wage on the likelihood of separation cannot be compared directly to its effect on the likelihood of EN. The reason is that the number of separations is greater than the number of EN in the sample.[3] To compare the two effects, I calculate the odds ratio of the effect of an increase in the real minimum wage on the likelihood of EN to the likelihood of separation as follows:

$$\frac{\beta_{EN} * \overline{EN}}{\beta_{separation} * \overline{separation}}$$

[3] Moreover, EN is a subsample of separation.

where β_{EN} is the coefficient on the ln (MW), and $\overline{EN}$ is the mean EN in the sample. $\beta_{separation}$ and $\overline{separation}$ are defined in the same way. Given the elasticities calculated in Sections 4 and 5, the estimated odds ratio is 0.47. Slightly less than half of the separations due to an increase in the real minimum wage are related to non-employment. The rest are due to job-to-job transitions.

The odds ratio between the effect of an increased real minimum wage on the likelihood of NE compared to its effect on hiring is calculated as follows:

$$\frac{\beta_{NE} * \overline{NE}}{\beta_{hiring} * \overline{hiring}}.$$

Given the elasticities calculated in Sections 4 and 5, the estimated odds ratio is 0.66. Approximately two-thirds of the reduction in hiring because of an increase in the real minimum wage is from the non-employed. The remainder is due to job-to-job transitions.

Putting together the results, I found evidence that an increased minimum wage is associated with a statistically and economically significant reduction in job-to-job transitions. Yet, these transitions do not affect the employment level. The estimates also show that most of the hiring reduction associated with an increase in the real minimum wage is due to a reduction in hiring from the non-employed. Therefore, the net effect on the likelihood of employment is negative.

Additionally, the estimates show that most of the reduction in separation, because of an increased real minimum wage, is due to a reduction in the job-to-job transitions. Therefore, the net effect on the likelihood of employment is positive. The EN and NE transitions work in opposite directions on the employment level. These conclusions can explain why literature is not in consensus regarding the effect of the minimum wage on employment.

[Table 4 about here]

6. Conclusions

This study analyzes the effect of an increase in the minimum wage on several labor market variables. It primarily focuses on the impact of the minimum wage on the dynamics in the labor market. The main findings are that the minimum wage negatively affects hiring rates yet reduces the separation rate. These two effects have opposite consequences on the level of employment, which also explains the weak impact of the real minimum wage on the employment rate. Evidence also shows that an increase in the real minimum wage is associated with a reduced probability of a worker quitting their job. There is no evidence, however, that it also reduces the probability of layoffs.

Therefore, I conclude that the empirical results support the job-ladder theoretical model developed in DLR. The evidence indicates that the reductions in the likelihood of hiring and separation because of an increased real minimum wage are caused partially by a reduction of job-to-job transitions.

An important future area of research is the length of the effect. That is, how long is hiring, for example, affected by the change in the minimum wage? A policy intervention may not be needed if the effect is relatively short.

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Table 1: Summary Statistics

Dependent Variables	Mean	Std. Dev.
Hiring	0.15	0.357
Separation	0.126	0.332
Employed	0.492	0.5
Layoff	0.011	0.103
Quit	0.217	0.413
Job to Job	0.126	0.332
Employed to Non-Employment (EN)	0.088	0.283
Non-Employment to Employed (NE)	0.117	0.321
Independent and other Variables		
Ln(Real Minimum Wage in 2010 $)	1.909	0.074
Married Indicator	0.022	0.147
Enrolled in School Indicator	0.636	0.481
Tenure (in years)	0.771	1.154
Big Firm Indicator (#employees>500)	0.623	0.485
High School Indicator	0.221	0.415
Black	0.273	0.445
Hispanic	0.217	0.412
Female	0.486	0.5
Real Wage (in 2010 $)	11.502	94.033
N=	103,371	
# Responders	8,707	

Table 2: The Effect of an Increase in the Real Minimum Wage on the Likelihood of Hiring, Separation, and being Employed.

Dependent Variable	(1)	(2)	(3)	(4)
Pr $(Hiring)$	-0.161***	-0.0554*	-0.327***	-0.121**
	(0.0385)	(0.0294)	(0.0544)	(0.0559)
Pr $(Separation)$	-0.0820**	-0.0398*	-0.104**	-0.0388**
	(0.0358)	(0.0226)	(0.0505)	(0.0188)
Pr $(Employed)$	-0.102***	-0.0276	-0.118***	0.0140
	(0.0248)	(0.0254)	(0.0351)	(0.0360)
Controls				
State trends	N	Y	N	Y
Region quarter fixed effects	N	N	Y	Y

Note- Fixed effects estimates. The Table reports the estimates for the log real minimum wage coefficient. All the regressions control for a high school graduate indicator, an indicator for whether the individual is enrolled in school, an indicator for whether the responder is married, an indicator of whether the responder is employed in a big firm (500+ employees), and tenure in quadratic form. The panel is quarterly, and hence the transitions are quarterly. The sample size is 103,371 from 8,707 individuals. Robust standard errors in parentheses and are clustered at the individual level. * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 3: The Effect of an Increase in the Real Minimum Wage on the Likelihood of Quit, Layoff, and Job to Job transitions.

Dependent Variable	(1)	(2)	(3)	(4)
Pr $(Quit)$	-0.115***	-0.104***	-0.0665*	-0.0597**
	(0.0325)	(0.0333)	(0.0359)	(0.0272)
Pr $(Layoff)$	0.00592	0.00860	0.00488	0.0119
	(0.0105)	(0.0108)	(0.0149)	(0.0153)
Pr $(Job\ to\ Job)$	-0.0820**	-0.0398	-0.104**	-0.0388*
	(0.0358)	(0.0366)	(0.0505)	(0.0218)
Controls				
State trends	N	Y	N	Y
Region quarter fixed effects	N	N	Y	Y

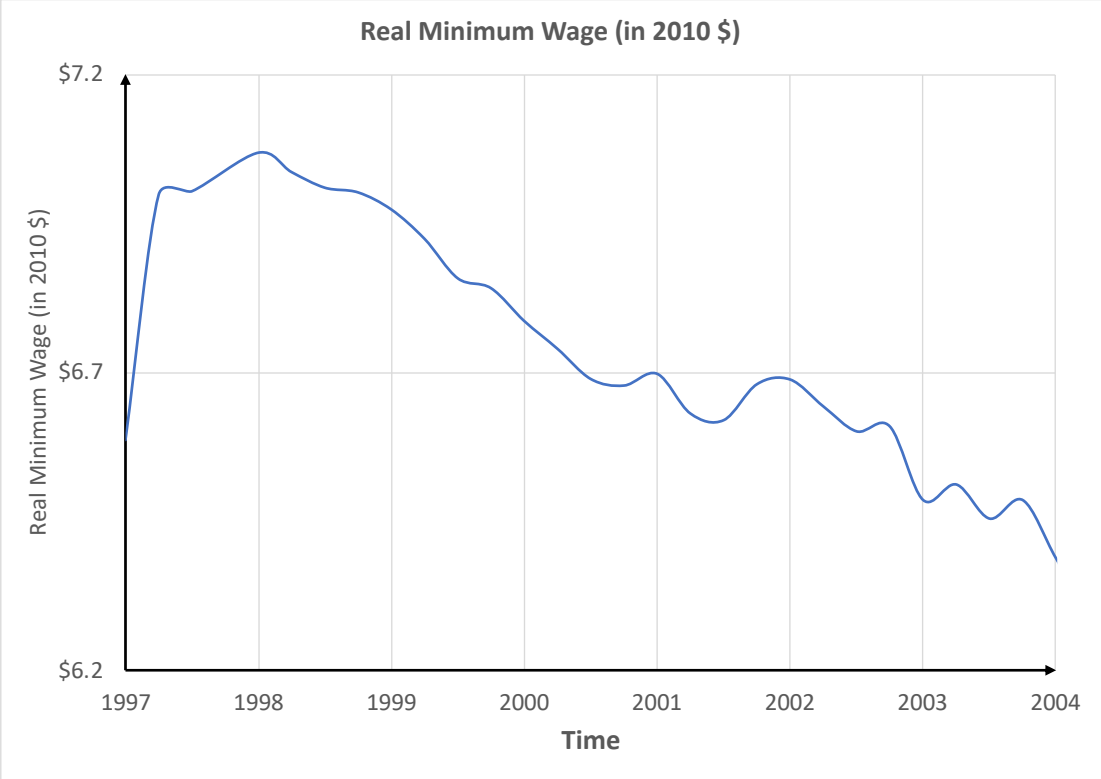
Note- Fixed effects estimates. The Table reports the estimates for the log real minimum wage coefficient. All the regressions control for a high school graduate indicator, an indicator for whether the individual is enrolled in school, an indicator for whether the responder is married, an indicator of whether the responder is employed in a big firm (500+ employees), and tenure in quadratic form. The panel is quarterly, and hence the transitions are quarterly. The sample size is 103,371 from 8,707 individuals. Robust standard errors in parentheses and are clustered at the individual level. * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 4: The Effect of an increase in the Minimum Wages on the Likelihoods of transitioning between Employment and Non-employment

Dependent Variable	(1)	(2)	(3)	(4)
Pr(*EN*)	-0.0488***	-0.0045	-0.013***	-0.0197**
	(0.011)	(0.0038)	(0.0042)	(0.0087)
Pr(*NE*)	-0.0612*	-0.0648*	-0.151***	-0.0797**
	(0.0335)	(0.0344)	(0.0475)	(0.0387)
Controls				
State trends	N	Y	N	Y
Region quarter fixed effects	N	N	Y	Y

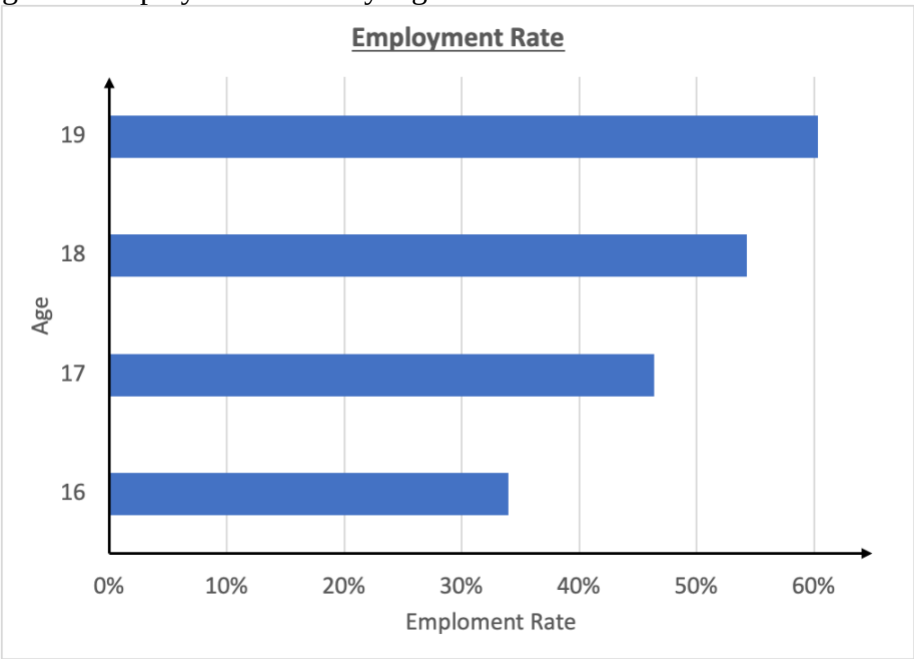
Note- Fixed effects estimates. EN stands for *Employment to Non-Employment* and NE stands for *non-Employment to Employed*. The Table reports the estimates for the log real minimum wage coefficient. All the regressions control for a high school graduate indicator, an indicator for whether the individual is enrolled in school, an indicator for whether the responder is married, an indicator of whether the responder is employed in a big firm (500+ employees), and tenure in quadratic form. The panel is quarterly, and hence the transitions are quarterly. The sample size is 103,371 from 8,707 individuals. Robust standard errors in parentheses and are clustered at the individual level. * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Figure 1: Real Minimum Wage (2010 dollars) over Time



Note: the figure is derived from the NLSY sample used in the analysis.

Figure 2: Employment Rates by Age



Note: the figure is derived from the NLSY sample used in the analysis.