

Impact of the Introduction of the National Living Wage on Employment and Hours

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November 22, 2017

INTERIM REPORT : DO NOT CITE

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1 Introduction

In April 2016, a new National Living Wage (NLW) was introduced in the UK. The NLW was set at £7.20, more than 7% higher than the level of the National Minimum Wage (NMW) which had been in effect since October 2015, and a more than 10% year-on-year increase compared to the April 2015 level of £6.50. Moreover, the NLW applies only to workers aged 25 and over, while the NMW adult rate had applied to workers aged 21 and over since 2010. This new age differential presents new opportunities for analyzing the data, which we will exploit.

The objective of this report is to present our interim findings on the impact of the introduction of the National Living Wage (NLW) on real wage growth, employment retention and weekly hours worked. We use two main types of methodology, applied to two data sources. Here, we give a brief overview of the approaches used, going into more detail in Section 2 below.

The first methodology is the standard difference-in-differences (DD) approach, which has been applied in a number of previous studies on the impact of the introduction of the National Minimum Wage (NMW) and of NMW upratings. This approach identifies the impact of a NMW uprating by comparing two groups of workers based on their pre-uprating wages: the treated wage group has initial wages below the incoming minimum wage level, and so are directly affected by the NMW uprating, while the control group were already earning at or somewhat above the incoming NMW uprating, and are not directly affected. We apply the standard version of this methodology to data from the quarterly longitudinal Labour Force Survey (LFS), and we apply a version of it to data from the longitudinal Annual Survey of Hours and Earnings (ASHE).

The second methodology is a novel difference-in-difference-in-differences (DDD) approach, which uses both wages and ages to identify treatment and control groups. Treated wage groups are defined as in the DD standard methodology. In addition, we can now exploit the fact that only workers aged 25 and over are eligible for the NLW, allowing us to define these workers as treated, and workers aged 21 to 24 as a control group. Of course, the validity of this control group depends on whether workers aged 21 to 24 did or did not indirectly benefit from the NLW introduction. We will examine this by checking whether the treated age-wage group (i.e. workers earning below the incoming NLW rate and aged

25 and over) experience higher rates of real wage growth than the control groups. We apply this DDD approach to longitudinal data from the Annual Survey of Hours and Earning (ASHE).

Using ASHE data, we find clear evidence of greater real wage growth for treated groups, both using the DD and the DDD methodology. However, we find no conclusive evidence at this stage that employment retention or hours worked have been negatively affected.

Results from the analysis of LFS data are similar. While the DD analysis finds some evidence of greater real wage growth for groups treated by the introduction of the NLW, we find no evidence of negative effects of the introduction of the NLW on employment retention. There is some tentative evidence that hours worked might have decreased by a very small amount for some groups.

In the remainder of the report, we first provide details of the three main approaches used: difference in differences applied to ASHE data (DD-ASHE), triple differences applied to ASHE data (DDD-ASHE), and difference in differences applied to LFS data (DD-LFS). In Section 3 we describe the data, and in Section 4 we present the results to all four approaches used. Section 5 concludes.

2 Methodology

In order to obtain as robust a view as possible on the impact of the introduction of the National Living Wage, we use several methodological approaches, each with its own advantages and disadvantages. The ability to implement each type of methodology depends upon which data source is being used. In particular, quarterly LFS data allows us to compare periods which do span a NMW/NLW uprating to those which do not, allowing us to implement the standard difference-in-differences (DD) approach. However, as the LFS is a household survey, the self-reported wages and hours may be less reliable and contain more measurement error than the ASHE data collected from firms. ASHE data is, however, only annual in frequency. This has implications for our interpretation of the DD estimates using ASHE, which we discuss below.

2.1 Difference in differences approaches

The difference in differences (DD) approach compares the evolution of the dependent variable for treated and untreated wage groups. The DD approach has become the standard means of evaluating the impact of NMW upratings on employment retention and hours worked in the UK.¹

The treated wage group is composed of those workers whose wages lie at or above the level of the minimum wage in period t , but below the level of the incoming minimum wage in the next period $t + 1$. That is, treated workers are directly affected by an increase in the minimum wage. The control wage group is composed of workers who were already earning at or just above the incoming minimum wage in period t . As a result, the control group is not directly affected by the increase in the minimum wage, although they may be indirectly affected if there are spillovers onto higher wage groups from a minimum wage uprating. These spillovers might, for example, derive from a desire on the part of employers to maintain wage differentials among job with differing responsibilities or skill requirements. We use two definitions of the control group: group C1 is composed of workers initially earning at or up to 10% in excess of the incoming minimum wage rate, while group C2 is composed of workers initially earning between 10% and 20% in excess of the incoming minimum wage rate.

Throughout our analysis we consider three definitions of the treatment group:

1. All workers earning between the initial and incoming minimum wage
2. Only workers earning at or very close to the initial minimum wage
3. A weighted ‘wage gap’ definition, where the weight on each observation is increasing in the distance between the initial wage and the incoming minimum wage (i.e. is increasing in the individual’s pay increase due to the NMW uprating)

The weights for the treated group in the wage gap variable are given as:

$$\theta_{it} = \frac{\ln\left(\frac{NMW_{t+1}}{w_{it}}\right)}{\ln\left(\frac{NMW_{t+1}}{NMW_t}\right)} \quad (1)$$

This non-linear weighting scheme gives greater weight to individuals who experienced

¹For example Stewart and Swaffield (2008); Dickens et al. (2015).

larger pay rises as a result of the minimum wage uprating. The weight θ_{it} on individual observation i in period t is equal to 1 when the individual’s wage is at the old minimum wage (when $w_{it} = NMW_t$), while $\theta_{it} = 0$ when the individual’s wage is $w_{it} = NMW_{t+1}$.

The standard DD approach exploits the fact that NMW upratings have (until the recent past) occurred annually, while longitudinal LFS data allows us to observe hours worked and employment at a quarterly frequency. This allows a differentiation between treated periods, which span an uprating in the minimum wage, and untreated periods, which do not. We implement this standard approach using LFS data.

In addition, we also present a difference in differences specifications for ASHE data. As ASHE data is annual, we do not have any periods in which the minimum wage rate did not increase at all. However, we can exploit the fact that the introduction of the NLW in April 2016 represented a year-on-year increase in the nominal minimum wage of more than 10% (Table 3), compared to nominal increases of between 1% and 3% in the control years. We do this by treating the introduction of the NLW as the only treated period, and all other smaller NMW upratings as ‘controls’, or by weighting by the size of the NMW/NLW uprating.

2.2 Difference-in-differences using LFS longitudinal data

Longitudinal LFS data allows us to observe employment status and hours worked at a quarterly frequency for 5 consecutive quarters for each individual, although wage information is only collected in the first and fifth quarters. Hence, we establish whether an individual belongs to the treated or control wage group by using their first quarter wage observation, and then compare their employment status or hours worked with a later period. We use 3-quarter time spans. By using different waves of LFS longitudinal data, we can differentiate between 3-quarter time spans which do contain a minimum wage uprating and those which do not. The former are treated periods, while the latter are control periods. A general form for this approach is:

$$y_{igt} = X'_{it}\beta + \alpha_t + \gamma_g + \delta D_{gt} + \epsilon_{igt} \quad (2)$$

where y_{igt} is the dependent variable for individual i belonging to wage group g in wave with initial period t , α_t are time fixed effects, γ_g are group fixed effects, D_{gt} is an indicator

taking the value one when treated group g is affected by a minimum wage uprating over the period considered, and X'_{it} are individual-year specific controls. In the baseline specification, group $g \in T, C$ are workers whose wages are either below (treated T) or up to 10% above (control C) the incoming level of the minimum wage.

The corresponding regression equation is:

$$y_{igst} = X'_{it}\beta + \alpha + \gamma \cdot W_{iTt} + \lambda \cdot Y_{st} + \delta \cdot (W_{iTt}Y_{st}) + \epsilon_{igst} \quad (3)$$

where W_{iTt} is an indicator variable which takes the value one when individual i belongs to the treated wage group T in period t and zero otherwise, while Y_{st} is an indicator which takes the value one if the time span beginning in period t does span a minimum wage uprating and zero otherwise.

We estimate a slightly more general specification, which allows for a full set of time fixed effects:

$$y_{igst} = X'_{it}\beta + \alpha + \gamma \cdot W_{iTt} + \sum_t \lambda_t \cdot Y_t + \delta \cdot (W_{iTt}Y_{st}) + \epsilon_{igst} \quad (4)$$

where Y_t is an indicator that takes the value 1 for time spans beginning in period t and 0 otherwise.

We consider three types of dependent variable:

- Real wage growth conditional on remaining employed
- Employment retention
- Conditional change in hours

Real wage growth gives the growth in wages between the first and fifth quarters of the individual's wages. We use *hrrate*, which is the self-reported hourly wage rate. Employment retention is captured by a dummy variable which takes the value one if the individual was employed in the initial quarter t , and then was still employed in the third quarter, zero if the individual was employed at t but is no longer employed in the third quarter, and missing otherwise. Finally, we also consider the change in hours worked conditional on remaining employed, that is the change in hours worked for workers who

retained employment between the first and third quarters.

We also consider a variant of this baseline DD-LFS specification, which allows for a constant differential trend in the dependent variable between the treated and untreated wage groups. Now the regression equation is given by

$$y_{igst} = X'_{it}\beta + \alpha + \gamma_{T,0} \cdot W_{iTt} + \gamma_{T,1} \cdot (t - 2011) \cdot W_{iTt} + \sum_t \lambda_t \cdot Y_t + \delta \cdot (W_{iTt}Y_{st}) + \epsilon_{igst} \quad (5)$$

It is straightforward to confirm that now the population difference in differences is given by $\delta + \gamma_{T,1}$. That is, now the coefficient δ on the interaction term in 5 now captures the differential impact of an uprating in the minimum wage on treated and control groups *after* taking into account the differential wage trend $\gamma_{T,1}$ between the treated and control groups.

A further variant of the DD-LFS specification includes workers with wages higher up in the wage distribution, in addition to the control group. The rationale for including this third wage group, which is neither treated nor control, is to improve estimation of the time fixed effects and possibly the control variables such as age or occupation. Now, the regression equation is

$$y_{igst} = X'_{it}\beta + \alpha + \gamma_T \cdot W_{iTt} + \gamma_R \cdot W_{iRt} + \sum_t \lambda_t \cdot Y_t + \delta_R \cdot (W_{iRt}Y_{st}) + \delta_T \cdot (W_{iTt}Y_{st}) + \epsilon_{igst} \quad (6)$$

where W_{igt} is an indicator variable which takes the value one when individual i belongs to the wage group g in year t and zero otherwise, and workers can now belong to groups $g \in T, C, R$. Workers in the treated wage group have wages below the incoming level of the minimum wage, while members of the control group C have wages up to 10% above the incoming minimum wage and workers in group R have wages between 10% and 30% above the incoming minimum wage rate at $t + 1$.

2.3 Difference-in-differences using ASHE data

NLW introduction as ‘treated period’

As ASHE data is collected annually, and the UK NMW has also been updated at least annually since its introduction, all pairs of observed time periods span a minimum wage increase. This lack of any recent control time spans might seem to make ASHE data inappropriate for a difference-in-differences approach. However, the NLW introduction is associated with a much larger increase in the minimum wage than in the recent past. Between April 2015, when the NMW was set at £6.50 and April 2016, when the NLW was introduced at £7.20, the minimum wage for workers aged 25 and over rose by 10.8% in nominal terms.² This increase is more than three times as large as increases in the ‘control’ periods since 2011, which have ranged between 1.8% and 3.0% in nominal terms, as shown in Table 3.

We first consider a DD specification which treats periods spanning the NLW introduction in April 2016 as ‘treated periods’, while considering periods spanning the much smaller previous NMW upratings to be ‘control periods’. A general form for this is

$$y_{igt} = X'_{it}\beta + \alpha_t + \gamma_g + \delta D_{gt} + \epsilon_{igt} \quad (7)$$

where y_{igt} is the dependent variable for individual i belonging to wage group g in year t , α_t are time fixed effects, γ_g are group fixed effects, D_{gt} is an indicator taking the value one when treated group $g = T$ is affected by the introduction of the National Living Wage in $t + 1 = 2016$, and X'_{it} are individual-year specific controls. In the baseline specification, group $g \in T, C$ are workers whose wages are either below (treated T) or up to 10% above (control C) the new level of the National Living Wage at $t + 1$.

The corresponding regression equation is:

$$y_{igt} = X'_{it}\beta + \alpha + \gamma \cdot W_{iTt} + \lambda \cdot Y_T + \delta \cdot (W_{iTt}Y_T) + \epsilon_{igt} \quad (8)$$

where W_{iTt} is an indicator variable which takes the value one when individual i belongs to the treated wage group T in year t and zero otherwise, while Y_T is an indicator which

²Most workers aged 25 and over are covered, with the exception of apprentices in their first year.

takes the value one in the treated period, i.e. $Y_T = 1$ when the NLW is introduced at $t + 1$.

We estimate a slightly more general specification, which allows for a full set of time fixed effects:

$$y_{igt} = X'_{it}\beta + \alpha + \gamma \cdot W_{iTt} + \sum_{t=2011}^{2015} \lambda_t \cdot Y_t + \delta \cdot (W_{iTt}Y_T) + \epsilon_{igt} \quad (9)$$

where Y_t is an indicator that takes the value 1 in year t and 0 otherwise. We use age, age squared and 2-digit occupation as controls. We call this specification DD-I.

As in the DD-LFS specifications, we consider three types of dependent variable: real wage growth, employment retention, and the change in hours worked conditional on remaining employed.

To fix ideas, we will couch our explanation of the DD-ASHE strategy in terms of the employment retention rate as a dependent variable. Employment retention takes the value one for individual i in year t if that individual was employed in both years t and $t + 1$. The DD coefficient δ in equation 9 captures the relative change in employment retention rates for the treated vs control wage groups after the introduction of the NLW in 2016. To see this using regression equation 9, note that the change in employment retention for the control group between 2015 and 2014 (neglecting any changes in the controls X'_{it} for now) is:

$$E[y_{igt}|g = C, t = 2015] - E[y_{igt}|g = C, t = 2014] = \lambda_{2015} - \lambda_{2014} \quad (10)$$

The change in employment retention for the treated group between 2015 and 2014 is (again neglecting any changes in the controls X'_{it} for now):

$$E[y_{igt}|g = T, t = 2015] - E[y_{igt}|g = T, t = 2014] = \lambda_{2015} - \lambda_{2014} + \delta \quad (11)$$

The population differences in differences is then:

$$\begin{aligned}
& (E[y_{igt}|g = T, t = 2015] - E[y_{igt}|g = T, t = 2014]) \\
& - (E[y_{igt}|g = T, t = 2015] - E[y_{igt}|g = T, t = 2014]) = \delta
\end{aligned} \tag{12}$$

The coefficient δ on the interaction term in 9 captures the differential impact of the introduction of the NLW on treated and control groups for the dependent variable. This effectively treats all previous years as if there had been no increase in the NMW, which would tend to understate the impact of the NLW introduction.

We also consider a variant of this baseline DD-ASHE specification, which allows for differential trends in the dependent variable between the treated and untreated wage groups. Now the regression equation is given by

$$y_{igt} = X'_{it}\beta + \alpha + \gamma_{T,0} \cdot W_{iTt} + \gamma_{T,1} \cdot W_{iTt} \cdot (t - 2011) + \sum_{t=2011}^{2015} \lambda_t \cdot Y_t + \delta \cdot (W_{iTt}Y_T) + \epsilon_{igt} \tag{13}$$

It is straightforward to confirm that now the population difference in differences is given by $\delta + \gamma_{T,1}$. That is, the coefficient δ on the interaction term in 13 now captures the differential impact of the introduction of the NLW on treated and control groups for the dependent variable, after taking into account the differential wage trend between the treated and control groups. We call this specification DD-II.

A further variant of the DD-ASHE specification includes workers with wages higher up in the wage distribution, whilst continuing to treat the group with wages up to 10% higher than the initial minimum wage as the control group. The rationale for including this third wage group, which is neither treated nor control, is to improve estimation of the time fixed effects and possibly the controls. Now, the regression equation is

$$y_{igt} = X'_{it}\beta + \alpha + \gamma_T \cdot W_{iTt} + \gamma_R \cdot W_{iRt} + \lambda \cdot Y_T + \delta \cdot (W_{iTt}Y_T) + \delta_R \cdot (W_{iRt}Y_T) + \epsilon_{igt} \tag{14}$$

where W_{igt} is an indicator variable which takes the value one when individual i belongs to the wage group g in year t and zero otherwise, and workers can belong to groups $g \in T, C, R$. Workers in the treated wage group have wages below the new level of the NLW, while members of the control group C have wages up to 10% above the incoming

NLW and workers in group R have wages between 10% and 30% above the new NLW at $t + 1$. We do not report the results from 14, as they are nearly indistinguishable from the results of estimating 9.

Weighting by the size of the minimum wage uprating

All three specifications 9, 13 and 14 treat years $t=2011$ to 2014 as control periods, even though they were affected by NMW upratings, albeit of smaller magnitude than the NLW introduction. Next, we consider an alternative specification, which does take the earlier upratings into account. We do this by estimating a model in which we interact the size of the uprating ω_t at $t + 1$ with membership in the treated wage group at t . The size of the uprating ω_t ranges from about 1.8% to 10.8% in 2016. The equation is:

$$y_{igt} = X'_{it}\beta + \alpha_t + \gamma_g + \delta \cdot D_{gt} \cdot \omega_t + \epsilon_{igt} \quad (15)$$

where $D_{gt} = 1$ when treated group $g = T$ is affected by an uprating in the minimum wage and ω_t is the nominal percentage increase in the NMW or NLW between t and $t + 1$. The corresponding regression equation is:

$$y_{igt} = X'_{it}\beta + \alpha + \gamma \cdot W_{iTt} + \lambda_t \cdot Y_t + \delta \cdot (W_{iTt}Y_t) \cdot \omega_t + \epsilon_{igt} \quad (16)$$

We call this specification DD-III. Now, δ in 16 captures the impact of a one percentage point rise in the NMW or NLW on the dependent variable. Accordingly, the change in the employment retention rate for the control group between 2015 and 2014 becomes (neglecting any changes in the controls X'_{it} for now):

$$E[y_{igt}|g = C, t = 2015] - E[y_{igt}|g = C, t = 2014] = \lambda_{2015} - \lambda_{2014} + \delta \quad (17)$$

The change in wage growth for the treated group between 2015 and 2014 becomes (again neglecting any changes in the controls X'_{it} for now):

$$E[y_{igt}|g = T, t = 2015] - E[y_{igt}|g = T, t = 2014] = \lambda_{2015} - \lambda_{2014} + \delta \cdot (\omega_{2015} - \omega_{2014}) \quad (18)$$

The population difference in differences is then:

$$\begin{aligned}
& (E[y_{igt}|g = T, t = 2015] - E[y_{igt}|g = T, t = 2014]) \\
& - (E[y_{igt}|g = T, t = 2015] - E[y_{igt}|g = T, t = 2014]) = \delta \cdot (\omega_{2015} - \omega_{2014})
\end{aligned} \tag{19}$$

Now the estimate of δ in 16 is an estimated elasticity (or semi-elasticity), representing the change in the dependent variable for each percentage point increase in the NMW/NLW. This effectively treats the NLW introduction as just a particularly large increase in the NMW. It also assumes that the reaction of the dependent variable is linear in the size of the wage increase. This may or may not be a valid assumption.

2.4 Difference in differences in differences approach

From October 2010 up to the introduction of the NLW in April 2016, most workers aged 21 and over were eligible for the adult rate of the NMW. Beginning in April 2016, a new age distinction was put into place: most workers aged 25 and over became eligible for the higher NLW rate of £7.20, while workers aged 21-24 only remained eligible for the adult rate of NMW of £6.70 until October 2016. This introduces a further source of variation between a treated age group (aged 25 and over in April 2016) and a control age group (aged 21-24 in April 2016), which we exploit in a difference-in-differences-in-differences (DDD) strategy. This strategy identifies the impact of the introduction of the NLW as a triple interaction between treated wage group, treated age group and treated period. Of course, such a triple-differences strategy obtains identification from potentially strong assumptions, in particular common trends in the dependent variable for age group-wage group cells. For this reason, we will also present DDD specifications which allow for differential trends for treated age groups and wage groups.

2.4.1 Difference-in-differences in differences using ASHE data

Simplest DDD specification

We begin with the simplest possible version of the DDD using ASHE data. This simplest baseline DDD-ASHE specification allows for two age groups: treated are aged 25 or over when the NLW is introduced, while controls are aged 21 to 24 in April 2016. This specification also allows for two wage groups: members of the treated wage group have initial wages below the incoming level of the NLW/NMW, and are thus directly affected

by the uprating, while controls have wages at t that are slightly higher than the incoming NLW/NMW rate. Finally, we divide time spans into two groups: the only treated time periods span the introduction of the NLW, i.e. transitions spanning 2015 and 2016. The regression equation is:

$$y_{igat} = X'_{it}\beta + \alpha + \gamma \cdot W_{iTt} + \varphi A_{iTt} + \lambda \cdot Y_T + \delta_{WY} \cdot (W_{iTt}Y_T) + \delta_{AY} \cdot (A_{iTt}Y_T) + \delta_{WA} \cdot (W_{iTt}A_{iTt}) + \delta_{WAY} \cdot (W_{iTt}A_{iTt}Y_T) + \epsilon_{igt} \quad (20)$$

where W_{iTt} is an indicator variable which takes the value one when individual i belongs to the treated wage group in year t and zero otherwise, while Y_T is an indicator which takes the value one in the treated period, i.e. $Y_T = 1$ when the NLW is introduced at $t + 1$, and A_{iTt} is an indicator which takes the value one when individual i is a member of the treated age group in year $t + 1$, i.e. $A_{iTt} = 1$ for workers aged 24 and over, who will be at least 25 next period.

We estimate a slightly more general specification, which allows for a full set of time fixed effects:

$$y_{igat} = X'_{it}\beta + \alpha + \gamma \cdot W_{iTt} + \varphi A_{iTt} + \sum_{t=2011}^{2015} \lambda_t \cdot Y_T + \delta_{WY} \cdot (W_{iTt}Y_T) + \delta_{AY} \cdot (A_{iTt}Y_T) + \delta_{WA} \cdot (W_{iTt}A_{iTt}) + \delta_{WAY} \cdot (W_{iTt}A_{iTt}Y_T) + \epsilon_{igt} \quad (21)$$

For exposition, we treat [21](#) as a linear regression, even though we will also be running some non-linear regressions for some dependent variables, in particular a probit specification for employment retention rates. We call this specification DDD-I.

The DDD is the difference between two DD specifications, one for the treated age group and the other for the control age group.

1) the differential impact of the introduction of the NLW on treated and untreated wage groups for those aged 25 and over in 2016:

$$\begin{aligned}
& E[y_{igat}|g = T, a = T, t = T] - E[y_{igat}|g = T, a = T, t = C] \\
& - E[y_{igat}|g = C, a = T, t = T] - E[y_{igat}|g = C, a = T, t = C] \\
& = \delta_{WY} + \delta_{WAY}
\end{aligned} \tag{22}$$

2) the differential impact of the introduction of the NLW on treated and untreated wage groups for those aged 22-24 in 2016:

$$\begin{aligned}
& E[y_{igat}|g = T, a = C, t = T] - E[y_{igat}|g = T, a = C, t = C] \\
& - E[y_{igat}|g = C, a = C, t = T] - E[y_{igat}|g = C, a = C, t = C] \\
& = \delta_{WY}
\end{aligned} \tag{23}$$

Now, the differences in differences in differences (DDD) coefficient δ_{WAY} captures by how much more the introduction of the NLW impacted on treated wage group members who were also aged 25 and over compared to the impact on treated wage group members who were aged 22-24 at the introduction of the NLW. Taking the difference between these two DDs 1) and 2) yields:

$$\begin{aligned}
& E[y_{igat}|g = T, a = T, t = T] - E[y_{igat}|g = T, a = T, t = C] \\
& - E[y_{igat}|g = C, a = T, t = T] - E[y_{igat}|g = C, a = T, t = C] \\
& - \{E[y_{igat}|g = T, a = C, t = T] - E[y_{igat}|g = T, a = C, t = C] \\
& - E[y_{igat}|g = C, a = C, t = T] - E[y_{igat}|g = C, a = C, t = C]\} \\
& = \delta_{WAY}
\end{aligned} \tag{24}$$

Differential but constant age and wage trends

Next, we examine a specification which allows for both a differential yet constant trend for the treated age group and for the treated wage group. The regression equation becomes

$$\begin{aligned}
y_{igat} = & X'_{it}\beta + \alpha + \gamma_{T,0} \cdot W_{iTt} + \gamma_{T,1} \cdot W_{iTt}(t - 2011) + \varphi_{T,0}A_{iTt} + \varphi_{T,1}A_{iTt}(t - 2011) \\
& + \sum_{t=2011}^{2015} \lambda_t \cdot Y_t + \delta_{WY} \cdot (W_{iTt}Y_T) + \delta_{AY} \cdot (A_{iTt}Y_T) + \delta_{WA,0} \cdot (W_{iTt}A_{iTt}) \\
& + \delta_{WAY} \cdot (W_{iTt}A_{iTt}Y_T) + \epsilon_{igat}
\end{aligned} \tag{25}$$

where $\gamma_{T,1}$ is the constant trend for the treated relative to the control wage group, and

is the constant trend for the treated relative to the control age group. It is straightforward to confirm that the population difference-in-differences-in-differences expression still evaluates to δ_{WAY} .

2.5 Robustness checks

We check for robustness of our results by running a series of placebo tests. Each placebo test substitutes the true treated year by a counterfactual placebo ‘treated’ year. For example, rather than using the time span 2015/16 as the treated period over which the NLW was introduced, the 2011 placebo test takes the 2011/12 time span to be ‘treated’. Any findings of statistically significant estimated treatment effect using a placebo time span would cast the validity of the results into doubt.

3 Data

We use two main sources of data on wages, employment retention and hours worked: the longitudinal quarterly Labour Force Survey (LFS) and the longitudinal Annual Survey of Hours and Earnings (ASHE). Each data source has advantages and disadvantages. The quarterly frequency of the LFS data allows us to observe employment retention and changes in hours over time periods which both span minimum wage increases and which do not. This allows for the implementation of the standard DD strategy. However, the LFS is a household survey, and as such the reported wages and hours might not be as reliable as in the ASHE, which is an employer survey. Also, the ASHE is a 1% sample of National Insurance (NI) numbers, giving much larger sample sizes than for the LFS. This is especially important when examining potentially differential impacts of minimum wage increases on smaller demographic or groups.

3.1 Longitudinal ASHE data

3.1.1 Structure of the data

ASHE is longitudinal and collects detailed data from employers on wages and hours on a 1% sample of NI numbers. ASHE collects little demographic data apart from gender, age, industry and occupation, limiting the set of controls which can be used. Employers

are only required to submit ASHE data for employees who are earning at or above the PAYE threshold, although many larger employers submit data for all employees. As a result, it can be difficult to distinguish between low-wage workers leaving employment and reducing their hours below the PAYE threshold.

Data is collected progressively for a reference week in April each year. Up to and including 2015, most NMW upratings took place in October, midway between two ASHE data collection reference periods. In April 2016, and again in April 2017, however, the NLW and NMW took effect as of 1 April. As a result, data in 2016 and 2017 was collected shortly after the implementation of a new minimum wage, so that the adjustments recorded are of a shorter term nature than in pre-2016 data.³

We drop observations where there are inconsistencies either in the identifier variable, sex or age over time, as well as those affected by periods of absence. We also drop observations with unrealistic observations of 112 or more total weekly hours worked. Our dependent variables take the difference between values at the time of uprating the previous period. In the DDD specifications, we focus on workers whose age at the time of the uprating is between 22 (the minimum eligibility for the adult rate of the NMW being 21) and 59 (the last year before eligibility for the state pension for women at age 60 in much of our dataset). For example, when the treated period is April 2016 we are focusing on workers aged 21 to 58 in April 2015 and consequently aged 22 to 59 in April 2016. In the DD specifications, we focus on workers aged 25 or older, who would be eligible for the National Living Wage.⁴

3.1.2 Descriptives - wages

Real wage growth is defined as the change in the log real wage, $\ln(realwage)_{t+1} - \ln(realwage)_t$. The resulting sample sizes for the treatment and control groups are reported in Table 1. The table shows a much higher incidence of low pay for females compared to males. The size of the treated wage group is considerably larger in 2015 than in other years, as this is the group whose April 2015 wages lie between £6.50 (the NMW rate in April 2015) and £7.20 (the NLW rate in April 2016). Table 2 shows me-

³A similarly short adjustment period also occurred when the NMW was first introduced in 1999.

⁴Workers become eligible for the new minimum wage rate in the first pay period which commences on or after the reference date, which in the case of the NLW introduction is 1 April 2016.

dian growth in wages in both nominal and real terms, where the entries for 2016 give the real wage increases between April 2015 and April 2016. In real terms wages across all individuals, and for our treated and control groups declined year-on-year for 2011/12 to 2013/14. Also, real wage growth for the treated wage group is nearly double that for the control wage group in the 2015/16 time period spanning the introduction of the NLW. Figure 1 illustrates our difference in differences in differences strategy. As discussed above, our DDD estimate is the difference between two single differences. The first difference is the difference between the treated and untreated wage groups for those aged 25. This is illustrated by the difference between the solid line showing the mean wage growth for the treated wage - treated age group (TW x TA), and the dotted line (CW x TA). The second difference is shown the difference between treated and untreated wage groups for those aged 22-24, and this is illustrated by dashed line (TW x CA) and the dash-dot line (CW x CA). The DDD line shows the difference between these two single differences.

Figure 2 shows wage densities (for wages below £20/hour) in each year with a marker for the relevant NMW/NLW rate. Particularly in more recent years a spike is quite clear suggesting a degree of bunching very near the nominal NMW/NLW rate.

3.1.3 Descriptives - employment retention rates

Employment retention is defined as a dummy variable equal to 1 when a person is observed in the ASHE (and therefore in employment) in a subsequent period, and zero otherwise. Figure 3 shows the evolution of employment retention rates for the treated and control wage-age groups. The trends of all four wage-age groups as described above are fairly similar, giving a DDD line that is close to zero over this period. However, it is difficult to draw firm conclusions on trends with such a small number of data points.

3.1.4 Descriptives - changes in hours worked

Hours of work in the ASHE is taken from total paid hours, and we define the change in conditional hours worked as being the change in hours for those who are still in employment. Figure 4 shows the change in hours worked (conditional on being in employment) for the treated and control wage-age groups. Differences in hours worked between the wage-age groups are relatively small at the beginning of the period and towards the end

of the period, with a large difference developing between the treated and untreated wage groups for those aged 22-24.

3.2 Longitudinal LFS data

3.2.1 Structure of the data

We use matched LFS data to estimate the DD-LFS and DDD-LFS models outlined above. The LFS is a quarterly survey with individuals remaining in the sample for up to five quarterly waves. Earnings questions for the time period under consideration (2011 onwards) are asked in waves 1 and 5. We also use matched employment status information from waves 1 and 3. We drop observations with inconsistent sex and age profiles across waves.

3.2.2 Descriptives - wages

We require an accurate measure of hourly wages to be able to identify individuals that are directly affected by the NMW/NLW, as well as individuals that earn close, but above the minimum wage that could serve as a potential control group. The LFS has two measures of hour wages, a derived measure, hourpay, and an hourly rate variable, hrrate. As has been discussed elsewhere (Dickens and Manning, 2004; Dickens and Draca, 2005), hourpay is subject to significant measurement error in comparison with hrrate, and we therefore use hrrate only, in our analysis. Figures 5 and 6 show wage densities using hrrate, and they show that there is a clear spike around the NMW/NLW.

Sample sizes for the treatment and control groups in the job retention and hours worked models estimated below are shown in Table 67. Table 68 shows median growth in wages by NMW/NLW uprating year in both nominal and real terms. In real terms wages across all individuals, and for our treated and control groups declined year-on-year during 2011-2014, following the financial crisis.

Figure 7 shows the mean and median growth in wages for the treated group (those earning at the minimum wage or up to 0.5% above it) and the control group (those earning up to 10 above the incoming minimum wage). Up until the introduction of the NLW in April 2016, the treated group refers to those earning the NMW, after April 2016 it refers to those on the NLW. As we would expect, wage growth of the treated group has exceeded

that of the control group, and at the end of the period there is clearly a more pronounced differential between the treated and control groups. This reflects the relatively large nominal increase in the NMW/NLW of 7.5% for those aged 21-24 earning the NMW of £6.70 from October 2015, who then received the NLW of £7.20 in April 2016.

3.2.3 Descriptives - employment retention rates

Figure 8 shows employment retention rates (the probability of being in employment, conditional on being employed 6 months ago) for the treated and control groups from the LFS. Retention rates follow a similar trend for both the treated and 0-10% control group, with retention rates for the treated group being fractionally above those for the control group between 2013-2015. There is no apparent fall in retention rates for the treated wage group following the introduction of the NLW in April 2016.

3.2.4 Descriptives - changes in hours worked

Figure 9 shows the change in hours worked (conditional on being in employment) for the treated and control groups. The overall trend in hours for both the treated and control group over this period is broadly similar, especially in the last couple of years. From NMW years 2010 through to 2014, the treated group tended to experience larger increases and decreases in hours worked compared to the control group.

4 Results

4.1 DDD Analysis using individual level ASHE records

4.1.1 Wages

Across all of the DDD-ASHE specifications considered, we find quite consistent increases in real wage growth associated with the introduction of the NLW, across all demographic groups. Table 4 gives the results for the simplest DDD-I specification. When considering all workers directly affected by the introduction of the NLW, the estimated increase in wage growth is small at 1.0 percentage points (pp), rising to 1.8pp for part-time women, and significant only at the 5% level in both cases. For workers which were earning at

the old minimum wage, the estimated increase in real wage growth is larger at 3.2pp for all workers aged over 25, and about 2.2pp when focusing only on workers aged 25-30, but both highly significant with p-values <0.001 . The wage-gap specification gives, as expected, results that are intermediate, with wage growth for all treated workers aged over 25 at 2.6pp and for treated workers aged 25-30 at 1.9pp, and significant at the 1% level. Introducing constant differential trends for the treated age group and the treated wage group yields very similar results (Table 9, based on equation 25)

Tables 5 to 8 report the results of placebo tests for specification DDD-I, in which the treated period is (counterfactually) taken to be the years 2011, 2012, 2013 or 2014. The estimated increases in real wages for the treated age-wage groups seem to be robust to the placebo tests. That is, we see that in the placebo tests, there is no significant difference in real wage growth between the placebo treated age-wage group and the control age-wage group, except in one case where we find marginally significantly *lower* wage growth for the treated age-wage group. That is, we only find higher wage growth rates for over-25 year old treated wage group workers than for those under 25 when the NLW introduces a higher minimum wage for those aged 25 and over. This indicates that we can indeed attribute significantly higher wage growth for the treated age-wage group to the introduction of the NLW. Tables 10 to 13 give the placebo tests for the specification DDD-II, and results are very similar to those for DDD-I.

4.1.2 Employment retention

In the DDD-ASHE specifications, we find no conclusive evidence for a negative impact of the introduction of the NLW on employment retention. While the regression coefficients correspond to a negative impact of the introduction of the NLW on employment retention, some of these are not robust to placebo tests.

In the baseline specification, some of the regression coefficients correspond to a negative impact of the introduction of the NLW on employment of -4.2pp for those earning at the old minimum wage, and -5.0pp using the wage gap measure, but only marginally significant at the 10% and 5% level, respectively (Table 14). These estimates rise to -12.0pp for fulltime men (significant at the 1% level) and -7.5pp (significant at 10% level) using the wage gap measure. Results are quite similar when taking into account constant differential trends for treated age and treated wage groups (Table 19).

However, when we run placebo tests for employment retention, we find large and highly significant effects on employment retention for part-time women and full-time men when using the (counterfactual) treatment year 2012 (Tables 16 and 21), and for part-time men when using the (counterfactual) treatment year 2011 (Tables 15 and 20). While we do not find any significant positive placebo DDD treatment effects for fulltime women, the spurious effects for other groups are still worrying, and call the validity of the specification into question. In the next stage of the research, we aim to examine the employment retention effects in more detail.

Even if further investigation were to validate the negative impacts on employment retention, some caution should still be taken when interpreting these results. First, April 2016 marks the first time in our sample that ASHE data was collected in the same month as a minimum wage uprating. Collecting data on employment immediately after a new level of the minimum wage takes effect might tend to bias employment retention rates downwards. That is, the downward deviation from trend of ERRs could be an artefact of the sampling time frame. This could be the case, for example, if increasing the minimum wage led to increased churn in the low-wage labour market, causing some treated low-wage workers to lose their current employment. In the past, workers who lost work due to a minimum wage uprating in October had until March of the following year to find new jobs and be recorded as (re-)employed in ASHE in April. In contrast, any workers who lost their jobs due to the introduction of the NLW in April 2016 would have had at most a few weeks to find new employment before being sampled.

Second, submitting data to ASHE is only mandatory for the employers of workers above the PAYE threshold. While many larger firms submit data for all workers, regardless of whether they are above the PAYE threshold, smaller firms may only submit data for those with sufficient hours. Recent increases in the income tax threshold imply that workers earning £7.20 an hour must work nearly 30 hours weekly to exceed the PAYE threshold. We cannot exclude the possibility that some workers who drop out of the sample in April 2016 have actually just reduced their hours below the PAYE threshold. In this case, we would be confounding a (potentially small) intensive margin reduction in hours with an extensive margin reduction in employment retention. We return to this point in the next section, when we examine the impact of the NLW introduction on hours worked conditional on remaining employed.

4.1.3 Hours worked

The regression results indicate that the introduction of the NLW might have led to small increases in hours worked for workers who retained their jobs. The increases seem to be concentrated among workers aged 25-30 who were exposed to the largest pay rises, i.e. those who were previously earning at the old minimum wage. In the baseline specification (Specification DDD-I, Table 24), these workers are estimated to have increased their hours on average by about an hour and thirty minutes weekly, significant at the 5% level. Using the wage gap estimator, the increase for workers aged 25 to 30 is estimated to be about one hour and fourteen minutes weekly. Including a constant differential trend for the treated age-wage group does not have much impact on the results (Specification DDD-II, Table 29).

The results obtained from placebo tests on both the baseline specification DDD-I and the specification DDD-II with differential trends, however, are not fully convincing. Using the placebo treatment period 2011-2012 (Tables 25 and 26), we find a marginally significant (at the 10% level) and positive impact on hours worked of fulltime men of just over two and a half hours weekly, casting some doubt on the robustness of the results. Again, we intend to examine the impact of the NLW introduction on hours worked more closely in our further research.

4.2 DD Analysis using individual level ASHE records

4.2.1 Wages

Results for real wage growth regressions using the “difference in differences” DD specifications on ASHE data are presented in Tables 34, 39, and 44. Throughout, we focus on workers aged 25-59, a group which is eligible for the National Living Wage when it is introduced in 2016. We use robust regression to correct for outliers.⁵

NLW introduction as the only treated period

Our estimates indicate that wage growth is significantly higher for workers in the treated wage groups when the NLW is introduced for the baseline specification DD-I (Table 34).

⁵We implement robust regression using the `robreg m` command in Stata (Jann, 2010), which fits Huber (1973)’s M-estimator using iteratively reweighted least squares to eliminate the observations with greatest influence on the parameter estimates.

Across all groups, workers in the treated group experienced wage growth that was about 4.8 percentage points (pp) higher upon introduction of the NLW than did workers of the control group. When restricting the treated group to workers who were earning at or very near to the old NMW in 2015, we find that the impact on wage growth is somewhat larger for fulltime workers (5.0pp rather than 3.5pp for fulltime men and 4.4pp rather than 4.2pp for fulltime women), but somewhat smaller for part time men and women. All of the estimates are highly significant. Introducing differential trends for the treated and control wage groups has little impact on the results (DD-II specification, Table 39).

It may seem counterintuitive that the estimated increase in wage growth could be *smaller* when focusing on workers at the initial minimum wage. To see how this can happen, recall that equations 9-13 all allow for both a full set of year fixed effects and an interaction between the treated year and the treated wage group. The wage impact for workers at the old minimum wage can be smaller when this regression attributes relatively more variation in wage growth to the year FE than to the interaction with the treated group. Thus, when more variation in wage growth is attributed to the year FE, and less to the interaction term, the estimated wage impact can be lower for workers exposed to the largest wage increases.

In the baseline specification DD-I (Tables 35 to 38), placebo tests show some positive and significant wage effects. However, the impact on wages is much smaller, corresponding to real wage growth that is between 0.3pp and 2.0pp higher for workers in the placebo ‘treated’ wage groups. This is not surprising, however, because there were in fact NMW upratings in the placebo years, ranging in size between 1% and 3%. As a result, rather than casting doubt on the results, these placebo tests rather seem to support them.

In the specification allowing for a constant differential trend between treated and control wage groups, placebo tests again show some positive and significant impact on wages (Tables 40 to 43). In some cases, these now also correspond to real wage growth that is between 2.0 and 3.5 pps higher for workers in the placebo treated wage groups. Again, this is not surprising, as there were in fact small NMW upratings in the placebo years, ranging in size between 1% and 3%. Thus, in this case, we do not interpret the results of these placebo tests as casting doubt on the results.

Weighting by the size of the minimum wage uprating

Next, we consider results of a setup based on equation 16, in which the interaction between

the year and the treated wage group is weighted by the size of the real minimum wage increase in that year. The estimated coefficients reported in Table 44 can be interpreted as elasticities: the percentage point increase in real wage growth for the treated group for every percentage point increase in the minimum wage.

The estimated elasticities in Table 44 are in line with the results of the DD-I and DD-II specifications described above. Real wage growth in the entire treated wage group increases by about 0.4pp for each 1 pp real minimum wage increase, for full-time workers, and about 0.6pp for part-time workers. When the treatment group is restricted to only include those previously at or very near the old level of the minimum wage, i.e. those experiencing the greatest pay rises, wage growth increases by 0.5pp for all workers.

4.2.2 Employment retention

NLW introduction as the only treated period

Similarly to the DDD case, we find some indications but no conclusive evidence of a negative impact of the introduction of the NLW on employment retention. From the ‘difference in differences’ specifications using ASHE data, we find some negative and significant coefficients, particularly for women who were exposed to the largest pay rises due to the introduction of the NLW. However, the placebo tests fail in some cases, casting some doubt on the results. Again, we aim to examine these results in more depth in our next report.

In the baseline specification (DD-I, Table 45), the estimated coefficients are negative and highly significant, corresponding to a reduction in the employment retention rate by 5.2pp for all treated workers. Breaking the results down by gender and full/part time status, we find that the results are mainly driven by the reduction in the employment retention rate for women, with no significant coefficients for parttime men, and coefficients only marginally significant at the 10% level for full-time men. When focusing on fulltime women experiencing the largest pay rises (i.e. those who were initially earning at or very near the old minimum wage), the negative impact on employment retention rises to 10.7pp, again highly significant.

When we run placebo tests for the baseline DD-I specification (Tables 46-49), however we find several instances of spurious negative impacts on employment retention. The placebo

for part-time women in 2011, and several of the placebos for 2013, give coefficients that are negative and significant. This casts doubt on the validity of the results.

When we allow for a constant trend in employment retention rates, we find a somewhat stronger and more widespread negative impact on employment retention rates of 7.0pp for all treated workers (specification DD-II, Table 50). Across demographic groups, the impacts are relatively large in magnitude, and often highly significant at the 0.1% or 1% level, except for part-time men. The largest impact remains on women, with an estimated reduction in employment retention of 7.4pp across all fulltime women and 7.9pp for all parttime women (both significant at the 0.1% level), compared to a reduction of only 4.5pp for fulltime men (significant at the 0.1% level). For part-time men the reduction is also estimated to be 5.0pp, but only marginally significant at the 5% level. Given the wage increases reported in the previous sub-section, these estimates correspond to elasticities of employment retention to wage growth of approximately -1 for men and -2 for women.

Once again, however, placebo tests for specification DD-II (Tables 51 to 54) show some negative impacts on employment retention when 2013 is taken to be the placebo treatment year. That is, we find that employment retention was significantly lower for some groups of treated parttime workers in 2013, even in the absence of any significantly larger increases in wages for these groups. In addition, placebos for 2011 and 2014 both exhibit some positive and significant impacts on employment retention. All of this casts further doubt on the results.

The larger magnitude negative point estimates of NLW introduction on employment retention when controlling for differential trends (DD-II, Table 50 vs DD-I, Table 45) can be explained by the positive estimated trend in employment retention rates for the treated wage group. That is, employment retention among workers whose wages are low enough to be directly affected by NMW/NLW upratings seems to be rising relative to those with slightly higher earnings. Our results indicate that in the absence of the NLW introduction, if pre-treatment trends had continued, then employment retention rates for lowest-wage workers would have continued to rise for men. However, due to negative impact of the NLW introduction on ERRs, retention rates for men have risen less than they otherwise would have.

Weighting by the size of the minimum wage uprating

Now we consider the results of specification DD-III (equation 16, Table 55) which weights

each observation by the nominal increase in the minimum wage in that year. The coefficients can thus be interpreted as elasticities: A negative point estimate gives the percent decrease in employment retention rates for each percent increase in the nominal minimum wage rate. The results are quite consistent with the elasticities implied by DD-I and DD-II described above. The elasticity across all workers is about 0.3, but the elasticity for women is estimated to be about -0.7. The estimated elasticity for fulltime women exposed to the largest wage increases is somewhat higher in magnitude still at -1.1. The estimates for all workers and for full-time women are significant at the 0.1% level. We do not, however, estimate any significant negative elasticity of employment retention to increases in the minimum wage for men.

4.2.3 Hours worked

The dependent variable is now the change in hours worked, conditional on remaining employed.

NLW introduction as the only treated period

Once again, we find no conclusive evidence of an impact of the introduction of the NLW on hours worked conditional on remaining employed. While we do find one negative and marginally significant coefficient estimates, the placebo test results cast doubt on its robustness.

In the simplest specification (DD-I, Table 56), we find no evidence of any impact of the NLW on hours worked. Allowing for a differential trend for the treated wage group (DD-II, Table 189) shows a small reduction in hours for parttime women of about 34 minutes weekly, but only significant at the 5% level. Placebo tests also lead to some negative impact on hours worked for part-time men when 2013 is taken to be the treated year, albeit only significant at the 10% level (DD-II, Tables 57 to 60). This again casts some doubt on the validity of the results.

Weighting by the size of the minimum wage uprating

In the specification which weights by the size of the minimum wage uprating (DD-III, Table 66), we do not find any estimates of an elasticity of hours with respect to minimum wage increases that are statistically significantly different from zero.

4.3 DD Analysis using individual level LFS records

4.3.1 Wages

Results for real wage growth regressions using the “difference in differences” DD specifications on LFS data are presented in Tables 69 to 81. Throughout, we focus on workers aged 25-59, a group which is eligible for the National Living Wage when it is introduced in 2016. Pooling across all groups (i.e. men and women, part-time and full-time workers), in the baseline specification (equation 4 and Table 69), we do not find any significant wage growth, unless we restrict attention to those workers who were previously earning at or very near to the old minimum wage; in this case wage growth is estimated to be 1.7pp higher upon introduction of the NLW, at 0.1% significance.

Tables 70 to 74 report the results of placebo tests for specification DD-I, in which the treated period is (counterfactually) taken to be the years 2011, 2012, 2013 or 2014. The estimated larger increases in real wages for the treated wage group pass the placebo tests in all years.

When we control for differential trends in wage growth for treated and control wage groups we fail to find any significant wage growth (equation 5 and Table 75).

In Table 81 we take into account earlier up-ratings of the NMW, by including them as treatment periods and weighting by the size of the increase in the NMW or NLW in order to capture the impact of the magnitudes of the NMW/NLW uprating. These results suggest higher real wage growth rates for the treated group of only about 0.5pp for each percentage point increase in the nominal minimum wage.

Overall our estimates using the LFS provide some evidence that wage growth is higher for workers in the treated wage groups when the NLW is introduced, although the estimated increases in wage growth are smaller in magnitude than for ASHE data.

4.3.2 Employment retention

In the LFS data, as shown in tables 82 (DD-I), 83 (DD-II), and 84 (DD-III), we find no evidence that the introduction of the NLW led to a reduction in employment retention rates.

4.3.3 Hours worked

In the baseline specification (Table 85), we find some evidence of a decrease in hours worked conditional on remaining employed, but only for part-time women, and only when restricted to those workers who were previously earning at or very near to the old minimum wage, or when using the wage gap estimator. The conditional change in hours is measured in units of weekly hours worked, so the point estimate of -1.578 corresponds to a decrease in weekly hours worked by part-time women of just over one and one half hours. However, as shown in Tables 86-89 these results do not pass the placebo tests in 2011. A similar pattern emerges when we allow for a differential trend, the effect for part time women remains and is slightly larger in magnitude (Table 91), but this result is not robust to the placebo test for 2011 (Table 92).

The results from the weighted DD regressions (Table 97) follow a similar pattern, although now the coefficients should be interpreted as giving the reduction in weekly hours for each percentage point increase in the nominal minimum wage. Table 97 shows a small decrease in weekly hours for part time women of about 7 minutes for each percentage point increase in the minimum wage.

5 Conclusion

This report has presented our interim findings on the impact of introducing the NLW on real wage growth, employment retention and weekly hours worked. We used both differences in differences (DD) and difference in differences in differences (DDD) approaches, and applied to longitudinal ASHE and to longitudinal LFS data. Our results are quite consistent across the two approaches and the two data sources used.

We consistently find that the introduction of the NLW has led to higher rates of real wage growth for the treated groups of workers who were directly affected by it. The estimated increases in wage growth ranged from 1.0pp to 5.0pp for all workers, and from 1.7pp to 5.0pp for workers exposed to the largest wage increases, because they were earning at or very close to the old NMW of £6.50 before the NLW was introduced at £7.20 in April of 2016.

At this stage, however, we find no conclusive evidence that the introduction of the NLW

led to a statistically significant decline in employment retention rates. We do find some statistically significant negative coefficients in some specifications using ASHE data, but these are not robust to placebo tests. We find no evidence of a negative impact on employment retention in the LFS data.

We also find no conclusive evidence of a statistically significant impact on hours worked for those who remain employed. While some of the regression estimates from the DDD approach suggest that hours worked might have increased slightly for the youngest group of treated works, these results are not fully robust to placebo tests. In contrast, while some of the regression estimates for the DD approach seem to suggest small negative effects on hours worked for some groups, these also do not seem to be fully robust to placebo effect. When we use a DD specification on LFS data whose coefficients can be interpreted as elasticities, we estimate a weakly significant decline of about 7 minutes worked weekly for each percentage point increase in the minimum wage, but only for part-time women.

6 References

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7 ASHE descriptives

Table 1: Sample sizes from the ASHE longitudinal panel

	Treated wage				Control wage			
	female		male		female		male	
	TA	CA	TA	CA	TA	CA	TA	CA
2011/12	1861	348	1009	286	5523	789	2941	713
2012/13	1124	224	609	160	5640	831	2980	696
2013/14	3492	713	2110	617	5588	797	2849	712
2014/15	1978	395	1035	296	6316	866	3611	806
2015/16	9571	1613	5439	1378	5963	750	3729	707

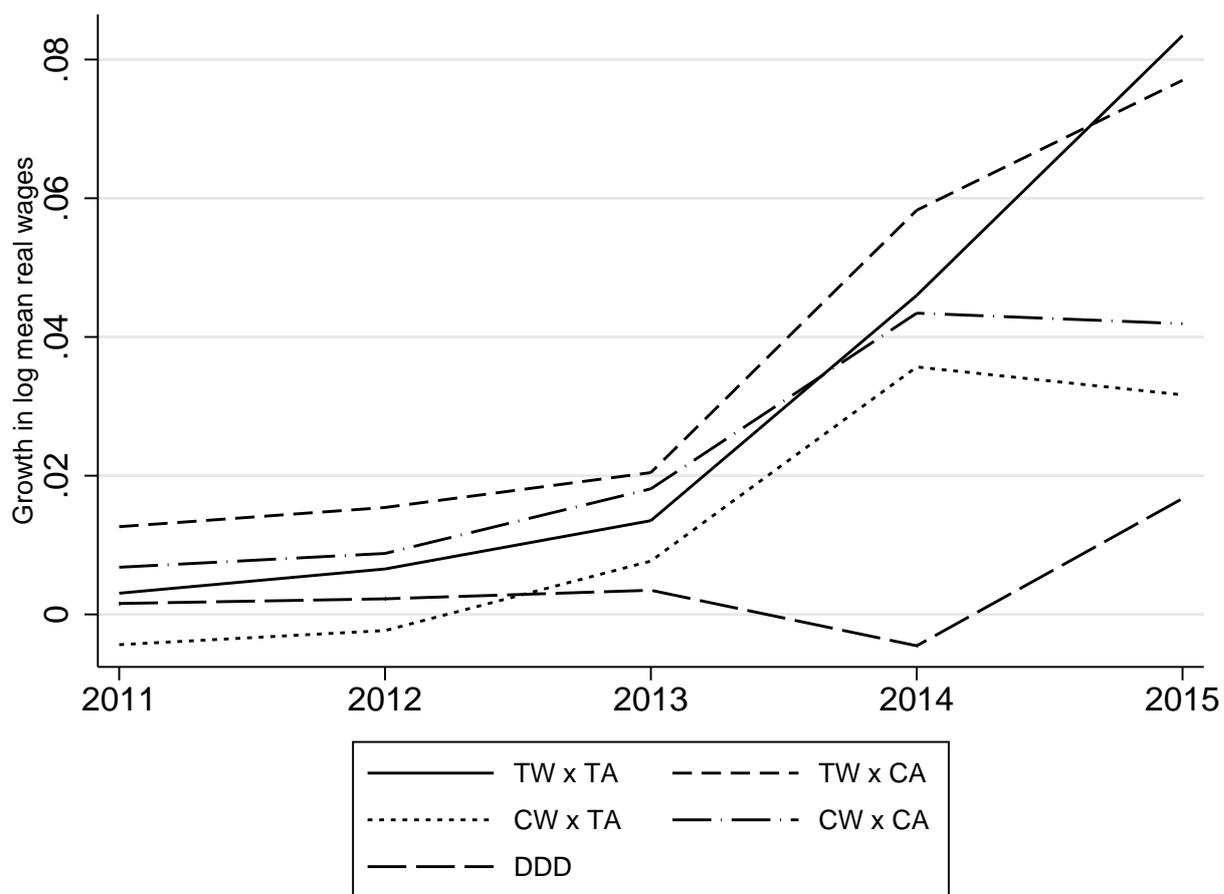
Table 2: Annual percentage increase in median pay by treatment and comparison group and by year (ASHE)

	all individuals	treated group	0-10% comparison group
Real			
2011/12	-2.4	-0.9	-1.1
2012/13	-1.0	-1.3	-0.5
2013/14	-1.8	1.4	1.4
2014/15	1.3	5.1	10.6
2015/16	1.2	8.6	3.8
Nominal			
2011/12	0.6	2.0	1.9
2012/13	1.4	1.1	1.8
2013/14	0.02	3.2	3.2
2014/15	1.1	4.9	10.4
2015/16	1.5	9.0	4.1

Table 3: NMW/NLW rates

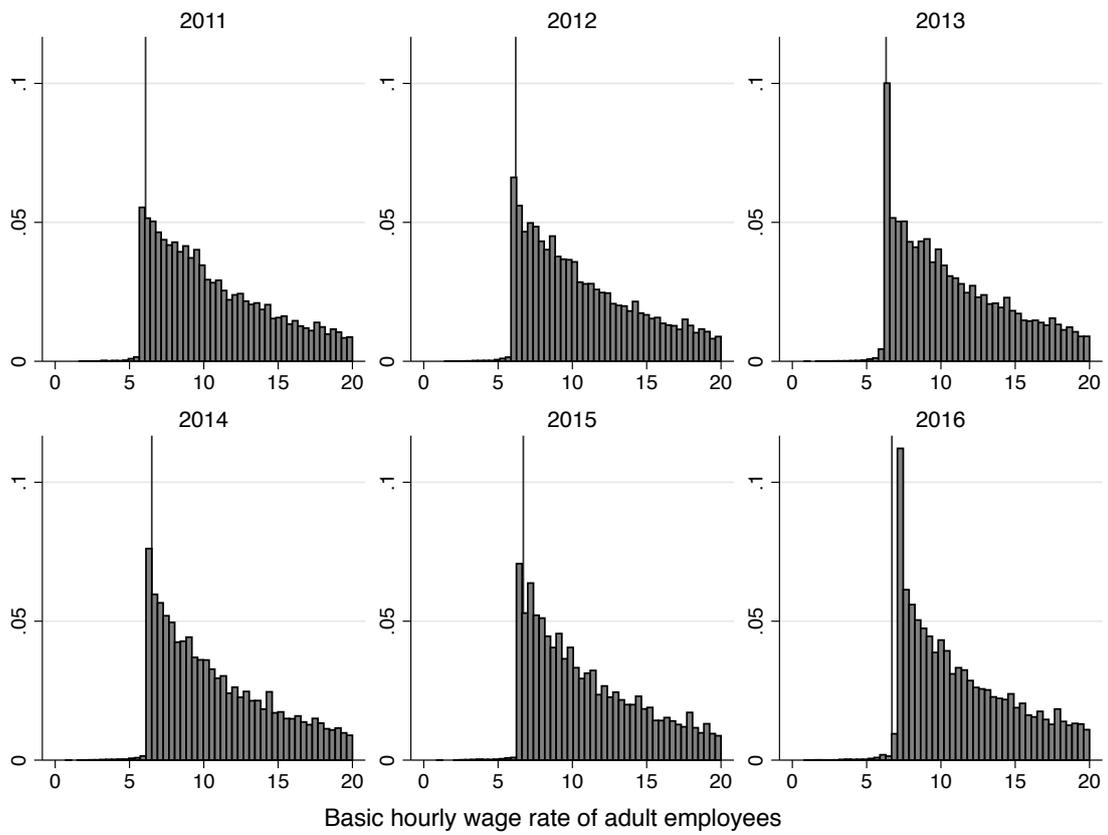
Nominal				
	Over 25 NMW/NLW	Under 25 NMW/NLW	% change over 25	% change under 25
2011	5.93	5.93		
2012	6.08	6.08	2.5	2.5
2013	6.19	6.19	1.8	1.8
2014	6.31	6.31	1.9	1.9
2015	6.50	6.50	3.0	3.0
2016	7.20	6.70	10.8	3.1
Real				
	Over 25 NMW/NLW	Under 25 NMW/NLW	% change over 25	% change under 25
2011	6.29	6.29		
2012	6.30	6.30	0.2	0.2
2013	6.33	6.33	0.5	0.5
2014	6.36	6.36	0.5	0.5
2015	6.50	6.50	2.2	2.2
2016	7.18	6.68	10.5	2.8

Figure 1: Mean growth in wages for treated and control groups (ASHE)



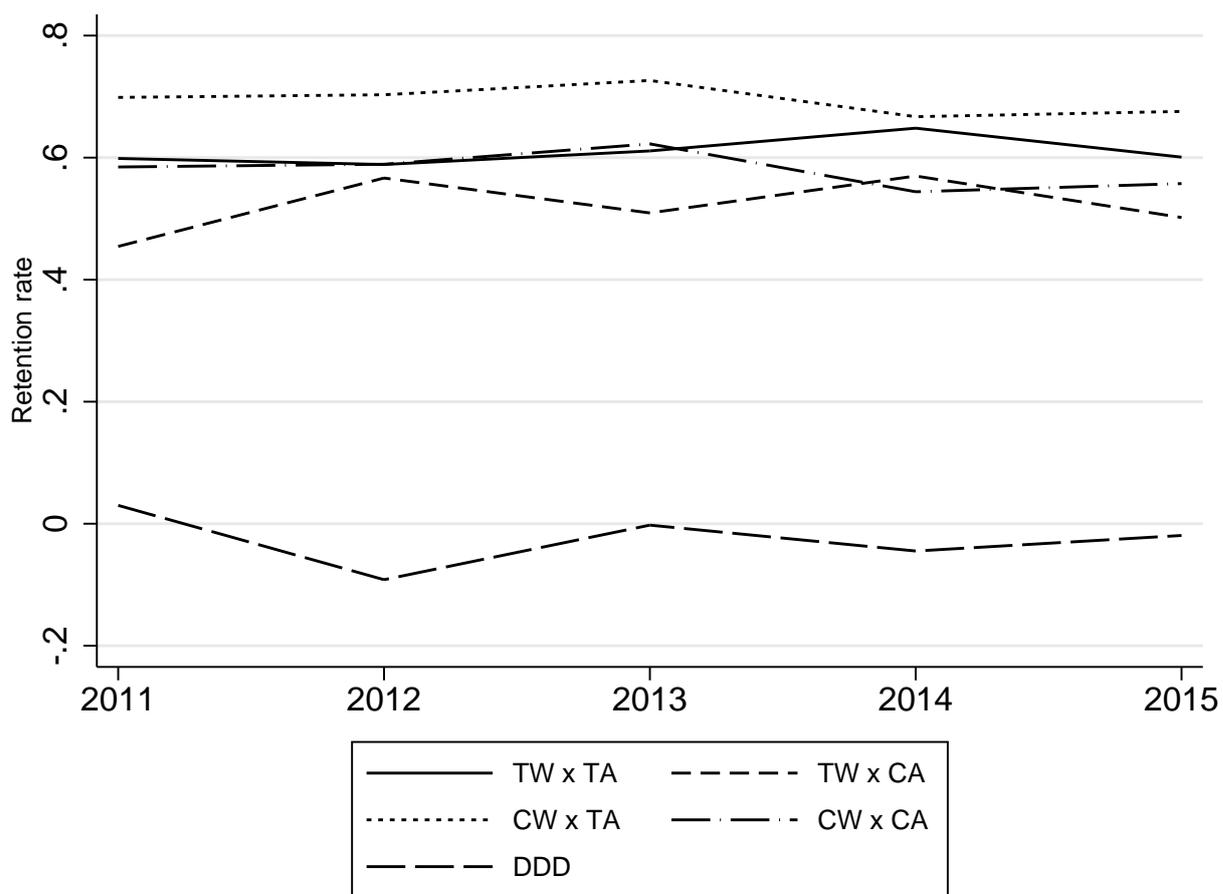
Note.: TW x TA represents the treated wage and treated age group; TW x CA the treated wage and control age group; CW x TA the control wage and treated age group; and CW x CA the control wage and control age group.

Figure 2: Distribution of wages for adults, ASHE



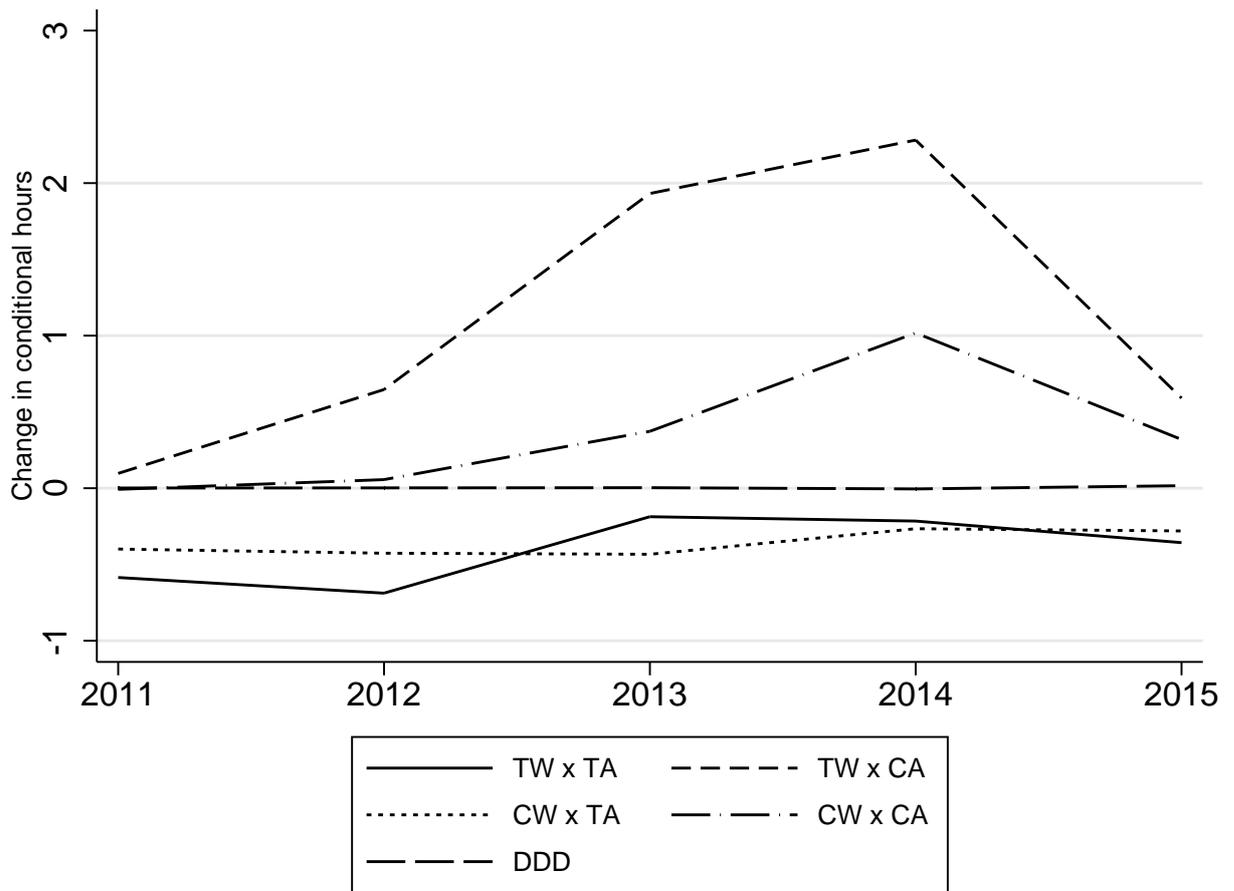
Note.: Wages for adults aged >21 for 2010-2015, and for adults aged >25 in 2016.

Figure 3: Mean growth in employment retention for treated and control groups (ASHE)



Note.: TW x TA represents the treated wage and treated age group; TW x CA the treated wage and control age group; CW x TA the control wage and treated age group; and CW x CA the control wage and control age group.

Figure 4: Mean growth in conditional hours worked for treated and control groups (ASHE)



Note.: TW x TA represents the treated wage and treated age group; TW x CA the treated wage and control age group; CW x TA the control wage and treated age group; and CW x CA the control wage and control age group.

8 ASHE regression results

8.1 DDD Wages

Table 4: Real wage growth, specification DDD-I

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.010* (0.004)	-0.000 (0.009)	0.009 (0.009)	0.018* (0.008)	0.006 (0.009)
δ (25-30)	0.003 (0.005)	0.010 (0.011)	0.005 (0.011)	0.002 (0.009)	0.004 (0.012)
δ (25-59) (old)	0.032*** (0.005)	0.035** (0.012)	0.032** (0.010)	0.026* (0.011)	0.029** (0.010)
δ (25-30) (old)	0.022*** (0.006)	0.027* (0.014)	0.033* (0.014)	0.013 (0.010)	0.017 (0.013)
δ (25-59) (wg)	0.026*** (0.006)	0.026* (0.012)	0.024* (0.011)	0.026** (0.010)	0.024* (0.012)
δ (25-30) (wg)	0.019** (0.006)	0.032* (0.014)	0.023 (0.014)	0.017 (0.011)	0.009 (0.014)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: Real wage growth, specification DDD-I Placebo 2011

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.002 (0.005)	0.009 (0.013)	-0.004 (0.011)	-0.009 (0.009)	0.002 (0.012)
δ (25-30)	-0.002 (0.007)	0.005 (0.016)	-0.003 (0.015)	-0.006 (0.011)	-0.001 (0.014)
δ (25-59) (old)	-0.001 (0.009)	0.011 (0.024)	0.009 (0.014)	-0.019 (0.028)	-0.005 (0.016)
δ (25-30) (old)	0.005 (0.012)	0.003 (0.026)	0.026 (0.025)	-0.008 (0.025)	-0.015 (0.021)
δ (25-59) (wg)	-0.006 (0.008)	0.012 (0.022)	-0.012 (0.018)	-0.024 (0.018)	0.005 (0.016)
δ (25-30) (wg)	-0.004 (0.011)	0.005 (0.023)	-0.005 (0.023)	-0.018 (0.019)	0.006 (0.021)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 6: Real wage growth, specification DDD-I Placebo 2012

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.002 (0.005)	0.002 (0.013)	0.010 (0.011)	-0.002 (0.009)	0.002 (0.010)
δ (25-30)	0.002 (0.007)	0.002 (0.016)	0.009 (0.015)	-0.001 (0.012)	0.001 (0.015)
δ (25-59) (old)	-0.004 (0.007)	-0.031 (0.020)	-0.004 (0.015)	0.002 (0.010)	-0.004 (0.013)
δ (25-30) (old)	-0.006 (0.010)	-0.036+ (0.022)	-0.007 (0.021)	0.018 (0.016)	-0.002 (0.030)
δ (25-59) (wg)	0.002 (0.007)	-0.015 (0.022)	0.018 (0.015)	0.001 (0.012)	-0.002 (0.015)
δ (25-30) (wg)	0.002 (0.011)	-0.020 (0.023)	0.023 (0.023)	0.007 (0.017)	0.000 (0.025)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 7: Real wage growth, specification DDD-I Placebo 2013

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.002 (0.004)	0.008 (0.011)	-0.007 (0.010)	0.005 (0.007)	0.001 (0.009)
δ (25-30)	0.005 (0.006)	0.016 (0.013)	-0.008 (0.013)	0.005 (0.009)	0.004 (0.012)
δ (25-59) (old)	0.002 (0.006)	0.019 (0.016)	0.008 (0.013)	0.001 (0.008)	-0.004 (0.010)
δ (25-30) (old)	0.003 (0.008)	0.020 (0.017)	-0.001 (0.019)	-0.002 (0.011)	0.005 (0.016)
δ (25-59) (wg)	0.003 (0.006)	0.016 (0.014)	-0.002 (0.013)	0.007 (0.009)	-0.004 (0.011)
δ (25-30) (wg)	0.006 (0.007)	0.024 (0.016)	-0.010 (0.017)	0.006 (0.011)	-0.004 (0.015)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 8: Real wage growth, specification DDD-I Placebo 2014

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.003 (0.005)	-0.020 (0.013)	0.006 (0.011)	0.000 (0.008)	-0.003 (0.011)
δ (25-30)	-0.004 (0.007)	-0.023 (0.015)	0.009 (0.015)	-0.001 (0.010)	-0.002 (0.014)
δ (25-59) (old)	0.001 (0.009)	-0.012 (0.024)	-0.030 (0.042)	0.005 (0.012)	0.017 (0.013)
δ (25-30) (old)	0.002 (0.011)	0.001 (0.025)	0.004 (0.044)	-0.004 (0.015)	0.008 (0.019)
δ (25-59) (wg)	-0.001 (0.008)	-0.023 (0.019)	0.000 (0.019)	0.002 (0.011)	0.006 (0.013)
δ (25-30) (wg)	-0.003 (0.009)	-0.023 (0.021)	0.009 (0.024)	-0.001 (0.014)	0.007 (0.018)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 9: Real wage growth, specification DDD-II

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.010*	-0.000	0.008	0.018*	0.006
	(0.004)	(0.009)	(0.009)	(0.008)	(0.009)
δ (25-30)	0.003	0.010	0.005	0.002	0.004
	(0.005)	(0.011)	(0.011)	(0.009)	(0.012)
δ (25-59) (old)	0.032***	0.034**	0.031**	0.026*	0.029**
	(0.005)	(0.012)	(0.010)	(0.011)	(0.010)
δ (25-30) (old)	0.021***	0.027*	0.032*	0.013	0.017
	(0.006)	(0.014)	(0.014)	(0.010)	(0.013)
δ (25-59) (wg)	0.026***	0.026*	0.023*	0.026**	0.025*
	(0.006)	(0.012)	(0.012)	(0.010)	(0.012)
δ (25-30) (wg)	0.019**	0.031*	0.022	0.017	0.009
	(0.006)	(0.014)	(0.014)	(0.011)	(0.014)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 10: Real wage growth, specification DDD-II Placebo 2011

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.002	0.009	-0.004	-0.009	0.002
	(0.005)	(0.013)	(0.011)	(0.009)	(0.012)
δ (25-30)	-0.002	0.005	-0.003	-0.006	-0.001
	(0.007)	(0.016)	(0.015)	(0.011)	(0.014)
δ (25-59) (old)	-0.001	0.011	0.010	-0.019	-0.005
	(0.009)	(0.024)	(0.015)	(0.028)	(0.016)
δ (25-30) (old)	0.005	0.004	0.026	-0.009	-0.015
	(0.012)	(0.026)	(0.025)	(0.023)	(0.021)
δ (25-59) (wg)	-0.006	0.012	-0.012	-0.024	0.005
	(0.008)	(0.022)	(0.018)	(0.018)	(0.016)
δ (25-30) (wg)	-0.004	0.005	-0.004	-0.018	0.006
	(0.011)	(0.023)	(0.023)	(0.019)	(0.021)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 11: Real wage growth, specification DDD-II Placebo 2012

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.002 (0.005)	0.002 (0.013)	0.009 (0.011)	-0.002 (0.009)	0.002 (0.010)
δ (25-30)	0.002 (0.007)	0.002 (0.016)	0.009 (0.015)	-0.001 (0.012)	0.001 (0.015)
δ (25-59) (old)	-0.004 (0.007)	-0.032 (0.020)	-0.004 (0.015)	0.002 (0.010)	-0.004 (0.013)
δ (25-30) (old)	-0.006 (0.010)	-0.036+ (0.022)	-0.008 (0.021)	0.018 (0.017)	-0.002 (0.030)
δ (25-59) (wg)	0.002 (0.007)	-0.015 (0.022)	0.018 (0.015)	0.001 (0.012)	-0.002 (0.015)
δ (25-30) (wg)	0.002 (0.011)	-0.020 (0.023)	0.023 (0.023)	0.007 (0.017)	0.001 (0.025)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 12: Real wage growth, specification DDD-II Placebo 2013

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.002 (0.004)	0.008 (0.011)	-0.007 (0.010)	0.005 (0.007)	0.001 (0.009)
δ (25-30)	0.005 (0.006)	0.016 (0.013)	-0.008 (0.013)	0.006 (0.009)	0.004 (0.012)
δ (25-59) (old)	0.002 (0.006)	0.018 (0.016)	0.010 (0.013)	0.001 (0.008)	-0.004 (0.010)
δ (25-30) (old)	0.003 (0.008)	0.020 (0.017)	-0.002 (0.019)	-0.002 (0.011)	0.002 (0.016)
δ (25-59) (wg)	0.003 (0.006)	0.016 (0.014)	-0.002 (0.013)	0.007 (0.009)	-0.004 (0.011)
δ (25-30) (wg)	0.006 (0.007)	0.024 (0.016)	-0.011 (0.017)	0.007 (0.011)	-0.004 (0.015)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 13: Real wage growth, specification DDD-II Placebo 2014

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.003 (0.005)	-0.020 (0.013)	0.005 (0.011)	0.001 (0.008)	-0.003 (0.011)
δ (25-30)	-0.004 (0.007)	-0.024 (0.015)	0.007 (0.015)	-0.001 (0.010)	-0.001 (0.014)
δ (25-59) (old)	0.001 (0.009)	-0.012 (0.024)	-0.032 (0.042)	0.006 (0.013)	0.018 (0.013)
δ (25-30) (old)	0.001 (0.011)	-0.001 (0.025)	0.001 (0.044)	-0.004 (0.015)	0.011 (0.020)
δ (25-59) (wg)	-0.001 (0.008)	-0.023 (0.019)	-0.001 (0.019)	0.003 (0.011)	0.006 (0.013)
δ (25-30) (wg)	-0.004 (0.009)	-0.024 (0.021)	0.007 (0.024)	-0.001 (0.014)	0.007 (0.019)

Robust regression. Standard errors in brackets.

⁺ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

8.2 DDD Employment retention

Table 14: Employment retention, specification DDD-I (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.030+ (0.018)	-0.075* (0.034)	-0.016 (0.034)	0.018 (0.035)	-0.047 (0.044)
δ (25-30)	-0.028 (0.021)	-0.087* (0.040)	-0.021 (0.041)	0.035 (0.042)	-0.032 (0.054)
δ (25-59) (old)	-0.042+ (0.022)	-0.081+ (0.048)	-0.101* (0.050)	-0.011 (0.038)	0.024 (0.047)
δ (25-30) (old)	-0.023 (0.027)	-0.049 (0.056)	-0.103+ (0.061)	0.019 (0.047)	0.023 (0.059)
δ (25-59) (wg)	-0.050* (0.022)	-0.120** (0.045)	-0.075+ (0.045)	-0.003 (0.040)	0.003 (0.050)
δ (25-30) (wg)	-0.042 (0.026)	-0.110* (0.052)	-0.093+ (0.055)	0.011 (0.048)	0.032 (0.062)

Robust standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 15: Employment retention, specification DDD-I Placebo 2011 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.057* (0.028)	0.065 (0.058)	0.003 (0.059)	0.145** (0.049)	-0.050 (0.064)
δ (25-30)	0.072* (0.034)	0.066 (0.067)	0.090 (0.072)	0.165** (0.060)	-0.049 (0.077)
δ (25-59) (old)	0.001 (0.052)	0.025 (0.113)	-0.130 (0.123)	0.126 (0.085)	-0.220* (0.111)
δ (25-30) (old)	0.058 (0.063)	0.076 (0.129)	0.058 (0.138)	0.250* (0.104)	-0.371** (0.133)
δ (25-59) (wg)	0.053 (0.044)	0.071 (0.092)	-0.039 (0.097)	0.188* (0.073)	-0.159 (0.098)
δ (25-30) (wg)	0.083 (0.053)	0.094 (0.106)	0.112 (0.114)	0.247** (0.091)	-0.236* (0.118)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 16: Employment retention, specification DDD-I Placebo 2012 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.071* (0.032)	-0.142* (0.071)	-0.000 (0.062)	-0.088 (0.058)	-0.032 (0.074)
δ (25-30)	-0.116** (0.039)	-0.172* (0.079)	-0.047 (0.077)	-0.197** (0.071)	-0.005 (0.090)
δ (25-59) (old)	-0.110* (0.044)	-0.123 (0.100)	-0.066 (0.092)	-0.179* (0.072)	-0.036 (0.096)
δ (25-30) (old)	-0.185*** (0.055)	-0.198+ (0.112)	0.049 (0.115)	-0.322*** (0.095)	-0.145 (0.123)
δ (25-59) (wg)	-0.126** (0.047)	-0.169 (0.105)	-0.049 (0.094)	-0.199* (0.081)	-0.043 (0.107)
δ (25-30) (old)	-0.199*** (0.058)	-0.242* (0.118)	-0.033 (0.118)	-0.355*** (0.104)	-0.069 (0.134)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 17: Employment retention, specification DDD-I Placebo 2013 (OLS)

	All	FT men	FT women	PT women	PT men
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.012 (0.024)	-0.016 (0.051)	-0.015 (0.050)	-0.002 (0.043)	0.089 (0.055)
δ (25-30)	0.020 (0.029)	-0.005 (0.058)	-0.042 (0.061)	0.010 (0.052)	0.085 (0.067)
δ (25-59) (old)	0.033 (0.033)	-0.051 (0.071)	0.058 (0.071)	0.063 (0.055)	0.038 (0.072)
δ (25-30) (old)	0.043 (0.040)	-0.022 (0.081)	-0.061 (0.086)	0.084 (0.070)	0.147 (0.090)
δ (25-59) (wg)	0.031 (0.031)	-0.030 (0.066)	0.016 (0.067)	0.048 (0.054)	0.102 (0.070)
δ (25-30) (wg)	0.039 (0.038)	-0.014 (0.076)	-0.068 (0.081)	0.057 (0.067)	0.156+ (0.085)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 18: Employment retention, specification DDD-I Placebo 2014 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.021 (0.027)	0.020 (0.057)	0.007 (0.054)	-0.053 (0.046)	-0.044 (0.064)
δ (25-30)	-0.012 (0.033)	0.035 (0.065)	0.004 (0.066)	-0.005 (0.057)	-0.097 (0.077)
δ (25-59) (old)	0.070 (0.045)	0.181+ (0.093)	0.064 (0.094)	0.006 (0.077)	0.153 (0.106)
δ (25-30) (old)	0.087 (0.056)	0.197+ (0.108)	0.055 (0.119)	0.017 (0.098)	0.125 (0.133)
δ (25-59) (wg)	-0.006 (0.039)	0.054 (0.081)	0.043 (0.081)	-0.078 (0.066)	-0.002 (0.089)
δ (25-30) (wg)	0.007 (0.047)	0.078 (0.093)	0.054 (0.100)	-0.037 (0.083)	-0.066 (0.109)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 19: Employment retention, specification DDD-II (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.030+ (0.018)	-0.074* (0.034)	-0.018 (0.034)	0.016 (0.035)	-0.044 (0.044)
δ (25-30)	-0.025 (0.021)	-0.085* (0.040)	-0.018 (0.041)	0.038 (0.042)	-0.029 (0.054)
δ (25-59) (old)	-0.034 (0.022)	-0.075 (0.049)	-0.095+ (0.050)	-0.001 (0.038)	0.028 (0.048)
δ (25-30) (old)	-0.021 (0.027)	-0.048 (0.056)	-0.105+ (0.061)	0.022 (0.047)	0.022 (0.059)
δ (25-59) (wg)	-0.046* (0.022)	-0.116** (0.045)	-0.075+ (0.045)	0.002 (0.040)	0.005 (0.050)
δ (25-30) (wg)	-0.039 (0.026)	-0.107* (0.052)	-0.093+ (0.055)	0.016 (0.048)	0.033 (0.062)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 20: Employment retention, specification DDD-II Placebo 2011 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.058* (0.028)	0.069 (0.058)	0.004 (0.059)	0.144** (0.049)	-0.049 (0.064)
δ (25-30)	0.073* (0.034)	0.068 (0.067)	0.091 (0.072)	0.165** (0.060)	-0.049 (0.077)
δ (25-59) (old)	0.000 (0.052)	0.021 (0.113)	-0.130 (0.124)	0.126 (0.085)	-0.219* (0.111)
δ (25-30) (old)	0.058 (0.063)	0.071 (0.129)	0.058 (0.138)	0.251* (0.104)	-0.373** (0.133)
δ (25-59) (wg)	0.054 (0.044)	0.074 (0.092)	-0.039 (0.097)	0.188* (0.073)	-0.159 (0.098)
δ (25-30) (wg)	0.083 (0.053)	0.094 (0.106)	0.113 (0.114)	0.249** (0.091)	-0.237* (0.118)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 21: Employment retention, specification DDD-II Placebo 2012 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.071* (0.032)	-0.141* (0.071)	-0.001 (0.062)	-0.090 (0.058)	-0.032 (0.074)
δ (25-30)	-0.116** (0.039)	-0.170* (0.080)	-0.048 (0.077)	-0.197** (0.071)	-0.004 (0.090)
δ (25-59) (old)	-0.111* (0.044)	-0.119 (0.100)	-0.070 (0.092)	-0.182* (0.072)	-0.039 (0.096)
δ (25-30) (old)	-0.186*** (0.055)	-0.197+ (0.112)	0.049 (0.115)	-0.324*** (0.095)	-0.147 (0.123)
δ (25-59) (wg)	-0.127** (0.047)	-0.166 (0.105)	-0.053 (0.094)	-0.200* (0.081)	-0.046 (0.107)
δ (25-30) (wg)	-0.200*** (0.058)	-0.241* (0.118)	-0.035 (0.118)	-0.355*** (0.104)	-0.071 (0.134)

Robust standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 22: Employment retention, specification DDD-II Placebo 2013 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.011 (0.024)	-0.014 (0.051)	-0.015 (0.050)	-0.004 (0.043)	0.091 (0.055)
δ (25-30)	0.020 (0.029)	-0.003 (0.058)	-0.042 (0.061)	0.009 (0.052)	0.087 (0.067)
δ (25-59) (old)	0.033 (0.033)	-0.051 (0.071)	0.055 (0.071)	0.062 (0.055)	0.043 (0.072)
δ (25-30) (old)	0.043 (0.040)	-0.024 (0.081)	-0.056 (0.086)	0.082 (0.070)	0.149+ (0.090)
δ (25-59) (wg)	0.030 (0.031)	-0.028 (0.066)	0.013 (0.067)	0.049 (0.054)	0.101 (0.070)
δ (25-30) (wg)	0.038 (0.038)	-0.013 (0.076)	-0.069 (0.081)	0.060 (0.067)	0.155+ (0.085)

Robust standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 23: Employment retention, specification DDD-II Placebo 2014 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.024 (0.027)	0.024 (0.057)	0.006 (0.054)	-0.059 (0.047)	-0.051 (0.064)
δ (25-30)	-0.014 (0.033)	0.036 (0.065)	-0.001 (0.066)	-0.010 (0.058)	-0.096 (0.077)
δ (25-59) (old)	0.064 (0.046)	0.190* (0.093)	0.054 (0.094)	-0.006 (0.078)	0.141 (0.107)
δ (25-30) (old)	0.079 (0.057)	0.200+ (0.108)	0.036 (0.120)	0.002 (0.099)	0.134 (0.134)
δ (25-59) (wg)	-0.011 (0.039)	0.062 (0.081)	0.038 (0.081)	-0.088 (0.067)	-0.015 (0.090)
δ (25-30) (wg)	0.003 (0.047)	0.081 (0.093)	0.042 (0.100)	-0.045 (0.083)	-0.063 (0.110)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

8.3 DDD Conditional hours

Table 24: Change in conditional hours, specification DDD-I

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.095 (0.332)	0.694 (0.516)	0.319 (0.509)	-0.637 (0.884)	-0.280 (1.274)
δ (25-30)	0.353 (0.451)	0.171 (0.641)	0.457 (0.674)	-0.466 (1.153)	1.299 (1.685)
δ (25-59) (old)	0.520 (0.499)	0.840 (0.875)	1.324 (0.844)	-0.066 (1.102)	-0.206 (1.475)
δ (25-30) (old)	1.507* (0.677)	0.869 (1.059)	1.345 (1.159)	1.894 (1.425)	1.349 (2.062)
δ (25-59) (wg)	0.549 (0.453)	1.305+ (0.754)	0.687 (0.715)	0.047 (1.079)	0.385 (1.508)
δ (25-30) (wg)	1.239* (0.609)	0.844 (0.929)	0.741 (0.974)	1.174 (1.404)	2.215 (2.068)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 25: Change in conditional hours, specification Placebo 2011 DDD-I

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.290 (0.523)	-0.204 (0.730)	1.487 (0.956)	-1.089 (1.272)	1.394 (2.065)
δ (25-30)	0.590 (0.714)	-0.076 (0.992)	1.639 (1.154)	-0.610 (1.571)	1.241 (2.651)
δ (25-59) (old)	-1.103 (1.241)	2.684+ (1.623)	0.401 (2.949)	-4.205 (3.038)	-4.262 (5.130)
δ (25-30) (old)	-0.765 (1.614)	3.491 (2.211)	-0.333 (3.231)	-2.739 (3.098)	-0.431 (5.700)
δ (25-59) (wg)	0.004 (0.883)	-0.208 (1.171)	2.626 (1.794)	-1.832 (1.854)	0.139 (3.488)
δ (25-30) (wg)	0.696 (1.188)	0.774 (1.669)	2.933 (2.103)	-0.745 (2.480)	0.100 (4.756)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 26: Change in conditional hours, specification Placebo 2012 DDD-I

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.527 (0.577)	-0.394 (0.792)	-0.712 (0.848)	-2.978 (1.934)	1.061 (2.163)
δ (25-30)	-1.036 (0.777)	-0.057 (1.003)	-1.316 (1.244)	-2.999+ (1.773)	0.007 (2.870)
δ (25-59) (old)	-0.474 (0.838)	-0.388 (1.259)	-1.302 (1.227)	-1.962 (2.135)	1.681 (2.780)
δ (25-30) (old)	-0.763 (1.128)	0.414 (1.547)	-3.308+ (1.873)	-0.448 (2.261)	1.114 (4.561)
δ (25-59) (wg)	-0.700 (0.847)	-0.146 (1.219)	-1.536 (1.271)	-3.409 (2.543)	1.578 (3.156)
δ (25-30) (wg)	-1.066 (1.158)	0.561 (1.563)	-2.727 (1.956)	-2.913 (2.522)	1.588 (4.853)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 27: Change in conditional hours, specification DDD-I Placebo 2013

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.141 (0.460)	-0.247 (0.706)	-0.282 (0.718)	1.503 (1.234)	-0.875 (1.649)
δ (25-30)	-0.516 (0.627)	-0.513 (0.930)	-0.921 (0.957)	0.457 (1.393)	0.131 (2.145)
δ (25-59) (old)	0.112 (0.690)	-1.750+ (1.033)	0.596 (1.029)	2.396 (1.725)	1.118 (2.643)
δ (25-30) (old)	0.267 (0.897)	-1.947 (1.333)	1.280 (1.500)	1.665 (1.878)	2.075 (3.282)
δ (25-59) (wg)	0.219 (0.629)	-0.890 (0.956)	-0.376 (0.971)	2.501 (1.638)	0.974 (2.242)
δ (25-30) (wg)	-0.098 (0.838)	-1.407 (1.261)	-0.751 (1.345)	1.390 (1.797)	1.603 (2.929)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 28: Change in conditional hours, specification DDD-I Placebo 2014

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.372 (0.516)	0.831 (0.790)	-0.249 (0.761)	0.939 (1.342)	-1.445 (2.018)
δ (25-30)	0.922 (0.708)	0.781 (1.051)	0.696 (1.004)	2.244 (1.591)	-2.476 (2.575)
δ (25-59) (old)	0.856 (1.013)	1.846 (1.424)	0.578 (1.365)	0.546 (2.339)	-6.374 (6.376)
δ (25-30) (old)	0.735 (1.291)	0.858 (1.923)	1.733 (1.850)	0.240 (2.816)	-8.270 (5.097)
δ (25-59) (wg)	0.160 (0.870)	1.665 (1.234)	0.301 (1.181)	-0.171 (2.069)	-4.232 (3.301)
δ (25-30) (wg)	0.424 (1.093)	1.219 (1.620)	1.148 (1.611)	0.730 (2.303)	-5.458 (3.787)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 29: Change in conditional hours, specification DDD-II

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.055 (0.333)	0.702 (0.516)	0.275 (0.514)	-0.705 (0.886)	-0.318 (1.276)
δ (25-30)	0.320 (0.451)	0.176 (0.640)	0.390 (0.674)	-0.503 (1.155)	1.292 (1.685)
δ (25-59) (old)	0.463 (0.500)	0.834 (0.875)	1.265 (0.846)	-0.122 (1.112)	-0.302 (1.470)
δ (25-30) (old)	1.436* (0.678)	0.858 (1.059)	1.276 (1.156)	1.791 (1.429)	1.246 (2.065)
δ (25-59) (wg)	0.495 (0.455)	1.323+ (0.755)	0.623 (0.720)	-0.024 (1.087)	0.283 (1.510)
δ (25-30) (wg)	1.187+ (0.611)	0.843 (0.931)	0.663 (0.974)	1.123 (1.405)	2.199 (2.069)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 30: Change in conditional hours, specification DDD-II Placebo 2011

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.260 (0.523)	-0.204 (0.731)	1.493 (0.956)	-1.115 (1.272)	1.345 (2.050)
δ (25-30)	0.574 (0.714)	-0.067 (0.992)	1.674 (1.154)	-0.601 (1.568)	1.260 (2.658)
δ (25-59) (old)	-1.076 (1.242)	2.694+ (1.624)	0.390 (2.945)	-4.173 (3.037)	-4.045 (5.130)
δ (25-30) (old)	-0.766 (1.615)	3.493 (2.209)	-0.325 (3.238)	-2.781 (3.112)	-0.197 (5.726)
δ (25-59) (wg)	-0.018 (0.883)	-0.207 (1.171)	2.596 (1.814)	-1.840 (1.855)	0.127 (3.507)
δ (25-30) (wg)	0.675 (1.189)	0.776 (1.666)	2.942 (2.102)	-0.738 (2.483)	0.187 (4.777)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 31: Change in conditional hours, specification DDD-II Placebo 2012

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.563 (0.577)	-0.386 (0.793)	-0.772 (0.852)	-3.062 (1.935)	1.063 (2.159)
δ (25-30)	-1.064 (0.778)	-0.052 (1.003)	-1.418 (1.249)	-3.039+ (1.788)	0.008 (2.869)
δ (25-59) (old)	-0.525 (0.839)	-0.392 (1.261)	-1.387 (1.231)	-2.039 (2.136)	1.630 (2.781)
δ (25-30) (old)	-0.810 (1.129)	0.408 (1.544)	-3.441+ (1.874)	-0.546 (2.262)	0.953 (4.569)
δ (25-59) (wg)	-0.746 (0.848)	-0.126 (1.222)	-1.619 (1.271)	-3.485 (2.544)	1.551 (3.154)
δ (25-30) (wg)	-1.109 (1.159)	0.563 (1.563)	-2.852 (1.960)	-2.983 (2.514)	1.558 (4.855)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 32: Change in conditional hours, specification DDD-II Placebo 2013

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	-0.176 (0.459)	-0.237 (0.707)	-0.336 (0.722)	1.419 (1.239)	-0.857 (1.650)
δ (25-30)	-0.542 (0.627)	-0.510 (0.929)	-1.025 (0.962)	0.426 (1.397)	0.166 (2.149)
δ (25-59) (old)	0.098 (0.691)	-1.754+ (1.040)	0.547 (1.035)	2.400 (1.827)	1.181 (2.767)
δ (25-30) (old)	0.223 (0.897)	-1.949 (1.334)	1.198 (1.505)	1.530 (1.861)	2.063 (3.379)
δ (25-59) (wg)	0.182 (0.636)	-0.861 (0.958)	-0.457 (0.985)	2.457 (1.645)	0.958 (2.289)
δ (25-30) (wg)	-0.139 (0.838)	-1.411 (1.250)	-0.863 (1.359)	1.352 (1.802)	1.631 (2.928)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 33: Change in conditional hours, specification DDD-II Placebo 2014

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ (25-59)	0.346 (0.516)	0.832 (0.790)	-0.308 (0.763)	0.839 (1.352)	-1.258 (2.027)
δ (25-30)	0.881 (0.709)	0.766 (1.052)	0.612 (1.008)	2.071 (1.602)	-2.264 (2.580)
δ (25-59) (old)	0.863 (1.017)	1.801 (1.429)	0.493 (1.379)	0.470 (2.356)	-5.811 (6.378)
δ (25-30) (old)	0.699 (1.297)	0.786 (1.929)	1.620 (1.859)	-0.108 (2.815)	-7.926 (5.107)
δ (25-59) (wg)	0.152 (0.873)	1.686 (1.234)	0.204 (1.191)	-0.263 (2.088)	-3.794 (3.327)
δ (25-30) (wg)	0.378 (1.098)	1.192 (1.624)	1.004 (1.624)	0.453 (2.319)	-5.070 (3.815)

Robust regression. Standard errors in brackets.

⁺ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

8.4 DD Wages

Table 34: Real wage growth, specification DD-I (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.048*** (0.001)	0.035*** (0.003)	0.042*** (0.003)	0.057*** (0.002)	0.055*** (0.004)
δ (old)	0.045*** (0.001)	0.050*** (0.004)	0.044*** (0.003)	0.046*** (0.002)	0.037*** (0.004)
δ (wg)	0.067*** (0.001)	0.061*** (0.003)	0.063*** (0.003)	0.074*** (0.002)	0.065*** (0.004)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 35: Real wage growth, specification DD-I Placebo 2011 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.003+ (0.001)	0.010* (0.004)	0.000 (0.003)	0.002 (0.002)	0.001 (0.004)
δ (old)	0.007* (0.003)	0.003 (0.008)	-0.001 (0.006)	0.009* (0.004)	0.010 (0.008)
δ (wg)	0.011*** (0.002)	0.018* (0.007)	0.004 (0.005)	0.012*** (0.003)	0.009 (0.007)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 36: Real wage growth, specification DD-I Placebo 2012 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.002 (0.002)	-0.008+ (0.004)	0.007+ (0.004)	0.004* (0.002)	-0.001 (0.005)
δ (old)	0.006** (0.002)	-0.001 (0.005)	0.007 (0.005)	0.009*** (0.003)	-0.001 (0.005)
δ (wg)	0.008** (0.002)	-0.005 (0.006)	0.015* (0.006)	0.011*** (0.003)	0.001 (0.006)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 37: Real wage growth, specification DD-I Placebo 2013 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.006*** (0.001)	-0.008* (0.003)	-0.007** (0.003)	-0.005*** (0.002)	-0.001 (0.004)
δ (old)	-0.008*** (0.002)	-0.003 (0.005)	-0.013** (0.004)	-0.010*** (0.002)	0.001 (0.004)
δ (wg)	-0.013*** (0.002)	-0.013** (0.005)	-0.016*** (0.003)	-0.014*** (0.002)	-0.007 (0.005)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 38: Real wage growth, specification DD-I Placebo 2014 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.003* (0.001)	0.007+ (0.004)	0.004 (0.003)	0.002 (0.002)	0.001 (0.005)
δ (old)	0.005* (0.003)	0.005 (0.007)	0.020** (0.007)	0.003 (0.003)	-0.006 (0.005)
δ (wg)	0.008*** (0.002)	0.011+ (0.006)	0.015** (0.005)	0.006* (0.003)	0.003 (0.006)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 39: Real wage growth, specification DD-II (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.050*** (0.002)	0.037*** (0.005)	0.042*** (0.004)	0.060*** (0.002)	0.055*** (0.006)
δ (old)	0.050*** (0.003)	0.048*** (0.008)	0.037*** (0.007)	0.055*** (0.004)	0.046*** (0.007)
δ (wg)	0.073*** (0.002)	0.066*** (0.007)	0.064*** (0.005)	0.082*** (0.003)	0.070*** (0.007)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 40: Real wage growth, specification Placebo 2011 DD-II (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.004+ (0.002)	0.023*** (0.007)	-0.001 (0.006)	0.001 (0.003)	0.003 (0.007)
δ (old)	0.005 (0.004)	0.008 (0.011)	0.010 (0.009)	0.002 (0.005)	0.006 (0.010)
δ (wg)	0.015*** (0.004)	0.035** (0.011)	0.010 (0.009)	0.011* (0.005)	0.012 (0.011)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 41: Real wage growth, specification Placebo 2012 DD-II (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.002 (0.002)	-0.009* (0.004)	0.008+ (0.004)	0.004+ (0.002)	-0.001 (0.005)
δ (old)	0.005* (0.002)	-0.001 (0.006)	0.012* (0.006)	0.007* (0.003)	-0.006 (0.006)
δ (wg)	0.006* (0.002)	-0.009 (0.007)	0.017** (0.006)	0.008* (0.003)	-0.001 (0.007)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 42: Real wage growth, specification Placebo 2013 DD-II (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.006*** (0.001)	-0.008* (0.004)	-0.007** (0.003)	-0.005** (0.002)	-0.001 (0.004)
δ (old)	-0.008*** (0.002)	-0.003 (0.005)	-0.016*** (0.004)	-0.008*** (0.002)	0.003 (0.004)
δ (wg)	-0.013*** (0.002)	-0.012** (0.005)	-0.017*** (0.004)	-0.013*** (0.002)	-0.006 (0.005)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 43: Real wage growth, specification Placebo 2014 DD-II (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.008*** (0.002)	0.017** (0.006)	0.009* (0.004)	0.007* (0.003)	0.002 (0.006)
δ (old)	0.012*** (0.003)	0.007 (0.009)	0.025** (0.008)	0.013** (0.004)	-0.003 (0.007)
δ (wg)	0.020*** (0.003)	0.024** (0.008)	0.025*** (0.006)	0.020*** (0.003)	0.011 (0.008)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 44: Real wage growth, specification DD-III (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.005*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.006*** (0.000)	0.006*** (0.000)
δ (old)	0.005*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	0.004*** (0.000)
δ (wg)	0.007*** (0.000)	0.006*** (0.000)	0.007*** (0.000)	0.008*** (0.000)	0.007*** (0.000)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Weighted by NMW/NLW upratings.

8.5 DD Employment retention

Table 45: Employment retention, specification DD-I (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.052*** (0.007)	-0.026+ (0.014)	-0.069*** (0.014)	-0.059*** (0.011)	-0.019 (0.023)
δ (old)	-0.049*** (0.010)	-0.005 (0.023)	-0.107*** (0.023)	-0.043** (0.015)	-0.013 (0.025)
δ (wg)	-0.062*** (0.009)	-0.037+ (0.020)	-0.103*** (0.020)	-0.057*** (0.014)	-0.013 (0.026)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 46: Employment retention, specification DD-I Placebo 2011 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.015 (0.011)	-0.005 (0.025)	-0.043+ (0.025)	-0.002 (0.016)	-0.022 (0.032)
δ (old)	0.055* (0.025)	0.010 (0.061)	0.018 (0.057)	0.111** (0.036)	0.011 (0.063)
δ (wg)	-0.026 (0.018)	-0.032 (0.042)	-0.056 (0.041)	-0.000 (0.027)	-0.039 (0.050)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 47: Employment retention, specification DD-I Placebo 2012 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.006 (0.013)	0.018 (0.029)	-0.002 (0.029)	-0.026 (0.019)	0.013 (0.038)
δ (old)	0.006 (0.019)	-0.028 (0.044)	-0.011 (0.044)	0.015 (0.027)	0.041 (0.051)
δ (wg)	-0.008 (0.021)	-0.007 (0.046)	-0.006 (0.047)	-0.019 (0.030)	0.021 (0.056)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 48: Employment retention, specification DD-I Placebo 2013 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.034*** (0.010)	-0.027 (0.021)	0.003 (0.021)	-0.042** (0.014)	-0.054+ (0.028)
δ (old)	-0.046** (0.014)	-0.030 (0.033)	-0.022 (0.031)	-0.044* (0.021)	-0.092* (0.037)
δ (wg)	-0.026+ (0.013)	-0.010 (0.030)	0.003 (0.028)	-0.032+ (0.019)	-0.051 (0.036)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 49: Employment retention, specification DD-I Placebo 2014 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.062*** (0.011)	0.025 (0.024)	0.037 (0.023)	0.074*** (0.016)	0.085** (0.032)
δ (old)	0.054** (0.021)	0.098* (0.048)	0.044 (0.042)	-0.002 (0.032)	0.144** (0.054)
δ (wg)	0.070*** (0.017)	0.048 (0.038)	0.043 (0.036)	0.066** (0.025)	0.110* (0.047)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 50: Employment retention, specification DD-II (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.070*** (0.007)	-0.045*** (0.013)	-0.074*** (0.014)	-0.079*** (0.011)	-0.050* (0.022)
δ (old)	-0.069*** (0.010)	-0.049* (0.023)	-0.103*** (0.023)	-0.047** (0.016)	-0.060* (0.028)
δ (wg)	-0.097*** (0.009)	-0.077*** (0.018)	-0.110*** (0.019)	-0.092*** (0.014)	-0.069** (0.026)

Robust standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 51: Employment retention, specification DD-II Placebo 2011 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.050** (0.020)	0.008 (0.044)	-0.008 (0.043)	0.090** (0.028)	0.048 (0.057)
δ (old)	0.090* (0.036)	0.111 (0.086)	0.066 (0.081)	0.093+ (0.052)	0.082 (0.093)
δ (wg)	0.053+ (0.031)	0.022 (0.071)	-0.008 (0.069)	0.083+ (0.045)	0.055 (0.086)

Robust standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 52: Employment retention, specification DD-II Placebo 2012 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.005 (0.014)	0.022 (0.030)	0.014 (0.030)	-0.017 (0.020)	0.028 (0.039)
δ (old)	0.001 (0.021)	-0.009 (0.050)	-0.005 (0.049)	-0.021 (0.031)	0.068 (0.056)
δ (wg)	0.011 (0.022)	0.011 (0.049)	0.018 (0.049)	-0.008 (0.031)	0.051 (0.059)

Robust standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 53: Employment retention, specification DD-II Placebo 2013 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.046*** (0.010)	-0.031 (0.022)	-0.008 (0.021)	-0.055*** (0.015)	-0.072* (0.029)
δ (old)	-0.049** (0.015)	-0.050 (0.035)	-0.027 (0.032)	-0.029 (0.023)	-0.115** (0.040)
δ (wg)	-0.040** (0.014)	-0.021 (0.031)	-0.009 (0.029)	-0.043* (0.020)	-0.074* (0.038)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 54: Employment retention, specification DD-II Placebo 2014 (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.073*** (0.016)	0.039 (0.035)	0.007 (0.033)	0.097*** (0.023)	0.103* (0.046)
δ (old)	0.094*** (0.026)	0.101+ (0.060)	0.054 (0.054)	0.067+ (0.039)	0.188** (0.067)
δ (wg)	0.064** (0.022)	0.032 (0.049)	0.009 (0.047)	0.075* (0.032)	0.109+ (0.060)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Include linear trends for treated wage and age groups.

Table 55: Employment retention, specification DD-III (OLS)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.003*** (0.001)	-0.000 (0.002)	-0.007*** (0.002)	-0.004** (0.001)	0.001 (0.003)
δ (old)	-0.004*** (0.001)	0.001 (0.002)	-0.011*** (0.002)	-0.004* (0.002)	0.000 (0.003)
δ (wg)	-0.004*** (0.001)	-0.001 (0.002)	-0.010*** (0.002)	-0.004* (0.002)	0.001 (0.003)

Robust standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Weighted by NMW/NLW upratings.

8.6 DD Conditional hours

Table 56: Change in conditional hours, specification DD-I (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.021 (0.096)	-0.095 (0.205)	-0.048 (0.205)	-0.053 (0.136)	-0.122 (0.523)
δ (old)	0.228 (0.151)	0.017 (0.364)	0.006 (0.379)	0.058 (0.205)	0.538 (0.588)
δ (wg)	0.102 (0.136)	0.129 (0.310)	-0.055 (0.316)	-0.064 (0.187)	0.115 (0.618)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 57: Change in conditional hours, specification DD-I Placebo 2011 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.056 (0.145)	0.210 (0.341)	0.125 (0.336)	-0.441* (0.183)	0.982 (0.728)
δ (old)	0.050 (0.344)	1.849* (0.873)	-1.415 (0.947)	-0.156 (0.390)	0.254 (1.537)
δ (wg)	0.014 (0.249)	0.036 (0.617)	-0.074 (0.604)	-0.342 (0.309)	1.500 (1.154)

Robust regression. Standard errors in brackets.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 58: Change in conditional hours, specification DD-I Placebo 2012 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.089 (0.174)	-0.102 (0.402)	-0.026 (0.397)	-0.190 (0.221)	0.264 (0.861)
δ (old)	0.053 (0.255)	0.088 (0.632)	0.268 (0.647)	-0.399 (0.315)	1.504 (1.067)
δ (wg)	-0.110 (0.278)	0.044 (0.671)	-0.291 (0.701)	-0.367 (0.346)	0.702 (1.235)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 59: Change in conditional hours, specification DD-I Placebo 2013 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.053 (0.132)	-0.114 (0.307)	-0.218 (0.295)	0.151 (0.174)	-0.835 (0.623)
δ (old)	-0.043 (0.202)	-0.740 (0.498)	0.887+ (0.492)	0.075 (0.266)	-1.245 (0.803)
δ (wg)	-0.010 (0.184)	-0.071 (0.442)	0.537 (0.431)	0.095 (0.242)	-1.511+ (0.798)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 60: Change in conditional hours, specification DD-I Placebo 2014 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.183 (0.148)	0.012 (0.344)	0.170 (0.315)	0.403* (0.200)	-0.036 (0.722)
δ (old)	-0.008 (0.317)	0.348 (0.754)	-1.178+ (0.703)	0.580 (0.469)	0.662 (1.075)
δ (wg)	0.079 (0.242)	0.055 (0.566)	-0.625 (0.546)	0.427 (0.327)	0.853 (1.032)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 61: Change in conditional hours, specification DD-II (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.145 (0.167)	0.034 (0.378)	-0.037 (0.357)	-0.570* (0.229)	0.641 (0.839)
δ (old)	0.285 (0.322)	0.888 (0.811)	-0.083 (0.782)	-0.474 (0.436)	1.172 (1.228)
δ (wg)	0.055 (0.259)	0.148 (0.609)	0.081 (0.593)	-0.563 (0.349)	0.973 (1.145)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 62: Change in conditional hours, specification DD-II Placebo 2011 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.188 (0.259)	0.321 (0.601)	0.342 (0.589)	0.048 (0.332)	0.846 (1.272)
δ (old)	-0.008 (0.496)	2.004 (1.254)	-2.683* (1.300)	0.636 (0.606)	-0.569 (2.081)
δ (wg)	0.180 (0.428)	0.066 (1.039)	-0.600 (1.027)	0.345 (0.542)	1.972 (1.926)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 63: Change in conditional hours, specification DD-II Placebo 2012 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.052 (0.179)	-0.148 (0.413)	-0.032 (0.411)	-0.044 (0.225)	0.017 (0.888)
δ (old)	0.034 (0.288)	-0.413 (0.732)	0.394 (0.743)	-0.237 (0.344)	1.587 (1.212)
δ (wg)	-0.099 (0.291)	0.043 (0.706)	-0.384 (0.733)	-0.198 (0.360)	0.401 (1.300)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 64: Change in conditional hours, specification DD-II Placebo 2013 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.092 (0.137)	-0.091 (0.319)	-0.226 (0.302)	0.011 (0.184)	-0.680 (0.649)
δ (old)	-0.031 (0.222)	-0.602 (0.549)	0.940+ (0.515)	-0.113 (0.317)	-1.227 (0.820)
δ (wg)	-0.024 (0.194)	-0.071 (0.460)	0.601 (0.445)	-0.038 (0.259)	-1.429+ (0.830)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 65: Change in conditional hours, specification DD-II Placebo 2014 (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	0.171 (0.212)	0.212 (0.495)	0.379 (0.468)	0.003 (0.284)	1.098 (1.010)
δ (old)	0.044 (0.383)	1.387 (0.939)	-1.965* (0.885)	0.365 (0.544)	1.648 (1.423)
δ (wg)	0.075 (0.310)	0.107 (0.737)	-0.899 (0.708)	0.139 (0.415)	2.320+ (1.333)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Include linear trends for treated wage and age groups.

Table 66: Change in conditional hours, specification DD-III (Robust)

	All	FT men	FT women	PT women	PT men
	(1)	(2)	(3)	(4)	(5)
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
δ	-0.002 (0.010)	-0.011 (0.021)	-0.004 (0.021)	-0.002 (0.014)	-0.018 (0.054)
δ (old)	0.022 (0.015)	0.001 (0.037)	-0.005 (0.039)	0.006 (0.021)	0.057 (0.060)
δ (wg)	0.009 (0.014)	0.012 (0.032)	-0.010 (0.032)	-0.005 (0.019)	0.013 (0.063)

Robust regression. Standard errors in brackets.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Weighted by NMW/NLW upratings.

9 LFS descriptives

Table 67: Sample sizes from the LFS (matched cross sections, waves 1 and 3)

	Treatment group				Control group			
	female		male		female		male	
	before	after	before	after	before	after	before	after
2010	286	133	126	48	496	445	245	194
2011	382	300	176	141	383	400	170	169
2012	255	299	119	133	455	423	200	155
2013	320	268	140	113	315	385	150	184
2014	337	275	156	143	473	448	185	184
2015	338	360	188	160	421	447	201	199
2016	242	583	104	264	182	453	107	224

Note: Treatment group includes individuals paid at or above the existing NMW/NLW, but below the new NMW. Comparison group includes those paid 0-10% above the new NMW/NLW. Wage used to define treatment and comparison groups is *hrrate* (hourly rate). ‘Before’ and ‘after’ refer to the particular uprating; all up-ratings are October, except for 2016 which refers to the introduction of the NLW.

Table 68: Annual percentage increase in median pay by treatment and comparison group and by year (LFS)

	all individuals	treated group	0-10% comparison group
Real			
2011	-2.7	-0.8	-1.0
2012	-1.4	-1.6	-1.4
2013	-0.1	-0.4	-0.4
2014	-0.6	-0.06	1.1
2015	0.5	3.2	5.7
2016	2.3	10.4	5.9
Nominal			
2011	0.13	3.1	2.6
2012	1.2	1.7	2.2
2013	2.9	1.8	1.1
2014	1.8	1.9	3.5
2015	0.9	3.0	5.9
2016	2.5	10.8	6.3

Figure 5: Distribution of hrrate for adults aged >21, LFS (NMW upratings)

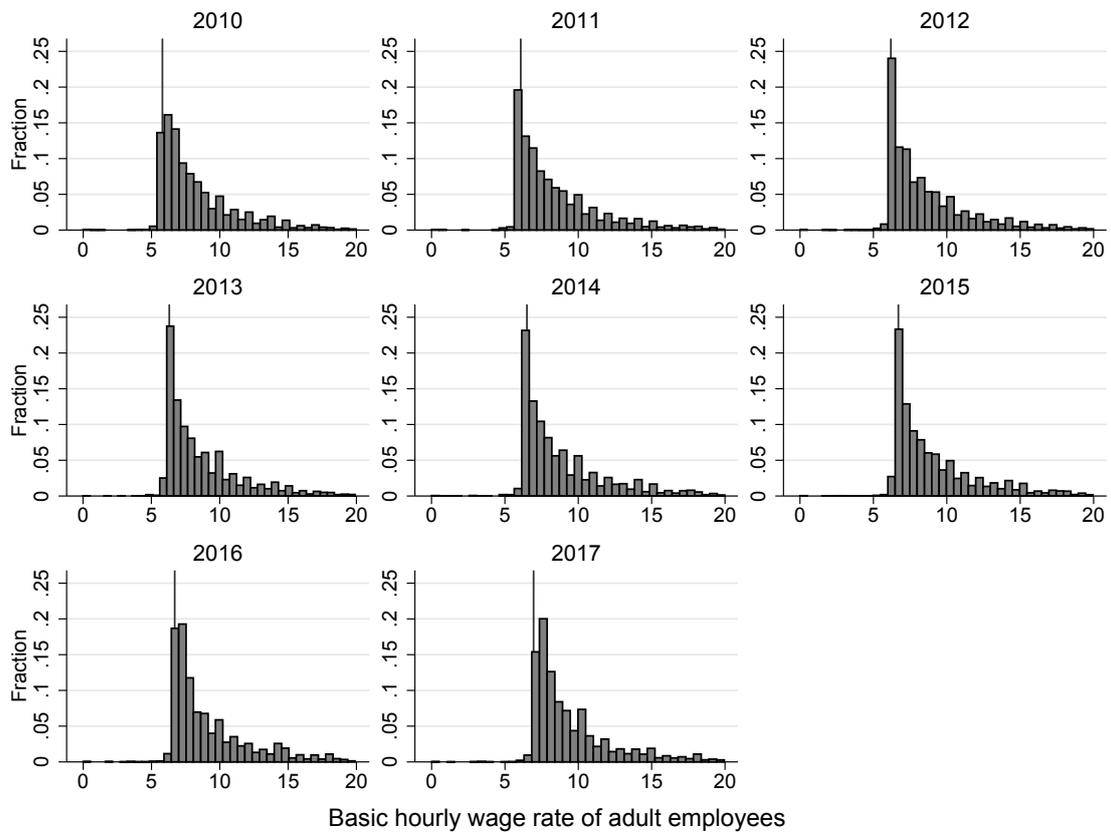


Figure 6: Distribution of hrrate for adults aged >25, LFS (NLW introduction)

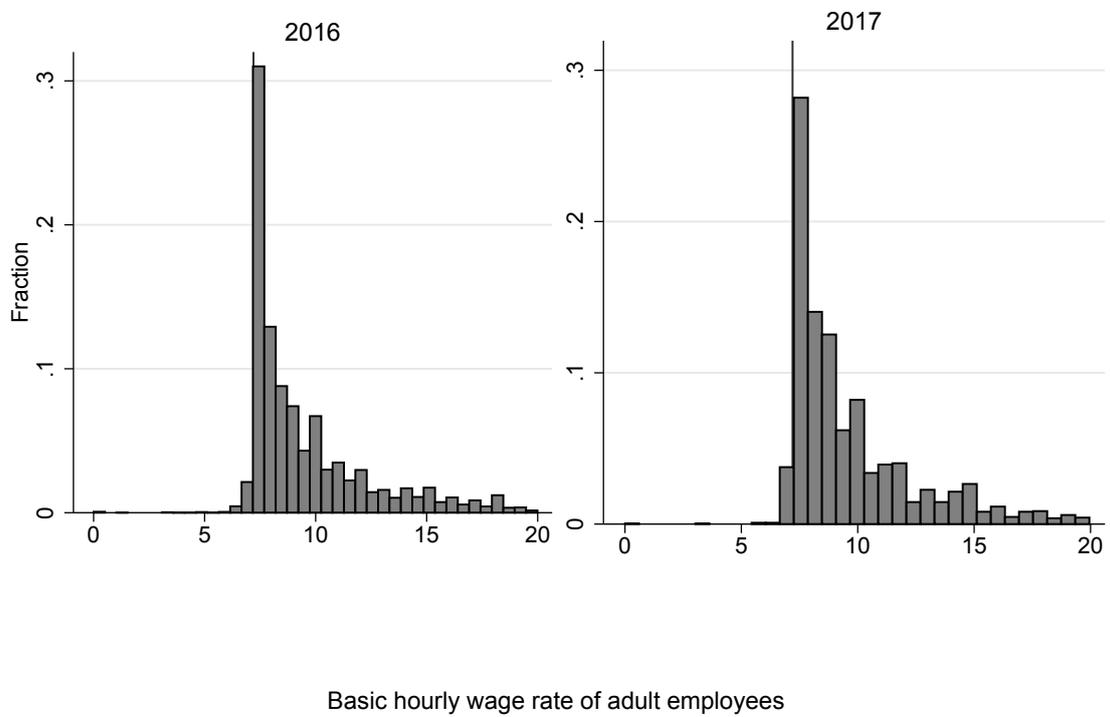


Figure 7: Mean and median growth in wages for treated and control groups (LFS)

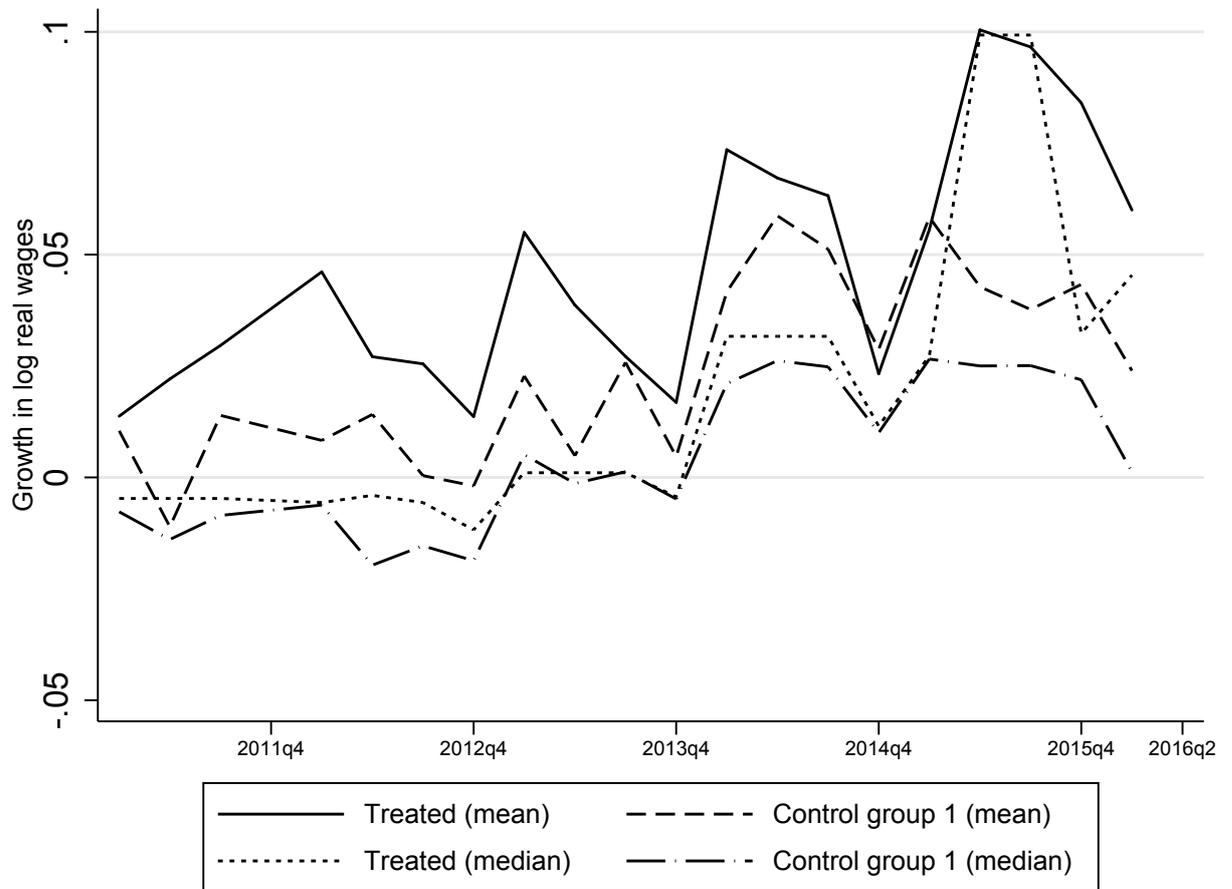


Figure 8: Mean retention rate (6 months) for treated and control groups (LFS)

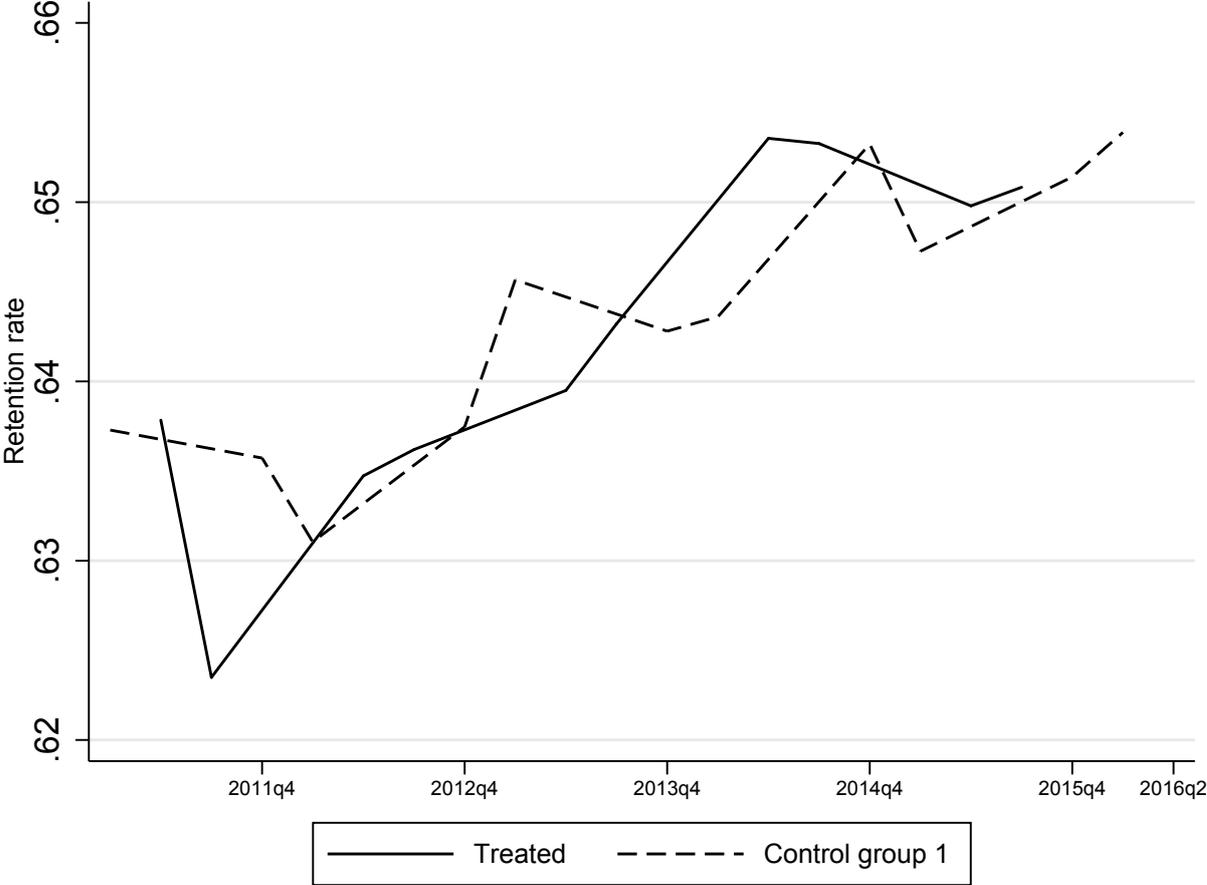
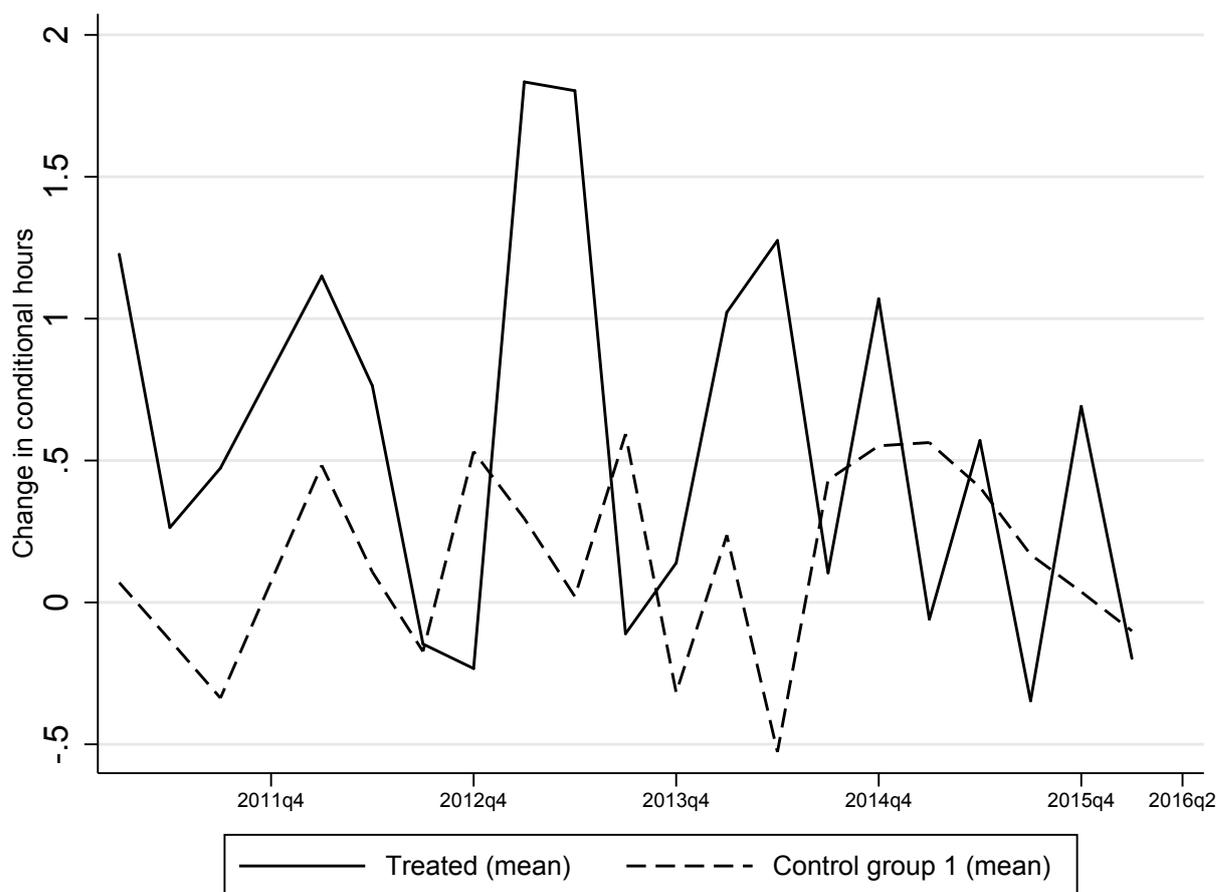


Figure 9: Mean change in hours (conditional on employment) for treated and control groups (LFS)



10 LFS regression results

10.1 DD Wages

Table 69: Real wage growth, specification DD-I (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.010 (0.009)	[-0.008,0.027]	0.027 (0.027)	[-0.026,0.080]	0.008 (0.019)	[-0.029,0.044]	0.002 (0.013)	[-0.023,0.026]
δ (old)	0.017*** (0.005)	[0.007,0.026]	0.038* (0.018)	[0.003,0.072]	0.005 (0.011)	[-0.016,0.026]	0.015* (0.006)	[0.003,0.027]
δ (wg)	0.024*** (0.005)	[0.015,0.034]	0.037* (0.016)	[0.005,0.068]	0.006 (0.011)	[-0.015,0.027]	0.025*** (0.006)	[0.013,0.037]

Robust, M-estimator.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 70: Real wage growth, specification DD-I Placebo 2011 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.017*** (0.005)	[-0.026,-0.007]	-0.003 (0.017)	[-0.037,0.031]	-0.016 (0.011)	[-0.037,0.006]	-0.019** (0.006)	[-0.031,-0.007]
δ (old)	-0.008 (0.005)	[-0.018,0.002]	-0.000 (0.019)	[-0.037,0.037]	-0.019 (0.012)	[-0.041,0.004]	-0.009 (0.007)	[-0.023,0.004]
δ (wg)	-0.013* (0.006)	[-0.024,-0.002]	-0.004 (0.020)	[-0.042,0.035]	-0.018 (0.012)	[-0.041,0.005]	-0.014+ (0.007)	[-0.028,0.000]

Robust, M-estimator.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 71: Real wage growth, specification DD-I Placebo 2012 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.016** (0.005)	[-0.026,-0.006]	-0.001 (0.016)	[-0.031,0.030]	-0.017 (0.011)	[-0.038,0.005]	-0.021*** (0.006)	[-0.034,-0.009]
δ (old)	-0.010+ (0.005)	[-0.020,0.001]	0.005 (0.016)	[-0.026,0.036]	-0.013 (0.011)	[-0.035,0.009]	-0.012+ (0.007)	[-0.026,0.002]
δ (wg)	-0.013* (0.006)	[-0.024,-0.002]	0.011 (0.017)	[-0.023,0.044]	-0.015 (0.012)	[-0.038,0.008]	-0.017* (0.007)	[-0.032,-0.003]

Robust, M-estimator.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 72: Real wage growth, specification DD-I Placebo 2013 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.019*** (0.005)	[-0.028,-0.009]	-0.046** (0.016)	[-0.077,-0.014]	-0.010 (0.011)	[-0.032,0.011]	-0.012+ (0.006)	[-0.023,0.000]
δ (old)	-0.014** (0.005)	[-0.025,-0.004]	-0.042* (0.017)	[-0.076,-0.009]	-0.010 (0.012)	[-0.034,0.014]	-0.007 (0.006)	[-0.020,0.005]
δ (wg)	-0.018*** (0.005)	[-0.029,-0.008]	-0.050** (0.018)	[-0.085,-0.016]	-0.011 (0.013)	[-0.036,0.014]	-0.010 (0.007)	[-0.022,0.003]

Robust, M-estimator.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 73: Real wage growth, specification DD-I Placebo 2014 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.003 (0.005)	[-0.006,0.013]	0.012 (0.016)	[-0.019,0.043]	-0.001 (0.010)	[-0.022,0.019]	0.002 (0.006)	[-0.009,0.014]
δ (old)	0.005 (0.005)	[-0.005,0.015]	0.005 (0.017)	[-0.027,0.038]	0.002 (0.011)	[-0.021,0.024]	0.004 (0.006)	[-0.007,0.016]
δ (wg)	0.005 (0.005)	[-0.005,0.015]	0.004 (0.017)	[-0.030,0.038]	0.000 (0.011)	[-0.022,0.023]	0.005 (0.006)	[-0.007,0.017]

Robust, M-estimator.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 74: Real wage growth, specification DD-I Placebo 2015 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.007 (0.004)	[-0.002,0.015]	-0.013 (0.014)	[-0.040,0.014]	0.020+ (0.010)	[-0.000,0.040]	0.008 (0.005)	[-0.002,0.018]
δ (old)	0.005 (0.005)	[-0.004,0.014]	0.001 (0.014)	[-0.027,0.029]	0.018+ (0.011)	[-0.003,0.039]	0.007 (0.006)	[-0.004,0.018]
δ (wg)	0.008 (0.005)	[-0.002,0.017]	-0.004 (0.015)	[-0.033,0.025]	0.022+ (0.012)	[-0.001,0.045]	0.009 (0.006)	[-0.002,0.021]

Robust, M-estimator.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 75: Real wage growth, specification DD-II (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.002 (0.005)	[-0.008,0.011]	0.003 (0.016)	[-0.029,0.035]	-0.016 (0.011)	[-0.037,0.006]	0.002 (0.006)	[-0.010,0.014]
δ (old)	-0.001 (0.006)	[-0.012,0.010]	0.026 (0.020)	[-0.013,0.065]	-0.017 (0.012)	[-0.041,0.006]	-0.003 (0.007)	[-0.017,0.012]
δ (wg)	-0.021 (0.013)	[-0.046,0.004]	0.026 (0.036)	[-0.045,0.097]	-0.030 (0.026)	[-0.081,0.021]	-0.043* (0.018)	[-0.078,-0.008]

Robust, M-estimator. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 76: Real wage growth, specification DD-II Placebo 2011 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.003 (0.005)	[-0.013,0.007]	0.008 (0.018)	[-0.028,0.044]	-0.007 (0.013)	[-0.032,0.018]	-0.004 (0.007)	[-0.017,0.009]
δ (old)	0.001 (0.006)	[-0.011,0.013]	0.014 (0.020)	[-0.025,0.054]	-0.009 (0.014)	[-0.036,0.018]	-0.004 (0.008)	[-0.019,0.011]
δ (wg)	-0.008 (0.018)	[-0.043,0.027]	0.003 (0.040)	[-0.076,0.082]	-0.006 (0.058)	[-0.119,0.107]	-0.015 (0.019)	[-0.051,0.022]

Robust, M-estimator. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 77: Real wage growth, specification DD-II Placebo 2012 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.008+ (0.005)	[-0.018,0.001]	0.006 (0.016)	[-0.024,0.037]	-0.010 (0.011)	[-0.032,0.013]	-0.014* (0.006)	[-0.026,-0.001]
δ (old)	-0.004 (0.006)	[-0.015,0.007]	0.009 (0.016)	[-0.023,0.040]	-0.001 (0.012)	[-0.025,0.023]	-0.009 (0.007)	[-0.024,0.005]
δ (wg)	0.009 (0.017)	[-0.024,0.041]	0.065* (0.033)	[0.000,0.129]	0.012 (0.052)	[-0.089,0.114]	-0.018 (0.018)	[-0.054,0.017]

Robust, M-estimator. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 78: Real wage growth, specification DD-II Placebo 2013 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.018*** (0.005)	[-0.027,-0.008]	-0.043** (0.016)	[-0.074,-0.012]	-0.009 (0.011)	[-0.031,0.012]	-0.011+ (0.006)	[-0.022,0.001]
δ (old)	-0.018*** (0.005)	[-0.028,-0.008]	-0.046** (0.017)	[-0.080,-0.012]	-0.013 (0.012)	[-0.037,0.011]	-0.011+ (0.006)	[-0.023,0.002]
δ (wg)	-0.008 (0.012)	[-0.031,0.015]	-0.059+ (0.033)	[-0.124,0.007]	-0.015 (0.025)	[-0.064,0.035]	0.010 (0.015)	[-0.020,0.040]

Robust, M-estimator. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 79: Real wage growth, specification DD-II Placebo 2014 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.004 (0.005)	[-0.013,0.006]	0.006 (0.015)	[-0.025,0.036]	-0.006 (0.011)	[-0.027,0.014]	-0.006 (0.006)	[-0.018,0.005]
δ (old)	-0.003 (0.005)	[-0.013,0.007]	-0.003 (0.017)	[-0.036,0.030]	-0.005 (0.012)	[-0.028,0.017]	-0.003 (0.006)	[-0.015,0.009]
δ (wg)	0.013 (0.011)	[-0.009,0.035]	0.039 (0.032)	[-0.025,0.102]	-0.014 (0.023)	[-0.060,0.032]	0.001 (0.015)	[-0.028,0.031]

Robust, M-estimator. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 80: Real wage growth, specification DD-II Placebo 2015 (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.008+ (0.005)	[-0.017,0.001]	-0.021 (0.015)	[-0.050,0.007]	0.011 (0.011)	[-0.010,0.032]	-0.009 (0.006)	[-0.020,0.002]
δ (old)	-0.016*** (0.005)	[-0.026,-0.007]	-0.019 (0.016)	[-0.050,0.012]	-0.001 (0.012)	[-0.024,0.022]	-0.012+ (0.006)	[-0.024,0.001]
δ (wg)	-0.046*** (0.012)	[-0.070,-0.023]	-0.056+ (0.032)	[-0.118,0.006]	-0.011 (0.026)	[-0.061,0.040]	-0.056*** (0.016)	[-0.088,-0.025]

Robust, M-estimator. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 81: Real wage growth, specification DD-III (Robust)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.004*** (0.000)	[0.003,0.005]	0.003+ (0.002)	[-0.000,0.006]	0.003* (0.001)	[0.000,0.005]	0.005*** (0.001)	[0.003,0.006]
δ (old)	0.004*** (0.001)	[0.003,0.005]	0.005** (0.002)	[0.001,0.009]	0.003* (0.001)	[0.001,0.005]	0.003*** (0.001)	[0.002,0.005]
δ (wg)	0.005*** (0.001)	[0.004,0.006]	0.005** (0.002)	[0.002,0.009]	0.004*** (0.001)	[0.002,0.007]	0.005*** (0.001)	[0.004,0.007]

Robust, M-estimator.

Restricted to treated and control age, and treated wage and control group 1.

Weighted by NMW/NLW uprating

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

10.2 DD Employment retention

Table 82: Employment retention, specification DD-I (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.009 (0.029)	[-0.066,0.048]	-0.021 (0.056)	[-0.131,0.089]	-0.007 (0.035)	[-0.074,0.061]	0.063 (0.078)	[-0.089,0.215]
δ (old)	-0.012 (0.020)	[-0.051,0.028]	0.026 (0.043)	[-0.058,0.109]	-0.024 (0.031)	[-0.085,0.037]	-0.019 (0.034)	[-0.087,0.048]
δ (wg)	-0.030 (0.019)	[-0.067,0.007]	-0.060 (0.043)	[-0.145,0.025]	-0.013 (0.030)	[-0.071,0.045]	-0.024 (0.030)	[-0.083,0.036]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 83: Employment retention, specification DD-II (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
tt	-0.008 (0.013)	[-0.034,0.019]	-0.045 (0.031)	[-0.106,0.017]	-0.001 (0.022)	[-0.044,0.042]	-0.003 (0.021)	[-0.045,0.039]
tt_old	0.014 (0.016)	[-0.018,0.046]	0.028 (0.034)	[-0.039,0.096]	0.000 (0.029)	[-0.056,0.057]	0.010 (0.027)	[-0.043,0.063]
tt_wg	-0.003 (0.016)	[-0.034,0.028]	-0.037 (0.036)	[-0.107,0.034]	0.008 (0.028)	[-0.047,0.063]	-0.006 (0.026)	[-0.056,0.045]

OLS, robust standard errors. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 84: Employment retention, specification DD-III (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.002 (0.002)	[-0.006,0.001]	-0.007 (0.004)	[-0.015,0.002]	0.001 (0.002)	[-0.004,0.005]	-0.001 (0.003)	[-0.006,0.005]
δ (old)	-0.002 (0.002)	[-0.006,0.003]	0.005 (0.005)	[-0.005,0.015]	-0.002 (0.004)	[-0.008,0.005]	-0.002 (0.004)	[-0.009,0.005]
δ (wg)	-0.002 (0.002)	[-0.006,0.002]	-0.004 (0.005)	[-0.014,0.007]	0.000 (0.003)	[-0.006,0.007]	-0.000 (0.003)	[-0.007,0.006]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

Weighted by NMW/NLW uprating

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

10.3 DD Conditional hours

Table 85: Change in conditional hours, specification DD-I (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.368 (0.656)	[-0.918,1.654]	0.679 (1.544)	[-2.347,3.704]	-1.097 (0.926)	[-2.912,0.717]	0.927 (0.923)	[-0.881,2.736]
δ (old)	-0.788+ (0.461)	[-1.691,0.115]	-1.188 (1.092)	[-3.328,0.952]	0.213 (1.049)	[-1.844,2.269]	-1.578** (0.516)	[-2.588,-0.567]
δ (wg)	-0.763+ (0.447)	[-1.640,0.114]	-0.918 (1.022)	[-2.921,1.084]	0.320 (1.003)	[-1.646,2.286]	-1.713** (0.540)	[-2.770,-0.656]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 86: Change in conditional hours, specification DD-I Placebo 2011 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.252 (0.421)	[-1.077,0.573]	0.019 (0.829)	[-1.606,1.643]	0.207 (1.098)	[-1.946,2.359]	-1.276** (0.389)	[-2.038,-0.514]
δ (old)	-0.489 (0.487)	[-1.444,0.466]	0.029 (0.909)	[-1.754,1.811]	-1.401 (1.240)	[-3.831,1.029]	-0.957** (0.359)	[-1.661,-0.253]
δ (wg)	-0.417 (0.493)	[-1.384,0.550]	0.003 (0.888)	[-1.737,1.743]	-0.716 (1.220)	[-3.108,1.676]	-1.329** (0.410)	[-2.133,-0.524]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 87: Change in conditional hours, specification DD-I Placebo 2012 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.236 (0.435)	[-0.617,1.088]	-0.576 (1.146)	[-2.822,1.669]	0.260 (0.583)	[-0.884,1.403]	0.799 (0.627)	[-0.430,2.027]
δ (old)	0.508 (0.434)	[-0.342,1.358]	0.632 (1.027)	[-1.382,2.645]	0.057 (0.581)	[-1.082,1.197]	0.998 (0.701)	[-0.375,2.371]
δ (wg)	0.442 (0.428)	[-0.397,1.280]	0.238 (0.861)	[-1.450,1.927]	0.126 (0.631)	[-1.112,1.363]	1.040 (0.718)	[-0.368,2.447]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 88: Change in conditional hours, specification DD-I Placebo 2013 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.682 (0.437)	[-0.174,1.538]	0.230 (0.708)	[-1.157,1.617]	0.331 (0.695)	[-1.031,1.692]	1.106 (0.677)	[-0.221,2.432]
δ (old)	1.182* (0.510)	[0.182,2.182]	-0.070 (0.789)	[-1.615,1.476]	0.459 (0.893)	[-1.291,2.210]	1.540* (0.785)	[0.000,3.079]
δ (wg)	1.153* (0.511)	[0.152,2.154]	0.281 (0.795)	[-1.277,1.839]	0.559 (0.891)	[-1.188,2.306]	1.649* (0.783)	[0.115,3.183]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 89: Change in conditional hours, specification DD-I Placebo 2014 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.373 (0.455)	[-0.519,1.264]	-1.131 (0.899)	[-2.892,0.630]	-0.118 (0.927)	[-1.935,1.699]	0.400 (0.549)	[-0.676,1.476]
δ (old)	0.238 (0.515)	[-0.770,1.247]	-1.904* (0.957)	[-3.779,-0.029]	0.164 (1.022)	[-1.840,2.167]	0.060 (0.580)	[-1.076,1.196]
δ (wg)	0.373 (0.516)	[-0.639,1.385]	-1.527 (0.993)	[-3.473,0.418]	0.031 (1.034)	[-1.994,2.057]	0.346 (0.604)	[-0.839,1.530]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 90: Change in conditional hours, specification DD-I Placebo 2015 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.682+ (0.406)	[-1.477,0.113]	0.562 (0.802)	[-1.010,2.135]	-0.698 (0.919)	[-2.499,1.103]	-0.841+ (0.497)	[-1.815,0.133]
δ (old)	-0.674 (0.469)	[-1.593,0.244]	0.713 (0.931)	[-1.111,2.538]	-0.575 (1.197)	[-2.920,1.771]	-0.689 (0.598)	[-1.860,0.483]
δ (wg)	-0.887+ (0.474)	[-1.816,0.041]	0.757 (0.967)	[-1.138,2.651]	-0.719 (1.180)	[-3.032,1.594]	-0.986 (0.607)	[-2.175,0.204]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 91: Change in conditional hours, specification DD-II (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.343 (0.340)	[-1.010,0.324]	-0.587 (0.689)	[-1.938,0.764]	0.256 (0.675)	[-1.067,1.579]	-1.225** (0.464)	[-2.135,-0.316]
δ (old)	-0.641+ (0.387)	[-1.400,0.118]	-1.013 (0.847)	[-2.673,0.647]	-0.263 (0.858)	[-1.945,1.419]	-1.192* (0.520)	[-2.212,-0.172]
δ (wg)	-0.640 (0.389)	[-1.403,0.123]	-0.943 (0.832)	[-2.574,0.687]	0.125 (0.828)	[-1.498,1.747]	-1.528** (0.535)	[-2.576,-0.480]

OLS, robust standard errors. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 92: Change in conditional hours, specification DD-II Placebo 2011 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.678 (0.472)	[-1.604,0.247]	0.253 (0.971)	[-1.650,2.156]	0.455 (1.165)	[-1.828,2.738]	-1.988*** (0.473)	[-2.914,-1.062]
δ (old)	-0.844 (0.546)	[-1.914,0.226]	-0.341 (1.040)	[-2.380,1.697]	-0.893 (1.322)	[-3.485,1.699]	-1.364** (0.488)	[-2.321,-0.406]
δ (wg)	-0.907+ (0.548)	[-1.981,0.166]	-0.062 (1.029)	[-2.079,1.955]	-0.460 (1.298)	[-3.003,2.084]	-1.923*** (0.517)	[-2.936,-0.911]

OLS, robust standard errors. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 93: Change in conditional hours, specification DD-II Placebo 2012 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.029 (0.454)	[-0.860,0.919]	-0.489 (1.186)	[-2.813,1.835]	0.358 (0.660)	[-0.936,1.652]	0.591 (0.645)	[-0.673,1.854]
δ (old)	0.397 (0.463)	[-0.509,1.304]	0.412 (1.035)	[-1.616,2.440]	0.543 (0.723)	[-0.875,1.960]	0.981 (0.722)	[-0.435,2.397]
δ (wg)	0.206 (0.458)	[-0.693,1.104]	0.188 (0.918)	[-1.612,1.988]	0.357 (0.749)	[-1.112,1.826]	0.893 (0.738)	[-0.554,2.339]

OLS, robust standard errors. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 94: Change in conditional hours, specification DD-II Placebo 2013 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.635 (0.439)	[-0.226,1.496]	0.321 (0.719)	[-1.088,1.730]	0.333 (0.705)	[-1.048,1.715]	1.065 (0.679)	[-0.265,2.395]
δ (old)	1.135* (0.522)	[0.112,2.158]	-0.295 (0.818)	[-1.897,1.308]	0.641 (0.935)	[-1.191,2.473]	1.562* (0.795)	[0.004,3.121]
δ (wg)	1.073* (0.516)	[0.062,2.083]	0.233 (0.809)	[-1.352,1.819]	0.622 (0.910)	[-1.161,2.405]	1.624* (0.788)	[0.080,3.168]

OLS, robust standard errors. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 95: Change in conditional hours, specification DD-II Placebo 2014 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	0.418 (0.456)	[-0.475,1.311]	-1.153 (0.902)	[-2.921,0.615]	-0.155 (0.930)	[-1.977,1.667]	0.454 (0.551)	[-0.626,1.533]
δ (old)	0.190 (0.524)	[-0.837,1.217]	-2.170* (0.984)	[-4.099,-0.241]	0.092 (1.040)	[-1.947,2.130]	0.032 (0.596)	[-1.135,1.200]
δ (wg)	0.363 (0.520)	[-0.657,1.383]	-1.659+ (1.006)	[-3.630,0.313]	-0.022 (1.041)	[-2.062,2.018]	0.358 (0.613)	[-0.844,1.559]

OLS, robust standard errors. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 96: Change in conditional hours, specification DD-II Placebo 2015 (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.575 (0.420)	[-1.398,0.247]	0.460 (0.836)	[-1.178,2.097]	-0.819 (0.935)	[-2.652,1.015]	-0.733 (0.522)	[-1.756,0.290]
δ (old)	-0.849+ (0.493)	[-1.816,0.117]	0.573 (0.995)	[-1.378,2.524]	-0.945 (1.235)	[-3.366,1.476]	-0.874 (0.635)	[-2.119,0.371]
δ (wg)	-0.896+ (0.491)	[-1.859,0.067]	0.633 (1.009)	[-1.346,2.612]	-0.922 (1.198)	[-3.269,1.425]	-1.017 (0.636)	[-2.263,0.229]

OLS, robust standard errors. Constant group specific time trends included.

Restricted to treated and control age, and treated wage and control group 1.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 97: Change in conditional hours, specification DD-III (OLS)

	All		FT men		FT women		PT women	
	(1) Coef./se	CI	(2) Coef./se	CI	(3) Coef./se	CI	(4) Coef./se	CI
δ	-0.075+ (0.044)	[-0.160,0.010]	-0.007 (0.095)	[-0.192,0.179]	0.013 (0.089)	[-0.162,0.188]	-0.123* (0.056)	[-0.232,-0.014]
δ (old)	-0.099+ (0.053)	[-0.202,0.004]	-0.150 (0.115)	[-0.376,0.076]	0.037 (0.119)	[-0.196,0.270]	-0.113+ (0.062)	[-0.235,0.010]
δ (wg)	-0.115* (0.052)	[-0.216,-0.013]	-0.092 (0.113)	[-0.313,0.128]	0.004 (0.114)	[-0.219,0.226]	-0.145* (0.064)	[-0.269,-0.020]

OLS, robust standard errors.

Restricted to treated and control age, and treated wage and control group 1.

Weighted by NMW/NLW uprating

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$