The Impact of a Minimum Wage Increase on Hours Worked: Heterogeneous Effects by Gender and Sector

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The Minimum Wage in Ireland

- First introduced in 2000 at a rate of £4.40 (€5.58) per hour
- Regular increases up until 2007 (€8.65 per hour)
- From 2007 onwards, there was a long period of no increases
  - The minimum wage was still €8.65 per hour in 2015
- In 2015, the Low Pay Commission was established

The Minimum Wage in Ireland

Minimum Wage in Ireland	
Year	Hourly Minimum Wage
2015	€8.65
2016	€9.15
2017	€9.25
2018	€9.55
2019	€9.80
2020	€10.10
2021	€10.20
2022	€10.50

- Increasing to €11.30 from Jan 1, 2023
- Government committed to a living wage by 2026
  - 60% of median wage
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  - What is the overall impact on hours worked?
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- Important to look at the intensive margin (hours worked)
  - Employers often say this is the main channel of adjustment (Metcalf, 2008)
  - Empirical evidence to support this - Stewart and Swaffield (2008); Caliendo et al. (2017); Neumark et al. (2004)
  - Redmond and McGuinness (2021) – evidence of reduction in hours, but no evidence of job losses

Data

- LFS-EAADS data (2012 to 2018)
  - Earnings Analysis using Administrative Data Sources
  - Earnings data taken from P35 tax records and linked to LFS

Methodology

- Standard 2x2 DiD

$$Hours_{i,t} = \alpha + \gamma D + \delta Time + \beta(DxTime) + \varepsilon_{i,t}$$

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- D is the treatment dummy variable
  - Equals 0 for the control group – not impacted by the MW increase (€10 to €15 per hour)
  - Equals 1 for the treatment group – those earning less than the increased MW (€9.55 in 2018)
    - Introduce a degree of flexibility (+5%) – anybody earning less than €10 per hour

Methodology

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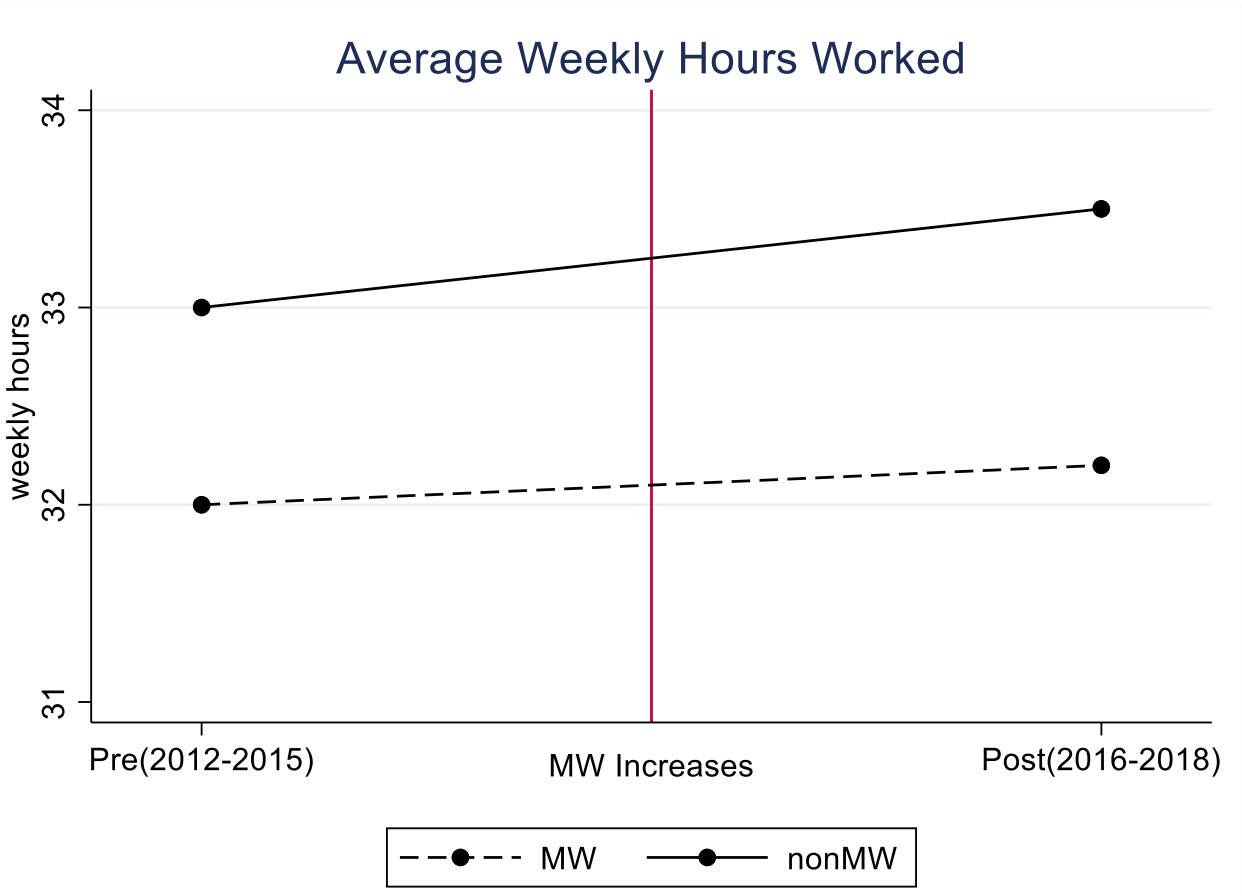

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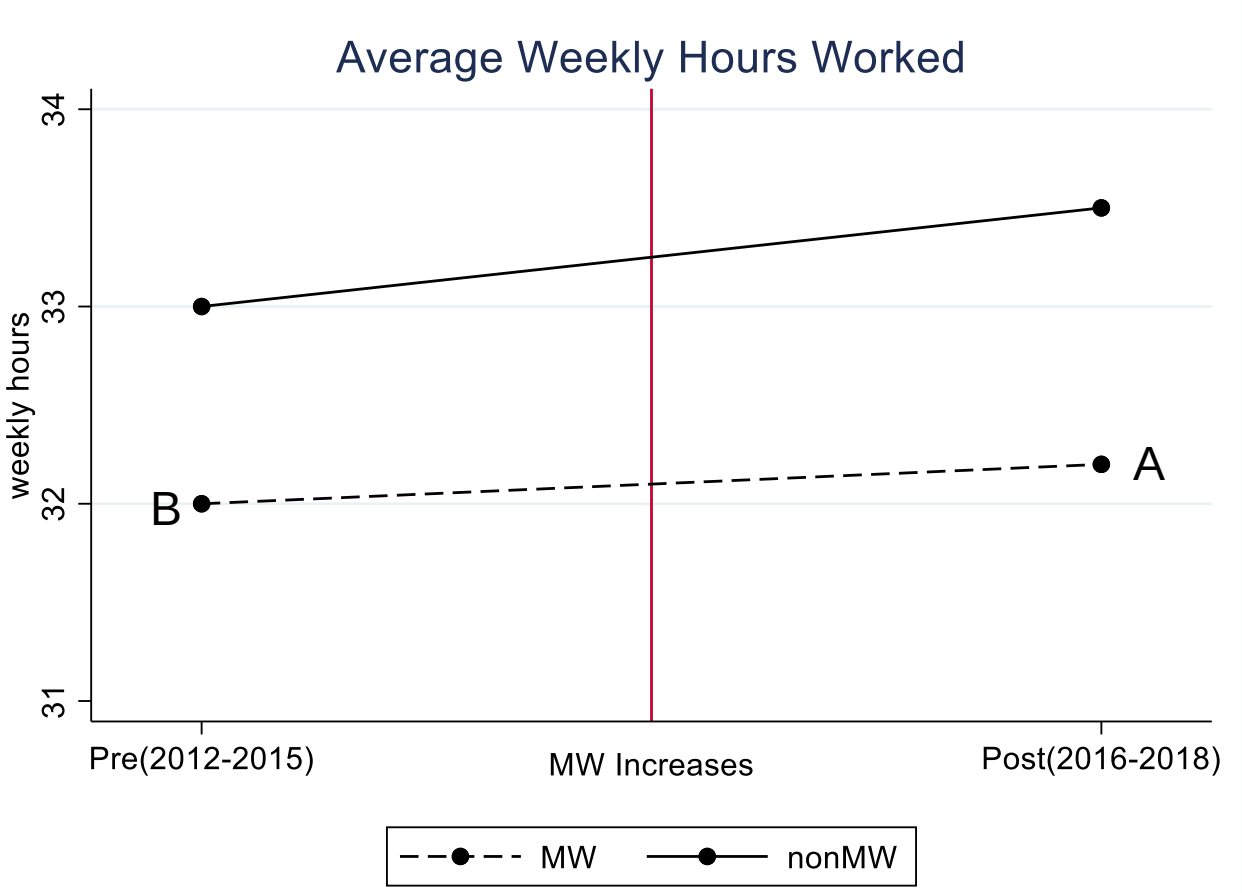

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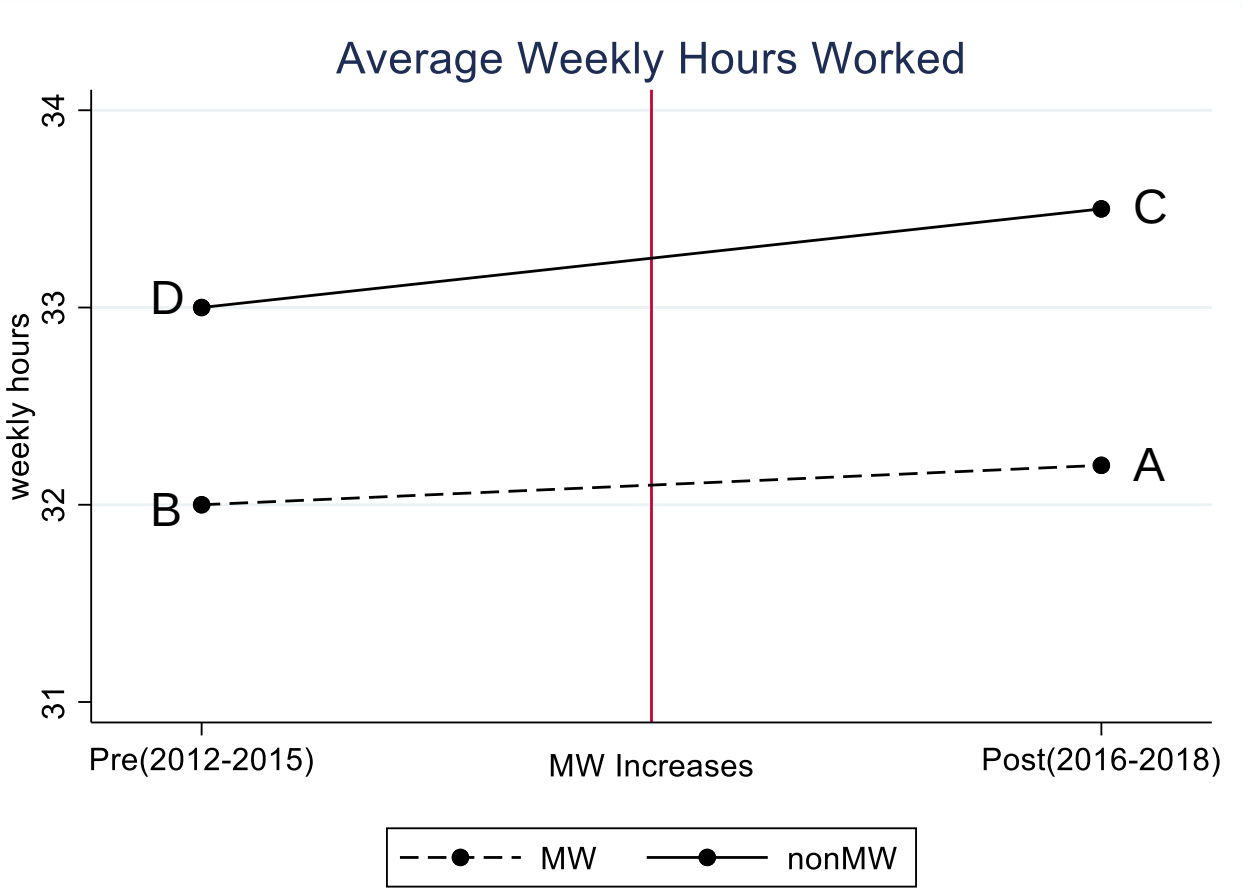

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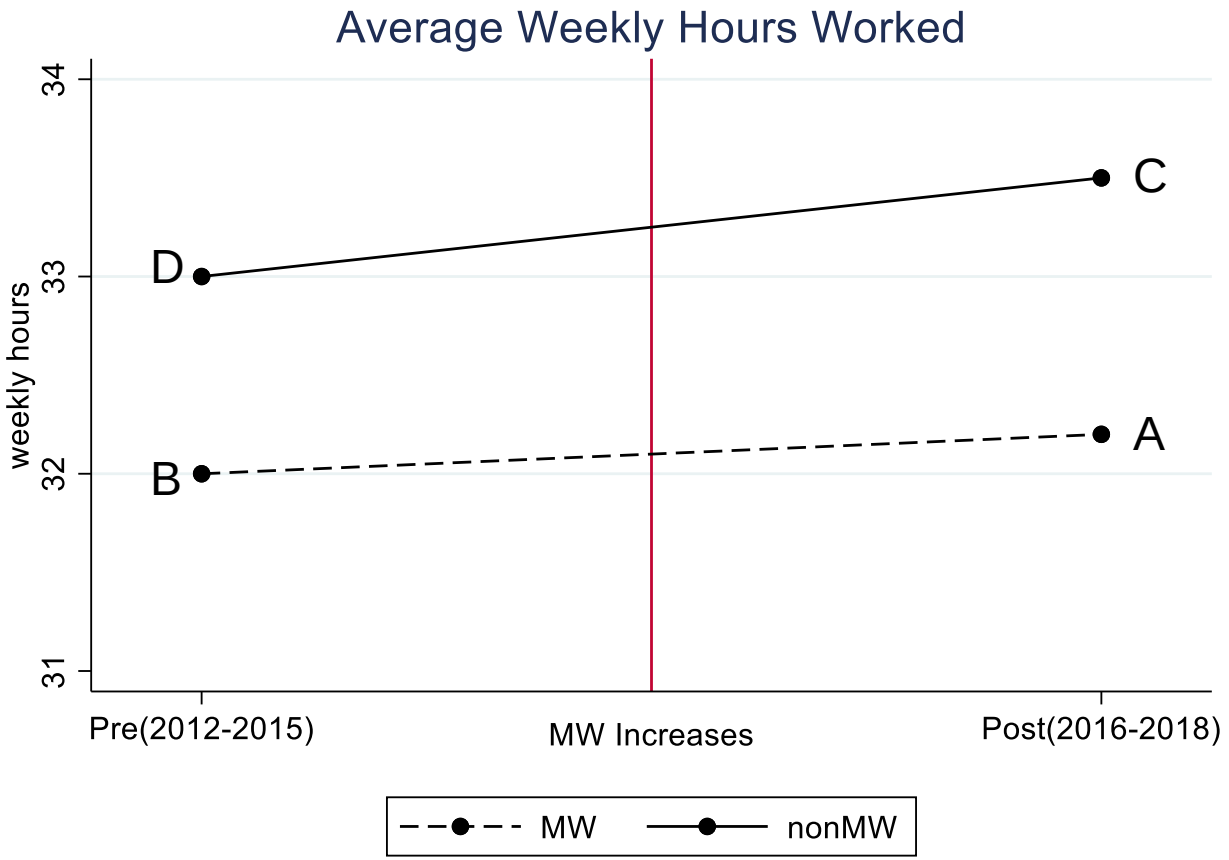
$$Hours_{i,t} = \alpha + \gamma D + \delta Time + \beta(DxTime) + \varepsilon_{i,t}$$

$$\boldsymbol{\beta = (A - B) - (C - D)}$$



Data and Methodology

- Fully flexible DiD estimator (Mora and Reggio, 2015)

$$E(Y_{it}|D_i, X_i) = \delta + X'_{it}\beta + \sum_{\tau=t_2}^{T} \delta_\tau I_t^\tau + \gamma^D D_i + \sum_{\tau=t_2}^{T} \alpha_\tau . I_t^\tau . D_i + \varepsilon_{it} \quad (1)$$

- The X's include gender, education, marital status, sector, nationality, experience (in years), firm size, region, age

Results

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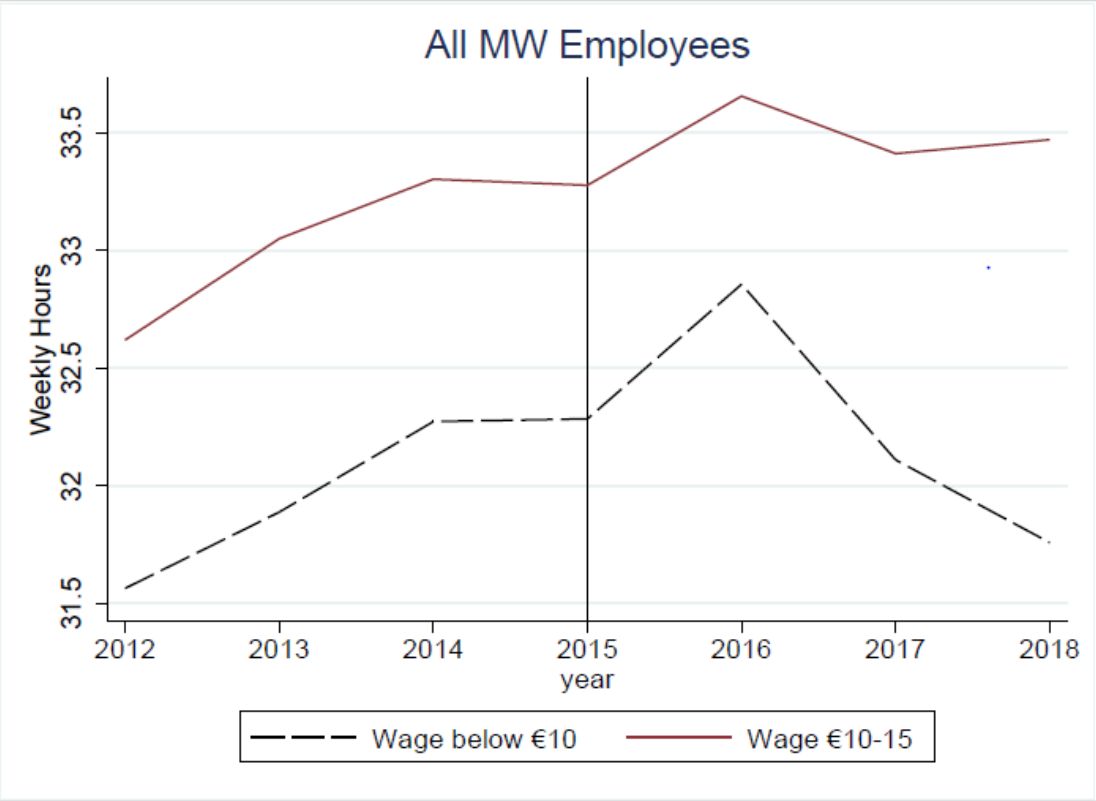
FIGURE 5.1 AVERAGE WEEKLY HOURS WORKED (2012 TO 2018)



Source: Authors' analysis.

Results

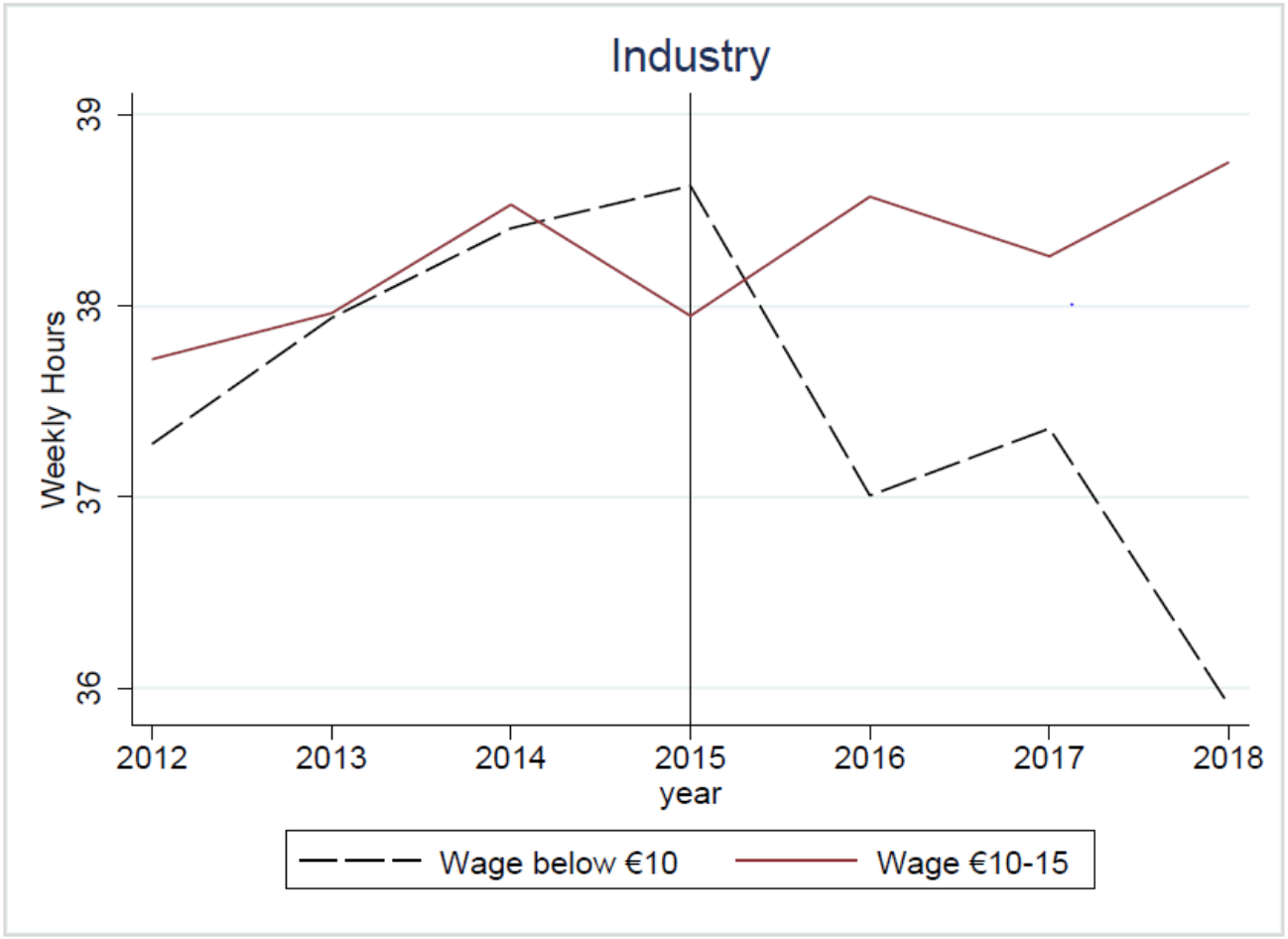
TABLE 5.1 THE IMPACT OF THE 2016 MINIMUM WAGE INCREASE ON HOURS WORKED

VARIABLES	Hours
DiD Estimates	
DiD – 2018	-0.95**
	(0.46)
DiD – 2017	-0.59
	(0.42)
DiD – 2016	0.04
	(0.08)

Note: we also control for gender, education, marital status, sector, nationality, experience, firm size, region and age

Results

FIGURE 5.2 AVERAGE WEEKLY HOURS WORKED FOR INDUSTRY SECTOR EMPLOYEES (2012 TO 2018)



DiD Coefficient (2018)

-3.02***
(1.18)

Source: Authors' analysis.

Results

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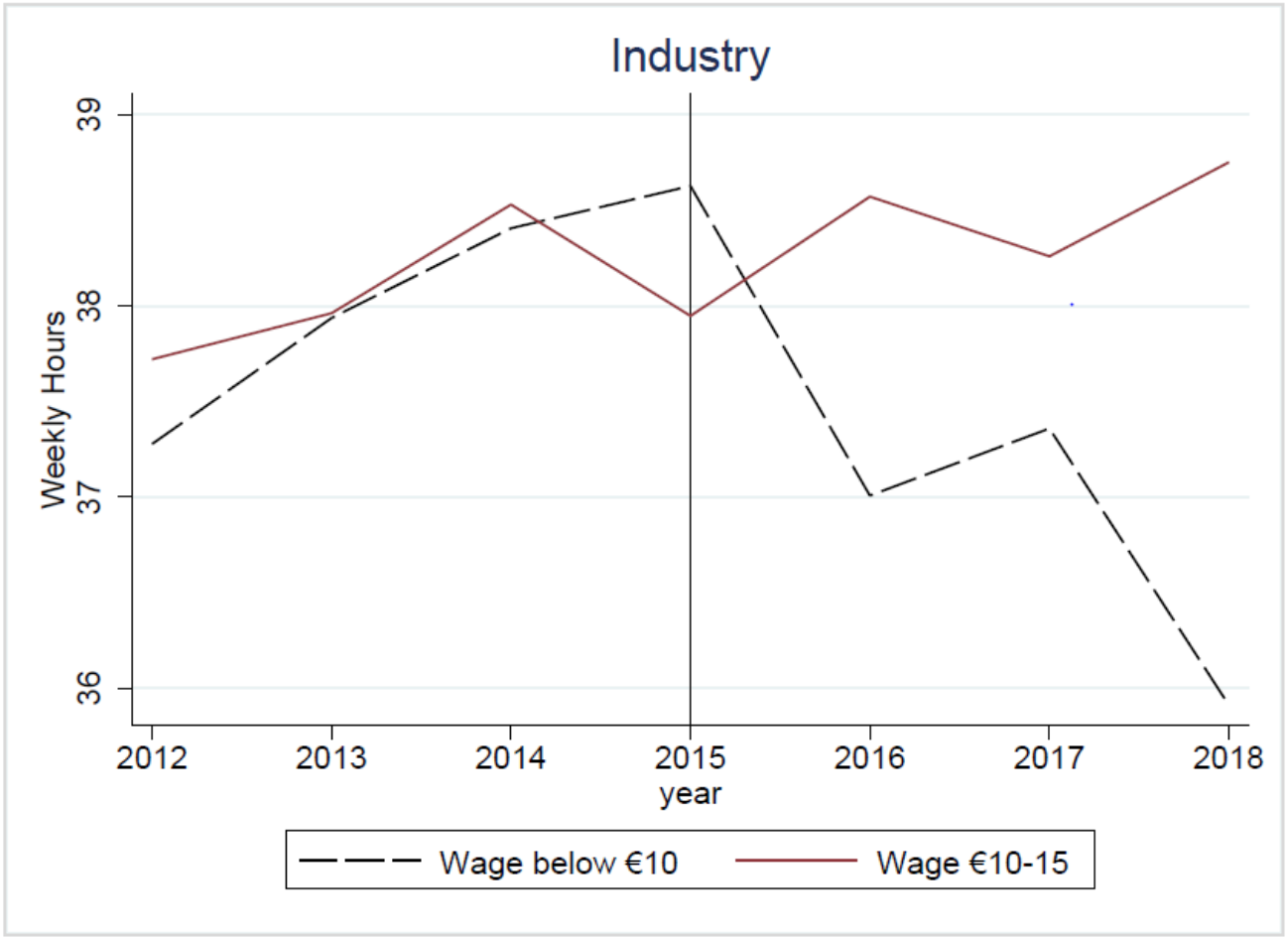


DiD Coefficient (2018)

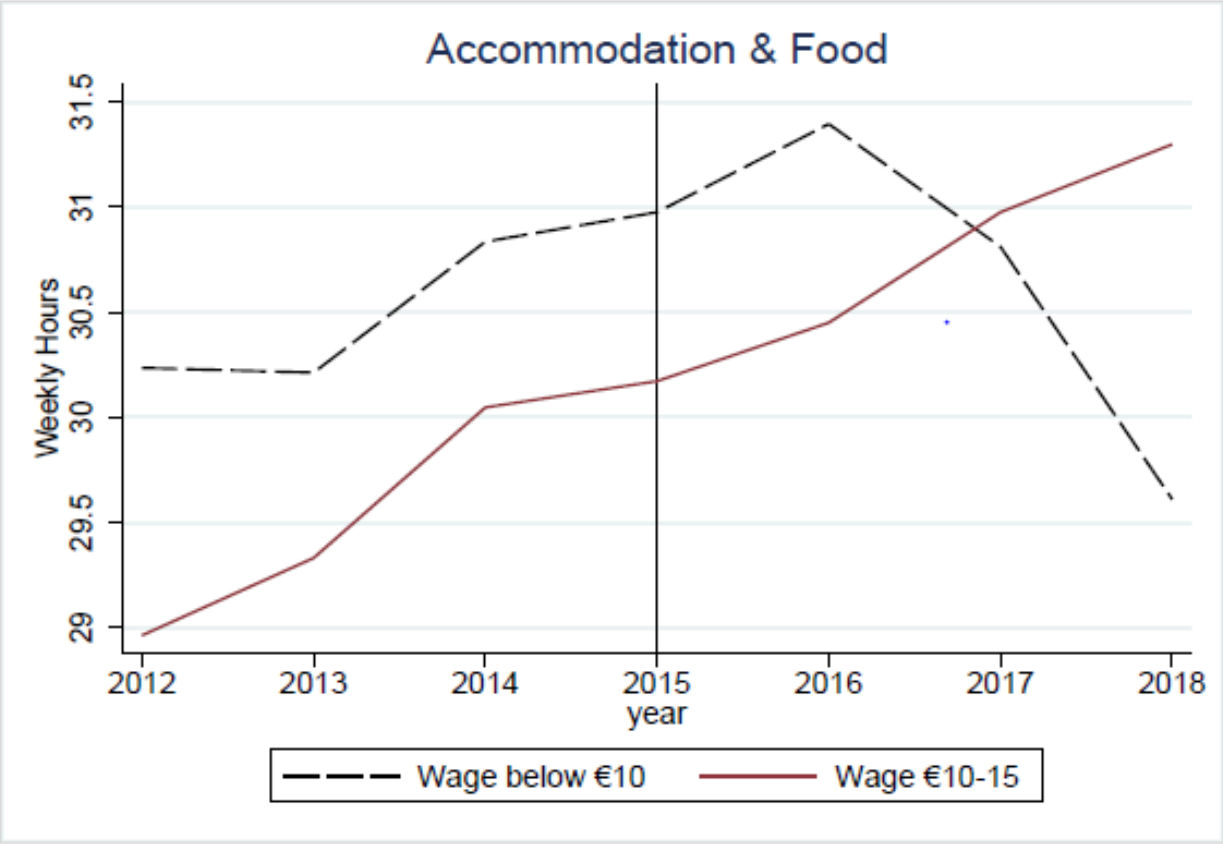
-3.02***
(1.18)

Consistent with Lordan and Neumark (2018)

Source: Authors' analysis.

Results

FIGURE 5.3 **AVERAGE WEEKLY HOURS WORKED FOR ACCOMMODATION AND FOOD SECTOR EMPLOYEES (2012 TO 2018)**



Source: Authors' analysis.

DiD Coefficient (2018)

-2.56**
(1.15)

Results

Average weekly hours worked for women

DiD Coefficient (2018)

-0.70
(0.58)

Results

Average weekly hours worked for men

DiD Coefficient (2018)

-1.52***
(0.65)

Conclusion

- Following a minimum wage increase, there is evidence of a reduction in hours worked
  - Particularly for MW workers in the industry and accommodation & food sectors
  - Larger impacts for men compared to women

- Note: despite reduction in hours, the average MW worker was still better off (in real terms) following MW increases

Data and Methodology

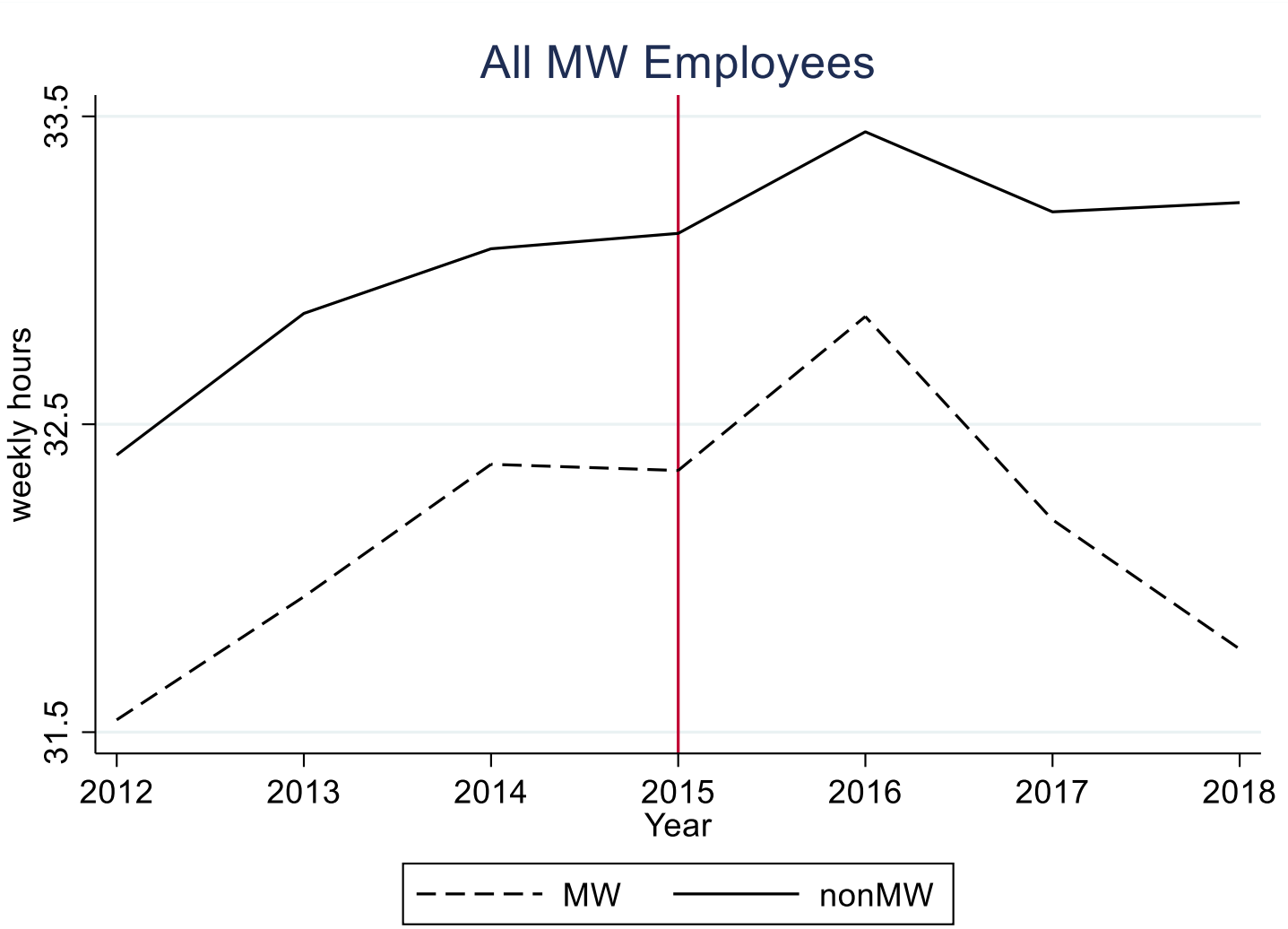
twoway (line MW T, color(black) lpattern(dash) ylabel(31(1)34) xscale(range(-0.1 1.1)) xlabel(0 1)) (line nonMW T, color(black) xline(.5) ytitle(weekly hours) graphregion(color(white)))

twoway (connected MW T, color(black) lpattern(dash) ylabel(31(1)34) xscale(range(-0.1 1.1)) xlabel(0 1)) (connected nonMW T, color(black) xline(.5) ytitle(weekly hours) graphregion(color(white)) title(Average Weekly Hours Worked))

Mortdms007

MORTDMS007 –

Results


All MW Employees
weekly hours
33.5
32.5
31.5
2012
2013
2014
2015
2016
2017
2018
Year
MW
nonMW