

# Zero Hours Contracts and Labour Market Policy

N. Datta<sup>1,2</sup> G. Giupponi<sup>1,3</sup> S. Machin<sup>1,3</sup>

<sup>1</sup>CEP    <sup>2</sup>UCL    <sup>3</sup>LSE

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# Motivation

- International labour markets feature growing use of “alternative” work arrangements
  - Self-employment (freelance, contract workers)
  - Zero hours contracts
  - Important distinctions between the types!
- Debate about **flexibility vs. insecurity tradeoff**
  - Additional, potentially desirable flexibility
  - Shift of burden of insecurity onto worker and emergence of low wage, dead-end jobs
- Cause?
  - Worker preferences, weak labour demand, technology, **labour market policy**

# This paper

1. Empirically document nature of **zero hours contracts** in UK setting
  - Draw on data from LFS and newly collected survey data
  - ZHCs most prevalent in low wage sectors of UK labour market
  - Stark dichotomy between workers valuing flexibility and workers engaged in ZHCs out of necessity rather than choice
2. Do higher **minimum wages** induce larger utilisation of ZHCs?
  - Leverage unique UK policy setting and rich employer-employee data
  - Find evidence of shift in composition of workforce towards ZHC jobs in adult social care and other low-pay sectors

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# Literature

## Alternative work arrangements

- Early literature on employment dynamics of “atypical” contracts (Rodgers and Rodgers, 1989; Beard and Edwards, 1995; Nollen, 1996; Kalleberg, 2000; Addison and Surfield, 2009)
- Recent research on drivers of current shift to alternative work arrangements (Katz and Krueger, 2016 and 2017; Mas and Pallais, 2017; Dube et al., 2018)

## Minimum wages

- Large body of micro-based studies on employment effects in US and UK (Card and Krueger, 1994; Machin et al., 2003; Stewart, 2004; Dube et al., 2010 and 2016; Baskaya and Rubinstein, 2012; Clemens and Wither, 2014)
- Smaller strand of literature on other margins of adjustment: prices (Aaronson, 2001; MaCurdy, 2015; Harasztosi and Lindner, 2017), profits (Draca et al., 2011), firm value (Bell and Machin, 2018), service quality (Giupponi and Machin, 2018)
- Wage distributional effects of minimum wages (DiNardo et al., 1996; Lee, 1999; Autor et al., 2016; Giupponi and Machin, 2018)

# Outline

1. Zero Hour Contracts
2. CEP-LSE Survey of Alternative Work Arrangements
3. Zero Hours Contracts and Minimum Wage Policy

# Zero Hour Contracts in the UK Setting

- Employment contract under which worker is not guaranteed minimum number of hours and is only paid for work carried out
- Workers not obliged to accept work, employers not obliged to offer work
- Don't have a specific legal status, qualify as "workers" but not necessarily "employees"
- Complications dealt with in UK case law look for regular work patterns
- Estimates from ONS suggest growth from 143,000 workers in 2008 to 883,000 in 2017
- Political and media attention on working conditions and practices
  - Exclusivity clauses and imbalance in employment relationship
  - Earnings insecurity and uneven application of employment rights



# Zero Hour-Like Contracts in the International Setting

- Comparisons rely on assessing qualitative similarities
- Most developed economies have similar proportions to UK, though varying degree of regulation
- Largest proliferation in Europe is in Netherlands, but much greater regulation
- In some countries outlawed, or regulated to the point of non existence
- Welfare implications relies on other factors such as union coverage and domestic economic performance

## Key facts from LFS

|                                | All Employees |      | ZHC Employees |      |
|--------------------------------|---------------|------|---------------|------|
|                                | Mean          | S.D. | Mean          | S.D. |
| Age                            | 43.4          | 13.4 | 38.2          | 16.6 |
| Prop. female                   | 0.49          | 0.50 | 0.59          | 0.49 |
| Prop. in FT education          | 0.03          | 0.17 | 0.17          | 0.37 |
| Median hourly wage (£)         | 11.5          |      | 7.9           |      |
| Hours worked in reference week | 31.4          | 17.4 | 21.3          | 17.0 |
| Like to work more hours        | 0.08          | 0.27 | 0.25          | 0.43 |
| Prop. paid less than next NLW  | 0.20          | 0.40 | 0.49          | 0.50 |
| Obs.                           | 71,604        |      | 1,907         |      |

- ZHCs most represented in low pay sectors such as security, hospitality, social care and leisure
- ZHCs have lowest persistence of all economic activity, though highest rates of transition into unemployment and inactivity from employment

# CEP-LSE Survey of Alternative Work Arrangements

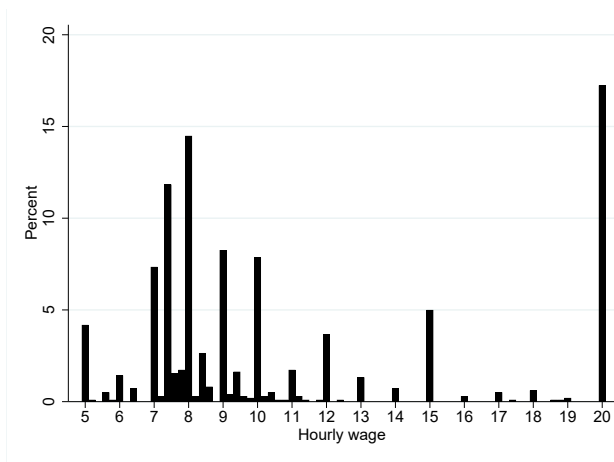
## Objective

- Collect information on preferences, characteristics and employment conditions of workers on alternative work arrangements in the UK
- Unique data set giving greater information not seen in the LFS on these types of workers

## Implementation

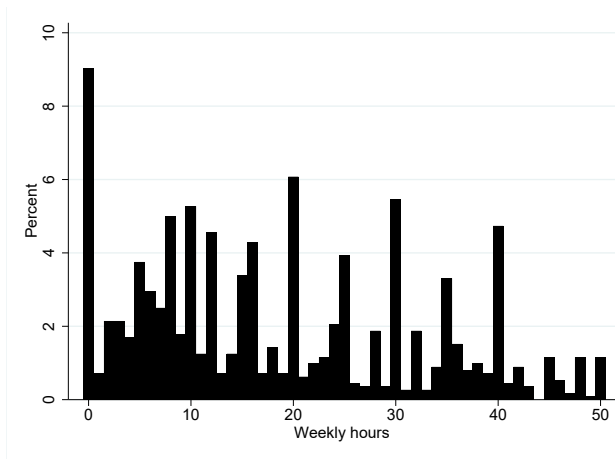
- Online survey run between February 5 and March 2, 2018
- Survey designed to be representative of UK population aged 18-65
- $N \approx 19,000$
- Overall good representativeness across gender, age, education, regions, hours and median wage

## Hourly wage distribution



- Large fraction paid at or close to minimum wage rate (£7.5 at time of survey)

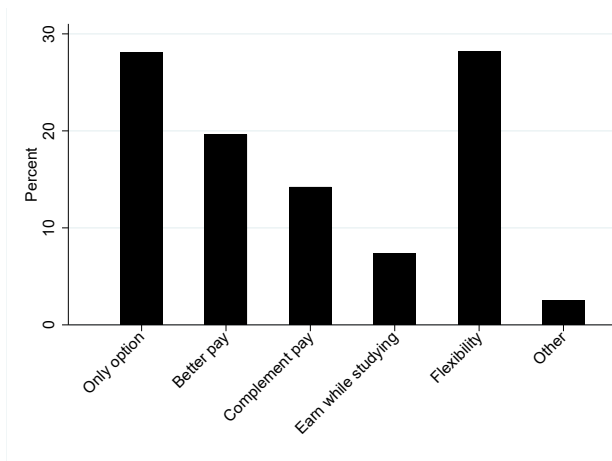
## Weekly hour distribution



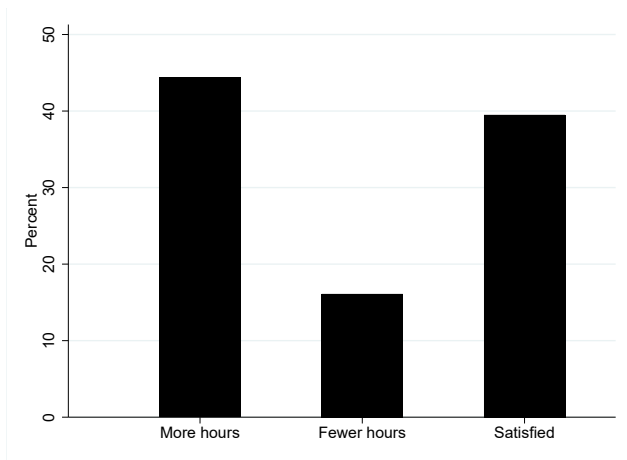
- 32% do unpaid work, averaging 7 hours per week → lose  $\approx$  £80 p.w.

# ZHCs: Necessity or choice?

Main reason for being on a ZHC

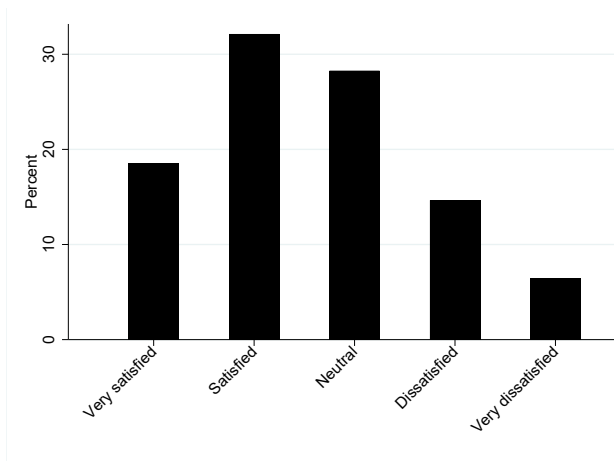


## Desired hours of work at current wage rate



- Reason for not working more hours: no available work [Detail](#)
- Reason for wanting fewer hours: domestic commitments and leisure [Detail](#)
- Similar results for desired pattern of hours [Detail](#)

# Job satisfaction



Comparison with self-employed



# Zero Hours Contracts and Minimum Wage Policy

- Large fraction of workers on ZHCs paid at minimum wage rate
- **Question:** *are ZHC inherently low-paid jobs or is there role of minimum wage policies in spread of ZHC among low-paid jobs?*
- ZHCs can help employers buffer wage cost shock due to MW increase
- Intensive-margin adjustment via contract mix
- Investigate causal effect of MW policies on incidence of ZHCs in UK

# The National Living Wage introduction

- National minimum wage has existed in UK since April 1999
- NLW announced in July 2015 emergency budget by newly elected Conservative party
- Raised minimum wage for workers aged 25+ to £7.20 from April 1, 2016
- Unexpected intervention from political party traditionally hostile to MW
- Sizable increase: 10.8% when announced and 7.5% when implemented
- “Natural experiment” to study effect of MW policy on ZHC utilization

# Data and sample design

## National Minimum Dataset for Social Care (NMDS-SC)

- Online system administered by Skills for Care and the UK Department of Health that collects information on adult social care workforce in England
- Matched employer-employee monthly dataset
- *Firm level*: employment, location, system update dates
- *Worker-level*: demographics, job role, hours, hourly wages, update dates
- Balanced panel of 4,680 care homes and domiciliary care agencies active between March 2015 and March 2017 [Summary statistics](#)

# The adult social care sector

- *Residential care*: provision of accommodation and personal care in residential centre
- *Domiciliary care*: personal care provided to people who live in their own houses
- Sector highly vulnerable to minimum wages
  - Low-pay, non-unionised, labour intensive
  - Fees regulated by local authorities → low price pass-through
- High incidence of ZHC, especially in domiciliary care
- Good-quality data on hourly wages and employment

# Empirical strategy

## Structural form

$$\Delta Y_{j,t} = \alpha_1 + \beta_1 \Delta \ln W_{j,t} + X'_{j,t-1} \gamma_1 + \varepsilon_{j,t}$$

## First stage

$$\Delta \ln W_{j,t} = \alpha_2 + \beta_2 MIN_{j,t-1} + X'_{j,t-1} \gamma_2 + \eta_{j,t}$$

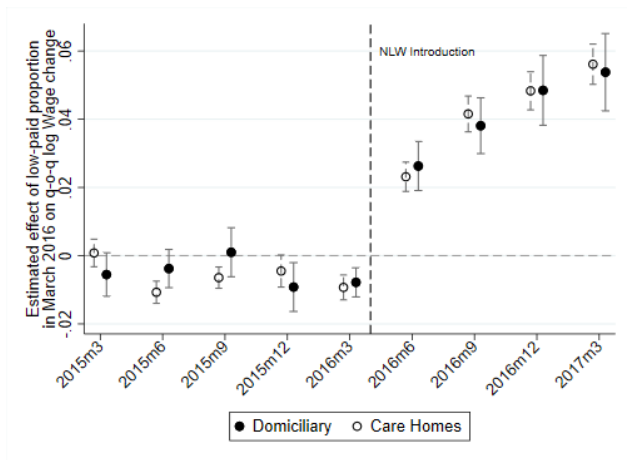
- *MIN* is proportion of workers paid less than their age-specific minimum
- *X* includes proportion female, average age, proportion care assistant, proportion with nursing qualification, occupancy rate and LA dummies

## First stage

|                              | <b>Change in log average hourly wage</b> |          |          |          |
|------------------------------|--|----------|----------|----------|
|                              | <i>March 2016 to March 2017</i>          |          |          |          |
|                              | (1)                                      | (2)      | (3)      | (4)      |
| Low-paid prop.               | 0.053***                                 | 0.054*** | 0.056*** | 0.056*** |
|                              | (0.002)                                  | (0.003)  | (0.003)  | (0.003)  |
| Low-paid prop. × Domiciliary |  | -0.000   |          | 0.001    |
|                              |  | (0.006)  |          | (0.001)  |
| Observations                 | 4,680                                    | 4,680    | 4,680    | 4,680    |
| Controls                     | No                                       | No       | Yes      | Yes      |
| F-stat                       | 519.52                                   | 280.43   | 410.41   | 203.22   |
| Mean of dep. var.            | 0.041                                    |          |          |          |

- ▷ 1 st. dev. increase in low-paid prop. (34 pp) → 1.9 pp faster wage growth on baseline of 4%

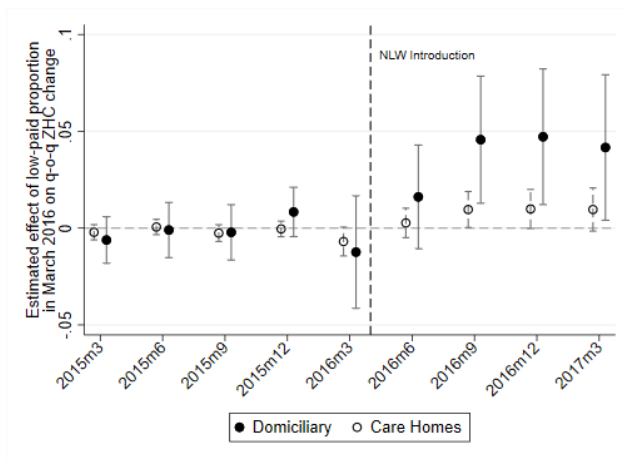
# Impact on Wages



$$\text{Pre NLW: } \Delta^q \ln W_{j,t} = \alpha_{3,t} + \beta_{3,t} \text{Min}_{j, \text{Mar}2016} + X'_{j,t} \gamma_{3,t} + \xi_{j,t}$$

$$\text{Post NLW: } \Delta \ln W_{j, \text{Mar}2016}^t = \alpha_{4,t} + \beta_{4,t} \text{MIN}_{j, \text{Mar}2016} + X'_{j,t-1} \gamma_{4,t} + \xi_{j,t}$$

# Impact on ZHCs



$$\text{Pre NLW: } \Delta^q ZHC_{j,t} = \alpha_{3,t} + \beta_{3,t} \text{Min}_{j, \text{Mar}2016} + X'_{j,t} \gamma_{3,t} + \xi_{j,t}$$

$$\text{Post NLW: } \Delta ZHC_{j, \text{Mar}2016}^t = \alpha_{4,t} + \beta_{4,t} \text{MIN}_{j, \text{Mar}2016} + X'_{j,t-1} \gamma_{4,t} + \xi_{j,t}$$

ZHC Regressions



# Discussion

- MW increase  $\Rightarrow$   $\uparrow$  in ZHCs in a low-pay sector, with stronger impacts on the sub-sector in which work organised into short and fragmented tasks
  - ▷ Domiciliary: 3.5%  $\uparrow \Delta \ln W_{j,t} \rightarrow$  2.9 pp faster ZHC growth on baseline of 6.1%
  - ▷ Care Home: 3.5%  $\uparrow \Delta \ln W_{j,t} \rightarrow$  0.41 pp faster ZHC growth on baseline of 0.6%
- Mechanism: new ZHC jobs replaced non-ZHC positions Employment
- Other low pay sectors?

## ZHC equations in low-paid sectors (LFS data)

$$ZHC_{i,t} = \alpha_5 + \beta_5 PostNLW_t + X'_{i,t} \gamma_5 + u_{i,t}$$

|                           | Share of workers on ZHC |                     |                     |                     |
|---------------------------|-------------------------|---------------------|---------------------|---------------------|
|                           | Social care             |                     | All low-pay sectors |                     |
|                           | (1)                     | (2)                 | (3)                 | (4)                 |
| Post NLW                  | 0.011***<br>(0.003)     | 0.010***<br>(0.003) | 0.008***<br>(0.001) | 0.010***<br>(0.001) |
| Observations              | 25,191                  | 25,191              | 91,362              | 91,362              |
| Controls                  | No                      | Yes                 | No                  | Yes                 |
| Pre-NLW mean of dep. var. | 0.042                   | 0.042               | 0.041               | 0.041               |

- $X$ : age, education, gender, white, British, public sector, regional dummies
- Breakdown shows significant impacts across hospitality, social care, hospitality, cleaning, leisure, textiles, hairdressing, food processing...

# Conclusion

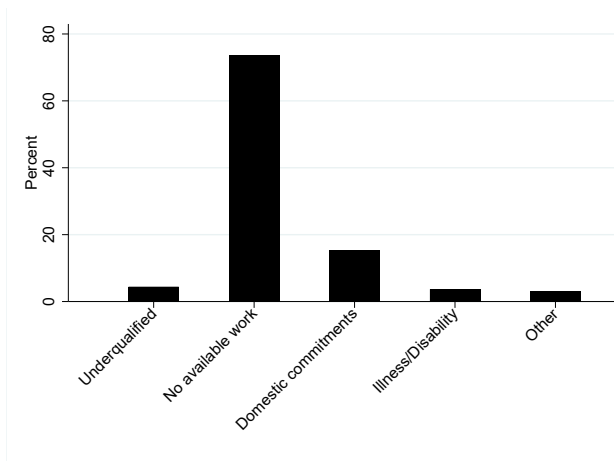
- Contribute to the recent surge in academic and policy interest on rise and nature of alternative work arrangements
- Document stark dichotomy in preferences for flexibility vs. need for security among ZHC workers
- Provide evidence suggestive of role of minimum wage policies in increased ZHC utilisation
- Results have important bearing on policy making:
  - Commitment to achieve NLW of 60% of the median wage by 2020
  - Concerns about insecure working arrangements (Taylor Review)
  - Need for regulation of ZHC, with consideration of nuances of ZHC workers

# Appendix

## Demographics of ZHC workers

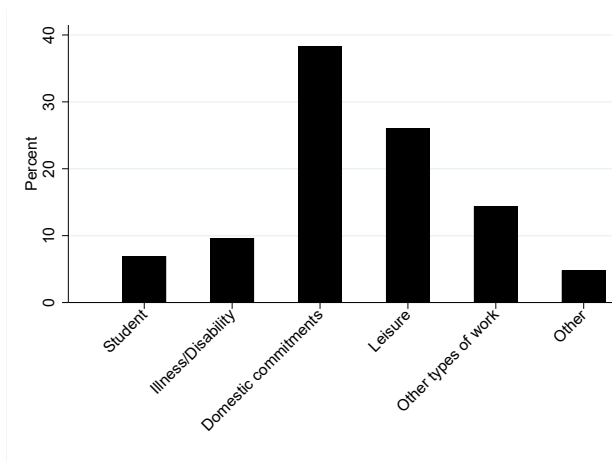
| <b>Sample of ZHC Workers in LSE-CEP Survey</b> |       |       |
|--|-------|-------|
|  | Mean  | S.D.  |
| Female   | 0.53  | 0.50  |
| Age  | 36.28 | 13.21 |
| Less than high school                          | 0.25  | 0.43  |
| High school                                    | 0.23  | 0.42  |
| Trade/technical/vocational training            | 0.11  | 0.31  |
| Bachelor's degree                              | 0.27  | 0.45  |
| Master's and/or doctorate degree               | 0.13  | 0.34  |
| Multiple employers (ZHC jobs)                  | 0.42  | 0.49  |
| Non-ZHC job holder                             | 0.34  | 0.47  |
| Hourly wage                                    | 14.92 | 16.94 |
| Hourly wage (median)                           | 8.64  |       |
| Weekly hours                                   | 18.62 | 13.67 |
| Different days worked per week                 | 4.06  | 1.71  |
| Proportion doing unpaid hours                  | 0.32  | 0.47  |
| Average weekly unpaid hours                    | 7.08  | 9.02  |
| Observations                                   | 1,167 |       |

# Main reason for not working more hours



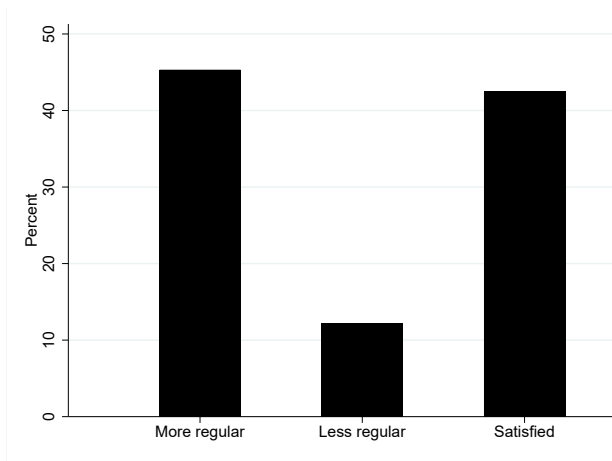
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## Main reason for wanting fewer hours



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## Desired pattern of hours at current wage rate

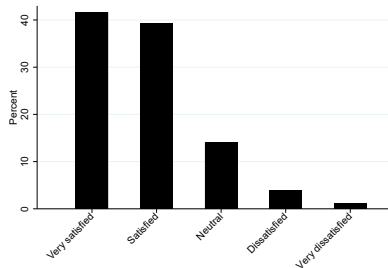


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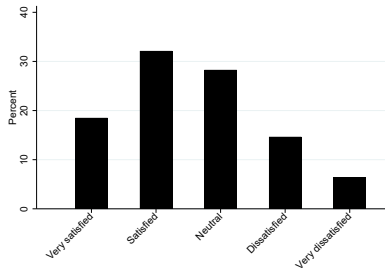


# Job satisfaction: ZHC workers vs. self-employed

## Self-employed

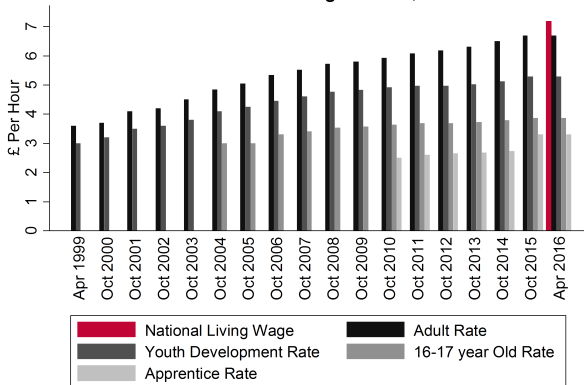


## Zero hours contract workers



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### National Minimum Wage Rates, 1999-2016



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# Summary statistics

March 2016

|                                  | All firms |       | Care homes |       | Domiciliary care |       |
|----------------------------------|-----------|-------|------------|-------|------------------|-------|
|                                  | Mean      | S.D.  | Mean       | S.D.  | Mean             | S.D.  |
| <i>Firm-level variables</i>      |           |       |            |       |                  |       |
| Number of employees              | 45.22     | 46.26 | 38.99      | 31.16 | 65.97            | 74.00 |
| Hourly Wage                      | 7.57      | 1.09  | 7.53       | 1.11  | 7.67             | 1.01  |
| Prop. paid below NLW             | 0.48      | 0.34  | 0.52       | 0.32  | 0.34             | 0.36  |
| Weekly hours                     | 25.61     | 8.90  | 28.56      | 5.17  | 15.75            | 11.31 |
| Prop. on ZHC                     | 0.12      | 0.23  | 0.05       | 0.10  | 0.38             | 0.33  |
| Female                           | 0.85      | 0.13  | 0.84       | 0.13  | 0.87             | 0.11  |
| Age                              | 42.60     | 4.63  | 42.71      | 4.53  | 42.21            | 4.92  |
| Prop. carer                      | 0.61      | 0.19  | 0.56       | 0.16  | 0.75             | 0.23  |
| Prop. with nursing qualification | 0.03      | 0.06  | 0.04       | 0.07  | 0.00             | 0.01  |
| Occupancy rate                   | 0.77      | 0.33  | 0.92       | 0.14  | 0.27             | 0.30  |
| Number of firms                  | 4,680     | 4,680 | 4,680      | 4,680 | 4,680            | 4,680 |

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# ZHC regression

## Change in proportion of employees on zero hour contracts

March 2016 to March 2017

|   | (1)              | (2)                | (3)                | (4)                | (5)                | (6)                |
|---|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Low-paid prop.                          | 0.001<br>(0.006) | 0.006*<br>(0.004)  | 0.014**<br>(0.007) | 0.012**<br>(0.006) |                    |                    |
| Low-paid prop. × Domiciliary            |                  | 0.039**<br>(0.019) |                    | 0.033*<br>(0.019)  |                    |                    |
| $\Delta \ln W_{j,t}$                    |                  |                    |                    |                    | 0.257**<br>(0.126) | 0.118*<br>(0.070)  |
| $\Delta \ln W_{j,t} \times$ Domiciliary |                  |                    |                    |                    |                    | 0.720**<br>(0.356) |
| Observations                            | 4,680            | 4,680              | 4,680              | 4,680              | 4,680              | 4,680              |
| Controls                                | No               | No                 | Yes                | Yes                | Yes                | Yes                |
| Mean of dep. var.                       |                  |                    |                    |                    |                    |                    |
| All firms                               | 0.019            |                    |                    |                    |                    |                    |
| Care homes                              | 0.006            |                    |                    |                    |                    |                    |
| Domiciliary                             | 0.061            |                    |                    |                    |                    |                    |

▷ 3.5% ↑  $\Delta \ln W_{j,t}$  → 2.9 pp faster ZHC growth on baseline of 6.1%

# Employment

## Change in log number of employees

March 2016 to March 2017

|  | (1)               | (2)               | (3)               | (4)               | (5)               | (6)               |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Low-paid prop.                                 | -0.000<br>(0.011) | -0.010<br>(0.011) | -0.001<br>(0.014) | -0.009<br>(0.013) |                   |                   |
| Low-paid prop. × Domiciliary                   |                   | 0.036<br>(0.032)  |                   | 0.024<br>(0.033)  |                   |                   |
| $\Delta \ln W_{j,t}$                           |                   |                   |                   |                   | -0.019<br>(0.245) | -0.189<br>(0.199) |
| $\Delta \ln W_{j,t} \times \text{Domiciliary}$ |                   |                   |                   |                   |                   | 0.664<br>(0.600)  |
| Observations                                   | 4,680             | 4,680             | 4,680             | 4,680             | 4,680             | 4,680             |
| Controls                                       | No                | No                | Yes               | Yes               | Yes               | Yes               |
| Mean of dep. var.                              | 0.013             |                   |                   |                   |                   |                   |

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# ZHC equations- Balanced March 2016- March 2017

| Change in proportion of employees on zero hour contracts |                   |                   |                  |                   |                  |                   |
|--|-------------------|-------------------|------------------|-------------------|------------------|-------------------|
| <i>March 2016 to March 2017</i>                          |                   |                   |                  |                   |                  |                   |
|  | (1)               | (2)               | (3)              | (4)               | (5)              | (6)               |
| Low-paid prop.   | -0.006<br>(0.005) | 0.001<br>(0.004)  | 0.005<br>(0.007) | 0.003<br>(0.005)  |                  |                   |
| Low-paid prop. × Domiciliary                             |                   | 0.034*<br>(0.018) |                  | 0.032*<br>(0.018) |                  |                   |
| $\Delta \ln W_{j,t}$                                     |                   |                   |                  |                   | 0.101<br>(0.126) | 0.060<br>(0.100)  |
| $\Delta \ln W_{j,t} \times \text{Domiciliary}$           |                   |                   |                  |                   |                  | 0.566*<br>(0.327) |
| Observations   | 5,345             | 5,345             | 5,345            | 5,345             | 5,345            | 5,345             |
| Controls   | No                | No                | Yes              | Yes               | Yes              | Yes               |
| Mean of dep. var.  |                   |                   |                  |                   |                  |                   |
| All firms  | 0.020             |                   |                  |                   |                  |                   |
| Care homes   | 0.007             |                   |                  |                   |                  |                   |
| Domiciliary  | 0.062             |                   |                  |                   |                  |                   |

▷ 3.5%  $\uparrow \Delta \ln W_{j,t} \rightarrow$  2.1 pp faster ZHC growth on baseline of 6.2%