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An Anatomy of Zero-Hour Contracts in the United Kingdom

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Summary

Zero-hour contract (ZHC) jobs – jobs that lack a guaranteed minimum number of hours – regularly make headlines. Research to date has focused on the analysis of small surveys using bivariate associations. We present the first attempt to empirically explore the determinants and labour market consequences of ZHCs using multivariate techniques. Exploiting refined measures of ZHCs in the 2014 Labour Force Survey, we find ZHCs are concentrated in jobs where labour inputs are easy to define and where specialist knowledge is low. They are particularly concentrated in jobs involving physical tasks, with one in five ZHC jobs being care assistants and home carers. This suggests employers, particularly small ones, are strategically using ZHCs as a tool for cost containment but only in a relatively restricted set of work circumstances. In terms of outcomes, even when controlling for characteristics of work and workers, we find that ZHC jobs are associated with a higher risk of variable hours, underemployment and low pay – even compared with other forms of temporally flexible and non-standard arrangements. We find no evidence that they are a particularly pervasive feature of the UK labour market, but some future growth in their incidence cannot be ruled out given polarising employment patterns.

Introduction

One striking feature of the shifting landscape of work is the emergence of zero-hour contract (ZHC) working. There is no legal definition of a ZHC job, but it is generally accepted to occur when a contract of employment lacks a guaranteed minimum number of hours (BIS 2013; ONS 2014). Proponents praise the flexibility such contractual arrangements afford to organisations and workers alike, while free-market economists have long taken the view that the ease of firing workers takes the worry out of hiring them in the first place, thus keeping joblessness low. Critics, on the other hand, describe ZHCs as a form of precarious employment more extreme than any of their ‘atypical work’ predecessors, associated with inferior job quality and labour market prospects. However, claims in both camps are often not based on systematic analysis, so little is yet known about the types of jobs in which ZHCs are concentrated, the characteristics of employees which occupy them, and the labour market implications of such contractual arrangements for workers.

Using multivariate techniques on the 2014 Quarterly Labour Force Survey (LFS) to disentangle explanations, we document and account for the incidence of ZHCs and assess whether they are associated with inferior labour market outcomes for their incumbents. The report is structured as follows. First, we present the anatomy of ZHC jobs in the UK. In particular, we look at the prevalence of ZHCs relative to other forms of flexible arrangements and establish the characteristics of work and workers in ZHCs. Second, we examine the labour market outcomes of such jobs and compare them with other forms of flexible working arrangements to arrive at a comprehensive assessment of three narratives on ZHC working. Conclusions and implications for policy are discussed in the final section.

1 Definition and prevalence of ZHCs

A conclusive definition of ZHCs that was understood by employers and employees was lacking in the UK until recently. As a result, for a number of years any estimates of their prevalence have been misleading despite a question on ZHCs appearing in the LFS since the mid-2000s.¹ Following a consultation exercise with employer, employee and legal groups, the Department of Business, Innovation and Skills defined ZHCs as ‘*an employment contract in which an employer does not guarantee the individual any work and the individual is not obliged to accept any work offered*’ (BIS 2013: 2). The refinement in the definition of ZHCs was accompanied by the Office for National Statistics introducing major improvements in their survey methodology. As a result, we can now make more informed assessments of their prevalence. Table 1 estimates the proportion of ZHC workers and other flexible arrangements by employment status. The total number of workers on ZHCs in their main job in 2014 stood at 836,000, representing about 2% of the total workforce. ZHCs are less prevalent than other forms of flexible and non-standard employment such as shift work, annualised hours and temporary contracts, and only slightly more common than agency work.

The situation in relation to growth in ZHCs is harder to assess owing to changes in the LFS item format producing discontinuities in how ZHCs were measured. With these caveats in mind, the available data does appear to show an increase in their incidence in recent years, especially in the wake of the recession. An analysis of the LFS for the period 2006 to 2012 found a sharp rise in the fraction of ZHC jobs of around 50%, most of which occurred between 2010 and 2012 (Resolution Foundation 2013). Similar trends are found in the WERS, with the percentage of workplaces making use of ZHCs increased from 4% to 8% from 2004 to 2011 (van Wanrooy et al 2013). However, while the use of ZHCs appears to be growing, there is widespread consensus that it is partly attributable to growing public awareness, leading to improved reporting from both individuals and employers in

¹ In particular, early LFS waves did not allow respondents to specify working under a ZHC if they reported shift work, an issue resolved in the later LFS waves which we use in this article (ONS 2013).

surveys. Indeed, when looking at the length of time in one's current job, an examination of the LFS shows that two-thirds of the 19% increase in the incidence of ZHCs between 2014 and 2015 is from respondents in the same job and with the same employer, indicating that some of the growth is not resulting from new ZHC jobs but from improved reporting by their incumbents.

Table 1: Flexible arrangements by employment status (%)

	All workers	Standard workers	Non-standard workers	Self-employed
Annualised hours	4.1	5.1	3.7	0.5
Shift work ^a	17.6	20.6	17.6	5.8
Temporary contract	6.5	-	22.1	-
<i>Zero-hour contract</i>	2.2	0.8	5.9	1.0
Agency worker	1.5	1.5	1.2	-
On-call working	2.0	2.2	1.5	2.2
<i>Any flexible arrangement</i>	16.3	15.1	24.7	4.4
All workers	100	53.5	30.8	15.8

Source: Respondents' main job in the Labour Force Survey 2014

Notes: ^a Available in the April to June quarter only. Standard workers are full-time permanent employees, non-standard workers are part-time and/or non-permanent employees.

2 Determinants of ZHCs

We next summarise the results from multivariate analyses on the determinants of ZHCs. In exploring the correlates of ZHC jobs, we distinguish two sets of factors: those related to characteristics of work and those related to the characteristics of workers. In Table 2, we report *odds ratios* derived from logistic regressions. The numbers are then interpreted as the odds of being in a ZHC job *relative to* a defined reference category, *holding other factors constant*. An odds ratio of 1 for a given variable means the odds between being in a ZHC job *relative to* the reference category is exactly even. Odds ratios greater than 1 indicate more likely, and less than 1 indicate less likely – relative to the reference group. Column 1 reports the odds ratios relative to all other types of employee, Column 2 relative to other forms of flexible arrangements, and Column 3 relative to full-time permanent (standard) employees.

2.1 Characteristics of ZHC work

Theories of workplace flexibility make the distinction between functional and numerical flexibility. ZHCs can be viewed as beneficial to employers in certain circumstances because they allow them to easily vary labour inputs (and so costs) in line with peaks in demand (Atkinson 1984). Sociological theories of employment make predictions regarding the sorts of occupations which are amenable to numerical flexibility – and so ZHC working – depending on the characteristics of work. Goldthorpe's (2007) model of social stratification emphasises two aspects of work: (1) how difficult tasks are to monitor (and so temporally separable); and (2) the level of 'human asset specificity' (specialist knowledge) required to perform the job. In occupations where labour inputs are harder to define and require specialist knowledge, job tenures are typically longer, earnings are less connected to day-to-day productivity (for example salaried), advancement happens through internal labour markets, and flexibility is functional rather than numerical or temporal in nature (Cully 1999).

Conversely, in occupations where labour inputs are easily defined and specialist knowledge is not very important, tenures are typically shorter, earnings are more directly connected to labour inputs

(for example hourly paid), and they generally offer fewer opportunities for advancement. In such situations, employers can more easily exercise numerical flexibility by varying headcounts in the case of fixed-term contracts or work hours in the case of shift work. By extension, we expect ZHCs to be much more prevalent in the latter.

Table 2: The determinants of ZHC jobs

	(1)	(2)	(3)
	ZHC vs all other employees	ZHC vs flexible arrangements (excl. ZHC)	ZHC vs full-time permanent
Specialist knowledge	0.551 ^{***}	0.587 ^{***}	0.286 ^{***}
	(-8.11)	(-7.31)	(-11.38)
Work monitoring difficulty	0.537 ^{***}	0.664 ^{**}	0.342 ^{***}
	(-4.17)	(-2.76)	(-4.49)
Service tasks	1.248 ^{***}	1.148	1.732 ^{***}
	(3.41)	(1.86)	(5.31)
Manual tasks	1.511 ^{***}	1.208 ^{***}	1.606 ^{***}
	(8.59)	(3.43)	(5.90)
Temporary contract	6.341 ^{***}	0.682 ^{***}	-
	(23.39)	(-4.39)	
Part-time	3.295 ^{***}	3.651 ^{***}	-
	(13.24)	(14.89)	
Workplace: 1-24	Ref.	Ref.	Ref.
Workplace: 24-99	0.947	0.791 ^{**}	0.696 ^{**}
	(-0.78)	(-3.21)	(-2.91)
Workplace: 100+	0.582 ^{***}	0.426 ^{***}	0.213 ^{***}
	(-4.69)	(-7.12)	(-5.66)
Female	0.962	1.090	1.651 ^{***}
	(-0.47)	(1.07)	(4.02)
16-24	2.477 ^{***}	2.075 ^{***}	1.921 ^{**}
	(6.97)	(5.45)	(3.28)

25–34	1.343** (2.83)	1.196 (1.66)	1.254 (1.37)
35–44	1.068 (0.62)	0.993 (–0.06)	0.741 (–1.61)
45–54	Ref.	Ref.	Ref.
55–65	1.308* (2.47)	1.335* (2.48)	0.842 (–0.83)
65+	1.585** (2.97)	1.829*** (3.66)	0.803 (–0.36)
Degree	0.883 (–1.47)	0.888 (–1.39)	0.682* (–2.43)
GCSEs/A-levels	Ref.	Ref.	Ref.
Other qualifications	0.811* (–2.40)	0.876 (–1.44)	0.777 (–1.68)
No qualifications	0.496*** (–4.49)	0.555*** (–3.57)	0.693 (–1.42)
Live with parents	0.779 (–1.90)	0.823 (–1.45)	0.688 (–1.85)
Married	0.886 (–1.47)	0.928 (–0.85)	0.716* (–2.36)
Children	0.950 (–0.64)	1.041 (0.48)	1.136 (0.95)
Pseudo R2	0.158	0.138	0.105
N	62,329	14,449	53,385

Source: Employees' main job in the Labour Force Survey 2014

Notes: Logistic regression estimations and odds ratios reported. Z-statistics in parentheses. Statistical significance: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Flexibility arrangements (excl. ZHC) are employees who have a contract involving at least one of the following: annualised hours, shift work, temporary contract, agency workers, and workers with on-call working.

The results in Table 2 largely support these two work characteristics as being predictive of ZHCs: ZHC jobs are less likely to be found in occupations where labour inputs are harder to define and where

higher levels of specialist knowledge are required.² When examining the incidence of ZHCs compared with other forms of flexible arrangements (Column 2), we find that these two salient characteristics are even more predictive of ZHCs compared with other forms of flexible work.

Given the large sample sizes of the LFS, we can drill down into an even finer level of detail to see which four-digit occupations and three-digit industries account for the prevalence of ZHCs. Table 3 lists the top ten occupations and industries that account for ZHCs. It shows that one in five ZHC employees are concentrated in just one occupation: care assistants and home carers. Half of all ZHC workers are concentrated in just ten occupations (of a possible 353). Examining prevalence by industry, we find a similar pattern of labour market concentration in a smaller number of largely labour-intensive service sectors characterised by varying demands (out of a possible 88). Given these patterns, we therefore included some specific indicators of labour-intensive tasks used heavily in these occupations and sectors – service and manual task indicators – as predictors in the multivariate models in Table 2. We find these both strongly predict ZHC working. When comparing ZHC jobs with other forms of flexible arrangement (Column 2), we find that they are not statistically distinguishable in the case of service tasks, but are in the case of manual tasks. This implies one main differentiator between ZHC jobs and other kinds of flexible arrangements is that they are more physically demanding, and could provide one reason for employers choosing ZHCs over other types of flexible arrangement.

Table 3: Concentration of ZHC jobs in top ten occupations and industries

	Occupations (4-digit)	% of all ZHC jobs	% occupation ZHC jobs	Industries (2-digit)	% of all ZHC jobs	% industry ZHC jobs
1	Care assistants and home carers	19.8	12.0	Food and beverage service activities	13.4	8.2
2	Kitchen and catering assistants	5.2	7.4	Residential care activities	11.8	6.6
3	Sales and retail assistants	4.8	2.4	Education	8.6	1.4
4	Cleaners, domestics	4.2	3.6	Human health activities	8.5	2.0
5	Bar staff	3.1	12.2	Social work without accommodation	7.4	4.2
6	Security guards and related occupations	3.1	9.9	Retail trade, except vehicles	6.5	1.4
7	Waiters, waitresses	2.8	11.2	Accommodation	4.4	8.2
8	Nursing auxiliaries and assistants	2.7	4.7	Sports, amusement, recreation	4.1	7.7
9	General office assistants/clerks	2.3	1.8	Land transport incl. via pipelines	3.0	3.0
10	Chefs, cooks	1.8	3.3	Security & investigation activities	3.0	10.1
Total top 10 (%)		48.1		Total top 10 (%)	67.8	

Source: Employees' main job in the Labour Force Survey 2014

Finally, we also examine several other characteristics of work in Table 2 which are likely predictive of ZHC working. We find that ZHC jobs are much more likely to be temporary jobs that are part-time, demonstrating that forms of atypical and non-standard employment are not mutually exclusive.

² Information on occupational characteristics is derived from the British Skills and Employment Survey (a job task database, see Felstead et al 2014) and mapped onto the LFS by four-digit SOC 2000 occupation codes (see Williams 2016).

ZHCs are less likely to be found in larger workplaces too, presumably because such workplaces can better manage staffing implications of fluctuations in demand internally than smaller workplaces.

2.2 Characteristics of ZHC workers

Independent of characteristics of work, it is possible that ZHC jobs are particularly attractive to certain labour market groups (because of the flexibility they afford), reflecting matching between individual preferences and contractual arrangements. For instance, we might expect those with young children to be predictive of ZHC working as a way of achieving work–family balance. However, given the lack of guaranteed hours, ZHCs might also be associated with labour market disadvantage. It is therefore possible that workers with lower human capital (education), restricted in their employment options, to be more likely to accept ZHC jobs. For example, younger workers, with lower levels of work experience overall, are likely to fall into this category. Similarly, groups with perceived weaker attachment to the labour market, such as women and post-retirement-age workers, may also be channelled into ZHC jobs.

Contrary to human capital predictions, we find more-educated workers to be over-represented in ZHCs relative to groups with middle levels of education (GCSEs/A-levels) (Table 2). We find no strong evidence of ZHCs being more prevalent amongst women. Similar results are obtained when we explore other indicators of labour market attachment, such as being married, having children and living with parents. Of all the indicators included in our model, age shows the clearest patterns: a curvilinear relationship with notable concentrations of ZHCs in younger (less than 24) and older workers (over 55). The obvious question that follows is whether the observed sorting to ZHCs is a result of worker preferences or whether it is indicative of labour market disadvantage. For example, if ZHCs are associated with labour market disadvantage, their higher odds observed in our data amongst younger workers is clearly alarming. To this we now turn.

3 Outcomes of ZHC jobs

We examine three broad aspects of job quality that may be associated with ZHC working relating to hours, pay and labour market prospects. The associations between ZHC jobs and other forms of flexible arrangements with several indicators of job quality are displayed in Table 4.

3.1 Hours

Atypical employment is often associated with three kinds of inferior outcomes in terms of working hours: hours inadequacy, hours insecurity and hours unpredictability (Alexander and Haley-Lock 2015). In the LFS, we can gauge only the first two types. Inadequacy is captured by a yes/no item asking respondents to report whether they would like to work more hours in their present job at the current basic rate of pay if they were given the opportunity. Hours insecurity is captured by another yes/no item asking respondents whether their usual hours vary from week to week. While we find ZHC working is associated with hours insecurity as might be expected (Column 2), we find no evidence of differences in the overall hours of ZHC employees relative to non-ZHC employees (Column 1). However, ZHC workers are more likely to report underemployment (Column 3), which is also the case for temporary and part-time employees and is not unique to ZHC jobs. This suggests then that while ZHC workers do not necessarily work more or fewer hours relative to other types of employment, controlling for other factors, the level of hours offered is inadequate for those working in ZHC jobs, suggesting that workers with restricted labour market opportunities may be channelled into ZHC jobs. Indeed, we find ZHCs are associated with looking for another job (Column 7), suggesting they are often being used as a stop-gap.

Table 4: Labour market outcomes of ZHC jobs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Log hours	Variable hours	Under-employed	Log hourly pay	Low pay	Pay varies	Looking for another job
Zero-hour contract	0.0138 (0.38)	4.993*** (18.83)	1.424*** (4.14)	-0.156*** (-4.08)	1.811*** (3.71)	5.056*** (11.90)	1.893*** (7.60)
Annualised hours	- 0.0491*	0.947 (-1.16)	1.084 (1.08)	- 0.00255 (-0.20)	0.950 (-0.53)	0.697** (-2.66)	1.107 (1.27)
Agency work	0.0488 (1.59)	0.946 (-0.60)	1.159 (1.20)	0.00736 (0.29)	0.850 (-0.87)	1.274 (1.30)	1.764*** (5.01)
On-call working	0.0109 (0.44)	3.163*** (14.84)	0.937 (-0.54)	0.0446 (1.68)	0.831 (-1.03)	2.665*** (8.03)	1.154 (1.22)
Temporary contract	-0.0354 (-1.65)	1.391*** (7.00)	1.284*** (4.07)	- 0.0565** (-3.00)	1.445*** (3.72)	2.330*** (8.59)	2.529*** (16.18)
Part-time	- 0.613*** (-46.93)	0.913*** (-3.39)	3.938*** (35.92)	- 0.0752*** (-8.19)	1.755*** (10.58)	1.130 (1.78)	1.752*** (12.72)
Pseudo R2 / R2	0.156	0.040	0.097	0.446	0.282	0.057	0.078
N	62,132	62,132	62,132	42,334	42,334	42,334	62,132

Source: Employees' main job in the Labour Force Survey 2014

Notes: Logistic regression estimations and odds ratios reported, except for Columns 1 and 4, which are Ordinary Least Squares estimations. T/Z-statistics in parentheses. Control variables estimations omitted to save space. Controls: specialist knowledge, work monitoring difficulty, service tasks, manual tasks, workplace size, female, age, highest qualifications, whether live with parents, whether married, whether have children, whether foreign-born, and tenure in current job. Statistical significance: * p < 0.05, ** p < 0.01, *** p < 0.001.

3.2 Pay

Turning to pay, we examine hourly rates to standardise for differences in hours across jobs (Column 4). We find ZHCs are associated with 15.6% lower hourly pay, controlling for other factors (roughly equivalent to gender pay gap). It is also notable that the pay penalty for ZHCs is greater than that for

temporary and part-time working. To further gauge the substantive implications of the pay penalty, we estimate a separate model with probability of receiving low pay (a binary variable indicating whether pay is below two-thirds the median hourly wage) and find that ZHC working is associated with a risk of low pay relative to non-ZHC workers, and this still holds even when compared with other flexible arrangements where a pay penalty exists (Column 5). ZHCs score even worse with respect to pay variability, which is perhaps not so surprising given the insecurity in hours (Column 6). Finally, to estimate extent to whether ZHC employment is by choice, we explore an LFS item asking whether the respondent is looking for another job. We find that ZHC workers are more likely to respond positively, only second to those on temporary contracts (Column 7). While dissatisfaction with the organisation rather than the type of contract could also account for this, given our findings on pay penalties and underemployment, we clearly cannot rule out the possibility that ZHC work is not only substandard but often involuntary.

3.3 Labour market prospects of ZHC workers

To examine the extent to which ZHC working is temporary or persistent, we turn to the British Household Panel Survey (BHPS), which annually interviewed a representative sample of households (Taylor et al 2010). We use the years 2001 to 2008, when respondents were asked to report whether they work on a ZHC. We find that there are substantively large relative odds of being unemployed in the next year following a spell of ZHC working (available from the authors), but this is only significant at the 10% level. There is, however, stronger evidence of a persistence of ZHC working with a spell in a ZHC job resulting in a 3.7 greater odds of being observed in a ZHC job the next wave relative to other forms of employment. The BHPS analysis is only preliminary because of small numbers of ZHC jobs observations in BHPS and different time period and survey items relative to the LFS, but it is suggestive of ZHCs being associated with spells of unemployment and persistence in ZHC working.

Conclusions and implications

Despite the lack of a robust evidence base, normative statements and policy recommendations on ZHCs have been widespread. This paper has sought to address this gap. Contrary to popular opinion, we find no evidence that ZHCs are a pervasive feature of the British labour market. However, given their concentration within low-skilled service occupations – which are growing in size across the UK and the developed world more generally (Goos et al 2014) – future growth in their incidence cannot be ruled out. Given the finding on the incidence of superior educational credentials amongst these workers, it is possible that some skills mismatch is present in the labour market which, if persistent because of entrapment in such jobs, will lead to skills obsolescence. Sadly, we find little evidence of any redeeming features of ZHC jobs in terms of better pay or transitions to more stable forms of employment. Rather, we find persistence of ZHC working in the next survey wave in the BHPS. Coupled with their higher incidence amongst younger workers, the prospect of a scarring labour market effects amongst this vulnerable group should be of particular concern to policy-makers. It is also important to ensure that ZHCs do not come to represent another source of in-work poverty in the form of hours underemployment. If this was the case, then in addition to National Minimum Wage and Living Wage provisions, extending regulation to hours in the form of minimum hour guarantees is a policy worth considering as a means to combat in-work poverty.

From an organisational point of view, one can clearly see the benefits that ZHCs afford to organisations in terms of numerical and temporal flexibility. We find for example that one in five ZHC jobs are in just one occupation: care assistants and home carers. This suggests it is largely employers using ZHCs to their advantage when it makes sense to do so from a business point of view. Given their strong correlations with low job quality indicators, even when compared with other forms of

non-standard employment, it is somewhat encouraging to see the incidence of ZHCs being confined to a restricted set of occupations and industries and generally affecting only a small proportion of jobs within them. However, it is evident that ZHCs are another manifestation of the 'core/periphery' workforce employment strategy (Atkinson 1984) which has been shown to have a 'dark side' for organisations in the form of wasted human capital and negative employee attitudes (Kalleberg 2003). Indeed, as our study shows, ZHCs are associated with increased likelihood of looking for another job, thus indicating a potentially low employee attachment to the organisation. Employers should therefore be mindful of these negative aspects of ZHCs when using them as a workforce employment strategy.

The implications of its cross-sectional design and the small sample sizes in the BHPS mean that we cannot fully address the long-term implications of ZHC working, so our conclusions should be treated as preliminary. The limitations of the current study should provide the basis for future research on ZHCs. Overall, we refrain against recommending heavy-handed regulation of ZHCs despite their inferior job quality – even in comparison with other flexible arrangements – as they represent a numerically small form of employment (at present) amenable to only a relatively restricted set of circumstances. However, we conclude ZHCs are therefore clearly no substitute for high-quality skills, employment growth and active labour market policies.

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