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Zero-hours contracts: Flexibility or insecurity? Experimental evidence from a low income population

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Non-technical summary

The growth of zero-hours contracts in the aftermath of the 2008 financial crisis has received considerable interest. By not guaranteeing any work and only paying for work done if and when requires, zero-hours contracts introduce significant uncertainty and variability in hours worked, pay and schedules. Yet, the effect of this uncertainty on workers is not well understood. On the one hand, supporters claim that zero-hours contracts offer much needed flexibility not just for employers but also for workers and their families. This view appears to be supported by surveys that typically do not find large differences between the job satisfaction of workers on zero-hours contracts and those on permanent contracts. On the other hand, critics say that zero-hours contracts are a burden for workers. This view is supported by qualitative findings that the uncertainty of zero-hours contracts negatively affects workers' health, finances and family relationships.

The existing evidence on the impact of uncertainty is not only inconclusive but also potentially biased. Zero-hours contracts tend to be associated with a lower pay, lower training opportunities, fewer promotions and are concentrated in particular industries such as hospitality or personal services. For this reason, it is difficult to separate the effects of uncertainty from those of these other (negative) job characteristics.

This study addresses these problems by using experimental methods. 301 low-income, working age, non-student individuals took part in an on-line experiment testing worker labour supply behaviour under standard and zero-hours contractual conditions. Results provide compelling evidence that work related uncertainty is avoided by workers. Participants who faced a 50\% probability of work not being available were significantly less likely to work compared to participants who faced no uncertainty. The magnitude of the difference was substantial: between 15 and 30 percentage points. This is not only because variability in work availability reduced total expected pay but also because uncertainty itself was perceived as detrimental. Even when they received a pay rate twice as high and when they had access to out of work benefits when work was unavailable, participants facing uncertainty about work availability chose to work less.

The second finding indicates that benefits can be used to encourage people to take up insecure/ flexible work. This can be done either by making sure benefits provide a source of income when work is unavailable or by threatening benefit sanctions. In both cases, the probability to choose work increased by around 11 to 15 percentage points.

Zero-hours contracts: flexibility or insecurity? Experimental evidence from a low income population

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Abstract

This paper experimentally studies labour supply responses to earnings uncertainty. 301 low-income, working age, non-student individuals took part in an on-line experiment simulating standard and zero-hours contractual conditions. Results unambiguously support the hypothesis that work uncertainty discourages work. This is not only because variability in work availability reduced total expected pay but also because uncertainty itself is perceived as detrimental. Uncertainty is avoided even at the cost of lower total earnings. Interactions between work related uncertainty and the benefit system are important. Both the use of benefits as insurance when work is unavailable and benefit sanctions can increase incentives to take up insecure work.

Keywords: precarious work, economic insecurity, wages, labour supply, low income, experiment

JEL: D8, I38, J83, J88

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1 Introduction

The economic and financial crisis that erupted in 2008 was followed by an increase in atypical and insecure jobs (Prosser, 2016; Finnigan, 2018). The increase followed a decades long shift in advanced capitalist societies from the standard employment contract characterized by long tenure, good pay and job security to non-standard or atypical employment (Kalleberg et al., 2003; Kalleberg, 2011; Kalleberg and Vallas, 2018; Rubery et al., 2018; Tregaskis et al., 1998). While long-term trends are well-understood, there is less agreement about the underlying causes, the extent to which these changes are desirable or the appropriate policy responses.

One body of work attributes these changes in employment to structural processes such as globalization, technological change, the rise of financial capitalism and capital mobility, as well as demographic shifts. On the one hand, slower economic growth, increased competition and changes in technology pressure firms into increasing the numerical flexibility of their workforce and limiting their wage bill (Kalleberg et al., 2003; Tregaskis et al., 1998). On the other hand, the rising labour market participation of women, particularly mothers, older workers and students creates employee demand for working arrangements that are more flexible than the standard employment contract. In this view, the spread of non-standard employment is not necessarily bad (Jahn et al., 2012). Non-standard employment may enable peripheral groups such as young workers, women with care responsibilities, older workers or immigrants to participate in the labour market. Employers may use atypical jobs as a screening mechanism, thereby lowering the cost of hiring. A general move towards increased employment flexibility may also avoid the divide between a core workforce on standard employment contracts and a peripheral one in temporary/ insecure jobs (Barbieri, 2009).

A different school sees the rise of atypical employment as a result of shifts in the political economy landscape that increased the power of capital at the expense of labour (Kalleberg and Vallas, 2018). In this view, the undesir-

ability of non-standard employment from a worker's perspective is taken as given. Flexibility is entirely to the benefit of the employer, although the dualisation literature provides a more nuanced view highlighting the insider-outsider divide (Rueda, 2007). An increasing body of evidence indicates work related insecurity can have negative consequences for workers, most notably increased stress, poorer physical and mental health and financial difficulties (Burchell, 2011; Burgand et al., 2009; Bender and Theodossiou, 2018; Green and Leeves, 2013).

A key aspect of this debate is the extent to which the flexibility embedded in non-standard employment contracts is one-sided and the extent to which workers benefit from or are harmed by it. Answering this question is not as straightforward as it may seem. Non-standard employment is often associated with poorer job quality: lower wages, fewer benefits, fewer hours, less control. However, this is not evidence that *flexibility itself* is a negative job feature. Surveys of job satisfaction often fail to find significant differences between workers on standard employment contracts and those in non-standard jobs (Guest et al., 2006; Pyper and McGuinness, 2018) and workers often state that they are happy with their existing flexible arrangements. In contrast, qualitative studies indicate that the uncertainty in working hours, working schedules and pay associated with flexible employment can both create significant financial hardship and strain family and social relationships (Lambert, 2008; Ravalier et al., 2017; Pennycook et al., 2013).

This paper seeks to answer the question of whether flexibility is beneficial or harmful to workers using a different methodological approach. Rather than asking respondents about their satisfaction with a given set of work arrangements in a survey or in interviews, inference is drawn by examining worker behaviour in an on-line real effort experiment with low income, non student participants. Using an experimental framework has the advantage of clearly isolating flexibility/ uncertainty from other job characteristics that might influence worker behaviour. Results provide strong evidence that uncertainty

is perceived as undesirable by workers and avoided wherever possible. A second contribution is to provide evidence on the interactions between work uncertainty and the benefit system. Workers can be incentivised to take up flexible work both by providing a safety net that reduces uncertainty around income and by sanctioning them. The rest of the paper proceeds as follows. Section 2 discusses the different ways non-standard employment generates uncertainty, focusing on an exemplary case - zero hours contracts. Section 3 details the experimental design and the characteristics of the sample. Section 4 presents the main results, Section 5 discusses them and Section 6 concludes.

2 Precarious work or flexible working?

While a canonical definition of insecure or precarious work has yet to emerge, contractual uncertainty, insecurity or instability is usually a key element (Kalleberg and Vallas, 2018; Prosser, 2016). The literature on non-standard/ atypical employment has generally lumped together various working arrangements that diverge from the standard employment contract, including self-employment, temporary, part-time, shift, variable hours, on-call and on-demand jobs. Not all of these arrangements necessarily involve uncertainty. When they do, uncertainty can refer to different aspects of the job: pay, hours, schedules or length of employment. The uncertainty can refer to the very near (e.g.the number of hours worked next week) or the distant future (e.g. whether the contract will be renewed next year).

Zero-hours contracts are an employment arrangement that embodies the insecurity associated with non-standard employment. Under this type of contracts, employees are not guaranteed any work and are only paid for work carried out but usually agree to be available for work if and when required (Adams and Prassl, 2018; Pyper and McGuinness, 2018). Their hours, pay and schedules can be varied at very short notice. Together with undeclared, informal work and some types of self-employment, zero-hours contracts are

probably one of the most flexible/ insecure forms of employment.

2.1 A classical example: Zero-hours contracts

In the UK, zero-hours contracts have attracted considerable attention after their numbers appeared to increase considerably between 2010 and 2018. They are thought to make up for 6% of contracts and approximately 3% of employees (Adams and Prassl, 2018; Farina et al., 2019). The existing evidence suggests that employers use the flexibility afforded by zero-hours contracts to outsource the risk of low demand to employees. Zero-hours workers work fewer hours on average, experience more week-to-week variability, and are more likely to be underemployed than employees on other types of contracts (Adams and Prassl, 2018; Koumenta and Williams, 2019). They also experience a pay penalty of approximately 8-10% (Adams and Prassl, 2018; Koumenta and Williams, 2019). With respect to the uncertainty they involve, zero-hours contracts resemble the very precarious working arrangements prevailing in the XIX-th and early XX-th century (Quinlan, 2012).

The uncertainty embedded in zero-hours workers has been said to at least partly reflect worker preferences for 'flexibility'. The standard employment contract with fixed, regular, full-time employment is believed to be unsuitable for students, older workers and women with care responsibilities. These and other groups who do not wish to or cannot work full time are thought to benefit from the existence of zero-hours contracts. The evidence on the benefits of flexibility for workers is scant and often contradictory. A 2013 survey of zero-hours workers in the UK in 2013 found they were slightly more satisfied with their jobs and work-life balance compared to permanent employees(Development, 2013). On the other hand, qualitative evidence suggests that zero-hours contracts introduce significant instability and may harm workers by making the management of both budgets and family commitments more difficult (Henly and Lambert, 2014; Pennycook et al., 2013). The unpredictability of working hours, schedules and pay interferes with the ability

to plan financially, organize child-care and take on long-term commitments such as a mortgage. There is also evidence that management use the instability in hours and pay as a tool to control employees and ensure they are compliant (Pennycook et al., 2013).

Standard rational actor models suggest that humans dislike uncertainty and seek to avoid it, i.e. they are risk averse (Rabin, 2000). This prediction is borne out by a substantive body of research that documents risk aversion in a variety of contexts (Holt and Laury, 2002; Goeree et al., 2003). However, the salience of risk aversion in labour market decisions and the way it influences behaviour are less well understood. The theory-based expectation is that workers prefer certainty and they will seek to avoid situations where work availability is uncertain.

2.2 The role of public transfers

Public transfers have sometimes been construed as the answer to retaining flexibility while limiting insecurity. In the golden years of the standard employment contract, the role of public transfers was mainly to provide an income source to those who could not participate in the labour market for particular reasons. As persistent unemployment became a major policy concern, the role of working age public transfers transformed to emphasize support for job creation. On the one hand, in-work benefits were introduced to make low paid employment more attractive. On the other hand, workfare sought to limit or even remove out of work benefits as an alternative source of income.

In theory, public transfers could be used to mitigate some of the variability in income generated by insecure employment, including zero-hours contracts. By replacing or topping up incomes when work is unavailable, public transfers could reduce income insecurity while enabling flexibility. In practice, such a system is not easy to implement. The administrative requirements of accessing benefits may be more difficult to meet when pay is

variable. Moral hazard considerations that typically limit the availability of out of work benefits continue to be salient.

Traditionally, the UK had separate income support programs for out of work individuals and low paid workers. The introduction of Universal Credit removed this divide but introduced other features that might be problematic for workers on zero-hours contracts such as a requirement to increase hours and pay. The switch to making payments in arrears is also salient. Because current payments are based on the previous month's earnings, Universal Credit could actually increase the variability of income. Finally, since 2011, the use of benefit sanctions increased significantly with recipients sometimes sanctioned for things outside of their control such as missing an appointment because of illness, family commitments or even a job interview (Reeves and Loopstra, 2017; Dwyer, 2018). While sanctions may increase the transition rate into employment, they may be harmful to future job prospects (Arni et al., 2013).

3 How can experiments help our understanding of work related uncertainty?

The existing evidence makes it difficult to judge the extent to which zero-hours contracts conform to worker preferences or not. Surveys of job or hours satisfaction may be unsuitable for capturing complex situations and suffer from desirability bias. Workers may also express satisfaction not because of a preference for flexibility but because of a perceived lack of alternative employment. On the other hand, qualitative studies may not be necessarily representative of zero-hours workers experience and they may be more likely to capture the negative aspects. Both types of methods are vulnerable to biases common to observational studies. Zero hours contracts have on average worse pay, are part-time, have fewer training opportunities, and tend to be concentrated in particular occupations and industries (Farina et al., 2019;

Koumenta and Williams, 2019). In addition, zero hours contracts are not randomly distributed in the working age population. Workers in these jobs tend to disproportionately come from marginal/ vulnerable categories such as immigrants, students and young people, the less-educated, minorities and women. Both worker and job characteristics can confound preferences for flexibility and these confounding factors are not easily dealt with in observational studies.

Experimental studies have the advantage of being able to address confounding factors, observed or unobserved, in a convincing way (Charness and Kuhn, 2011; Falk and Heckman, 2009). By carefully manipulating the environment and controlling the assignment of units to treatments, the researcher can be fairly confident that changes in observed behaviour can be attributed to treatment manipulation and not other coincidental factors.

The most important criticism levelled at experiments concerns their artificial nature and potentially lack of generalizability. There are two important aspects: participants and their backgrounds and the experimental environment itself. Recruiting participants from convenient pools such as undergraduate students rather than from the population of interest can be problematic insofar as the behaviour of the two groups differs and patterns observed in one group cannot be generalized to the other. To avoid this problem, participants in this study were recruited from the low-income working age population, for whom zero-hours contracts are particularly salient. To participate in the experiment, participants needed to be aged 18 to 60 and to have a family income of £20,000/ year or less. Undergraduate students were excluded even when they worked and satisfied the income condition.

The second generalizability issue concerns the experimental environment itself and its ability to replicate all the real-world features of interest. While labour markets tend to be complex, a growing number of studies have successfully used experiments to study a large number of phenomena such as job search behaviour, competition, wage bargaining, market design and so-

cial preferences among others (Charness and Kuhn, 2011). Elements that are deemed important by theory such as for example the cost of providing effort, the wage structure or out of work income streams can be credibly reproduced in the lab (Falk and Heckman, 2009; Camerer and Hogarth, 1999). Following best practice, this study used a real effort task and high monetary incentives to simulate the context in which the decision to work is made. In addition, experimental instructions deliberately use language associated with the decision to work in the real world. Completing the experimental task is referred to as 'working' and associated payments as 'earnings'. The payment associated with the non-work alternative is referred to as a 'benefit'. Withdrawal of this alternative in referred to as a 'benefit sanction'. The language is designed to encourage participants to identify the experimental context with a real-world work decision situation.

This study contributes to the debate on flexibility and worker preferences by providing experimental evidence on how uncertainty about work and pay affects worker behaviour. Using an experimental framework allows for a clear isolation of uncertainty from other job characteristics that may also influence worker choices. By varying the uncertainty about work availability and total pay and observing worker responses, a clear test of how uncertainty impacts willingness to work can be performed. The same framework is then used to test for interactions between work and pay uncertainty and the benefit system. This is done by varying the availability of an out of work benefit and/ or the use of benefit sanctions.

The next section provides a detailed description of the experimental design. A complete transcript of the experiment can be found in Appendix 2.

4 Data and methods

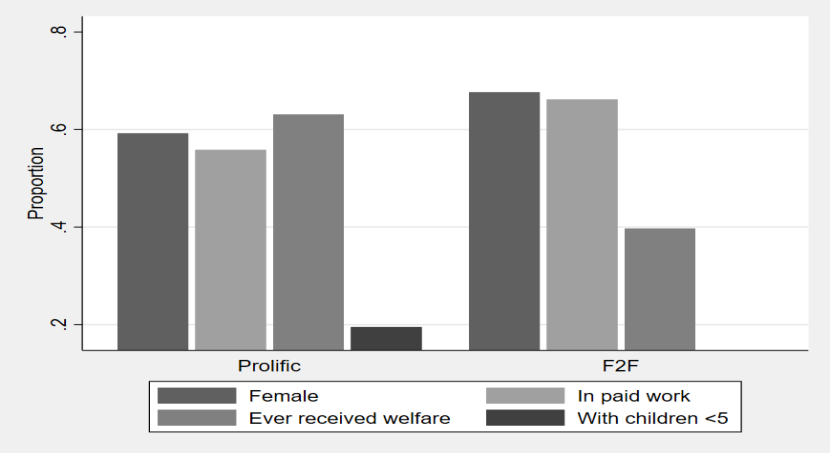
4.1 Sample characteristics

Low income working age non-student participants living in the UK were recruited to take part in an on-line experiment simulating the choice between paid work and lower benefits under the standard employment contract and under a zero-hours contract. To be eligible to participate, subjects had to be aged between 18 and 60, have a family income of less than £20,000 per year and not be undergraduate students (graduate students who satisfied and age and income conditions and who worked were accepted). All participants were resident in the UK at the time they participated.

Data was collected in two ways. 68 participants took part in nine face to face (f2f) sessions between July 2019 and February 2020. The sessions were conducted on iPad tablets in two locations in Colchester, UK. Subsequently, data was collected via an on-line participant recruitment platform called Prolific (https://www.prolific.co/). Prolific was chosen due to its explicit focus on facilitating data collection for research purposes, its ethical safeguards, accessibility of screening information, and the availability of sufficiently large numbers of UK participants. 233 individuals completed one of four sessions organized in May and June 2020.

Figure 1 displays sample demographic information. Both f2f and Prolific participants were more likely to be female: 59% of Prolific participants and 68% of f2f participants were women. The average age was 37 years in both samples. Prolific participants were more likely to have experience of claiming out of work benefits: nearly 60 % said they have received out of work benefits in the past vs. only 40% in the f2f sample. The majority of participants were working in both samples: around 51% in the Prolific sample and 72% in the f2f sample. Prolific participants were also slightly more likely to have children under five in their care (19% vs. 15%).

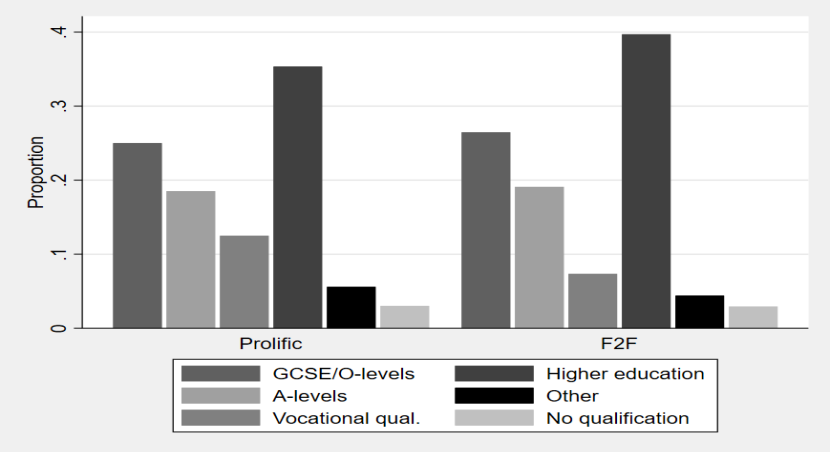
Participants in the f2f sessions were slightly more educated than those



Source: Experimental data

Figure 1: Sample characteristics by source

recruited via Prolific (see 2). Almost 40% had a diploma of higher education compared with only 35% of Prolific participants.



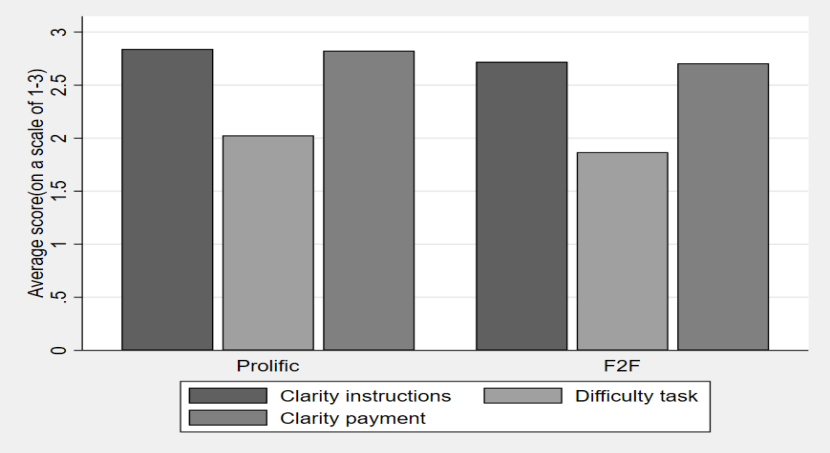
Source: Experimental data

Figure 2: Highest educational qualification

Both Prolific and f2f subjects had some previous experience of taking part in experiments although this varied considerably from person to person. As expected, Prolific participants were on average much more experienced.

4.2 Experimental Design

Participants completed the experiment using a purpose built web page built using oTree (Chen et al., 2016) and hosted by a cloud service platform. The experiment had five stages. In the first stage, participants received general instructions and consent was obtained. In the second stage,participants took part in a lottery game designed to measure risk aversion. The main part of the experiment took place in stage three. It consisted of 26 rounds. In each round, participants were asked to choose between performing a real effort task for pay or accepting a lower benefit and moving on to the next round. The exact conditions under which this choice took place differed between the treatment and control groups. The fourth stage measured participants' skill in completing the real effort task. The final stage collected demographic information and asked participants to rate their understanding of the instructions and incentives and the difficulty of the task. Detailed information about each stage is given below. A complete transcript can be found in Appendix 2.



Source: Experimental data

Figure 3: Average rating of clarity and task difficulty

Participants took on average 35-40 minutes to complete the experiment.

Figure 3 shows average participant ratings of the clarity of instructions, the clarity of incentives and the difficulty of the task (all were rated on a scale from 1 to 3). Prolific participants tended to give slightly higher scores to both the clarity of instructions and of incentives, possibly reflecting their experience with participating in experiments. However, both groups rated instructions and incentives as clear and the task as moderately difficult.

The lottery stage

After reading the instructions, participants were asked to play a lottery game designed to measure their risk aversion. The lottery followed the methodology proposed by Drichoutis and Lusk (2016), itself an adaptation of the widely used Holt and Laury (2002) multiple price lists. Participants were presented with a list of ten pairs of lotteries and asked to pick one lottery for each pair. Each pair consisted of a 'safe' lottery and a 'risky' one. As participants progressed through the list, the 'risky' lottery became financially more attractive. The point in the lottery risk where participants switched from the safe to the risky lottery is a measure of their risk aversion.

The main stage

The main stage of the experiment simulated the decision to work under different conditions. In a real-world labour market setting, the decision to work involves weighing up its advantages (e.g. pay) versus its disadvantages (e.g. time and effort). To replicate this setting as closely as possible, participants were required to complete a real-effort task in return for pay. The task was chosen to be relatively simple but tedious and boring. Participants were asked to transcribe short Latin paragraphs from Tertullian, an early Christian author. Participants were paid the full rate if they had three mistakes or fewer as measured by the Levensthein distance. If they had any more, they were paid nothing. This rule has been chosen so as to incentivise participants to try and transcribe correctly but at the same time not penalize then for

small errors. Participants were aware of this rule before they attempted to transcribe any texts.

The main stage had 26 rounds. The first two rounds were unpaid trial rounds where participants had the opportunity to practice completing the transcription task if they wished to do so. The remaining 24 rounds were paid. In each round, participants had to choose whether to work or receive a benefit. The pay associated with each option varied across treatments and rounds. In the control group, work was always available. In the two treatment groups, work was available with a probability of 50%. Participants chose whether to work or receive benefits before knowing whether work was available. If they chose to work and work was unavailable, they did not work but were also not paid anything, similar to a zero-hours contract. The payments associated with each option-working or receiving a benefit- for each treatment group and round are shown in Table 1.

To better understand the effects of earnings versus uncertainty on the choice to work, two treatment groups were constructed. In the first treatment group, participants were paid the same pay rate as participants in the control group, but work was only available half of the time. If they consistently chose work over benefits, participants in the first treatment group could expect to earn half of what participants in the control group earned but also to work 50% less. Essentially, this is the zero-hours contract setting where lack of work (and pay) is only compensated by increased leisure. In the second treatment group, participants were paid twice the pay rate of participants in the control group. If they always chose to work, they could expect to earn the same as participants in the control group but work only half as much. Clearly, participants in the second treatment group should be better off than participants in the control group when choosing work over benefits.

In rounds 3 to 14, participants received the benefit only when they expressly chose the benefit option. They did not receive the benefit when they chose to work and work was unavailable. This set-up is intended to cap-

Table 1: Pay structure

Group	Round	Work		Benefit		
		Availability	Pay rate	Access	Rate	Sanctions
Control	3-14	Always available	£1.50	When choosing benefit	£1	No
Treatment 1	1-12	50% chance	£1.50	When choosing benefit	£1	No
Treatment 2	1-12	50% chance	£3.00	When choosing benefit	£1	No
Control	15-26	Always available	£1.50	When choosing benefit	£1	Yes
				When choosing benefit	£1	No
Treatment 1	15-26	50% chance	£1.50	When choosing benefit	£1	Yes
				When work unavailable OR When choosing benefit	£1	No
Treatment 2	15-26	50% chance	£3	When choosing benefit OR	£1	Yes
				When work unavailable OR When choosing benefit	£1	No

ture the time and administrative costs of applying for benefits. Typically, a zero-hours worker would be unable to access benefit income that would immediately compensate them for lost pay due to unavailability of work. In some situations, working individuals cannot access out of work benefits, making working and benefit receipt mutually exclusive.

In the last 12 rounds, the availability of the benefit changed. Participants in all treatments were randomly allocated to two benefit treatment groups, resulting in a 3 by 2 crossed treatment design. In the first benefit treatment group, participants received the benefit not only when expressly choosing this option but also when they chose work and work was unavailable. In this case, benefits were no longer an alternative to paid work but also an insurance mechanism that topped up incomes whenever work was not available. In the second case, participants faced a 50% probability of being sanctioned, i.e. not receiving the benefit, if they chose to receive benefits two rounds in a row. If a participant chose to receive benefits in the previous round *and* and chose again to receive benefits in the current round, the computer determined randomly with a 50% probability whether a sanction would be applied or not. No sanction was applicable if work was chosen in the previous round. By introducing uncertainty on the benefit side, sanctions approximate a workfare based approach aiming to deter participants from opting for benefits.

Productivity stage

While the labour task was relatively simple, individuals are still expected to vary widely in their ability to complete it. Typing skills in particular may influence the extent to which a participant will choose to work or receive benefits. As participants were randomly allocated to the three groups, typing skills should on average be the same in every group and therefore not affect average treatment effects. However, they could considerably increase variance and hence limit the precision of any estimates. To counter this undesirable result, stage four collected a measure of participant productivity.

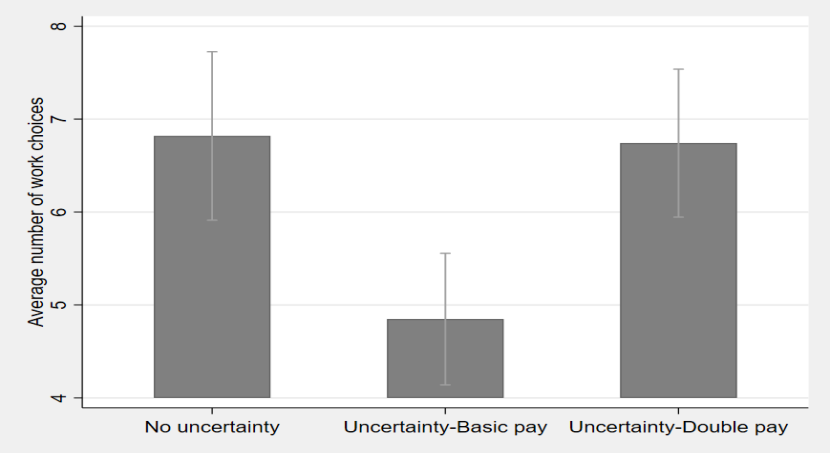
Participants were presented with a challenge: they had 5 minutes to transcribe as many texts as possible. For each correctly transcribed text they received £1.50 and they could not move on to the next round until the 5 minutes elapsed. On average, participants correctly transcribed 3-4 texts. However, some participants were considerably more skilled. The maximum number of correctly transcribed texts was nine.

5 Results

5.1 The impact of uncertainty about work availability on the decision to work

If uncertainty about work availability in itself is undesirable and avoided by workers, we would expect to see participants choose to work less often in the two treatment groups compared to the control group. In fact this is what we observe. Figure 4 shows the average number of work choices in the first 12 paid rounds (when benefits and work were mutually exclusive) by treatment group. Participants in the first treatment group choose on average to work in 4.8 rounds compared to 6.8 in the control group. The nonparametric Mann Whitney test indicates that this difference is significant at the 1% level (z=2.90). In the second treatment group, the number of rounds worked was similar to the control group despite the pay rate being twice as high.

Figure 5 shows the evolution of the decision to work over time. It plots the proportion of participants who chose to work by treatment group and round. All three groups experienced a decline in the proportion choosing to work possibly due to fatigue or boredom. However, the decline is much steeper in the two treatment groups compared with the control group. In the first treatment group, the proportion choosing to work is lower already in the first round (55 % versus 64% in the control group). It then declines precipitously reaching 31 % in round 14. In the second treatment group,



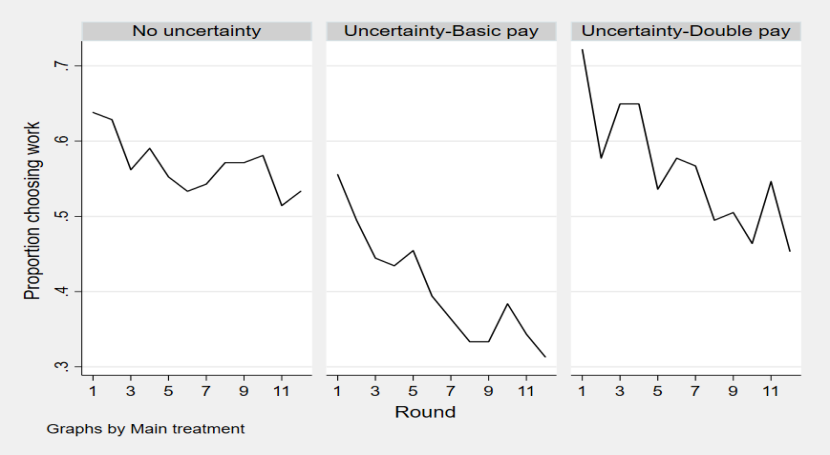
Source: Experimental data

Figure 4: Average number of work choices in the first stage, by treatment group

the proportion choosing to work is initially higher than in the control group, possibly reflecting the higher pay rate this group received. However, the decline in the proportion to work is just as strong as in the first treatment group so in round 14, the proportion working is lower than in the treatment group (45% vs. 53%). While in theory participants in the second treatment group are better off working, they are less likely to work in the later rounds.

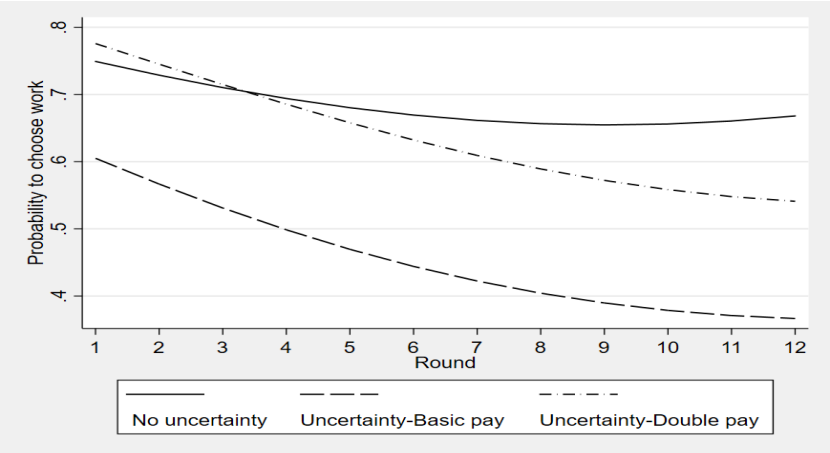
In the next step, the probability to choose to work was modelled using a logistic regression. In addition to the main variable of interest-the treatment group-controls were included for the round number, the participant's productivity measured as the number of correctly transcribed texts in the productivity stage, the session(4 Prolific sessions plus one face to face), participant ratings on the difficulty of the task, clarity of instructions and clarity of incentives, and demographic characteristics: gender, age, the number of children under five, current work status, and welfare receipt. To capture the time variation in treatment effects, appropriate interaction were included. A full list of estimated coefficients can be found in Table A in Appendix 1.

Figure 6 shows the predicted probability to choose work over benefits de-



Source: Experimental data

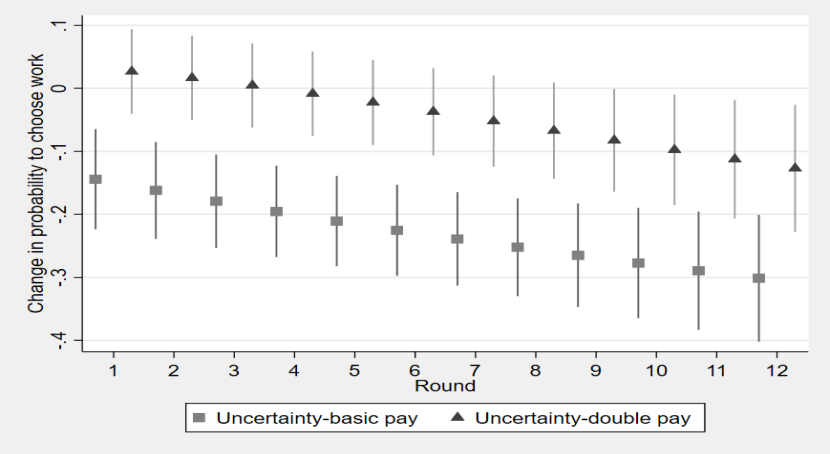
Figure 5: Proportion choosing to work in the first stage, by round and treatment group



Source: Experimental data

Figure 6: Probability to choose work by round and treatment group

rived from the logistic regression model. Results largely mirror the descriptive patterns shown in Figure 5. Both treatment groups show a significant decline of the probability to choose to work over time. Interestingly, the steepness of the curve is almost identical despite the second treatment group receiving a much higher pay rate. The difference is that the first treatment group starts from a much lower base. In both treatment groups, the decline in the probability to choose to work is much steeper compared to the control group.



Source: Experimental data

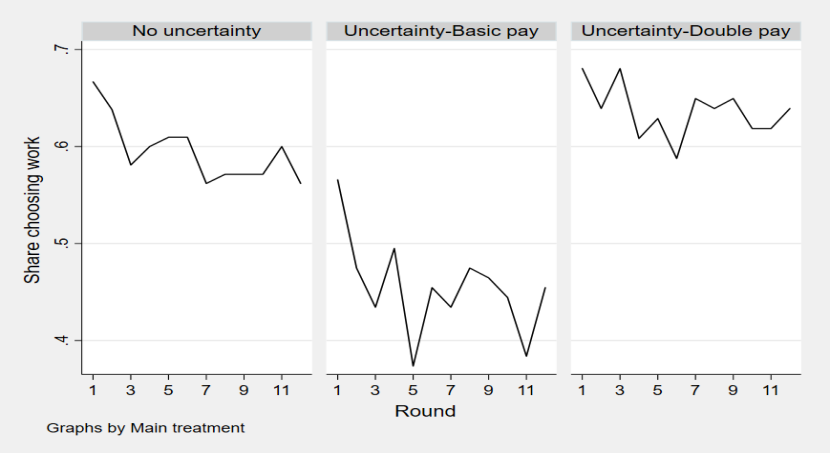
Figure 7: Average marginal effects of treatment group

Average marginal effects by round together with associated confidence intervals are shown in Figure 6. Participants in the first treatment group clearly are less likely to choose to work than participants in the control group in every round. Moreover, the difference between the two groups is increasing over time. In the case of the second treatment group, there is initially no difference in the probability to choose to work compared to the control group. However, the difference is widening in later rounds to the point that in the last four rounds, the second treatment group is significantly less likely to choose to work than the control group despite receiving a much higher pay rate.

To sum up, participants facing uncertainty about work availability were much less likely to choose to work compared to the control group for which work availability was certain. This effect increased over time and manifested itself even when the pay rate was considerably higher suggesting that participants saw uncertainty as undesirable and sought to avoid it. Interactions between uncertainty and benefit design are examined next.

5.2 Insurance through benefits or sanctions?

In the first half of the experiment,working and receiving benefits were mutually exclusive alternatives. Participants who choose to work could not receive benefits even when work was unavailable. This setting mirrored traditional income support systems that were explicitly designed to support people out of work and generally did not allow for combining earnings and benefit income.



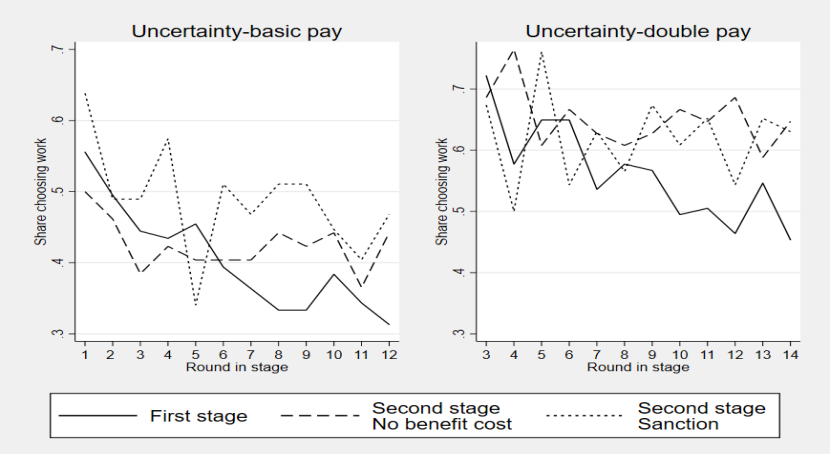
Source: Experimental data

Figure 8: Proportion choosing to work in the second stage, by round and treatment

In the second half of the experiment, the conditions under which benefits could be accessed were changed. Participants in all three treatment groups were randomly assigned to two possible benefit treatments. In the first treat-

ment, participants automatically received the benefit whenever work was not available in addition to receiving it when the benefit option was expressly chosen. In this situation, benefits effectively insure against the unavailability of work in any particular round. In the case of the control group, since there is no work uncertainty, this option is equivalent to the set-up in the first half of the experiment. In the second benefit treatment, participants faced a possible sanction if they chose to receive benefits two rounds in a row. The sanction consisted of the benefit not being paid. Sanctions were imposed randomly with a probability of 50%. Participants were aware of all the rules governing access to benefits before making their choices.

Both benefit treatments are designed to make the work option more attractive, either through the use of a carrot (extra availability of benefits) or a stick (benefit sanctions). This part of the experiment had two objectives: measuring the extent to which these sticks and carrots modified participant behaviour and increased labour supply and establishing whether one option was more effective than the other.

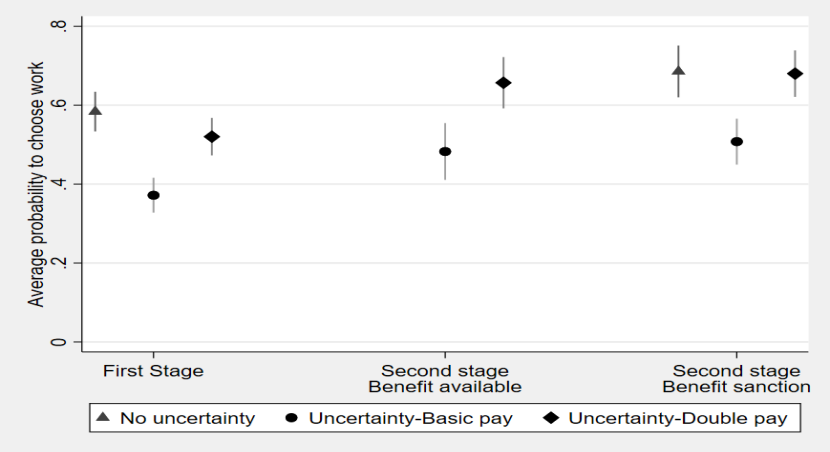


Source: Experimental data

Figure 9: Proportion choosing to work by benefit treatment

Figure 8 shows the proportion of individuals choosing to work in rounds 16 to 26 by original treatment group and combining the responses of participants

in different benefit treatment groups. While the proportion of work choices declines, just as in the first half of the experiment, the decline is less steep particularly in the second treatment group. To understand what treatment is driving these results, Figure 9 plots the share of individuals choosing to work by benefit treatment as well as results from the first stage focusing on the two treatment groups where work was uncertain. The proportion of individuals choosing to work increases under both benefit treatments. Moreover, at least in the descriptive results shown in Figure 9, there appears to be no significant difference between the two benefit treatments. Both mitigate the decline in the proportion choosing to work that occurs over time.



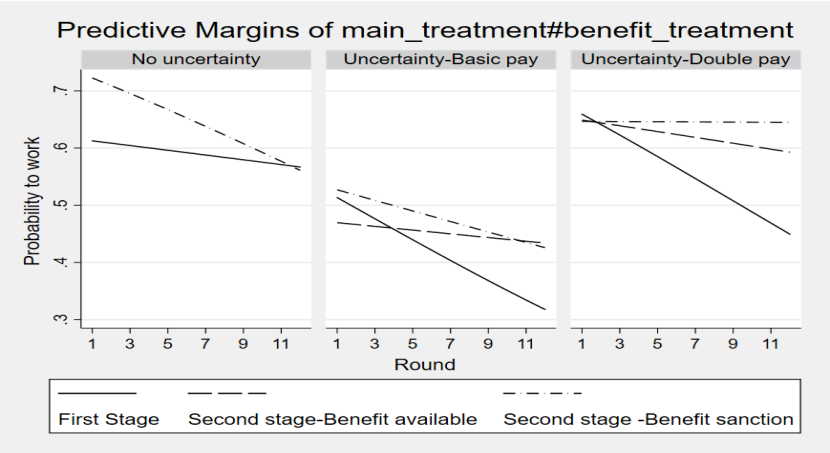
Source: Experimental data

Figure 10: Average probability to choose to work by treatment groups

In the next step, the impact of the benefit treatment effects on the work choice probability by main treatment and round was estimated using a logistic regression and including the same control variables as in the previous subsection (a complete set of results is available in Table B in Appendix 1). Figure 10 displays average predicted probabilities to choose work by main treatment and benefit treatment in the first and second stages. The average predicted probability to choose work increased by between 11 and 15 percentage points both under the insurance and sanctions regimes. This increase is of

a comparable magnitude to the negative effect induced by uncertainty about work availability in the first stage (note however that uncertainty continues to depress willingness to work under both benefit treatments). Regression results confirm the differences between the two benefit treatment groups are negligible.

Finally, Figure 11 displays the same predicted probabilities to choose work, allowing the effects to differ by round (a complete list of estimated coefficients can be found in Table C in Appendix 1). It shows that in the case of the two groups who faced uncertain work availability, both benefit treatments worked by limiting the decline in the proportion working over time. The lines corresponding to the two benefit treatments are much flatter compared to the line corresponding to the first stage. Thus the effect of the benefit treatments was especially large in the later rounds. In the control group which faced no uncertainty, sanctions also increased the probability to work. They did so especially in the early rounds. The effect of sanctions however wore off over time and in the final rounds there is no difference between participants who faced sanctions and those who did not.



Source: Experimental data

Figure 11: Average probability to choose to work by treatment group and round

6 Discussion

Experimental results unambiguously indicate that uncertainty deters working. Participants who faced a 50% probability of work not being available were significantly less likely to work compared to participants who faced no uncertainty. The magnitude of the difference was substantial: between 15 and 30 percentage points depending on round, when the pay rate was identical. One possible interpretation of this result focuses on the financial incentives. Whenever work was unavailable, participants who chose to work lost the benefit payment. On average, they were expected to earn half as much as the control group if they always chose work. In fact they earned around 80% of the control group's participant earnings by choosing the benefit option more often.

To better understand whether the financial incentive is the sole driver, the second treatment group faced a pay rate that was twice as high as that of the control group. If they always choose work, this group could expect to earn as much as the control group but work only half the time. On average, the second treatment group did indeed choose to work a similar number of rounds as the control group. However, the overall average masks important time trends. In the early rounds, participants in the second treatment group were *more* likely to choose to work. Behavioural economics research has shown that workers often focus on the headline wage rate and tend to discount additional elements such as for example taxes (Fochmann et al., 2013) or in this case work uncertainty. As participants gained more experience, they were less likely to choose to work and in the final rounds were actually *less* likely to choose work compared to the treatment group. The decline in the proportion choosing to work was very similar in the two treatment groups (and much stronger than in the control group) suggesting that as participants become more experienced, they tend to place increasing weight on work availability being uncertain. Clearly, the much higher pay rate was not enough to compensate participants for the work uncertainty they faced.

The conclusion that uncertainty itself is driving lower labour supply is also supported by results from the second half of the working stage. Participants who faced work uncertainty chose to work less compared to the control group even when they received the benefit in case work was unavailable. On average, they chose to work 42% of the time compared to 60 % in the control group. Taken together, these results suggest that workers seek to avoid work uncertainty not just to maximize their payments but also because they dislike uncertainty itself.

The second half of the experiment tested two alternative benefit policies. The first made the benefit automatically available whenever participants chose to work but work was unavailable. The second introduced benefit sanctions with a 50% probability whenever participants chose the benefit option two rounds in a row. The first benefit treatment approximates a 'flexicurity' regime where workers face work related instability but are shielded to some extent by the safety net. The second benefit treatment corresponds to a 'workfare' regime where workers are encouraged to take up unstable or insecure work by having their access to out of work benefits limited. Both benefit policies increased the probability to choose work over benefits and impacted by limiting the decline in the propensity to choose work over time.Importantly, while the increase under benefit sanctions was slightly larger, the difference was not statistically significant. It is important to stress that in real-life sanctions are likely to have strong adverse consequences (financial hardship, family stress etc.) that are not captured by the experiment. Instead, what is captured is the behavioural incentives given by the threat of sanctions. As such, while the two options may have similar effects in an experimental setting, they are unlikely to be equivalent in a real life setting.

7 Conclusions

This study set out to experimentally test the effects of work uncertainty on the labour supply behaviour of workers.

It should be noted that the experimental environment likely downplays and limits any negative effects of work uncertainty for two reasons. First, the experiment was a one-time session of limited duration which likely minimized the chance of scheduling conflicts. In a real world situation, workers in zero-hours jobs can face substantial difficulties in planning for non-work related activities on on ongoing basis. Second, the uncertainty faced by participants was entirely random and computer generated. The experimenters had no control over whether work was made available to a participant in a given round or not. In the real world however, employers and managers have some control over how to distribute existing work. They often use this discretionary power not only to match demand with labour costs but also to discipline workers and control them. Because employers have some control over work availability, they can use this to essentially reduce the autonomy and bargaining power of their employees. Scheduling conflicts and lack of control impose two additional costs on workers that are not captured by the experimental set-up used in this study.

The implication is that far from opting for flexibility, zero-hours workers are most likely hurt by the uncertainty and insecurity inherent in this type of employment arrangement. A higher pay rate whenever work is not guaranteed shields workers from some of the financial consequences of insecurity. In the experiment, participants in the higher pay rate group earned similar amounts as those in the control group. However, a higher pay rate does not necessarily compensate workers for the costs of uncertainty itself, nor does it automatically enable them to avoid scheduling conflicts or to escape excessive managerial control.

The second finding of this study is that the safety net can be used to increase labour supply, either by shielding workers from some of the mone-

tary losses they incur when work is unavailable or by threatening sanctions. Interestingly, in this case, the two alternatives had very similar effects. Further research is needed to verify this result. However, if confirmed, it would suggest that governments can achieve similar results to benefit sanctions by tweaking the design of benefits. Given the potential negative outcomes associated with sanctions (Dwyer, 2018), this is an important finding.

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8 Appendix 1: Estimated coefficients from logistic regressions

Table A: Estimated coefficients of a logistic regression predicting the probability to choose work in the *first* 12 paid rounds

	Coefficient	**SE**	**p-value**
$T1(Uncertainty, basic\,pay)$	-0.701	0.239	0.003
$T2(Uncertainty, double\,pay)$	0.154	0.235	0.514
$T1X\,Round$	-0.055	0.030	0.072
$T2X\,Round$	-0.065	0.030	0.028
$Round$	-0.118	0.043	0.006
$Round^2$	0.007	0.003	0.026
$Productivity$	1.156	0.146	0.000
$Productivity^2$	-0.078	0.019	0.000
$Female$	0.396	0.169	0.019
Age	-0.005	0.007	0.455
$In\,paid\,work$	0.015	0.163	0.926
$Children < 5$			
One	0.287	0.244	0.223
Two	-1.302	0.491	0.008
$Three\,or\,more$	0.119	0.838	0.887
$Ever\,received\,welfare$	-0.045	0.177	0.801
$Task\,difficulty$	-0.086	0.177	0.436
$Clarity\,instructions$	-0.071	0.205	0.728
$Clarity\,payments$	-0.030	0.194	0.877
$Session\,fixed\,effects$		Yes	
$Constant$	-0.770	0.778	0.323
$N\,individuals$		295	
$N\,observatons$		3540	

Note: SE are clustered for 295 individuals; all f2f submissions have been pooled into one session
Source: Author's calculations based on experimental data

Table B: Estimated coefficients of a logistic regression predicting the probability to choose work in the *last* 12 paid rounds (Model 1)

	Coefficient	**SE**	**p-value**
$T1(Uncertainty, basic\,pay)$	-1.087	0.197	0.000
$T2(Uncertainty, double\,pay)$	-0.329	0.198	0.096
$Benefit\,T1(insurance)$		Omitted	
$Benefit\,T2(sanctions)$	0.570	0.270	0.035
$T1X Benefit\,T1$	-0.164	0.278	0.555
$T1X Benefit\,T2$	0.124	0.279	0.658
$T2X Benefit\,T1$	0.731	0.208	0.000
$T2X Benefit\,T2$	0.295	0.307	0.335
$Round$	-0.032	0.009	0.000
$Productivity$	1.153	0.129	0.000
$Productivity^2$	-0.087	0.017	0.000
$Female$	0.381	0.158	0.016
Age	-0.013	0.007	0.054
$In\,paid\,work$	0.070	0.155	0.653
$Children < 5$			
One	0.106	0.227	0.641
Two	-1.128	0.398	0.005
$Three+$ 0.323	0.164	0.749	
$Ever\,received\,welfare$	-0.036	0.164	0.825
$Task\,difficulty$	-0.052	0.103	0.587
$Clarity\,instructions$	-0.101	0.187	0.590
$Clarity\,payments$	-0.047	0.169	0.780
$Session fixed effects$		Yes	
$Constant$	-0.910	0.381	0.017
$N\,individuals$		295	
$N\,observatons$		7080	

Note: SE are clustered for 295 individuals; all f2f submissions have been pooled into one session
Source: Author's calculations based on experimental data

Table C: Estimated coefficients of a logistic regression predicting the probability to choose work in rounds 15-26 (Model 2)

	Coefficient	**SE**	**p-value**
$T1(Uncertainty, basic\,pay)$	-0.289	0.263	0.272
$T2(Uncertainty, double\,pay)$	0.476	0.251	0.0.058
$Benefit\,T1(insurance)$		Omitted	
$Benefit\,T2(sanctions)$	0.783	0.270	0.360
$T1X\,Benefit\,T1$	-0.180	0.423	0.671
$T1X\,Benefit\,T2$	-0.854	0.413	0.0.038
$T2X\,Benefit\,T1$	-0.268	0.293	0.360
$T2X\,Benefit\,T2$	-1.140	0.404	0.0.005
$T1X\,Round$	-0.071	0.025	0.005
$T2X\,Round$	-0.076	0.023	0.001
$Benefit T1X\,Round$	0.070	0.031	0.005
$Benefit T2X\,Round$ -0.058	0.023	0.001	
$T1X\,Benefit\,T1X\,Round$		Omitted	
$T1X\,Benefit\,T2X\,Round$	0.104	0.041	0.010
$T2X\,Been fit\,T1X\,Round$	0.005	0.031	0.895
$T2X\,Benefit\,T2X\,Round$	0.154	0.035	0.000
$Round$	-0.021	0.013	0.111
$Productivity$	0.587	0.066	0.000
$Female$	0.436	0.160	0.006
Age	-0.013	0.007	0.067
$In\,paid\,work$	0.101	0.158	0.523
$Children < 5$			
One	0.078	0.225	0.728
Two	-1.013	0.372	0.006
$Three+$ 0.257	0.812	0.751	
$Ever\,received\,welfare$	-0.048	0.166	0.774
$Task\,difficulty$	-0.052	0.102	0.611
$Clarity\,instructions$	-0.046	0.176	0.794
$Clarity\,payments$	0.062	0.169	0.709
$Session fixed effects$		Yes	
$Constant$	-0.343	0.691	0.619
$N\,individuals$		295	
$N\,observatons$		7080	

Note: SE are clustered for 295 individuals; all f2f submissions are pooled into one session
Source: Author's calculations based on experimental data

9 Appendix 2: Experimental Instructions

Welcome to this study on pay insecurity!

I would like to invite you to take part in a study on insecure work. The study aims to better understand how pay insecurity affects the decisions of low income workers. Your participation is entirely voluntary and you are free to withdraw at any point without penalty or disadvantage. Before you agree to participate, please read carefully the information provided.

Background to the study

This experiment is part of a larger project on Risk Aversion, Earnings Uncertainty and Labour Supply funded by the Nuffield Foundation, a charitable trust that funds social science research and led by Dr Silvia Avram, a researcher at the University of Essex. The project aims to better understand how people decide whether and how much to work when wages are unpredictable and whether changing public policies to improve income security would help people stay in work.

The experiment

The experiment will last UP TO 90 minutes. You will be given detailed instructions. During the experiment, you will be asked to choose repeatedly between performing a task (transcribing text) in return for earnings and a fixed payment. You will also be asked to play a lottery and answer a few demographic questions. There are no right or wrong decisions. The purpose of the experiment is to study decision making processes and is in no way intended to be a test.

Payment

In return for your participation, you will receive experimental earnings of between £10 and £50. How much you earn will depend partly on your choices and partly on luck. You will receive your payment via Prolific subject to your submission being approved. Submissions are normally approved within 48 hours from experiment completion.

Are there any risks?

We are not aware of any risks associated with your participation in this study.

Withdrawal

Withdrawal

Your participation in this study is entirely voluntary. You are free to withdraw from the study without giving a reason and without penalty. If you choose to withdraw from the study, any data we collected as part of the experiment will be destroyed. Please note that withdrawal is no longer possible once you are paid for your submission.

What happens with your data?

We do NOT collect any personal data as part of the experiment. The only identifying information we store is your Prolific ID which is needed to link your submission with your payment. We will call the data we collect in the experimental session your experimental data. It includes demographic information(gender, age, education, employment history), a measure for your appetite for risk taking, your choices on the work task and your experimental earnings. Your experimental data is completely anonymized and confidential. The data will be stored in electronic files and analysed using statistical methods. At the end of the project, the anonymized data will be archived and deposited with the UK Data Service, a Data centre based at the University of Essex.

Informed consent

Should you agree to take part in the study, you will be asked to sign a consent form. This is to make sure you understand the study information, the terms under which you participate and what happens with the data your provided.

Findings

Findings from this study will be published in a report available here: https://www.nuffieldfoundation.org/risk-aversion-earnings-uncertainty-and-labour-supply.

Concerns and complaints

If you have any concerns or complaints about the study, please contact in the first instance the principal investigator, Dr Silvia Avram. If you are still concerned or believe your complaint has not been properly adressed, please contact the ISER Research Director, Prof Paul Clarke. If you are still unsatisfied, please contact the University of Essex Research Governance and Planning Manager, Sarah Manning-Press. Contact details are listed below.

Principal investigator
Dr Silvia Avram, Institute for Social and Economic Research

Informed consent

Taking part in the study

I have read and understood the study information on the previous page. I understand that if I have questions, I can contact the lead investigator via the Prolific messaging platform.

○ Yes ○ No

I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason and without penalty.

○ Yes ○ No

I understand that taking part in the study involves performing a work task (transcribing text), playing a lottery and answering a few questions about my age, gender, education and employment history.

○ Yes ○ No

I understand that the study may take up to 90 minutes to complete and that I am free to leave the experiment at any time if I no longer wish to participate.

○ Yes ○ No

I understand that for my participation, I will receive experimental earnings of between £10 and £50.

○ Yes ○ No

Next

Informed consent

Use of the information in the study

I understand that information I provide will be used for aggregate statistical analyses, the results of which will be published in a report and in scientific papers. Neither myself nor any of my individual answers will be identified in any of the publications.

○ Yes ○ No

I understand that no personal information that can identify me is collected other than my Prolific ID which is needed for technical reasons. I understand that my Prolific ID will be deleted from the final dataset and the information destroyed at the end of the study.

○ Yes ○ No

Future use and reuse of the information by others

I give permission for the annonymized experimental data that I provide to be deposited with the UK Data Service so it can be used for future research and learning.

○ Yes ○ No

Next

Welcome to this experimental session!

Thank you for agreeing to take part in this experiment. Please read carefully the following instructions. If you have any questions, you can contact the principal investigator via the Prolific messaging platform.

This experiment may take up to 90 minuted to complete but most people take under an hour. The length of the session partly depends on your choices. During this time, please refrain from using mobile phones, browsing alternative sites or engaging in another activity. If you are using a tablet, you should disable the spelling, autocomplete and predictive features of the keyboard now.

For participating in this experimental session, you will be paid earnings of between £10 and £50. How much you earn will depend partly on your choices and partly on luck.

Instructions

The purpose of this experiment is to better understand how workers make decisions about work when pay is unpredictable and insecure. The experiment will consist of five stages. At the beginning of each stage, you will receive detailed instructions about your tasks in that stage. Please read them carefully, and make your choices. Once you are finished with your current task, press NEXT to continue. Below is a list of the five stages of this experimental session.

- Stage 1: Instructions
- Stage 2: Lottery
- Stage 3: Text transcription- Part I
- Stage 4: Text transcription- Part II
- Stage 5: Short survey and payment information

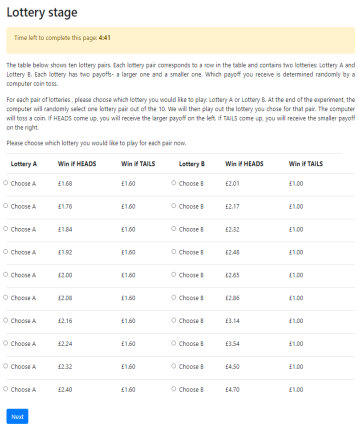
With the exception of instruction pages, all the other parts of the experiment are timed. It is not possible to pause the experiment. Once you have submitted your choices, it is not possible to change them.

At the end of the experiment, you will be given information about your stage and overall earnings. You will then be automatically redirected back to Prolific to confirm you have completed this experiment.

Thank you and good-luck!

Please press NEXT once you are ready to start.

Next



Lottery stage

Time left to complete this page: 4:41

The table below shows ten lottery pairs. Each lottery pair corresponds to a row in the table and contains two lotteries: Lottery A and Lottery B. Each lottery has two payoffs- a larger one and a smaller one. Which payoff you receive is determined randomly by a computer coin toss.

For each pair of lotteries , please choose which lottery you would like to play: Lottery A or Lottery B. At the end of the experiment, the computer will randomly select one lottery pair out of the 10. We will then play out the lottery you chose for that pair. The computer will toss a coin. If HEADS come up, you will receive the larger payoff on the left. If TAILS come up, you will receive the smaller payoff on the right.

Please choose which lottery you would like to play for each pair now.

Lottery A	Win if HEADS	Win if TAILS	Lottery B	Win if HEADS	Win if TAILS
Choose A	£1.68	£1.60	Choose B	£2.01	£1.00
Choose A	£1.76	£1.60	Choose B	£2.17	£1.00
Choose A	£1.84	£1.60	Choose B	£2.32	£1.00
Choose A	£1.92	£1.60	Choose B	£2.48	£1.00
Choose A	£2.00	£1.60	Choose B	£2.65	£1.00
Choose A	£2.08	£1.60	Choose B	£2.86	£1.00
Choose A	£2.16	£1.60	Choose B	£3.14	£1.00
Choose A	£2.24	£1.60	Choose B	£3.54	£1.00
Choose A	£2.32	£1.60	Choose B	£4.50	£1.00
Choose A	£2.40	£1.60	Choose B	£4.70	£1.00

Next

Text transcription section

Time left to complete this page: **0:29**

In this section you will be asked to choose between performing a work task for pay or receiving benefits. The task consists of copying Latin texts. You will be shown an image of a text and your task is to type the text in a box. Please try and type the text as accurately as possible, respecting punctuation and upper and lower cases.

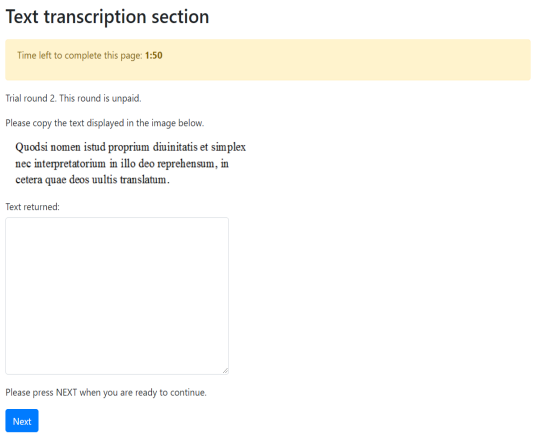
You will only be paid if you make 3 or fewer transcription errors.

This section consists of 26 rounds. In each round, the work task will be the same but the payment rate, the availability of benefits or the availability of work may change. You will be given all the information when you choose between working and receiving benefits.

The first two rounds are trial rounds and are NOT paid. Their purpose is to allow you to familiarize yourself with the work task should you wish to do so.

Please press NEXT when you are ready to continue.

Next



Text transcription section

Time left to complete this page: **1:50**

Trial round 2. This round is unpaid.

Please copy the text displayed in the image below.

Quodsi nomen istud proprium diuinitatis et simplex nec interpretatorium in illo deo reprehensum, in cetera quae deos uultis translatum.

Text returned:

Please press NEXT when you are ready to continue.

Next

Text transcription section

Time left to complete this page: **0:53**

The trial rounds are now finished. The following rounds will be paid.

In the next rounds, you will be asked to choose between working and receiving benefits. You can make a different choice in each round.

If you choose to work, you will be presented with the work task and will have 2 minutes to complete it. You will be paid £1.50 for each text with 3 or fewer transcription errors.

If you choose to receive benefits, you will be paid a benefit of £1.00 and will move on to the next round.

Please press NEXT when you are ready to continue.

Next

Text transcription section

Time left to complete this page: **0:53**

The trial rounds are now finished. The following rounds will be paid.

In the next rounds, you will be asked to choose between working and receiving benefits. You can make a different choice in each round.

If you choose to work, the computer will flip a coin to determine whether work is available. If the outcome is HEADS, work is available. To receive the full payment of £1.50, you will need to transcribe a text and make 3 or fewer mistakes. If the outcome of the coin toss is TAILS, work is NOT available. You will not be paid for this round and you will immediately move to the next round.

If you choose to receive benefits, you will be paid a benefit of £1.00 and will move on to the next round.

Please press NEXT when you are ready to continue.

Next

Text transcription section

Time left to complete this page: **0:57**

The trial rounds are now finished. The following rounds will be paid.

In the next rounds, you will be asked to choose between working and receiving benefits. You can make a different choice in each round.

If you choose to work, the computer will flip a coin to determine whether work is available. If the outcome is HEADS, work is available. To receive the full payment of £3.00, you will need to transcribe a text and make 3 or fewer mistakes. If the outcome of the coin toss is TAILS, work is NOT available. You will not be paid for this round and you will immediately move to the next round.

If you choose to receive benefits, you will be paid a benefit of £1.00 and will move on to the next round.

Please press NEXT when you are ready to continue.

Next

Text transcription section

Time left to complete this page: **0:50**

You are playing round 3 out of 26.

Your current total payment from this section is £0.00.

Please choose whether you would like to receive benefits or to work in this round.

If you choose to work, first the computer will flip a coin to determine whether work is available. If the outcome is HEADS, work is available. To receive the full payment of £1.50, you will need to copy a short paragraph and make no more than 3 mistakes. If the outcome of the coin toss is TAILS, work is NOT available. You will not be paid for this round and you will immediately move to the next round. If you choose to receive benefits you will be paid £1.00 and move to the next round.

Would you like to receive benefits or work in this round?

◉ Receive Benefits ○ Work

Next

Text transcription section

Time left to complete this page: **0:24**

You have chosen to receive benefits this round.

You have earned £1.00 in this round.

Your total current payment from the Text transcription section is now £1.00.

Please press Next to proceed to the next round or section.

Next

Text transcription section

Time left to complete this page: **1:56**

You are playing round 4 out of 26.

The computer tossed a coin to determine the availability of work in this round.

The outcome is TAILS. Work IS NOT available in this round. Please press Next to proceed to the next round.

Next

Text transcription section

Time left to complete this page: **0:25**

You have chosen to work this round.

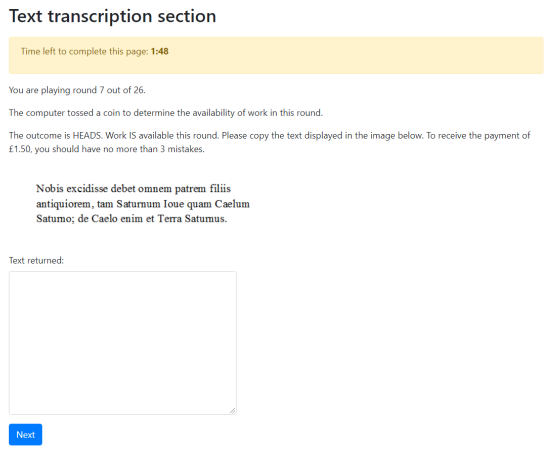
The was no work available in the current round.

You have earned £0.00 in this round.

Your total current payment from the Text transcription section is now £1.00.

Please press Next to proceed to the next round or section.

Next



Text transcription section

Time left to complete this page: **0:47**

You have completed 14 rounds.

In the remaining rounds, if you choose to work, there will still be a 50% chance of work being available. The computer will toss a coin. If HEADS comes up, work is available. To receive the pay rate of £1.50, you need to copy a text and have 3 or fewer errors. If TAILS comes up, work is not available.

However, if work is not available, you will receive a £1.00 benefit instead. You will then move to the next round.

If you choose to receive benefits, you wil be paid a benefit of £1.00 and move to the next round.

Please press NEXT when you are ready to continue.

Next

Text transcription section

Time left to complete this page: **0:16**

You have chosen to work this round.

The was no work available in the current round.

You have earned £1.00 in this round.

Your total current payment from the Text transcription section is now £9.00.

Please press Next to proceed to the next round or section.

Next

Text transcription section

Time left to complete this page: **0:44**

You have completed 14 rounds.

In the remaining rounds, if you choose to work, you will continue to be paid £1.50 for each text you copy with 3 or fewer errors.

If you choose benefits twice in a row, there is a 50% chance of being sanctioned. If you choose to receive benefits and have chosen benefits in the previous round too, there is a 50% chance of being sanctioned. The computer will flip coin. If the outcome is HEADS, you will be sanctioned. You will not receive any benefits in the current round. If the outcome is TAILS, you will not be sanctioned. You will receive £1.00 in benefits and move to the next round.

Please press NEXT when you are ready to continue.

Next

Text transcription section

Time left to complete this page: **0:46**

You are playing round 15 out of 26.

In the previous round you have chosen to Receive Benefits and you received £1.00.

Your current total payment from this section is £12.00.

Please choose whether you would like to receive benefits or to work in this round.

If you choose to work, you will be shown a text and ask to copy it. To receive the full payment of £1.50, you will need to copy a short paragraph and make no more than 3 mistakes.

In the previous round you have chosen to Receive Benefits. If you choose to receive benefits this round, there is a 50 % chance you will be sanctioned. The computer will flip a coin. If the outcome is HEADS, you will be sanctioned. You will not receive any benefits this round and you will immediately move to the next round. If the outcome is TAILS, you will not be sanctioned. You will receive £1.00 in benefits and move to the next round.

Would you like to receive benefits or work in this round?

◉ Receive Benefits ○ Work

Next

Text transcription section

Time left to complete this page: **0:21**

You have chosen to receive benefits this round.

You have NOT been sanctioned in this round.

You have earned £1.00 in this round.

Your total current payment from the Text transcription section is now £13.00.

Please press Next to proceed to the next round or section.

Next

Text transcription section

Time left to complete this page: **0:27**

You have chosen to receive benefits this round.

You have been sanctioned in this round.

You have earned £0.00 in this round.

Your total current payment from the Text transcription section is now £14.00.

Please press Next to proceed to the next round or section.

Next

Text transcription stage. Part II

You have completed the first part of the text transcription stage. The second part will begin shortly.

In this part, you have 5 minutes to complete as many text transcription tasks as possible. For each transcription that has three or fewer errors, you will receive £1.50. There is no limit on the amount of transcriptions that you can submit in the 5 minutes available. You cannot move to the next section before the 5 minutes elapse.

Press NEXT when you are ready to begin.

Next

Text transcription stage. Part II

Time left to complete this section: **4:58**

Please copy the text below. To receive the payment of £1.50 you should have no more than 3 mistakes.

Frugi religio et paupertina superstitio; altaria temeraria et uasa sordida, et nidor exilis ex illis, et deus ipse nusquam. Ergo non ante religiosi quam maiores, quia religiosi.

Text returned:

Next

Rate the experimental session

Time left to complete this page: **2:47**

The main part of the experiment is complete. Please answer a few questions about the experimental session today.

Please rate the clarity of the instructions you received in this experimental session:

- The instructions were always clear and easy to understand
- The instructions were generally clear but on a few occasions I did not understand them straight away
- I had considerable difficulty understanding the instructions

Please rate the difficulty of the transcription task:

- The task was simple and easy to perform
- The task was neither easy nor difficult
- The task was difficult to perform

Please rate how well you understood the payments associated with the choices you made:

- I clearly understood the payments associated with each option for every choice I made
- I understood the payments associated with each option for most of the choices I made
- I rarely understood the payments associated with each option for the choices I made

If you have any other comments about the experimental session, please write them in the box below:

Demographic questions

Time left to complete this page: **2:48**

Please answer a few short questions about yourself to complete the experimental session.

Are you a male or female?

- Male
- Female

What is your age (in years)?

What is the highest qualification you currently hold?

- GSCE /O-levels
- A-levels
- Vocational qualifications(ex: NVQ 3-5)
- Diploma of higher education or higher
- Other qualification
- No formal qualifications

Are you currently in paid work?

- Not in paid work
- In paid work

How many children aged under 5 do you have in your care?

- None
- One
- Two
- More than two

Have you ever received means-tested out of work benefits such as Income Support, Jobseeker allowance, Employment and support allowance or Universal credit?

- No
- Yes

Next

Lottery play

Time left to complete this page: **0:31**

At the beginning of the experiment you were shown 10 lottery pairs and chose which lottery you preferred for each pair. We will now play out your lottery of choice in a randomly selected pair.

The computer has randomly selected lottery pair number 8.

You have chosen to play lottery A. Please press PLAY to play out the lottery. The computer will toss a coin. If the outcome is HEADS, you will receive £2.24. If the outcome is TAILS, you will receive £1.60.

Play

Lottery outcome

Time left to complete this page: **0:15**

The outcome of the coin toss is TAILS. You have won £1.60.

Please press NEXT to receive information about your total payment and how to collect it.

Next

Finish

The experimental session is finished. Thank you for participating!

You have earned £19.00 from the Text transcription stage and £1.60 from the Lottery stage. You will also receive a show-up fee of £0.00. Your total payment is £20.60

You will be paid in the usual way via the Prolific platform after your submission is approved. Your submission will normally be approved in the next 48 hours.

Thank you and good-bye!

Return to Prolific