What triggers multiple job holding? An experimental investigation.

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AN EXPERIMENTAL INVESTIGATION

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Abstract: This paper presents an empirical examination of individuals' motivations for multiple-job holding or moonlighting. Theoretical models of moonlighting suggest that individuals to hold a second job for either financial reasons (they face hours-constraints in their first job) or non-pecuniary motives (heterogeneous jobs). We assess the relative importance of these reasons using a purposefully collected stated preference data set. We find that individuals respond to financial constraints by having multiple-jobs, but these financial motives are not sufficient to explain moonlighting. We also find that individuals are attracted to the non-pecuniary aspects of the second jobs, such as job satisfaction and entrepreneurial opportunities. Furthermore, we find evidence that second job holding may be a hedging strategy against job insecurity in the primary job. Our empirical results contribute to a better understanding of this labour market behaviour.
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AN EXPERIMENTAL INVESTIGATION

Increased labour market flexibility is one of several changes to European economies during the last quarter of the twentieth century (Harrison, 1998). This increased labour market flexibility has been accompanied by an increase in multiple job-holding: There is a substantial, and growing, proportion of workers in the UK who hold a second job. Between 1984 and 2001 the number of people with a second job increased by 68%; while the number of people in employment increased by 18%. Multiple job-holding or moonlighting[1] is a labour supply strategy that can ensure uninterrupted employment spells and provide higher earnings to individuals compared to working in one job. Since 1995 more than 1.2 million people in the UK have had multiple jobs at some time (Labour Force Survey, Office of National Statistics). This equates to between 8 and 10% of the UK labour market (Böheim and Taylor, 2004). Furthermore, over the last year, the average time an individual spends working in their second job has increased by 2.7% to 9.8 hours per week.

The labour economics literature suggests that individuals choose to work in more than one job for two reasons: they are hours constrained in their primary job; and they seek heterogeneous jobs. The first motivation posits that an individual may be constrained in the number of hours that he can work in his primary job and consequently this limits his earnings capacity from that job. In response to the employer's inability to offer him enough hours on the primary job, the individual may choose to take a second job to achieve his desired income level (Conway and Kimmel, 1998). The

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[1] The term "moonlighting" is used liberally to refer to multiple-job holding, without making any implications regarding the legitimacy or the time the described actions take place.

second, heterogeneous jobs, motivation recognises that the hours of labour supplied to the two jobs may not be perfect substitutes. Individuals may choose to work in a second job for reasons that are not connected to primary job's hours of work or earnings (Kimmel and Conway, 2001; Böheim and Taylor, 2004). For instance, an individual may have a second job to learn about new occupations or gain training in a new field with the aim of starting a primary or sole job in this field in the future; to engage in activities of interest to them; to gain job satisfaction not received from the primary job; or to maintain flexible work schedules

The individual's reason for holding a second job influences both the determination of wages and hours of work, and has implications for the length time an individual will hold a second job. There has been to date, however, very little empirical analysis of what motivates individuals to moonlight. This is primarily due to the lack of data suitable for answering this question. While most large micro datasets ask respondents whether they have a second job, none of these datasets explicitly gather information on why individuals choose to hold more than one job. Furthermore, large micro datasets predominantly focus on revealed preference data, and thus can only report second job characteristics for individuals who moonlight. However, there are three reasons why an individual does not moonlight, and while it is not possible, using revealed preference data, to distinguish between these reasons they each imply different individual labour supply decisions: (1) Individuals are not interested in moonlighting, (2) Individuals would like to moonlight but they can not find a second job with attractive features, and (3) Individuals would like to moonlight but they cannot find employment. There are two possible reasons why one individual cannot find employment in a second job and another individual can. First, observed

moonlighters may be more informed or more engaged in the job market, which allows them to identify job opportunities, or they could be more aggressive in their job search. Second, multiple-job holding is the outcome of a two-step process: an individual queues for a second job, and the employer hires the individual from a pool of applicants. This implies that moonlighters and non moonlighters may also differ in their attractiveness to employers.

We add to the literature on multiple job holding by investigating what triggers moonlighting behaviour. To do this we focus on the individual's decision to moonlight and relate this to characteristics of the primary job and second job using a form of conjoint analysis, a discrete choice experiment. This, stated preference method, elicits individuals preferences for different multiple job combinations. This approach allows us to investigate the relative importance of competing theoretical explanations for moonlighting. Section 1 presents the theoretical background of moonlighting and reviews empirical studies on multiple-job holding. Section 2 discusses methods of data collection, Section 3 presents and discusses the results and Section 4 concludes.

1. Theory and Literature

The standard theoretical framework assumes that an individual's labour supply decisions on both the primary and secondary jobs are based on utility-maximising behaviour. An hours-constrained worker does not work sufficient hours on his primary job to reach the level of income that optimises his utility. For the hours-constrained worker, primary job hours are no longer a choice variable, and the only avenue for working more hours is to take a second job (Conway and Kimmel, 1998).

The hours-constrained moonlighter is illustrated in **Figure 1**. The total amount of time available is denoted by T, and H_1 represents the maximum number of hours the individual can work in his primary job. Whether the individual chooses to take a second job in order to increase his utility and income will depend on the second job wage. If the wage on the second job exceeds the reservation wage (determined by the utility level (I_1) given at the intersection of the primary job wage and the allowable hours H_1; Heineck and Scharze, 2004), the hours-constrained individual will take the second job. The hours-constrained worker then chooses to supply H_2 hours to the second job (resulting in an increase in utility).

[Figure 1]

The case of a moonlighter who is not constrained in his primary job hours is depicted in **Figure 2**. In this case the wage on the second job is assumed to be higher than the primary job wage[2]. An individual who does not face an hours constraint on his primary job can work any number of hours that fall in the given working time span T–H_1. An individual who wishes to work more hours will always choose to work the additional hours on the second job rather then working more than H_1 hours on the primary job at the lower wage.

[Figure 2]

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[2] Although individuals may be attracted to the second job due to its non-pecuniary characteristics, it is not possible in this static framework to picture the decision of a non-constrained multiple-job jobholder whose wage rate on the second job is lower than that on the prime job (Heineck and Scharze, 2004).

Early empirical research investigating moonlighting primarily focused on the hours constrained motivation. The first theoretical and empirical treatment of moonlighting was carried out by Shisko and Rostker (1976) who found that the supply of labour to a second job fell with primary job earnings. Hamel (1967) similarly finds that the level of a worker's earnings determines his propensity to moonlight, and as the level of earnings rises the incidence of moonlighting declines. Guthrie (1969) investigates moonlighting among teachers in the U.S., and finds evidence that moonlighting serves primarily to improve living standards. Krishnan (1990) also finds that longer hours and higher income on the primary job deters multiple-job holding, adding further support to the hours constraints motive for moonlighting.

More recent research has investigated alternative moonlighting motives. For instance, the dynamics of moonlighting are investigated by Kimmel and Conway (2001) for the U.S. and Böheim and Taylor (2004) for Great Britain. They find evidence for multiple motives for moonlighting, with the hours constraint motive being the most common. Böheim and Taylor find that moonlighting is persistent over time and conclude that hours constraints is unsatisfactory as an explanation for moonlighting. Patterns of mobility into and out of second jobs over time are examined by Paxson and Sicherman (1996), who conclude that moonlighting is a dynamic process with most workers experiencing moonlighting at some point in their working lives, and that the hours constraints explanation for moonlighting fails to account for the fact that over time workers can avoid hours constraints by searching for new jobs. Bell *et al.* (1997) investigate if moonlighting acts as a "hedge" against unemployment, but little evidence is found to support this motive for having a second job. Evidence from transition economies suggests that moonlighting is likely to be transitory and

correlated with future job mobility. Guariglia and Kim (2006) find that moonlighting is transitory and generally associated with career shifts. Further, Panos, Pouliakas and Zangelidis (2009) find that moonlighting may facilitate job transition, and act as a stepping stone towards new primary jobs, particularly self-employment.

2. The data

We use a survey to collect data on working conditions and moonlighting behaviour from individuals who are employed in the U.K. North Sea oil and gas industry[3]. We focus on the UK North Sea oil and gas industry because of its unique working time arrangements and our expectation that moonlighting motivations may vary across individuals. Offshore oil work is characterised by constrained working hours, regular long periods of onshore time (during which they are not working in their primary job), and high wages. The European Union working time regulations that came into force in 2003 impose a time constraint on offshore employees who are not able to freely adjust their working hours,[4] and consequently offshore employees are labour-income constrained in their primary job[5]. We investigate the labour supply responses of these offshore workers to this constraint; specifically, do offshore workers respond to a labour-income constraint on their primary job by taking a second job? On the other hand, offshore jobs tend to be well-paid jobs. As a result, individuals may have two jobs not for financial reasons, or due to their hours-constraint, but for other non-

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[3] The U.K. oil and gas industry plays a considerable role in the U.K.'s labour market by providing 480,000 jobs to individuals across the U.K., including 100,000 highly skilled jobs in Scotland.

[4] Individuals may agree to work more than 48 hours per week, but the maximum number of working hours allowed over a 52 week period is 2304.

[5] On average individuals in the sample appear to work 15 consecutive days offshore, followed by a 15 days onshore break.

pecuniary reasons. While our analysis is confined to the U.K. North Sea oil and gas industry, our study is relevant to other industries and occupations with similar working time arrangements: for example, the fisheries sector or occupations that are characterised by shift work (such as firemen). For an investigation of multiple job holding within the fisheries sector, see Dickey and Theodossiou (2006).

Data was collected using self-completed questionnaires. The questionnaires were distributed, through the offshore installation managers (OIMS) of 152 different UK North Sea offshore installations[6], to a random sample of 760 offshore workers in January 2007. Data collection took place over three months and 330 completed questionnaires were returned by the OIMs. This represents a 43% response rate. The questionnaire collected information about the personal characteristics and job characteristics of the respondents. Respondents were asked if they held a second job, and information was gathered on the occupation, employment status, hours of work and wages of the second job.

We investigate individual's decision to moonlight and relate this to characteristics of the primary job and second job using a form of conjoint analysis, a discrete choice experiment. This methodology originated in marketing research and has been applied to transportation research, and in environmental and health economics to elicit preferences for non-market goods (Kanninen, 2007). Discrete choice experiments are based on Lancaster's theory of value (Lancaster, 1966), and can be used to estimate the trade-offs that individuals make between the dimensions of goods and services.

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[6] This represents approximately 96% of all the UK North Sea offshore installations.

The first stage in designing a discrete choice experiment is the definition of the attributes or characteristics of the good or service. We define the good as an employment package consisting of a primary job and a potential second job. The characteristics of both the primary and the secondary job are selected to cover the range of possible moonlighting motivations suggested by the theoretical literature and to be realistic representations of the choices that offshore workers may face. We describe the primary job using four characteristics; **job security** (temporary contract —lasting less than 12 months, fixed term contract —lasting between one and three years, and permanent contract), **job safety** (low risk of work related accidents, medium risk of work related accidents, high risk of work related accidents), **working time** (two-weeks onshore and two weeks offshore, three weeks onshore and two weeks offshore), **household income** (not enough to cover regular expenses, just enought to cover regular expenses, enough to cover regular expenses and have some savings). The second job is described using four characteristics; **type of second job** (self-employed, part-time employee, full-time employee), **job satisfaction** (a job you enjoy, doesn't offer any particular satisfaction), **entrepreneurial activities** (gain experience to start a new career, *not* gain experience to start a new career), **wages** (£300, £600, £900, £1200, £1500, £1800 per onshore period).

Job security is included as a characteristic to test if individuals hold a second job as a hedging strategy against unemployment. Two characteristics of the primary job **working time** and **household income,** and one characteristic of the second job **wages in the second job** are used to capture hours constraints/financial motives for multiple-job holding. Three characteristics of the second job, the **type of second job**, the perceived **job satisfaction** and the opportunity for **entrepreneurial activities** reflect

heterogeneous jobs motives. **Job safety** in the primary job is included to test if individuals in jobs with high risk of accidents may get a second job as a "way out" of their primary job (the heterogeneous jobs argument).

The characteristics of the primary job and second job are combined to define a primary plus second job employment 'package'. This package is presented to respondents in the questionnaire, and respondents are asked to imagine that they are employed in the primary offshore job specified and then state if they would take the second job as described. **Figure 3** provides an example of a choice.

[Figure 3]

In the questionnaire respondents were asked to complete a series of choices. To select the job packages to present in the questionnaire we used experimental design theory (Cox, 1958). In total the discrete choice experiment includes eight job characteristics. A full factorial combination of these characteristics and their levels results in 3,888 primary and potential second job packages. To select the sample from the set of all possible combinations we used an orthogonal main effects plan (Sloane – website). This reduced the number of combinations to 36. Due to the possibility of respondent fatigue, this was more combinations than we wanted to include in one questionnaire. Thus, we split the 36 packages into two sets of 18 packages. To assign the packages to one of the two sets we added an additional two level variable to the experimental design. By assigning packages to each of two sets in this way we ensured that attribute levels were balanced and orthogonal both within and across sets (Hensher et

al., 2006). Thus, there were two versions of the questionnaire and in each version respondents were asked to complete 18 choices[7].

2.1 Analysis of the discrete choice experiment

Analysis of discrete choice experiment data is based on random utility theory (RUT) (McFadden, 1973). Accordingly, we assume that the individual knows his preferences with certainty, but these preferences contain elements that are unobservable by the researcher and thus are treated as stochastic. Individual *n*, has an indirect utility function for job package *i*, that is composed of two additive parts, a systematic (observable) component V_{in}, and a stochastic (unobservable) component ε_{in} where,

$$U_{in} = V_{in} + \varepsilon_{in}$$

We assume that respondents will take a second job when U_{in} is positive. The systematic component of utility is described by a vector x_{in} that contains the eight primary and second job characteristics defined above. The systematic component of the indirect utility function specified is assumed to be linear-in-parameters. (By using an orthogonal main effects plan to select the profiles included in the DCE we can identify the main effect of each characteristic, but interaction terms between characteristics are confounded.) By assuming the stochastic component, ε_{in}, is independent and identically distributed (IID) extreme value type 1, a logit model is used for estimation. The behaviour being modelled is respondents' probability of

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[7] The complete set of 36 hypothetical choices is available from the authors upon request.

11

stating they would take the second job. The probability that respondent, n, chooses to

moonlight in alternative i is:

$$P_n\left(moonlight_i\right) = \frac{1}{1 + e^{-\beta' x_{in}}}$$

The model above assumes that the parameters β are the same for all respondents i.e.

respondents on average have the same preferences. However, it is likely that different

respondents will have different preferences. This preference heterogeneity can be

incorporated into the model using a random parameters logit model (Train, 2001).

The random parameters model assumes that

$$U_{in} = \beta_n' x_{in} + \varepsilon_{in}$$

where β_n is a vector of coefficients for individual n representing the individual's

tastes. The coefficients can vary across the population with density $f(\beta)$, and the

individual knows his own β_n and ε_{in}. I f β_n were known to the researcher then the

probability of respondent n choosing alternative i would be a logit conditional on β_n.

As this is not the case, the unconditional choice probability is the integral over all

possible values of β_n.

$$P_{in} = \int \left(\frac{e^{\beta_n' x_{in}}}{\sum_j e^{\beta_n' x_{jn}}} \right) f(\beta) d(\beta)$$

The random parameters logit model also considers the sequence of respondents' choices, thus avoiding the restrictive assumption of the logit model that several choices made by the same individual are independent. In this case, the coefficients are assumed to vary over respondents but are constant for all choices made by the same respondent. To estimate the random parameters logit, the researcher must first specify a distribution for each of the random coefficients, and the mean and standard deviation of the coefficients are estimated. Most applications of the random parameters logit to date have specified $f(\beta)$ as normal or log-normal.

3. Results

Of the 330 respondents to the questionnaire, 312 respondents were male. Given the low number of female respondents we focus the analysis of the discrete choice experiments on male respondents. **Table 1** reports demographic and job characteristics for the sample of male respondents, and for moonlighters and non-moonlighters separately. The statistical significance of the mean differences across the two groups is provided in the last column. The profile of the average respondent is that of a male worker, aged 44, who is married or co-habitats and has a child.

[Table 1]

The incidence of moonlighting among oil and gas workers in our sample is 7.4%, which is representative of the national average (Böheim and Taylor, 2004). Moonlighters tend to be slightly younger than non-moonlighters and are less likely to be married, although the number of children living in the household is marginally higher. The comparison of moonlighters and non-moonlighters highlights differences that are consistent with the financial motive for multiple job holding. Moonlighters have lower average earnings from their primary job. Furthermore, 43% of non-

moonlighters stated they were living comfortably, but only 26% of moonlighters chose this category to describe their financial situation, and a higher proportion of moonlighters than non-moonlighters stated they were "finding it very difficult" financially. When asked about their preference over the number of hours they work on their primary job, 2% of non-moonlighters wanted to spend more days working offshore compared to 13% of moonlighters.

3.1 Results of the discrete choice experiment

In the discrete choice experiment respondents were asked a series of 18 choices, resulting in a panel dataset of 5,940 observations. **Table 2**, column 3 reports the results of the logit model. All attributes included in the discrete choice experiment (except for income from the second job) are categorical and thus are coded as dummy variables. Ceteris paribus, there is a disinclination to moonlight, as indicated by the statistically significant negative constant term. All job characteristics included in the discrete choice experiment have a statistically significant effect on the probability that a respondent would state he was willing to moonlight, except working time. Thus, respondents would moonlight to overcome financial constraints which they may face, but financial motives are not sufficient to explain this labour market behaviour: Heterogeneous-jobs motives are also important in the decision to hold a second job.

[Table 2]

Working on a temporary contract (lasting less than 12 months) relative to a fixed term contract (lasting between 1-3 years) in the primary job significantly increased the

14

probability of moonlighting, suggesting that individuals would get a second job as a way to insure against job insecurity. Relative to a primary job with low risk of injury, a primary job with a high risk of injury increased the probability of moonlighting.

Relative to household income from the primary job 'not being enough', household income levels of 'just enough' and 'more than enough' had a negative effect on the probability of moonlighting: this is evidence of the financial motives behind moonlighting. Relative to a full-time second job, a part-time second job and a self-employed second job both increased the probability of moonlighting. A finding that may be interpreted as evidence that individuals may hold a second job in order to maintain flexible work schedules.

Respondents were more likely to state that they would moonlight if the second job provided job satisfaction, and similarly if the second job offered an opportunity to learn skills to start their own business. The earnings from the second job had a positive effect on respondents' probability of stating they would moonlight.

In the mixed logit model, all coefficients except earnings from the second job, and the constant were specified as random. There were no strong a-priori reasons to restrict the sign of the coefficients to be either positive or negative, thus normal distributions were specified for all variables. The constant term is fixed (not specified as random) to aid model identification. We use the results of the model to calculate the marginal rates of substitution between a change in attribute levels and earnings from the second job. Thus, the coefficient of the earning attribute is fixed, to aid the calculation of

these marginal rates of substitution (Train, 2001). Simulation was performed using 2000 Halton draws. **Table 2**, column 4 reports the results of the mixed logit model.

Compared to the logit model, the mixed logit model has improved model fit, indicated by the lower (absolute) value of the log likelihood at maximisation and lower value of the Akaike Information Criteria. The parameter estimates from the logit and mixed logit are not directly comparable because parameter estimates and model variances are confound in discrete choice models. For all attributes the standard deviation is significant at the 1% level; this indicates that preferences vary in the sample. With respect to the primary and second job characteristics which were statistically significant in the logit model the results are qualitatively the same. Consider the attributes that were not significant in the logit model (permanent contract, medium risk, and working time), in the mixed logit model the mean is not significant but the standard deviation is significant. This implies that within the sample these variables have opposing effects on respondents' probability to moonlight.

The estimated means and standard deviations indicate the share of the population that place a positive or negative value on job attributes[8] (**Table 3**). Consider the distribution of the estimated coefficient for part-time (compared to full-time) second job, the estimated mean is 0.389 and the estimated standard deviation is 1.078, thus

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[8] The mean and the standard deviation of the normally distributed parameter are obtained from the estimates. These are then converted to a standard normal distribution, by dividing the mean estimate by the standard deviation estimate resulting in z, this gives the equivalent point for the mean in a standard normal distribution. Given the standard normal distribution has mean 0 and is symmetric, one can calculate the amount of the distribution between 0 and z and add this to or subtract this from 0.5 (depending on the sign of the coefficient) to determine the proportion of the parameter distribution that is positive and negative.

64% of the distribution is positive and 36% of the distribution is negative. This implies that a part-time second job preferred to a full time second job for about two thirds of the sample and one third of the sample would prefer a full-time to a part-time second job.

[Table 3]

The ratio of the first job characteristics coefficient to the second job earnings coefficient is a measure of the amount of monetary compensation required in the second job to make respondents' utility equivalent to the base category for that attribute. The marginal rates of substitution for the mixed logit[9] are presented in **Table 4**. For instance, to compensate workers for a temporary contract compared to a fixed contract, an individual needs to earn £260 more from their second job, ceteris paribus. Similarly the ratio of the second job characteristics coefficient to the second job earnings coefficient is a measure of respondents' willingness to pay for these characteristics compared to the base category for that attribute. All other things equal, respondents are willing to pay £413 in order to be self-employed in their second job. In other words being self-employed, compared to being a full-time employee, in the second job is equivalent to earning £413 more from that job.

[Table 4]

We calculated the marginal rates of substitution to eliminate scale parameter confound found in binary choice models and to present the coefficients into a meaningful

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[9] This is the authors' preferred estimate. The marginal rates of substitution based on the logit model are also available upon request.

metric. In considering the results one should focus on the relative, rather than the absolute, magnitude. The absolute magnitude may be inflated by two factors. First, the sample is drawn from a high-paid sector and thus respondents may have a lower marginal utility of income than the population. Second, studies have indicated that stated preference studies are prone to hypothetical bias (List and Gallet, 2001; Blumenschien et al, 2008). Two studies have empirically investigated the correspondence between hypothetical and real valuations elicited using discrete choice experiments and these give conflicting results. Carlsson and Martinsson (2001) find no significant differences in donations to an environmental charity. Lusk and Schroeder (2004) find significant differences in the probability of purchase for certified beef steaks. However, they find no significant difference in marginal rates of substitution. More evidence exists for the comparison of hypothetical and actual valuations obtained using the contingent valuation stated preference method. These studies typically report higher valuations when questions asked are hypothetical rather than real (Liljas and Blumenschein, 2000; List and Gallet, 2001). This evidence should be kept in mind when interpreting the marginal rates of substitution calculated from the discrete choice experiment.

4. Conclusion

Our paper contributes to the largely unexplored issue of why individuals hold multiple jobs. Theoretical models of moonlighting suggest there are two reasons for individuals to hold a second job: financial motives (hours-constraints) and non-pecuniary motives (heterogeneous jobs). We assess the relative importance of these motives using a discrete choice experiment. We investigate this using purposefully collected data from offshore oil workers. While individuals respond to financial

constraints by moonlighting, financial motives alone are not sufficient to explain multiple-job holding. Respondents are attracted to the non-pecuniary characteristics of the second job. We find evidence that moonlighting may be a hedging strategy against job insecurity in the primary job. Further, the flexibility of the work schedule, the perceived level of job satisfaction from the secondary employment, and the entrepreneurial opportunities are also important determinants of individuals' decision to hold a second job. Our findings contribute to a better understanding of this labour market behaviour and demonstrate the usefulness of purposefully collecting data to investigate labour market phenomenon that are not adequately covered by existing large scale panel datasets.
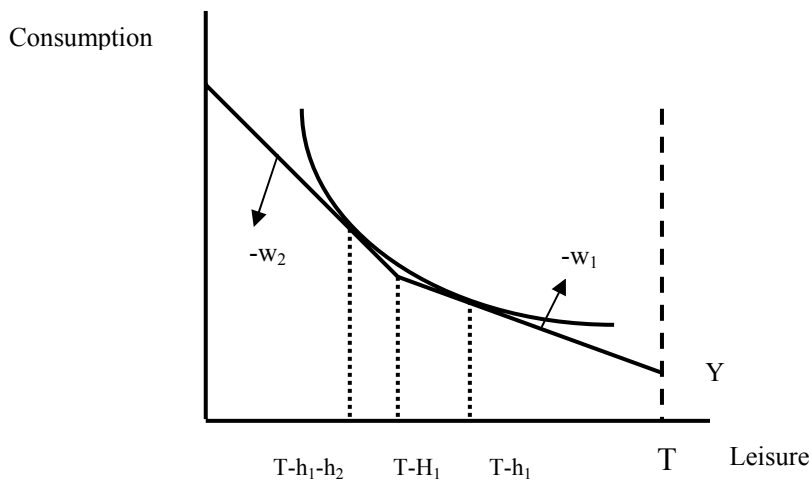
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Figure1: Utility maximising hours-constrained moonlighter

Consumption

I^*

I_1

$-w_2$

$Y+ (w_1-w_2)H1$

H_2

Y

$-w_1$

$T-H_1-H_2$ $T-H_1$ T Leisure
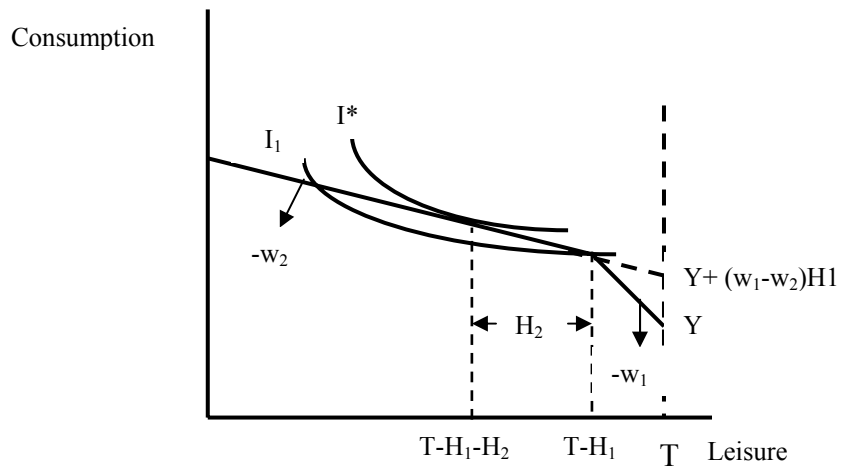
Figure 2: Utility maximising non hours-constrained moonlighter

Consumption

$-w_2$

$-w_1$

Y

$T-h_1-h_2$ $T-H_1$ $T-h_1$ T Leisure

22

Figure 3: Example of a primary and second job package, and the choice that respondents were asked to make

Current job characteristics and financial situation	Second job characteristics
• **Fixed-term** contract (lasting between 1 and 3 years)	• You would be **full time** (usually more than 30 hours per month)
• **High risk** of work related accidents	• The job **would not offer** you any particular **satisfaction**
• You spend **2 weeks offshore** and **3 weeks onshore**	• You would **gain experience to help you start a new career**, or build up a new business outside the oil industry
• The household income is **just enough to cover regular household needs**	• The usual monthly take home earnings are £**300**

If your current job and financial situation were as described on the left hand side above, would you take up the second job described?

○	○
yes	no

Table 1: Demographic and job characteristics for male only sample

	All	Moonlighters	Non-moonlighters	Test *Pr*(|T|>|t|)
Individual & household characteristics				
Average age (years)	44.2	42.1	44.4	
Household size	3.0	3.3	3.0	
Married/living together	84%	83%	84%	
No. of children in household	0.76	0.91	0.75	
No. of contributors to household income	1.7	1.7	1.7	
Education				
Up to secondary school education	23%	22%	24%	
Diploma/Vocational qualifications	60%	57%	60%	
University degree	11%	13%	10%	
Postgraduate degree	4%	9%	4%	
Annual household income				
Less than £15,000	1%	4%	0%	**
£15,000-£19,999	1%	0%	1%	
£20,000-£24,999	3%	4%	2%	
£25,000-£29,999	14%	30%	13%	**
£30,000-£39,999	20%	13%	20%	
£40,000-£49,999	18%	9%	19%	
£50,000-£59,999	42%	35%	43%	
Financial Situation				
Living comfortably	42%	26%	43%	
Doing alright	44%	57%	43%	
Just about getting by	12%	13%	12%	
Finding it quite difficult	1%	0%	1%	
Finding it very difficult	1%	4%	1%	*
Primary job				
Monthly net pay	3096.5	2719.4	3124.1	*
Hours worked per day	13.0	13.0	13.0	
Days worked per month	15.1	15.5	15.1	

Temporary contract	4%	9%	3%	
Fixed contract	7%	4%	8%	
Permanent contract	89%	87%	89%	
Preference over work hrs: more	0.03	0.13	0.02	***
Preference over work hrs: same	0.27	0.17	0.28	
Preference over work hrs: less	0.70	0.70	0.70	
Second job				
More than one job	7.4%	100%	n.a.	
Earnings from second job on a typical offshore break	621.7	621.7	n.a.	
Hours on second job (per offshore break)	31.9	31.9	n.a.	
Self employed	61%	61%	n.a.	
Related to primary job	35%	35%	n.a.	
No. of observations	312	23	289	

Notes: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 2: Results of discrete choice experiment for logit model and random parameters logit model

Attribute	Level	Logit Coefficient (SE)	Random parameters logit Coefficient (SE)	Standard Deviation (SE)
Type of contract[a]	Permanent	0.341 (0.072)	0.088 (0.115)	0.912 (0157)***
	Temporary	0.137 (0.073)*	0.260 (0.111)**	0.0586 (0.218)***
Job safety[b]	Medium risk	0.015 (0.072)	0.098 (0.114)	0.947 (0.157)***
	High risk	0.178 (0.073)**	0.319 (0.122)***	0.938 (0.167)***
Working time		-0.022 (0.059)	0.003 (0.099)	0.868 (0.119)***
Household income[c]	Just enough	-0.783 (0.072)***	-1.254 (0.131)***	1.147 (0.149)***
	More than enough	-1.395 (0.075)***	-2.231 (0.132)***	0.961 (0.156)***
Type of 2nd job[d]	Part-time	0.166 (0.074)**	0.389 (0.121)***	1.078 (0.157)***
	Self-employed	0.221 (0.072)***	0.413 (0.111)***	0.826 (0.162)***
2nd Job satisfaction[e]		0.749 (0.062)***	1.311 (0.119)***	1.175 (0.133)***
Entreprenurial activities[f]		0.597 (0.059)***	0.979 (0.117)***	1.319 (0.136)***
2nd job monthly earnings		0.001 (0.000)***	0.001 (0.000)***	
Constant		-1.339 (0.120)***	-2.451 (0.181)***	
Log (l)		-3341.83	-2901.86	
N		5577	5577	
Akaike Information Criterion		6709.66	5851.72	

Notes: a Omitted level: Fixed term contract; b omitted level: Low risk; c omitted level: not enough income; d omitted level: Full-time employment; e omitted level: doesn't offer any particular satisfaction; f omitted level: will not gain experience to start new career; g omitted level: no formal qualifications. *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Proportion of sample population with positive/negative coefficient for each job characteristic based on the random parameter logit estimates

Attribute	Level	Positive	Negative
Type of contract[a]	Permanent	50	50
	Temporary	50	50
Job safety[b]	Medium risk	50	50
	High risk	64	36
Working time		50	50
Household income[c]	Just enough	13.8	86.2
	More than enough	1	99
Type of 2nd job[d]	Part-time	64	36
	Self-employed	69	31
2nd Job satisfaction[e]		86.6	13.4
Entrepreneurial activities[f]		77.1	22.9

Notes: a Omitted level: Fixed term contract; b omitted level: Low risk; c omitted level: not enough income; d omitted level: Full-time employment; e omitted level: doesn't offer any particular satisfaction; f omitted level: will not gain experience to start new career; g omitted level: no formal qualifications.

Table 4: Marginal rates of substitution calculated using the random parameter logit estimates

Attribute	Level	Mean (£ per month)
Type of contract[a]	Permanent	.
	Temporary	260
Job security[b]	Medium risk	.
	High risk	319
Working time		.
Household income[c]	Just enough	1254
	More than enough	2231
Type of 2nd job[d]	Part-time	389
	Self-employed	413
2nd Job satisfaction[e]		1311
Entrepreneurial activities[f]		979
Constant		2451

Notes: a Omitted level: Fixed term contract; b omitted level: Low risk; c omitted level: not enough income; d omitted level: Full-time employment; e omitted level: doesn't offer any particular satisfaction; f omitted level: will not gain experience to start new career; g omitted level: no formal qualifications.