Still At Work? An empirical test of competing theories of long hours culture

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An Empirical Test of Competing Theories of the Long Hours Culture

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Abstract

There is increasing evidence of a widening in the cross-country dispersion in general working hours. More recently, however, there has been considerable attention given to the "long hours culture" phenomenon identified in certain segments of the labour market, in particular amongst professional and managerial staff, and potential causes and impacts of such a culture. In this study we use a large-scale European worker survey to test the validity of several competing hypotheses of why people work long hours. Our results show that there is a labour – quality of leisure trade-off for women, but not for men. Other key determinants of long working hours are industry sector, occupational status, gender and job security proxied by employment contracts.

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1. Introduction

To date, much of the discussion surrounding the long hours culture has focused on how different US workers are compared to their European and Japanese counterparts (see for example Prescott, 2004; Brett and Stroh, 2003). This is perfectly rational as the evidence on length of working years shows quite clearly that US workers work longer than their non-US counterparts (ILO Laborstat, 2005) in some cases substantially so, and tend to take less holiday time (ILO, 2001). For example, in 1994 French workers worked an average of 39.9 hours per week, Italians 39.5, UK 40.1, and Japanese 43.2. This compared to 41.0 in the US. By 2003 the equivalent figures were 39.6 for France, 38.3 for Italy, 39.6 for UK and 42.2 for Japan compared to 42.6 for the US. Thus in all these countries bar the US the trend in working hours over the last ten years has been downwards, typically by around an hour per week. Yet in the US the trend has been upwards by a similar amount. And if we take into account the shorter holiday time taken by US workers, over a full year, this difference is even greater.

Yet the debate thus far has focused on how hard the Americans work compared to their counterparts in major competitor nations, and has implicitly assumed that Western Europe is a homogenous group of countries. Although the European Union has been very active in terms of employment legislation, such as the Working Time Directive, 1998, covering hours and holidays, the effects have been significantly different across the core EU-15 member states. In this context, it is the UK, within the EU, which is seen in a similar light to the way the US is perceived in the wider developed world in terms of working much longer hours and taking less holiday.

Further, whilst observing more general patterns of variation in average hours worked across countries, it is also the case that researchers have tended to focus on particular segments of the employed labour force perceived to have a longer hours culture. For example, Brett and Stroh (2003) explicitly considered managers working more than 61 hours per week, whilst others have reported on top executive hours (Hochschild, 1997; Worthy, 1987). This accords with the findings of Gershuny (2000), who, commenting on occupational status and working time, states that, 'now the most important people are the busiest' and further that, 'we now demonstrate our status by lack of leisure.'

So what are the implications of long hours and why is it important? For the individual it can mean an increase in stress, and potentially deleterious effects on psychological and physical health. Social effects might include an increase in family tensions (Spector et al, 2004) and marital relations (Doyle and Reeves, 2002). For the economy, it could lead to poor labour productivity both in terms of increased absenteeism and declining marginal productivity of labour when present at the workplace but working long hours (Barmby et al, 1993; Brown and Sessions, 2004). This is sometimes referred to as presenteeism, which describes the phenomenon of being at work but achieving little or nothing.

This study will use a large-scale EU wide worker survey to address four fundamental questions.

- What is the extent of long hours working across the European Union?
- Does the long hours culture vary across European Union countries?
- Who works long hours?

- What are the potential explanations for working long hours?

In doing so, we will build upon, and complement, other empirical work in this area (for example the US study of Brett and Stroh, 2003). The value added of our study is that we have data for 15 European Union countries; That we are able to test for evidence of long hours across the full range of occupational groups; that we have data for 1,000 workers in each of the fifteen countries for the year 2000.

The rest of the paper is set out as follows. In section 2 we review the literature and identify several competing theories developed to explain the increase in long hours working. In section 3 we present the basic variables and discuss our methodological approach. Section 4 presents and discusses the basic data and the findings of our econometric analysis of long hours. We conclude in section 5 by summarising our key findings and evaluating the validity of the major theories of long hours in the context of the European Union.

2. Literature Review and Hypothesis Development

Using the framework developed by Brett and Stroh (2003) from their extensive review of the extant literature across the academic disciplines of economics, sociology and psychology, we can test our data against their four general theories and some explicit hypotheses drawn from the wider literature. These include the labour-leisure trade-off, social contagion theory, work as a means of escaping from family stress, the rewards of work hypothesis and, work intensification theory.

The Labour-Leisure Trade-Off

This theory has its roots firmly within the field of microeconomics. As such it makes the assumption that individual workers derive utility from leisure and that wages are a means of inducing individuals into supplying work hours, subject to wages being above some minimum (reservation) level, typically assumed to be around the level of social security (welfare) payment to unemployed workers. It thus follows that rational workers will supply more hours when wages are high, although at very high wage levels theory predicts that the labour supply curve is backward bending (i.e individuals on very high wages begin to substitute leisure hours for work hours) as the utility of additional pay is diminishing.

An interesting adjunct to this basic labour – leisure model is developed by Brett and Stroh (2003). Here, they consider the nature of leisure itself, or in economic parlance, the consumption of leisure. They posit that higher earning individuals have greater choice in terms of the types of leisure they consume. In particular they have the spending power to enjoy forms of leisure that are less likely to impinge on working time. Thus we can hypothesise that longer hours at work has a negative association with leisure hours consumed. This implicitly assumes that individuals are seeking to equalise their quality adjusted leisure time i.e low wage earners consume more hours of lower quality leisure, and high wage earners consume fewer hours of high quality leisure. Brett and Stroh (2003) only found support for this hypothesis among high earning females, who were making a trade-off between work and leisure hours. Hamermesh (2005), using time-budget data from Australia, Germany, Netherlands and the US, finds that the amount of temporal routine a person engages in is affected by variations in the price of time, income and the ability to generate variety.

Specifically, he finds that more educated people engage in less routine behaviour, and higher household incomes allow people to purchase more temporal variety.

We can also add a dynamic element to the labour-leisure model by allowing for the presence of internal labour markets. Under this regime, where workers future pay and promotion might be linked to an investment in longer hours now, rational individuals will estimate the net present value of future higher pay and compare this with the disutility of supplying more hours in the current time period. Sturges and Guest (2004) found that among graduates in the early years of their career, concern for career success encourages them to work longer hours, even if it means experiencing increasingly unsatisfactory relationship between home and work.

From this discussion we can derive four hypotheses:

H1: The more work hours an individual supplies, the fewer hours of leisure they will consume

H2: The more individuals earn, the fewer hours of leisure they will consume

H3: Higher earners will consume different types of leisure than lower earners

H4: Very high earners will consume more hours of leisure than medium level earners (backward bending labour supply curve)

Social Contagion

Economic events over the last two decades, in particular the two downturns at the beginning of the 1980s and 1990s, have had profound effects on the nature of labour markets and employment. It can be argued that the former could be classified as a

blue collar recession, with large employment losses amongst manual workers, and the latter a white collar recession, with large losses amongst managerial, technical and professional staff. Globalisation, and the effects of an intensification in competition in tradeable goods and services, also meant that for many business in (relatively) poorly performing economies, they had the choice to either adapt or lose markets.

It was only fifteen years ago, remember, that the US and UK looked to Japan as the most dynamic, efficient and technology driven economy in the world. Today the situation is more complex, with businesses having to make choices over competing with developing countries (for example China) in low-cost, high volume goods and services, or developed countries in high value added areas. Clearly, the former is likely to impact on blue-collar jobs and the latter more on white-collar jobs.

Thus, whilst employment losses in the two recessionary periods of the early 1980s and 1990s have meant an intensification of work for those still in jobs, this has occurred in parallel with a general pattern of management de-layering (a reduction in the number of levels of the management hierarchy) as more and more businesses began to adopt new, leaner and responsive styles of management (Simpson et al, 2003; Kodz et al, 1999). In economic downturns, and /or periods of restructuring, this has often meant that there is more work per (remaining) employee than was the case in relatively buoyant times (Burchell et al, 1999). Further, as employees fear for their jobs more, they become more willing to accept longer hours as the price of keeping their jobs (Beatson, 1995; Kodz et al, 1999).

It then becomes very interesting as an economy moves out of recession. Here, both firms and workers can be reluctant to expand employment, or at least not at the levels required to fully accommodate demand. On the part of firms, it is often more cost effective to offer overtime payments to existing workers than to make new hires. For workers, who have worked harder throughout the downturn, they often feel that the firm owes them a debt of loyalty, and can also be reluctant to share the benefits with new hires. This is similar to insider-outsider models of employment (see Lindbeck and Snower, 2001). Briefly, insiders (those currently in jobs) undertake actions that makes it more difficult for outsiders, (those potentially seeking employment) to be competitive compared to existing insiders. This means that those that get past these implicit barriers and get employed need the approval of insiders to function effectively in their jobs. Thus they mimic the behaviour of insiders, which may entail longer hours.

In the psychology literature, this is referred to as social contagion (Latane, 2000), and relates to individuals changing their behaviour through social interaction with others. Eastman (1998), for example, found evidence that managers' working hours were affected by the hours other managers worked, rather than having individual targets. An interesting adjunct to this is the theory of social comparisons. Here, insiders can have a tendency to escalate their behaviour in response to a perceived threat from new hires, to maintain their distinctiveness. But this escalated behaviour then becomes the cultural norm. Importantly, social comparison requires both a mechanism for the transmission of norms and a process by which they can escalate. There is evidence that a 'long hours culture' encourages people to work longer hours (Kodz et al, 1999).

There is also an issue, often discussed by economists, surrounding the appropriate measurement of work effort (Sousa-Poza and Ziegler, 2003; Rebitzer and Taylor, 1995). For, it is effort that is fundamental to productivity, not simply hours at work. However, in the absence of appropriate mechanisms for measuring effort, many employers use hours as an indicator of performance (Sousa-Poza and Ziegler, 2003). Whilst this may be a fairly accurate means over a range of hours, for example up to thirty-five hours, this may not hold for extended hours beyond this due to declining marginal productivity of labour. Yet due to the costs and managerial time involved in designing and implementing more sophisticated measurement systems (Cowling, 2001;2002), it is evident that employers do relate time to performance in an explicit way. Further, they also use hours as a signal of loyalty and employee commitment (Clarkberg and Moen, 2001; Kodz et al, 1999; Rutherford, 2001).

Finally, we note that it is likely that there will be substantial inter-industry variation in the prevalence of long hours (Sparks et al, 2001; Hogarth et al, 2003). This is related to the nature of work itself, patterns of consumer demand and types of worker employed. On the nature of work, we can envisage that in a production line set up, unless a full complement of workers elect to work longer hours, it is not feasible to set the track in motion. Yet in industries characterised by small team or individual working, this may not be an issue. In addition, the nature and demands of the supervisory hierarchy can dictate long hours norms and culture (Maume and Bellas, 2001).

Patterns of consumer demand (i.e when people are more likely to demand your product or service) can also play a large part (Kodz et al, 1999). For example, if you

run a taxicab business, then it is potentially a 24 hour service with peaks at certain times of the day, and days of the week (Jacobsen and Kooreman, 2005). On labour force composition, we might expect industries with high shares of female, and ethnic minority, workers to have different patterns of working hours than those dominated by white males.

From the discussion in this section, we can propose four hypotheses:

H5: There will be substantial inter-industry variation in long hours working

H6: Employees who work longer hours are more committed

H7: Closely supervised workers will work longer hours

H8: Job insecurity will be associated with longer hours

Work: An Escape from Family Stress

Perhaps surprisingly in an era where work-life balance is becoming a major issue in human resource management, Hochschild (1997) argues that those who work long hours are doing so to avoid domestic tension. Thus, she quite firmly posits that the direction of causality is such that prior domestic tension then feeds through into longer working hours. Further, she argues that it is changes in the structure of family life, increasing single parenthood, double income households etc, that have increased stress in the home to such an extent that people would rather work than go home to their children and families.

Yet this is not supported by the body of evidence from 'happiness' and 'life satisfaction' studies (Bouazzaoui and Mullet, 2002; Tsau and Liu, 2001), which

consistently find that children are positively correlated with happiness, as is having a partner. Nor indeed is it consistent with the body of research output on work-life balance (White, 2003; Jacobs and Winslow, 2004), and its increasing usage in modern day business. We also note that prior studies that have tested for these effects have not been able to empirically validate this theory (Brett and Stroh, 2003; Crouter et al, 2001; Hughes et al, 1992; Pitman, 1994; Maume and Bellas, 2001).

But the general theory that individuals react to dissatisfaction with one domain by increasing time allocation in another, the compensation hypothesis (Tenbrunsel et al, 1995) has a solid, intuitive feel to it. In fact, studies on workplace absenteeism suggest very strongly that dissatisfaction with work increases absence (Brown and Sessions, 2004). Whilst the focus of Hochschilds theory is on psychological involvement as the fundamental driver of reallocation decisions, others have focused on the relative value of work time over domestic time in terms of meeting role expectations (Edwards and Rothbard, 2000; Hamermesh, 2005; Groot and Massen van Den Brink, 2002; Gould, 2004; Hodson, 2004; Kim and Zepeda, 2004).

From this discussion, we can draw out three hypotheses:

H9: Individuals who work longer hours are more dissatisfied with domestic life

H10: The presence of children in the household will lead to variation in the incidence of long hours working

H11: Marital status will lead to variation in long hours working

The Rewards of Work

In the psychology literature work is often associated with self-esteem, status and well-being. For example, Gray (2004) in a study of Australian fathers work hours and measures of well-being, found that work hours were negatively related to only two of the thirteen measures they tested for. They concluded that for fathers working long hours, their satisfaction with their hours was found to be very important to the relationship between hours and well-being. This accords with other findings reported by Leana and Feldman (1992), who identified loss of male self-esteem as an outcome of either retirement or job loss, and Gilbert (1994) who found that work boosts female identity.

Other work has pointed to the relative importance of work compared to family roles in terms of defining an individuals status in society (Hochschild, 1997). Jacobs and Winslow (2004), in their study of academic careers, found that whilst long hours greatly contributed to research productivity (a key measure of academic standing), these demands posed a dilemma for parents who wanted to spend time with their families. Kim and Zepeda (2004) find that intra-household time allocation is gender specific, and the fathers economic status had the largest impact on the time allocation of household members. Further evidence is found in a study by Hodson (2004), who establishes a link between well-paid employment and having a rich social life at work, relative to family life. The author concludes that upper-status employees reap both greater material and greater social rewards from their jobs, and as a consequence are more drawn to higher work involvement.

From this discussion, we can derive two final hypotheses:

H12: Individuals who work the longest hours will be more satisfied with their jobs

H13: Individuals who work the longest hours will be more involved with their work

3. Data and Methodology

The data we use for the empirical part of this paper is derived from a survey of the working populations (employed + self-employed) of the core European Union 15 member states. The survey was designed to be representative of the working populations within each of the 15 countries, and was conducted in 2000. In total we have records for in excess of 21,000 workers (1,000 minimum in each country bar Luxembourg which has a reduced sample to reflect its tiny population). The survey questioned workers about the nature of their jobs, social activities, personal demographics and working conditions.

Dependent Variables

- The most basic survey question is, "*For how many hours a week do you work in your regular paid job?*" This is coded into nine categories ranging from category 1 which refers to less than 10 hours, to category 9, which refers to greater than 60 hours per week.

This variable will form the basis of our subsequent analysis and testing of our hypotheses. Next we turn to our explanatory variables.

Explanatory Variables

Here we have sought to identify, from the extensive survey instrument, those variables that best approximate the 13 hypotheses we are seeking to empirically test. Firstly, we discuss those variables that represent alternative use of time, or non-work time.

Alternative Time Use: here we have ten separate variables that capture an individuals' involvement in a range of non-work based activities. The actual survey question is: *How often are you involved in any of the following activities outside work?* And the activities are; voluntary or charitable activity; political activity; caring for and educating your children; cooking; housework; caring for elderly; taking a training or educational course; sporting activity; cultural activity, and; leisure activity. The variables are coded such that 1=everyday for one hour or more, 2=everyday or every second day for less than one hour, 3=once or twice a week, 4=once or twice a month, 5 once or twice a year, 6=not applicable.

Country: a variable that identifies which of the EU-15 the individual respondent is from. The fifteen are Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Portugal, UK, Austria, Sweden, and Finland.

Occupation: a variable that identifies the occupational classification of the respondent. The occupations are; legislator; professional; managerial & technical; clerical; sales; skilled manual; craft worker; plant & machinery operator; elementary (unskilled), and armed forces.

Employment Contract: this refers to the nature of an individuals employment contract and is coded into four categories; unlimited permanent contract; fixed term contract; temporary agency contract, and; apprenticeship or other training scheme.

Industry Sector: the survey question asks respondents to indicate "*What is the main activity of the company or organisation where you work?* Responses are coded into eleven categories; agriculture; manufacturing & utilities; construction; wholesale & retail; hotels & catering; transport & communications; finance & real estate; public administration; education; health, and other services.

Public / Private: the survey asks respondents whether they are working in; national or local government services; a state owned company; private business.

Establishment Size: defined in employment terms, the survey asks "*how many people in total work in the local unit of the establishment where you work?* Responses are coded thus; none (interviewee works alone); 2-4; 5-9; 10-49; 50-99; 100-249; 250-499, and; 500 and over.

Work-Life Balance: the survey asks respondents "*in general, how well do your working hours fit in with your family or social commitments outside work?* Responses are coded from one to four where 1=not at all well, 2=not very well, 3=fairly well, and 4=very well.

Pace of Work: this is intended to proxy for cultural norms in the workplace. The survey question is "*on the whole, is your pace of work dependent , or not, on the work done by your colleagues?*", and is coded as a simple yes or no.

Direct Control: this is intended to capture supervisory effects on working hour norms. The survey question is the same as for pace of work but refers to "*the direct control of your boss*".

Boss Gender: this is intended to capture any variation in norms attributable to the gender of an individuals' immediate boss and is coded in three ways; male, female or not applicable.

Health Risk: this variable captures any potential health risks that may be attributable to differences in working hours and ask simply "*does your work affect your health, or not?*" Responses are yes or no.

Job Satisfaction: the survey question is, "*on the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with working conditions in your main paid job?*

Personal Characteristics: the survey also elicits detailed demographic information on individuals concerning their marital status, gender, age, the presence of young children in the household (defined as <15 years old), income relative to the within country distribution (coded into quartiles), whether that person in the main shopper in the household, and whether that person in the highest earner in the household.

Methodology

Having discussed at length the source and nature of the data we are going to use for the empirical part of this paper, we now turn our attention to the empirical methodology we will use. In simple terms we are going to adopt a two-stage procedure. Firstly, we will present some basic sample statistics for our dependent variable. In this section we will disaggregate these statistics by country to identify any potential variation across the expanse of the European Union, as well as other key variables capturing our main hypotheses.

We will then proceed to estimate individual regressions for males and females on our key dependent variable, hours. As our variable is not continuous, we cannot use OLS regressions (the hours variable is coded into nine bands). Here we use an ordered probit procedure to capture the order and categorical nature of the dependent variable. This is even more important if we replicate the procedure of Brett & Stroh (2003) who restricted their analysis to those working more than 34 hours per week.

The basic model is such that;

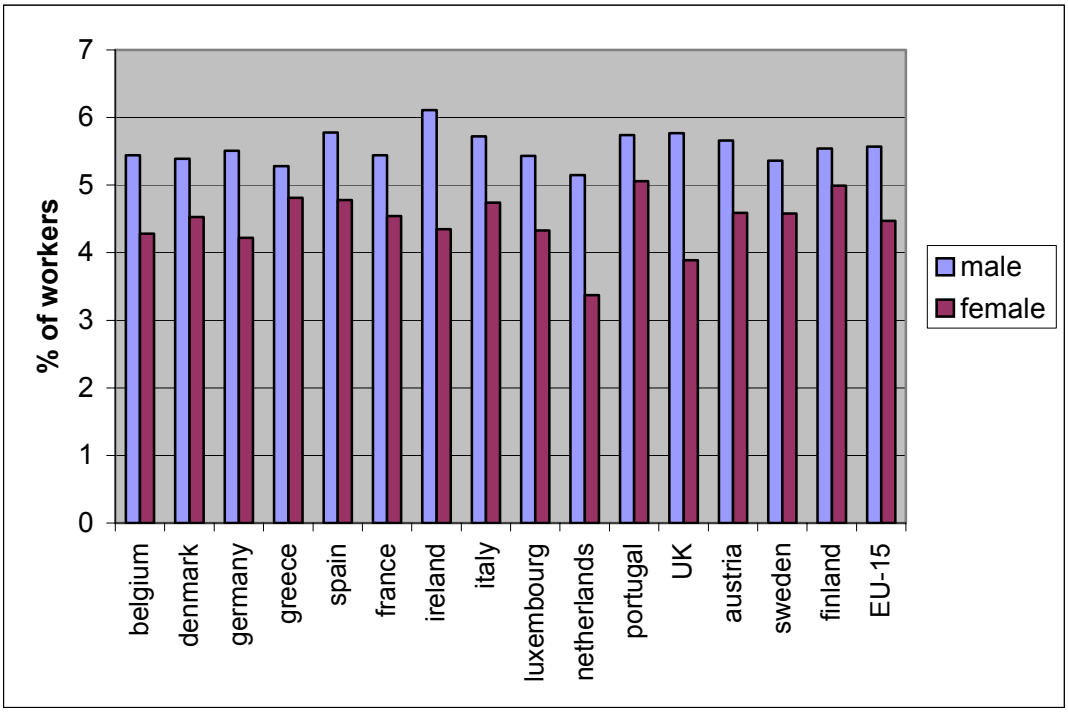
Working Time Measure = f (country, occupation, industry, public/private, establishment size, work-life balance, pace of work, control, health, job satisfaction, personal characteristics, alternative time uses)

4. Results

We begin by considering our basic hours variable. Fig 1 below shows the proportion of the working population in each country working more than 60 hours per week. In line with Brett and Stroh (2003) we disaggregate our data by gender.

Fig 1

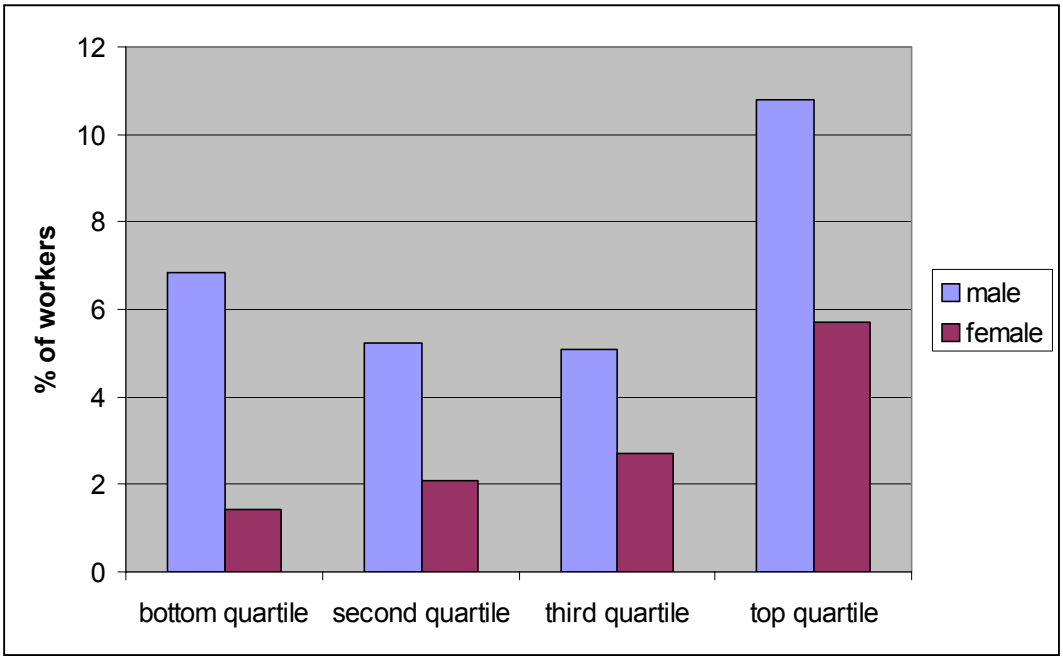
Proportion of working population working more than 60 hours per week



The first point to note is that the variation across countries in hours is statistically significant at below 1% for males and females. Further, males are more likely to work longer hours than females. Yet the variation in female long hours across countries is much greater than is the case for males. For example the difference between Portugal (high) and Netherlands (low) for women is 1.69 per cent for women. For men the largest difference (between Ireland and Netherlands) is only 0.96 per cent.

Fig 2

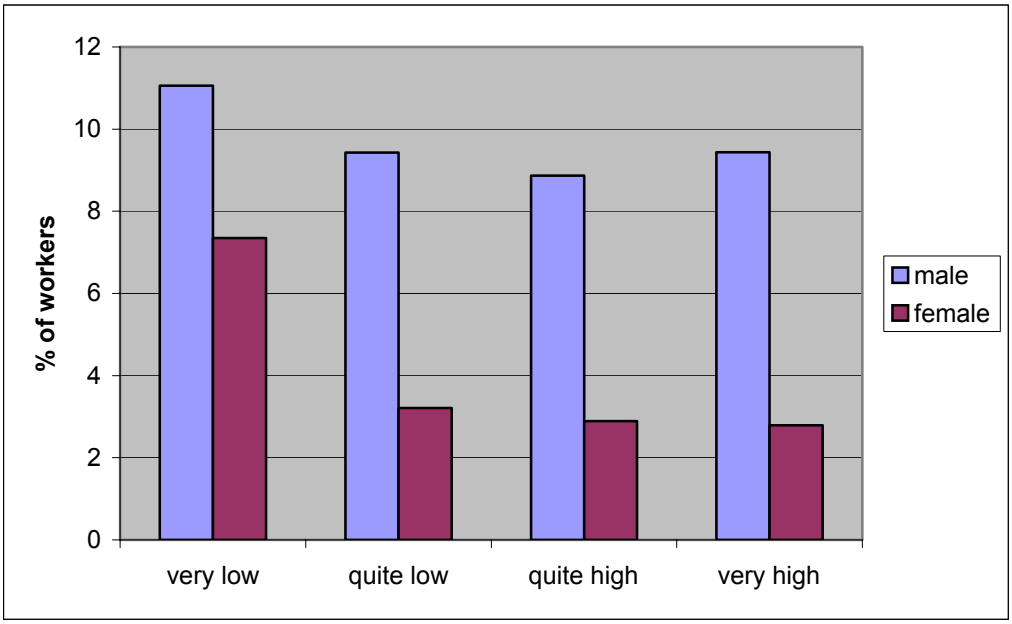
Income Quartile by Working More than 60 Hours Per Week



From Fig 2, we observe that for males the relationship between long hours and income is 'U' shaped with high proportions of workers in the bottom and top income quartiles, although substantially more of the highest income earners work long hours. For females the contrast is stark. Here we note that there is a positive, and increasing propensity for women to work longer hours as we move up the income distribution. This suggests very strongly that the reasons for men and women working very long hours might be quite different.

Fig 3

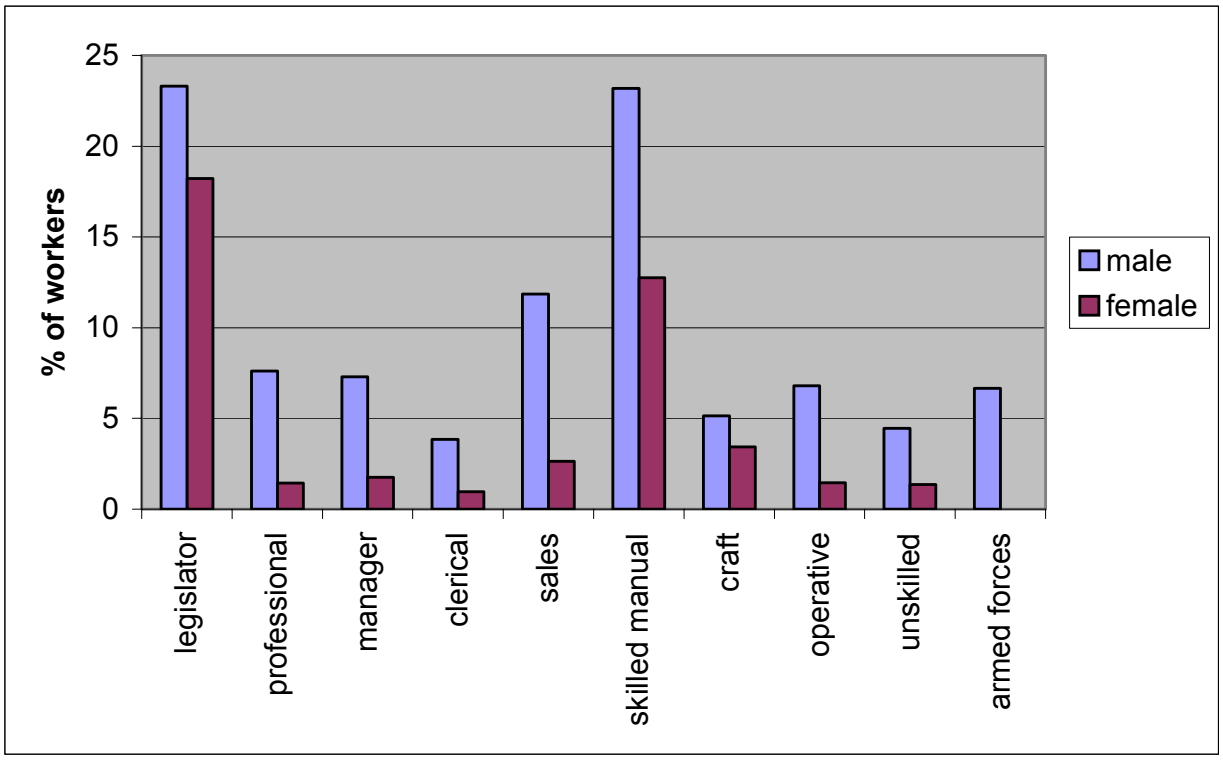
Job Satisfaction and Working More than 60 Hours Per Week



Regarding job satisfaction, we observe that for both males and females that it is workers that have the greatest propensity to work very long hours that are least satisfied with their jobs. For all other levels of job satisfaction above this, the propensity to work very long hours is broadly even. Yet the magnitude of the difference between the least satisfied workers and the rest is far larger for females than males. This might imply that the marginal disutility of additional hours of work is higher for women than men.

Fig 4

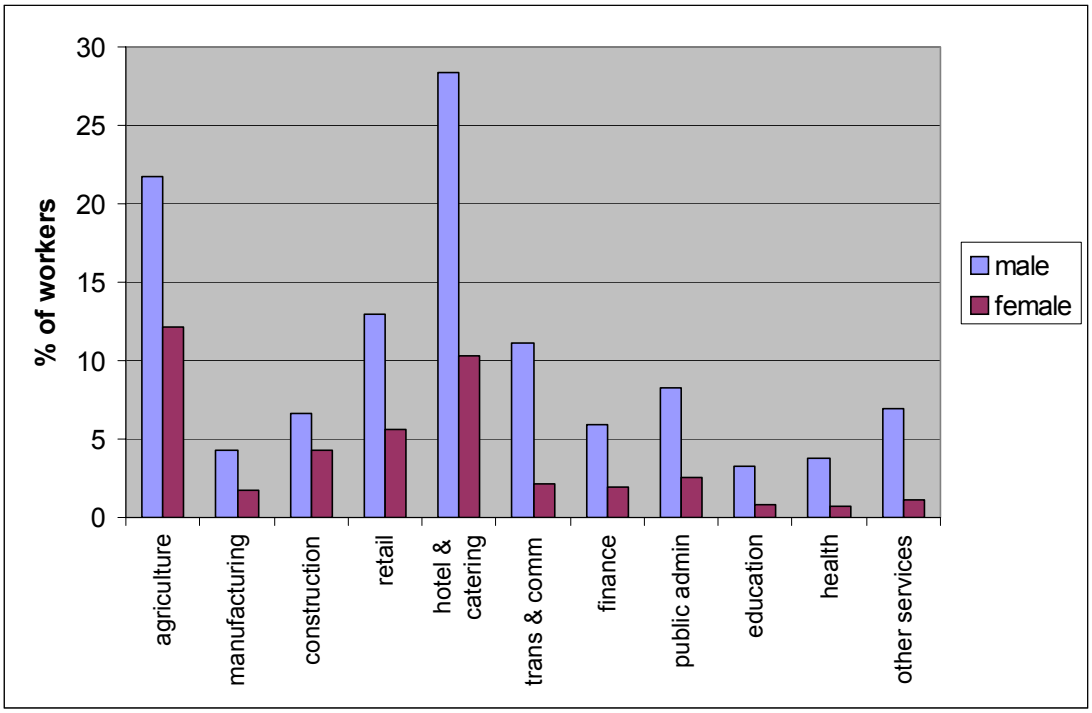
Occupational Status by Working More than 60 Hours Per Week



On occupational status, an area in which the literature has focused quite heavily on, we observe that for males three occupations have substantially higher incidences of long hours working. These are; legislators (administrators), skilled manual, and; salesmen, in declining order of magnitude. In the former two, more than one in five male workers work more than 60 hours per week. This contrasts with very low incidences amongst clerical, unskilled and craft workers. For women we also observe high incidences of long hours amongst legislators and skilled manual workers, and very low incidences amongst armed forces, clerical, unskilled, professionals, and plant & machine operatives.

Fig 5

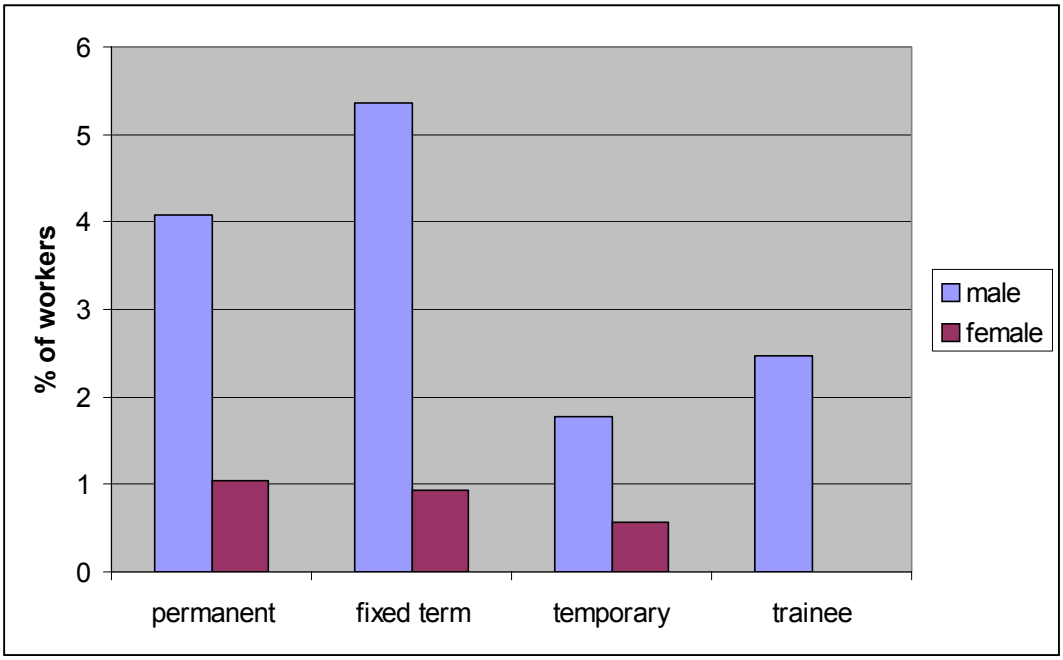
Industry Sector and Working More than 60 Hours Per Week



Industry sector is also an issue raised in earlier work (see for example, Brett and Stroh, 2003). Here we see that there is tremendous variation for both males and females in the incidence of long hours working. From Fig 5, hotels & catering, agriculture and retailing are all sectors where significantly more workers, male and female, work long hours. For men we can also add transport & communications. By contrast we observe very low proportions of males and females in education and health working long hours. Once again the difference between the lowest and highest female incidences is larger, proportionately, than that of males.

Fig 6

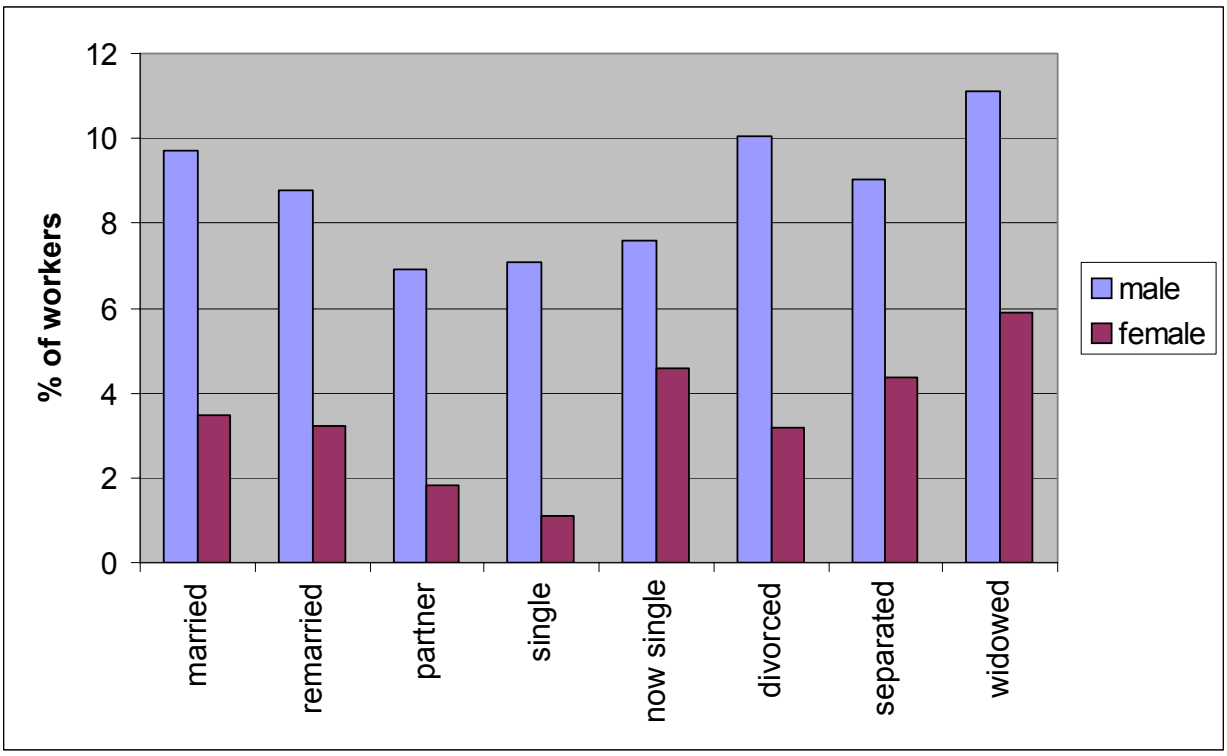
Employment Contract and Working More than 60 Hours Per Week



Employment contract, it can be argued, is a good proxy for job stability or security. It might well be the case that many workers begin their working lives with a particular company as trainees or on temporary contracts and hope that they will be offered either lengthier fixed term contracts or permanent employment. The pattern in the data is interesting and quite different across gender. For males, it appears that workers on temporary contracts are not trying to conform to workplace norms by working longer hours to the extent that all other workers, including trainees do. This contrasts with males on fixed term contracts who appear to be working longer, perhaps in the hope of securing permanent employment. For women there is a positive relationship between contract duration and long hours working suggesting that for women it is not the hope of better contracts that is driving their working hours.

Fig 7

Marital Status and Working More than 60 Hours Per Week



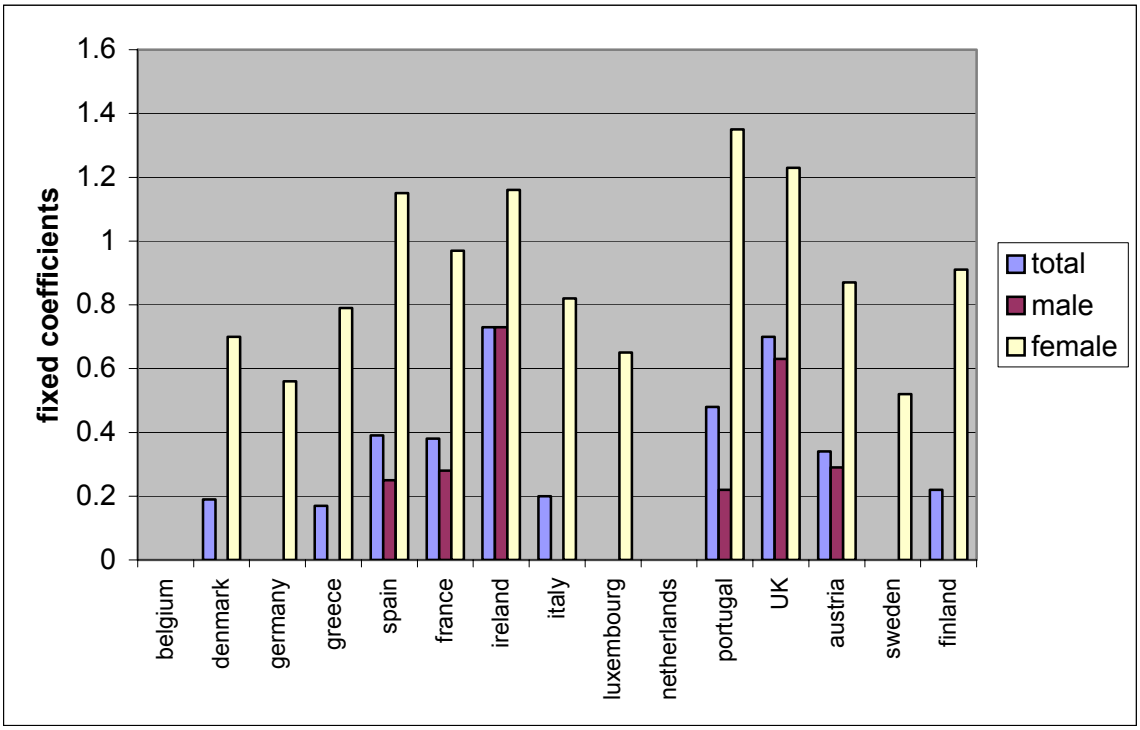
Marital status is an issue on which there is tremendous variation amongst men and women. In both cases, however, widowers had the highest incidence of long hours working, although for males divorcees also had a very high rate, as did first time marriers. The former suggests that work may be a means of socialisation and taking ones mind off bereavement. For women, apart from the widowed effect, the pattern is quite different. For example, female divorcees were less likely to work long hours than married females, yet being newly single or separated tended to increase the incidence of long hours work. Finally, we note that single males and females tended to have a low incidence of long hours suggesting that they are enjoying their independence in non-work ways.

Regression Results

Table 1 in the appendices reports the results for three hours equations. Model (1) is a full model with gender included. Following on from this we estimate two separate gender models (Model (2) for males and Model (3) for females). Fig 8 below shows the findings *vis a vis* cross-country variation in the EU for males and females.

Fig 8

Cross-Country Variation (base country = Belgium)



From Model (1) we observe that 10 of the EU countries have a significantly higher propensity to work long hours than Belgium. The longest hours prevail in Ireland, UK and Portugal. Countries comparable with Belgium are Germany, Luxembourg, Netherlands and Sweden which, with the exception of Sweden, are all middle European. This might imply that there is an element of culture or social norms across

the different EU countries, which manifests itself in terms of workers in particular countries being more/less willing to work longer hours. This might be viewed as consistent with social contagion theory.

For males, there is some variation across countries, but the extent of this is much less than for females. This suggests that cultural or social norms might be playing a role. In only six countries, in descending order of magnitude, Ireland, UK Austria, France, Spain and Portugal, did men work longer hours than their Belgian counterparts (Model 2). This compares to thirteen for women, notably Portugal, UK, Ireland, Spain and France (Model 3). Further the scale of the difference is much larger for women. What this strongly suggests is that UK, Ireland and Portugal, holding a host of job and personal characteristics constant, have the longest hours cultures in the EU, and further that this holds for men and women. Further, social and cultural norms play a significantly greater role for women than men. In the entire EU only Belgium and Netherlands can be considered averse to a long hours culture.

Labour-Leisure Trade-Off

The basic hypothesis is that work and leisure are substitutes (H1). From Model (1), we note that only three non-work activities are significantly associated with hours worked, and two in the opposite direction to that predicted. Only eldercare is associated with a reduction in hours. By contrast, doing voluntary/charity work is associated with doing more hours, as is undertaking further education or training. Thus the aggregate evidence is not strong in terms of supporting H1, particularly as one might class eldercare as substituting market-based work for non-market work, rather than explicit leisure. The evidence also suggests that those that want to 'get on'

in life are working longer hours and supplementing this by acquiring additional human capital.

For men explicitly, (Model 2), there is marginal evidence to show that involvement in political activities (possibly trade-union work) is associated with longer hours and domestic housework is associated with shorter hours (significant at the 10% levels respectively). For women (Model 3), the only significant relationship identified is a positive one between time spent on cultural activities and longer hours. This might be more supportive of the quality of leisure hypothesis, H3, than the trade-off hypothesis, H1. Regarding H2, the income –leisure trade-off, we observe very little evidence that higher incomes are associated with longer hours. Only in the male model do we observe a positive effect for men in the highest income quartile, and only significant at the 10% level.

H3 is an interesting hypothesis in that it predicts that richer people will consume different types of leisure. We tried to proxy and test for any such effects by interacting four income quartiles with our ten non-work activity variables[1]. The results are, for the most part, inconclusive regarding H3. For example, we observe in Model (1) that second quartile (fairly poor) income earners who participate in voluntary work do less hours. Very rich people (top income quartile) who engage in political activity work even fewer hours. By contrast, fairly poor income earners who look after the elderly do more hours, as do very rich people who enjoy cultural activities, and moderately rich people who enjoy genuine leisure. For men we only observe one effect for rich men involved in political activities who work significantly

[1] We do not report the interaction results for our three models as this would extend the results table by a considerable amount. However, they are available from the authors if required.

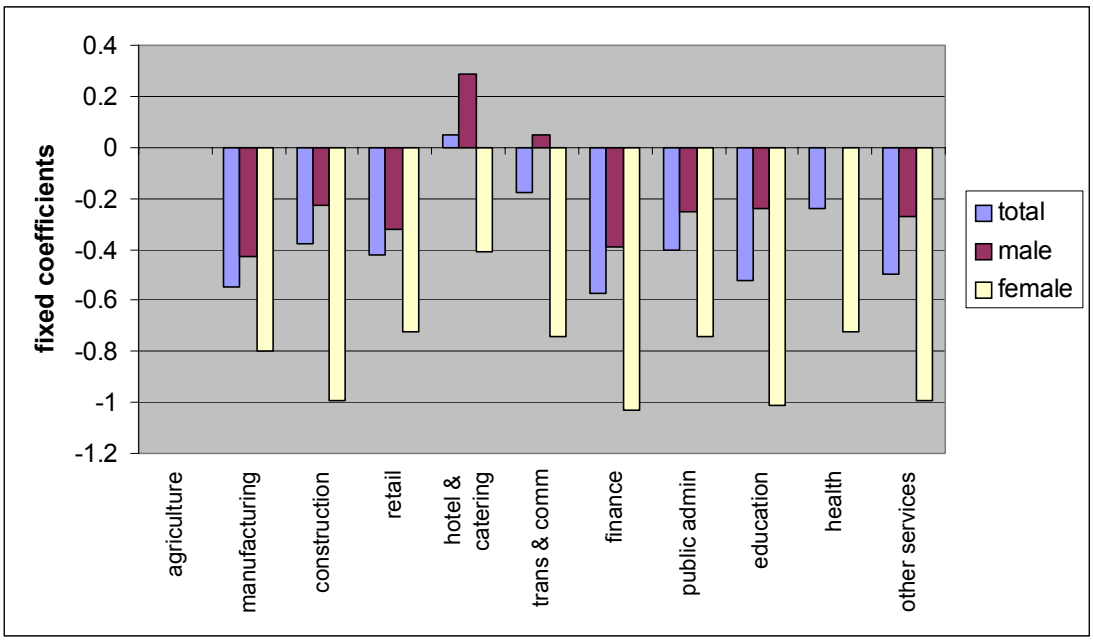
fewer hours. This contrasts with our female findings that better capture the essence of H3. For example, fairly rich women who participate in sports work fewer hours, as do poor and very poor women who engage in cultural activities. Taken as a whole, our results strongly suggest that this is an area that merits further, more detailed, consideration in future work using variables that are better able to capture the essence of H3. Similar conclusions can be made about H4, that the very highest income earners will work less than fairly high income earners, although the evidence is more supportive of this hypothesis (see above rich men in politics and rich sporty females).

Social Contagion

The four hypotheses drawn from theory broadly relate to potential impacts from social and workplace norms. Our hypotheses cover industry variation, commitment, supervision and job insecurity. Fig 9 below shows the variation by industry sector.

Fig 9

Industry Variation (base = agriculture)



From Fig 9 we observe that industry is a critical determinant of long hours working. Further, industry effects are larger for women than men. The interesting feature is that women in agriculture work by far the longest hours. Only female hotels & catering workers come remotely close in terms of propensity to work very long hours. This contrasts with women inn construction, financial services, education and other services who are highly unlikely to work long hours. For men the longest hours ranking is different with hotels & catering at the top in terms of long hours, followed by transport & communications and then agriculture. Further, males in manufacturing and financial services are the least likely to work long hours. Thus we find across the board support for H5 in that there is substantial industry variation in the propensity to work long hours. Yet the nature of this varies for men and women. This merits further investigation.

Regarding commitment, H6, we proxy this by testing whether working hours 'fit' with family and social commitments outside of work. Here we observe an interesting pattern in the data, with a strong negative association between long hours and very good fit with family and social commitments and a strong and positive association between very bad fit and long hours for men, but no such relationship for women. Thus it would appear that men find longer hours harder to deal with in terms of fulfilling their other roles. The same is not true for women.

H7 predicts that the nature of work supervision will impact on whether or not a long hours culture exists. Here we have two variables that capture this; whether an individuals pace of work is set by colleagues, or whether it is set directly by their

boss. Further, we can also test whether having a male or female boss has any impact. The way these impacts potentially feed through into longer hours is via social norms set by others, which then become the norm or culture within that working environment. The results across all three models, at first reading, strongly reject H7 for males and females, although the effect for colleagues setting the pace of work is stronger for women in the sense that for males it makes no difference and for females it actually reduces the propensity to work longer hours. Thus we might re-state our findings *vis a vis* social contagion and argue that it does exist and does have an impact on hours but in terms of reducing them rather than increasing them.

Regarding H8, which predicts that job insecurity will increase the propensity to work long hours, we proxy this by employment contracts. From Model (1), we observe that fixed term contract workers work the longest hours and trainees the least. This general result holds for males (Model 2), but not for females (Model 3). Thus we find some evidence, but only for men, that job insecurity, only having a fixed term contract will be associated with an increase in the incidence of long hours working. Yet this is slightly ambiguous given that temporary contract workers do not have a higher incidence than permanent workers. And for women this is even more ambiguous.

Work as an Escape

Here we derived three hypotheses, predicting that hours will increase when people are dissatisfied at home (H9) and that hours will vary with children (H10) and by marital status (H11). Unfortunately, we do not really have the data to investigate with any precision H9 although our work fitting in with family social commitments can tell us

something. However, our discussion here will focus more heavily on the latter two hypotheses.

Concerning the presence of children in the household, we note that in the full model and male model no effects were identified on long working hours. For women there was a negative effect on the incidence of long hours for those with one or two children, but no difference for those with more compared to none. Taken together these gender results strongly suggest that children do not influence the way men work in the way that they do for women. Further, having lots of children encourages women to become more involved at work as a means of escaping family stress. Here again we observe important gender specific differences in terms of what drives people to work longer hours. However, there is somewhat of a paradox here for men who, as we noted earlier, find it difficult to manage long hours and family commitments.

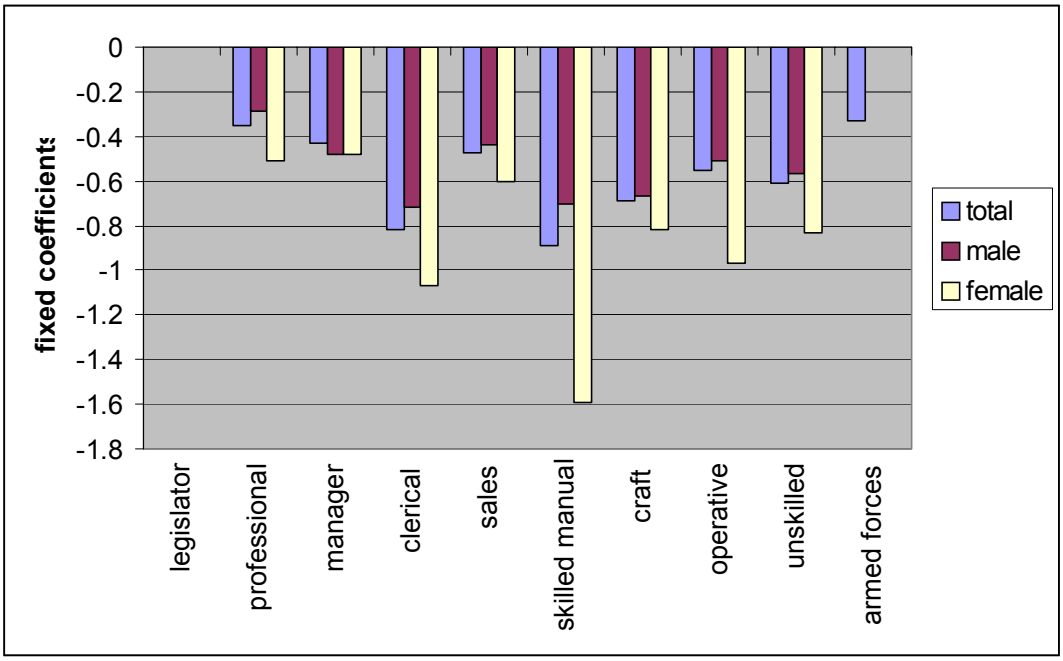
On marital status, we note that it plays a relatively minor role in the determination of long hours working, but where it does they are quite interesting. For males, we note that those co-habiting with a partner work the longest hours. For women, those that are just recently single work the longest hours. For men we might hypothesise that they may be building for a potential future marriage. The female result might suggest that they are using work as a means of escape from domestic stress, having recently experienced a failed relationship. On the whole, but only for women we find strong support for hypothesis H10, and for men and women weaker support for H9 and H11.

Rewards of Work

We have two hypotheses relating to long hours and work rewards. The first is a very traditional job satisfaction measure (H12), and the second deals with work involvement (H13). We are not able to capture the full spirit of H13, but we hope to identify some of these potential effects through our occupational status variable. On job satisfaction, we find no evidence that long hours working either increases or decreases job satisfaction. This is a rather striking finding and suggests that for many workers a long hours culture may not be so deleterious to their enjoyment of work itself.

Fig 10

Occupational Variation (base = legislator)



On occupation, we are particularly interested in the top three (from left hand side) categories (legislator, professional and managerial), whom we, *a priori*, expect to be more involved with their jobs. The results are broadly supportive of this contention,

with the notable exception of armed forces, which is a special type of occupation, and salesmen who appear comparable with managers. By contrast, clerical and skilled manual workers across gender are least likely to be working very long hours. Thus we find fairly robust support for H13 if we accept that occupational status is a good indicator of work involvement. Further, our results also confirm the strong focus of earlier work on long hours on professional and managerial staff.

Other Results

We were also able to incorporate a host of other variables in our models, some of which provided some interesting results. For example, private sector employees were significantly more likely to work longer hours than public sector workers. There was also a negative effect on the incidence of long hours by size class of business (i.e the smaller the business is the more likely we are to observe a long hours culture). Perhaps surprisingly, age of individual played no role. These former two results are more generally supportive of social contagion theory.

5. Conclusion

To date much of the discussion on long hours culture has focused on how different US workers are compared to their European and Japanese counterparts. This is rational given the evidence on length of working years, which shows that US workers work longer than their non-US counterparts. Although the European Union has been very active in terms of employment legislation covering hours, it is our contention that the effects have been significantly different across EU member states, and that this merits further investigation. Further, it is also the case that researchers have tended to focus on particular segments of the labour force perceived, and often borne

out in these studies, to have a long hours culture, for example managers and top executives.

In this study we used a large, EU wide worker survey to address four fundamental questions:

- What is the extent of long hours working across the EU?
- Does the long hours culture vary across the EU?
- Who works long hours?
- What are the potential explanations for working long hours?

Using the framework developed by Brett and Stroh (2003), from their extensive review of the literature, we set out to test our data against four general theories drawn from economics, sociology and psychology. These are labour-leisure trade-off theory, social contagion theory, work as a means of escaping family stress, and the rewards of work theory.

From our univariate statistics, the first point of note was that the variation across countries in long hours working is statistically significant for males and females. Further, males are more likely to work long hours. Yet the variation in female long hours across countries is much greater than was the case for males. We also found that, for males, the relationship between long hours and income was 'U' shaped. For females the contrast was stark, with a positive and increasing propensity for women to work very long hours as we move up the income distribution. This suggests that the reasons for men and women working long hours are quite different.

From our job satisfaction data, we also hypothesised that the marginal disutility of additional hours of work was higher for women than men. Other evidence showed considerable variation according to occupational status. For males, more than one in five legislators and skilled manual workers worked more than 60 hours per week. Similar, results, albeit on a smaller scale were found for women. Industry sector was also an area in which we identified huge variation. Specifically, we noted that agriculture and retailing were characterised by long hours working. Regarding employment contracts, we found that for women there was a positive relationship between contract duration and long hours working.

From our multivariate modelling, we also observed significant cross-country variation, although the extent of this is much less for males than females. This suggests that cultural or social norms (social contagion theory) might be playing a role. Overall, we note that UK, Ireland and Portugal have the longest hours culture in the EU. Only Belgium and the Netherlands can be considered to be averse to a long hours culture.

In terms of the labour-leisure trade-off theory, only three non-work activities were significantly associated with long hours working, and two in the opposite direction to that predicted. Only eldercare is associated with a reduction in working hours. By contrast doing voluntary work or undertaking further education / training is associated with longer hours. The evidence suggests that those who want to 'get on' in life are working longer hours and supplementing this by acquiring additional human capital.

By contrast, we observe very little evidence that higher incomes are associated with longer hours.

In terms of social contagion theory, we note that industry is a critical determinant of long hours working. Further, these effects are larger for women than men. The interesting feature is that women in agriculture work by far the longest hours. Only those in hotels & catering come close. Male incidence of long hours working is highest in hotels & catering and transport & communications. Additional evidence concerning 'fit' with family or social commitments shows that for men there is a strong, and negative, association between long hours and very good fit with family commitments. Surprisingly, no such relationship was apparent for women. In terms of workplace norms and pace of work, the evidence strongly suggests that where norms do exist, and have an impact, it typically manifests itself through a reduction in working hours rather than an increase. This implies that long hours are a positive individual choice, rather than one instigated by bosses or colleagues. Finally, there is some evidence, but for men only, that job insecurity is associated with longer hours.

Our evidence concerning work as an escape from family stress is mixed. On the impact of children, we note that this has no effect on male hours. For women there was a negative effect for those with one or two children, but no difference for those with more than two compared to none. On balance, we are drawn to the conclusion that children do not unduly influence the way men work. Yet for women, having lots of children encourages women to become more involved at work as a means of escaping family stress.

In terms of working longer to enjoy the rewards of work, we find no evidence that longer, or shorter hours, is affected by higher or lower job satisfaction.

Thus we have tested four theories of long hours working against a large data set and found that all theories have a degree of validity and capture different aspects of why people work very long hours. Broadly speaking, we find more evidence for men supporting social contagion theory and more for women supporting work as a means of escape from family stress. We conclude that men and women working longer hours do so for quite different reasons, and that future work needs to bear this in mind. Further, industry sector, occupational status and country specific factors all are fundamental to both the incidence and extent of long hours working.

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Appendix: Table 1

	Full Model (1)		**Male (2)**		**Female (3)**	
	coeff	**Z stat**	**coeff**	**Z stat**	**coeff**	**Z stat**
Country						
Denmark	0.19	2.16	0.09	0.86	0.71	3.01
Germany	0.12	1.31	0.09	0.80	0.56	2.31
Greece	0.17	1.66	0.05	0.41	0.79	3.16
Spain	0.39	4.30	0.25	2.39	1.15	4.75
France	0.38	4.24	0.28	2.75	0.97	4.11
Ireland	0.73	7.92	0.73	6.81	1.16	4.83
Italy	0.20	2.18	0.08	0.79	0.82	3.38
Luxembourg	0.18	1.23	0.14	0.87	0.65	1.69
Netherlands	0.03	0.33	-0.01	-0.01	0.32	1.18
Portugal	0.48	5.41	0.22	2.12	1.34	5.82
UK	0.70	7.86	0.63	6.25	1.23	5.15
Austria	0.34	3.72	0.29	2.73	0.87	3.64
Sweden	0.03	0.35	-0.05	-0.05	0.52	2.25
Finland	0.22	2.51	0.01	0.09	0.91	3.94
Occupation						
Professional	-0.35	4.82	-0.29	3.23	-0.51	3.84
Managerial	-0.43	6.44	-0.48	5.92	-0.48	3.72
Clerical	-0.82	11.41	-0.72	7.97	-1.07	8.27
Sales	-0.47	6.83	-0.44	5.05	-0.60	4.78
Skilled	-0.89	5.12	-0.70	3.44	-1.59	4.30

manual						
Craft	-0.69	9.91	-0.67	8.34	-0.82	4.74
Plant operative	-0.55	7.45	-0.51	6.09	-0.97	5.33
Unskilled	-0.61	7.85	-0.57	6.18	-0.83	5.40
Armed forces	-0.33	1.86	-0.22	1.16	-7.22	0.00
Employment contract						
Fixed term	0.13	2.49	0.18	2.70	0.04	0.52
Temporary	-0.08	0.59	-0.19	1.12	0.14	0.64
Trainee	-0.29	2.06	-0.26	1.50	-0.33	1.30
Industry						
Manufacturing	-0.55	4.30	-0.43	2.72	-0.80	3.26
Construction	-0.38	2.78	-0.23	1.40	-0.99	2.95
Retail	-0.42	3.21	-0.32	2.03	-0.72	2.99
Hotel & Catering	0.05	0.35	0.29	1.64	-0.41	1.66
Transport & Comms	-0.18	1.33	0.05	0.29	-0.74	2.85
Finance & Real Estate	-0.57	3.85	-0.39	2.13	-1.03	3.79
Public Admin	-0.40	2.95	-0.25	1.54	-0.74	2.94
Education	-0.52	3.67	-0.24	1.36	-1.01	3.89
Health	-0.24	1.64	0.00	0.01	-0.72	2.86

Other Services	-0.50	3.81	-0.27	1.65	-0.99	4.21
Sector						
State owned	-004.	0.61	0.06	0.67	-0.07	0.66
Private	0.32	5.79	0.54	7.11	0.06	0.65
Firm Size (employees)						
2-4	-0.38	4.21	0.01	0.06	-0.54	4.35
5-9	-0.56	6.15	-0.15	1.02	-0.73	5.66
10-49	-0.59	6.79	-0.18	1.23	-0.80	6.59
50-99	-0.61	6.42	-0.23	1.53	-0.72	5.18
100-249	-0.59	6.15	-0.18	1.23	-0.80	5.52
500 +	-0.66	6.34	-0.28	1.79	-0.71	4.41
Work Life Balance						
Quite Good	0.66	3.84	0.70	3.28	0.46	1.51
Quite Bad	0.30	1.83	0.34	1.63	0.13	0.45
Very Bad	-0.17	1.01	-0.14	0.69	-0.33	1.14
Pace of Work						
Colleagues set pace	-0.06	2.03	-0.04	1.16	-0.11	1.85
Boss sets pace	-0.05	1.64	-0.06	1.53	0.00	0.02
Immediate Boss						
Woman	-0.02	0.56	-0.01	0.14	-0.09	1.49

N/a	0.24	2.54	0.31	2.53	0.18	1.20
Job Satisfaction						
Quite high	-0.11	1.35	-0.08	0.80	-0.20	1.29
Quite low	-0.12	1.49	-0.11	1.14	-0.17	1.13
Very low	-0.03	0.31	0.04	0.37	-0.20	1.26
Marital status						
Remarried	0.03	0.25	0.03	0.20	0.03	0.15
Co-habiting	0.08	1.58	0.10	1.66	0.05	0.62
Single	0.03	0.45	-0.03	0.43	0.09	0.95
Now single	0.00	0.02	-0.14	1.30	0.22	1.76
Divorced	0.04	0.57	-0.00	0.02	0.04	0.39
Separated	0.02	0.14	0.02	0.12	0.01	0.04
Widowed	0.07	0.52	0.02	0.09	-0.03	0.14
Gender						
Male	0.24	6.02				
Age						
25-39	-0.02	0.39	-0.06	0.88	0.04	0.40
40-54	-0.01	0.22	-0.12	1.49	0.16	1.50
55 +	-0.07	0.89	-0.11	1.10	0.05	0.33
Children						
1	-0.08	1.64	-0.07	1.24	-0.16	1.89
2	-0.07	1.20	-0.04	0.48	-0.26	2.22
3	0.00	0.01	-0.04	0.31	-0.03	0.15

4 +	-0.21	1.22	-0.27	1.32	-0.10	0.28
Household Income Earners						
1	-0.05	0.87	-0.18	2.24	0.14	1.48
2	-0.00	0.02	-0.06	0.71	0.09	0.77
3	0.04	0.62	-0.01	0.09	0.09	0.71
4 +	0.07	0.83	-0.01	0.10	0.20	1.30
Out of Work Activities						
Voluntary work	0.26	1.72	-0.11	1.00	0.32	1.59
Political activity	0.21	1.61	0.27	1.65	0.30	0.45
Childcare	0.01	0.07	0.06	0.35	0.03	0.16
Cooking	-0.05	0.34	-0.07	0.40	0.14	0.44
Housework	-0.21	1.43	-0.30	1.71	-0.33	0.95
Eldercare	-0.20	2.47	0.03	0.26	-0.06	0.28
Training	0.24	3.42	0.18	0.83	0.20	0.86
Sports	0.05	0.45	-0.02	0.13	0.19	1.45
Culture	-0.20	1.60	-0.27	1.46	0.35	2.53
Leisure	-0.12	1.09	-0.01	0.06	0.05	0.43
Income Quartile						

2nd	-0.01	0.04	0.02	0.14	0.37	1.01
3rd	-0.06	0.41	-0.06	0.38	0.10	0.24
4th	0.23	1.61	0.29	1.68	0.20	0.46
Log likelihood	-7391.01		-5079.02		-2193.35	
Pseudo R sq	0.112		0.115		0.126	
No Obs	9968		6255		3713	
Cut point 1	-0.415		-0.073		-0.828	
Cut point 2	-0.250		0.084		-0.634	
Cut point 3	0.181		0.504		-0.140	
Cut point 4	0.834		1.184		0.498	

* comparison groups are; Belgium, legislator (administrator), permanent contract, agriculture, 0-1 employees, work-life balance very good, job satisfaction very high, marital status married, age 16-24, children none, lowest income quartile.