

Is Working from Home Good Work or Bad Work? Evidence from Australian Employees*

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Abstract

There is concern that workers are finding it increasingly difficult to balance work and family life and face growing time stress. Working from home is one form of flexibility in working arrangements that may assist workers to juggle work and non-work commitments. However, it may also provide a pathway for greater intrusion of work into family life and for added work-related stress. Data from the Household, Income and Labour Dynamics in Australia Survey indicates that around 17 per cent of Australian employees work some of their usual working hours from home, but there has been no increase in the incidence of employees working from home in the past decade. Overall, the ability to work some hours from home is seen by employees as a positive job attribute that provides flexibility to balance work and non-work commitments. However, working from home is also associated with long hours of work and the evidence provides grounds for concern that working from home does facilitate greater intrusion into non-work domains of life through this channel.

Keywords: Working from home, Telecommuting, Job quality

JEL Classification: J22, J81, J28

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1. Introduction

There has been growing interest from policy makers and social researchers, notably within the European Union, in the issue of the quality of work and what features of work characterise ‘good jobs’ and ‘bad jobs’. A common perception is that the quality of work has been declining over time as workers have had to become more flexible and to give up standard working arrangements and conditions for more precarious employment.

Among key concerns on the job quality agenda are the number of hours worked and the ability for workers to balance work and family life. Studies suggest that Australia and other developing countries have observed a growing incidence of non-standard working time arrangements, in which employees work hours outside a typical Monday to Friday daytime schedule (Krahn, 1995; Li, *et al.*, 2014; Stone, 2012). This is often seen as a response to demand side (firm) factors associated with the emerging ‘24/7 economy’, globalisation and deregulation, but also reflects supply side preferences of workers, notably as the increased labour force participation of women leads to greater friction between work and family commitments. A related potential shift in working patterns that has received less attention is for employees to work some hours from their home. As with non-standard work hours, such a response in work patterns can be a double-edged sword, providing both increased flexibility for workers to manage their work and non-work schedules, but also increasing the capacity for work time and work-related stress to impact upon families and leisure. This may have implications for policy and for firms’ human resource practices.

Given reports of the increasing importance of such flexible working arrangements, there is lack of evidence on whether working from home is good work or a bad work. Gajendran, *et al.*, (2007) note that reviews of the last two decades of research have been inconclusive on whether telecommuting is good or bad for employees. In the case of Australia, only one recent study was identified (Wooden and Fok, 2013). Concentrating on ‘home-workers’ (who worked the majority of their hours at home), that study found that only around 5 per cent of workers could be classified as ‘home workers’ and that the trend in working at home appeared to have actually declined over the period 2001-2010.

Using data from the Household, Income and Labour Dynamics in Australia Survey, this paper explores the extent of work undertaken from the home by employees in Australia and key characteristics of that work. Following a review providing a background to the issues, section 3 looks at the incidence of employees working from home in Australia, how that has changed since 2001 and who are most likely to work from home. Section 4 presents evidence on the financial rewards to hours worked at home, and in section 5 we assess whether employees who work from home view their jobs any more or less favourably than workers who do not work from home in terms of the ability to balance work and non-work commitments, satisfaction with hours worked and overall job satisfaction. In the final section we summarise the evidence, concluding there is no straightforward answer to the question proposed in the title. The ability to work from home is generally a positive attribute of a job, but it is a cautionary tale and contexts are important.

2. Literature review

The issue of the quality of work has captured the attention of policy makers, notably in the European Union countries where improving job quality has become an explicit policy objective (see, Burgess, Connell and Dockery, 2013, for a recent review). In the theoretical world of perfectly functioning labour markets differences in job attributes that impact upon worker wellbeing may not be an issue: compensating differentials (such as wage differences) would exactly offset other attributes of jobs, so that the value workers placed on the pecuniary and non-pecuniary aspects of jobs equated to reflect worker and employer preferences in equilibrium. In the real world, however, there are a number of reasons to expect that markets may deliver sub-optimal outcomes and reasons for job quality to be considered an important social and policy issue in addition to the standard market imperfection arguments of asymmetric information and bargaining power.

Important among these are the balance between work and family life. It is well established that there are spillovers (externalities) between work and non-work domains extending beyond workers' own wellbeing and health to the wellbeing of other family members (Li, *et al.*, 2014). The consequences of some work patterns, such as the long-term effects of working night shifts are not well understood. There are growing concerns about the phenomenon of 'overwork' (Cassells, Gong and Duncan, 2011; Schor, 1992; Williams, Pocock and Skinner, 2008) and inequality between the unemployed/underemployed and those working long hours, or the divide in the distribution of work between households. There are a number of reasons to suspect that workers may seek to work more hours than is optimal: they may systematically overestimate the utility gained from added income and status and underestimate intrinsic benefit gained from non-work activities, such as time with family and friends (Dockery, 2012; Frank, 1999; Frey, 2008, pp. 127-137). Finally, there is considerable uncertainty regarding the productivity effects of work quality, meaning significant welfare gains for both employers and employees may be going unrealised (Burgess, *et al.*, 2013, pp. 12-13).

It is therefore important to know what the attributes of 'good jobs' and 'bad jobs' are. Increased flexibility – or the growth of non-standard working arrangements and schedules – has been highlighted as both a positive and negative trend in job quality. Working from home is one of these forms of flexibility. Telecommuting, as it is referred to in the United States, teleworking, as it is referred to in Europe, home-working, working-at-a-distance, off-site workers, or remote workers are all terms that are used to convey the idea that work is something you do, not someplace you go (Baruch, 2001). There has been a growing trend of providing flexible working arrangements at the workplace with an intention to allow workers to continue productive contributions to the workforce while also attending to family and other responsibilities (Council of Economic Advisors, 2010), increasing productivity (Kurland and Bailey, 1999; Bloom, *et al.*, 2013; Council of Economic Advisors, 2010), reduce absenteeism and turnover, to improve workers' health (Council of Economic Advisors, 2010), to help employees balance work and family demands (Galinsky, *et al.*, 2008), discretion in determining the timing, pace and location at which role requirements are met (Greenhaus and Powell, 2006), lowering work-family

conflict (Gajendran and Harrison, 2007; Thomas and Ganster, 1995), increasing job satisfaction (Baltes, *et al.*, 1999; Allen, 2001) and to reduce traffic congestion on the roads / reduce commute time (Kurland and Bailey, 1999).

However, these alternative work forms bring both benefits and challenges to organisations, individuals and society. Critical among these from the firm perspective are the impacts on productivity and costs, upon which there is only limited evidence (Bloom, *et al.*, 2013; Kurland and Bailey, 1999). The following review concentrates on studies of the impact of working from home from the employee's perspective, and reveals that there is no consensus on whether working from home is a good work or bad work for employees. When the workplace is moved into the home environment, it is argued that there is the dual potential to exacerbate conflict, or to minimize it through increasing work schedule flexibility (Doherty, *et al.*, 2000; Kurland and Bailey, 1999; Boston College Center for Work and Family, 2012), to result in longer working hours (Kurland and Bailey, 1999), career stagnation and adverse effect on employees' performance (Baruch and Nicholson, 1997; Bloom, *et al.*, 2013), and feelings of social isolation (Kurland and Bailey, 1999; Bloom, *et al.*, 2013; Boston College Report, 2012).

Working from home may have impacts on family functioning through time spent on children, the quality of relationships, the home environment and other family obligations. It impacts upon work life balance when work interferes with family responsibilities, when overworking affects employees' social networking, and their balance between work and personal life. Duxbury and Higgins (2002) note that telecommuting can increase conflict between work and family when: employees who work at home spend a greater, or disproportionate, percentage of their time on paid work activities; flexibility gained through telecommuting benefits the work organization but not the employee's family; commuting serves as a buffer between the employee's home and work domains, and the lack of a commute decreases the opportunity for employees to reduce the transfer of stress from one domain to the other.

In the US there has been considerable focus on 'telework' or 'telecommuting'. Gajendran, *et al.*, define telecommuting as '...an alternative work arrangement in which employees perform tasks elsewhere that are normally done in a primary or central workplace ... using electronic media to interact with others inside and outside the organization' (2007, p. 1525). Although workers may telecommute from places other than the home, and homework need not necessarily involve electronic media, Gajendran, *et al.*, (2007, p. 1524) acknowledge telecommuting as the most common form of 'flexible work locations', and clearly there is considerable commonality in associated issues. Telecommuting is argued to increase the permeability of boundaries in life domains and the degree to which either family or work encroaches on the other because they occupy the same place and, potentially, the same time, possibly leading to work-family conflict. Such permeability can also make psychological disengagement from work more difficult, increasing the likelihood of time-based conflict leading employees to work after normal work hours and this may be especially true for individuals who find it difficult to separate activities between home and work (Gajendran, *et al.*, 2007).

In a study for the UK, Felstead, *et al.*, (2000) provided evidence that working from home can significantly raise the probability of being low paid. There is also

evidence that employees who work from home work longer hours. An estimated 42 per cent of American telecommuters work 50 to 75 hours per week and one-half of European telecommuters work more than ten extra hours per week (Doherty, *et al.*, 2000; Pratt, 1999; Empirica, 1999). According to the Boston College Center for Work & Family, 46 per cent of telecommuters worked while on vacation as compared to 34 per cent of traditional office workers. In addition, only 24 per cent of telecommuters rated their work/life balance as 'good' or 'very good' compared to 26 per cent of traditional workers, and 38 per cent of those using daily flextime (the ability to alter working hours on a daily basis). These results would imply that telecommuting does not necessarily lead to greater feelings of work/life balance (Boston College Report, 2012). However, that same report finds that many employees see flexible work arrangements such as telecommuting as a privilege rather than as a way of working.

For Australia, Lafferty, *et al.*, (1997) looked at the trends and difficulties facing homeworkers and found that increasing numbers of homeworkers are also becoming marginalised, as shown by low (and declining) rates of union membership, high levels of casualisation and low levels of access to industrial benefits. Coupled with the existence of a large informal or illegal homeworking labour force, they argue that this indicated the growth of a substantial periphery of homeworkers, characterised by insecurity and poor pay and conditions. As noted above, however, Wooden and Fok's (2013) more recent study does not suggest any increase in the incidence of homeworking in Australia between 2001 and 2010.

3. Australians working from home

This section presents descriptive data on the incidence of working from home in Australia and trends in home working over the past decade. A first step is to decide upon the empirical constructs that appropriately capture the act of 'working from home' as we conceive of it for the purposes of the research questions posed. A multivariate analysis is presented to explore the characteristics of people and jobs that are associated with working from home.

Data and definitions

The data used in this study come from the Household, Income and Labour Dynamics in Australia Survey. HILDA is a household panel survey in which respondents are tracked and interviewed each year. The panel was established through a random sample of private households in Australia, and within those households all persons aged 15 and over are interviewed. The bulk of interviews are conducted between September and December each year and, at the time of this analysis, data from eleven waves, spanning 2001 to 2011, were available. Around 13,000 individuals from over 7,000 households have responded in each year, with year-on-year attrition rates averaging below 10 per cent (see <http://www.melbourneinstitute.com/hilda/> for further details).

HILDA collects a wealth of data on respondents' demographic characteristics, their personal and family circumstances and on the nature of their employment. The sample used for analysis is restricted to employed persons aged 15 and over who were employees (as opposed to employers, self-employed or unpaid family helpers), reflecting that our key interest is in the consequences of employment arrangements

made between firms and employees. This results in a total sample over the eleven waves of 78,383 person-year observations on an unbalanced panel of 17,002 individuals for which working from home status could be determined.¹

Each year persons in paid employment were asked the following question: 'Are any of your usual working hours worked at your home (that is, the address of your usual place of residence)?' with the option to respond either 'yes' or 'no'. Employees who answered in the affirmative were then asked approximately how many hours each week they usually work from home. For those who indicated their hours varied, they were prompted instead 'How many hours per week do you work at home on average over a usual four-week period?'. Finally, the home workers were asked 'Are the hours worked from home the result of a formal arrangement with your employer?'.² Respondents are specifically instructed to include any paid or unpaid overtime in their reckoning of 'usual hours', with an added note that this includes hours worked both at home and at the workplace. For persons who held multiple jobs, the wording made clear that the responses should relate to their main job, defined as the one from which they get the most pay each week.

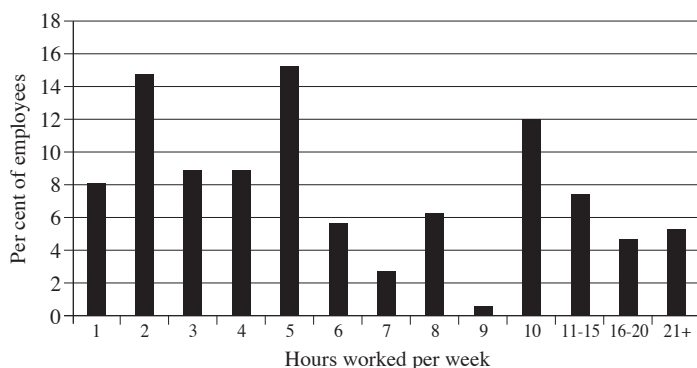
For the pooled observations across all 11 waves from 2001 to 2011, 16.4 per cent of employees indicated they worked some of their usual hours from home. As Wooden and Fok (2013) note, many people who report working some of their usual hours from home also report working only a few hours there each week, and question whether these people should really be considered 'home workers' as such. Their preferred definition of home workers is those who work the majority of their hours in their main job from home. While Wooden and Fok's (2013) main interest was in measuring the number of homeworkers, the focus here is instead upon the degree to which employees' work and home lives overlap, and whether this flexibility is generally beneficial to the worker. So while we are interested in all hours worked from home, we also test the sensitivity of the findings by conditioning on the number of hours worked from home.

Among the employees who work some of their hours from home, almost one-quarter (23 per cent) report working just one or two hours at home each week, and the majority (56 per cent) reported working five hours or fewer from home each week (see figure 1). Spikes in the distribution are evident at five, eight and ten hours, which may be attributed to rounding in the case of five and ten hours, and eight hours marking a full day's work. Therefore the sensitivity of the findings to the definition of working from home is tested by comparing results for those who work any hours at home with results for those who work eight hours or more per week in the home (the latter representing 30 per cent of the former).

¹ The sample available for multivariate analyses is lower due to non-response for some of the variables.

² This was the sequence of questions for Waves 2 to 11. The order and wording of these questions were slightly different in Wave 1. In Wave 1 the question on whether any hours are worked at home was followed by the question on whether this was the result of a formal arrangement, and then the questions on the number of hours. For those who indicated the number of hours they worked from home varied, the follow up question was 'Thinking about the last month, how many hours on average have you worked from home each week?'.

Figure 1 - Number of hours worked in the home per week: distribution among employees who work from home



The incidence of working from home

In the pooled sample, 16.4 per cent of employees indicated they worked some of their usual hours from home and 5.9 per cent of employees worked eight hours per week or more from home.³ The proportion of women working any hours from home was marginally higher than for men (16.7 per cent versus 16.1 per cent), as was the proportion doing eight hours or more (6.1 per cent versus 5.7 per cent), and both differences are statistically significant (at the 5 per cent level). For those doing so, the estimated average hours worked in the home was quite substantial at 7.7 hours per week – essentially a full day’s work. On average, men report working more hours from home (7.9 hours per week) than women (7.5 hours).

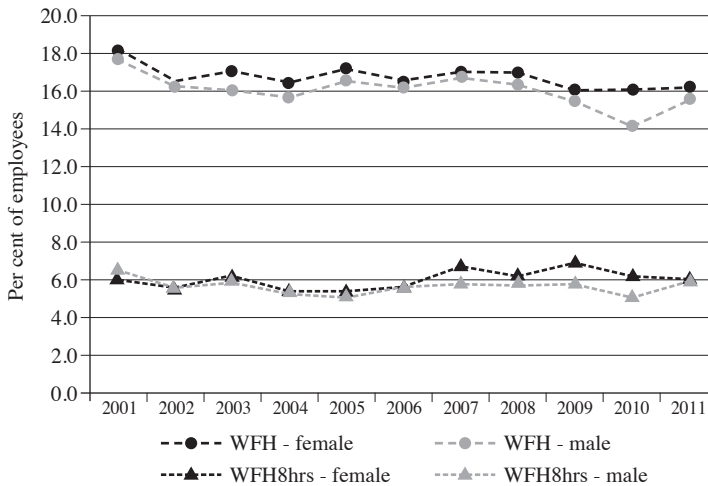
In contrast to the impression painted in much of the international literature of a growing intrusion of work into family life, the data show no evidence of an increase in the incidence of working from home between 2001 and 2011. If anything, the proportion working any hours from home has fallen, while the proportion working eight hours or more from home has remained flat. This holds for both males and females, and the proportion of men working from home seemed to fall following the global financial crisis of 2008 (see figure 2). There also seems no obvious trend in the average hours worked, though a spike occurs for 2009 when an average 8.5 hours worked from home per week was reported. This may reflect some employees usually working only a few hours from home ceasing to work from home at all following the GFC. The absence of any upward trend in the incidence or intensity of working from home concords with evidence presented in Wooden and Fok (2013), as would be expected given the analyses are based on the same data. Wooden and Fok (2013) note that the ABS Location of Work Survey also indicates a declining trend in the proportion of Australians working from home.

As expected, there are significant differences in the incidence of home working across occupations and industry. For both managers and professionals, the

³ All means and proportions presented in section 3.2 are calculated using the HILDA provided ‘responding person population weight’.

proportion working from home is 36 per cent, while for all other occupational groups it is below 10 per cent. Similarly, managers and professionals are much more likely to work the equivalent of a full day or more per week from home. Across industries it is employees in the education and training sector who have by far the greatest tendency to work hours from home (51 per cent) and who are the most likely to do eight or more hours of work from home.

Figure 2 - Proportion of Australian employees working from home; 2001-2011



Notes: WFH - works from home; WFH8hrs – works 8 hours or more per week from home.

Source: HILDA.

Who works from home?

Of course differences across industries may be attributable to the occupational structure and gender composition within those industries, and vice versa. In order to identify independent factors that contribute to the observed incidence of working from home, multivariate logit models are estimated of the probability that an employee works any of their usual hours from home, and of the probability that they work eight or more hours from home each week. We also note that in 2010 and 2011 individuals were asked whether or not they had access to the internet at home. Just under 93 per cent of persons reported having access, and as would be expected the incidence of working from home was substantially greater for those on-line (17 per cent compared to 6 per cent for those without the internet at home). However, home internet access is not included in the multivariate analysis because of the likelihood that it is endogenous.

Panel models are estimated to utilise the fact that the data represent repeat observations on individuals.⁴ The results reported in the main body of the paper are for

⁴ Specifically, the XTLOGIT procedure in STATA, with vce(robust) option to generate robust standard errors.

random effects models, with those from the equivalent fixed effects models reported in the appendices. Given arguments that the reasons Australians work from home vary between men and women (Powell and Craig, 2013), separate models are estimated by gender. The results are reported in the form of odds ratios, which show the estimated effect of a variable on the probability of working from home relative to its default category. A ratio of unity indicates no difference between the two categories. In the first model, for example, the coefficient of 1.129 for 45-54 year old females indicates that they are estimated to be 12.9 per cent (that is $1.129 - 1 = 0.129$) more likely to work from home than the omitted category of women aged 35 to 44 years. In contrast, women between 24 and 34 are estimated to be 17.7 per cent less likely to work from home (that is, $0.823 - 1 = -0.177$). All variables have been defined in categorical form for convenience of interpretation, although entering some in linear and quadratic forms proved to be technically superior specifications.

The results indicate that the likelihood of working from home increases with age. It is markedly higher for women employees with a resident child aged zero to four years whether they are married or single, and to a lesser extent the youngest child being aged 5-14.⁵ The presence of children has a lesser impact on married men's work locations. The results for sole fathers are not significant, which is likely to reflect the low sample numbers for sole fathers.

Characteristics of an individual's employment have a major impact upon the incidence of working from home. Compared to permanent employees, fixed term employees are more likely to work from home, while casuals are between 20 per cent and 45 per cent less likely to work from home. Those employed under 'other' contractual arrangements are around three times more likely to work from home and four times more likely to do extended hours from home, but we suspect this results from a blurring between the definition of 'employee' and those who are 'own account' workers to some extent, such as employees paid on commission or possibly contractors or consultants. Relative to employees in the private sector, government employees are less likely to work from home. The effect is stronger for women, with no statistical difference observed between sectors for men working eight or more hours per week.

The incidence of working from home increases with the employees' length of tenure with their current employer, though the effect is stronger in the models for any hours worked from home. No significant variation by tenure is observed in the likelihood of men working eight or more hours per week from home. In terms of hours worked, the incidence of working any hours at home follows a U shape. The default category is those working between 31 and 38 hours, which includes the most common standard full-time working weeks of a 35 hour or 37.5 hour week. Compared to these 'standard full-time' workers, people who usually work part-time and people who work longer hours are more likely to do some of their hours from home. The association is very strong for those working long (45-54) and very long (55 or more) hours per week. A different relationship is observed for the probability of working eight hours or more per week from home. In this case the likelihood increases steadily with hours worked⁶, with an even more pronounced association of working long or very long hours.

⁵ The variables for the presence of children are based on the presence and age of the respondent's own resident children in the household.

⁶ In part this will be simply definitional, in that part-time workers who work less than eight hours per week cannot work eight or more hours at home.

Union members are substantially less likely to work any hours or extended hours from home. The occupation dummies confirm that it is professionals and managers that are most likely to work from home. The incidences are anything from 35 per cent to 95 per cent lower for all other occupations. As the descriptive statistics implied, employees in the education and training sector are much more likely than those in healthcare and social assistance services (the omitted category) to work from home after controlling for occupational structure and the other job and individual characteristics. A higher incidence of working from home for those in agriculture, forestry and fishing may again reflect that some people live on the properties where they work, as in the case of farms, or an overlap between employee and own account workers. Consistent with this, the effect is greatly accentuated in the models for working eight hours or more from home. As may be expected given the requirement for customer contact, the retail trade industry and hospitality (accommodation and food services) have the lowest incidence of home workers.

The results help to give some indication of whether or not working from home reflects employees' preferences. Generally, characteristics of employees that would be expected to be associated with higher status within an organisation and within the labour market more generally – being in a professional or managerial job, being more senior in age, not being a casual, having longer tenure with the employer – are all associated with being more likely to work from home. These associations suggest being able to work from home is a valued job attribute. In addition, we can surmise that employees with younger children are more likely to want to be able to work some of their hours from home, to help in juggling caring responsibilities. The observed results are consistent with such preferences being accommodated, at least to some extent.

Generally, variables have similar estimated impacts on the likelihood of an employee working any hours from home and of an employee doing a more substantial number of hours from home. The salient differences, as noted, are with respect to tenure with the current employer, working in the agriculture, forestry and fishing industry, and the number of hours worked in total each week. The findings relating to total working hours – that working longer hours in the home increases disproportionately with total hours worked – are suggestive of working from home providing a pathway for jobs to intrude upon home life. Women who work 55 hours or more per week are estimated to be nine times more likely to do any of their hours in the home, but 21 times more likely to work the equivalent of a full day or more in the home. The comparable figures for men are, respectively, seven and 11 times more likely.

Finally, the influence of being a union member is to reduce the likelihood of working from home. If one believes that unions act to protect employees' conditions of employment and increase their members' bargaining power with their employer, then this points to the conclusion that working from home is something that detracts from the quality of working conditions: something employees are 'protected' against by their union. An alternative hypothesis is that unions discourage working from home because it undermines their ability to mobilise and recruit workers as members. It should be noted that the union effect is not significant in the equivalent fixed-effects models, but the other key results are largely insensitive to estimation by random effects versus fixed effects specifications (see appendix table A1).

Table 1 - Probability of working any hours from home, and of working eight or more hours from home, Australian employees, results from random-effects logit models, by gender, 2001-2011

	Women				Men			
	WFH - any hours		WFH 8+ hrs/wk		WFH - any hours		WFH 8+ hrs/wk	
	Odds Ratio	P> z	Odds Ratio	P> z	Odds Ratio	P> z	Odds Ratio	P> z
Constant	0.038	0.00	0.004	0.00	0.048	0.00	0.005	0.00
Age (years)								
15 to 24	0.336	0.00	0.349	0.00	0.370	0.00	0.480	0.00
25 to 34	0.823	0.03	0.693	0.00	0.720	0.00	0.678	0.01
35 to 44	—		—		—		—	
45 to 54	1.129	0.16	1.170	0.20	1.093	0.30	1.458	0.01
55 to 64	1.093	0.48	1.076	0.68	1.248	0.07	2.292	0.00
65 plus	1.249	0.44	1.587	0.29	1.226	0.42	3.162	0.00
Family status								
Married with no kids	1.389	0.00	1.312	0.05	1.248	0.02	1.177	0.24
Married & youngest child 0-4	2.858	0.00	3.360	0.00	1.471	0.00	1.384	0.03
Married & youngest child 5-14	1.970	0.00	1.759	0.00	1.498	0.00	1.397	0.03
Married & youngest child 15-24	1.261	0.07	1.554	0.02	1.081	0.56	1.057	0.76
Single with no kids	—		—		—		—	
Single & youngest child 0-4	2.285	0.00	2.684	0.00	1.231	0.20	1.080	0.78
Single & youngest child 5-14	1.543	0.00	1.625	0.01	1.265	0.21	1.211	0.57
Single & youngest child 15-24	0.954	0.77	0.707	0.17	0.627	0.09	0.596	0.28
Has disability	1.146	0.06	0.954	0.68	1.014	0.85	1.010	0.93
Employment contract:								
Fixed term	1.298	0.00	1.468	0.00	1.166	0.05	1.153	0.24
Casual	0.720	0.00	0.831	0.20	0.555	0.00	0.616	0.01
Permanent or ongoing	—		—		—		—	
Other	3.372	0.00	4.622	0.00	2.675	0.00	3.837	0.00
Sector								
Private, for profit	—		—		—		—	
Private, not-for-profit	1.131	0.25	1.167	0.31	1.575	0.00	1.323	0.16
Government enterprise	0.714	0.01	0.652	0.03	0.773	0.05	0.960	0.83
Other Government	0.842	0.08	0.964	0.80	0.950	0.65	1.003	0.99
Other	1.505	0.02	1.567	0.12	2.174	0.00	1.943	0.02
Tenure with current employer								
1 year or less	—		—		—		—	
2 to 5 years	1.370	0.00	1.057	0.55	1.323	0.00	1.058	0.56
6 to 10 years	1.613	0.00	1.232	0.10	1.344	0.00	1.162	0.25
11 or more years	1.702	0.00	1.316	0.06	1.716	0.00	1.096	0.50
Hours usually worked in main job								
1 to 15 hours per week	1.201	0.10	0.512	0.00	2.394	0.00	0.587	0.11
16 to 30 hours per week	1.144	0.09	0.831	0.17	2.066	0.00	1.662	0.03
31 to 38 hours per week	—		—		—		—	
39 to 44 hours per week	1.930	0.00	1.661	0.00	1.713	0.00	1.629	0.00
45 to 54 hours per week	4.885	0.00	4.701	0.00	4.084	0.00	3.661	0.00
55 or more hours per week	9.244	0.00	21.230	0.00	6.996	0.00	11.188	0.00

Table 1 - Probability of working any hours from home, and of working eight or more hours from home, Australian employees, results from random-effects logit models, by gender, 2001-2011 (continued)

	Women				Men			
	WFH - any hours		WFH 8+ hrs/wk		WFH - any hours		WFH 8+ hrs/wk	
	Odds Ratio	P> z	Odds Ratio	P> z	Odds Ratio	P> z	Odds Ratio	P> z
Union/employee org. member	0.865	0.04	0.859	0.14	0.807	0.00	0.745	0.01
Occupation								
Manager	1.123	0.24	0.999	0.99	0.958	0.61	0.836	0.15
Professional	—		—		—		—	
Technician/tradesperson	0.192	0.00	0.146	0.00	0.184	0.00	0.137	0.00
Community/pers. services worker	0.274	0.00	0.284	0.00	0.278	0.00	0.276	0.00
Clerical/administration	0.311	0.00	0.449	0.00	0.354	0.00	0.295	0.00
Sales worker	0.350	0.00	0.456	0.00	0.557	0.00	0.640	0.04
Machinery operator/driver	0.081	0.00	0.126	0.00	0.043	0.00	0.043	0.00
Labourer	0.108	0.00	0.086	0.00	0.104	0.00	0.110	0.00
Industry								
Agric., forestry, fishing	4.705	0.00	18.685	0.00	2.470	0.00	4.312	0.00
Mining	0.773	0.57	1.426	0.59	0.831	0.40	0.727	0.39
Manufacturing	1.218	0.26	2.850	0.00	0.771	0.11	1.045	0.87
Electricity, gas, water	0.962	0.95	0.864	0.83	1.019	0.94	0.671	0.39
Construction	2.662	0.00	5.796	0.00	1.249	0.19	1.248	0.45
Wholesale trade	2.071	0.00	2.125	0.02	1.788	0.00	1.780	0.06
Retail trade	0.564	0.00	0.309	0.00	0.526	0.00	0.697	0.25
Accommodation/food	0.634	0.02	0.680	0.24	0.658	0.05	0.772	0.49
Transport & storage	2.503	0.00	2.495	0.01	1.131	0.53	0.860	0.62
Information media/telecoms	1.546	0.04	2.096	0.02	2.061	0.00	2.483	0.01
Finance & insurance	1.016	0.93	1.350	0.32	1.907	0.00	2.550	0.00
Rent, hiring, real estate	2.266	0.00	2.123	0.08	2.532	0.00	2.702	0.02
Professional services	2.361	0.00	2.784	0.00	2.476	0.00	3.809	0.00
Admin support services	1.264	0.23	2.234	0.01	0.972	0.91	1.867	0.13
Public admin	1.054	0.73	0.986	0.95	0.873	0.39	0.719	0.22
Education & training	7.990	0.00	7.747	0.00	7.529	0.00	9.942	0.00
Healthcare/social assistance	—		—		—		—	
Arts & recreation	1.483	0.13	1.561	0.27	1.925	0.01	2.894	0.01
Other services	2.155	0.00	4.343	0.00	1.364	0.13	2.837	0.00
Observations	39016		39016		38928		38928	
Individuals	8532		8532		8424		8424	
Obs./person	4.6		4.6		4.6		4.6	
Wald Chi-sq.	2892	0.00	1413	0.00	2858	0.00	1386	0.00
Log pseudo-likelihood	-11322		-5660		-11109		-5442	

The simple frequencies presented above show women are more likely than men to work from home. The same result was observed for the UK by Felstead *et al.*, (2000). Gender differences were explored further by estimating similar models for males and females jointly with the inclusion of a dummy variable capturing gender (not reported). This revealed that one of the key factors driving the lower incidence of working from home for males is the sharper increase in hours worked in the home by women as total hours worked increase. This offsets gender differences in the occupational and industrial structure of employment which, all things being equal, would contribute to an increased likelihood of males working from home relative to women.

4. Is home work well paid?

To assess the financial pay-off that workers receive for hours spent working at home a standard Mincer wage equation was estimated in which the dependent variable is the log of real hourly wages earned in the employee's main job.⁷ The inclusion of a dummy variable indicating that the individual works some of their usual hours from home provides an estimated coefficient that is essentially zero and completely insignificant, indicating that there is no wage differential associated with working from home (see table 2). Limiting the definition of the 'works-at-home' dummy to only those working eight hours per week or more from home returns a negative and significant coefficient. The result suggests that employees who work a substantial number of hours from home earn around eight per cent lower hourly wages, and this differential is similar for men and women.

Hourly wages in this specification are calculated by dividing the HILDA derived variable for 'current weekly gross wages and salary' by usual weekly hours worked, both defined for the employee's main job. Note that this places the number of hours worked on the left-hand side of the estimated equation, where it acts as the denominator. Given (1) that many workers are not paid by the hour and (2) the sharp increase in the incidence of working from home as the total number of hours worked increases beyond a typical full-time working week, this could misrepresent the impact on overall earnings. Restricting the sample to full time employees and estimating models for the log of weekly wages tells a very different story. Working from home is then estimated to be associated with around four per cent higher weekly wages for men and 3.5 per cent higher weekly wages for women who work any hours in the home. However that premium is smaller for those who work eight hours per week or more from home, and in the case of women is not significantly different from zero. It seems that full-time workers who work from home do earn higher weekly wages, but the gain declines with the number of hours worked from home, and for all workers hourly wages fall as one works more hours from home. This evidence points to employees receiving a relatively lower rate of compensation for hours put in at home relative to hours put in at the workplace.

⁷ These results are not reported in full, but the random effects model is well behaved with variables having the expected signs. The range of controls is the same as those shown in table 3. The wages data are deflated using the December quarter CPI index for each year to be expressed in real 2001 dollars.

Table 2 - Estimated wage premium associated with working from home on wages – selected results from random effects Mincer wage equations

<i>Dependent variable/sample</i>	<i>Works any hours from home</i>	<i>Works 8 hours or more from home</i>
<i>Hourly real wage</i>		
Female employees	0.009 (0.27)	-0.089 (0.00)
Male employees	-0.008 (0.29)	-0.073 (0.00)
All employees	0.000 (0.98)	-0.082 (0.00)
<i>Weekly real wage</i>		
Female FT employees	0.035 (0.00)	0.004 (0.71)
Male FT employees	0.040 (0.00)	0.027 (0.01)
All FT employees	0.038 (0.00)	0.017 (0.02)

To more fully explore the returns to hours worked in the home, we depart from the standard wage equation and place hours worked on the right hand side, decomposed into the number of hours usually worked at the workplace, and the number worked at home. For ease of interpretation wages are now expressed in real dollar amounts rather than in logarithmic form. The coefficient on the hours variables can then be taken as a direct 'hourly wage rate'. The full results (see table 3) reflect established findings – wages increase with age (but at a declining rate), with years of education, previous years of work experience and time with the current employer. Wages are estimated to be higher for males by an average of \$143 per week. There is an additional premium for married men (\$49 per week) and for union members. A wage penalty is observed for persons with a disability and with lower English language proficiency. The coefficients on the wave variable suggest real weekly wages increased by around \$11 per annum for women and \$20 per annum for men over this time. For each observation two weekly hours variables are included – the number of hours supplied at work, and the number of hours supplied at home. Hours at work are derived simply by subtracting hours worked at home from total usual hours. The results indicate that on average work undertaken at home is rewarded at a rate of around \$10.50 per hour. This is a rate of about \$1 per hour less than the return to hours spent in the office. This differential associated with hours worked from home holds for both men and women, though is marginally larger for women.⁸ If the sample is restricted to full-time workers a similar differential of around \$1 per hour less relative to time put in at the workplace is observed. Given that many employees are not directly recompensed for additional hours worked, such as through overtime payments, it is not surprising that additional hours put in at home are estimated to attract lower reward in terms of current earnings. An interesting avenue for further investigation is whether or not such hours worked at home attract future pay-offs in terms of promotion or wage increases.

⁸ Estimation by fixed effects models returns a similar differential associated with working from home of around -\$1 per hour, but the estimated differential associated with hours worked in the home is larger for women (-\$2.70) and smaller for men (-\$0.20) – see appendix table A2.

Table 3 - Random effects linear regression results for usual weekly wages (\$2001)

	<i>Females</i>		<i>Males</i>		<i>Persons</i>	
	<i>Coef.</i>	<i>P> z </i>	<i>Coef.</i>	<i>P> z </i>	<i>Coef.</i>	<i>P> z </i>
Constant	-596.13	0.00	-977.61	0.00	-1006.36	0.00
Weekly hours worked						
At work	12.01	0.00	11.43	0.00	11.67	0.00
At home	10.76	0.00	10.58	0.00	10.59	0.00
Wave (1 to 11)	10.60	0.00	19.79	0.00	15.16	0.00
Male					142.66	0.00
Age (in years)	12.28	0.00	3.53	0.60	17.62	0.00
Age-squared	-0.17	0.00	-0.11	0.20	-0.25	0.00
Years of education ^a	37.50	0.00	73.45	0.00	54.59	0.00
Married	5.35	0.29	48.79	0.00	31.41	0.00
Has Long-term disability	0.32	0.94	-12.01	0.05	-6.17	0.11
& disability restrict works	-11.01	0.03	-21.80	0.01	-17.64	0.00
Non-English speaking bkgrd .						
& Eng proficiency good	-14.93	0.02	-48.48	0.00	-32.70	0.00
& Eng. Proficiency poor	-97.34	0.00	-55.10	0.15	-70.93	0.00
Works part-time	-61.52	0.00	-52.66	0.00	-61.83	0.00
Employment contract:						
Fixed term	7.41	0.23	37.39	0.00	22.18	0.00
Casual	-4.67	0.23	7.11	0.34	4.22	0.29
Permanent or ongoing	—		—		—	
Other	-36.87	0.26	65.72	0.36	16.83	0.69
Sector						
Private, for profit	—		—		—	
Private, not-for-profit	-21.15	0.00	-68.10	0.00	-40.93	0.00
Government enterprise	22.07	0.01	-0.23	0.99	11.03	0.23
Other Government	14.45	0.01	-26.56	0.03	-5.64	0.35
Other	-6.78	0.46	-51.09	0.01	-19.74	0.03
Union/employee org. member	18.99	0.00	44.21	0.00	29.40	0.00
Work experience (years) ^b	10.02	0.00	33.16	0.00	16.20	0.00
Work exp.-squared/100	-99.19	0.00	-421.75	0.00	-155.43	0.00
Tenure - current employer (years)	3.33	0.00	3.45	0.03	2.94	0.00
Tenure squared	-0.03	0.32	-0.02	0.57	-0.01	0.65
Occupation controls	Yes		Yes		Yes	
Industry controls	Yes		Yes		Yes	
Observations	30084		31585		61669	
Individuals	7291		7455		14745	
Obs./persons	4.1		4.2		4.2	
Wald Chi-sq.	14575	0.00	7207	0.00	17763	0.00
R-sq.: within	0.40		0.25		0.28	
between	0.65		0.48		0.54	
overall	0.60		0.44		0.51	

Notes: ^a Years of education is the sum of years of school (assumed minimum of seven plus reported years of secondary school completed) and years of post-school education imputed from highest post-school qualification (ranging from 0.5 years for a Certificate I/II to eight years for a Doctorate); ^b work experience is equal to the reported employment history variable 'years in paid work since leaving school'.

5. Do employees prefer to be able to work from home?

A number of data items are collected in HILDA which enable direct tests on whether working from home is generally a positive or negative attribute of jobs from an employee's perspective. Specifically we utilise responses to three questions relating to job satisfaction. Employed persons are asked to indicate how satisfied or dissatisfied they are with various aspects of their jobs and their job overall. A showcard is used which depicts a scale ranging from 0 (totally dissatisfied) to 10 (totally satisfied). The items include:

- The flexibility available to balance work and non-work commitments
- The hours you work
- All things considered, how satisfied are you with your job.⁹

Differences in these three items are investigated conditional upon working from home status to see whether working from home is associated with higher or lower job satisfaction. Looking at the mean responses pooled over the 11 waves (table 4) the responses indicate that women who work any hours from home are significantly less satisfied with the flexibility available to balance work and non-work commitments than women who do not work from home, and those who work eight hours or more in the home less satisfied still. This also holds for the subset of female parents. For male parents, those who work any hours and who work eight hours or more from home are more satisfied with their flexibility to balance work and non-work commitments than those who do not work from home. For all groups, satisfaction with hours worked is lower for those who work any hours from home and lower still for those working longer hours in the home.

For females' overall job satisfaction, there is little variation by home worker status but for males overall job satisfaction seems to increase with hours worked in the home. This may reflect that men with higher job satisfaction are more likely to continue with their work when they get home.

To control for a large range of other potential factors that may affect job satisfaction, and may be correlated with working from home status, multivariate models are estimated with the subjective ratings of job satisfaction as the dependent variables. For the explanatory variables, a variable capturing working from home status is now added to the set of covariates included in the models reported in table 1. In the interests of parsimony, age, hours usually worked and tenure are now specified in linear and quadratic forms rather than categories, and the occupation and industry controls are included but not reported.¹⁰

The satisfaction rating scale provides an ordinal discrete variable, suited to estimation using the ordered probit or logit model. For ease of interpretation, however, the specification used is instead a simple linear regression. Although this is technically an inappropriate specification for a dependent variable bounded between zero and 10, results tend to be very similar whether such dependent variables are treated as cardinal variables or the more technically correct ordered logit or probit specifications are used (Ferrer-i-Carbonell and Frijters, 2004).

⁹ The other items covered were satisfaction with 'your total pay', 'your job security' and 'the work itself (what you do)'.

¹⁰ Hours worked was also tested in logarithmic form, but this resulted in a lower R-squared.

Table 4 - Mean job satisfaction: flexibility, hours worked and overall; by gender and parent status

	<i>Don't work from home</i>	<i>Work any hours from home</i>	<i>Works 8 hours/week or more from home</i>
<i>Satisfaction with flexibility</i>			
Females - all	7.58	7.23***	6.98***
Female parents ^a	7.60	7.30***	7.05***
Males - all	7.31	7.37*	7.39
Male parents ^a	7.17	7.28**	7.30**
<i>Satisfaction with hours worked</i>			
Females - all	7.37	7.01***	6.61***
Female parents ^a	7.44	7.06***	6.65***
Males - all	7.21	6.87*	6.73***
Male parents ^a	7.17	6.74***	6.59***
<i>Overall job satisfaction</i>			
Females - all	7.68	7.72*	7.62
Female parents ^a	7.75	7.76	7.70
Males - all	7.54	7.64***	7.70***
Male parents ^a	7.52	7.58*	7.68***

Notes: ***, ** and * denote the difference between the mean and the corresponding mean for those who do not work from home is significant at the one per cent, five per cent and 10 per cent levels, respectively, by the standard t-test. ^a Parents are those who have any resident own children up to the age of 24.

A number of different specifications are tested to capture the effect of working from home. Three of these are dummy variables defined to equal one if the employee works any of their usual hours from home; usually works eight hours per week or more from home; and, following Wooden and Fok's (2013) preferred definition, works at least half of their hours from home. The final specification is a linear variable equal to the number of usual hours per week worked from home. Models are again estimated separately by gender to allow for potential differential impacts of working from home for men and women.

The results for random-effects panel models with the dummy variable based on any hours worked in the home among the regressors are presented in table 5.¹¹ The estimated coefficients for each of the different variables capturing working from home status from comparable models are summarised in table 6.

The key result is the positive association between working from home and employees' satisfaction with the flexibility to balance work and non-work commitments. Moreover, this estimated effect becomes larger and more highly significant for indicators associated with a greater intensity of working from home, either in terms of the number of hours or the share of hours done in the home. To appreciate that the estimated effect is of some magnitude, consider the estimated coefficient of 0.57 for males who work the majority of their hours from home. The literal interpretation is that a male working at least half of his hours from home, other things being equal, moves him up the 0 to 10 satisfaction scale by almost 0.6 of a point. Responses on these scales are tightly clustered around 7.5. For satisfaction with flexibility, 80 per cent of employees nominate

¹¹ The models are estimated using XTREG in STATA with the random effects and robust standard errors options.

a figure from six to 10 in the 'satisfied' interval. Hence 'shifts' of almost 0.6 for males and 0.36 for females represent sizeable differences in average satisfaction.

Table 5 - Job satisfaction: random effects panel regression results, HILDA waves 1-11 (2001-2011)

	<i>Satisfaction with ability to balance work and non-work commitments</i>		<i>Satisfaction with hours worked</i>		<i>Overall job satisfaction</i>	
	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Male</i>
Constant	7.978 ***	9.016 ***	7.835 ***	8.303 ***	8.697 ***	9.327 ***
Works any hours from home	0.063 *	0.108 ***	-0.160 ***	-0.166 ***	0.015	0.053 *
Age (in years)	0.025 ***	-0.020 **	-0.039 ***	-0.069 ***	-0.049 ***	-0.090 ***
Age-squared	0.000 **	0.000 ***	0.001 ***	0.001 ***	0.001 ***	0.001 ***
Family status						
Married with no kids	0.095 **	0.064	0.156 ***	0.055	0.162 ***	0.090 **
Married & youngest child 0-4	-0.162 ***	0.031	0.157 ***	0.031	0.230 ***	0.134 ***
Married & youngest child 5-14	-0.086	0.019	0.159 ***	-0.014	0.231 ***	0.145 ***
Married & youngest child 15-24	0.008	0.080	0.194 ***	0.012	0.260 ***	0.135 ***
Single with no kids	—	—	—	—	—	—
Single & youngest child 0-4	-0.132	0.034	0.110	0.059	0.114 *	0.134 **
Single & youngest child 5-14	-0.233 ***	0.174 *	-0.047	0.066	0.201 ***	0.191 ***
Single & youngest child 15-24	-0.115	0.022	-0.031	0.046	0.056	0.084
Has disability	-0.135 ***	-0.078 **	-0.113 ***	-0.105 ***	-0.120 ***	-0.078 ***
Employment contract:						
Fixed term	-0.011	-0.068 *	0.017	0.036	-0.047	-0.021
Casual	0.054	-0.158 ***	-0.296 ***	-0.313 ***	-0.079 **	-0.253 ***
Permanent or ongoing	—	—	—	—	—	—
Other	-0.385 *	-0.413 **	-0.426 **	-0.261	-0.715 ***	-0.163
Sector						
Private, for profit	—	—	—	—	—	—
Private, not-for-profit	0.208 ***	0.162 **	0.135 ***	0.201 ***	0.074 *	0.175 ***
Government enterprise	0.019	0.068	-0.024	0.205 ***	0.046	0.168 ***
Other Government	0.068	0.155 ***	0.038	0.259 ***	0.100 ***	0.235 ***
Other	0.093	0.269 **	0.016	0.046	0.118	0.107
Tenure with current employer (years)	0.011 *	-0.002	-0.015 **	-0.024 ***	-0.034 ***	-0.026 ***
Tenure squared	0.000 **	0.000	0.000 ***	0.001 ***	0.001 ***	0.001 ***
Hours usually worked/week in main job	-0.025 ***	-0.022 ***	0.041 ***	0.037 ***	-0.005 *	-0.007 **
Hours squared	0.000 ***	0.000 ***	-0.001 ***	-0.001 ***	0.000	0.000
Union/employee org. member	-0.341 ***	-0.233 ***	-0.191 ***	-0.041	-0.189 ***	-0.021
Occupation controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	38990	38884	38998	38919	39001	38919
Persons	8529	8417	8528	8423	8530	8424
Obs./person	4.6	4.6	4.6	4.6	4.6	4.6
Wald Chi-square	1429 ***	1236 ***	885 ***	1109 ***	537 ***	723 ***
R-squared: within	0.04	0.03	0.04	0.04	0.01	0.01
Between	0.09	0.08	0.07	0.08	0.04	0.05
Overall	0.08	0.07	0.06	0.07	0.02	0.03

Notes: ***, ** and * denote the estimated coefficient is significantly different from zero at the one per cent, five per cent and 10 per cent levels, respectively.

Table 6 - Summary of results - estimated effects of various indicators of working from home on job satisfaction (random-effects linear regression)

Definition of working from home status ^a	Satisfaction with...					
	flexibility to balance work/non-work commitment		The hours you work		Job overall	
	Female	Male	Female	Male	Female	Male
Works any hours from home	0.06 *	0.11 ***	-0.16 ***	-0.17 ***	0.01	0.05 *
Works 8 hours per week or more from home	0.10 *	0.13 **	-0.22 ***	-0.25 ***	-0.02	0.03
Works majority of hours from home	0.36 ***	0.57 ***	0.18 **	0.14	0.13 *	0.20 **
Number of hours worked from home per week	0.012 ***	0.016 ***	-0.006	-0.007 **	0.000	0.005 **

Notes: a. refers to usual hours worked in each case; ***, ** and * denote the estimated coefficient is significantly different from zero at the one per cent, five per cent and 10 per cent levels, respectively.

Working from home seems to be associated with a lower level of satisfaction with ‘the hours you work’, although this does not hold for those who work the majority of their hours from home. The fixed effects results (table A3) for both men and women also suggest those who work mainly from home are more satisfied with hours worked. This may reflect a difference between those with ongoing arrangements or intentions to work from home as opposed to those who do so intermittently as workloads and other circumstances require. For overall job satisfaction, the results are less robust – satisfaction is relatively higher for males rather than females working from home, but note again the potential endogeneity of this result. The set of results reported in table 6 is closely mirrored by those obtained using fixed-effects models (see appendix table A3).

To briefly note some results for the other control variables contained in table 5, the presence of young and school aged children decreases women’s satisfaction with flexibility, but otherwise the presence of resident children is associated (on average) with greater satisfaction. Employees with a disability that restricts everyday activities report lower satisfaction in all cases. Permanent employment and work in the not-for-profit and government sector appears preferable. Being a member of a union or employee association is associated with markedly lower satisfaction with flexibility and, for women, with hours worked and overall job satisfaction. This result may be endogenous in the sense that dissatisfied employees may be more likely to join a union. However, it also fits with the results reported above suggesting that unions may actually act to oppose flexible working arrangements that include the possibility of working from home. Satisfaction with flexibility to balance work and non-work commitments decreases markedly with the number of hours worked per week. Taking the coefficients on hours and hours-squared together, the estimated effect of working 55 hours per week as opposed to 35 hours per week is to reduce women’s satisfaction with flexibility to balance commitments by almost a full point on the scale, and by

0.8 of a point for men. For overall job satisfaction the effects are much smaller. Satisfaction with hours worked is estimated to increase up to roughly the equivalent of a full-time workload (40 hours per week) before dropping off with additional hours.

Given these and the prior results relating to the impact of hours on the likelihood of working from home, additional models were estimated separately for the subset of long-hours workers, defined as those who report usually working 45 hours or more, and other workers. Generally, working from home is associated with greater flexibility and greater overall job satisfaction for both groups of workers. However, the dissatisfaction with hours of work associated with working from home is much stronger for employees working long hours. The exception is those who work the majority of their hours from home. For those who usually work less than 45 hours per week, working the majority of hours from home is associated with increased satisfaction with hours worked, and the effect is insignificant for long-hours workers.

6. Conclusion

We have sought to cast light on the issue of whether or not working from home is something typically associated with good jobs. This has been investigated primarily in terms of the effect of working from home on work-life balance. Is working from home a positive attribute that helps employees balance their commitments? Or is it one of the ways through which labour market deregulation is undermining standard working conditions?

We have found no simple answer. The descriptive analysis suggests that, in just over a decade of the HILDA Survey, there has not actually been any increase in the incidence of employees working from home. If anything there has been a slight decrease in the proportion of employees working any hours from home, and the proportion working eight hours or more per week in the home has remained static. These findings for Australia seem to be in contrast to the impression painted in the international literature of a growing incidence of 'teleworking' and 'telecommuting'. Those who do work from home report working a substantial number of hours in the home – around one day a week – and this has also remained relatively stable over time.

Multivariate analyses show that managers and professionals are by far the most likely to work from home. Women with pre-school and school aged children, older workers, those who have been with their employer for longer and who are employed in the private sector are also more likely to work from home. Union membership is associated with a lower incidence of working from home.

The most marked variation in the likelihood of working from home comes with respect to the number of hours usually worked per week. Working long hours goes hand in hand with working from home. For example, females and males who usually work 55 or more hours per week are estimated to be nine and seven times more likely to work from home, respectively. The likelihood of working eight hours per week or more from home increases even more dramatically, and this response is strongest for women. Herein lies the double-edged nature of home-work: its potential to facilitate longer working hours and the intrusion of work into home life.

If the reason employees are working from home is to meet home and family commitments, it does not follow that such home commitments, and the time spent

working there, would increase more than proportionately with hours of work. An issue here may be that time spent in the office is constrained by the timing of home commitments, rather than the duration of those commitments. Take the example of an employee who drops off and picks up children from school, such that the start- and end-times of their shift at the workplace is constrained by those commitments. Save for returning to the workplace for a second time that day, any additional hours would therefore need to be done at home. This is consistent with results relating to gender. It is still the case that women are more likely than men to meet caring obligations, such as getting children to and from school and preparing meals. Consequently, when work times lengthen, men stay in the office for longer but women work longer at home.

Among full-time workers, it seems that jobs associated with working from home are higher paying jobs – typically paying around four per cent higher weekly wages after controlling for a wide range of individual and job characteristics. However, this increase in wages does not fully compensate home workers for the number of additional hours they put in. We estimate that workers receive an hourly rate for hours worked in the home that is roughly 10 per cent lower than they are compensated for hours at the workplace. Savings in commuting times may offset this difference, and it is also possible that working additional hours from home may contribute to future promotions and pay rises.

Irrespective of hours worked, employees value the flexibility of being able to work some of their hours from home, and this is also generally associated with greater overall job satisfaction. However, other than for those who work the majority of their hours from home, working from home is associated with lower satisfaction with hours worked. It is clear that many of these hours are worked from home as a means to cope with long hours of work and high workloads. Once hours of work are controlled for, it is women who are more likely to work from home. For those working long hours, being able to do some of those hours from home does not necessarily impact negatively on their satisfaction with work life balance, but rather it is the long hours themselves that detract from satisfaction. In the sample used here, one in four male employees reported working 45 hours per week or longer and one in ten women.

The important question is the extent to which the capacity to work from home facilitates longer work hours and hence contributes to the dissatisfaction with work-life balance associated with longer hours of work and reduced leisure time. It seems a key distinction to make is between ‘home-workers’ as opposed to workers who do some of their hours from home. Here we find unambiguously positive effects for employees who work at least half their hours from home, and this concords with previous findings with respect to employees who work from home through a formal agreement with their employer (Dockery and Bawa, 2014). These definitions are likely to capture employees who have ongoing explicit or implicit arrangements for working from home, and who might be considered ‘home-workers’. This status is clearly valued by those employees who have such working arrangements.

For others who find themselves working long hours, working some of those hours from home becomes a ‘necessary evil’ to cope with those long hours. For these workers it is the long hours that detract from work-life balance, not so much the fact that this often leads to hours of work being done within the home. Overall, we

conclude that jobs which offer the possibility to work from home are ‘good jobs’ for part-time workers and those who work standard full-time hours. In fact, for any given level of hours worked, the option to work from home is a positive job attribute. But there is a sting in the tail. Once one works from home, hours are not given. There is reason to believe that working from home facilitates greater intrusion into life’s non-work domains through increases in workloads. In managing their employees’ workloads and quality of working life, employers should be mindful of the extent to which employees may be putting in additional hours outside of the workplace.

To the extent that employees’ choices to work from home will be primarily voluntary, albeit in some cases a choice made due to high workloads, job insecurity and or other pressures, it might be expected that the ‘rational, utility maximising’ worker would also report satisfaction with those arrangements. The data on preferred working hours contained in HILDA could be used to further investigate the association between working from home and hours mismatch, and this may cast light on the degree to which working from home is associated with ‘overwork’. Previous research has demonstrated that mismatch between actual and preferred hours of work is more important for job satisfaction than number of hours worked (Wooden, Warren and Drago, 2009). The possibility that employees do not fully appreciate the externalities associated with working from home, or mistakenly see it as a one-off or temporary response to their workloads, can also be explored through HILDA, thanks to the ability to link an individual’s work patterns to other household members’ ratings about work-life balance and family functioning. This is the subject of ongoing research.

The possibility of utilising the longitudinal nature of HILDA to test the impact of working from home upon future promotion prospects and other future labour market outcomes provides another avenue for future research. There is also a need for research using alternative constructs and richer information to add to what can be gleaned from the existing HILDA questions. This may come in the form of qualitative studies and other surveys addressing the topic, or through additional questions being incorporated into future waves of HILDA.

Appendix

Results for fixed effects models

Table A1 - Probability of working any hours from home, and of working eight or more hours from home, fixed-effect logistic regression models

	Women				Men			
	WFH - any hours		WFH 8+ hrs/wk		WFH - any hours		WFH 8+ hrs/wk	
	Odds Ratio	P> z	Odds Ratio	P> z	Odds Ratio	P> z	Odds Ratio	P> z
Age (years)								
15 to 24	0.708	0.04	0.569	0.04	0.550	0.00	0.413	0.00
25 to 34	1.046	0.66	0.825	0.21	0.847	0.09	0.706	0.02
35 to 44	—		—		—		—	
45 to 54	0.943	0.55	1.219	0.17	1.004	0.97	1.670	0.00
55 to 64	0.740	0.07	1.088	0.72	1.059	0.73	2.756	0.00
65 plus	0.468	0.04	1.061	0.91	0.708	0.31	2.939	0.02
Family status								
Married with no kids	1.422	0.00	1.832	0.00	1.000	1.00	1.266	0.16
Married & youngest child 0-4	2.796	0.00	3.600	0.00	1.179	0.15	1.324	0.12
Married & youngest child 5-14	2.644	0.00	2.861	0.00	1.163	0.26	1.440	0.07
Married & youngest child 15-24	1.609	0.00	3.053	0.00	0.755	0.08	1.048	0.84
Single with no kids	—		—		—		—	
Single & youngest child 0-4	2.090	0.00	2.549	0.00	1.174	0.42	0.872	0.67
Single & youngest child 5-14	1.430	0.03	1.676	0.05	1.160	0.52	0.916	0.79
Single & youngest child 15-24	1.003	0.99	0.888	0.68	0.699	0.29	0.452	0.22
Has disability	1.011	0.90	0.760	0.03	0.947	0.52	0.971	0.82
Employment contract:								
Fixed term	1.156	0.06	1.314	0.02	1.043	0.61	1.193	0.16
Casual	0.755	0.00	0.796	0.10	0.595	0.00	0.662	0.04
Permanent or ongoing	—		—		—		—	
Other	2.935	0.01	3.333	0.03	2.510	0.01	2.952	0.03
Sector								
Private, for profit	—		—		—		—	
Private, not-for-profit	0.993	0.95	1.155	0.41	0.974	0.87	0.763	0.25
Government enterprise	0.852	0.26	0.836	0.45	0.745	0.05	0.834	0.42
Other Government	0.894	0.31	1.056	0.76	0.805	0.11	0.660	0.05
Other	1.217	0.30	1.286	0.37	1.587	0.10	0.941	0.86
Tenure with current employer								
1 year or less	—		—		—		—	
2 to 5 years	1.349	0.00	1.017	0.86	1.359	0.00	1.130	0.21
6 to 10 years	1.489	0.00	1.188	0.18	1.325	0.00	1.383	0.01
11 or more years	1.417	0.00	1.199	0.25	1.657	0.00	1.206	0.22
Hours usually worked in main job								
1 to 15 hours per week	0.931	0.51	0.411	0.00	1.994	0.00	0.505	0.02
16 to 30 hours per week	1.095	0.27	0.733	0.02	1.542	0.00	1.267	0.27
31 to 38 hours per week	—		—		—		—	
39 to 44 hours per week	1.610	0.00	1.387	0.01	1.363	0.00	1.238	0.16
45 to 54 hours per week	2.880	0.00	2.602	0.00	2.504	0.00	2.399	0.00
55 or more hours per week	3.892	0.00	7.545	0.00	3.608	0.00	5.765	0.00

Table A1 - Probability of working any hours from home, and of working eight or more hours from home, fixed-effect logistic regression models (continued)

	Women				Men			
	WFH - any hours		WFH 8+ hrs/wk		WFH - any hours		WFH 8+ hrs/wk	
	Odds Ratio	P> z	Odds Ratio	P> z	Odds Ratio	P> z	Odds Ratio	P> z
Union/employee org. member	0.902	0.19	0.894	0.36	1.008	0.93	0.880	0.35
Occupation								
Manager	1.115	0.27	1.126	0.39	1.036	0.67	0.928	0.54
Professional	—		—		—		—	
Technician/tradesperson	0.310	0.00	0.328	0.01	0.568	0.00	0.536	0.00
Community/pers. services worker	0.586	0.00	0.581	0.02	0.560	0.00	0.663	0.18
Clerical/administration	0.608	0.00	0.916	0.59	0.665	0.00	0.623	0.02
Sales worker	0.579	0.00	0.655	0.11	0.717	0.02	0.726	0.16
Machinery operator/driver	0.215	0.00	0.134	0.01	0.198	0.00	0.292	0.00
Labourer	0.472	0.00	0.416	0.05	0.419	0.00	0.562	0.06
Industry								
Agric., forestry, fishing	2.449	0.01	7.579	0.00	2.993	0.00	4.624	0.00
Mining	1.040	0.93	2.657	0.18	0.743	0.27	0.631	0.29
Manufacturing	1.098	0.63	2.355	0.01	0.802	0.25	1.200	0.55
Electricity, gas, water	1.108	0.81	0.923	0.92	0.985	0.96	1.023	0.97
Construction	1.951	0.01	3.288	0.00	1.242	0.30	0.997	0.99
Wholesale trade	1.825	0.00	1.756	0.10	1.185	0.40	1.177	0.61
Retail trade	0.648	0.02	0.297	0.00	0.544	0.00	0.695	0.29
Accommodation/food	0.688	0.07	0.582	0.21	0.518	0.01	0.620	0.30
Transport & storage	2.583	0.00	2.435	0.06	1.356	0.18	0.980	0.96
Information media/telecoms	1.230	0.36	1.308	0.45	0.929	0.78	1.141	0.72
Finance & insurance	1.236	0.34	1.024	0.95	1.292	0.27	2.169	0.04
Rent, hiring, real estate	1.124	0.68	1.011	0.98	1.243	0.51	1.420	0.47
Professional services	1.728	0.00	1.522	0.08	1.450	0.04	2.368	0.00
Admin support services	1.011	0.96	1.434	0.32	0.674	0.15	1.343	0.51
Public admin	1.006	0.97	0.759	0.31	0.706	0.08	0.560	0.09
Education & training	2.906	0.00	2.501	0.00	2.228	0.00	2.294	0.01
Healthcare/social assistance	—		—		—		—	
Arts & recreation	0.976	0.93	0.936	0.88	1.245	0.40	1.682	0.22
Other services	1.625	0.02	2.083	0.02	1.102	0.67	1.937	0.08
Observations	13088		6339		12720		6023	
Individuals	1712		820		1625		771	
Obs./person	7.6		7.7		7.8		7.8	
LR Chi-sq.	804	0.00	561	0.00	664	0.00	434	0.00
Log -likelihood	-4613		-2065		-4543		-1980	

Table A2 - Linear regressions results for usual weekly wages (\$2001) – fixed effects

	<i>Females</i>		<i>Males</i>		<i>Persons</i>	
	<i>Coef.</i>	<i>P> z </i>	<i>Coef.</i>	<i>P> z </i>	<i>Coef.</i>	<i>P> z </i>
Constant	-732.69	0.00	-1181.17	0.01	-1087.04	0.00
Weekly hours worked						
At work	9.65	0.00	5.29	0.00	7.28	0.00
At home	6.91	0.00	5.06	0.00	6.16	0.00
Wave (1 to 11)	-15.99	0.11	-25.35	0.21	-26.55	0.01
Years of education	24.56	0.03	31.19	0.04	33.25	0.00
Married	29.56	0.06	-12.60	0.62	10.49	0.48
Has Long-term disability	-5.16	0.70	-26.16	0.20	-14.66	0.23
& disability restrict works	-0.63	0.97	4.42	0.87	0.76	0.96
Non-English speaking bkgrd						
& Eng. proficiency good	32.41	0.22	-63.80	0.12	-12.46	0.61
& Eng. Proficiency poor			-467.70	0.22	-437.35	0.18
Works part-time	-129.86	0.00	-235.54	0.00	-172.44	0.00
Employment contract:						
Fixed term	19.50	0.14	1.46	0.94	14.49	0.24
Casual	-33.94	0.05	-36.53	0.34	-38.07	0.04
Permanent or ongoing	—		—		—	
Other	-37.56	0.57	370.06	0.00	194.83	0.00
Sector						
Private, for profit	—		—		—	
Private, not-for-profit	-19.26	0.33	57.40	0.13	6.83	0.73
Government enterprise	-43.12	0.11	106.62	0.01	28.05	0.25
Other Government	-23.70	0.25	53.48	0.14	10.62	0.60
Other	26.27	0.37	60.36	0.24	39.95	0.16
Union/employee org. member	-1.86	0.89	38.29	0.08	15.98	0.20
Work experience (years)	59.65	0.00	105.91	0.00	86.76	0.00
Work exp-squared/100	-333.85	0.00	-808.13	0.00	-542.45	0.00
Tenure - current employer (years)	1.80	0.34	0.48	0.87	0.70	0.68
Tenure squared	-0.06	0.32	0.06	0.44	0.02	0.75
Occupation controls	Yes		Yes		Yes	
Industry controls	Yes		Yes		Yes	
Observations	5582		5573		11155	
Individuals	2022		2003		4025	
Obs./persons	2.8		2.8		2.8	
Wald Chi-sq.	38.4	0.00	16.9	0.00	42.4	0.00
R-sq.: within	0.33		0.18		0.22	
between	0.12		0.06		0.09	
overall	0.14		0.04		0.09	

Table A3 - Summary of results - estimated effects of various indicators of working from home on job satisfaction from fixed effects models

Definition of working from home status ^a	Satisfaction with...					
	flexibility to balance work/non-work commitment		The hours you work		Job overall	
	Female	Male	Female	Male	Female	Male
Works any hours from home	0.07 *	0.09 **	-0.12 ***	-0.12 ***	0.03	0.06 **
Works 8 hours per week or more from home	0.13 **	0.09	-0.11 **	-0.21 ***	0.02	0.04
Works majority of hours from home	0.28 ***	0.44 ***	0.16 *	0.16 *	0.15 **	0.20 **
Number of hours worked from home per week	0.014 ***	0.012 ***	-0.001	-0.006 **	0.002	0.005 **

Notes: a. refers to usual hours worked in each case; ***, ** and * denote the estimated coefficient is significantly different from zero at the one per cent, five per cent and 10 per cent levels, respectively.

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