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The Polarisation of Working Hours in Ireland

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THE POLARISATION OF WORKING HOURS IN IRELAND

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ABSTRACT

There is evidence of polarisation in the literature, a polarisation between the economics and sociological literature. On the one hand the economics literature has largely ignored patterns of declining working hours for low paid workers. Though the economics literature has given attention to topics such as polarisation in the labour market, and differences in working hours across countries and over time, these two topics have not been combined. In contrast this subject has been the topic of much research in the sociological literature. The aim of this paper is to examine changes in hours worked in Ireland from 1992 up to the present. Similar to other countries, Ireland has shown a decline in the average working hours of sales and service workers, even though this occurred at a time of growth in the labour market. In contrast hours worked by clerical staff have shown far smaller declines, despite decreases in the share in employment of clerical staff.

A number of hypotheses are explored for why this occurred. One hypothesis is that an increase in labour participation by women, who are more likely to work part-time, may have led to a fall in average working hours. However, this fails to explain why average working hours for male workers also declined. The paper also explores cross sectoral patterns. Though average weekly hours have declined in sectors associated with low pay (such as hotel and food sector, and retail and wholesale), low paid workers in other sectors (such as manufacturing) have not seen a decline in average weekly work hours. During the boom period some trends in Ireland have been quite different to those in other countries. From 1992 to 2002 wage growth was highest for those at the bottom of the wage distribution, a pattern quite different to other countries. Such differences with other countries may be due to the unsustainable property boom. However, there is no evidence that the boom has delayed a decrease in the working week. In fact the long term decline in working hours has stabilised during the boom. Also, the evidence does not support the hypothesis that average working hours declined due to greater participation from women, or a change in sectoral composition. Most of the change has been within sectors, genders, and occupations.

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THE POLARISATION OF WORKING HOURS IN IRELAND

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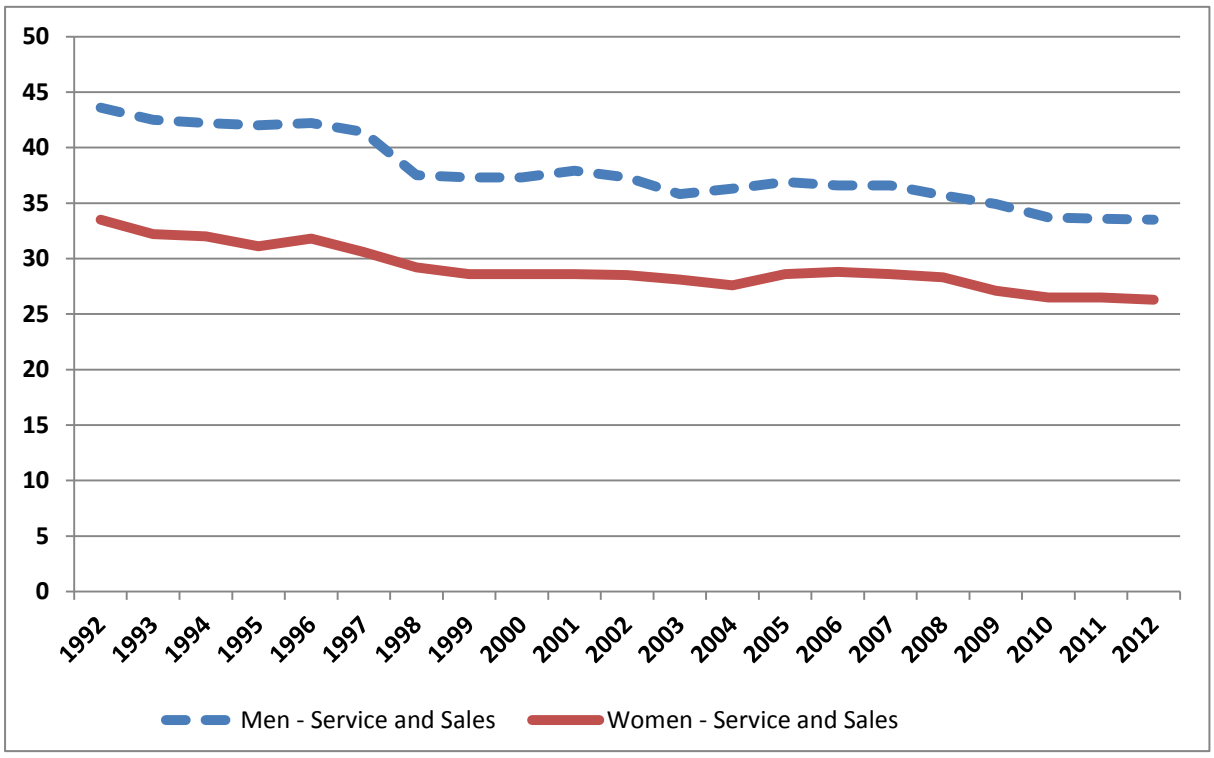
1. INTRODUCTION

There is evidence of polarisation in the literature, a polarisation between the economics and the sociological literature.

In the economics literature past trends in labour market inequality are usually framed around the topics of skill-biased technical change (whereby technical change such as the introduction of computers increase employment of highly skilled workers, and decreases it for the less skilled) or of polarisation (whereby middle skilled occupations, such as clerical work has been hollowed out by the introduction of computers). In the economics literature it is a standard assumption that workers can choose the number of hours they wish to supply to the labour market, there has not been much research on changing working hours by occupation, and research in working hours has mainly been with regard to comparisons across countries and across time in the average number of hours worked per person. In contrast, in the sociological and industrial relations literature there has been far greater focus on the decreasing number of hours worked for low paid workers, and an ability for such workers to find employment that matches their preferences.

As can be seen in Figure 1, in Ireland by 2012, the average male sales and service worker worked as many weekly hours as the average female sales and service worker did in 1992. There has been a decline in working hours for the generally low paid workers, while the hours of other occupation groups have been largely stable.

Figure 1: Average number of actual weekly hours of work in main job for service and sales workers



The pattern of declining hours of work for low paid workers is not just an Irish pattern. As early as the mid-1990s a polarisation of weekly hours of work was identified in both the US and Canada, with greater earnings inequality being associated with greater polarisation of working hours (Morissette, 1996). Frase and Gornick (2012) find that in richer countries it is the highly educated that tend to work longer hours, while in middle income countries it is the low paid that tend to work longer hours. This raises the questions, to what extent are low working hours associated with low pay? Are these changes explained by a change in the composition of the workforce, in particular due to a greater participation of women? Finally, what sectoral differences determine low working hours?

The paper is presented as follows. Section two outlines both the economic, sociological, and industrial relations literature on changes in working hours. Section three outlines the Irish data, and examines to what extent changes in the composition of employment may explain the decline in the average length of the working week. Section four concludes and suggests avenues for future research.

2. LITERATURE REVIEW

There is evidence internationally both of a change in average working hours, and changes between occupations. In the economics literature differences in average working hours, over time and across countries, has received the most attention. Previously it was presumed that labour supply depended solely on population, while now variation in labour supply plays a central role in macroeconomic analysis (Rogerson, 2006). Americans now work more (market) hours than Europeans, a situation that was the opposite in the 1970s (Prescott & Adviser, 2004).

Usalcas (2008)) presents some evidence from Canada and internationally. A polarisation in working hours has been apparent. Research in the mid-1990s showed longer hours were associated with higher earners and shorter hours among the lower paid. Though, from 1997 to 2006 there has been less polarization of hours. In 2006 women were more likely to be employed and work longer. Workers in transportation and warehousing had growth in long hours, and workers in information, culture, and recreation services showed growth in short hours. All other sectors showed growth in those working 30-40 hours. Across the OECD there has been a decline in working hours. UK and Ireland showed a big decrease in those working over 50 hours (from 1997 to 2006). In Ireland there was a large increase in the number of women working part time (from 27.6 percent to 34.9 per cent), though the decrease in average working hours for women has been less pronounced (from 34.1 hours to 31.6).

Economics literature

Cho and Cooley (1994) estimate that over the business cycle only a quarter of the adjustment in labour input is an adjustment in working hours, with the rest being an adjustment in headcount. The degree to which hours per worker is not examined can be seen in the work of Ebell and Haefke (2009). When examining long term trends in US employment, justify assuming hours per worker are held constant as being consistent with the 'long run focus' of the paper.

Recently there has been a shift in the economics literature on the topic of changes in the labour market. Previously there has been much discussion regarding an increased demand for highly educated workers (see for example Acemoglu (2002); David H. Autor, Katz, and Kearney (2008);

and Lemieux (2008)). However in recent years the debate has shifted to one of 'polarisation'. Polarisation is where there is an increase in employment for both highly skilled and low skilled occupations, but a hollowing out of medium skilled employment. Manning (2004) has suggested that increasing inequality can lead to increased demand for services provided by the low skilled (such as bar workers). This is as the increased incomes of the rich will mean they will demand more of these services. Helpman, Itskhoki, and Redding (2010) hypothesise that the increase in inequality is driven by an increase in trade openness increasing the demand for high-skill workers. However this offers nothing as to why employment may have increased in low-pay occupations. David H Autor and Dorn (2012) put forward a hypothesis for why polarisation may occur. Falling computer prices decrease employment of workers doing middle skilled routine tasks, which are more concentrated in the goods producing sector than service sector. If goods and services are complementary, then falling computer prices make goods cheaper, increasing the demand for goods, and due to complementarity, also the demand for services.

However, the evidence for polarisation is mixed. Also, the literature is not helped by two hypotheses being used as synonyms. The routinisation hypothesis suggests that those with middle occupations will more likely lose their jobs (which can lead to an increase in the employment share at the top, at the bottom, or both top and bottom of the skill distribution), and a polarisation hypothesis which suggests and increase in employment shares at both the top and bottom of the skill distribution. Though there is strong evidence for an increase in demand for higher paid workers, evidence is weaker for an increase in demand for lower skilled workers. David H Autor and Dorn (2012) show that wages and employment have increased for those at the top *and* bottom of the skill distribution in the US, from 1980 to 2005. It should be noted however that other authors (such as Card and DiNardo (2002), and Lemieux (2006)) have suggested that changes in wages for those at the bottom are due to changes in the minimum wage. Goos and Manning (2007) look at British data from 1975-1999 and find rises in employment shares for the highest and lowest wage occupations, however wages have not increased for those at the bottom of the distribution. Goos, Manning, and Salomons (2009) also look at data across Europe from 19930-2006. Although there has been a decrease in the share of hours worked by middle professions across Europe, for five of the 16 countries examined there has also been a fall in the share of hours worked by the lowest paying occupations. Oesch and Rodríguez Menés (2011) look at Britain, Germany, Spain and Switzerland, and find evidence in support of the routinization hypothesis. However, cross-country differences in wage-setting institutions and migration affect to what extent technological change leads to a polarized pattern of employment. Christopoulou, Jimeno, and Lamo (2010) also look at changes in the employment and wage distribution across European countries from 1995 to 2002. If there was an increase in demand for low skilled workers one would expect an increase in wages for the bottom deciles in comparison to the middle. Only for Ireland, Spain and Hungary is this the case. Only these countries have a broadly U-shaped pattern of wage increases. The authors decompose wage changes due to changes in the composition of the workforce and changes in returns (how wages change for if workers' characteristics are constant). For Ireland the wage effect is actually downward sloping. This, combined with the evidence from Goos et al. (2009) is evidence of an increase in demand for low-skilled workers and is the opposite of the SBTC hypothesis. For the other six countries wage increases are highest for those on higher incomes, but the patterns vary greatly for each country.

Some economic literature mentions hours (though not in the context of polarisation)
Previously it was presumed that labour supply depended solely on population, while now variation in labour supply plays a central role in macroeconomic analysis (Rogerson, 2006). However, the distribution in working hours among people has not received as much attention.

There has been some economics literature which deals with the topic of hours worked. However this is usually based on annual rather than weekly hours, and is not in the context of polarisation. Prescott and Adviser (2004) look at the topic of why Americans work more (market) hours than Europeans (a situation that was the opposite in the 1970s) attributing the difference to changes in marginal tax rates on households (as distinct from marginal tax rates on individuals). This work is consistent with that of Meyer (2002), who found that the participation of single mothers in the labour market increased as a result of changes in earned income tax credits, though interestingly the usual number of hours worked for single mothers and single childless women was stable from 1986 to 2000. (Though Bargain, González, Keane, and Özcan (2012) look at the effect of Ireland's 1995 divorce referendum rather than tax changes, they also find that the change impacted on female labour force participation rather than hours worked by women. However, it is still possible for greater numbers of women in employment to affect the composition of the workforce, and so average number of hours worked per week.) Rogerson (2006) looks at data for OECD countries from 1956-2003, and considers that technology and government policies are the best explanations for cross country differences in hour worked. Pissarides (2007) also looks at the average annual hours of work, and states that the supply of hours is influenced by differences in productivity between the services sector and other market sectors of the economy and home production. However, Pissarides (2007) does not look at differences in average working hours across sectors. _ENREF_9

Though not explicitly linked to the topic of polarisation, there is some economics literature that can be applied directly to the topic. Bell and Freeman (2001) compare hours worked in Germany and the United States. They noticed that (for Germany using data from 1985-1995 and for the US data from 1989-1996) hours worked vary according to the level of inequality within an occupation, and that hours worked generally increase with hourly earnings in an occupation. Bell and Freeman (2001) explain this as workers are assumed to choose long hours in order to gain promotion, and in a more unequal economy there is a greater pay-off from achieving such a promotion. This is similar to the hypothesis of Landers, Rebitzer, and Taylor (1996) who suggest that workers in law firms work inefficiently long hours to 'signal' that they are hard workers and gain promotion. However, while this might apply for areas of the labour market where workers can influence their hours, this assumption appears to be contradicted by some of the sociological literature. Skuterud (2005) specifically looks at how changes in the law regarding Sunday trading affected hours worked in Canada between 1980 and 1998. He found that firms mainly increased employment rather than increasing hours worked by existing staff. Kudoh and Sasaki (2011) note that hiring costs for higher skilled jobs are higher, and that average working hours may be linked to the cost of hiring workers while Parmentier (2010) suggests that those working in more capital intensive sectors are likely to work longer hours.

Zavodny (2000) looks at how changes in the minimum wage affects hours of work for teenagers and finds no significant effect, though Stewart and Swaffield (2008) find evidence suggesting that the introduction of a minimum wage reduced working hours for low paid workers in Britain.

In contrast, sociology and industrial relations literature – hours included

There has been much written within the sociological and industrial relations literature on changes in working hours and precarious employment. It has been recognised, outside of the economics literature, that the issue of weekly working hours is an important topic. There has been some sociological research which mirrors the economic research regarding the average hours worked. Frase and Gornick (2012) look at why American tend to work longer hours than others (using data from 17 high and middle-income countries), and in particular look at the role of education. They find that in higher income countries, higher educated workers are more likely to work long hours, but this pattern is reversed for middle income countries where it is the low paid who tend to work longer hours.

de Lange, Gesthuizen, and Wolbers (2012) find for the Netherlands that, particularly among young less educated individuals an increase in the likelihood of flexible employment but less unemployment. There is also a trend in couples being more likely to both have precarious employment (de Lange, Wolbers, & Ultee, 2012). This suggests that the increase in female participation is not necessarily due to married women simply taking up part-time work irrespective of their husband's economic situation.

A common assumption in the economics literature is that workers choose how many hours they wish to work, based on various incentives, though it should be noted that variability in working hours is not a topic that has received much attention in the economics literature. This topic is discussed in the industrial relations and sociological literature. Issues regarding work flexibility have often been focused on salaried workers, particularly women, to allow workers combine market work and care-giving, however such flexibility does not always benefit workers paid on an hourly basis (Susan J. Lambert, Haley-Lock, & Henly, 2012). Susan J. Lambert (2008) considers business practices such as 'just-in-time' have increased the demand for labour flexibility and have shifted risk from firms onto workers. Zeytinoglu, Cooke, and Mann (2009) assess whether labour flexibility is to the benefit of firms or workers in the case for Canada. They find that flexible work schedules are not significantly related to personal characteristics such as marital status or dependent children but rather factors such as occupation, employment status, sector, and non-unionised work. The authors conclude that flexible work is created for the benefit of business reasons rather than facilitating the interests of workers. Analysing the results of a 1997 survey conducted in 22 countries, Stier and Lewin-Epstein (2003) find that a significant number of workers are constrained in how they can allocate time between work and other tasks, with preferences for work affected by both individual and country characteristics. Some solutions have been put forward, so as a 'three-hour rule' in Canada that means workers must be paid for a minimum of three hours for any day they are required to report to work (S.J. Lambert & Henly, 2009).

Related to flexible hours is the issue of precarious work. Kalleberg (2009) notes that up to the end of the Great Depression, most US jobs were precarious. Also there has been a general decline in the time workers spend with their employers (with increases in tenure for women, but decreases for men).

Data

The data used in this analysis is taken from the Eurostat Labour Force Survey for various years. This is derived from data collected by Ireland's Central Statistics Office. It should be noted that there are several breaks in this series. Between 1983 and 1997 the April Labour Force Survey is

used. From September 1997 onward the Quarterly National Household Survey served as the basis of the Eurostat results. This data was collected on a seasonal basis (e.g. winter referred to December, January and February) up to 2008. From the first quarter of 2009 this was changed to a quarterly basis (Eurostat, 2011). Another break is with regard to definitions of sectors of the economy, which in 2008 switched from NACE Rev.1.1 to NACE Rev. 2. Unfortunately these breaks coincide with two major periods of change in Ireland, the Organisation of Working Time Act which came into force in March 1998; and the financial crisis which peaked in 2008 (before giving way to a more chronic period of recession). Also, in 1998 a large proportion of "Skilled agricultural, forestry and fishery workers" were reclassified as managers, while in 2011 the breakdown for occupation again altered, based on the revised ISCO 08, limiting comparability with previous years. For all data hours refer to hours actually worked.

3. PATTERNS IN IRELAND

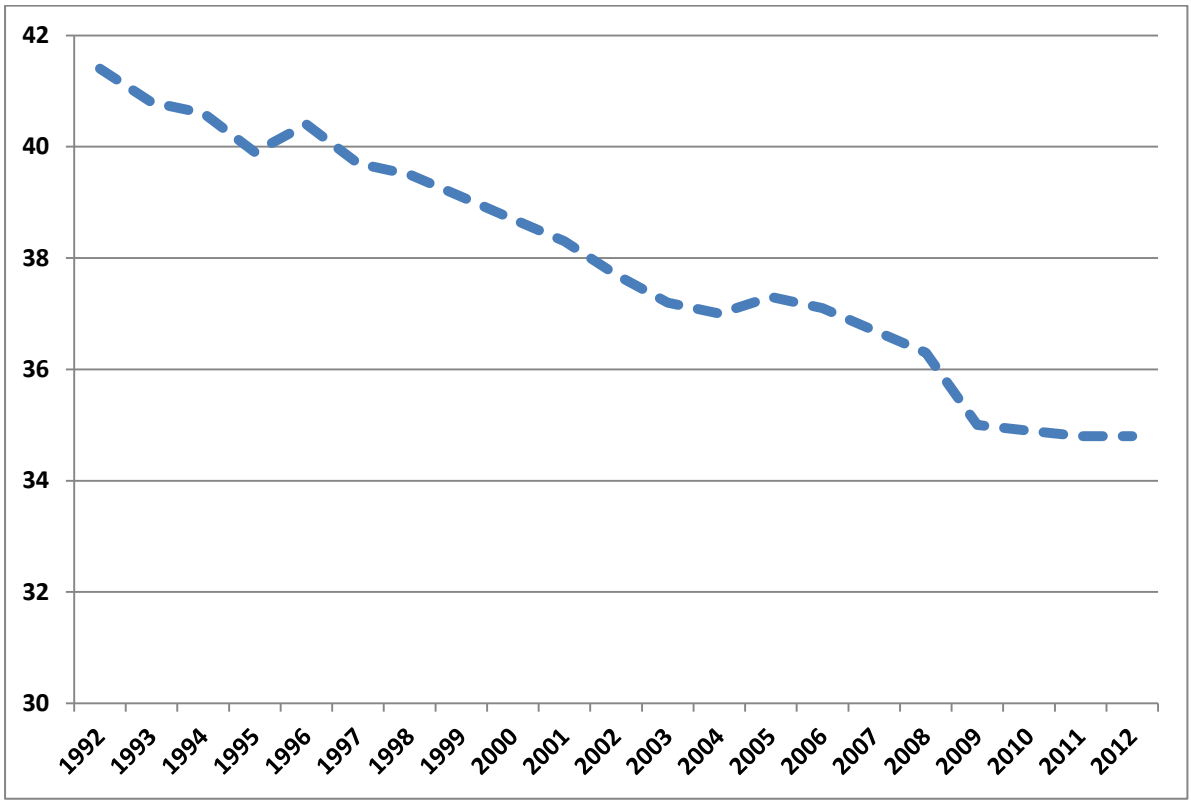
The period between 1992 and 2012 has been a period of great labour market change in Ireland.

In 1992 64.7%, almost two thirds, of those in employment were men. By 2012 this was down to almost a half (53.4%). In 1992 27.4% were employed in skilled non-manual occupations (e.g. managers, professionals and technicians). By 2012 this was 41.2%. The length of the average working week has also been in steady decline. This occurred at a time of labour market polarisation across the world. However, in some ways Ireland is unique. For example Ireland did not show the same patterns of wage polarisation as other countries (Christopoulou et al., 2010). Also, during the 2000s employment of clerical workers was not hollowed out as in other countries, though during the crisis the pattern has been reversed with those in clerical occupations losing employment, while employment in professional and technical occupations has remained steady. Also, between 1992 and 2009 working hours declined steadily (Figure 2), but during the current recession the length of the average working week has stabilised. This raises the questions, what has caused the change in working hours since 1992? Also, do the changes since the recession represent a mere cyclical change that will reverse when the economy recovers, or did the construction boom mask a fundamental shift in the economy, one that has occurred in many economies across the world?

There are several reasons why the average working week has declined. One may be due to a fundamental structural change, such as the Organisation of Working Time Act. Alternatively fundamental change could have occurred across all or a group of workers (perhaps due to a change in technology or management practices) that result in a shorter working week. Finally the change may be due to changes in the composition of the workforce, such as a greater participation rate of women or a change in the composition of economic sectors in the economy (such as an expansion of the hospitality sector) or a change in the composition of occupations.

From Figure 2, a change in the Organisation of Working Time Act seems an unlikely explanation as the trend in working hours preceded that date (though it may be of greater relevance to specific sectors).

Figure 2: Length of average working week.

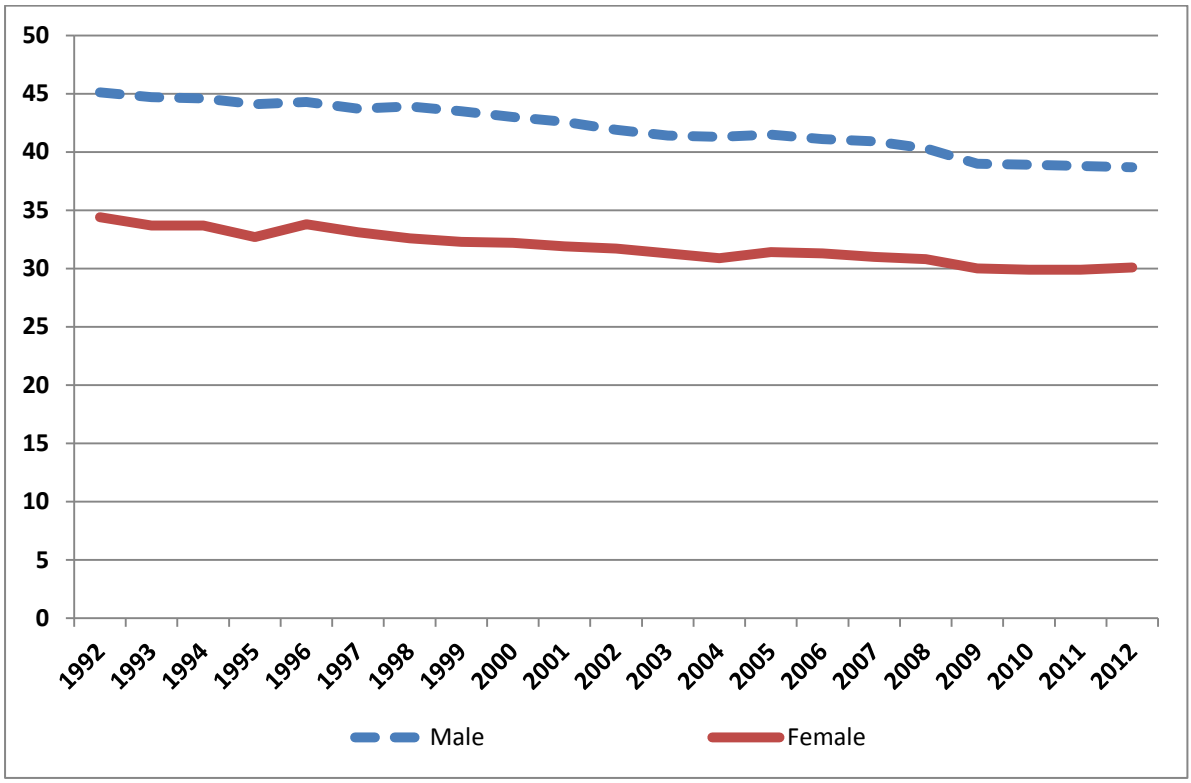


Source: Eurostat Labour Force Survey (lfsa_ewhais)

Gender

Between 1992 and 2012 the average working week declined by 6.6 hours. If greater participation of women was the cause for the decline in average working hours then one would expect the average working week of men and women would be relatively stable. As can be seen, this is not the case. The average working week has been declining for both men and women. By 2012, for men the average working week has declined by 6.4 hours, and by 4.3 hours for women. Therefore the average week has declined by more for both men and women. Also between 2008 and 2009 there was a large decline in hours worked (a fall of 1.3 hours for men and 0.8 for women), but it has since levelled off. It has been suggested that women have a preference for working shorter hours (Altonji & Dunn, 2000), as they tend to be responsible for other tasks (such as looking after children), and that the composition of women in the workforce has altered (i.e. a greater proportion of the women in the workforce are women that prefer to work shorter hours). However, given the similar trend for both men and women, this is an unlikely explanation.

Figure 3: Average weekly hours actually worked for men and women



Occupational category

A more interesting pattern is seen by examining the breakdown by occupation where a pattern of polarisation based on working hours becomes more apparent. All occupations showed a decline in the average working week. With the exception of skilled agricultural, forestry and fishery workers (for which the data is unreliable), the largest declines in working hours were for service and sales workers and elementary occupations (which includes occupations such as cleaners, refuse workers, food preparation assistants and labourers in agriculture and industry) with declines of 9.6 and 8.6 hours respectively. Table 1 presents the data for selected years. (Though there was a change in definition between 2010 and 2012, with the exception of agricultural workers, the change is minor.) The pattern in decline in working hours for relative low paid occupations is consistent with patterns in other countries. Also, the working hours of professionals were relatively stable. However, within occupations the change in working hours does not appear to be influenced by the recession.

Table 1: Average working hours by occupation

	1992	1996	2000	2004	2008	2012
Managers	45.5	44.5	50.1	45.8	43.9	41.6
Professionals	37.1	37.2	36.3	35.5	35.4	35.7
Technicians and associate professionals	40.2	39.7	37.4	36.5	36.0	35.8
Clerical support workers	35.5	34.5	33.8	32.5	32.5	31.4
Service and sales workers	38.4	36.3	31.7	30.6	30.8	28.8
Skilled agricultural, forestry and fishery workers	59.3	62.3	40.8	37.1	36.9	49.2
Craft and related trades workers	39.8	39.7	41.5	39.9	39.6	36.8
Plant and machine operators, and assemblers	41.1	41.2	40.5	40.1	39.6	38.1
Elementary occupations	39.6	36.5	33.4	32.9	33.0	31.0
Armed foreces occupations	45.5	45.6	43.9	42.1	41.6	41.9
Total	41.4	40.4	38.7	37.0	36.3	34.8

Note: data for managers and Skilled agricultural, forestry and fishery workers not comparable across years due to changes in classification.

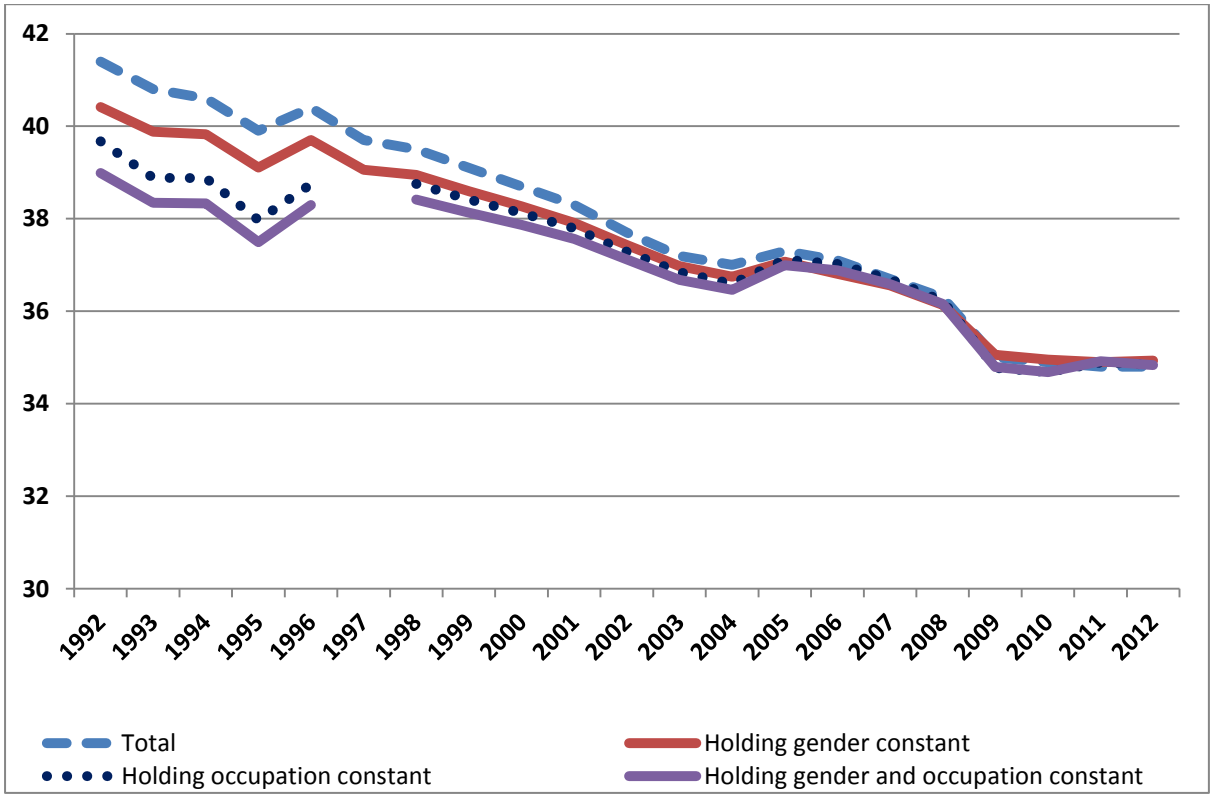
Though the recession does not appear to have greatly affected the trend within occupations, it is possible that the boom masked a structural shift. For example, if those working in construction (who tend to be craft and related trades workers), worked above average hours, then the shift away from construction would result in lower average working week for total employment. As can be seen from Table 1, craft and related trades workers have a working week that is relatively close to the average, so is unlikely to have much of an affect.

Table 2 shows the employment shares by occupation for 2008 and 2010. The year 2010 is chosen as it is the last year in which occupation classifications are directly comparable. The share of clerical workers has not fallen, despite the routinisation hypothesis of David H. Autor, Levy, and Murnane (2003). There have been declines since 2010, but it is unclear to what extent these are due to reclassification.

Table 2: Employment shares by occupation

	2008	2010
Managers	15.2%	12.9%
Professionals	17.2%	19.7%
Technicians and associate professionals	6.4%	7.0%
Clerical support workers	12.7%	13.2%
Service and sales workers	18.1%	19.2%
Skilled agricultural, forestry and fishery workers	0.8%	3.6%
Craft and related trades workers	13.2%	9.5%
Plant and machine operators, and assemblers	7.4%	6.5%
Elementary occupations	8.7%	7.4%
Armed foreces occupations	0.3%	0.5%

Figure 4: Change in Total Average Working Hours, holding composition constant at 2008 levels



Note: For decomposition by sector and gender there were issues of reliable data for the agriculture and defence occupations for women. It was assumed the such women worked 39 hours. Due to the small numbers employed in both sector the effect is marginal (e.g. having the hours wrong by as much as 10 hours would only affect the total hours worked by 0.036 hours (or 2 minutes). As 2008 is the reference year, for 2008 all series should have the same value (36.3 hours). However, due to rounding errors there is a small difference of up to 0.2 hours.

As can be seen from Figure 4, holding the composition of the workforce in terms of gender and occupation constant at 2008 levels, the decline in working hours is less dramatic, suggesting that change in composition has played some role. Looking at each factor individually, it appears that changes in the composition of occupation has played a larger role than gender. However, given the change in definition of occupation, this should be treated with some caution. Also, holding occupation and gender composition constant the decline in working hours is still substantial. Composition has almost no effect on average working hours between 2008 and 2012. Overall, patterns in Ireland seem to be consistent with the hypothesis of Kudoh and Sasaki (2011). It is likely that a higher demand for highly skilled workers has meant higher recruitment costs, so high skilled workers work longer hours. In contrast, low skilled labour has become more abundant, lowering search costs for low skilled worker, resulting in declines in the working week for the low skilled.

Table 3: Working hours by sector (NACE Rev1)

	1992	1996	2000	2004	2008
Agriculture, hunting and forestry	57.5	59.2	55.4	53.3	48.8
Fishing	47.2	41.2	54.5	-	-
Mining and quarrying	42.0	41.6	41.1	40.6	41.2
Manufacturing	39.2	39.2	39.1	38.3	38.5
Electricity, gas and water supply	37.3	38.1	37.8	38.3	39.4
Construction	41.4	40.9	42.5	40.6	39.8
Wholesale and retail trade: repair of motor vehicles, motorcycles and personal and household goods	39.4	38.9	36.2	34.3	34.0
Hotels and restaurants	42.3	40.4	35.2	33.6	32.9
Transport, storage and communications	40.6	41.8	40.8	40.2	38.8
Financial intermediation	37.9	36.7	37.3	36.1	36.6
Real estate, renting and business activities	38.4	39.3	37.7	37.0	36.4
Public administration and defence; compulsory social security	38.5	37.3	38.0	36.3	36.2
Education	29.7	28.9	28.0	28.2	28.3
Health and social work	37.4	36.3	34.2	32.4	31.8
Other community, social and personal services activities	36.7	34.4	35.2	33.3	33.1
Activities of private households as employers and undifferentiated production activities of private households	28.5	-	31.6	25.5	27.4
Extraterritorial organisations and bodies	-	-	35.0	36.7	-
Total	41.4	40.4	38.7	37.0	36.3

Note: unreliable data omitted

Economic Sector

As can be seen in Table 3, changes in working hours by sector have been dramatic. The year 2008 is chosen as a cut-off point as in 2008 there was a break in sector classification. Some sectors that tend to be capital intensive, such as mining and quarrying, manufacturing, and electricity, gas and water supply have shown stable hours. In contrast, labour intensive sectors such as health and social work, and the wholesale and retail trade have shown declines of over five hours. Particularly striking has been the decline in the working week in the hotel and restaurant sector. This sector has gone from above average working week to firmly below average, a decline of 9.4 hours in the average working week. A particularly steep fall occurred between the years 1996 and 1999.

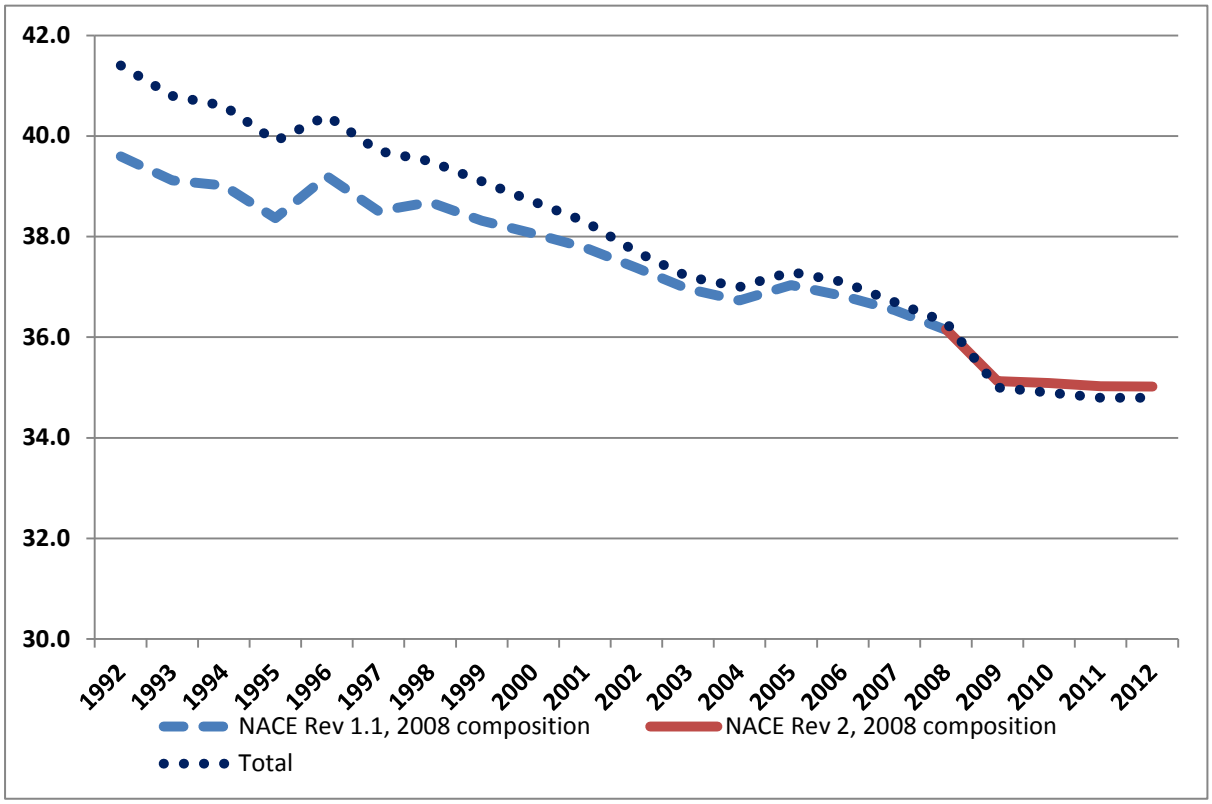
Using the alternative NACE Rev2 it is possible to see changes in working hours by sector since the crash. Unsurprisingly, the construction sector has shown the largest falls in employment.

Table 4: Change in average working hours by sector

	2008	2012	Change
Agriculture, forestry and fishing	49.3	48.1	-1.2
Mining and quarrying	41.5	40.1	-1.4
Manufacturing	38.5	37.8	-0.7
Electricity, gas, steam and air conditioning supply	39.4	38.1	-1.3
Water supply, sewerage, waste management and remediation activities	39.9	38.0	-1.9
Construction	39.7	35.3	-4.4
Wholesale and retail trade: repair of motor vehicles and motorcycles	34.0	32.8	-1.2
Accommodation and food service activities	39.2	38.3	-0.9
Transport and storage	32.9	31.3	-1.6
Information and communication	38.2	38.6	0.4
Financial and insurance activities	36.6	36.8	0.2
Real estate activities	36.1	35.8	-0.3
Professional, scientific and technical activities	38.3	37.3	-1.0
Administrative and support service activities	33.4	31.8	-1.6
Public administration and defence; compulsory social security	36.2	36.4	0.2
Education	28.5	28.7	0.2
Human health and social work activities	31.7	31.5	-0.2
Arts, entertainment and recreation	33.2	31.0	-2.2
Other service activities	31.7	30.3	-1.4
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	27.4	27.6	0.2
Activities of extraterritorial organisations and bodies	-	38.8	
Total	36.3	34.8	-1.5

The evidence from the previous charts suggests that a changing composition since 2008 has had a minor impact. on the length of the average working week. Figure 5 shows how working hours would have changed, if the 2008 sectoral composition was kept for all years. As is shown, during the recession the effect of sectoral change is minimal. In the period 1992 to 2008, sectoral shift has had an impact, serving to reduce the length of the working week, however this effect is minor compared to the changes occurring within sectors.

Figure 5: Change in average working hours, keeping 2008 sectoral composition



Note: Using NACE Rev. 2, for the sector Activities of extraterritorial organisations and bodies, hourly data is only available for 2012, so the same figure is used for the years 2008 to 2012. Using NACE Rev. 1.1, the are some missing hourly observations for the sectors Fishing; Activities of private households as employers and undifferentiated production activities of private households; and Extraterritorial organisations and bodies. These were assigned an unchanging working week of 45 hours, 28 hours, and 34 hours respectively. As these sector comprise at most approximately 1% of those in employment, this assumption has a minor effect on the overall result.

4. CONCLUSION

Overall the Irish experience has been consistent with data in other countries. Declines in working hours have occurred mostly within sectors and occupations that are labour intensive and associated with low pay. A number of reasons for the decline in working hours have been put forward such as an increase in female participation, or a shift in the sectoral composition of the economy. This paper shows that both these factors played a relatively minor role, and that the greatest change has been within specific sectors.

The recession does not appear to be a driver of shorter working hours. Despite an initial fall in working hours between 2008 and 2008, hours have remained stable. In fact, the most striking aspect of the recession is that hours have remained stable when compared with the period 1992 to 2008. This certainly runs counter to the expectations of many. Economic research from other countries shows during a recession a fall in labour demand is met mainly with a decline in headcount rather than working hours. However such research usually does not examine the

long term secular trend of falling working hours. It is a puzzle as to why such a decline should be halted during a time of a weak labour market.

Though the data is not consistent with any particular model, it is consistent with elements of two models in particular. Kudoh and Sasaki (2011) suggest that longer working hours are associated with workers with higher recruitment costs that tend to be higher paid, while Parmentier (2010) suggests that sectors with greater capital intensity are associated with longer working hours. This is as employers face a high cost of employing a worker (due to recruitment costs or renting the necessary capital), and this offsets any benefits of having a flexible pool of workers to which an employer can assign working hours. Also, the increase in capital productivity (such as due to changes in shop opening hour regulations) could possible explain the change. Synthesising these models and perhaps incorporating an element regarding the business cycle could prove an area of fruitful economic research. Ireland is currently pursuing a strategy of export led growth, which tends to be skill-biased. Such a model could help shed light on to what extent such a strategy may mean lower paid workers are left behind.

Other areas of future research include a more detailed decomposition of occupations and sectors by accessing micro-data such as Ireland's National Employment Survey. This may help to shed light on a number of puzzles. This include why has the decline in working hours slowed during a time of recession, and why has the hotel and catering sector been particularly affected by declines in working hours.

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