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The Part-Time Pay Penalty

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Abstract

In 2003, women working part-time in the UK earned, on average, 22% less than women working full-time. Compared to women who work FT, PT women are more likely to have low levels of education, to be in a couple, to have young and numerous children, to work in small establishments in distribution, hotels and restaurants and in low-level occupations. Taking account of these differences, the PT penalty for identical women doing the same job is estimated to be about 10% if one does not take account of differences in the occupations of FT and PT women and 3% if one does. The occupational segregation of PT and FT women can explain most of the aggregate PT pay penalty. In particular, women who move from FT to PT work are much more likely to change employer and/or occupation than those who maintain their hours status. And, when making this transition, they tend to make a downward occupational move, evidence that many women working PT are not making full use of their skills and experience.

Women working PT in the other EU countries have similar problems to the UK but the UK has the highest PT pay penalty and one of the worst problems in enabling women to move between FT and PT work without occupational demotions. At the same time, PT work in the UK carries a higher job satisfaction premium (or a lower job satisfaction penalty) than in most other countries. Policy initiatives in recent years like the National Minimum Wage, the Part-Time Workers Regulations and the Right to Request Flexible Working appear to have had little impact on the PT pay penalty as yet although it is too early to make a definitive assessment of the full impact of some of these regulations. The most effective way to reduce the PT pay penalty would be to strengthen rights for women to move between FT and PT work without losing their current job.

Keywords: employment transitions, part-time work, motherhood, EU, equality
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1. Introduction

In 2003 45% of female workers in Britain were working part-time (PT) and the majority of British women will work part-time at some point in their lifetime. Consequently, the types of jobs and the levels of pay and conditions that are available on a part-time basis are of crucial importance in influencing the economic opportunities of women. But, although the overall pay gap between men and women in the UK has fallen in the last 30 years – Anderson et al, (2001) reported that the average hourly earnings of women rose from 64% of that of men in 1973 to 82% in 2000 and the latest figures from the New Earnings Survey suggest little change over the period 2000-2003 – there is an important difference in the fortunes of full-time (FT) and PT women over this period. While the earnings of FT women have been rising relative to men's this is not true of the earnings of PT women. This implies that the earnings gap between FT and PT women has been widening.

Figure 1.1 presents a measure of the gap in average hourly earnings between FT and PT women using data from the New Earnings Survey (NES) for the period 1975-2003 and from the Labour Force Survey (LFS) for 1993-2003. The estimates from these two data sources do differ but they both suggest a very large pay gap between FT and PT women – the NES suggests that in 2001 the average hourly earnings among PT women were 26% below those of FT women – for the LFS, the gap is somewhat lower though still substantial at 22%. This pay gap is what we call the part-time pay penalty (PTPP) and its cause is the subject of this report[*]. Furthermore, the NES suggests that the PTPP has risen over time (the PTPP was 15% in 1975) though most of the rise in the PTPP seems to have occurred prior to 1995 and the LFS data does not suggest any very marked trend over the last 10 years.

In this report, we provide an analysis of the current level of the PT pay penalty in the UK, how it has changed over time and how the UK compares with other European countries. The plan of the report is as follows. In the next section we discuss the relative advantages and disadvantages of different definitions of part-time status. The third section then compares the characteristics of FT and PT British women showing that there are large differences in their education, their age, the types of households they live in, the employers that they work for and the jobs that they do.

The fourth section then presents estimates of the current level of the PTPP in the UK. The main conclusion is that although the overall unadjusted PTPP is very large (as shown in Figure 1.1), this cannot be used a reliable estimate of the pay penalty that a given woman would suffer if she changed from FT to PT status because women working PT are very different from those working FT and the numbers in Figure 1.1 do not take account of these differences. If one does adjust the PTPP to take account of these differences then the PTPP is 10% if one does not control for differences in occupation and 3% if one does. That is, within occupations, the PTPP is very small. The true PTPP probably lies between these two numbers. The fifth section then considers trends in the UK PTPP showing that the change over the last 30 years visible in Figure 1.1 can mostly be ascribed to rising differences in the types of jobs done by FT and PT women and to the general rise in UK wage inequality[†].

[*] It should be noted, although we do not analyse it, that there is also a large part-time pay penalty for men – the New Earnings Survey suggests that in 2003 part-time men had average hourly earnings that were 32% lower than the average hourly earnings of full-time men.

[†] This affects the PTPP because rising wage inequality has led to a wider wage gap between managers and cleaners, a change that tends to raise the PTPP because most managers work FT and most cleaners work PT.

Because occupational segregation is so important in understanding the PTPP the sixth section tries to explain why it is that PT workers come to be over-represented in badly-paid jobs. We present evidence that women who want to change their hours from FT to PT often have to change both employers and occupations to do so and that there is a tendency for the change to be associated with downward occupational mobility. All of this contributes to an under-utilization of the skills of women who work PT.

The seventh section then compares the situation of PT women in the UK with other EU countries. The most striking fact is that both the unadjusted and adjusted PTPPs in the UK are the highest in the EU. In addition British women seem to find it harder than women in other European countries to change their hours status without suffering downward occupational mobility. This paints a rather bleak picture of the situation of British women who are working PT. But, there is a more positive side. British PT women report levels of job satisfaction that are amongst the highest in Europe. Finally the eighth section discusses policies that have been implemented or proposed in Britain with the aim of improving the conditions of PT workers and reducing the PTPP. Very few of the recent initiatives seem to have had much impact, largely because they have not been very effective in reducing the occupational segregation of FT and PT women.

The main conclusions of the report can be stated as follows:

- In 2003 women working part-time in the UK earned, on average, 22% less than women working full-time – this is the part-time pay penalty. The part-time pay penalty has increased over the past 30 years with most of the rise occurring prior to the mid-1990s.
- This average pay differential between part-time and full-time women cannot be used as an estimate of the pay penalty that would be suffered by a given woman moving from full-time to part-time work because women working part-time and women working full-time are very different in their characteristics and do very different jobs.
- Compared to women who work full-time, part-time women are more likely to have low levels of education, to be in a couple, to have dependent children that are both young and numerous, to work in small establishments in distribution, hotels and restaurants and in low-level occupations. Almost 25% of part-time women are a shop assistant, a care assistant or a cleaner. 15.1% of full-time women are managers but only 4.4% of part-time women.
- Taking account of these differences the part-time penalty for identical women doing the same job is estimated to be about 10% if one does not take account of differences in the occupations of FT and PT women and 3% if one does.
- The pay differential between full-time and part-time women within occupation is very small and the occupational segregation of part-time and full-time women can explain most of the aggregate part-time pay penalty.
- The aggregate part-time pay penalty has risen over time but almost all of this rise can be explained by a rising contribution of occupational segregation. Women working part-time have failed to match the occupational up-grades made by women who work full-time.
- Rising UK wage inequality has also acted to widen the pay gap between women working part-time and women working full-time as it has widened the pay gap between high-level and low-level occupations.
- Women who move from full-time to part-time work are much more likely to change employer and/or occupation when making this transition than are women who maintain their hours status.

- Women moving from full-time to part-time work, on average, make a downward occupational move, evidence that many women working part-time are not making full use of their skills and experience. This downward occupational mobility is less marked for those women who move from full-time to part-time work without changing their employer.
- There is also evidence of under-utilisations of the skills of women working part-time among women with nursing and teaching qualifications.
- More research is needed on whether there are good reasons for why employers do not make certain jobs available on a part-time basis or whether some combination of inertia, lack of imagination and prejudice is also involved.
- Women working part-time in the other EU countries have similar problems to the UK but the UK has the highest part-time pay penalty and one of the worst problems in enabling women to move between full-time and part-time work without occupational demotions. At the same time, part-time work in the UK carries a higher job satisfaction premium (or a lower job satisfaction penalty) than in most other countries.
- Policy initiatives in recent years like the National Minimum Wage (1999), the Part-Time Workers Regulations (2000) and the Right to Request Flexible Working (2003) appear to have had little impact on the part-time pay penalty as yet although it is too early to make a definitive assessment of the full impact of some of these regulations.
- The most effective way to reduce the part-time pay penalty would be to strengthen rights for women to move between full-time and part-time work without losing their current job.

2. Defining FT/PT Status

There are two main types of definition of PT status. The first is based on self-assessment i.e. the answer to a direct question about whether the individual is full-time or part-time - for example, the UK LFS asks the question "in your main job were you working full-time or part-time?"

Alternatively one can use a definition of PT status based on hours worked: by convention the hours measure used is the basic usual weekly hours in a job. In the UK the standard definition is that part-time workers have usual basic weekly hours less than or equal to 30 (with a cut–off of 25 for teachers as their hours reflect only classroom hours and not preparation/marking time) but, for example, a cut-off of 35 hours is more common in the United States (see, for example, Blank, 1990). Alternatives would be actual hours worked in the job or to assign workers to PT or FT status based on total hours worked in *all* jobs. This last point is quite important as 7.6% of women who are PT in their main job have a second job compared to only 3.2% of women who are FT in their main job (figures from 2003 LFS). Women with more than one paid job will mostly be PT in all of them so that some "part-time" workers may end up working as many hours in total as some full-timers. But, as any disadvantage suffered by part-time workers is likely to occur within a particular job and not be influenced greatly by hours worked in other jobs, it seems most sensible to determine part-time status on a job-by-job basis rather than a worker-by-worker basis.

Where a data set only contains information that can be used for one type of definition of PT status or the other, a researcher can only use the definition of part-time status that is available. But, where there is a choice, which measure is preferable? The answer is that they both have advantages and disadvantages.

The main disadvantage of the self-assessment measure is that it is subjective – it is conceivable that someone working 'only' 60 hours per week in a firm where the culture is to work 70 hours perceives themselves as part-time though outsiders might not agree. On the other hand this subjectivity may be an advantage in some circumstances. One of the major concerns about the PT pay penalty is that those working part-time are at a disadvantage relative to those in the same job who are working full-time – in this case self-assessment may be the best definition to use. And this 'subjectivity' is also to be found in legislation[‡]. For example, the 2000 Part-Time Workers' Regulations has the following definition "a worker is a part-time worker for the purpose of these Regulations if he is paid wholly or in part by reference to the time he works and, having regard to the custom and practice of the employer in relation to workers employed by the worker's employer under the same type of contract, is not identifiable as a full-time worker". And international statistics on the incidence of PT work produced by agencies like Eurostat use a self-assessment measure giving the reason that "it is impossible to establish a more exact distinction between part-time and full-time work, due to variation in working hours between Member states and also between branches of industry". The advantage of the hours-based definition is that it is 'objective', one can distinguish between degrees of part-time work, but it is inflexible. One typically has to make some allowance for teachers and it may be inappropriate for some other jobs.

One should consider whether it makes much of a difference what definition is used. Table 2.1 presents a cross-tabulation from the LFS in 2003 of how many workers are classified as PT or FT according to the self-assessment and the hours-based definitions. The hours-based measure has 45.9% of women working PT compared to 43.5% on the self-assessment measure and 5.2% of women have a different classification depending on the definition used. So, although there are differences, they are not very substantial.

Figure 2.1 shows the relationship between the basic usual hours worked and the self-assessed measure of part-time status. It plots the fraction of women who report themselves as PT for each level of basic usual hours. All of those with basic usual hours below 15 report themselves as PT (these are not shown on the Figure) and all those with basic usual hours above 40 report themselves as FT. But, in the middle one can see that some women who work the same basic usual hours report they are PT and some report they are FT. However, around 30 hours there is a rapid fall in the proportion reporting they are PT so the convention of the 30-hours threshold for defining PT status does seem to reflect perceptions. For teachers the fall in the proportion reporting they are PT occurs around 25 hours so the tradition of using a different hours threshold for teachers also seems justified.

In some of the literature on PT work a distinction is made between 'short' PT jobs and 'long' PT jobs (see, for example, Tam, 1997). The average basic usual weekly hours for women who define themselves as PT is 19 hours compared to 38 hours for those women defining themselves as FT. Approximately half of PT women work less than 20 hours per week and one-quarter work less than 15 hours per week. The gap in weekly hours of work is the result both of PT women working, on average, fewer hours per day and fewer days per week. But the latter effect is more important – 85% of FT women work 5 days a week compared to only 35% of PT women (all figures from the 2003 LFS).

[‡] Not all legislation has the same definition. For example maternity rights used to differ according to whether individuals worked more or less than 16 hours per week.

In this report the vast bulk of our analysis is based on the self-assessment definition of PT status. But, at a number of crucial points we do check whether any of our substantive conclusions are affected by this choice and the answer is that the choice of definition does not seem to make a large difference to the results.

3. What Types of Women Work Part-Time?

The main reasons given by British women for working PT are reported in Table 3.1. Over 80% of PT women report they do not want a FT job and the next most common answer (11% of respondents) is that the woman is a student. Students are an increasing fraction of PT workers as more young people stay longer in education and changes in the funding of education mean that more have to earn some money to finance their studies. But there is less concern about students with low earnings because this is not a permanent state of affairs and many of them will go on to have much higher earnings later in life. For this reason, the analysis that follows excludes, wherever possible, women who are in full-time education.

The second column of Table 3.1 presents the reasons given by non-students for taking a PT job – now almost 90% of respondents report that they did not want a FT job. The LFS then asks these women why they do not want a FT job – their answers are tabulated in Table 3.2. 68% of women give domestic or family commitments as the reason they do not want or are prevented from taking a FT job. So PT work seems to be an option taken by women when there are heavy competing demands on their time. The fact that most PT women report they do not want a FT job should not be taken as evidence that the PT pay penalty is no cause for concern – these women may be choosing PT work as the best option available to them in the labour market but the available choices may be limited by forces over which individual women have no control.

The characteristics of PT and FT women differ in many ways, the most important of which are:

- age
- education
- household structure
- ethnicity
- types of employer
- types of contract
- occupation

Part-Time Working, Age and Education

The incidence of PT work varies with age and with education as shown by Figure 3.1 (this figure excludes students). For all age groups more educated women are less likely to be working PT. There are a number of possible explanations for this. As the more-educated typically have greater earnings potential, the loss in earnings from reducing hours worked is larger making PT work seem less attractive and the higher earnings may also increase the ability to pay for childcare making it easier to work FT. Or it may be that better-educated women are, on average, more career-oriented and PT work is seen (probably correctly given the evidence presented later in this report) as having an adverse impact on career prospects.

For all education groups, the proportion of women working PT has a similar lifetime profile though with some differences in timing. The PT proportion rises after labour market entry (rather later for better-educated women) peaking in the late 30s then falling slightly until the age of 50 and then rising again after the age of 60. The obvious explanation for this pattern is the constraint imposed by domestic commitments: women are much more likely to work part-time if they have children or other domestic commitments with the rise in the incidence of PT work occurring at later ages for better-educated women as, on average, these women are older when they have children.

Part-Time Working, Age and Household Characteristics

Figure 3.2 presents the lifetime profile for PT working for women in 4 different household structures – single and coupled, with and without dependent children. One notices a very large impact of dependent children – 60% of coupled women aged 30-40 with dependent children work PT compared to 10% for childless women. The impact of being in a couple is much smaller – lone mothers are less likely to work PT than other mothers especially when they are young (though it should be noted that the UK has a rather low –though rising - employment rate among lone parents – see Gregg and Harkness, 2003, for recent trends in the UK and international comparisons) but for older women in households without dependent children, coupled women are more likely to work part-time than single women. This last finding might be a generational effect with older married women being less committed to the labour market or it may be a continuation of PT work even after dependent children have left home that occurs because of habit or because years of PT work limit the quality of FT jobs available to them in a way that makes PT work continue to be the most attractive option.

Not surprisingly, it is not just the presence of children but their age that affects the likelihood of working part-time – Figure 3.3 plots the percentage working part-time against age of youngest child. Apart from single mothers with children aged less than a year, the older the youngest child the less likely is the woman to work part-time. For single mothers, the percentage working PT seems to fall markedly after the age of 5 while for coupled mothers there seems to be a more gradual decline. And the number of children is also important – women with 2 dependent children are 15 percentage points more likely to work PT.

Part-Time Working and Ethnicity

Table 3.3 reports the variation in the incidence of PT work across ethnic groups. The incidence of PT working is highest among white women (at 42%) and lowest among women in the black ethnic groups (around 25%) with the Asian groups in between with an incidence of around 30% (although Pakistani women have an incidence of 40%). It is important to remember that the employment rates of women vary across ethnic groups in the UK – the second column of Table 3.3 shows that employment rates are highest for white women, slightly lower for Indian, Black Caribbean and Chinese women and much lower for Pakistani and Bangladeshi women. The third column shows that almost 94% of working women in the UK are white: one consequence of this is that we have rather small samples of ethnic minority women in the data sets available to us and this prevents a detailed study of the PTPP among ethnic minorities.

Part-Time Working and Employer Characteristics

Part-time women are less likely to work in large workplaces with 55% of PT women working in establishments with more than 25 employees compared to 70% of FT women. They are equally likely to work in private and public sectors. There are very large differences in the industrial distribution of PT and FT women. Table 3.4 shows that PT women are less likely to work in manufacturing and financial services than FT women and much more likely to be working in distribution, hotels and restaurants.

Part-Time Working and Job Characteristics

On average PT women have been in their jobs for 6.4 years compared to 7.3 years for FT women. PT women are less likely to be in a permanent job with 7.4% of PT women being in some type of non-permanent job compared to 4.7% of FT women. 45% of these non-permanent jobs for PT women are for a fixed period or a fixed task, 22% are casual work and only 12% are agency temping. Table 3.5 documents the incidence of various flexible working practices among PT and FT working women. The incidence of flex-time is lower among PT than FT workers but term-time working agreements and job-sharing are more common. However, with the exception of term-time working agreements which almost 10% of PT women have, the incidence of all these arrangements is low. This conclusion is not consistent with other research findings, notably those from the second Work-Life Balance Study (WLBS) conducted in early 2003 (Stevens et al, 2004), that report a much higher incidence of flexible working practices. In part this may be because the WLBS question asks about the use of the practice not just currently (as the LFS question does) but with the current employer over the past year. But the differences seem too large to be explained by this fact alone – for example, WLBS reports almost 9% of women are job-sharing compared to 1.5% according to the LFS.

Part-Time Working and Occupation

One of the most striking differences between PT and FT workers is in the types of jobs that they do. Table 3.6 presents the distribution of occupation across the 9 broad categories of the 2000 Standard Occupational Classification for both PT and FT women. The most striking fact is that PT women are much less likely than FT women to be working as managers, professionals and associate professional and much more likely to be in personal service, sales and elementary occupations. For example 15.1% of FT women are managers compared to only 4.4% of PT women and 17.9% of PT women are in the elementary occupations compared to only 5.4% of FT women. This deficit of PT workers in the higher-level occupations and surplus in the lower-level occupations is (as later sections of this report demonstrate) very important for understanding the PT pay penalty so let us consider the occupational distribution of PT and FT women in more detail.

The occupational segregation of PT and FT women becomes even more marked when one looks at detailed occupations. The 2000 Standard Occupational Classification has approximately 370 occupations in its most detailed classification and Table 3.7 lists all the detailed occupations that account for more than 1% of employment either among PT women or FT women together with their average hourly wage (this is computed across all women, both PT and FT – see Table 4.5 below for pay differentials between FT and PT women within occupations). 10% of PT women are sales assistants with a further 7% as cleaners and 5% as care assistants – in total almost 1 in 4 PT women are in just these 3 occupations all of which

are low-paid. Although many of the important occupations for PT women are low-paid there are some that are better-paid – for example, 3.4% of PT women are working as nurses. The most common occupations among FT women have many of the same low-paid occupations though with smaller fractions of employment than among PT women but some better-paid occupations like nurses, teachers, some managers and administrative officers in government also appear in the list of important occupations for FT women.

Another way of looking at the same issue is to consider the occupations that have the highest and lowest proportions of PT workers. Table 3.8 lists the 10 occupations that most and least PT intensive together with the average hourly wage in those occupations. Only 1 of the 10 most PT intensive occupations has an average hourly wage above the median wage for all women and 7 out of the 10 have average hourly wages in the bottom quartile of female hourly earnings. In contrast 7 out of the 10 least PT intensive occupations have average earnings above the median for all women and even those with average earnings below the median are only slightly below.

Conclusion

This section has suggested that women working PT are more likely than FT women to be less-educated, older, white, in a couple with dependent children who are both numerous and young, to be working in small establishments in shops, hotels and restaurants, in a temporary job, with low job tenure and in low-level occupations. In the interests of clarity of exposition we have documented all of this using bivariate comparisons. In doing this there is a danger that the apparent effect of one characteristic is really the effect of some other that is excluded from the specific comparison being made. But a multivariate analysis that includes all the variables simultaneously in a statistical model of the determinants of part-time working leads to similar conclusions. Appendix A provides this detailed analysis for those who are interested.

4. The Current Level of the Part-Time Pay Penalty

Which Pay Penalty?

In investigating the economic situation of women working PT one needs a comparison group against which to benchmark the performance of PT women. The two most commonly used comparison groups are full-time men and full-time women. The pay gaps between PT women and the two possible comparison groups are related to each other as can be seen in the expression:

$$\frac{W_{F,PT}}{W_{M,FT}} = \frac{W_{F,PT}}{W_{F,FT}} . \frac{W_{F,FT}}{W_{M,FT}}$$

where $W_{F,PT}$ is the average level of pay among female part-time workers etc. This formula shows that the pay gap between part-time women and full-time men can be thought of as the pay gap between part-time women and full-time women multiplied by the pay gap between full-time women and full-time men. In this report we focus solely on the pay gap between part-time and full-time women as the formula makes clear that a discussion of the pay gap between part-time women and full-time men also makes it necessary to discuss the factors responsible for the pay gap between full-time women and men, an issue that has been

considered extensively elsewhere (see, for example, Anderson et al., 2001) and would result in a much larger enquiry.

But it is important to recognise that there are dangers in this. If, for example, we find that the PTPP has widened this could either be because the position of PT women has worsened or the position of FT women has improved or the position of FT women has improved faster than the position of PT women. It is necessary to have a clear idea about this as one might have a very different attitude towards policies that reduce the PTPP by improving the opportunities available to PT women or policies that reduce the PTPP by reducing the opportunities available to FT women.

Existing Studies

There is a small existing literature on the pay differential between FT and PT women. The earliest studies were for the US (e.g. Jones and Long, 1979; Blank, 1990) but there are also some studies for the UK. The first was probably Ermisch and Wright (1993) who used data from the 1980 Women and Employment Survey. In their data the average hourly earnings among PT women were approximately 85% of the average hourly earnings of FT women but much of this gap could be 'explained' by differences in education and work experience with an 'unexplained' PTPP in the region of 2-8%. Harkness (2002, ch3) is the most thorough study for the UK – she uses data from the 1980 Women and Employment Survey, the British Household Panel Survey and the General Household Survey. She documents the rise in the PTPP from 1980 to 1998 and finds that much of this can be accounted for by changes in the characteristics of FT and PT women.

Measuring the Part-Time Pay Penalty: Conceptual Issues

We start our analysis by a consideration of the current level of the PTPP. As shown in Figure 1.1 the raw gap in hourly pay between PT and FT women is large – PT women, on average earn 22% less than FT women according to the latest figures for 2003 from the LFS. But, it is not clear that this is a good measure of the pay penalty that would be suffered by an individual woman if she decided to switch from FT to PT status which is what we would like to be able to measure. For example, we have already noted that FT women are, on average, better-educated than PT women so that part of the overall PT pay penalty can be accounted for by this education differential. As a switch from FT to PT status cannot be expected to be associated with a change in education we need to 'adjust' the overall pay penalty for this difference in education between FT and PT women. Similar considerations apply to other differences in characteristics between FT and PT women noted in the previous section.

However, the characteristics that should be controlled for in getting an estimate of the pay penalty that would be suffered by a woman who switches from FT to PT work is not entirely clear-cut. A particularly pertinent example is 'occupation'. If a woman changes from FT to PT status a change in occupation may be necessary (we present evidence on this in Section 6). If this is the case then an estimate of the PTPP that controls for occupation will not be capturing an important aspect of the PTPP and will only, at best, provide an estimate of the PTPP if a woman switches from FT to PT status without having to change occupation something that is perhaps over-optimistic. At the same time an estimate of the PTPP that does not control for differences in occupation may exaggerate the true PTPP as part of the reason that FT and PT women work in different occupations is the differences in labour market experience they possess. We deal with this problem by presenting estimates of the

PTPP that both include and exclude occupation – it seems likely that the true PTPP lies somewhere between these two estimates.

Economists have developed a variety of techniques to adjust the raw pay differentials for differences in characteristics and we present several of them to investigate the robustness of our estimates of the PTPP. As they all give very similar answers, it does not seem to matter very much which is used. A much more extensive discussion of these different methodologies, our application of them and more detailed results is contained in Appendix B.

Measures of the Current Level of the Part-Time Pay Penalty from the LFS

Table 4.1 presents our estimates of the PTPP using data from the Labour Force Survey for 2001-2003[§]. Our sample is women aged 16-64 inclusive who are not in full-time education. We exclude those whose reported hourly wages are below £1 per hour or above £100 per hour. The first row headed 'Unadjusted PTPP' shows that the average hourly earnings of PT women are 22.1% less than the average hourly earnings of FT women. But, as explained above this cannot be used as an estimate of the PTPP that would be suffered by a woman moving from FT to PT work because it does not control for differences in the characteristics of PT and FT women. The rest of the estimates in Table 4.1 do this though in different ways. The second row presents an estimate that is based on assuming that the PTPP is the same for everybody but that controls for year, month, region, education, age, ethnicity, marital status, the number of children, the age of youngest child, job tenure, employer size and industry and, in the final two columns, occupation– we label this the Adjusted PTPP (Constant)[**]. The first column in the second row shows that when one controls for differences in characteristics between FT and PT women the PTPP falls from 22% to 11%. This halving of the PTPP occurs because PT women are less well-educated, they work in lower wage industries, they work in smaller workplaces and they are less likely to work in London (on the other hand, they are older which is associated with higher earnings). Although smaller than the unadjusted PTPP, this estimate is still quite large.

But, as the next two columns show the inclusion of occupation as additional controls makes a very large difference. In the second column we include the 9 broad occupational categories (that are listed in Table 3.6) and in the third column we include controls for the 370 detailed occupations in the SOC 2000 classification. Inclusion of the broad occupational categories causes the adjusted PTPP to fall to 3.3% and the inclusion of the narrow occupational categories causes it to fall to 2.5%. It is perhaps remarkable how much explanatory power is obtained just through the use of the 9 broad occupational categories. Although these estimates of the PTPP are significantly different from zero in a statistical sense they are rather small in absolute terms. The way to interpret this result is that, within occupations, the pay gap between PT and FT women is small. This is in line with evidence from other surveys e.g. Stevens et al (2004) finds that 74% of women say that their employer provides PT workers with the same hourly rate of pay.

[§] The start of the period is determined by the start of the use of the SOC2000 occupational classification and the end by the latest available data.

[**] For the more technically minded this simply involves estimating a linear regression with the log of hourly earnings as the dependent variable, the other controls on the right-hand side and a dummy variable for whether the woman works PT. The coefficient on this dummy variable is then converted from log to percentage points. More details can be found in Appendix B.

We have shown that occupational segregation of PT women into low-paid occupations can explain a very large part of the unadjusted PTPP[††]. The difficult question to answer (and one that we try to address in the sixth section of this report) is whether we see few women working PT in high-wage occupations because the women who are qualified to work in those occupations all choose to work FT or because these well-paid jobs are not available on a PT basis (and, if this is the case, whether there is a good reason for this practice).

The estimates in the second row of Table 4.1 assume that there is no variation in the PTPP something that is not necessarily the case. The final two rows of Table 4.1 present estimates of the PTPP that allow it to vary with the characteristics of the woman[‡‡]. Once we allow the PTPP to vary with the characteristics of the worker there is too much information in total to be digestible so it is conventional to summarize the results by an estimate of the PTPP for a 'representative' workers. By convention these are the average PT worker and for the average FT worker and we report results for these in the last two rows of Table 4.1[§§]. As can be seen the results are very similar both to each other and to the estimates based on the assumption that the PTPP is constant.

There are other important statistical issues surrounding the estimates presented in Table 4.1. For example, the statistical models used assume that the characteristics affect the average log hourly earnings in a linear way and this may not be the case. And the estimates assume that the decision to work FT or PT is independent of factors that are not controlled for in the determination of hourly earnings (i.e. is exogenous). Appendix B contains more discussion of these issues but our conclusion is that the estimates presented in Table 4.1 give the correct impression about the magnitude and source of the PTPP.

One other interesting question is the importance of different characteristics in accounting for the observed PTPP. Table 4.2 presents estimates using the approach where we allow the PTPP to vary by characteristics. In this approach one can evaluate the contribution of characteristics using either the returns to those characteristics for FT workers or PT workers. We report both in Table 4.2. The first row reports the unadjusted PTPP of 22.1%. The second row shows that differences in the characteristics of FT and PT workers (including occupation) can account for a gap of approximately 20%. By far the most important characteristic is occupation – this variable alone is responsible for approximately 70% of the accounted-for part of the PTPP. Education is the next most important followed by industry, employer size and region. Age works in the opposite direction: as PT workers are, on average, older than FT workers this factor tends to reduce the unadjusted PTPP.

Measures of the Part-Time Pay Penalty from the Workplace Employee Relations Survey

Although the LFS is a very valuable source of information on earnings and the characteristics of workers, information on employers is relatively sparse. For example, we do not have information on whether the jobs done by PT women have high levels of gender segregation

[††] It is worth noting that attempts to account for the pay gap between men and women are never as 'successful' as these results are in accounting for the PTPP. For example, the study of the UK gender pay gap by Anderson et al (2001) never managed to account for more than half of the unadjusted gap.

[‡‡] For the more technically minded these estimates are based on estimating separate linear regressions for log hourly earnings for PT and FT workers and then applying Oaxaca decompositions. More details can be found in Appendix B.

[§§] It is conventional to report these estimates for two 'representative' women as a crude check on whether conclusions are sensitive to the choice of the representative woman.

or are done primarily by FT and PT workers in the particular establishment where they work. This is potentially important because studies of the gender pay gap (e.g. Anderson et al, 2001) typically find that gender segregation is important.

To see whether these variables are important for the PTPP we turn to an analysis of the 1998 Workplace Employee Relations Survey (WERS), a survey of approximately 2000 establishments (with more than 10 workers) and approximately 25000 workers within them. Information is collected on the personal characteristics of the workers and on the characteristics of the workplace.

The unadjusted PTPP in the WERS data is 24.5%, slightly higher than in the LFS. Inclusion of controls that exclude occupation reduce this to about 12%, again similar to the LFS (this is the first column of the second row). The percentage of women in the job makes very little difference here suggesting that the crowding of women into certain jobs does not have much effect on the PTPP. Inclusion of broad occupation controls also has a very large effect in this data set reducing the adjusted PTPP to 3.4%, again similar to the LFS. One simple way to investigate the importance of firm characteristics is to look at the PTPP within firms (technically, this is what is called a fixed effect estimate). When controls for the specific firm are included the estimate of the PTPP falls further to 2.5% (this is the third column). This suggests that firm characteristics have a modest influence on the PTPP compared to the occupation done by women.

Taken together, the fact that the estimates in Table 4.3 are broadly similar to those derived from the LFS suggests that the lack of availability of certain types of information on workplace characteristics in the LFS is not a serious impediment to getting good estimates of the PTPP from the LFS.

Variation in the Part-Time Pay Penalty

Some of the estimates of the PTPP reported in Table 4.1 allow the PTPP to vary with characteristics but the practice of reporting an estimate for a representative worker obscures the fact that the variation in the PTPP is itself of some interest. One can see evidence of variation in the PTPP by comparing the contribution of different factors in Table 4.2 using the PT or FT coefficients. Using PT coefficients the contribution of education is a little smaller and the contribution of experience much smaller. This points to the fact that the returns to experience seem much lower for part-time women and that the returns to education are a little bit lower. The explanation for this is probably that part-time work carries little value in the labour market – a conclusion that is in line with other studies (see, for example, Dolton, Joshi and Makepeace, 20003).

Table 4.4 investigates in more detail variation in the PTPP by education. The first row presents estimates of the unadjusted PTPP for 4 different education groups. The unadjusted PTPP is larger for the less-educated being 17% for those with no educational qualifications and 13% for graduates. However, once one controls for other characteristics, the adjusted estimates of the PTPP seem larger for the highly-educated. For example, the adjusted (constant) PTPP once one includes education is 2.1% for those with no educational qualifications and 3.6% for graduates. However, these differences are quite small.

Table 4.5 investigates differences across different occupation groups estimating the PTPP in a selection of very specific occupations in which there are large numbers of both FT and PT

women. We report both the unadjusted PTPP and the adjusted PTPP assuming they are constant. In 5 of the 17 occupations reported in Table 4.5 there is a part-time pay premium and not a pay penalty although, once one includes controls a pay premium remains in only 3 of the 17 occupations and is only significantly different from zero in one of them (nursing auxiliaries and assistants[***]). Among the other occupations the largest adjusted part-time pay penalty is 5.3% among local government clerical assistants. The overriding impression from Table 4.5 is that, within occupations, the adjusted PTPP is small.

We also investigated whether there was any difference in the PTPP between public and private sectors. The differences were very small.

The Distribution of the Part-Time Pay Penalty

Attention so far has focused solely on the difference in average earnings between PT and FT women. But, the PT pay penalty might vary across the pay distribution. Harkness (2002) found that it was smaller at the ends of the pay distribution and largest in the middle. To investigate this Table 4.6 presents estimates of the PTPP at different points in the distribution. In line with the earlier conclusions of Harkness, the PTPP does seem to be larger in the middle of the distribution than at the extremes. However, after controlling for characteristics (including occupation) these differentials are all relatively small peaking at about 10% at the 25th percentile.

Alternative definitions of PT status.

All the estimates so far have been based on the self-assessment measure of PT status. We also provided some estimate using an hours-based measure. The comparison of the two is presented in Table 4.7. It does not appear to make much difference which measure is used.

We also explored whether there was a significant difference in the PTPP between women who are in 'long' PT jobs (working more than 16 hours a week) and 'short' PT jobs. We found no significant differences and we have not pursued this angle further.

Conclusion

The unadjusted PTPP is very large with the average PT woman having hourly wages that are 22% below those of the average FT woman. But, because the average PT worker and FT worker are so different this unadjusted figure cannot be used as an estimate of the pay penalty that would be suffered by a woman switching from FT to PT work. An adjusted estimate of the PTPP that does not control for occupation is about 11%. However this falls to 3.5% if occupation is controlled for. How one should interpret this importance of occupation is of vital importance. The fact that within occupations the gap in earnings between FT and PT workers is small suggests that women will not suffer a sizeable wage penalty if they can maintain their occupation while transferring from FT to PT status. But that is a big 'if': the evidence presented later in this report suggests that many women do not maintain their current occupation while changing their working hours and are forced to make a downward occupational move if they want to move from FT to PT work.

[***] This may be the result of the fact that many PT workers in this occupation are agency workers who are remunerated at a higher hourly rate than regular workers and should probably not be taken as a 'model' occupation for avoiding the PTPP.

5. Trends in the Part-Time Pay Penalty

Trends in PT Working

Figure 5.1 shows that there has been very little change in the proportion of women working PT in the past 20 years**,** during which the percentage has varied between 41% and 43% (see Rice, 1993, for earlier trends in part-time working). But, this picture of stability is somewhat misleading as more women are working now than 20 years ago so that a higher percentage of *all* women of working age are working PT than previously as well as a higher percentage working FT. Figure 5.2 presents the evolution of the fraction of all women who are working FT and the fraction working PT. It is quite likely that some women who previously worked PT are now working FT and some women who previously did not work for wages at all are now working PT.

Trends in the Part-Time Pay Penalty since the Early 1990s

Our earlier analysis primarily used data from the LFS for the period since 2001. To assess whether there have been any changes over time, we present estimates of the PTPP in the LFS using earlier data. As earnings data only started in the LFS in 1993 we cannot go back very far. Table 5.1 presents a comparison of the PTPP in the period 1993-1995 with that from 2001-2003 (these estimates are the same as those in Table 4.2 but are repeated for convenience). The unadjusted PTPP is 22.4% in 1993/5 and 22.1% in 2001/3. The adjusted PTPPs are also very similar in the two periods suggesting little change in the PTPP in the last 10 years. The fact that, within occupations, the PTPP was very small in the early 1990s, suggests that the Part-Time Workers Regulations that came into force in 2000 and ensured that PT workers could not be paid a lower hourly rate than FT workers doing the same job had little impact because this was already largely the case.

The bottom part of Table 5.1 shows the relative importance of different variables in accounting for the gap between the unadjusted and adjusted PTPP in the two periods. There is more change here: occupation and industry seem more important than in the past and education and employer size less important. But some caution is needed here: there is a change in the system of occupational classification with the introduction of SOC2000 that was so substantial that one cannot directly compare estimates in the two periods.

This conclusion of stability in the PTPP over the last 10 years is broadly in line with the evolution of the PT pay penalty as presented in Figure 1.1. But that picture also showed that, prior to the 1990s there was a big rise in the PT pay penalty that needs to be explained.

Longer-Run Trends in the Part-Time Pay Penalty

To analyse earlier trends the absence of earnings data in the LFS forces us to use another dataset – here we use the New Earnings Survey (NES). Measures of PT status are inevitably different in the LFS and NES. With the NES one has to use an hours-based definition of PT status as there is no self-assessment question and one cannot exclude students though the earnings of many students are probably fall below the National Insurance threshold and, hence, they do not appear in the sample. In addition the NES is known to under-sample those with very low earnings, most of whom will be PT. And many of the worker characteristics that are available in the LFS are not available in the NES – in the analysis that follows we use only age, industry and occupation. There do seem to be differences in the estimates of the

levels of the PTPP in the LFS and NES (only some of which can be explained by the different definitions of PT status) with the unadjusted estimate for the NES being rather higher than for the LFS (one can see this in Figure 1.1). But, in spite of these difficulties it seems likely that the NES gives an accurate picture of trends in the PTPP.

The overall trend in the PTPP for the NES has been presented in Figure 1.1. This shows a dramatic growth from 14% in 1975 to 28% in 1995 after which there is not much of a noticeable trend. Given that we have already shown that, for LFS data, one can explain a large part of the pay penalty using various characteristics, notably occupation, one might wonder whether this is true over time. Figure 5.3 plots the unadjusted PTPP and the adjusted PTPP once one controls for age, industry and occupation. What is most striking is that the adjusted PTPP shows very little change over time being around 10% throughout the period 1975-2001. This estimate of the adjusted PTPP is larger than that found in the LFS, a result that can partly be explained by the fact that some important variables (education, employer size and household characteristics) are not present in the NES but would also seem to be partly the result of the fact (reported earlier) that the estimated PTPP does seem larger in the NES than the LFS even when comparable definitions of PT status and the same control variables are used.

The Changing Contributions of Age, Industry and Occupation

The implication of Figure 5.3 is that a growing part of the unadjusted PTPP can be accounted for by differences in age, industry and occupation between FT and PT women. The natural next question to ask is which of these variables are the most important. The answer is contained in Figure 5.4 – here we decompose the accounted-for part of the unadjusted PT pay penalty into the separate components due to differences in age, industry and occupation (using the coefficients from the FT wage equation). As was the conclusion for the analysis of the current pay penalty, occupation is far and away the most important of these three variables. Furthermore, the contribution of occupation has been rising over time – in 1975 occupation could account for 10 percentage points of the unadjusted pay penalty but by 2001 this had risen to almost 20 percentage points. Changes in the age distribution of FT and PT workers also contribute 5 percentage points to the rise though this effect is much smaller if one uses the PT coefficients (because, as noted in the previous section, the return to experience is lower for PT women). Industry is and always was relatively unimportant.

There are two possible explanations for why the contribution of occupational segregation to the PT pay penalty has risen through time. It could be that occupational segregation itself has risen so that the jobs done by FT and PT women are more different now than they were in the past. Or, it could be that the wage rewards attached to different occupations has changed in such a way that a given level of occupational segregation leads to a larger pay penalty now than in the past. In fact, we know that this is what has been happening in Britain over the past 25 years – there has been a big rise in wage inequality (see, for example, Machin, 2003) and a large part of this has been a rise in the earnings gap between those at the top e.g. managers and professionals and those at the bottom of the occupational pay ladder e.g cleaners and shop assistants.

One way of disentangling these two explanations is to keep the occupational pay structure constant at its value in a particular year and then just change the occupational distribution. This is done in Figure 5.5. The line labelled ‘Current Year Coefficients’ is the total contribution year-by-year of occupation to the overall pay penalty – this is the same as the

line showing the contribution of occupation in Figure 5.3. Changes from year to year include both changes in the occupational segregation of FT and PT women and changes in the pay of different occupations. The line labelled '1975 Pay Structure' keeps the occupational pay differentials at their 1975 level so that changes year-on-year just represent changes in occupational segregation[†††]. The PTPP would be about 5 percentage points lower in 2003 if we had kept the 1975 pay structure so that one half of the rise in the overall contribution of occupation to the PTPP is the result of changing occupational segregation and about half is the result of the changing occupational pay structure. As a check that this conclusion is not sensitive to the use of the 1975 pay structure we also show in the line labelled '2001 Pay Structure' what happens if we use the 2001 pay structure. The conclusions are very similar: the PTPP would have been 5 percentage points larger in 1975 if the occupational pay structure had been what it is today.

So, a substantial part of the increase in the PT pay penalty is a by-product of the changes in the UK labour market that have led to more wage inequality. These changes have occurred across the whole labour market, are not specific to women and not specific to part-time status. But they do have the effect of leading to a sizeable rise in the PT pay penalty. There is a parallel here to the hypothesis of Blau and Kahn (2003) who argue that most of the variation in the total gender pay gap across countries can be ascribed to differences in the overall level of pay inequality and are not the result of gender-specific factors though they do have implications for pay differences by gender.

But the changes in the occupational distribution of PT and FT work do explain part of the rise in the pay penalty. Table 5.2 explores this in more detail, giving the occupational distribution of PT and FT workers in 1975 and 2001 using 9 broad categories, the change over this period and the difference in the change between FT and PT workers. So while the proportion of workers who are managers or professionals has risen for both FT and PT workers over this period, the rise is much greater for FT workers and this will have acted to widen the pay penalty. Similarly there has been a very large rise in the share of PT workers in sales and personal service occupations. There are some changes in the opposite direction**,** notably a very large fall in the share of PT workers in the other occupations that tend to be low-paid. Table 5.2 suggests an occupational up-grading of FT women over this period that is much greater than that occurring among PT women although even PT women are, on average, in higher-level occupations now than they were in 1975.

All of the analysis so far has suggested that the single most important factor in understanding the PT pay penalty is occupational segregation and we would go a long way in understanding the PT pay penalty if we could understand why it is that so many PT workers are in low-paid occupations and so few in high-level occupations and/or managers. The next section tries to shed some light on this.

6. Explaining the Job Segregation of PT and FT Workers

Our previous analysis showed that there are very few PT women in senior, especially managerial, jobs and many in low-paid occupations and that this occupational segregation can explain most of the difference in average earnings between FT and PT women. This occupational segregation can partly be explained by differences in education but only in part.

[†††] Note that, by construction the two lines must meet in 1975.

Why are there so few women working PT in high-level occupations? Very crudely, there are three broad types of explanation. First, it may be that all of the women with the requisite skills and experience to do high-level jobs choose to work FT rather than PT. If this is the case then there is no particular problem with the occupational segregation we observe (though one might be concerned with the work-life balance issues this scenario poses). Secondly, it may be that the women with the necessary skills to do the high-level jobs and who want to work PT choose to do a lower-level occupation even though they could retain the higher-level one. This might appear a curious choice but could emerge if, for example, having children caused some women to put more emphasis on family life and less on career. Thirdly, it may be that high-level occupations are simply not available on a PT basis so that women who are qualified to do these jobs but who would like, in an ideal world, to work PT in these jobs are forced to choose between working FT in the high-level job or working PT in a lower-level occupation. In the last case the skills of women who work PT are being under-utilised and this waste of human capital could be a source of concern. If this is the situation we need to ask whether there are good reasons why certain jobs cannot be done on a PT basis or whether it is some combination of inertia, lack of imagination and prejudice on the part of employers.

This section presents evidence pertaining to these issues though the precise elements of choice and constraint that are so important to the hypotheses described above are, ultimately, impossible to disentangle.

Changes in Hours Status, Employers and Occupations

Research in the US (e.g. Altonji and Paxson, 1988, 1992) and the Netherlands (Euwals, 2001) has documented that workers who want to change their hours of work often have to change employers to do so[‡‡‡]. Table 6.1 presents some evidence on this from the LFS.

Table 6.1 shows the rates of transition between FT and PT status and vice versa. The first row tells us that 2.8% of women who are currently working FT were reported as working PT three months ago. For women who are currently working PT, 3.8% were reported as working FT three months ago. Also of some interest are the flows into FT and PT employment from workers who were not in employment 3 months ago. The second and third rows show that 1% of women who are currently working FT were unemployed three months ago and 0.9% were inactive. For those women currently working PT 1.5% were unemployed and 4.2% inactive three months ago. So, while flows into FT status are more likely to come from women who were previously working PT, flows into PT status are more likely to come from non-employment. Other research (e.g. Gregg and Wadsworth, 2000) suggests that these entry jobs tend to be badly-paid. For individuals who are not in employment but who have worked in the past 8 years, the LFS also reports previous FT/PT status. Table 6.1 also reports the previous hours status of entrants into PT/FT work from non-employment. The most striking fact is that over 80% of entrants into FT work from non-employment were also FT in their previous job and over 80% of entrants into PT work from non-employment were also PT in their previous job.

Although the figures in Table 6.1 tell us about the labour market transitions between FT and PT work and vice versa, changes of jobs and occupations are also of some interest. This is

[‡‡‡] This is in contrast to the standard labour supply model of economists in which workers have freedom to alter hours of work at will within jobs.

reported in Table 6.2 where we report the fraction of women who are changing their employer and/or occupation by whether they have changed their hours status or not (by which we mean a shift from FT to PT status or vice versa). One can see that women who change from FT to PT status and vice versa are much more likely to have a change of employer and/or occupation than are women who maintain their hours status. 17% of women who have shifted from FT to PT status have changed employer compared to 3.3% of those who remained FT. Of those women who have moved from FT to PT status and changed employer 73% have changed their narrowly-defined occupation and 57% their broadly-defined occupation. For women remaining in FT status but changing employer the figures are 50% and 35%.

But, even if women manage to make the transition from FT to PT status without changing employer, they are still more likely to change occupation than women who remain in FT status. 12% of women moving from FT to PT status change narrow occupation compared to 7% of women remaining FT.

It should be emphasized that moves from PT to FT status (and vice versa) also tend to be associated with changes in employer and occupation. This evidence suggests that particular jobs with particular employers tend to be labelled as either FT or PT, and, to change hours status, many women have to change employers. But, although these figures are suggestive they contain no information about the direction of occupational moves.

The Direction of Occupational Mobility Among FT and PT Workers

The direction of the occupational moves documented above is of some interest as, if women are managing to move up the occupational scale when they move from FT to PT status this is of much less concern than if they are moving downwards. With 370 narrow occupations it is hard to summarize all the occupational moves and, indeed, to rank all the occupations on a one-dimensional scale. So what we do is assign to each occupation the average wage among women in that occupation and then work out the change in the occupational wage associated with occupational moves. So if, for example, a woman moved from being a nurse (average wage £10.06 per hour) to being a care assistant (average wage £5.41 per hour) – and we do see some transitions like this in our data – this would be recorded as a 46% fall in the average occupational wage. While this approach is somewhat crude (for example, Houston and Marks, 2003, show that much occupational down-grading suffered by women returning to work PT after maternity leave is quite subtle and not well-captured by their occupation) it does have the advantage of being able to summarize a large amount of information in a few numbers.

The results are reported in Table 6.3. In the first column we report results for all working women and in the second column for graduates as occupational down-grading may be more serious for them (as it is more likely they were initially in a well-paid job). First, let us consider the results for all women.

In the first row of Table 6.3 we regress the log of the occupational wage on controls for characteristics and a dummy for part-time status. The reported number shows that, PT women are in occupations which, controlling for other factors, pay 13.8% less than the occupations in which FT women find themselves. This estimate is in line with the overall contribution of occupation to the PTPP penalty that we reported above. The rest of Table 6.3 provides some evidence about the source of this occupational segregation.

All employment spells must start with an entry from non-employment and the second panel of Table 6.3 presents some information for those women entering employment from non-employment. The second row provides an estimate of the part-time occupational pay penalty for those entering employment that is 14.4%, slightly above the overall PT occupational pay penalty. Although this estimate of the occupational PTPP is very large it is vulnerable to the criticism that FT and PT women entering employment have very different levels of labour market experience and this is partly a source of the observed PTPP. But, as the LFS contains information on previous occupation as long as the individual has worked within the last 8 years, we can look at occupational mobility across a spell of intervening non-employment – if a woman once had a particular job then it is not unreasonable to think she might be able to do it again. The third row of Table 6.3 presents an estimate of the occupational PTPP that is based on the change in the occupational wage. One can see that returning to work part-time means women suffer a wage penalty of 7.5% compared to those who return to work FT after controlling for previous occupation. This is lower than wage penalty reported in the previous row implying that those returning to work PT tend to have previously been in relatively low-paid occupations compared to those who are returning to work FT. But, the fact that there is still a sizeable pay penalty suggests that returning to work PT is associated with downward occupational mobility[§§§]. This is in line with other studies (Martin and Roberts, 1984; Joshi and Hinde, 1993; Blackwell, 2001; Houston and Marks, 2003) though, with the exception of Houston and Marks (2003) those other studies use data that is now quite old.

One might still argue that the estimate of the occupational PTPP in the third row of Table 6.3 does not control adequately for previous labour market experience. So, in the fourth row we restrict the sample to those who previously worked FT – the occupational PTPP is now higher at 9.9%. One might further argue that this does not control for the length of time since the previous job was left (this might be important because skills might atrophy over time). So, in the fifth column we restrict the sample to women who previously worked FT less than 12 months ago so that the skills were very recently applied. The estimate implies that those returning to work PT suffer an occupational PTPP of 7.8% suggesting that their skills are not being fully used. As a further check on this conclusion the sixth row of Table 6.3 uses a sample of those women whose were PT in their previous job. The estimate of 11.2% implies that those in this group who return to work FT do so in occupations that on average pay 11.2% more than the occupations of those who return PT.

But what happens within employment spells is also important so the third panel of Table 6.3 reports some estimates for those women who were in employment both currently and 3 months ago. In the seventh row the sample is those women who were in FT employment 3 months ago and the estimate implies that those women who are now working PT suffer an occupational PTPP of 2%. This includes women who both change employer and those who do not. As was seen in Table 6.2 we know that the women who have changed hours status are more likely to have changed employer. The eighth row shows that among those women who were previously FT who have changed employer and have moved to PT status there is an occupational PTPP of 8.9% again suggesting that these women are no longer using all their skills. In contrast, for those women who change hours status without changing employer there is a very small pay penalty of 0.2%. This suggests that one of the ways to avoid suffering a PTPP is to change hours status without changing jobs. The ninth, tenth and eleventh rows investigates the impact of moves from PT to FT status. The ninth row shows

[§§§] This estimate is conditional on those who report previous occupation that tends to be those who are returning to work after relatively short spells. But, as this group has a similar part-time pay penalty to those who do not have this information, the bias is likely to be rather small.

that those moving from PT to FT status get an occupational pay premium of 4.4%. For those women who make the transition from PT to FT status without changing employer there is a pay premium of 2.1% while for those who change employer it is 8.1%.

Finally, we might be interested in changes in occupation among women who do not change hours status and who do not change employer. As most of these moves are in an upward direction, this can be thought of as a promotion. The twelfth row of Table 6.3 shows that PT workers are 0.1% less likely to change occupation than FT workers and the thirteenth row shows that, when they do change occupation the growth in occupational wages is 1.2% less for PT workers. This suggests that women are less likely to be on a career track within employers.

Table 6.3 has presented evidence that there is under-utilization of skills among PT workers. Perhaps the most telling pieces of evidence in this regard is that among women who move from FT to PT work with a change of employer there is an occupational pay penalty of 8.9% and for those who have worked FT in the past 12 months but who return to work PT there is an occupational pay penalty of 7.8%.

If there is occupational down-grading and under-utilization of skills we might expect this to be more marked among highly-skilled workers for the simple reason that they have more to lose. Consequently, the second column of Table 6.3 repeats the same exercises for graduates. One sees the same patterns as for all women but what is very striking is that the occupational PTPP for graduates entering employment from non-employment are very large – of the order of 17% rather than the 8% found for all women. This does suggest a more acute problem with under-utilisation of skills among high-skill women.

All of the differentials analysed in Tables 6.1 to 6.3 act to concentrate PT workers in low-wage occupations. They are more likely to be recent entrants from non-employment, they are less likely to have long spells of employment, they may be forced to make changes of employers and downward occupational moves if they want to work PT and they are less likely to be promoted if they remain with their current employer. And the fact that certain occupations do not seem to be available on a PT basis is also likely to crowd those women who want to work PT into lower-level occupations, potentially lowering the wages in those occupations still further.

Women with Nursing and Teaching Qualifications

The evidence presented in Table 6.3 relies on rather indirect measures of skills, simply assuming that women who have done a particular job in the past can continue to do it in the future. For some specific occupations we can get a clear idea of whether a woman has the necessary skills to work in that occupation and then we can see where these women are actually working. The two clearest examples are perhaps teaching and nursing, both of which require specific qualifications information on which is contained in the LFS. Table 6.4 investigates the jobs being done by employed women with teaching or nursing qualifications PT and FT. In the first two columns one can see that among women with a teaching qualification who are working 71% of those working FT are working as teachers but only 56% of those working PT. And, among those working FT 9.5% of women with a teaching qualification are working in equivalent or 'higher'-level occupations compared to only 4.7% of those working PT. The consequence is that 38.5% of women with a teaching qualification who are working PT are working in lower-level occupations – 12% in associate professional

jobs, 10% in clerical jobs, and 9% in personal services. There does seem to be under-utilisation of their skills.

Among those with a nursing qualification the third and fourth columns of Table 6.4 shows that the proportion working as health and social welfare associate professionals (the group that contains nursing) is very similar for both those working FT (63%) and PT (64%). But there are big differences in the jobs being done by those who are not working in health. Among qualified nurses who are working FT and not as nurses, we see 19% in higher-level occupations and 16% in lower-level occupations. But among qualified nurses who are working PT there are 8.5% in higher-level occupations and 23% in lower-level occupations with 14% in personal service occupations. Again there seems to be under-utilisation of skills among qualified nurses who work PT.

Why Are Good Jobs Not Available on a PT Basis?

We have presented evidence that women who are working PT are often not making full use of their skills and experience. There are a number of possible reasons for this reflecting the elements of choice and constraint that may be important. First it may be that, for some reason, women choose to take a lower-level occupation when working PT even though the high-level job would be available on a PT basis. Or it may be that the constraint of working PT limits the distance women are prepared to travel to work because travel-to-work is a fixed cost (and PT women do have lower commuting times than FT women) restricting the range of jobs available and resulting in under-utilization of skills (this argument could only work for women who work fewer hours per day rather than those who work fewer days per week). Or it could be that employers simply refuse to offer certain jobs on a PT basis. In turn there may be good reasons for this or it may be the result of prejudice?

A number of arguments have been put forward in the economics literature for why there may be a pay penalty attached to PT work. For example, Barzel (1973) argues that there are set-up costs in many jobs and productive work only starts once these set-up costs have been met. As PT workers then spend a lower proportion of their time at work on productive tasks, it is argued that their average hourly productivity and hence their wage will be lower. This argument would seem to apply best where there are daily set-up costs though this then limits the applicability of the argument to those PT workers who work fewer hours per day and not those who work fewer days per week. And, as we have seen that there are very small pay differences between PT and FT workers within occupations, this would also seem to suggest that this argument is not that important in practice.

One type of set-up costs is the fixed costs of hiring, training and administering workers. A PT worker probably costs as much as a FT worker to train or to hire or to administer, but the number of hours worked over which an employer can get a return on these costs is lower. As a result, employers will only be prepared to pay PT workers lower wages than FT workers or, if they are forced to pay similar wages, they will be more likely to employ FT workers in these types of jobs. Montgomery (1988) provides evidence for this effect. As high-level jobs typically require more training and are more costly to fill, this could explain the deficit of PT workers in high-level occupations. This view means that we would expect employers to look more favourably on existing workers who want to shift from FT to PT work (because the fixed costs of hiring and training have already been paid) than on hiring workers who want to be PT from the start.

All workers work with capital that costs money for the employer to provide and employers need to generate a return on capital equal to that available elsewhere in the economy. As capital is not being used in a productive way when workers are not at work, PT workers may not earn as much as FT workers if the utilization rate of the capital they work with is lower. Whether this is the case or not depends very much on the particular employer – capital can be shared among workers and, to the extent that it is, this will reduce the importance of this effect. And there are forces that go in the opposite direction. In many service occupations e.g. shops, restaurants, bars and personal services, productive work can only be done when customers are present. FT workers may be at work at times when there are very few customers reducing their productivity. If PT work can be targeted on peak times in customer demand one might expect hourly earnings to be higher among PT workers than FT workers.

Coordination costs also have potential to explain why PT workers may receive lower hourly wages than FT workers and why certain types of jobs may only be available on a FT basis. For example, a manager may have to give verbal instructions to workers on what to do – if there is one FT worker these instructions need only be given once while if there are two PT workers they may have to be given twice. And if the job of supervising some workers is split between two PT managers they may have to spend time communicating with each other about the problems they have had – this liaison will, again, cost money. And if groups of workers need to meet to discuss problems this is easier if all the workers are working FT because it may be easier to find a time when they are all in the office. Of course, there are often ways around these problems with a little imagination and it may be that inertia is as important an obstacle to making certain jobs available on a PT basis than any insurmountable problems to the organization of work posed by PT workers.

Which, if any, of these effects are important in practice? We do have some evidence on employer attitudes to PT working (and other flexible working practices) though this is an area where more research is needed. For example, the 2003 Employer Work-Life Balance Study (Woodland et al, 2004) provides a wide range of information on employer attitudes. They find that employers are generally supportive of the desire of workers to balance life and work primarily because they think this leads to a more contented and productive workforce. But there is evidence that employers do make it difficult for women to change from FT to PT work. For example, Woodland et al (2004) report that 60% of employers would expect to allow a woman returning from maternity leave to shift from FT to PT work and 65% of these would allow this with the woman retaining their previous job and seniority. These figures imply serious problems for women wanting to shift from FT to PT work when returning to work after maternity leave – 40% would be forced to change employer and another 20% would be forced to accept a lower-status job. And Woodland et al (2004) show that employer attitudes towards women returning after maternity leave are the most favourable – for other women fewer employers reported being likely to be so accommodating. The reasons given by employers were almost exclusively related to business considerations.

Another study with relevant evidence on the attitudes of British employers to PT working is the case study research reported in Casey, Metcalf and Millward (1997). 24 employers in a range of sectors were interviewed about their attitudes to PT working as part of a wider investigation into their use of flexible labour. Their study makes it clear that employers do tend to label certain jobs as available or unavailable on a PT basis and conclude that "perceived advantages and disadvantages of a particular working-time practice are affected not only be objective facts but may also be affected by prejudice" (p119). Employers tended to see advantages in using part-time workers in tasks where workload varied over the course

of a working day (e.g. in shops), where there was not enough work for a FT worker and in making their jobs more attractive to women. However, employers also saw disadvantages in fixed administrative costs, higher rates of labour turnover, lower flexibility in working hours and the need in professional and administrative jobs the need to hire more people and the costs of liaison among them. This last factor might be thought to be especially pertinent to the lack of PT managers.

One way of getting some idea of the factors at work is to look at the relationship between hours worked and the fraction of managers who are PT – this is done in Figure 6.1. One sees that there is a marked rise in the proportion around 35 hours a week – among those working around 30 hours a week only 6.6% are managers but among those working around 40 hours a week 17.4% are. It is hard to rationalise such a discontinuity as the result of a rational policy on the part of employers about 'managers must work 35 and not 34 hours a week' – it is more likely to reflect a blanket perception that 'this job cannot be done on a PT basis'.

Conclusion

There is evidence of a lack of flexibility in hours within jobs so that women who want to work fewer hours often have to change employers and/or occupation in order to realize those desires. Furthermore these changes tend to be associated with downward occupational mobility that is particularly large for graduates. This represents not just a cost for the women themselves but a cost for the economy as a whole as it implies that the skills of many PT women are not being fully utilized. The net effect is that one sees very few women working PT in managerial and professional jobs. Although there are some reasons for why it may be more difficult to make such jobs available on a part-time basis, it may also be that there is a measure of inertia and prejudice involved. More research is needed on why so few good jobs seem to be available on a PT basis.

7. International Comparisons of the Part-Time Pay Penalty

The experience of other countries is of considerable interest in determining whether the UK situation of a large PTPP that is primarily the result of occupational segregation of FT and PT workers is unique and, if it is not, to try to identify any policies pursued in other countries that might usefully be applied to the UK.

The comparative part of the project uses data from the European Community Household Panel Survey (ECHPS). This is a household-based panel survey, containing annual information on a few thousands households per country. The ECHPS has the advantage that it asks a consistent set of questions across the 15 members of the pre-enlargement EU.[****] The Employment section of the survey contains information on the jobs held by members of selected households, including whether they work PT and why. Several indices of job satisfaction are also reported, both overall satisfaction and satisfaction with specific job attributes.

[****] The initial sample sizes are as follows. Austria: 3,380; Belgium: 3490; Denmark: 3,482; Finland: 4,139; France: 7,344; Germany: 11,175; Greece: 5,523; Ireland: 4,048; Italy: 7,115; Luxembourg: 1,011; Netherlands: 5,187; Portugal: 4,881; Spain: 7,206; Sweden: 5,891; U.K.: 10,905. These figures are the number of household included in the first wave for each country, which corresponds to 1995 for Austria, 1996 for Finland, 1997 for Sweden, and 1994 for all other countries.

Consistently with the previous analysis on LFS data, we use a measure of PT status based on self-assessment in our analysis on European data. It should be noted however, that such information is missing for a relative large number of observations in countries that switched from the ECHPS sample to national surveys during the ECHPS sample period, namely the U.K, Germany and Luxembourg. For these countries we complement the information on self-assessed PT status, whenever missing, with information on the number of hours worked. We thus include among part-timers those for whom the self assessed PT status is missing and the number of weekly hours worked is lower than 30 (25 for teachers).

All evidence that follows is based on female employees aged 15-64 not in full-time education. As the sampling procedures adopted in the ECHPS are not necessarily consistent across countries and, specifically, they changed during the survey period for the UK, Germany and Luxembourg, the evidence reported here is constructed using the sample weights given in the survey.

What Type of Women Work Part-Time in the EU?

Table 7.1 presents data on the percentage of part-time work in total employment as well as other indicators of the labour market position of women in the EU countries. The first piece of evidence that stands out in column 1 is that the incidence of part-time work varies substantially across European countries, going from just over 50% in the Netherlands to around 10% in Portugal, Greece and Finland. At the risk of some over-simplification there are three broad groups of countries. In the Nordic countries female labour force participation is very high but most of these women are working full-time and the incidence of part-time work is quite low. In the northern and central European countries (including the UK) female labour force participation is somewhat lower but there is a much higher incidence of part-time work. Finally in the southern European countries female labour force participation is low and the incidence of part-time working is also low. Not all countries fit neatly into these categories – Portugal seems closest to the Nordic countries in many ways – but this classification is useful to bear in mind.

Except in Scandinavia, where parental leave legislation and well-developed child-care provisions may allow mothers to combine family tasks and FT work, there seems to be a trade-off across countries between the share of women working FT and female labour market participation. In this perspective it should be noted that the UK has both one of the highest female participation rates and one of the highest PT employment rates in the EU.

Tables 7.2 to 7.7 present descriptive statistics on what type of women work PT in the EU and why. With only a few exceptions, part-time incidence increases with age (Table 7.2), especially in countries with a relatively large share of part-time jobs, such as the UK, the Netherlands and Ireland, and decreases with both educational qualifications (Table 7.3) and occupation (Table 7.4). Interestingly, in the UK and the Netherlands part-time jobs are particularly used in two of the broad occupations considered, namely service and sales workers and elementary occupations, where the share of part-time work for women is above 60%. Although the ECHPS does not allow as detailed a classification of occupations as the LFS and the NES, Table 7.4 confirms that other countries with large numbers of PT workers also have high degrees of occupational segregation and this experience is not unique to the UK. The deficit of PT workers in high-level occupations, notably managers, seems to be somewhat weaker in the southern European countries with low levels of female labour force participation. As mentioned before one must make a distinction between countries in which a

low occupational segregation between FT and PT women is the result of few opportunities for good jobs being available even to FT women and those in which it is the result of good opportunities being available to PT women. For this reason Table 7.5 presents the occupational distribution of employment among FT and PT women separately. This shows that the relatively good occupational position of PT relative to FT women in the Southern European countries is more because these countries have very few FT female managers than because they have large numbers of PT female managers. In Table 7.5 the UK stands out as having the highest proportion of FT female workers as managers though it does not stand out as having lots of PT female workers as managers.

Looking next at the household structure of employees, Table 7.6 shows that both marriage and the presence of children in the household increase the probability of a woman working part-time, and this effect is stronger in the U.K, Germany, Ireland, and especially in the Netherlands, than elsewhere. In other words, the very high part-time incidence in a few northern or central European countries is associated with women's domestic commitments. Single women without children seem to work relatively more similar hours across Europe than those married and/or with children.

The use of part-time work for combining paid work and family or other commitments should be associated with a lower incidence of involuntary part-time work. We would therefore expect that in countries where domestic commitments explain much of the incidence of part-time work among women, PT working women are less likely to consider themselves as involuntary part-timers. Information on why women hold part-time jobs is presented in Table 7.7, which shows that between a half and 80% of female part-timers in Germany, the Netherlands, Belgium, Luxembourg, Austria and Ireland work shorter hours in order to care after children or other family members. This proportion falls to less than one third in southern European countries, where the most frequent reason why women hold part-time jobs is because they could not find a full-time one.

The picture that emerges from these pieces of evidence can be summarized by saying that in northern and central Europe women with children want to work and tend to work part-time so that PT work appears to be a voluntary choice for most women in that situation. On the contrary, in southern European countries (including France) where fewer women (and especially women with children) want PT work, the incidence of involuntary part-time work is higher. The UK seems to fit quite well in the northern European model, with a very low incidence (6.7%) of involuntary part-time.

Although there are differences, the general pattern of PT working among in the EU countries is similar to the UK. PT women are more likely to have lower levels of education, to be married, to have children and to be in low-level occupations.

The Part-Time Pay Penalty in the EU

To assess the part-time pay penalty (or premium) in the EU we use specifications of wage equations that are as comparable as possible to those estimated earlier using the UK LFS data. However, due to data limitations and to the relatively small sample size of the ECHPS, the set of controls used here is more limited than that used for the UK analysis.

In particular, we exclude both job tenure and employer size from the estimated wage equations. The information on the start of the current job is unavailable for 22% and long job

spells are under-represented. For this reason we chose not to use information on job tenure rather over-represent short job spells in our sample. The information on employer size was initially collected for workers in the private sector only. After the initial wave, the employer size was collected for public sector workers as well, but as most information on the current job is only collected when a worker changes job since the previous year, this variable is missing for most public sector employees. We thus chose to retain public sector employees in our sample and not to use information on employer size.

Table 7.8 presents evidence on the part-time pay gap, based on alternative specifications of the wage equation. Column 1 reports the unadjusted PTPP. The UK stands out here with the largest unadjusted PTPP of 23.5%, similar to our earlier estimates on LFS data. Outside the U.K., the PTPP is everywhere below 20%, and in most cases below 10%. It is noticeable that there is no significant pay penalty in Belgium and Austria and actually a pay premium to part-time jobs in Germany, Italy and Greece.[††††]

As we use a subjective definition of part-time work, we do not further distinguish between "short" and "long" part-time hours. On this issue, work by Hu and Tijdens (2003) shows that short and long part-time carry similar pay penalties with respect to full-time work in the U.K. (this is in line with our earlier LFS results), while in the Netherlands there is no significant pay gap between long part-time work and full-time work but there is one between long PT jobs and short PT jobs.

The estimates in column 2 control for a number of worker and job characteristics and those in column 3 also control for occupation (19 categories). The estimates of the PTPP in both columns assume there is no variation in the PTPP across individuals. As more controls are included, the estimated PTPP is reduced, implying that part-time workers tend to have relatively low wage characteristics such as lower education, and to be over-represented in low wage sectors or occupations. Specifically, the simple inclusion of occupation dummies in column 3 roughly halves the estimated part-time pay gap in several countries. However, as a smaller set of controls are used here than in the UK analysis on LFS data, the adjusted estimate of the PTPP remains larger than the estimates reported in the earlier part of the report. In the ECHPS data the UK still stands out as the country with the largest part of the PTPP that cannot be accounted for by differences in characteristics between PT and FT women.

The estimates of the PTPP in columns 4-7 of Table 7.8 are based on a statistical model where the PTPP is allowed to vary with the characteristics of the woman. As in Section 4 we present estimates of the PTPP for the average FT and PT woman, and we also present estimates that both exclude (columns 4 and 5) and include (columns 6 and 7) controls for occupation. These estimates of the PTPP are quite similar to those based on the assumption of a constant PTPP.

[††††] It should be noted however that our estimates of the part-time pay premium in Germany contrast with the findings of related work by Bardasi and Gornick (2003) on data from the Luxemboug Income Study and Gustafsson et al. (2003) on GSOEP data. Both studies tend to find a penalty to part-timer work in Germany. The difference between our and their findings may be due to slight differences in specification (for example Bardasi and Gornick control for women's endogenous selection into part-time jobs) and inherent data differences (if hours of work are measured with error and measurement error may differ across data sources, this may lead to different estimates of the part-time penalty in hourly earnings).

The estimates in Table 7.8 suggest that the reason why the UK has the highest unadjusted PTPP in Europe is partly because FT and PT women are very dissimilar (in terms of earnings) in the UK (one can get an idea of how important this is by taking the difference in the estimates of the PTPP in columns 1 and 3 of Table 7.8) and because it has the largest adjusted PTPP (as one can see by looking at the estimates in the third column).

There are two possible reasons why the FT and PT women should be most dissimilar in the UK. The first is that the differences in the characteristics between FT and PT women really are the largest in the UK and the second is that a given level of dissimilarity in characteristics translates into a higher PTPP because of the high level of wage inequality in the UK. So if, for example, the pay gap between managers and cleaners is largest in the UK then a given level of occupational segregation will result in a higher observed level of the PTPP in the UK.

Table 7.9 explores this issue in more detail. Consider, first, the top half of the table. The first column reports the unadjusted PTPP. The second column then reports the part of this unadjusted PTPP that can be explained by the different characteristics of FT and PT women using the returns to different characteristics observed for FT women observed in that country. This shows that the UK is fourth in the EU behind Portugal, Spain and Ireland in terms of the difference between FT and PT women. The third column then works out what part of the unadjusted PTPP can be explained by the differences in characteristics between FT and PT women if they had the UK pay structure for FT women[‡‡‡‡]. In the Nordic countries and the Netherlands this makes a very large difference: this is because these countries have a relatively equal pay structure so that differences in characteristics between FT and PT women result in lower pay differentials between them. But, in the other countries the use of the UK pay structure does not have a very large effect.

The final two columns of Table 7.9 do the same exercise but by using the PT returns to characteristics. The results are largely similar but it is worth mentioning with respect to the previous 2 columns is that in southern Europe the portion of the part-time wage gap explained when using U.K. coefficients in is slightly higher. If anything, it seems therefore that lower returns to characteristics in southern Europe with respect to the U.K. apply to part-time even more than to full-time jobs.

The same exercise can be repeated for each characteristic taken individually. When doing this, the most important observable factor in explaining the PTPP, was the occupational distribution of workers (the impact of other characteristics such as education or age being often negligible or zero). In the lower panel of Table 7.9 we thus report the part of the PTPP explained by the differences in occupations, using again own and U.K. coefficients. Relative to the total wage gap, the role of occupation in predicting the average wage of part-timers seems stronger in southern Europe, where the part-time wage gap is relatively lower and in some cases negative, than in the UK.

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‡‡‡‡ In order to use U.K. coefficients for evaluating the PTPP in other countries we need to use an identical specification for the part-time and full-time wage equations for all countries. In practice this means that, if in any country the cell corresponding to a given sector or occupation is empty, or only includes either full-timers or part-timers, then observations belonging to the given sectors or occupations need to be dropped for all countries. This reduces somewhat the size of the sample used, and the results obtained on the reduced sample may not be strictly comparable to those presented in Table 7.8.

Occupational Mobility and Job Segregation

The estimates in Table 7.9 suggest that the UK has the fourth highest level of occupational segregation among the EU countries (in only Portugal, Spain and Ireland is it higher). In section 6 of the report we showed that British women who want to change from FT to PT work often have to change employers and jobs and job changes tend to be associated with downward occupational mobility. It is of some interest to see whether there are similar problems in other EU countries or whether some have successfully made transitions between FT and PT work easier.

Table 7.10 presents information for the EU countries on transitions rates between FT and PT status and from non-employment into employment. The information is the same as that presented for the UK in Table 6.1. The estimates for the UK in Tables 6.1 and 7.10 differ in part because, in the ECHPS, we can only look at transitions over a one-year period whereas Table 6.1 was based on transitions over a 3-month period.

Table 7.10 shows that, on average, 5% of women working part-time switch to full-time each year in the EU, and 11% of women working full-time switch to part-time. International comparisons show that the U.K. is among the countries with the highest mobility from part-time to full-time and lowest mobility from full-time to part-time. The Nordic countries stand out as having extremely high rates of transition between FT and PT work. In all countries, the proportion of workers who had a spell of unemployment and, even more, an inactivity spell just before the start of the current job is higher for part-timers than full-timers. But the UK (and the Netherlands is also very similar) stands out as the country in which there is the greatest difference between FT and PT workers in the fraction of workers entering that hours status from non-employment.

Table 7.10 says nothing about how changes in employer and occupation are associated with changes in hours status. We present such information in Table 7.11 (the analogous table for the UK earlier in the report is Table 6.2). In Table 7.11 we report the proportion of workers who are changing employer and the proportions who are changing occupation both in an upward and a downward direction (where the direction of the move is determined by comparison of the average wage in the old and the new occupation). In the top panel of Table 7.11 we report these job mobility rates for workers who change hours status and, in the bottom panel, we report it for those who do not change hours status.

A comparison of the two panels of Table 7.11 shows that, in most countries, workers who change hours status are more likely to change both employer and occupation than those women who do not change hours status. On average 16% of transitions to full-time jobs involve occupational promotions, while only 8% involve occupational demotions. On the other hand, 10% of transitions from FT to PT work have a promotion and 12% a demotion. So the UK pattern is not unique: women in all countries seem to find it hard to change hours status while keeping their current job (Sweden stands out as a notable exception). But the UK does stand out as having the highest rate of downward occupational mobility among women moving from FT to PT status when it is very average in its rate of downward occupational mobility for those who maintain their hours status. At the same time, the UK has the second highest (and the Netherlands is only slightly higher) rate of upward occupational mobility for women moving from PT to FT work. This suggests very big differences in the UK in the types of jobs available on a FT and a PT basis. So, the UK does seem to have a particular problem with downward occupational mobility among PT women. The countries in which

this problem seems relatively small are France, Italy and Finland (Sweden should perhaps also be included here though we do not have the necessary information on occupational mobility).

The bottom panel of Table 7.11 shows that the prospects of promotion are only slightly higher for full-time workers than PT women in most countries of the sample. The bulk of occupational segregation for part-time workers seems therefore to stem from lower starting occupation rather than from significantly lower upward mobility.

Are PT Workers "Overqualified"?

One of the advantages of the ECHPS over the UK LFS is that it contains direct information on the utilisation of skills in the form of a question that asks interviewees whether they feel that they have skills or qualifications to do a more demanding job than the one they currently hold. As we have presented evidence above that PT women are concentrated into lower-level occupations we might expect to see more evidence of 'over-qualification' for PT than FT women. And, because this problem seems particularly acute in the UK we might expect to see a particularly large difference in this country.

Of course, the information in this question is highly subjective: a feeling of over-qualification is related to the difference in perception between what one thinks one can do and what one is doing. Low self-esteem may lower the estimate of what one can do and result in an artificially low measured level of the under-utilisation of skills. This note of caution needs to be kept in mind in the discussion that follows.

Table 7.12 reports the proportion of women who report to feel overqualified for their current jobs by hours status. In general a very large proportion of women feel overqualified, but there is no systematic tendency for this to be more marked among PT workers. In particular in the UK the reported level of over-education is higher for FT than PT women – in fact, the reported level of over-qualification among FT British women is the highest in the EU. It is possible that these raw figures are misleading as they fail to control for other factors relevant to over-qualification. Consequently the third column of Table 7.12 reports the difference in reported over-education between PT and FT women after controlling for other relevant factors. But these results do no more than confirm the evidence found on the raw data: while there are some countries in which indeed women working part-time are more likely to feel overqualified than women working full-time, this is not the norm. For example, in Denmark and Portugal part-timers are actually less likely to feel overqualified than full-timers, while in a number of countries, including the U.K., there are no significant differences in perceptions of overqualification between part-timers and full-timers.

Job Satisfaction in PT Jobs

Finally, we consider the impact of part-time work on levels of job satisfaction. The ECHPS collects information on subjective job satisfaction, both overall and associated with specific aspects of a job, namely job security, earnings, working hours, type of work, working time and working conditions.

Satisfaction levels are measured on a scale 1-5, from very dissatisfied to very satisfied. Table 7.13 reports average levels of these indexes by country and hours status. On average, full-timers are more satisfied with their earnings and job security, but less satisfied with working

hours, working times and working conditions. Also, the part-time penalty to job satisfaction seems to be higher in southern Europe than in the north.

We also estimate the impact of PT status on levels of job satisfaction, controlling for relevant worker and job characteristics[§§§§]. The results are reported in Table 7.14, panel (a), where the figures represent the coefficients on a part-time dummy.

Looking at overall job satisfaction first, there seem to be systematic differences between northern and central Europe, where part-time either does not affect job satisfaction or even increases it (and especially so in the U.K.), and southern Europe, where part-time is everywhere associated with lower job satisfaction. There are, however, two exceptions to this international pattern, namely Finland and Ireland, where satisfaction is lower on part-time jobs.

Whether the U.K. premium in satisfaction on part-time jobs exists because women are particularly satisfied on part-time jobs or particularly dissatisfied in full-time jobs is another interesting question. To answer this question one can compare average levels of job satisfaction on full-time jobs in the EU, as shown in Table 7.12. It turns out that on average full-time women in the U.K. are more satisfied than in southern Europe, but less satisfied than in other countries. Relatively low satisfaction on full-time jobs in the U.K. can thus play a role in explaining its premium in satisfaction on part-time jobs vis-à-vis central and northern Europe, but not vis-à-vis southern Europe.

Looking at specific aspects of job satisfaction, it can be noted that the U.K. is generally performing quite well both in absolute terms and relatively to other European countries, while southern European countries tend to perform worse than average.

There is something of a paradox here: British women who work part-time seem to suffer a larger pay penalty than those in other European countries and suffer higher rates of downward occupational mobility when they move from FT to PT work yet they have higher levels of job satisfaction, even as far as earnings are concerned. In particular, satisfaction with earnings is particularly low in southern Europe, where on average there is not a large PTPP, and in some cases a pay premium. One possible interpretation of these pieces of evidence is that, as the incidence of involuntary part-time in southern Europe is higher than in the north, southern European women would expect a compensating wage differential for working part-time, and they are therefore less satisfied with their earnings, all else being equal. To explore this possibility we re-estimate similar satisfaction equations after excluding from our sample all women who declared to hold a part-time job because they could not find a temporary one. The results are reported in panel (b) of Table 7.14. Dropping involuntary part-timers indeed lowers the penalty in job satisfaction with earnings in southern Europe, but it should be noted that, at the same time, it increases the associated satisfaction premium in the north. Women working part-time in southern Europe are thus consistently less satisfied with their jobs than women working FT while this is not true in northern European countries (including the UK).

[§§§§] For the technically inclined, we estimate an ordered probit model.

Lessons from the Experience of Other Countries

We have used the ECHPS data to document that the problems facing women who want to work PT in the UK are not unique: they exist in some form in every other EU country. On 'objective' criteria like the level of the PTPP and downward occupational mobility associated with moves into PT work, the UK does seem to be doing worse than other countries although on 'subjective' criteria like job satisfaction and measure of 'over-qualification' the UK seems to be performing much better. But this does raise the question of whether there are any features of the labour market in other EU countries that could act as a role model for the UK.

In the Southern EU countries the differences between FT and PT women are less marked in many respects than in the UK - especially in the PTPP - but they do not seem a good role model for the UK as many PT workers are in that situation because they cannot find the FT job they want and the gap between FT and PT women is small more because FT women do not do particularly well in those countries than because the PT women do well. The Nordic countries look to be a more attractive role model. In these countries, women seem to have greater flexibility in choosing the hours they want to work although rather few women in these countries choose to work PT (probably because of the well-developed system of childcare provision and parental leave entitlements). There is occupational segregation between FT and PT women in the Nordic countries, perhaps on a level similar to that in the UK, but the more compressed pay structure means that this does not produce as big a pay gap as it does in the UK.

The position in the UK is broadly somewhat similar to that in a set of central European countries (Germany, Netherlands, Belgium and Austria), in which part-time work is very widespread, carries a relatively small pay penalty with respect to full-time work, and in several cases a premium in terms of job satisfaction. These countries thus seem to be the best performers in terms of part-time employment in Europe. The UK seems to do as well as the "central European model" as far as satisfaction on part-time jobs is concerned, but worse in the associated pay gap.

Finally, Ireland seems to be the worst performing country in part-time employment. Part-time work in Ireland is widely used, but it carries both a high wage penalty (second only to the U.K.) and also a high satisfaction penalty.

Conclusions

PT work in other EU countries has similar problems to the UK. However, there exists substantial international variation in the PTPP, as well as in other aspects of PT work. In particular, PT work in the UK seems to be characterised by the highest pay penalty. This is because the UK displays a relatively large difference between FT and PT women, and also the highest unexplained penalty, due to different wage rewards of given characteristics on FT and PT jobs. Among observable differences between FT and PT women, in all countries the main source of the PTPP is the segregation of PT workers in low-wage occupations. The extent of occupational segregation is not always higher in the UK than elsewhere, but a given level of segregation translates into a higher PTPP in the UK due to a higher overall wage inequality.

Evidence on job mobility shows that the UK has the highest rates of promotions and demotions when women move from FT to PT and from PT to FT, respectively, suggesting

important differences in the jobs available on a FT and a PT basis in the UK. Finally, the UK performs slightly better than the EU average regarding the degree of under-utilisation of skills on PT jobs, and significantly better than virtually all other countries in terms of levels of satisfaction on PT jobs.

8. Policy Options

What can be done about the PT pay penalty? As our previous discussion has made clear the main cause of the pay gap between FT and PT women is the different types of jobs that these women do. And these differences seem to be the result of the fact that certain jobs do not seem to be available on a PT basis. It seems likely that any policy that fails to have an impact on this occupational segregation will fail to reduce the PTPP.

Minimum Standards Policies

Because women working PT tend to be in the jobs in the economy with the lowest level of wages any policy that reduces wage inequality will tend to improve the relative position of PT women even if that policy is not directly targeted on them. We have already seen evidence of this in the fact that Nordic countries have low levels of overall wage inequality and a small PTPP even though they have quite high levels of occupational segregation.

In the UK the most important recent initiative to reduce wage inequality has been the National Minimum Wage (NMW) introduced in April 1999. This was initially set at the rate of £3.60 per hour for adults and has been raised periodically and is now £4.50 and will rise to £4.85 in October 2004. Because PT women are more likely to be low-paid than FT women this has affected more PT workers than FT workers (Low Pay Commission, 2003, estimates that 53% of the beneficiaries from the NMW are part-time women and only 17% are FT women). Hence we would expect the NMW to have reduced the PTPP.

Figure 8.1 shows the percentage growth in hourly wages at different percentiles (up to the third decile) in the wage distribution of PT and FT women for the period April 1998 to April 2000 that straddles the introduction of the NMW in April 1999[*****]. One can see that there was faster wage growth at the bottom end of the hourly wage distribution, something that is consistent with the impact of the NMW. One can also see that the impact of the NMW reaches further up the PT wage distribution (to about the 12th percentile) than the FT wage distribution (where it barely reaches the 5th percentile) and that the percentage wage increase at a given percentile is larger for PT women than for FT women. All of this is consistent with the NMW having a larger impact on the pay of PT than FT women.

However the actual impact of the NMW on the PTPP implied by Figure 8.1 is small. One can get a measure of this impact by taking the difference between the two lines in Figure 8.1 – this adds up to about 1 percentage point[†††††]. This is consistent with Figure 1.1 where it is hard to see any dramatic change in the PTPP in 1999 when the NMW was introduced. This is because the NMW has been set at a modest level. Other studies have found that the NMW has had a modest impact on overall wage inequality (Dickens and Manning, 2004) and on the

[*****] We do not use the NES for April 1999 as that data is exactly at the time of introduction of the NMW and almost certainly contains pay information relating to both before and after the introduction.

[†††††] This might be a slight under-estimate of the impact of the NMW on the PTPP as the NES is known to under-sample low-paid part-time workers and we have not attempted to correct for this.

gender pay gap (Robinson, 2002) and our finding here is in line with these studies. Unless the NMW is set at a considerably higher level it is not going to have a large effect on the PTPP.

Some other minimum standards policies may have had more effect. For example, the EU Working Time Directive that came into force in the UK in 1998 mandated a minimum of 4 weeks paid holiday a year (pro rata for PT workers who do not work 5 days a week). Prior to this there had been a substantial gap in the holiday entitlement of PT and FT workers and this has been markedly reduced since the directive came into force. Figure 8.2 shows the change over the period 1992-2003 in the average number of days of paid holiday for FT and PT women – there is a marked improvement in the position of PT women around the introduction of the Working Time Directive. And Figure 8.3 shows a large reduction around this time in the percentage of PT women with no paid holiday.

Equal Treatment Policies

Another type of policy designed to reduce the gap between FT and PT workers are 'equal treatment policies' that require employers to treat PT and FT workers equally. In the UK the Part-time Workers Regulations that were introduced in 2000 aimed to ensure that "part-timers are not treated less favourably than comparable full-timers in their terms and conditions, unless it is objectively justified"

But, as the pay gap between FT and PT women in the same occupation seems to have been small even before 2000 (see Table 5.1), 'equal treatment' legislation is unlikely to have much impact on the PT pay penalty. Indeed the evidence on the evolution of the PTPP presented in Figure 1.1 suggests this has been the case. And Figures 8.2 and 8.3 suggests these regulations have had little impact on the difference in holiday entitlement between PT and FT women even though the Working Time Directive had a large effect. It seems that there are relatively small differences in treatment of PT and FT workers within jobs currently in the UK and the problem is that the jobs done by PT and FT women are very different.

Training Subsidies

Among the policy recommendations of the The Kingsmill Commission into the labour market position of women (Kingsmill, 2001) was a subsidy for the training of low-paid workers. As PT women are more likely to be low-paid more PT than FT women would be the beneficiaries of such a policy so it would be expected to reduce the PTPP. But, how much difference would it make? Table 8.1 presents the gap in training receipt for FT and PT workers. The first column shows that 9% of FT women have received job-related training or education in the past week, 18% in the last four weeks and 35% in the past 13 weeks. The second column shows the unadjusted training differential between PT and FT women – so, for example, PT women are 10 percentage points less likely to have received training in the last 13 weeks. But, if one adjusts this PT training penalty for differences in characteristics as is done in the second column (that excludes occupation) and in the third column (that includes occupation) then the adjusted training gap is only half the size of the unadjusted gap. And, as the fourth row of Table 8.1 shows, the actual differences in the amounts of training received are so small (or the order of 5 minutes a week) that there would have to be an implausibly large return to this training for a reduction in inequalities in training (whether by subsidising the training of low-paid workers who are more likely to be PT or by more direct means of targeting PT workers) to have much of an impact on the PTPP.

Rights to Flexible Working

We have seen that one of the main problems facing women who want to work FT is that the better jobs do not seem to be available on a PT basis and that women making the transition from FT to PT work often have to change jobs to do so and suffer a downward occupational move. Given that the desire to work PT is often associated with the desire to spend more time with children this forces many women to choose between career and family. There have been some policy initiatives designed to strengthen the control of parents over their working hours. From 6 April 2003, parents of children aged under six or disabled children aged under 18 have the right to apply to work flexibly and their employers have a duty to consider these requests seriously. Flexible working is wider than just a change in the number of hours as it often involves a rearrangement of hours but it is certainly meant to include some change of hours status and evidence (e.g. Palmer, 2004) suggests that the desire to change from FT to PT work is the most common type of request. Some evidence suggests a large take-up by eligible women of these new rights. For example, DTI (2004) reports that 40% of parents had made a request, 60% had had them agreed and 63% of employers had had at least one request. It did report that women in senior positions were more likely to have their requests refused. However, as the report itself admits, the sample on which this report is based is highly selective. And Palmer (2004) reports, using data from the first DTI flexible working employee survey (that has a more representative sample), that 16% of women had made a request to work flexibly since April 2003 and 86% of these requests had been fully or partly accepted by employers. It also reports a significant increase in the number of requests being approved.

Given this it is of interest to look at other data sets to see whether there is any evidence of change and this is possible as the LFS has, since 2001, contained information on various forms of flexible working. As the earliest data available relates to March 2001 and the latest available data is for February 2004 it is possible that there were significant changes in practice prior to April 2003 (so the timing of the impact is different from the timing of the introduction of formal rights) and we are unable to undertake an assessment of anything other than the impact effect - it is of course possible that the long-run effect is very different.

As the changes affect women with children aged less than 6 we distinguish this group from other women in the Figures that follow. The legislation also affects women with disabled children of all ages but the numbers of these is relatively small and we have no way in our data to identify disabled children. Figure 8.4 shows that there has been very little change in the proportion of women working PT over the period 2000 to 2004 so there is no evidence here of any very large shift from FT to PT work in April 2003 which is the time of the introduction of the legislation. Furthermore Figure 8.5 also suggests a very considerable degree of stability in the proportions of women who want fewer and more hours in this period. There is no evidence of any greater degree of concordance between aspiration and reality here. Figure 8.6 looks at evidence that more women are asking employers for hours reductions and the fraction of employers who are able to agree to this. Again, there is no evidence of dramatic change here. It should be noted that these questions are only asked of women who want fewer hours so would not be asked of women who had successfully applied for an hours reduction – however as Figures 8.4 and 8.5 showed there is no evidence of big change in the fraction of women satisfied with their hours.

Of course flexible working is wider than just the number of hours so Figures 8.7a and 8.7b present evidence on the incidence of the most common forms of flexible working. Once again there is little evidence of marked change after the introduction of the new regulations.

There are a number of possible interpretations of why the LFS data shows virtually no impact of the legislation when other surveys show a more dramatic impact. It could be that the true impact occurs prior to our earliest data in 2001 as employers changed practice in advance of the new rights coming into force, that few women have yet taken advantage of their new rights, that employers are finding ways of turning down requests, that these new rights are not perceived of being of value to many women, that women may be afraid to ask their employer for changes to their working hours or think it pointless if they know the request is going to be turned down. Intriguingly, Woodland et al (2003, p116) report that "the characteristics of the workplaces that has received such a request [to move from FT to PT work] match those of the workplaces that reported such requests were acceptable". The evidence of limited impact does suggest that stronger legislation may be needed in order to give women true flexibility in the hours that they work.

The British experience with rights to flexible working does not seem to be unique. The Netherlands introduced similar legislation in 2000 probably in a slightly stronger form than in the UK i.e. with employers having fewer legitimate grounds for refusal. But the study of Fouarge and Baaijens (2004) also suggests little impact on transition rates between FT and PT work.

The Long Hours Culture

One should also mention that policies that affect groups who are not PT workers could also have an impact on the welfare of those working PT. For example, Britain stands out in the EU as the country in which FT workers have the longest weekly hours. This is particularly marked among managers – according to the 2002 Eurostat Labour Force Survey the average hours worked by UK FT male managers are 47.5 a week, the highest in the EU (only Denmark has an average above 45 hours and countries like the Netherlands have an average of 39.7). The UK is a country in which employers expect large commitments of time from their managers and this may serve to make PT managers look relatively unappealing. But the experience of other countries suggests that there is no very good reason why managers have to work such long hours and a reduction in these working hours may also be an effective way to make PT workers in good jobs look to be relatively less unattractive to employers.

Conclusions

In this section we have discussed the impact of various policies that have been introduced in recent years that might have been expected to have an impact on the PTPP as well as one proposal (subsidising the training of low-paid workers) that has been proposed. Minimum standards policies like the NMW are likely to have more impact than equal treatment policies as there does not seem widespread unequal treatment of FT and PT workers within jobs. However the impact of the NMW itself has been somewhat muted because it has been set at a modest level. But, as occupational segregation is the main causes of the PTPP policies that directly target this are likely to be most effective. In particular strengthening the rights of workers to change their hours status while keeping their pre-existing job seems a promising direction in which to move. The existing rights to request flexible working do not seem, as

yet, to have had much of an impact: it is important to determine whether this is because they have not existed for long or because employers are not sympathetic to such requests.

9. Conclusions

On average women working PT in the UK have hourly earnings that are 22% less than women working FT – this is the PTPP. The PTPP has widened over the past 30 years with most of the deterioration occurring prior to the mid-1990s. But this cannot be used as an estimate of the pay penalty that would be suffered by a woman switching from FT to PT work as women working PT and women working PT are very different in their characteristics and do very different jobs. Taking account of these differences the part-time penalty for identical women doing the same job is estimated to be about 10% if one does not control for occupation and about 3% if one does. Hence, it is the difference in the occupations of PT and FT women that can explain most of the pay differentials between them. The importance of occupation has increased over time as PT women have failed to make the occupational up-grades seen for FT women over the past 30 years. It is also the case that rising UK wage inequality has also acted to widen the pay gap between PT and FT women. There does seem to be a problem in the fact that women who want to move from FT to PT work are often forced to change employer and/or occupation and, on average, make a downward occupational move. This seems to occur even when they have the necessary skills and experience to do the higher-level job. The consequence is that there are many women working PT who do not seem to be making full use of the skills that they have.

Other EU countries have similar problems to the UK but the UK has the highest PTPP and one of the worst problems in enabling women to move between FT and PT work without losing status. However British women working PT seem relatively satisfied with their jobs and do not report high levels of under-utilization of skills.

Policy initiatives in recent years like the National Minimum Wage (1999), the Part-Time Workers Regulations (2000) and the Right to Request Flexible Working (2003) appear to have made little difference to the part-time pay penalty. The most likely explanation of this is that, with the exception of the right to request flexible working, none of these policies are targeted on the routes by which PT women end up in low-level occupations. And the right to request flexible working is quite weak in that it allows employers many legitimate reasons for refusing requests. But it seems likely that more moves in this direction are likely to be the most effective way to breaking down barriers to the availability of high-level jobs on a PT basis that is the most likely way to reduce the PTPP.

Appendix A
Multivariate Analysis of the Determinants of Part-Time Working

In the main text of this report, section 3 is about 'what types of women work part-time?'. All of the tables and figures in that section are essentially bivariate reporting the correlation of PT working with certain characteristics but no more than one or two at a time. There is a danger that conclusions based on this type of analysis are misleading because of correlations between different characteristics. For example one might see a spurious correlation between PT working and education even if no true one exists but there is a correlation between PT working and having children and more educated women have fewer children. The simplest way to allay these fears is to estimate a multivariate model in which one can control for many characteristics simultaneously.

Means of variables for FT and PT working women are reported in Table A1.

Accordingly Table A2 reports the estimates from a probit model in which the dependent variable is a binary variable taking the value 1 if the woman works PT and zero otherwise. The reference category is a white woman, aged 35-39 with 'A' levels who is single without children, who lives in the South-East, has job tenure between 5 and 10 years, is in the private sector in a permanent job in a workplace with less than 25 workers in retail and distribution and working in administration. The predicted probability of such a woman working PT is 29%.

The reported coefficients are the marginal effects so can be interpreted as the change in the probability of working part-time from the base category when one changes the relevant characteristic. So the marginal effect of -0.172 on the dummy variable for being aged 16-19 means that a teenager is 17% less likely to work PT than a woman in the reference category.

Technical Appendix

The estimates of the PTPP presented in the main body of this report are all based on a strong assumption - that PT status is exogenous (conditional on the included covariates). Other papers in this literature assume it is not and pay a lot of attention in trying to provide more sophisticated estimates. We have used our simpler approach because it is not really clear (in the absence of fantastic data) that more complicated methodologies solve the problems they identify and because the end results suggest a small PTPP. But the empirical methodology is particularly important if the estimates of the PTPP vary a lot according to the estimation strategy used. For example, using US data, Blank (1990) reports a very negative PTPP in the raw data, that becomes enormously negative when she uses instrumental variables as the estimation method and very positive when she uses a sample selectivity correction. At the end of the paper one is not sure quite what to think.

Econometric Methodology

Here we discuss different approaches to the estimation of the PTPP. We would like to be able to estimate the 'causal' effect of PT status i.e. the pay penalty that would be suffered by a woman who currently works changing from FT to PT status. Even this definition of the PTPP is not always the aim of researchers. Sometimes the aim is to estimate the PTPP for all women, whether they are currently working or not. As women who work are not a random selection of all women one has to then model the selection of women into employment. By choosing to focus on the estimation of the PTPP for women who currently work we avoid the need to do this. In what follows, everything is conditional on a woman working.

Define by w_i^F the log hourly wage of woman i if she works FT and by w_i^P the log hourly wage of woman i if she works PT. Hence, for woman i we have that $PTPP_i = w_i^F - w_i^P$. The problem is that, at any moment in time, the woman is at most observed in one of the states, FT or PT (it could be neither if the woman is not working at that time), so that one of the wages is missing and one cannot directly compute the PTPP. One has to have some way to estimate the 'missing' wage observation(s). One cannot do this without making some identifying assumptions and different methodologies make different assumptions.

It is perhaps easiest to start with what is the most common situation where we are interested in the estimating the mean PTPP. For a woman with characteristics x_i define the mean PTPP to be:

$$PTPP(x_i) = E\left(w_i^F \middle| x_i\right) - E\left(w_i^P \middle| x_i\right) \quad \text{(A1)}$$

Note that it is not possible to estimate individual-specific treatment effects – only averages across some groups. However, neither of the expectations on the right-hand side of (A1) are observable as we only observe the FT wage for women who work FT and the PT wage for women who work PT. If we define a variable PT_i that takes the value 1 if woman I works PT and 0 if they work FT then what we observe is $E\left(w_i^F \middle| x_i, PT_i = 0\right)$ and $E\left(w_i^P \middle| x_i, PT_i = 1\right)$. A naïve estimator of the PTPP would use the simple gap between these two means. So, let us define $PTPP^n(x_i)$ to be:

$$PTPP^n(x_i) = E\left(w_i^F \middle| x_i, PT_i = 0\right) - E\left(w_i^P \middle| x_i, PT_i = 0\right) \quad \text{(A2)}$$

When is this naïve estimator equal to the true one? Combining (A1) and (A2) we can derive:

$$PTPP(x_i) = PTPP^n(x_i) + \left[E\left(w_i^F \middle| x_i\right) - E\left(w_i^F \middle| x_i, PT_i = 0\right)\right] - \left[E\left(w_i^P \middle| x_i\right) - E\left(w_i^P \middle| x_i, PT_i = 0\right)\right] \quad \text{(A3)}$$

(A3) implies that a sufficient condition for the naïve estimate of the PTPP to be equal to the true PTPP is if the two terms in square brackets are equal to zero. Now we can write the mean FT wage conditional on x as::

$$E\left(w_i^F \middle| x_i\right) = \Pr\left(PT_i = 1 \middle| x_i\right) E\left(w_i^F \middle| x_i, PT_i = 1\right) + \left[1 - \left(PT_i = 1 \middle| x_i\right)\right] E\left(w_i^F \middle| x_i, PT_i = 0\right) \quad \text{(A4)}$$

where $\Pr\left(PT_i = 1 \middle| x_i\right)$ is the probability of an individual with characteristics x working PT. Using (A4) the first term in square brackets in (A3) can be written as:

$$\left[E\left(w_i^F \middle| x_i\right) - E\left(w_i^F \middle| x_i, PT_i = 0\right)\right] = \Pr\left(PT_i = 1 \middle| x_i\right)\left[E\left(w_i^F \middle| x_i, PT_i = 1\right) - E\left(w_i^F \middle| x_i, PT_i = 0\right)\right] \quad \text{(A5)}$$

This will only be equal to zero if:

$$E\left(w_i^F \middle| x_i, PT_i = 1\right) = E\left(w_i^F \middle| x_i, PT_i = 0\right) \quad \text{(A6)}$$

i.e. if the mean of FT log wages conditional on x is independent of whether an individual works FT or PT. Similarly the term in the second square bracket in (A3) will be zero if:

$$E\left(w_i^P \middle| x_i, PT_i = 1\right) = E\left(w_i^P \middle| x_i, PT_i = 0\right) \quad \text{(A7)}$$

i.e. if the mean of FT log wages conditional on x is independent of whether an individual works FT or PT.

The conditions in (A6) and (A7) have many different names in economics and statistics. Written in the form of (A6) and (A7) one would say that, conditional on x, part-time status is ignorable. Economists might be more familiar with saying that part-time status is exogenous. As it is an assumption that, conditional on observable characteristics (x), PT status is uncorrelated with unobservable characteristics, one can also express it as saying there is no problem with sample selection bias.

The consequence of these conditions is that one can simply estimate the mean of the full-time log wage using only those who work FT and one can simply estimate the mean of the part-time log wage using only those who work PT. The PTPP is then simply computed as the difference between the two.

We have presented 3 different estimates of the PTPP based on the exogeneity assumption, the dummy variable method, the Oaxaca decomposition and the re-weighting method. Let us consider these in turn. These make progressively weaker assumptions about the determinants of wages but, as in all statistical procedures, one's estimates will have more precision if one imposes valid restrictions on the data, so that standard errors will also rise.

Constant PTPP (Dummy Variable Method)

If the PTPP does not vary across individuals then we will have that:

$$E\left(w_i^P \middle| x_i\right) = E\left(w_i^F \middle| x_i\right) + \alpha \quad \text{(A8)}$$

where α is the PTPP. The simplest way to estimate this is to then model the mean of log wages conditional on characteristics x. The simplest way to do this is assume the mean is linear in the characteristics, i.e. that we have:

$$E\left(w_i^F \middle| x_i\right) = \beta x_i \quad \text{(A9)}$$

The simplest way to estimate the PTPP in this case is to include all workers, both FT and PT in the same regression together with a dummy variable for whether the individual works PT. That is, to estimate the regression:

$$w_i = \alpha PT_i + \beta x_i + \varepsilon_i \tag{A10}$$

In this case the PTTP is simply given by α and is the same for everybody – part-time status is assumed to affect the intercept but not the slope coefficients. If the assumption of a constant PTPP is incorrect but one estimates the model (A10) then the estimated PTPP will be some average of the PTPP across individuals in the sample – so will not be completely uninformative. But, in such a circumstance it would obviously be better to try to model the variation in the PTPP.

Varying PTPP (Oaxaca Decomposition)

The assumption in (A8) and (A9) that the PTPP is the same for everyone is very strong and unlikely to be satisfied in practice. A generalisation is to maintain the assumption that the means of the log wages are linear in the characteristics but to allow the slope coefficients as well as the intercept to differ according to whether a woman works FT or PT. In this case, (A8) and (A9) can be generalised to:

$$E\left(w_i^F \middle| x_i\right) = \beta^F x_i \tag{A11}$$

and:

$$E\left(w_i^P \middle| x_i\right) = \beta^P x_i \tag{A12}$$

so that the PTPP for someone with characteristics x is given by:

$$PTPP\left(x_i\right) = \left(\beta^F - \beta^P\right) x_i \tag{A13}$$

Under the exogeneity assumption (A11) and (A12) can be simple estimated using OLS. Because the average PTPP now varies with the characteristics so will be different for every woman and it is impossible to list the estimate for everybody, it is conventional to report the PTPP for a representative worker, either the average FT worker or the PT worker. Although this is really nothing more than a convention, one justification for the procedure is the Oaxaca decompostion. Because regression estimates go through the mean we will have:

$$\overline{w}^F - \overline{w}^P = \hat{\beta}^F \overline{x}^F - \hat{\beta}^P \overline{x}^P = \left(\hat{\beta}^F - \hat{\beta}^P\right)\overline{x}^F + \hat{\beta}^P\left(\overline{x}^F - \overline{x}^P\right) \tag{A14}$$

so that overall observed wage gap between FT and PT workers can be decomposed into a component that is the PTPP for the average FT worker and a part that is the difference in earnings between the average FT and PT worker using the coefficients from the PT equation. This decomposition is not unique – one can also write:

$$\overline{w}^F - \overline{w}^P = \hat{\beta}^F \overline{x}^F - \hat{\beta}^P \overline{x}^P = \left(\hat{\beta}^F - \hat{\beta}^P\right)\overline{x}^P + \hat{\beta}^F\left(\overline{x}^F - \overline{x}^P\right) \tag{A15}$$

which decomposes the overall observed wage gap between FT and PT workers into a component that is the PTPP for the average PT worker and a part that is the difference in earnings between the average FT and PT worker using the coefficients from the FT equation.

Because this method allows the PTPP to vary with the characteristics, it is not possible to estimate the PTPP if there are some x variables that are perfectly collinear with the PT dummy and there may a problem of large standard errors if there is high but not perfect collinearity. This may be a problem particularly when one includes detailed industrial and occupational controls. For example, in our sample of 85194 individuals in the LFS there are 248 for whom they have a value of x that cannot be observed in the other group. To make this a bit more real the largest excluded group is 87 school crossing patrol attendants all of whom are part-time. As we observe no such workers working full-time we cannot estimate the coefficient on the dummy variable for this occupation in the FT equation. But as less than one-third of one-per cent of all observations are excluded this has very little substantive impact on the results.

Varying PTPP (The Reweighting Method)

The Oaxaca decomposition assumes that the mean of the log wage is linear in the x variables. The re-weighting method makes weaker assumptions. Suppose the distribution of log wages with characteristics x who work FT is given by $f^F(w|x)$, that the distribution of log wages with characteristics x who work PT is given by $f^P(w|x)$. The PTPP in the mean of log wages for a woman with characteristics x can then be written as:

$$PTPP(x) = \int w\left[f^F(w|x) - f^P(w|x)\right]dw \tag{A16}$$

As in the previous example this varies with x so, in the interests of economy one typically reports averages across different groups. We choose to report estimates across the FT workers and the PT workers. The average across the FT workers will be given by:

$$\begin{aligned} PTPP &= \iint w\left[f^F(w|x) - f^P(w|x)\right]g^F(x)\,dw \\ &= \iint wf^F(w|x)g^F(x)\,dw - \iint wf^P(w|x)g^F(x)\,dw \end{aligned} \tag{A17}$$

where the distribution of x among FT workers is $g^F(x)$. Similarly one could estimate the average across the PT workers that will be given by:

$$\begin{aligned} PTPP &= \iint w\left[f^F(w|x) - f^P(w|x)\right]g^P(x)\,dw \\ &= \iint wf^F(w|x)g^P(x)\,dw - \iint wf^P(w|x)g^P(x)\,dw \end{aligned} \tag{A18}$$

where $g^P(x)$ is the distribution of x among PT workers. Note that the only difference between (A17) and (A18) is in the distribution of x used to average the PTPP.

Now let us consider how one can estimate (A17). One way of writing the assumption about the exogeneity of PT status is that:

$$f^F(w|x) = f^F(w|x, PT = 0) \tag{A19}$$

so that the first term on the second line of (A17) can be written as:

$$\iint wf^F(w|x)g^F(x)\,dw = \iint wf^F(w|x, PT = 0)g^F(x)\,dw = \overline{w}^F \tag{A20}$$

i.e the observed mean log wage among the women who work FT. Now consider the second term on the second line of (A17). The assumption on the exogeneity of PT status implies that:

$$f^P(w|x) = f^P(w|x, PT = 1) \tag{A21}$$

so that the second term on the second line of (A17) can be written as:

$$\iint wf^P(w|x)g^F(x)\,dw = \iint wf^P(w|x, PT = 1)g^F(x)\,dw \tag{A22}$$

but note that the final term is not the observed mean log wage among PT workers as it is evaluated at the distribution of x among FT and not PT workers. But we can re-weight the observed PT workers to ensure that the re-weighted distribution of x is the same as for FT workers. The weights that are necessary to do this are:

$$p(x) = \frac{g^F(x)}{g^P(x)} \tag{A23}$$

To estimate these weights we follow the method used by diNardo, Fortin and Lemieux (1996). They observed that application of Bayes' Rule implies that:

$$\Pr\left(PT=1\middle|x\right)=\frac{g^{P}\left(x\right)\Pr\left(PT=1\right)}{g^{P}\left(x\right)\Pr\left(PT=1\right)+g^{F}\left(x\right)\Pr\left(PT=0\right)} \tag{A24}$$

and that:

$$\Pr\left(PT=0\middle|x\right)=\frac{g^{F}\left(x\right)\Pr\left(PT=0\right)}{g^{P}\left(x\right)\Pr\left(PT=1\right)+g^{F}\left(x\right)\Pr\left(PT=0\right)} \tag{A25}$$

Re-arranging (A24) and (A25) we can derive:

$$\frac{g^{F}\left(x\right)}{g^{P}\left(x\right)}=\frac{\Pr\left(PT=0\middle|x\right)\Pr\left(PT=1\right)}{\Pr\left(PT=1\middle|x\right)\Pr\left(PT=0\right)}=\frac{1-\Pr\left(PT=1\middle|x\right)}{\Pr\left(PT=1\middle|x\right)}.\frac{\Pr\left(PT=1\right)}{1-\Pr\left(PT=1\right)} \tag{A26}$$

which are the weights required. The terms on the right-hand side of (A26) can be derives from an estimate of the probability of working PT given characteristics. The particular model we use is the probit model described in Appendix A.

To work out (A18) one simply needs to re-weight the FT workers using the inverse of the weights in (A26). Note that the weights will not be defined if there are any values of x for which everyone or no-one is PT. This is the equivalent of the identification for the Oaxaca decomposition. And, there may be very large standard errors if the proportion PT is close to zero or one as the weights may then be very large making the estimates very sensitive to observed wages among those groups. For this reason one often reports estimates based on a more balanced sample in which the weights are trimmed.

The re-weighting methodology makes much less in the way of assumptions about the distribution of wages. But there is typically a price to be paid for this flexibility: the necessity to make some assumption about the functional form of the relationship between the probability of working PT and x. So, while it is sometimes claimed that this method is 'less parametric' and so less restrictive than something like the Oaxaca decomposition it typically substitutes one form of parameterization for another and is not obviously better.

It should also be noted that there are other ways of estimating the PTPP – see Imbens (2003) for a review.

One of the advantages of the re-weighting approach is that one can use to compute statistics other than the mean. Once one has the re-weighted distribution one can compute medians and deciles, variances or anything else one wants. This is the basis of the calculations in Table 4.6. Some care is needed in interpreting these: because one cannot identify individual-specific PTPPs one cannot work out the distribution of the individual-specific PTPPs. But one can compare the overall distribution of earnings among FT women and what the distribution of the earnings would be among equivalent women if they worked PT.

Table B1 reports the estimates of the PTPP for the UK LFS using the three methodologies described here. In table B1 they are reported in log points – these are then converted to percentage point differences for the presentation in Table 4.1 in the main body of the report. Table B2 reports estimates from the ECHPS that form the basis of Table 7.8 in the main body of the text.

The Exogeneity Assumption

However, all the methodologies described above are based on the assumption that PT status is exogenous. But it is important to realize that this is a very strong assumption, one that might not be satisfied in practice. To understand how strong it is suppose that the way in which FT and PT log wages are determined is given by:

$$w_i^F = \beta^F x_i + \varepsilon_i^F \tag{A27}$$

and:

$$w_i^P = \beta^P x_i + \varepsilon_i^P \tag{A28}$$

where $\left(\varepsilon_i^F, \varepsilon_i^P\right)$ are assumed to have mean zero and be independent of the characteristics x_i. With this set-up the PTPP for woman i is given by:

$$PTPP_i = \left(\beta^F - \beta^P\right)x_i + \left(\varepsilon_i^F - \varepsilon_i^P\right) \tag{A29}$$

One interpretation of (A29) is that the PTPP is made up of an observable component related to the characteristics x_i and an unobservable component related to $\left(\varepsilon_i^F, \varepsilon_i^P\right)$. The exogeneity assumption allows PT status to be correlated with x_i (indeed this is something that can be tested) but assumes that it is uncorrelated with the unobserved component. Quite rightly, this strikes many researchers as somewhat implausible as, if PT status is chosen by women for whom the PTPP is relatively small this will lead to a correlation between the error in (A29) and PT status. All the estimates presented in the previous section will then be inconsistent.

What are the specific reasons why we might expect exogeneity to fail? We will discuss three though one could almost certainly come up with others.

First, individuals might differ in their commitment to the world of paid work and their ambitions in it. It seems plausible that those who are ambitious make greater investments in human capital that have a bigger pay-off in FT work so that the PTPP is negatively correlated with whether individuals work PT.

Secondly, there is the 'labour supply curve' argument. There is a very large literature that considers the impact of wages on hours of work. In contrast we have considered the impact of hours of work (specifically whether an individual is part-time or not) on wages. There is an obvious danger of reverse causation here: maybe it is low wages that 'cause' PT work, not PT work that 'causes' low wages. It should be noted that the existence of a PTPP might also cause problems for labour supply models (see Moffitt, 1984, and Lundberg, 1985, for studies that find evidence of a link between hours and hourly wages that is similar to a PTPP).

Thirdly, if PT status is defined using an hours-based measure and hourly wages are computed by dividing a measure of weekly earnings by a measure of weekly hours (as is the case in the LFS, the NES and the ECHPS) then any measurement error in hours will result in a failure of exogeneity and a bias in the estimates of the PTPP. To given an extreme example (though one that does occur very occasionally) suppose a decimal point was accidentally inserted in recording weekly hours and an individual was recorded as working 4 hours per week instead of 40. Their computed hourly wage would be 10 times the real level. This bias will tend to lead to an underestimate of the PTPP.

If exogeneity fails, how can we get a consistent estimate of the PTPP? There are a number of possible directions in which we might go.

Fixed Effect Estimates

First, by including better data one might hope to reduce the problem. If one has multiple observations on individuals i.e. panel data then one way in which one could do this would be to use fixed effect estimates – effectively introduce a dummy variable for each individual. The estimate of the PTPP then comes from data on those workers who are sometimes observed working FT and sometimes PT and compares their wages in these two situations.

In the LFS we do have a limited panel component as earnings information is recorded in both waves 1 and 5. Table B3 investigates panel estimates of the PTPP. In the first column we report estimates of the PTPP using the 'constant PTPP' methodology but restricting the sample to those women with two wage observations (there is a sample selection issue here as we will under-sample women with weak labour market attachment). The PTPP is similar at 4.8% though slightly larger than the estimates in Table 4.1. In the second column we include fixed-effects - the coefficient on PT status is now positive not negative implying the existence of a part-time pay premium of 5.2% and not a pay penalty.

It is perhaps tempting to think that this fixed effect estimate is the best estimate of the PTPP. But, there is reason to think that there are problems with it. One is the division bias problem reported above – any measurement error in hours will tend to be magnified in panel data and the division bias problem will become larger (see Freeman 1984). On the face of it this should not be a problem in the LFS data as the PT status definition is based on self-assessment so should not be affected by any measurement error in hours. But there is reason to believe that there is a problem.

Since March 1999, there has also been a direct question in the LFS about the hourly rate of pay. This is only defined for those who are paid by the hour, which is approximately 40% of employees. The important point is that this earnings measure should be less affected by measurement error in earnings as hours information is not used to derive the hourly wage measure. The third column of Table B3 reports OLS estimates of the PTPP using the hourly pay measure as the dependent variable but restricting the sample to those workers for whom we have two observations on both the hourly pay and hourly rate measures. This coefficient is essentially zero. The fourth column then reports fixed effect estimates using the hourly pay measure – this suggests a large pay premium to PT work. But, when one uses the hourly rate measures as the dependent variable one gets a PTPP of 3.1% using OLS and 1.9% using fixed effects. That is, a PTPP remains even with the fixed effect estimates and there is less difference between the OLS and fixed effect results. It seems reasonable to think that the hourly rate estimates are the more reasonable and these are closer to the estimates that do not use fixed-effects.

Table B4 reports fixed effect estimates of the PTPP using the ECHPS data. The resulting coefficients on the part-time dummy are in most cases positive, and everywhere higher than those reported in Table 7.8. One the one hand it may be argued that the estimated PTPP is lower (and indeed becomes a premium) when including fixed-effects if workers with low-wage characteristics tend to be over-represented in PT jobs. On the other hand, the inclusion of fixed-effects may amplify the effect of measurement error in reported hours status, which makes one doubt about the reliability of the estimated PT pay premia in Table B4.

Sample Selection Corrections

If, after one has made all possible attempts to deal with the exogeneity problem by the use of better data, it still remains, what can then be done? Crudely there are two techniques, instrumental variables (IV) and control function (CF) (or sample selection corrections) – see Heckman and Navarro-Lozano (2003) for a survey. Suppose that the following model describes whether a woman works FT or PT conditional on them working at all:

$$PT_i = I\left(\gamma z_i + \eta_i > 0\right) \tag{A30}$$

where $I(.)$ is an indicator function. The variables, z, that affect whether a woman works FT or PT might be the same or different from those which directly affect wages. In fact to work well, both IV and CF estimates require some variable in z that does not affect the wage equations in (A27) and (A28) but does affect whether an individual works PT. Such a variable is difficult to find and this is why this approach is not reported in the main text. But to illustrate the difference the use of this methodology makes we will follow most of the papers in the literature (e.g. Ermisch and Wright, 1993; Blank, 1990) and assume that children and marital status affect the decision to work PT but not the wages earned. This is a very strong assumption that may not, in reality, be any better than the exogeneity assumption that this is supposed to replace.

Here we report the CF estimates. If we estimate a wage equation for FT workers then one estimates the conditional mean i.e. one estimates:

$$\begin{aligned} E\left(w_i^F \left| x_i, z_i, PT_i = 0\right.\right) &= \beta^F x_i + E\left(\varepsilon_i^F \left| x_i, z_i, PT_i = 0\right.\right) \\ &= \beta^F x_i + E\left(\varepsilon_i^F \left| x_i, z_i, \eta_i < -\gamma z_i\right.\right) \end{aligned} \tag{A31}$$

and, if one estimates a wage equation for PT workers then one will estimate:

$$\begin{aligned} E\left(w_i^P \left| x_i, z_i, PT_i = 1\right.\right) &= \beta^P x_i + E\left(\varepsilon_i^P \left| x_i, z_i, PT_i = 1\right.\right) \\ &= \beta^P x_i + E\left(\varepsilon_i^P \left| x_i, z_i, \eta_i \geq -\gamma z_i\right.\right) \end{aligned} \tag{A32}$$

The PTPP for workers with characteristics x is given by $\left(\beta^P - \beta^F\right)x$.

Table B5 reports estimates of the PTPP that use this methodology. They are very similar to those using simpler approaches.

Our conclusion is that, while PT status is likely to be endogenous, it is hard to propose an estimation procedure that is clearly much better and that the best estimates available do not provide any evidence against the conclusion that the PTPP in the UK is, once one controls for occupation, between zero and 5%. For the EU countries, one should perhaps be a little more circumspect. The estimates of the PTPP obtained from the ECHPS do differ somewhat from those obtained in studies of individual countries (e.g. the UK) and there are some question marks about the quality of the data.

Table 2.1
Comparison of Different Definitions of PT status.

		Definition based on Basic Usual Hours		
		Full-Time	Part-Time	Total
Self-Assessed	Full-Time	6.6	0.5	7.1
		(52.7)	(3.8)	(56.5)
	Part-Time	0.2	5.3	5.4
		(1.4)	(42.0)	(43.5)
	Total	6.8	5.8	12.5
		(54.1)	(45.9)	(100.0)

Notes:
1. Source, LFS March 2003- February 2004. All numbers are weighted.
2. Definition of FT based on hours measure using >30 for most workers but >25 for teachers. Figures relate to main jobs only.
3. First number is number of workers in millions. Percentage of total is in brackets.

Table 3.1
Reasons for taking PT Job

%	All PT Workers	Non-Students	Students
Student	12	3	98
Ill/Disabled	2	2	0
Found No FT Job	6	6	1
Did Not Want FT Job	80	89	1

Notes:
1. Source, LFS March 2003- February 2004. All percentages are weighted. Sample is women working PT in main job. Total number of observations is 48700.
2. Students are defined as those still in full-time education. This explains why some non-students report they are working PT because they are a 'student'.

Table 3.2
Reasons for not Wanting FT Job (Non-students)

Reason Given	Percentage
Financially secure - work because want to	7
Earn enough working part-time	7
Want to spend more time with family	41
Domestic commitments prevent full-time working	27
Insufficient child-care facilities	2
Other	16

Notes:
1. Source, LFS March 2003- February 2004. All percentages are weighted. Sample is women working PT in main job who are not still in full-time education.

Table 3.3
Ethnicity and PT Working

Ethnicity	% working PT	% working	Share of female employment
White	42.0	69.6	93.8
Mixed	32.9	65.8	0.6
Indian	30.3	63.1	1.7
Pakistani	40.1	26.2	0.4
Bangladeshi	29.7	21.4	0.1
Other Asian	30.7	55.1	0.5
Black Caribbean	25.8	66.7	1.0
Black African	25.0	55.5	0.8
Other Black	26.0	67.5	0.1
Chinese	28.6	60.3	0.3
Other	34.6	47.2	0.7

Notes.
1. Source LFS March 2003- February 2004. All percentages are weighted.
2. Sample is women working who are not in full-time education and data refer to main job only.

Table 3.4
The Industrial Distribution of PT and FT Work

%	FT Women	PT Women	All Women
Agriculture & fishing	0.5	0.6	0.6
Energy & water	0.6	0.2	0.5
Manufacturing	10.5	5.0	8.2
Construction	1.7	1.7	1.7
Distribution, hotels and restaurants	16.6	25.7	20.4
Transport & communication	4.4	2.8	3.7
Banking, finance and insurance	17.4	12.5	15.4
Public admin, education and health	42.0	43.7	42.7
Other services	6.2	7.7	6.8

Notes.
1. Source LFS March 2003- February 2004. All percentages are weighted.
2. Sample is women working who are not in full-time education and data refer to main job only.

Table 3.5
The Incidence of Flexible Working Practices Among PT and FT Women

	Part-Time	Full-Time
Works Flex-Time	9.4%	14.3%
Annualised Hours Contract	4.3%	4.9%
Term-Time Working Agreement	11.6%	5.3%
Job Sharing	3.5%	0.2%
Nine-Day Fortnight	0.0%	0.2%
Four-and-a-Half Day Week	0.1%	1.1%
Zero Hours Contract	0.8%	0.2%
None of the Above	71.7%	74.3%

Notes.

1. Source LFS March 2003-May 2003 and December 2003-February 2004 (the relevant questions are only asked in spring and autumn quarters). All percentages are weighted.
2. Sample is women working who are not in full-time education and data refer to main job only.

Table 3.6
The Occupational Distribution of PT and FT Work

	FT Women (%)	PT Women (%)	All Women (%)
Managers and senior officials	15.1	4.4	10.7
Professional occupations	13.8	7.8	11.3
Associate professional and technical	17.3	11.3	14.8
Administrative and secretarial	23.3	22.4	23.0
Skilled trades	2.1	1.9	2.0
Personal services	12.4	16.6	14.1
Sales and customer services	7.1	15.9	10.7
Process, plant and machine operatives	3.2	1.8	2.6
Elementary	5.4	17.9	10.6

Notes.

1. Source LFS March 2003- February 2004. All percentages are weighted.
2. Sample is women working who are not in full-time education and data refer to main job only.

Table 3.7
The Most Common Occupations among PT and FT Women
(% of Total Employment)

Part-Time	%	Av Wage	Full-Time	%	Av Wage
Sales and retail assistants	10.1	4.86	general office assistants or clerk	4.3	6.82
Cleaners, domestics	7.1	4.97	accnts wages clerk, bookkeeper	3.9	7.96
Care assistants and home carers	5.0	5.70	Nurses	3.6	10.53
General office assistants or clerk	4.2	6.82	Care assistants and home carers	3.3	5.70
Educational assistants	3.4	5.98	sales and retail assistants	3.3	4.86
Kitchen and catering assistants	3.4	4.77	personal assists & othr secretarie	3.2	8.32
Nurses	3.4	10.53	Prim & nurs eductn teaching profs	3.1	13.87
Accnts wages clerk, bookkeeper	3.1	7.96	secondary eductn teaching prfsnals	2.4	14.35
Retail cashiers/check-out operator	2.8	4.86	Retail and wholesale managers	1.8	7.17
Receptionists	2.8	6.08	Office managers	1.7	10.07
Personal assists & other secretaries	2.6	8.32	customer care occupations	1.7	7.02
Nursing auxiliaries and assistants	1.8	5.60	local gov clerical offs & assists	1.6	7.59
School mid-day assistants	1.8	5.11	civil serv admin offcrs and assist	1.6	7.32
Counter clerks	1.8	6.93	Educational assistants	1.6	5.98
Prim & nurs eductn teaching profs	1.6	13.87	marketing and sales managers	1.6	14.58
Customer care occupations	1.5	7.02	Receptionists	1.4	6.08
Bar staff	1.1	4.48	Nursing auxiliaries and assistants	1.3	5.60
Local gov clerical offs & assists	1.1	7.59	Nursery nurses	1.3	6.54
Waitresses	1.1	4.75	Counter clerks	1.1	6.93
Hairdressers	1.1	4.08	Hairdressers	1.1	4.08
Other Teaching Professionals	1.1	11.91	Cleaners, domestics	1.1	4.97
			Childminders	1.0	4.44

Notes.
1. Source LFS March 2003- February 2004. All percentages are weighted.
2. Sample is women working who are not in full-time education and data refer to main job only.
3. Average wage is the geometric mean of the hourly wage for all women. See Table 4.5 for information on the PTPP within selected occupations.
4. For information the median hourly wage for women is £8.85, the 25^{th} percentile is £5.29 and the 75^{th} percentile is £10.63.

Table 3.8
The Occupations with the Highest and Lowest Proportions of PT Workers

Most PT Intensive Occupations	% PT	Av Wage	Least PT Intensive Occupations	% PT	Mean Hourly Wage
school crossing patrol attendants	100	5.29	managers in Construction	0.0	10.77
school mid-day assistants	98.2	5.11	Quality assurance managers	3.1	14.32
cleaners, domestics	82.6	4.97	Transport and distribution managers	4.3	10.61
playgroup leaders & assistants	82.6	5.14	Purchasing Managers	5.4	14.07
shelf fillers	80.3	5.38	Police Officers (sergeant and below)	7.6	11.63
Collector salesperson	78.4	8.14	Environmental protection officers	7.9	10.05
retail cashiers/check-out operator	75.2	4.86	Travel agency managers	9.4	8.83
Bar staff	73.2	4.48	leisure and sports managers	9.8	8.10
kitchen and catering assistants	70.5	4.77	Prison service officers (below principal officer)	9.9	8.50
Sports coaches	68.4	9.10	Marketing and sales managers	10.0	14.58

Notes.
1. Source LFS March 2003- February 2004. All percentages are weighted.
2. Sample is women working who are not in full-time education and data refer to main job only.
3. Average wage is the geometric mean of the hourly wage.
4. Only occupations with total employment of more than 25000 are reported (using LFS grossing weights) and miscellaneous occupations are excluded.
5. For information the median hourly wage for women is £8.85, the 25^{th} percentile is £5.29 and the 75^{th} percentile is £10.63.

Table 4.1
Estimates of the PT Pay Penalty: Different Methodologies

	Basic Controls	Basic Controls+ broad occupation	Basic Controls+ narrow occupation
Unadjusted PTPP	-22.1%	-22.1%	-22.1%
Adjusted PTPP (Constant)	-11.0%	-3.3%	-2.5%
Adjusted PTPP (Varying) (Average PT Woman)	-10.8%	-3.1%	-2.4%
Adjusted PTPP (Varying) (Average FT Woman)	-11.0%	-3.4%	-3.0%

Notes:
1. Data is from LFS 2001-2003.
2. Basic controls are for year, month, region, education, experience (age), ethnicity, marital status, the number of children, the age of youngest child, job tenure, employer size and industry.
3. More detail on these results can be found in Appendix B and Table B1.

Table 4.2
The Importance of Different Factors in Accounting for the PT Pay Penalty

	FT Coefficients	PT Coefficients
Unadjusted PTPP	-22.1%	-22.1%
PTPP Accounted for by Characteristics	-20.2%	-19.7%
Of which the contribution of the following variables is:		
Year/Month	0.0%	0.0%
Region	4.9%	4.5%
Education	16.4%	11.8%
Age	-8.8%	-3.6%
Race	-0.4%	0.0%
Marital Status/ Children	3.1%	-0.9%
Job Tenure	1.8%	1.8%
Employer Size	5.3%	3.6%
Industry	9.3%	13.2%
Occupation (Narrowly defined)	68.1%	70.0%

Notes.
1. These estimates come from the bottom half of Table 4.1.

Table 4.3
The PT Pay Penalty in Workplace Employee Relations Survey

	Basic Controls	Basic Controls+ broad occupation	Basic Controls +broad occupation +firm Effects
Unadjusted PTPP	-24.5%	-24.5%	-22.1%
Adjusted PTPP (Constant)	-11.9%	-3.4%	-2.5%
Adjusted PTPP (Varying) (Average PT woman)	-12.6%	-4.9%	-2.4%
Adjusted PTPP (Varying) (Average FT woman)	-9.9%	-1.4%	-3.0%

Notes.
1. Data source is 1998 Workplace Industrial Relations Survey.
2. Basic Controls Included are education, age, ethnicity, marital status, the presence of children in the household, job tenure, employer size, industry and the extent of gender segregation in the job.

Table 4.4
The Variation in the PT Pay Penalty by education

	No Quals	GCSEs	`A' Level	Graduates
Unadjusted PTPP	-17.1%	-15.0%	-15.5%	-13.0%
Basic Controls				
Adjusted PTPP (Constant)	-9.6%	-9.5%	-10.2%	-12.1%
Adjusted PTPP (Varying) (Average PT woman)	-8.8%	-9.9%	-10.7%	-12.0%
Adjusted PTPP (Varying) (Average FT woman)	-11.0%	-9.2%	-11.1%	-12.2%
Basic Controls + broad occupation				
Adjusted PTPP (Constant)	-2.1%	-3.7%	-3.4%	-3.6%
Adjusted PTPP (Varying) (Average PT woman)	-0.4%	-3.7%	-4.3%	-4.0%
Adjusted PTPP (Varying) (Average FT woman)	-5.1%	-4.0%	-3.0%	-2.1%

Notes.
1. Estimation uses the same data and methods as Table 4.1 but estimates separate earnings equations for the four education groups.

Table 4.5
Part-Time Pay Penalties in selected Occupations

	Unadjusted PTPP	Adjusted PTPP (Constant)	Number of observations
primary & nursery education teaching profs	-1.4%	-0.5%	2359
nurses	+4.3%*	-0.4%	3394
civil service admin officers and assistants	+9.9%*	+3.3%	1219
local government clerical officers & assistants	-5.2%*	-5.3%*	1257
accounts wages clerk, bookkeeper	-3.9%*	-4.6%*	3107
counter clerks	-4.9%*	-4.7%*	1308
filing & other records assistants & clerks	-5.5%*	-3.8%	917
general office assistants or clerk	0.0%	-3.2%*	3529
personal assistants & other secretaries	-11.4%*	-4.8%*	2644
receptionists	-1.6%	-1.7%	1792
nursing auxiliaries and assistants	+7.0%*	+7.1%*	1427
care assistants and home carers	+2.7%*	+1.8%	3575
educational assistants	-6.2%*	-2.9%	2222
sales and retail assistants	-3.5%*	-1.5%	5323
customer care occupations	-5.4%*	-4.0%*	1410
kitchen and catering assistants	-2.7%	-2.5%	1937
cleaners, domestics	+0.2%	0.0%	3388

Notes
1. Data is the same as that used in Table 4.1.
2. Other controls included are year, month, region, education, experience (age), ethnicity, marital status, the number of children, the age of youngest child, job tenure, employer size and industry.
3. An asterisk denotes that the coefficient is significantly different from zero at the 10% level.

Table 4.6
The PT Pay Penalty at Different Points in the Pay Distribution

	Unadjusted PTPP	Adjusted PTPP for Av FT Woman	Adjusted PTPP for Av PT Woman
10th Percentile	-13.2%	-8.2%	-3.4%
25th Percentile	-19.1%	-10.5%	-5.8%
50th Percentile	-23.6%	-7.5%	-7.3%
75th Percentile	-23.4%	-3.5%	-3.8%
90th Percentile	-15.8%	4.1%	-0.3%

Notes.

1. Data is the same as that used in Table 4.1.
2. The estimation method and interpretation of results are described in more detail in Appendiz B.
3. The estimates reported here are for the more balanced sample (details in Appendix B).

Table 4.7
The part-time pay penalty Using Different Definitions of PT Status

	Self-Assessment	Hours-Based Definition
Unadjusted PTPP	-22.1%	-23.5%
Adjusted PTPP (Constant)	-2.5%	-1.7%
Adjusted PTPP (Varying) (Average PT Woman)	-2.4%	-1.9%
Adjusted PTPP (Varying) (Average FT Woman)	-3.0%	-1.9%

Notes.

1. The sample and estimation method are the same as for Table 4.1. The Controls include narrowly defined occupation.
2. For the hours-based definition of PT status a worker is defined as PT if their basic usual weekly hours are <30 with the exception of teachers who are defined as PT if their hours are <25.

Table 5.1
A Comparison of the Detailed Decomposition in the 1990s and 2000s

	1993/1995		2001/2003	
	FT Coefficients	PT Coefficients	FT Coefficients	PT Coefficients
Unadjusted PTPP	-22.4%	-22.4%	-22.1%	-22.1%
Adjusted PTPP	-1.1%	-3.5%	-1.9%	-2.4%
PTPP Gap Accounted for by Characteristics	-21.3%	-18.9%	-20.2%	-19.7%
	Of which the contribution of the following variables is:			
Year/Month	0.0%	0.0%	0.0%	0.0%
Region	6.3%	5.2%	4.9%	4.5%
Education	19.7%	13.3%	16.4%	11.8%
Experience	-10.5%	-2.9%	-8.8%	-3.6%
Race	-0.4%	0.0%	-0.4%	0.0%
Marital Status/ Children	5.4%	-1.4%	3.1%	-0.9%
Job Tenure	5.0%	4.8%	1.8%	1.8%
Employer Size	8.8%	6.2%	5.3%	3.6%
Industry	7.9%	7.6%	9.3%	13.2%
Occupation (narrow)	57.3%	67.6%	68.1%	70.0%

Notes.
1. Estimates for 2001/3 are taken from Table 4.2. Estimates for earlier period simply apply same methodology to data from that period.

Table 5.2
Changes in the Occupational Distribution of PT and FT Employment

	Part-Time			Full-time			
	1975	2001	Change	1975	2001	Change	Change FT-Change PT
Managers	0.6%	3.8%	3.2%	4.5%	15.6%	11.1%	7.9%
Professionals	2.6%	4.7%	2.1%	7.6%	12.9%	5.3%	3.2%
Associate Professional	4.3%	9.3%	5.0%	7.5%	12.2%	4.7%	-0.3%
Clerical	24.0%	25.9%	1.9%	43.3%	33.2%	-10.1%	-12.0%
Craft	4.2%	0.8%	-3.4%	5.7%	2.1%	-3.7%	-0.3%
Personal Service	11.0%	20.9%	9.8%	6.4%	9.4%	3.0%	-6.9%
Sales	13.1%	19.4%	6.3%	7.4%	6.7%	-0.7%	-7.0%
Operatives	10.4%	2.1%	-8.3%	11.7%	4.9%	-6.8%	1.5%
Others	29.8%	13.2%	-16.6%	5.9%	3.1%	-2.8%	13.9%

Notes.
1. Data is taken from New Earnings Survey.
2 Occupational Coding is 1990 Standard Occupational Classification.

Table 6.1
Previous Labour Market Status of FT and PT Workers

Labour Market Status 3 months ago	Currently FT	Currently PT
% Full-Time	95.5	3.8
% Part-Time	2.8	91.6
% Previously Unemployed	1.0	1.5
Of which		
% Previous job FT	78.5	13.8
% Previous job PT	6.1	69.2
% Previous Job not known	15.4	17.0
% Previously Inactive	0.9	4.2
Of which		
% Previous job FT	86.8	4.3
% Previous job PT	1.4	82.7
% Previous Job not known	11.8	13.0

Notes.
1. Data is taken from quarterly LFS for the period June 2001 to February 2004.

Table 6.2
Changes in Hours, Jobs and Occupations

	Currently FT		Currently PT	
	Change in Hours Status	No Change in Hours Status	Change in Hours Status	No Change in Hours Status
% with a new employer	27.6	3.3	17.4	2.9
% with a new employer - changing narrow occupation	77.8	50.4	73.2	47.7
% with a new employer - changing broad occupation	61.1	34.6	57.4	33.4
% with old employer - changing narrow occupation	14.0	6.7	12.2	4.5
% with old employer - changing broad occupation	9.6	4.0	8.2	2.5

Notes.
1. Data is taken from quarterly LFS for the period June 2001 to February 2004.

Table 6.3
Occupational Mobility

	Dependent Variable	Sample	All Women	Graduates
1	Occupational wage	All Currently in Work	-13.8%	-13.1%
	Entrants from Non-Employment			
2	Occupational wage	All Entrants	-14.4%	-14.6%
3	Occupational wage change	All Entrants	-7.5%	-17.1%
4	Occupational wage change	Entrants who were previously FT	-9.9%	-20.7%
5	Occupational wage change	Entrants previously FT <12 months ago	-7.8%	-17.6%
6	Occupational wage change	Entrants who were previously PT	-11.2%	-18.1%
		Those Employed FT 3 Months Ago		
7	Occupational wage change	Previously in FT employment	-2.0%	-1.9%
8	Occupational wage change	Previously in FT employment with change in employer	-8.9%	-9.3%
9	Occupational wage change	Previously in FT employment with no change in employer	-0.8%	-0.9%
		Those Employed PT 3 Months Ago		
10	Occupational wage change	Previously in PT employment	-4.4%	-5.5%
11	Occupational wage change	Previously in PT employment with change in employer	-8.1%	-11.0%
12	Occupational wage change	Previously in PT employment with no change in employer	-2.1%	-2.4%
		Those with no change in employer and no change in hours status		
13	Change in Occupation	All Stayers	-0.1%	0.0%
14	Occupational wage change	Stayers with change in occupation	-1.2%	-0.3%

Notes:
1. Data come from LFS for period June 2001 to February 2004.
2. Changes are from one quarter to another.
3. Other controls included are education, region, year, household characteristics, quartic in potential experience.

Table 6.4
The Occupations of Women with Nursing and Teaching Qualifications

	Teaching Qualification		Nursing Qualification	
	FT (%)	PT (%)	FT (%)	PT (%)
Managers and senior officials	7.3	3.1	12.3	3.0
Professional occupations (excl teaching professionals)	2.2	1.6	4.6	3.7
Teaching professionals	71.4	55.7	1.8	1.9
Associate professional and technical (excl Health and Social Welfare Associate Professionals)	4.1	5.7	1.9	2.2
Health and Social Welfare Associate Professionals	4.7	7.3	63.2	64.9
Administrative and secretarial	4.6	10.1	2.8	5.3
Skilled trades	0.4	1.2	0.4	0.5
Caring Personal service	3.4	9.4	11.1	13.8
Leisure and Other Personal Service	0.7	1.1	0.3	0.4
Sales and customer service	0.6	2.5	0.6	2.1
Process, plant and machine operatives	0.2	0.4	0.2	0.2
Elementary	0.4	1.8	0.7	1.9

Notes.
1. Source of data is Labour Force Survey, 2001-2003.

Table 7.1
The employment status of women in the EU

Country	Part-time employment as % of total employment	Employment as % of Population	Unemployment as % of the labour force	Labour force participation rate
U.K.	40	63	5	67
Sweden	20	67	10	74
Finland	11	78	15	92
Denmark	18	84	10	93
Germany	33	61	12	70
Netherlands	53	50	20	63
Belgium	28	57	18	70
Luxembourg	26	52	3	54
Austria	26	66	6	70
Ireland	32	44	9	48
France	18	61	14	71
Italy	15	43	21	54
Spain	21	34	28	47
Portugal	10	64	12	72
Greece	12	34	25	46
Total	26	54	14	63

Notes.

1. Part-time employment is the % working part-time in total employment (part-time status is self-assessed).
2. The employment rate is the ratio between total employment and the working age population. The unemployment rate is the ratio between unemployment and the labour force. The participation rate is the ratio between the labour force and the working age population.
3. Source and sample: ECHPS, 1994-2001, females aged 15-64.

Table 7.2
Part-Time Employment as a Percentage of Total Employment in the EU – by age

	Age categories					
Country	15-24	25-34	35-44	45-54	55-64	Total
U.K.	30	34	44	41	56	40
Sweden	41	18	18	15	26	20
Finland	32	10	8	7	16	11
Denmark	22	11	14	22	29	18
Germany	9	25	40	40	45	33
Netherlands	27	39	66	63	68	53
Belgium	22	23	32	31	34	28
Luxembourg	9	18	32	39	35	26
Austria	6	24	33	31	36	26
Ireland	14	22	42	49	54	32
France	20	16	18	19	26	18
Italy	13	14	16	15	14	15
Spain	22	21	20	21	29	21
Portugal	6	6	9	16	33	10
Greece	12	11	9	14	31	12
Total	18	20	27	28	37	25

Notes.
1. All figures reported are % working part-time in the corresponding category.
2. Part-time status is self-assessed.
3. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students.

Table 7.3
Part-Time Employment as a Percentage of Total Employment in the EU – by education

	Education levels			
country	Low	Medium	High	Total
U.K.	48	38	31	40
Sweden	32	22	13	20
Finland	13	14	7	11
Denmark	24	18	14	18
Germany	38	33	27	33
Netherlands	53	55	43	53
Belgium	44	31	20	28
Luxembourg	30	22	23	26
Austria	28	25	22	26
Ireland	50	27	17	32
France	25	17	12	18
Italy	17	13	17	15
Spain	30	18	14	21
Portugal	12	4	8	10
Greece	16	8	12	12
Total	32	25	19	26

Notes.

1. All figures reported are % working part-time in the corresponding category.
2. Part-time status is self-assessed.
3. Low education: less than second stage of secondary education (ISCED 0-2); medium education: second stage of secondary education (ISCED 3); high education: recognized third level education (ISCED 5-7).
4. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students

Table 7.4
Part-Time Employment as a Percentage of Total Employment in the EU – by occupation

	Occupation (from higher to lower)									
country	A	b	c	d	e	f	g	h	i	Total
U.K.	14	27	29	36	60	27	20	22	69	40
Finland	3	7	9	9	13	12	4	7	23	10
Denmark	7	7	14	17	25	33	7	5	35	17
Germany	10	27	25	33	39	22	16	20	67	33
Netherlands	24	41	47	50	68	55	43	40	78	53
Belgium	2	27	23	19	43	46	29	12	53	29
Luxembourg	19	28	22	18	18	10	16	13	48	26
Austria	7	17	16	22	28	56	19	16	46	25
Ireland	12	22	19	25	43	96	23	13	61	32
France	6	17	11	16	22	30	12	7	40	18
Italy	8	17	12	11	18	35	8	9	25	15
Spain	13	12	13	12	22	46	13	10	43	21
Portugal	3	10	5	2	11	62	3	0	21	10
Greece	8	18	6	5	10	70	7	1	19	12
Total	12	21	21	22	34	49	10	12	45	26

Notes.

1. All figures reported are % working part-time in the corresponding category.
2. Part-time status is self-assessed.
3. Definition of occupations:
    a. Legislators, senior officials and managers
    b. Professionals
    c. Technicians and associate professionals
    d. Clerks
    e. Service workers and shop and market sales workers
    f. Skilled agricultural and fishery workers
    g. Craft and related trades workers
    h. Plant and machine operators and assemblers
    i. Elementary occupations
4. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students. Sweden is excluded as no information on occupations is available.

Table 7.5
The occupational distribution of women by hours status in the EU

	Occupation (from higher to lower)									
	Among women working full-time									
country	a	b	c	d	e	f	g	h	i	Total
U.K.	13	16	15	29	16	0	2	5	5	100
Finland	5	24	21	17	20	1	4	2	7	100
Denmark	3	16	27	22	20	0	2	4	7	100
Germany	3	12	34	21	17	1	5	4	5	100
Netherlands	7	20	27	22	14	1	2	3	4	100
Belgium	3	25	15	33	11	0	2	2	9	100
Luxembourg	2	11	20	28	19	1	2	2	14	100
Austria	3	6	19	28	25	1	5	2	10	100
Ireland	4	19	12	25	21	0	2	11	7	100
France	4	8	24	30	18	1	2	6	8	100
Italy	1	15	13	34	11	1	11	4	11	100
Spain	1	22	14	19	20	0	5	3	16	100
Portugal	1	10	10	17	19	2	17	7	17	100
Greece	1	19	12	28	17	1	8	3	11	100
Total	4	15	19	25	17	1	6	4	9	100
	Among women working part-time									
country	a	b	c	d	e	f	g	h	i	Total
U.K.	3	9	9	24	36	0	1	2	16	100
Finland	1	16	19	16	26	1	1	1	19	100
Denmark	1	6	21	20	32	1	1	1	17	100
Germany	1	9	24	21	22	1	2	2	19	100
Netherlands	2	13	22	20	27	1	1	2	13	100
Belgium	0	22	11	19	21	0	2	1	24	100
Luxembourg	2	12	17	18	12	0	1	1	38	100
Austria	1	4	11	24	29	2	4	1	24	100
Ireland	1	12	6	17	34	2	1	4	23	100
France	1	8	13	27	23	1	1	2	23	100
Italy	0	18	10	25	14	2	6	2	22	100
Spain	1	11	8	9	21	1	3	1	45	100
Portugal	0	10	4	3	19	21	5	0	37	100
Greece	1	33	6	12	14	11	5	0	19	100
Total	1	11	14	20	26	2	2	2	21	100

Notes.
All figures reported are % of women in each occupation, by hours, status. See also notes to Table 7.4

Table 7.6
Part-Time Employment as a Percentage of Total Employment in the EU – by household structure

	Household structure				
Country	Single, no children	Married, no children	Married, with children	Single, with children	Total
U.K.	24	29	54	44	40
Sweden	25	19	20	17	20
Finland	15	12	9	7	11
Denmark	19	20	17	9	18
Germany	9	24	53	32	33
Netherlands	22	34	81	58	53
Belgium	12	21	35	29	28
Luxembourg	7	16	48	20	26
Austria	6	15	43	25	26
Ireland	11	17	50	47	32
France	12	19	21	12	18
Italy	12	11	18	10	15
Spain	18	19	25	23	21
Portugal	6	12	12	16	10
Greece	9	14	13	10	12
Total	14	22	34	25	26

Notes.

1. All figures reported are % working part-time in the corresponding category.
2. Part-time status is self-assessed.
3. "Married" includes cohabiting; "children" refers to own children living in the household.
4. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students

Table 7.7
Reasons for taking part-time jobs in the EU

Country	In education or training	Disabled	Caring after children or other family member	Found no FT job	Did not want FT job	Other
U.K.	3	2	36	7	19	34
Finland	19	6	12	37	15	10
Denmark	7	3	23	18	41	7
Germany	2	2	84	5	6	2
Netherlands	3	3	53	8	25	8
Belgium	1	3	48	18	23	7
Luxembourg	1	3	66	9	15	6
Austria	2	1	69	9	11	7
Ireland	2	1	49	17	23	8
France	1	6	34	38	15	6
Italy	4	1	30	24	15	26
Spain	6	2	27	38	8	20
Portugal	3	13	24	28	6	26
Greece	3	2	16	44	14	21
Total	4	3	45	18	18	13

Notes.

1. All figures reported are % of part-time workers in the corresponding category. Columns sum to 100.
2. Part-time status is self-assessed.
3. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students (Students are defined as those still in FT education. This explains why some non-students report they are working PT because they are “in education or training”. Sweden is excluded as no information on the reason for holding a part-time job is available.

Table 7.8
Estimates of the PTPP in the EU: Different Methodologies

	Dummy variable for part-time			Oaxaca decomposition			
Country	Raw log FT-PT pay gap	Basic controls	Basic controls + occ	Basic controls Av FT Woman	Basic controls Av PT Woman	Basic controls +occ Av FT Woman	Basic controls + occ Av PT Woman
	1	2	3	4	5	6	7
U.K.	-23.5%	-16.9%	-10.9%	-15.9%	-17.8%	-10.5%	-11.5%
Finland	-14.1%	-3.1%	-1.3%	-6.2%	-6.7%	-4.4%	-7.2%
Denmark	-8.6%	-5.4%	-2.3%	-5.4%	-7.2%	-2.7%	-5.7%
Germany	3.1%	7.3%	8.7%	9.0%	6.8%	10.4%	7.6%
Netherlands	-3.0%	-7.0%	-3.5%	-5.0%	-7.6%	-2.0%	-4.2%
Belgium	-1.2%	3.8%	6.1%	3.7%	1.6%	5.5%	3.4%
Austria	2.1%	2.7%	7.3%	2.3%	6.2%	5.7%	10.1%
Ireland	-17.1%	-10.6%	-6.7%	-9.6%	-3.4%	-5.7%	-2.8%
France	-12.4%	-3.3%	-0.8%	-3.0%	-2.4%	-0.7%	0.7%
Italy	14.1%	15.8%	15.6%	16.2%	12.2%	16.2%	11.2%
Spain	-16.0%	1.1%	4.9%	1.5%	-5.7%	4.5%	-3.2%
Portugal	-6.9%	2.4%	2.8%	-5.7%	-17.0%	-6.1%	-10.8%
Greece	8.3%	5.1%	4.3%	5.4%	1.7%	4.5%	6.3%

Notes.

1. The figures in columns 1-3 are obtained from the coefficients on a part-time dummy in a regression where the dependent variable is the log of the gross hourly wage. The actual figures reported are computed by converting the estimated coefficients on the PT dummy into percentage points difference.
2. The figures in columns 4-7 represent the percentage points explained by different coefficients in a Oaxaca decomposition of the full-time/part-time wage gap.
3. The controls used are: year dummies, 2 education dummies, experience and its square, foreign born, married, number of dependent children, one dummy for public sector, 18 industry dummies, 19 occupation dummies.
4. *, **, and *** denote significance at 10%, 5% and 1% levels, respectively.
5. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students. Sweden is excluded as no information on wages is available. Luxembourg is excluded due to small sample size.

Table 7.9
The Importance of Characteristics in Explaining the PTPP in the EU

Country	Raw log FT-PT pay gap	Portion explained by all characteristics: Evaluated at own FT coeffs.	Evaluated at U.K. FT coeffs.	Evaluated at own PT coeffs.	Evaluated at U.K. PT coeffs.
U.K.	-21.9%	-14.3%	-14.3%	-13.9%	-13.9%
Finland	-9.4%	-12.0%	-15.9%	-10.8%	-13.3%
Denmark	-9.0%	-6.6%	-13.6%	-6.3%	-13.3%
Germany	2.2%	-8.7%	-7.4%	-6.5%	-6.8%
Netherlands	-8.8%	-4.5%	-10.1%	-2.2%	-8.5%
Belgium	-5.3%	-9.4%	-11.8%	-6.3%	-10.9%
Austria	2.6%	-5.0%	-3.8%	-6.9%	-5.9%
Ireland	-22.7%	-18.3%	-15.0%	-19.7%	-15.1%
France	-10.1%	-11.0%	-12.7%	-11.6%	-11.9%
Italy	13.0%	-6.0%	-9.2%	-1.9%	-11.0%
Spain	-14.8%	-25.2%	-20.1%	-17.7%	-22.0%
Portugal	-2.3%	-22.8%	-21.3%	-21.5%	-27.5%
Greece	6.3%	-7.6%	-11.0%	-8.0%	-13.2%

Country	Raw log FT-PT pay gap	Portion explained by occupation alone: Evaluated at own FT coeffs.	Evaluated at U.K. FT coeffs.	Evaluated at own PT coeffs.	Evaluated at U.K. PT coeffs.
U.K.	-21.9%	-9.1%	-9.1%	-11.5%	-11.5%
Finland	-9.4%	-5.1%	-6.6%	-3.6%	-8.3%
Denmark	-9.0%	-4.8%	-7.9%	-5.4%	-10.6%
Germany	2.2%	-5.8%	-6.2%	-5.8%	-7.2%
Netherlands	-8.8%	-6.7%	-7.5%	-6.6%	-10.1%
Belgium	-5.3%	-5.4%	-5.7%	-4.7%	-8.6%
Austria	2.6%	-5.4%	-6.0%	-6.2%	-8.1%
Ireland	-22.7%	-13.2%	-10.0%	-10.8%	-12.9%
France	-10.1%	-6.6%	-6.0%	-6.3%	-7.7%
Italy	13.0%	-1.3%	-2.9%	-0.8%	-4.1%
Spain	-14.8%	-11.0%	-10.1%	-9.2%	-14.1%
Portugal	-2.3%	-12.3%	-10.4%	-24.8%	-18.5%
Greece	6.3%	1.2%	-2.8%	8.8%	-5.2%

Notes.

1. The figures represent the total raw PTPP and the percentage-points explained by (i) all characteristics (upper panel) and (ii) occupation alone (lower panel) in a Oaxaca decomposition of the full-time/part-time wage gap.
2. See Table 7.8 for controls used in the regressions.
3. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students. Sweden is excluded as no information on wages is available. Luxembourg is excluded due to small sample size.

Table 7.10
Changes in hours, jobs and occupations in the EU

	Currently Full-time			Currently Part-time		
Country	% changing hours status	% previously unemployed	% previously inactive	% changing hours status	% previously unemployed	% previously inactive
U.K.	6.9	1.4	2.7	9.1	1.5	24.5
Sweden	8.5	4.0	13.9	29.3	4.4	13.0
Finland	3.3	4.0	1.7	25.2	11.0	7.0
Denmark	3.6	3.3	1.2	15.7	5.7	4.5
Germany	4.7	3.3	1.4	7.7	4.0	24.3
Netherlands	8.4	2.3	1.3	7.4	7.1	22.0
Belgium	4.3	2.0	1.0	11.2	7.3	11.5
Luxembourg	3.8	0.9	3.9	9.1	1.6	18.7
Austria	4.2	1.6	1.5	11.3	2.5	18.0
Ireland	6.6	3.1	3.6	9.6	3.2	32.1
France	3.3	2.5	2.3	11.2	5.8	7.4
Italy	5.4	4.0	2.5	19.4	5.9	12.6
Spain	4.6	8.0	3.7	11.2	13.4	26.5
Portugal	2.1	3.8	2.1	12.4	6.0	32.7
Greece	4.0	6.6	3.6	17.9	9.6	21.2
Total	4.9	3.5	3.1	11.4	5.1	20.7

Notes.

1. Part-time status is self-assessed.
2. Source and sample: ECHPS, 1994-2001, females aged 15-64, excluding students.

Table 7.11
Changes in Employers and Occupations in the EU

(a) Those Changing Hours Status

	Currently full-time			Currently part-time		
country	% with new employer	% moving to better paid occupation	% moving to worse paid occupation	% with new employer	% moving to better paid occupation	% moving to worse paid occupation
U.K.	39.4	23.9	5.3	26.8	8.8	18.2
Sweden	4.6	n.a.	n.a.	8.3	n.a.	n.a.
Finland	29.0	19.6	4.7	15.0	6.1	9.9
Denmark	35.1	19.5	6.2	30.7	7.9	13.2
Germany	28.7	13.0	6.2	16.9	7.5	11.2
Netherlands	30.8	24.0	9.0	18.0	13.9	15.3
Belgium	17.3	12.7	12.6	11.7	12.1	8.5
Luxembourg	11.6	20.0	6.6	15.3	8.8	14.2
Austria	11.8	12.0	9.7	18.0	12.5	12.8
Ireland	24.4	19.1	7.0	15.5	15.6	11.5
France	13.3	4.2	3.9	9.6	0.9	4.7
Italy	8.9	6.6	5.4	11.1	9.6	4.9
Spain	38.8	17.3	11.6	20.6	11.1	9.3
Portugal	26.2	13.3	10.2	16.3	12.1	10.4
Greece	16.5	6.4	3.5	13.0	7.5	4.7
Total	22.8	15.7	7.6	16.5	9.6	11.7

(b) Among workers not changing hours status

	Currently full-time			Currently part-time		
Country	% with new employer	% moving to better paid occupation	% moving to worse paid occupation	% with new employer	% moving to better paid occupation	% moving to worse paid occupation
U.K.	19.1	7.8	7.0	19.6	6.6	5.1
Sweden	6.5	n.a.	n.a.	10.5	n.a.	n.a.
Finland	13.7	4.1	2.7	34.6	2.6	3.6
Denmark	17.3	3.6	2.1	17.8	2.6	1.3
Germany	14.9	4.6	4.1	13.8	5.2	5.1
Netherlands	17.2	10.1	8.0	16.4	7.8	6.8
Belgium	9.1	7.0	8.3	9.4	6.1	7.3
Luxembourg	7.4	5.0	2.6	8.6	1.7	1.0
Austria	9.2	7.0	7.0	14.1	6.4	6.1
Ireland	19.6	10.7	6.8	32.5	9.8	6.4
France	7.4	1.5	0.8	17.1	1.2	0.7
Italy	10.3	5.3	3.7	14.5	6.6	3.5
Spain	19.3	10.2	8.1	36.6	6.9	7.3
Portugal	13.0	8.9	7.6	19.4	7.8	5.6
Greece	13.4	3.4	2.9	23.3	3.0	1.7
Total	13.5	6.2	5.0	18.3	6.0	5.1

Notes.
1. Part-time status is self-assessed.
2. Source and sample: ECHPS, 1994-2001, females aged 15-64, excluding students. See top of each panel for subsample used in each case.

Table 7.12
Under-utilisation of skills on part-time jobs in the EU

Country	% of FT women who are overeducated	% of PT women who are overeducated	Adjusted Differential FT-PT
U.K.	66	63	+2.6
Finland	60	66	+18.0***
Denmark	58	53	-9.8**
Germany	60	62	+4.6
Netherlands	41	40	+5.4**
Belgium	60	56	-2.4
Austria	57	64	+5.3
Ireland	52	57	+24.9***
France	46	45	+3.8
Italy	48	51	+4.2
Spain	60	64	+12.7***
Portugal	46	42	-8.9**
Greece	60	70	+29.6***

Notes.

1. Figures reported in columns 1 and 2 are the % of women who feel overqualified, by hours status. Figures reported in column 3 are coefficients on a part-time dummy in a probit model for whether a worker feels overqualified.
2. Part-time status is self-assessed.
3. The estimated equations also include: year dummies, 2 education dummies, age and its square, foreign born, married, number of dependent children, one dummy for public sector, 18 industry dummies, 19 occupation dummies.
4. *, **, and *** denote significance at 10%, 5% and 1% levels, respectively.
5. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students. Sweden is excluded as no information on job satisfaction is available. Luxembourg is excluded due to small sample size.

Table 7.13
Average levels of subjective job satisfaction by hours status in the EU

Country	Aspects of job satisfaction						
	Overall	Job security	Earnings	Working hours	Type of work	Working times	Working conditions
				Among women working full-time			
U.K.	4.39	4.39	4.10	4.19	4.49	4.62	4.50
Finland	4.59	4.59	3.96	4.56	4.50	4.81	4.52
Denmark	4.92	4.92	4.20	4.80	4.85	4.97	4.74
Germany	4.44	4.44	3.66	4.26	4.55	4.62	4.46
Netherlands	4.70	4.70	4.35	4.60	4.83	4.85	4.32
Belgium	4.51	4.51	3.99	4.48	4.66	4.73	4.43
Luxembourg	4.82	4.82	4.38	4.78	4.87	4.83	4.70
Austria	4.98	4.98	4.28	4.97	5.11	5.06	5.05
Ireland	4.65	4.65	4.00	4.81	4.86	4.99	4.84
France	4.44	4.44	3.67	3.33	4.60	4.36	4.26
Italy	4.05	4.05	3.30	4.08	4.23	4.14	4.11
Spain	4.28	4.28	3.32	4.04	4.34	4.25	4.27
Portugal	3.96	3.96	3.13	3.94	4.17	4.10	4.19
Greece	3.97	4.10	3.30	4.09	4.15	4.13	4.20
Total	4.39	4.39	3.70	4.21	4.51	4.49	4.39
				Among women working part-time			
U.K.	4.70	4.44	4.24	4.78	4.57	4.81	4.68
Finland	4.45	4.31	3.72	4.33	4.43	4.66	4.56
Denmark	4.96	4.75	4.45	5.22	4.92	5.03	4.80
Germany	4.36	4.49	3.68	4.67	4.48	4.82	4.55
Netherlands	4.73	4.68	4.33	4.91	4.81	5.00	4.40
Belgium	4.50	4.53	4.04	4.90	4.70	4.78	4.62
Luxembourg	4.68	4.92	4.21	5.00	4.78	4.94	5.01
Austria	4.92	4.84	4.30	5.17	5.03	5.23	5.24
Ireland	4.54	4.25	3.93	4.94	4.74	5.15	5.07
France	4.32	4.02	3.48	3.38	4.50	4.48	4.38
Italy	3.76	3.89	3.01	4.32	4.12	4.39	4.30
Spain	3.78	3.75	2.99	3.99	4.02	4.46	4.51
Portugal	3.33	3.72	2.71	3.63	3.82	4.10	4.17
Greece	3.15	3.31	2.58	4.06	3.92	4.27	4.11
Total	4.43	4.35	3.84	4.59	4.56	4.78	4.58

Notes.

1. Figures reported are average subjective job satisfactions levels by hours status.
2. Job satisfaction is measured on a scale 1-5, from “very dissatisfied” to “very satisfied”.
3. Part-time status is self-assessed.
4. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students. Sweden is excluded as no information on job satisfaction is available.

Table 7.14
The effect of holding a part-time job on several aspect of job-satisfaction in the EU

(a) Results based on the whole sample

	Aspects of job satisfaction						
Country	Overall	Job security	Earnings	Working hours	Type of work	Working times	Working conditions
U.K.	0.136***	0.399***	0.005	0.115***	-0.025	0.233***	0.090**
Finland	-0.100**	-0.209***	-0.103**	-0.137***	-0.096**	-0.078*	-0.054
Denmark	0.079**	0.400***	-0.107***	0.204***	0.062*	0.118***	0.070**
Germany	0.059	0.388***	0.202***	0.081**	-0.050	0.249***	0.072*
Netherlands	0.059***	0.270***	-0.129***	0.052**	-0.115***	0.151***	0.017
Belgium	0.070**	0.374***	0.003	0.081**	0.045	0.158***	0.187***
Austria	0.006	0.245***	-0.145***	0.025	-0.020	0.214***	0.186***
Ireland	-0.128***	0.112***	-0.417***	-0.087***	-0.151***	0.067**	0.078**
France	-0.100***	0.168***	-0.265***	-0.105***	-0.040*	0.166***	0.123***
Italy	-0.091***	0.294***	-0.121***	-0.188***	-0.022	0.297***	0.139***
Spain	-0.120***	0.093***	-0.240***	-0.117***	-0.083***	0.237***	0.130***
Portugal	-0.442***	-0.453***	-0.430***	-0.496***	-0.350***	-0.039	-0.017
Greece	-0.506***	-0.100**	-0.520***	-0.619***	-0.234***	-0.014	-0.135***

(b) Excluding "involuntary" part-timers

	Aspects of job satisfaction						
Country	Overall	Job security	Earnings	Working hours	Type of work	Working times	Working conditions
U.K.	0.140***	0.014	0.133***	0.430***	-0.025	0.275***	0.093**
Finland	0.024	0.120**	0.032	0.245***	-0.063	0.042	0.037
Denmark	0.129***	-0.001	0.237***	0.654***	0.064*	0.213***	0.086**
Germany	0.091**	0.272***	0.139***	0.544***	-0.052	0.280***	0.084**
Netherlands	0.084***	-0.087***	0.091***	0.384***	-0.124***	0.166***	0.011
Belgium	0.172***	0.089**	0.192***	0.641***	0.101***	0.222***	0.227***
Austria	0.072**	-0.098***	0.102***	0.374***	-0.004	0.240***	0.197***
Ireland	-0.072**	-0.276***	-0.015	0.365***	-0.129***	0.129***	0.090**
France	0.039	-0.008	0.049*	0.481***	0.083***	0.310***	0.140***
Italy	0.045	0.033	-0.04	0.514***	0.080***	0.437***	0.207***
Spain	-0.006	-0.077**	0.050	0.372***	-0.011	0.366***	0.168***
Portugal	-0.341***	-0.263***	-0.314***	-0.085*	-0.329***	0.049	-0.028
Greece	-0.159**	-0.143**	-0.338***	0.208***	-0.003	0.137**	-0.071

Notes.

1. Figures reported are coefficients on a part-time dummy in an ordered probit model for subjective levels of job satisfaction.
2. Job satisfaction is measured on a scale 1-5, from "very dissatisfied" to "very satisfied".
3. Part-time status is self-assessed.
4. The estimated equations also include: year dummies, 2 education dummies, age and its square, foreign born, married, number of dependent children, one dummy for public sector, 18 industry dummies, 19 occupation dummies.
5. *, **, and *** denote significance at 10%, 5% and 1% levels, respectively.
6. Source and sample: ECHPS, 1994-2001, female employees aged 15-64, excluding students. Sweden is excluded as no information on job satisfaction is available. Luxembourg is excluded due to small sample size.

Table 8.1
The Impact of PT Working on the Receipt of Training

	Incidence among FT Women	Unadjusted PT-FT Differential	Adjusted PT-FT Differential	Adjusted PT-FT Differential
Controls	-	None	Basic	Basic + broad occupation
Job Related Education or Training in Last Week	9%	-2.8%	-1.9%	-1.5%
Job Related Education or Training in Last 4 Weeks	18%	-5.5%	-3.9%	-2.8%
Job Related Education or Training in Last 13 Weeks	35%	-10.0%	-7.1%	-5.1%
Total Hours of Training in Past Week	0.22hours	-0.061	-0.011	-0.004

Notes.
1. The source of the data is LFS 2001 to 2003. The other controls included are education, region, year, household characteristics, a quartic in potential experience, and industry.

Table A1
Descriptive Statistics

Variable	All Working Women	FT Working Women	PT Working Women
Part-Time Working	41%	0%	100%
Graduates	30%	36%	22%
GCSE or equivalent	34%	31%	39%
No qualifications	18%	14%	23%
Age 16-19	3%	3%	2%
Age 20-24	8%	11%	4%
Age 25-29	10%	13%	6%
Age 30-34	13%	13%	12%
Age 40-44	14%	13%	16%
Age 45-49	13%	13%	13%
Age 50-54	11%	11%	12%
Age 55-59	10%	8%	12%
Age 60-64	3%	2%	6%
Married without Children	47%	54%	36%
Married with Children	32%	21%	46%
Single with Children	10%	8%	12%
Average Age of Youngest Child	7.8yrs	8.5yrs	7.2yrs
Number of Children	70%	46%	104%
Black	2%	2%	1%
Asian	3%	3%	2%
Tyne & Wear	2%	2%	3%
Rest of Northern Region	3%	3%	2%
South Yorkshire	2%	2%	4%
West Yorkshire	4%	4%	3%
Rest of Yorks & Humberside	3%	3%	7%
East Midlands	7%	7%	4%
East Anglia	4%	4%	5%
Inner London	3%	4%	2%
Outer London	6%	7%	5%
South West	9%	8%	9%
West Midlands (met county)	4%	4%	4%
Rest of West Midlands	5%	5%	5%
Greater Manchester	4%	4%	3%
Merseyside	2%	2%	2%
Rest of North-West	4%	4%	4%
Wales	5%	5%	5%
Strathclyde	4%	4%	3%
Rest of Scotland	6%	6%	6%
Northern Ireland	4%	4%	3%
Job Tenure < 5 years	51%	51%	51%
Job Tenure 10-15 years	12%	12%	12%
Job Tenure 15+ years	16%	17%	16%
Public Sector	38%	37%	38%
Non-permanent Job	6%	4%	8%
Establishment with >25 Employees	64%	70%	55%
Agriculture & fishing	0%	0%	0%
Energy & water	0%	1%	0%
Manufacturing	8%	11%	5%
Construction	2%	2%	1%

Transport & Communication	4%	4%	3%
Banking, finance & insurance etc	14%	17%	11%
Public admin, education & health	45%	44%	47%
Other services	5%	5%	6%
Managers and senior officials	10%	14%	4%
Professional occupations	11%	14%	7%
Associate professional and technical	14%	17%	11%
Skilled trades occupations	2%	2%	2%
Personal service occupations	14%	12%	17%
Sales and customer service occupations	11%	7%	17%
Process, plant and machine operatives	3%	3%	2%
Elementary occupations	11%	5%	18%

Notes:

1. Sample is LFS March 2003 – February 2004. Basic sample is women aged 16-64 who are not in full-time education.
2. Total sample size is 95314.

Table A2
The Determinants of the Probability of Working Part-Time

Variable	Marginal Effect (s.e.)	Variable	Marginal Effect (s.e.)	Variable	Marginal Effect (s.e.)
Graduates	0.003	Tyne & Wear	-0.072	Job Tenure < 5 years	0
	[0.006]		[0.012]**		[0.005]
GCSE or equivalent	0.026	Rest of Northern	-0.051	Job Tenure 10-15 years	-0.023
	[0.005]**	Region	[0.010]**		[0.006]**
No qualifications	0.008	South Yorkshire	-0.016	Job Tenure 15+ years	-0.053
	[0.006]		[0.012]		[0.006]**
Age 16-19	-0.172	West Yorkshire	-0.031	Public Sector	0.009
	[0.009]**		[0.009]**		[0.005]
Age 20-24	-0.178	Rest of Yorks	0.01	Non-permanent Job	0.221
	[0.007]**	& Humberside	[0.011]		[0.008]**
Age 25-29	-0.146	East Midlands	-0.019	Establishment with >25	-0.132
	[0.007]**		[0.008]*	Employees	[0.004]**
Age 30-34	-0.065	East Anglia	-0.003	Agriculture & fishing	-0.074
	[0.007]**		[0.010]		[0.028]**
Age 40-44	0.04	Inner London	-0.122	Energy & water	-0.216
	[0.007]**		[0.010]**		[0.019]**
Age 45-49	0.126	Outer London	-0.064	Manufacturing	-0.173
	[0.007]**		[0.008]**		[0.007]**
Age 50-54	0.211	South West	0.004	Construction	-0.08
	[0.008]**		[0.007]		[0.013]**
Age 55-59	0.304	West Midlands	-0.049	Transport &	-0.125
	[0.008]**	(met county)	[0.009]**	Communication	[0.009]**
Age 60-64	0.451	Rest of	-0.024	Banking, finance	-0.09
	[0.008]**	West Midlands	[0.009]**	& insurance etc	[0.006]**
Married without	0.051	Greater	-0.079	Public admin,	0.005
Children	[0.007]**	Manchester	[0.009]**	education & health	[0.007]
Married with	0.555	Merseyside	-0.053	Other services	-0.015
Children	[0.009]**		[0.012]**		[0.009]
Single with	0.481	Rest of North	-0.045	Managers and senior officials	-0.278
Children	[0.009]**	West	[0.009]**		[0.005]**
Age of Youngest	-0.026	Wales	-0.064	Professional occupations	-0.189
Child	[0.001]**		[0.008]**		[0.006]**
Number of	0.047	Strathclyde	-0.088	Associate professional and technical	-0.101
Children	[0.004]**		[0.009]**		[0.006]**
Black	-0.161	Rest of	-0.045	Skilled trades occupations	-0.021
	[0.011]**	Scotland	[0.008]**		[0.013]
Asian	-0.1	Northern	-0.127	Personal service occupations	0.026
	[0.010]**	Ireland	[0.009]**		[0.006]**
				Sales and customer	0.233
				service occupations	[0.007]**
				Process, plant	-0.023
				and machine operatives	[0.012]
				Elementary occupations	0.289
					[0.007]**

Notes:
1. Sample is LFS March 2003 – February 2004. Total sample size is 95314.
2. Estimated model is probit with dependent variable whether individual works PT.
3. Reported coefficients are marginal effects and all variables are dummy variables except number of children and age of youngest child (* denotes significance at 5% level, ** at 1% level).
4. Reference category is a white woman, aged 35-39 with 'A' levels who is isngle without children, who lives in the South-East, has job tenure between 5 and 10 years, is in the private sector in a permanent job in a workplace with less than 25 workers in retail and distribution and working in administration.

Table B1
Estimates of the PT Pay Penalty: Different Methodologies

	Basic Controls	Basic Controls+ broad occupation	Basic Controls+ narrow occupation
Unadjusted PTPP	-0.250	-0.250	-0.250
Adjusted PTPP (Constant)	-0.116	-0.034	-0.025
Oaxaca Decompostions			
Adjusted PTPP (Varying) Average FT Woman	-0.114	-0.032	-0.024
Adjusted PTPP (Varying) Average PT Woman	-0.117	-0.035	-0.030
Reweighting Estimates			
Adjusted PTPP (Varying) Average FT Woman	-0.069	0.000	0.011
Adjusted PTPP (Varying) Average PT Woman	-0.137	-0.044	-0.047

Notes.
1. These estimates are more extensive versions of those to be found in Table 4.1 in the main text. Figures here are log points that are corrected to percentage points in Table 4.1. Data and controls are described in the notes to that Table.
2. Methodology is described in Appendix B.

Table B2
Estimates of the PT penalty in the ECHPS: Different Methodologies

	Dummy variable for part-time			Oaxaca decomposition			
Country	Raw log FT-PT Pay gap 1	Basic controls 2	Basic controls + occ 3	Basic controls Av FT Woman 4	Basic controls Av PT Woman 5	Basic controls +occ Av FT Woman 6	Basic controls + occ Av PT Woman 7
U.K.	-0.268***	-0.185***	-0.115***	-0.173***	-0.196***	-0.111***	-0.122***
Finland	-0.152***	-0.031**	-0.013	-0.064***	-0.069***	-0.045***	-0.075***
Denmark	-0.090***	-0.056***	-0.023***	-0.056***	-0.075***	-0.027***	-0.059***
Germany	0.031***	0.070***	0.083***	0.086***	0.066***	0.099***	0.073***
Netherlands	-0.030***	-0.073***	-0.036***	-0.051***	-0.079***	-0.020***	-0.043***
Belgium	-0.012	0.037***	0.059***	0.036***	0.016	0.054***	0.033***
Austria	0.021	0.027**	0.070***	0.023**	0.060***	0.055***	0.096***
Ireland	-0.188***	-0.112***	-0.069***	-0.101***	-0.035***	-0.059***	-0.028***
France	-0.132***	-0.034***	-0.008	-0.030***	-0.024**	-0.007	0.007
Italy	0.132***	0.147***	0.145***	0.150***	0.115***	0.150***	0.106***
Spain	-0.174***	0.011	0.048***	0.015	-0.059***	0.044***	-0.033***
Portugal	-0.072***	0.024	0.028**	-0.059***	-0.186***	-0.063***	-0.114***
Greece	0.080***	0.050***	0.042***	0.053***	0.017	0.044***	0.061***

Notes.

1. The figures in columns 1-3 are the coefficients on a dummy for whether the individual is part-time in a regression where the dependent variable is the log of the gross hourly wage.
2. The figures in columns 4-7 represent the log points explained by different coefficients in a Oaxaca decomposition of the full-time/part-time wage gap.
3. The controls used are: year dummies, 2 education dummies, experience and its square, foreign born, married, number of dependent children, one dummy for public sector, 18 industry dummies, 19 occupation dummies.
4. *, **, and *** denote significance at 10%, 5% and 1% levels, respectively.

Source and sample: ECHPS, 1994-2001, female employees aged 15-64. Sweden is excluded as no information on wages is available. Luxembourg is excluded due to small sample size.

Table B3
Fixed-Effects Estimates of the PTPP in the LFS

	1	2	3	4	5	6
Log Wage Measure	Hourly Pay	Hourly Pay	Hourly Pay	Hourly Pay	Hourly Rate	Hourly Rate
Sample	2 obs on hourly pay	2 obs on hourly pay	2 obs on hourly pay & rate	2 obs on hourly pay & rate	2 obs on hourly pay & rate	2 obs on hourly pay & rate
Estimation Method	OLS	Fixed Effects	OLS	Fixed Effects	OLS	Fixed Effects
Coefficient on PT Dummy	-0.048	0.052	0.002	0.079	-0.031	-0.019
	(0.004)	(0.009)	(0.006	(0.012)	(0.004)	(0.007)
Number of Observations	41465	41465	14168	14168	14168	14168

Notes.
1. Sample is from LFS for March 2001 to November 2003
2. Other controls included are those reported in Table 4.1 including occupation.
3. Hourly pay is the derived hourly wage measure used in the main body of the text. Hourly rate is the straight hourly rate.

Table B4
Fixed-Effects Estimates of the PTPP in the ECHPS

	Dummy variable for part-time		
Country	Raw log FT-PT Pay gap 1	Basic controls 2	Basic controls + occ 3
U.K.	-0.005	0.003	0.015**
Finland	0.054***	0.068***	0.068***
Denmark	0.019	0.033***	0.040***
Germany	0.132***	0.136***	0.138***
Netherlands	0.100***	0.055***	0.059***
Belgium	0.165***	0.148***	0.149***
Austria	0.182***	0.171***	0.173***
Ireland	0.016	0.040***	0.042***
France	0.242***	0.265***	0.265***
Italy	0.077***	0.134***	0.135***
Spain	0.127***	0.173***	0.172***
Portugal	0.107***	0.165***	0.163***
Greece	0.013	0.137***	0.136***

Notes.
1. The figures reported are the coefficients on a dummy for whether the individual is part-time in a regression where the dependent variable is the log of the gross hourly wage.
2. The controls used are: year dummies, 2 education dummies, experience and its square, foreign born, married, number of dependent children, one dummy for public sector, 18 industry dummies, 19 occupation dummies.
3. *, **, and *** denote significance at 10%, 5% and 1% levels, respectively.

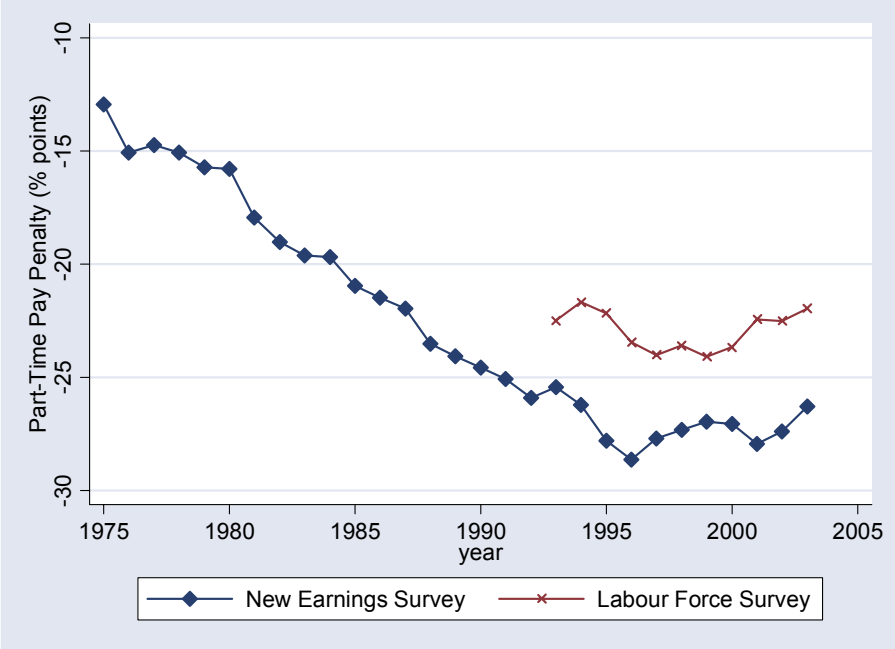
Source and sample: ECHPS, 1994-2001, female employees aged 15-64. Sweden is excluded as no information on wages is available. Luxembourg is excluded due to small sample size.

Table B5
Sample Selection Correction Estimates of the UK part-time pay penalty

	Basic Controls	Basic Controls + broad occupation
Unadjusted PTPP	-0.251	-0.251
Adjusted PTPP (Av FT Woman)	-0.020	-0.106
Adjusted PTPP (Av PT Woman)	-0.051	-0.145
Contribution of Sample Selection Correction	-0.001	0.008
Number of Observations	85191	85191

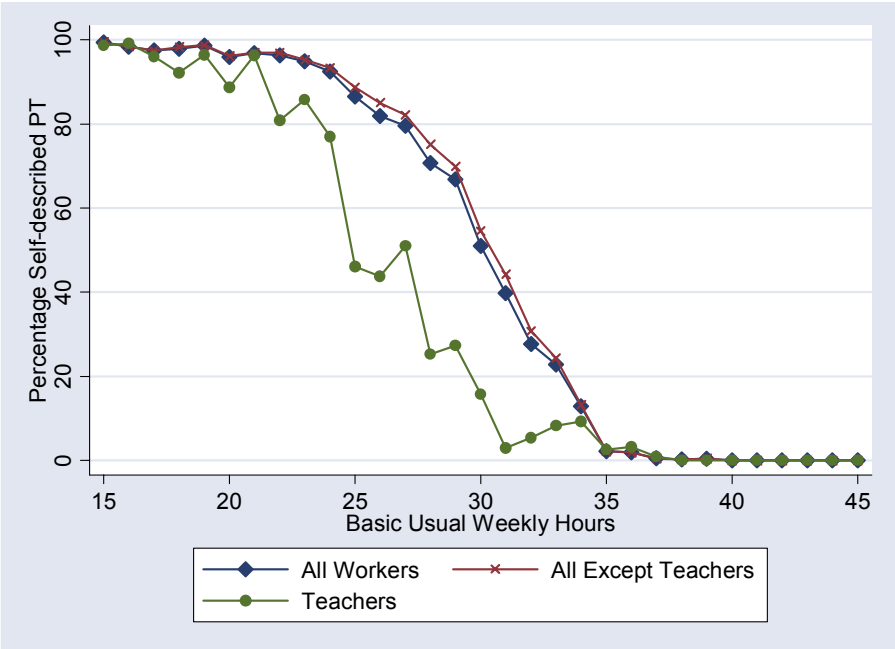
Notes.
1. Data is from LFS and as reported in the notes to Table 4.1
2. Basic Controls are as reported in Table 4.1 with the exclusion of marital status and child variables.
3. The sample selection equation also includes marital status and children.

Figure 1.1
The Part-time Pay Penalty



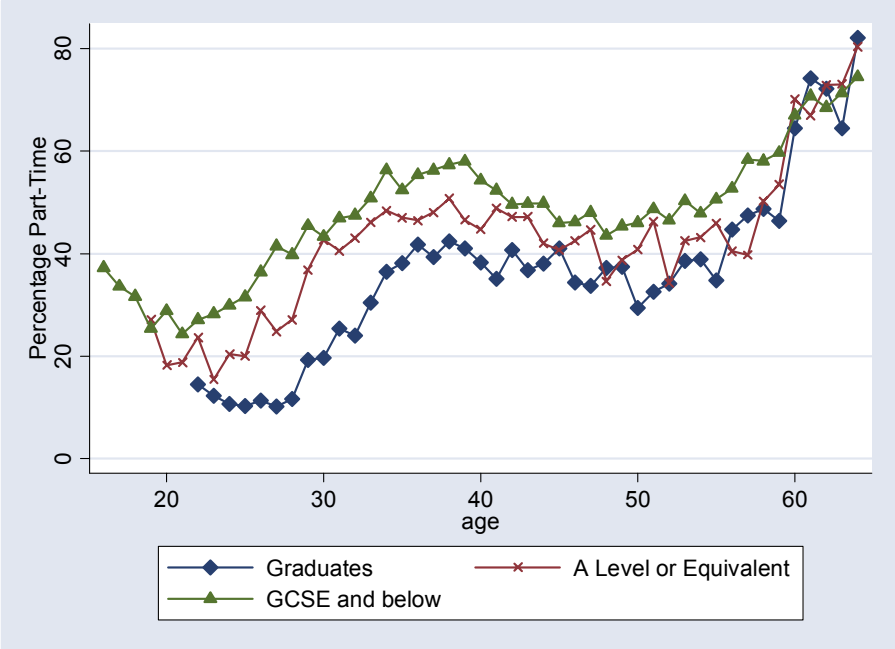
Notes.
1. The measure of pay used is hourly earnings.
2. Definition of PT status for LFS is self-assessed and the sample excludes students. For NES the definition of PT status is basic usual hours<=30 with 25-hour cut-off for teachers.

Figure 2.1
Comparison of the Two Definitions – Analysis by Hours



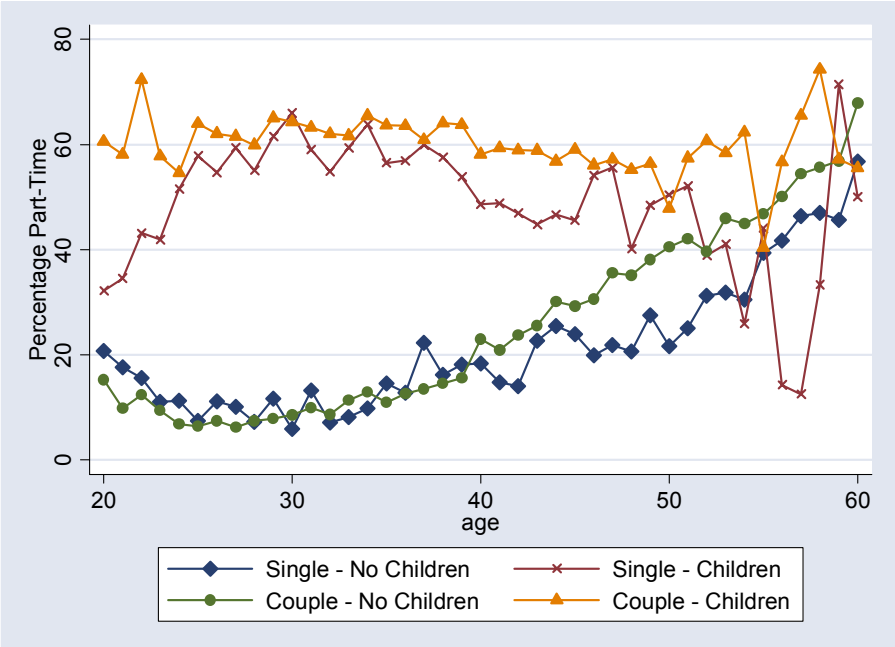
Notes.
1. Data source is LFS March 2003 to February 2004.
2. Data refer to main jobs only.

Figure 3.1
The Lifecycle Profile of Part-time Working



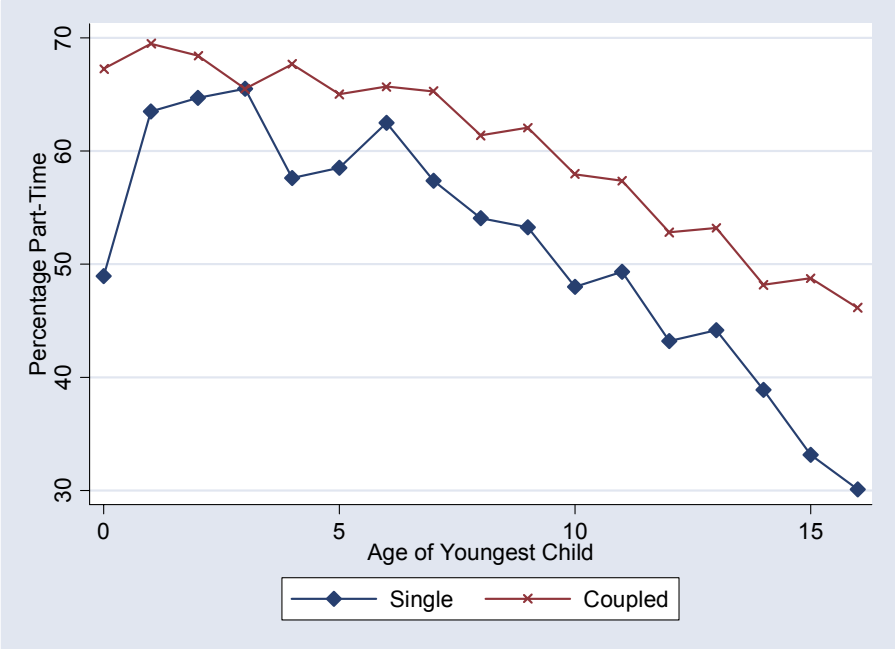
Notes.
1. Source data is Labour Force Survey, March 2003-February 2004.
2. Base is all women aged 16-54 who are working and not in full-time education.

Figure 3.2
The Lifecycle Profile of Part-time Working by Household Structure



Notes.
1. Source data is Labour Force Survey, March 2003-February 2004
2. Base is all women aged 16-54 who are working and not in full-time education.

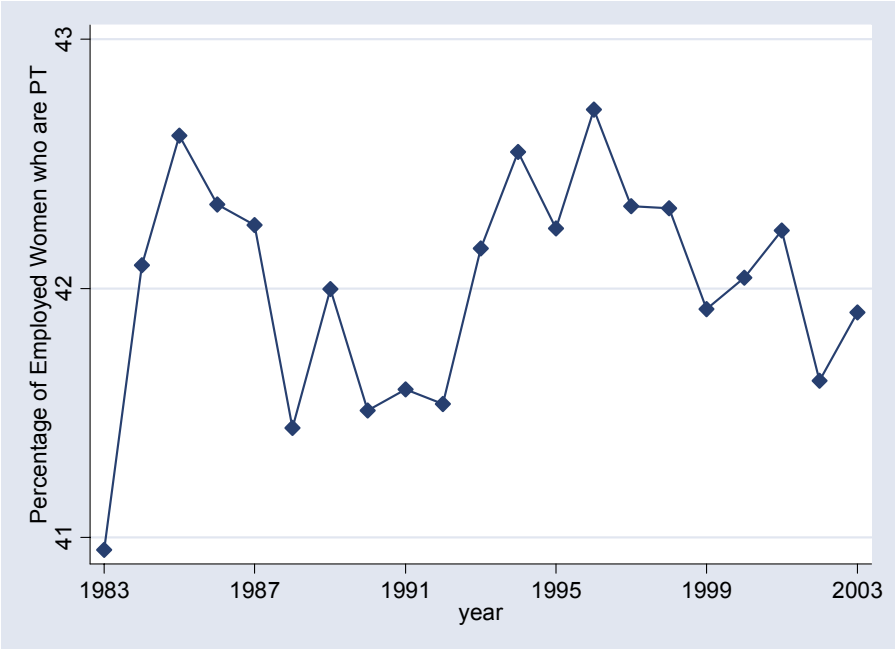
Figure 3.3
The Effect of Age of Youngest Child on Probability of Working Part-time



Notes.

1. Source data is Labour Force Survey, March 2003-February 2004.
2. Base is all women aged 16-54 who are working and not in full-time education.

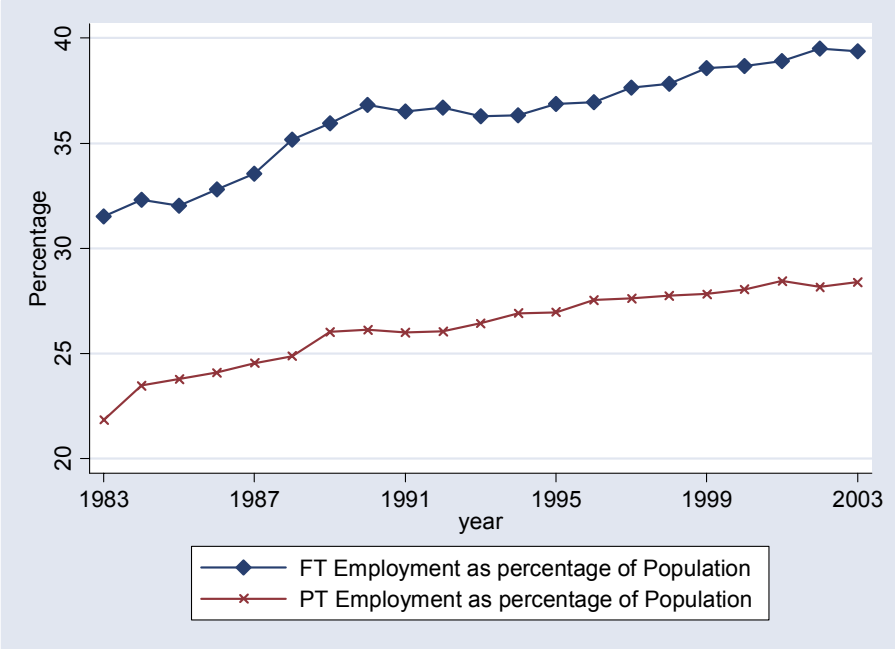
Figure 5.1
The Proportion of Women Working Part-time



Notes.

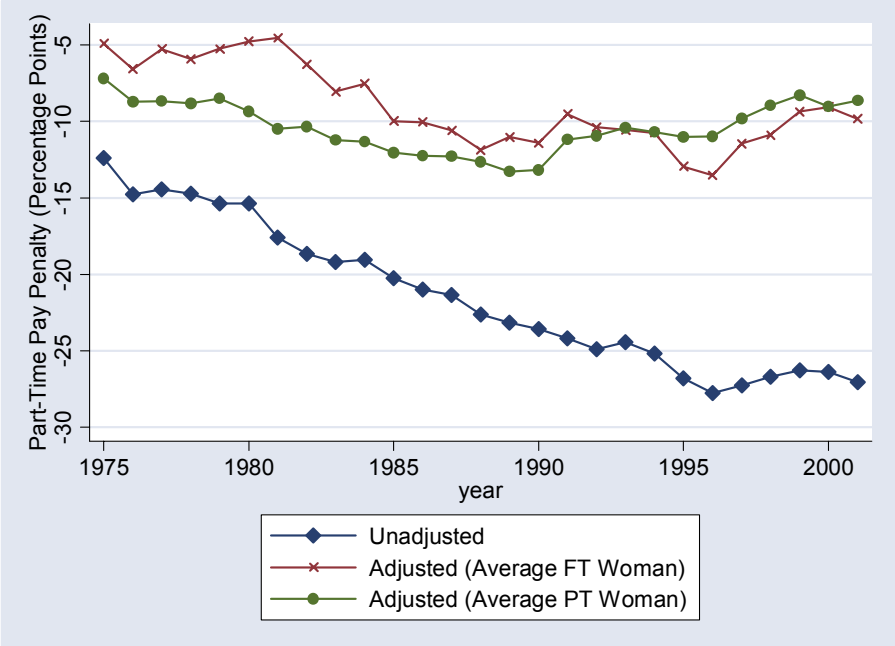
1. Source of data is spring quarters of LFS.
2. Sample is working women aged between 16 and 64 inclusive who are not in full-time education.

Figure 5.2
The Evolution of the Employment of PT and FT Women



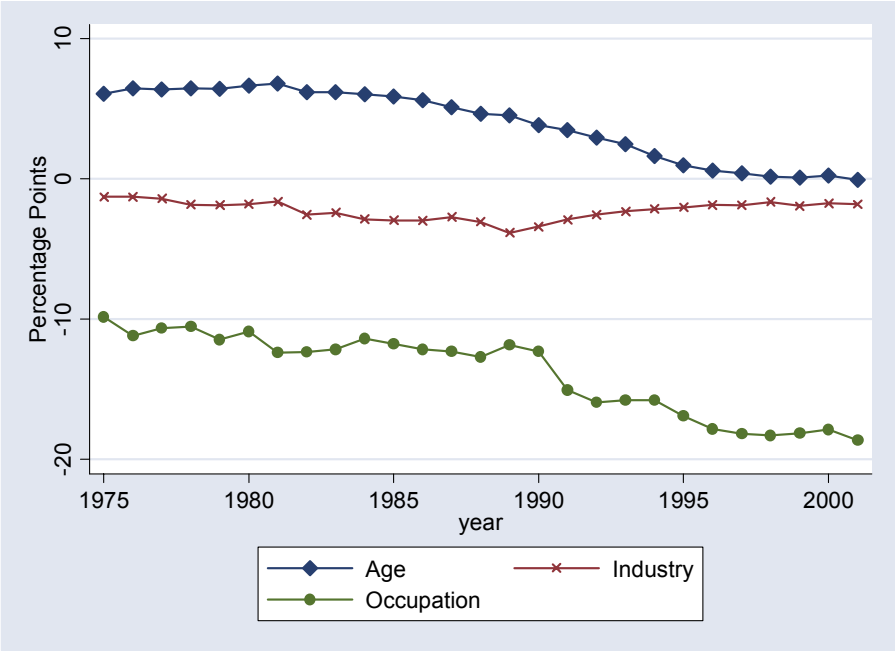
Notes.
1. Source of data is spring quarters of LFS.
2. Sample is women aged between 16 and 64 inclusive who are not in full-time education.

Figure 5.3
The Evolution of the PT Pay Penalty, 1975-2001



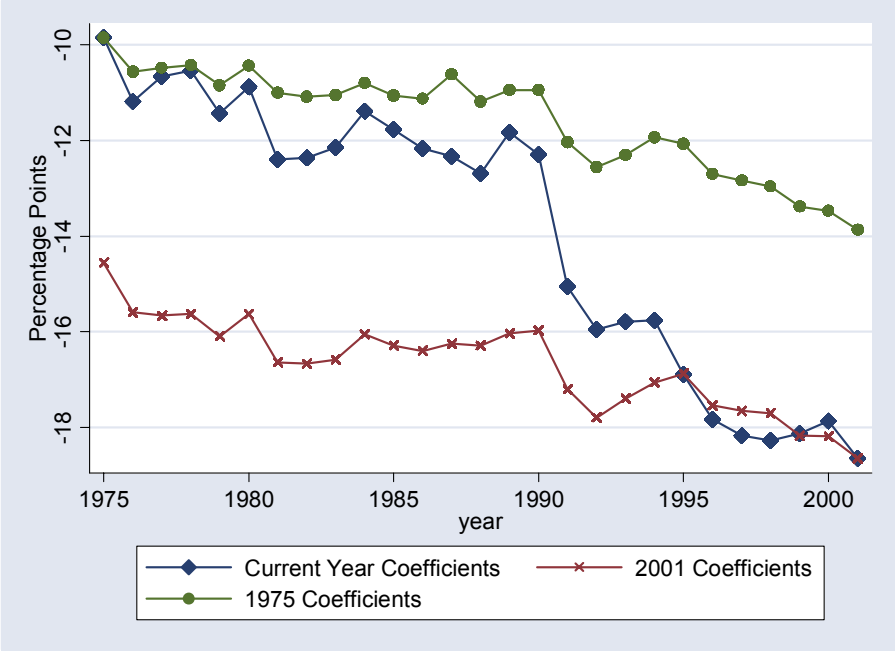
Notes.
1. Data is from NES. Controls are dummy variables for each age, 2-digit occupation and 2-digit industry. Separate regressions are estimated for each year.

Figure 5.4
The Relative Importance of Age, Industry and Occupation in Accounting for the PT Pay Penalty



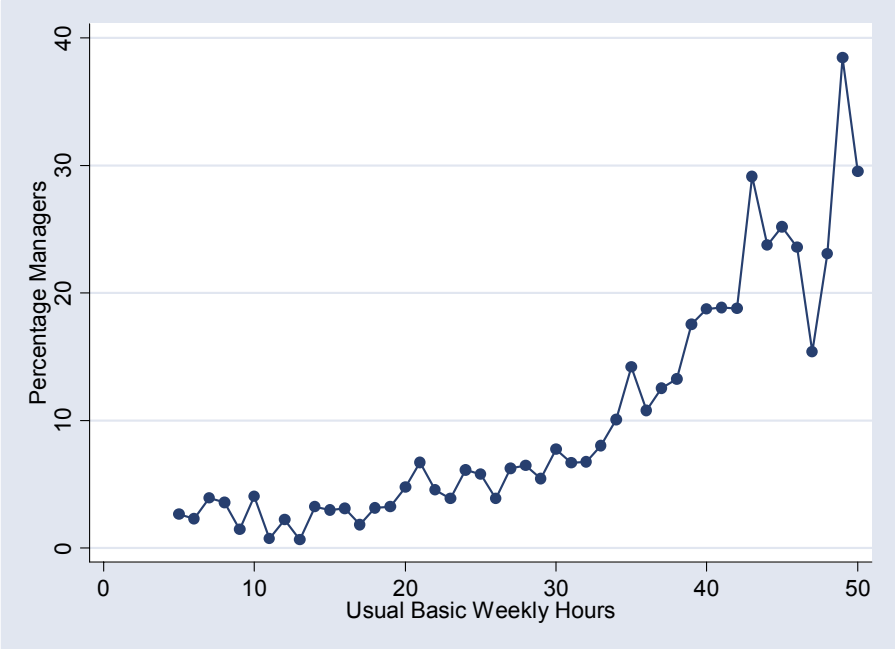
Notes.
1. Data is from NES. Controls are dummy variables for each age, 2-digit occupation and 2-digit industry. Separate regressions are estimated for each year.

Figure 5.5
The Role of Rising Wage Inequality



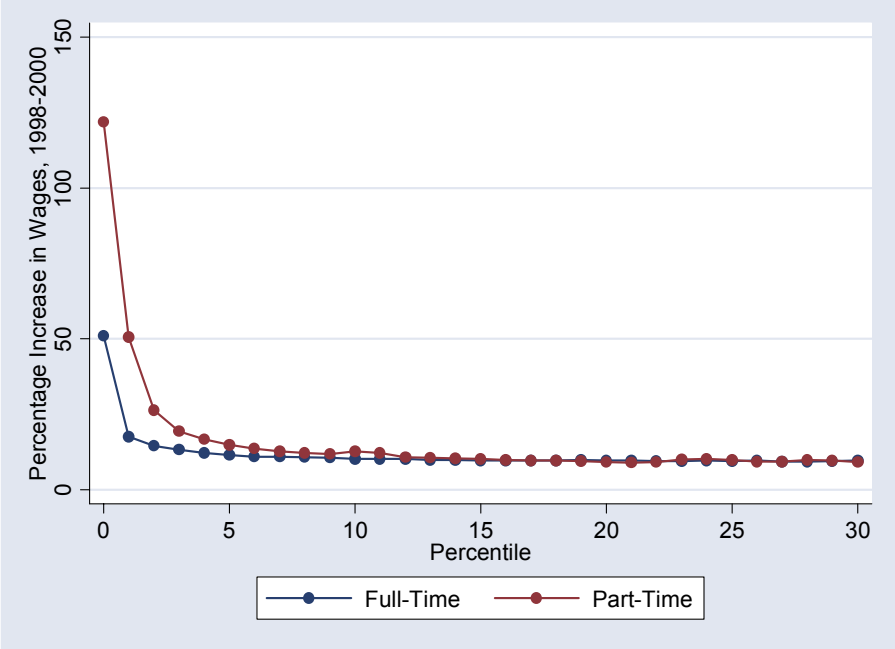
Notes.
1. Data is from NES. Controls are dummy variables for each age, 2-digit occupation and 2-digit industry. Separate regressions are estimated for each year.
2. The coefficients used are those estimated for full-time workers.

Figure 6.1
The Percentage of Managers by Basic Weekly Hours



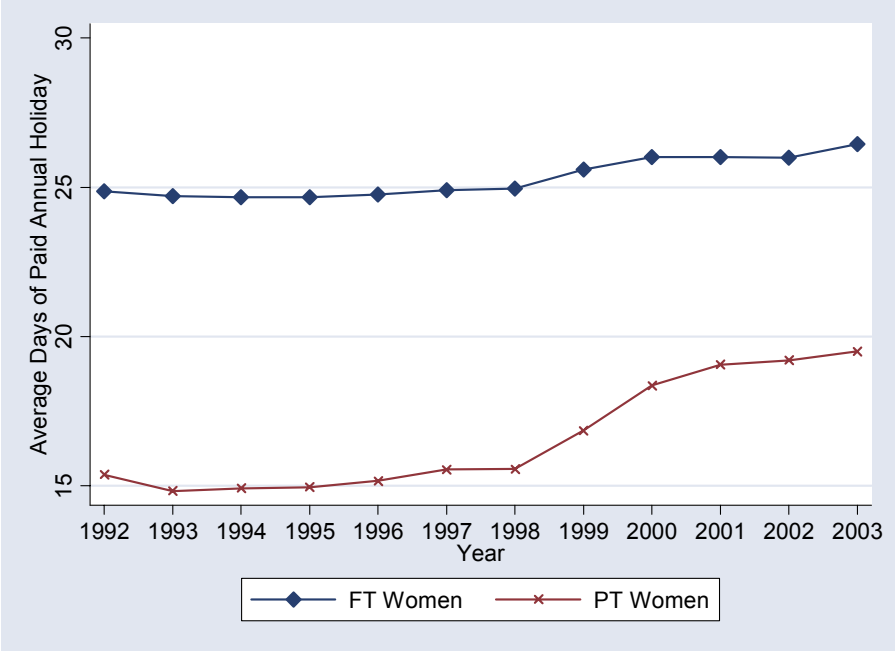
Notes.
1. Source is LFS March 2003 to February 2004.
2. Base is all women aged 16-54 who are working and not in full-time education.

Figure 8.1
The Impact of the National Minimum Wage for FT and PT Women



Notes.
1. Source of data is New Earnings Survey for 1998 and 2000. Sample is restricted to those aged 22 to 64 who are eligible for the adult minimum wage.
2. Figure shows the percentage increase in earnings at each percentile of the FT and PT women's distribution of hourly wages.

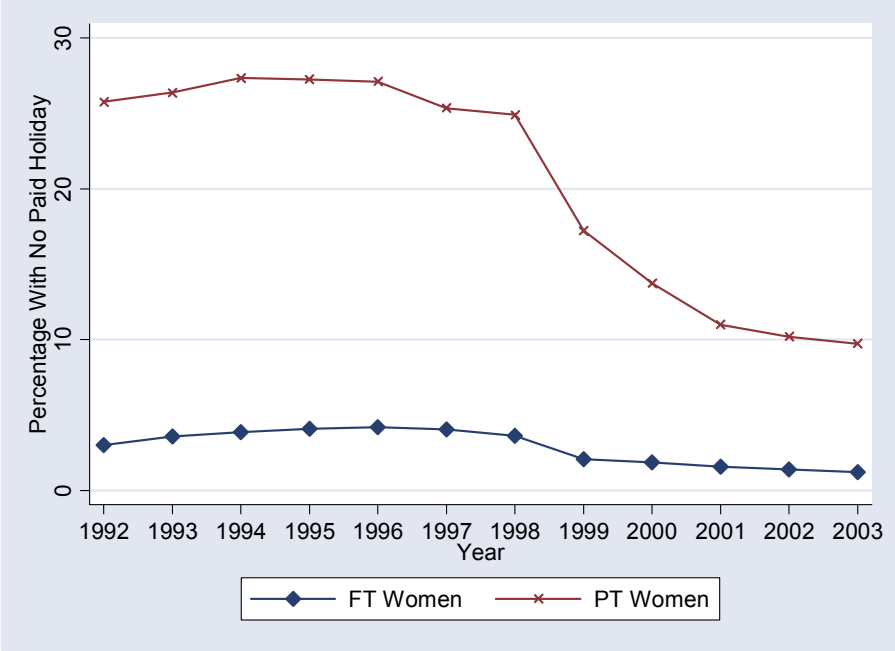
Figure 8.2
Average Days of Paid Holiday, 1992-2003



Notes.

1. Source of data is Autumn quarters of the Labour Force Survey
2. Base is all women aged 16-54 who are working and not in full-time education.

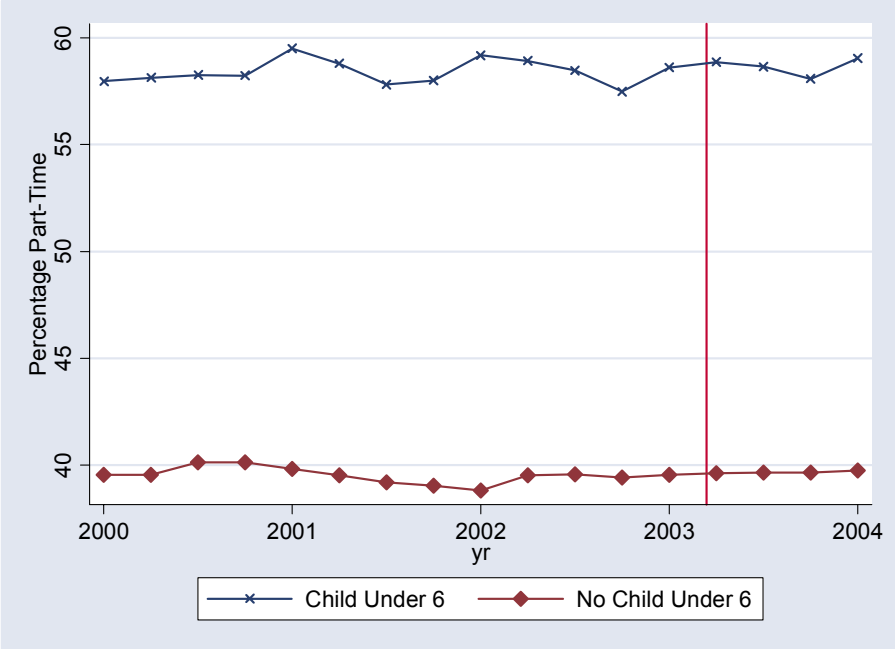
Figure 8.3
Percentage of Workers with no Paid Holiday, 1992-2003



Notes.

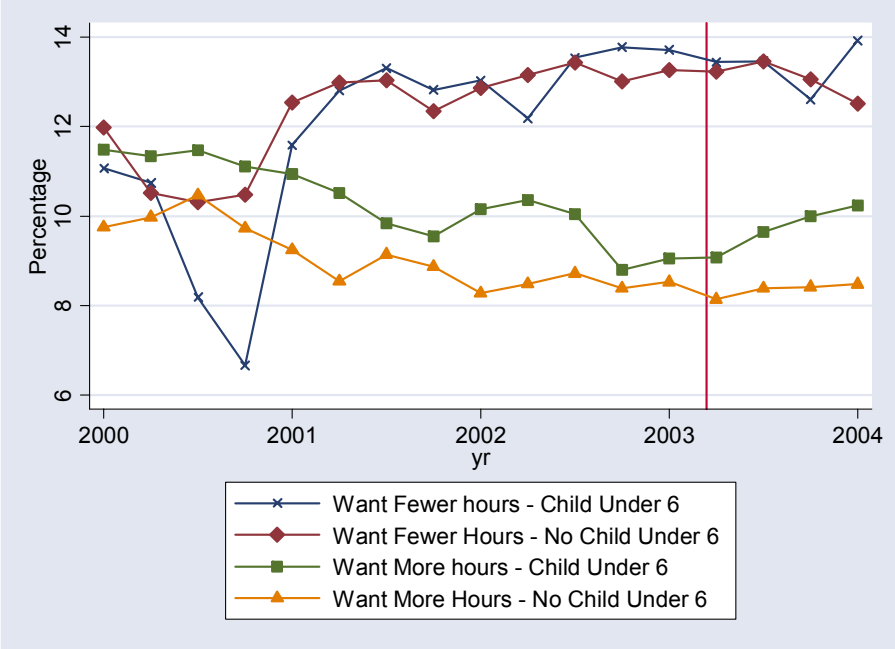
1. Source of data is Autumn quarters of the Labour Force Survey
2. Base is all women aged 16-54 who are working and not in full-time education.

Figure 8.4
Recent Changes in the Fraction of Women Working Part-time



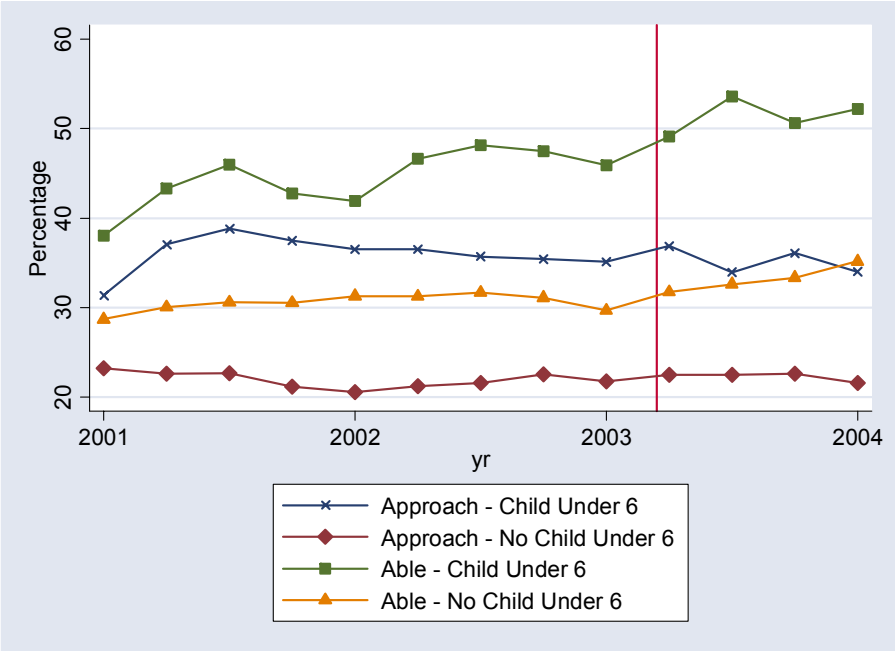
Notes:
1. Source of Data is LFS 2000q1 to 2003q4.
2. The vertical line represents the introduction of the Right to Request Flexible Working in April 2003.

Figure 8.5
Recent Changes in the Fraction of Women Wanting More and Fewer Hours



Notes:
1. Source of Data is LFS 2000q1 to 2003q4.
2. The vertical line represents the introduction of the Right to Request Flexible Working in April 2003.

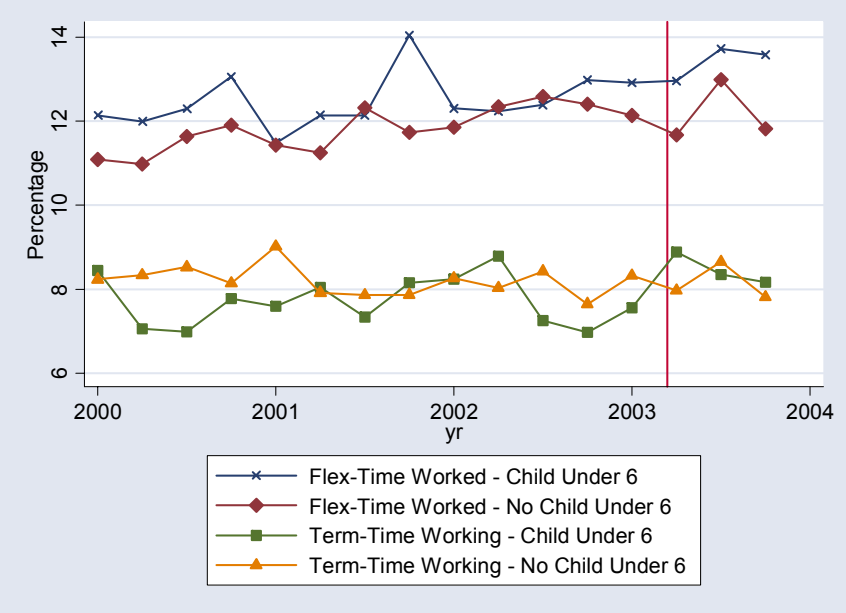
Figure 8.6
Recent Changes in Fraction of Women Who have approached Employer about Working Fewer Hours and Fraction where Employer has Agreed



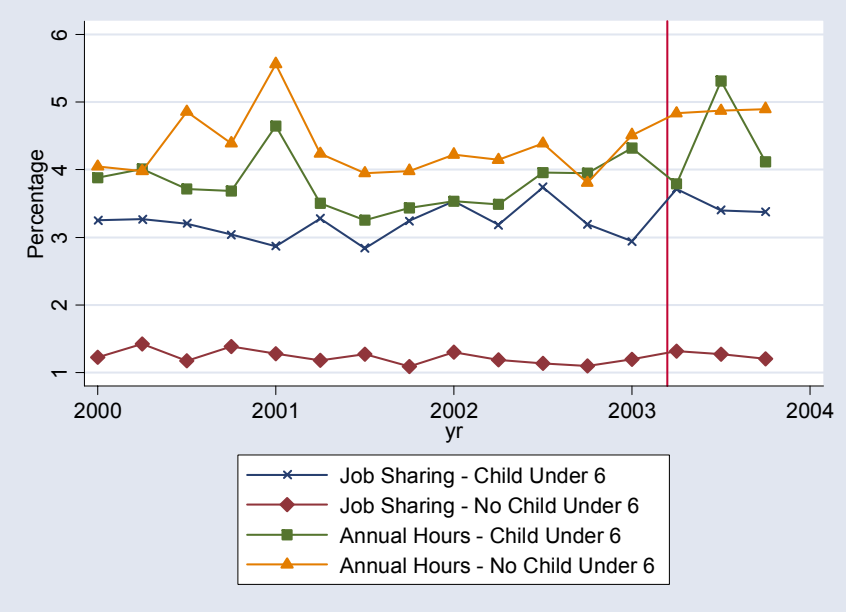
Notes:
1. Source of Data is LFS 2000q1 to 2003q4.
2. The vertical line represents the introduction of the Right to Request Flexible Working in April 2003.
3. The variable 'Approach' is the percentage of women who have approached their employer about working fewer hours. The variable 'Able' is the percentage of women whose employers have been able to let them work shorter hours.
4. Both questions are only asked of those women who would prefer to work shorter hours and this forms the sample for these questions.

Figure 8.7
Recent Changes in the Incidence of Other Forms of Flexible Working

a. Flex-Time and Term-Time Working



b. Job-Sharing and Annual Hours



Notes:
1. Source of Data is LFS 2000q1 to 2003q4.
2. The vertical line represents the introduction of the Right to Request Flexible Working in April 2003.

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