The Consistency and Reliability of the Activity History Data in the Families and Children Study (FACS)

Mike Brewer and Gillian Paull

Contents

List of tables

List of figures

Acknowledgements

The Authors

Mike Brewer, Institute for Fiscal Studies.

Gillian Paull (corresponding author), Institute for Fiscal Studies.

Summary

Academic study and policy discussion concerning the role of families with children in the labour market has increasingly focused on the *dynamics* of behaviour, emphasising the importance of changes in work choices and the relationships between past patterns of employment and current options. An important contribution to this analysis has been the recent initiation of the Families and Children Study (FACS) which has collected dynamic information on labour market characteristics for a sizable sample of families, allowing work behaviour over time to be studied more closely both for couple families and for lone parents.

The purpose of this report is to examine the consistency and reliability of the activity history data collected in the FACS. Using data from the first five waves of the FACS and from the first thirteen waves of the British Household Panel Survey (BHPS) as a comparison survey, carefully matched samples have been analysed to calibrate the completeness and consistency of the activity history data collected in the FACS and to test whether the FACS generates labour market statistics similar to the comparison survey. The analysis has two important purposes. First, for the intellectual objective of understanding any problems inherent in the method of collection of this type of data. Second, for the practical purpose in enabling future users of the FACS to understand potential problems within the data and how they might be addressed.

The consistency and completeness of the data collected within each wave is good: there is very little missing data; there are few inconsistencies between spells; and the spells cover the intended period in almost all cases. Comparisons across consecutive waves where information reported at one interview can be compared with a second, retrospective report at the next interview reveals mixed degrees of consistency. Most individuals give consistent accounts of their main activity, although consistency rates are much lower for non-work activities than for employment or self-employment. In accordance with the previous literature on recall error, inconsistencies across waves in reported activity arise primarily from non-work activity being redefined as periods of work for those with higher levels of involvement in work. However, the degree of consistency is slightly lower in the FACS than the BHPS. The matching of spell start date is weaker than that for the main activity, but is only slightly poorer than that in the BHPS. While work spells appear to be subject to random

inconsistencies in the reporting of the start date, there may be a systematic recall error in the reporting of non-work spells towards the subsuming of these spells into other types of longer spells at the subsequent interview. Consistency in the reporting of weekly work hours and weekly earnings across waves is poor in the FACS and slightly less consistent than in the BHPS. These inconsistencies may reflect some genuine changes as the two reports are not always capturing the same point in time, but this cannot explain why the matching is poorer in the FACS than the BHPS.

Finally, a number of differences in the reported dynamic labour market behaviour arose between the FACS and BHPS which could not be explained in any obvious way. In particular, the proportion of time spent in employment and the number of work and non-work spells differ in significant ways between surveys, while transition rates between states are generally lower in the FACS than the BHPS. Differences in questionnaire structure (including routeing via the question of when the respondent last worked and the way spell divisions are defined) does not appear to explain these discrepancies. Indeed, most of the differences between the surveys in the division of time across labour market activities are also evident in differences in the distribution of current activity, suggesting that the underlying source may lie in the nature of the two samples or in the framing of the activity questions rather than the manner in which spell information is collected.

Overall, the FACS survey provides a reasonably complete and consistent account of the activity history spells which is of a similar quality to that provided by the BHPS. One of the main irresolvable areas of weakness is the poor consistency in the reporting of spells and work characteristics across interviews, but this concern may be common across all surveys collecting activity history data in this manner. Indeed, the analysis has confirmed several previously known types of recall error and has uncovered fresh concerns about the recall of work characteristics. The unexplained differences in the resultant labour market statistics from the FACS and the BHPS calls for some caution in its use, but it is an open question as to which of the two surveys comes closest to reality.

However, there are two important limitations to the use of the FACS activity histories. First, the omitted transitions between non-work states due to the failure to route all individuals into the activity history is idiosyncratic to the FACS and means that it cannot be used for any analysis involving transitions between non-work states. Second, the failure to interview a substantial and biased proportion of male partners means that the activity history data should not be used for fathers. Nevertheless, for studies considering mothers' transitions between work and non-work and other changes in employment characteristics, the FACS provides a superior data source to most other surveys, both on account of its unusually large sample of mothers and on account of it providing reasonably consistent and complete activity history data for this group.

1 Introduction

Academic study and policy discussion concerning the role of families with children in the labour market has increasingly focused on the dynamics of behaviour, emphasising the importance of changes in work choices and the relationships between past patterns of employment and current options. In particular, the decisions made by mothers on whether to combine their position as carers in the home with participation in formal paid employment has increasingly been analysed in a longer term framework of the effects on the lifetime employment profile. An important contribution to this analysis of the family in the labour market has been the recent initiation of the Families and Children Study (FACS). Most importantly, the survey has collected dynamic information on labour market characteristics for a sizable sample of families, allowing work behaviour over time to be studied more closely both for couple families and for lone parents. The purpose of this report is to examine the consistency and reliability of this activity history data collected in the FACS which a view to providing guidance on any potential problems in its use.

The consistency and reliability of the collection of dynamic labour market data has been analysed in several previous studies for other data sets. The collection of this type of data can take several different forms. One approach is to repeatedly ask individuals for their current labour market status, as would be collected in the repeated interviews of a panel survey. A survey of this type has several practical drawbacks[1] and it has been shown that there may be a tendency for the resulting data to overstate the degree of dynamics in the labour market because classification

---

[1] For example, the interval of time between the data points would ideally be as short as possible to ensure that all changes in state are captured, but this may be limited by practical considerations. In addition, non-random attrition from the panel may generate biased model estimates (for example, see Peracchi & Welch (1995) or Paull (1997)). Or there may be 'time-in-sample' bias (sometimes called 'panel conditioning'), where estimates from people with different levels of exposure to the survey have different expected response values. The combination of these two effects has been referred to as 'rotation group bias' in the context of the CPS. Finally, there may be large financial and organisational investments involved in initiating and continuing the collection of panel data. A review of these issues can be found in Kalton, Kasprzyk & McMillen (1989).

errors in the reported labour market status can generate spurious transitions between states[2]. An alternative approach to obtain the desired data is to ask individuals to retrospectively recall their behaviour over a specified prior period, either by requesting the dates of changes in behaviour or by asking for the main activity during a number of sub-periods. Retrospective data of this type is collected in several of the major British cross-sectional surveys. The British Family and Working Lives Survey and the lifetime histories in waves B and C of the British Household Panel Survey (BHPS) attempt to collect lifetime histories. Most of the major labour market panel surveys also rely to some degree on recalled data for collecting information on labour market dynamics by asking respondents to retrospectively fill-in the gaps between interviews: the Quarterly Labour Force Survey asks about the prior three months, the BHPS collects information for the previous year and the National Child Development Survey covers the 7-10 years between interviews. However, the act of recollection may generate 'recall' biases, whereby reported behaviour is not only subject to random errors but also systematic errors that may intensify as the period of recall increases. Previous work on the BHPS (Paull 2002) has shown that most individuals are consistent in their reporting as the recall period lengthens, but individuals with the most transient behaviour are more likely to give inconsistent accounts. In particular, fewer spells of activity are reported as the recall period lengthens, shorter spells are less likely to be recalled correctly than longer ones, unemployment spells are less likely to be recalled correctly than other types of spells and self-employment spells are likely to be being redefined as paid employment. Other studies have shown that short spells of employment and non-employment may fail to be recalled over longer recall periods[3], that the reported aggregate time in un-employment falls with the length of recall[4], that shorter spells of unemployment are less likely to be recalled at a later date than longer spells[5] and that the reported length of unemployment spells may increase with recall[6].

The FACS survey, in a manner similar to the previous British surveys, uses a mixture of panel and retrospective reporting to obtain the dynamic data. As such, the resulting data may be subject to inconsistencies similar to those found in previous studies. It may also have its own idiosyncratic flaws. This report considers whether the FACS data contains the same type and magnitude of inconsistencies as other surveys for two purposes. First, for the intellectual objective of understanding any problems inherent in this method of collection of this type of data. Second, for the practical

---

[2] For example, see Clark & Summers (1979) and Poterba & Summers (1986) for studies of the Current Population Study in the US.

[3] See Pierret (2001)

[4] See Morgenstern & Barrett (1974), Horvath (1982), Akerlof & Yellen (1985), Duncan & Hill (1985), Mathiowetz & Duncan (1988), Levine (1993), Elias (1997) and Dex & McCulloch (1998).

[5] See Mathiowetz & Duncan (1988) and Levine (1993).

[6] See Bowers & Horvath (1984) and Poterba & Summers (1984)

purpose in enabling future users of the FACS to understand the potential problems within the data and how they might be addressed. Failure of the data to be consistent could distort the derived measures of labour market dynamics or make certain types of analysis problematic. For example, a bias towards failing to recall spells of unemployment correctly could lead to an understatement of its prevalence. Alternatively, negative spell lengths would be meaningless in modelling the hazard of state exit. Hence, it is essential to know the degree to which the data is consistent and complete.

The remainder of the report is organised as follows. The next section describes the FACS and how it collects information on labour market dynamics, while the third section introduces a comparison survey in the BHPS. Section 4 describes practical issues in the use of the activity histories from both surveys and the differences that arise between the two data sources. The following three sections provides the main analyses, examining the consistency of the activity histories within waves; the consistency of the information reported in the histories across waves; and how the resultant labour market statistics compare across the two surveys. The final section summarises and concludes.

2 The Families and Children Study

2.1 The survey

The Families and Children Study (FACS) is an annual panel survey of families defined as households with dependent children under the age of 16 or aged 16 to 18 and in full-time education. The first two waves of interviews were conducted in the summers of 1999 and 2000 when the sample consisted of lone parents and low income couple families (low income covering approximately the lowest 40 per cent of couple incomes). In subsequent waves (from 2001), the interviews have been conducted in the autumn and have also included higher income families to form a representative sample of couple families. In each wave, sample boosters are added to ensure the sample remains representative of the entire population of families. The main respondent to the survey is the Child Benefit recipient which is usually the mother, but there is also a shorter interview for the partner in couples if they are available. After 2002, families without dependent children were dropped from the sample at the following interview.

Table 2.1 presents the sample of respondents and partners by family type for each of the first five waves used in this report[7]. The couples in waves A and B contain only 'low income' families, whereas the latter waves (C to E) include a representative sample of all couple families. The presence of families without children may represent errors in the data collection or processing; the continued interview of families whose children have left the household; or households where the dependent

---

[7] Family type has been defined using variables covering the relationships between household members and direct information on the age and education status of children. Children include natural, step, adopted and fostered children. The categorization used here does not always correspond directly to the 'ndepch' variable which indicates whether there are any dependent children in the household and not necessarily the dependent children of the respondent or partner.

children are not those of the respondent or partner. In total, the sample contains 33,070, mostly female, respondents and 21,557, mostly male, partners, generating a total sample of 54,627 individuals.

Table 2.1 Respondents by family type

Number of respondents			Wave			
(Percentage in wave)	A	B	C	D	E	All waves
Mother with partner	2,122 (45)	2,507 (53)	5,548 (69)	5,160 (65)	5,145 (66)	20,482 (62)
Single mother	2,321 (50)	1,952 (41)	2,049 (25)	2,036 (26)	1,965 (25)	10,323 (31)
Father with partner	24 (1)	33 (1)	28 (0)	32 (0)	32 (0)	149 (0)
Single father	135 (3)	81 (2)	93 (1)	89 (1)	82 (1)	480 (1)
No children	57 (1)	147 (3)	344 (4)	566 (7)	522 (7)	1,636 (5)
Total number of respondents	4,659 (100)	4,720 (100)	8,062 (100)	7,883 (100)	7,746 (100)	33,070 (100)
Number of partners	2,165	2,600	5,738	5,532	5,522	21,557

2.2 Reporting of current activity

The current activity for all household members is initially reported by proxy in the household grid by the respondent answering the question 'What is the person currently doing?'. This question allows eleven possible activity responses[8]. Individual questionnaires are completed by the respondent and by partners if available and include an initial question in the work section of 'What best describes your current situation?'. This again allows a choice across the same eleven states of activity.

Table 2.2 presents the reported current main activity by family type using just the interview question except in the column for fathers with partners which also includes the household grid responses. This column has been added because a substantial proportion (42 per cent) of partners (who were mostly fathers in couples) did not give an interview.

---

[8] The eleven possible responses are: (1) working 16 or more hours, (2) working fewer than 16 hours, (3) unemployed and seeking work, (4) on a training scheme, (5) full-time education/at school, (6) sick/disabled (up to 6 months), (7) sick/disabled (6 months or longer), (8) looking after the home or family, (9) caring for a sick, elderly or disabled person, (10) retired and (11) other answer.

Table 2.2   Current activity by family type

| Percentage in current activity | Mothers | | Fathers | | |
	With partner	Single	With partner: only interviews	With partner: includes household grid	Single
Working 16 or more hours	53.4	42.7	83.1	91.1	51.5
Working fewer than 16 hours	13.4	5.1	0.9	1.1	3.8
Unemployed/seeking work	1.2	5.1	5.1	2.9	9.0
On a training scheme	0.2	0.7	0.3	0.1	0.4
Full-time education/at school	0.7	2.4	0.4	0.3	1.0
Sick/disabled (up to six months)	0.3	0.5	0.6	0.4	1.5
Sick/disabled (six months+)	2.1	3.5	5.4	2.2	10.0
Looking after the home/family	27.4	38.3	1.7	0.6	21.9
Caring for sick/old/disabled	0.8	0.9	1.1	0.1	0.2
Retired	0.1	0.1	1.2	0.7	0.8
Other	0.4	0.7	0.2	0.6	0.0
Total	100.0	100.0	100.0	100.0	100.0
Number of observations	20,638	10,323	12,084	8,437	480

Using the sample weights, the proportion of fathers with partners with interviews who are in work is 95.1 per cent, while the proportion unemployed is 2.2 per cent and the proportion sick/disabled (six months +) is 0.5 per cent, while the remaining categories command a share of one per cent or less.

Considering just the interview responses, fathers in couples have the highest proportion in work (84 per cent), while a higher proportion of mothers in couples are in work (67 per cent) than single fathers (55 per cent) and single mothers (48 per cent). Part-time work is most prevalent among the mothers in couples, with part-time work very rare for fathers in couples. As would be expected, a high fraction of mothers, both those in couples and those single, report their main activity as looking after the home or family (27 per cent and 38 per cent respectively). Some 22 per cent of single fathers also report this as their main activity, although, interestingly, nine per cent of lone fathers report themselves as unemployed and ten per cent as longer-term sick or disabled. This may be because single fathers who are not in work are less likely to categorise themselves as looking after the family than single mothers or because there may be a genuine difference in that unemployed and longer-term sick or disabled men are more likely to carry the responsibility for children as single fathers.

The column for fathers in couples which includes the household grid proxy answers for current main activity suggests that there may be a selection bias in male partners who are interviewed: those interviewed are less likely to be working and are more likely to be unemployed or longer term sick or disabled than the complete sample. However, weighting the interview data (see the table notes) appears to overstate the proportion in work, although it is closer to the combined interview and household grid proportions that the unweighted data.

Table 2.3 Current activity by wave

Percentage in current activity	Wave				
	A	**B**	**C**	**D**	**E**
Working 16 or more hours	44.3	53.6	68.9	69.1	70.4
Working fewer than 16 hours	7.7	7.5	6.5	6.3	6.2
Unemployed/seeking work	6.2	4.8	2.5	2.5	2.4
On a training scheme	0.4	0.4	0.2	0.2	0.3
Full-time education/at school	1.1	0.9	0.8	0.9	0.8
Sick/disabled (up to six months)	0.8	0.6	0.4	0.5	0.2
Sick/disabled (six months+)	6.2	4.8	3.0	2.9	2.7
Looking after the home/family	30.3	24.9	16.0	15.9	15.1
Caring for sick/old/disabled	1.5	1.2	0.7	0.7	0.6
Retired	0.9	0.9	0.7	0.7	0.6
Other	0.5	0.5	0.4	0.4	0.6
Total	100.0	100.0	100.0	100.0	100.0
Number of observations	6,824	7,214	13,798	13,415	13,268

The proportions in each current state differ across the waves (Table 2.3). The full-time employment rate is only 44 per cent of individuals in wave A compared to 54 per cent in wave B and 69 per cent in wave C, while the proportions in family care is 30 per cent in wave A compared to 25 per cent in wave B and 16 per cent in wave C. The proportions in part-time work, unemployed and longer-term sick or disabled are also slightly lower in wave C than wave B. Waves C, D and E are very similar in the distribution of current activity. Similar patterns of change across the first three waves appear within family type (not shown). For mothers and fathers within couples, the changes between waves B and C are easily explained by the additional couples to form a representative sample from wave C. For all family types, the shift from summer to autumn interviews in wave C may also have impacted on reported current activity. However, it is not so obvious why there have been the changes between the first two waves.

2.3   Reporting of the activity history

If the individual reports that they are not currently working (that is, responses 3-11 are given in the current activity), they are then asked whether they have ever had a paid job or worked as a self-employed person (or, for waves D and E, those who have been previously interviewed are asked whether they have had a paid job or worked as a self-employed person since the last interview). If the answer to this question is positive, the individual is asked in which month and year they left that work. The responses to these questions are used to route individuals into the work section of the survey. Individuals go on to answer detailed employment questions in the work section if:

• they are currently working;

• they are not currently working but have worked since being interviewed at the previous wave; or

- they are not currently working and were not interviewed at the previous wave, but have worked since March of two years prior to the interview year (or five years prior in the case of wave A)[9].

Those not currently working or those who worked recently by these criteria answer no further work questions.

The routeing into the activity history section of the survey is unclear from the survey documentation[10], but an examination of the data indicates that the routeing in practice uses the same criteria as that for the detailed work section. That is, those currently working or who had worked recently (since the last interview or since March two years previously for waves B-E and since March five years previously for wave A) have non-missing data for both the detailed work section and for the activity history section. This means that anyone without current or recent work is not routed into the activity history section and has no starting date for their current spell of (non-work) activity. Hence, movements between different types of non-work (such as unemployment and out of the labour force) cannot be obtained from the data for this group. However, as an end date for the last time they worked is reported, a start date for the current spell of 'non-work' can be derived.

The availability of work and activity history data for all potential individual interviews in the first five waves is presented in Table 2.4. The rows show the responses to the questions used for routeing while the columns check that the data collected matches

---

[9] An examination of the data for wave A showed that anyone who had worked since March 1994 (rather than March 1997) was routed into the work section, but the other waves followed the criteria stated in the questionnaire. Hence, the actual definition for recent work is having worked since March 1994 for wave A, March 1998 for wave B, March 1999 for wave C, March 2000 for wave D and March 2001 for wave E.

[10] According to some of the questionnaires (wave C panel, wave D and wave E), respondents and partners are routed into the activity history section using the following criteria: 'Entry into the work history module is conditioned upon the respondent having started their current spell of activity in the 12 months after the date of the last interview. If started their current activity before that date, work history is ignored. If started their current activity after that date, ask about each activity until get to activity that commenced prior to the date of interview.' This suggests that individuals should only enter the activity history section if they have changed their state since the last interview. However, for those not currently working and not routed into the detailed work section of the survey, there is no question asking when their current spell of activity began (they are only asked when they last finished working). For those routed into the work section but not currently working, they are only asked when their most recent work spell began, not their current activity. Hence, it does not appear possible for this routeing into the activity history section to be followed. Other questionnaires (waves A, B and C cross-section) seem to suggest that all respondents and partners complete the activity history section without any routeing.

that expected from the routeing criteria. Some 64 per cent of individuals (34,689) completed the work section and the activity history section of the survey. However, some 20 per cent (10,933) who have not worked recently report only their current (non-work) activity. A further 16.5 per cent (9,005) did not complete individual interviews although most of these (8,903) did have their current activity reported by the respondent in the household grid. Almost all respondents completed an interview, but only 71 per cent have worked recently and are routed into the detailed work and activity history sections. On the other hand, some 42 per cent of partners did not complete interviews, although most of those that did have recently worked and did go onto the further sections of the interview. The available data for seven individuals does not match that expected from the routeing questions: six who report having last worked before the March two years previously (or five years previously for wave A) were routed into the detailed work and activity history sections, while one individual currently working was not routed into these questions.

Table 2.4   Routeing and work data collected

Numbers of respondents and partners	Activity data collected			
Responses to questions used for routeing into detailed work and activity history sections	Detailed work and activity history	Current activity	Household grid	None
Currently in work	30,518	1	0	0
Last worked since March two years* previously and/or since previous interview	4,165	0	0	0
Last worked since March two years* previously but not since previous interview	0	439	0	0
Last worked before March* two years previously	6	4,734	0	0
Never worked	0	5,757	0	0
Not currently working, missing whether ever worked	0	2	0	0
Missing individual interview, only household grid state	0	0	8,903	0
Missing individual interview, no household grid state	0	0	0	102
Total number of respondents (Percentage of respondents)	23,418 (70.8)	9,647 (29.2)	5 (0.0)	0 (0.0)
Total number of partners (Percentage of partners)	11,271 (52.3)	1,286 (6.0)	8,898 (41.3)	102 (0.5)
Total of respondents and partners (Percentage of respondents and partners)	34,689 (63.5)	10,933 (20.0)	8,903 (16.3)	102 (0.2)

* denotes five years for wave A.

Those routed into the activity history section are asked when their current activity began. They are then asked what they 'were doing immediately before this period', being given the options of the eleven activity categories listed above. They are also

asked when this activity began and ended, with the end date being checked against the reported start date for the following spell. The process continues until the start date of a spell falls before either the previous interview date or before April of two years prior to the interview[11]. For spells of work reported in the activity history, supplementary questions are asked including whether the person was employed or self-employed, the usual weekly hours of work, the usual take-home pay and the usual take-home pay period.

It is unclear from the survey documentation whether work spells are divided by changes in employer. Following the reporting of a particular activity, the individual is asked 'when did you start that period of being in *the activity* ?'. This suggests that periods of activity should only be divided into separate spells when the individual moves from one of the eleven categories to another. This implies that continuous employment should be treated as one spell as long as the weekly hours did not switch between less than 16 to 16 or more, even if the individual switches job or employer. However, the questionnaires for waves C and E suggest that it may have been implicitly assumed that the requested start date for employment spells is when the individual began working for a particular employer because the help screen includes the guidance:

> *'Each job recorded should be with a different employer. If the respondent moves to a different job within the same organisation this counts as the same job unless they change from working up to 16 hours to 16 hours or more hours, or vice-versa.'.*

---

[11] An examination of the data shows that the cutoff of April two years previously was used in the case of wave A in spite of the routeing into the activity history section using March five years previously in this wave.

3 The British Household Panel Survey

The British Household Panel Survey (BHPS) is an annual survey of approximately 10,000 adults from a nationally representative sample of over 5,000 households. Individuals are re-interviewed in successive waves, together with any new adults living in the household. The vast majority of interviews are conducted during the autumn of each year, beginning in 1991 for the first wave, denoted wave A. All adults in the household are administered full individual interviews if possible. The analysis in this report uses data from the first thirteen waves of the BHPS, covering the period up to 2003, but does not include any booster samples such as the European Community Household Panel Survey (ECHP) addition.

Information on jobs and periods of non-employment are collected in a similar way to the Families and Children Study (FACS). At each interview, the individual is asked to select one of ten options best describing their current labour market state[12]. The

---

[12] The question asking for current status is: 'Please look at this card and tell me which best describes your current situation?' providing the options: (1) self-employed, (2) in paid employment (full or part-time), (3) unemployed, (4) retired from paid work altogether, (5) on maternity leave, (6) looking after family or home, (7) full-time student/at school, (8) long-term sick or disabled, (9) on a government training scheme, (10) something else.

starting date for the spell of this current activity is recorded[13]. For paid employment, this is the date of last promotion or employer change. If the starting date for the current activity began on or after September 1 of the year prior to interview, the individual is asked what they did before the current state, selecting from ten categories similar to those available for the current main activity[14]. The starting date of any previous activity is also recorded, with employment spells again divided by whether there is an employer change or whether there is a change in position (promotion or job change) with the same employer. The pattern of questioning continues until the starting date of a spell is prior to the September 1 of the year prior to interview, thereby covering the entire gap between interviews. For spells of work reported in the activity history, supplementary questions are asked including whether the person was employed or self-employed, the usual take-home pay and the usual take-home pay period.

---

[13] The starting date used in the activity history does not always correspond directly to the main activity reported in response to the question on 'what best describes your current situation'. In the BHPS, the individual is also asked whether they did *any* paid work or were away from a job in the week prior to interview (even if it is not their main activity) and the starting date for this work is recorded rather than the main activity. The only exception to the priority of collecting the start date for the work rather than main activity is for those in full-time education, for whom the date recorded is when they began the period of education even if they also hold a job. However, to best match the FACS data, the main activity state is used to describe the current state in the BHPS with an incorrect starting date if the current main activity and current work state differ and began on different dates. Analysis using the current work state rather than current main activity slightly raised the proportion reported as being in work in the BHPS, but had no substantial impact on the comparisons with the FACS data.

[14] The question asking for prior states is: 'Can you look at this card please and tell me which of the descriptions comes closest to what you were doing immediately before then?' providing the options: (1) doing a *different job* for the *same employer*, (2) working for a *different employer*, working for *myself* (self-employed), (3) unemployed/looking for work, (4) retired from paid work altogether, (5) on maternity leave, (6) looking after family or home, (7) full-time education/student, (8) *long-term* sick or disabled, (9) on a government training scheme, (10) something else.

4   Using the activity history data

Before examining the consistency of the data, it is useful to highlight some of the modifications made to the Families and Children Study (FACS) data in its practical use and to list the amendments made to both data sets to aid good comparability between the surveys[15]. Remaining potential sources of differences between the data from the two surveys are also noted. In Chapter 7, labour market statistics are compared between the British Household Panel Survey (BHPS) and FACS which require further important modifications and these are discussed in Section 7.1.

In examining the consistency and recall reliability of the data (Sections 5 and 6), the following modifications have been made in the practical use of the data:

• Spells have been re-ordered chronologically so that the current spell is always the last spell in the wave and the last spell reported at the interview is the first in the wave[16].

• Dates are defined by month. This ignores the precise day information was provided in the BHPS and for the interview date in the FACS.

• The end dates reported for the current spell in the activity history for the FACS have been replaced with the interview date. The end dates in the current version of the data are often inconsistent with other reported dates and may have arisen from an error in the processing of the data.

---

[15] Usual editing procedures were also applied such as setting all 'missing' codes to a consistent value for missing (such as 98/99 in the case of FACS dates) and the editing of unrealistic values to missing.

[16] The spells are collected in reverse chronological order in both surveys. That is, the current spell is reported first, with the activity before that constituting the second spell and so on until the final spell reported is the earliest spell within the history period.

- The activity has been re-categorised into a 'broad state' and a 'work state' in some of the analysis. This is both to improve presentation and to overcome the fact that the original eleven options in the FACS do not directly match with the ten options in the BHPS. The 'broad state' aggregates into the five states of employment, self-employment, unemployment, out of the labour force and full-time education. The 'work state' aggregates into the two states of work and non-work[17].

In using the BHPS as a comparison sample, the following modifications have been made to the BHPS data:

- The BHPS sample is restricted to parents with dependent children (those aged under 16 or aged 16 to 18 and in full-time education). Although there is no reason to suppose that parents are inherently any different from other groups in their consistency in the reporting and recording of their activity history, they do have a distinctive type of labour market activity which may be related to the reliability of the data[18].

- Employment spells in the BHPS divided by a promotion are merged so that employment spells are only divided by an employer change.

- The BHPS data has been modified to 'mimick' the routeing into the activity history in the FACS by replacing the activity history information for those who are not currently working or recently worked (since the beginning of September of the previous year) with a single spell of their current (non-work) activity with the start date of the earliest spell recorded[19]. This group is also reclassified as only having a 'current activity' to match the FACS data.

Potential sources of differences between the two surveys remain:

- The BHPS explicitly divides spells of work by moves between employers and between employment and self-employment, but the FACS is ambiguous on whether employment spells are divided in this way. Work spells in the FACS are also divided by switches in hours between less than 16 to 16 or more.

- In the BHPS, all spell end dates are imputed from the next spell start date or from the interview date in the case of the current spell, while the FACS has independent reports of end dates (subject to checking by the interviewer). Hence, gaps between spells may occur in the FACS, but are infeasible by construction in the BHPS.

---

[17] The spells are not merged in any way. Analysis using merged spells of the same broad state or same work state generated almost identical results.

[18] The few non-parents in the FACS are not excluded from the data to allow the presentation of results for the entire survey sample.

[19] It should be noted that this 'mimicking' may have affected some of the consistency statistics for the BHPS.

- The period over which activity history spells are collected differs slightly between surveys: the BHPS work histories are collected until a spell falls before September of the year prior to interview, while FACS collects spell information until a spell begins prior to the previous interview or, in the absence of a previous interview, falls prior to April of the year two years prior to interview.

- No weekly hours are reported in the retrospective spells in the BHPS and cannot be compared with those collected in the FACS.

5 Consistency within waves

This section considers the consistency and completeness of the activity history information provided at a single interview, independent of any data recorded at any other interview. Internal consistency within waves requires an absence of missing information, that spell end dates should not precede the start dates, that there are no gaps or overlaps between spells and that the spell division represents a transition between states. In addition, a complete history requires that the entirety of the spells cover the period defined by the cut-off point for continuing to collect spell information and by the interview date.

The prevalence of missing and inconsistent data at the spell level for those answering the activity history section of the survey is presented in Table 5.1. The possible missing variables include spell activity (state), start date and end date, while consistency requires internal consistency within the spell (the end date to be equal or after the start date implying a non-negative length) and consistency with the following spell (the end date of the first spell matching the start date of the second and a transition in activity). The table shows the degree of consistency for the original eleven categories in the Families and Children Study (FACS) and the original ten categories in the British Household Panel Survey (BHPS).

Table 5.1   Missing and inconsistent data: spell level

Percentage of spells	FACS	BHPS
Type of spell – not missing	100.0	99.7
Start date – not missing	99.8	92.3
End date – not missing	99.9	99.8
Spell length – non-negative	100.0	100.0
Spell gap:		
– no gap	85.4	100.0
– gap = 1	12.4	0.0
– gap > 1	1.5	0.0
– gap < 0 (overlap)	0.7	0.0
State transition:		
different	67.1	68.0
– work/work	32.1	31.3
– same state	0.8	0.7
# of spells	50,307	37,105
# of spells with length	50,188	34,209
# of consecutive spells without missing state	15,392	9,796
# of consecutive spells with gap	15,588	9,825

Figures use the original 11 states of activity for the FACS and ten states for the BHPS. Similar results were obtained using the broad state and work state definitions.

Across the 50,307 spells reported by respondents and partners who were routed into the work history sections in the FACS, there are no missing activity codes. However, 107 spells (0.2 per cent) are missing their start dates and 31 spells (0.1 per cent) are missing their end dates. All spells with both dates have consistent start and end dates creating non-negative spell lengths. This compares very favourably with the BHPS which has some 7.7 per cent of spells with a missing start date and slightly higher proportions than the FACS with missing spell types or end dates. The FACS contains 15,392 consecutive pairs of spells without a missing spell state and 15,588 consecutive pairs of spells without missing end or start dates which allow the calculation of a gap between spells. A large proportion of these consecutive spells (85.4 per cent) have an end date that matches exactly with the start date for the following spell. A further 12.4 per cent have a gap between spells of exactly one month implying that the following spell began in the month after the previous spell ended. This may be a reasonable account of reality if one activity ended on the last (working) day of one month and the following activity began on the first (working) day of the following month. Hence, a gap of one month is not regarded as a problem[20]. However, there is an inconsistency for gaps of greater than one month (1.5 per cent of spells) or where the spells overlap (0.7 per cent of spells)[21]. Most of the transitions in activity between spells are consistent: some 67.1 per cent of consecutive

[20] However, if spell length is calculated as end date minus the start date, it may be useful to add one to the end date of the first spell to generate a consistent measurement of spell length and a correct complete total length for the entire period considered.

spells involved a move from one state to a different state, while 32.1 per cent of consecutive spells are both spells of work. Only 0.9 per cent involved two spells of the same non-work activity. The similarity in these transition proportions with the BHPS is striking and suggests that the FACS spells are divided by employer change and by changes between employment and self-employment as in the BHPS, with spell division by switches in hours relatively unimportant.

Within waves, it is also important to check that the spells cover the expected period. For interviews with an immediate prior interview, the first spell should contain the date of the previous interview, that is, the start date should be equal or before the prior interview and the end date equal or after the prior interview. For spells without an immediately prior interview, the first date should contain the cut-off of April two years prior for the FACS and the September of the year prior to interview for the BHPS. Across all waves of the FACS, some 3.8 per cent of waves did not have spells covering the expected period, with most of these having a 'late' start date for the first spell, leaving a gap in the intended period of coverage. The problem is more common than in the BHPS, where 2.3 per cent of interviews do not have spells covering the expected period.

Table 5.2 presents the prevalence of incomplete and inconsistent data across the waves of the FACS. Over all the waves, 1.2 per cent of interviews have inconsistent or incomplete spell information, with small variation in this rate across waves (from 0.9 per cent in wave D to 2.0 per cent in wave A). Incorrect initial start dates are most prevalent in wave B (5.3 per cent of interviews) and least common in wave A (1.6 per cent of interviews). Considering both types of problems, some 95 per cent of interviews across all waves in the FACS have complete and consistent data which cover the intended period. This is considerably better than the 87.1 per cent in the BHPS, where over ten per cent of the interviews have either missing data or inconsistent spell information.

---

[21] By construction, the BHPS data has no gaps between spells because the spell end dates are imputed as the following spell start dates.

Table 5.2   Missing and inconsistent data: wave level

Percentage of interviews	FACS						BHPS
	Wave A	Wave B	Wave C	Wave D	Wave E	All waves	All waves
No problems	95.9	92.4	95.5	94.8	95.3	95.0	87.1
Early initial start date	0.0	3.1	0.2	0.0	0.1	0.5	1.5
Late initial start date	1.6	2.2	3.0	4.0	3.3	3.0	0.8
Spells inconsistent or incomplete	2.0	1.8	1.0	0.9	1.1	1.2	10.5
Combinations of problems	0.4	0.6	0.3	0.2	0.1	0.3	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of interviews	4,454	4,251	9,024	8,556	8,404	34,689	27,201

Spells inconsistent or incomplete include interviews with any spell with a missing state or start date or end date or consecutive spells with a gap of greater than one month or a negative gap or consecutive spells of the same state which is not work. Figures use the original 11 states of activity for the FACS and ten states for the BHPS. Similar results were obtained using the broad state and work state definitions.

Overall, the within wave spell consistency is good in the FACS survey: it has substantially less missing data than the BHPS; it has a small degree of inconsistency in the spell start and end dates but cannot be compared directly with the BHPS which ensures consistency by construction; and it is marginally less likely than the BHPS to contain a complete set of spells which cover the intended period.

6　Consistency and recall reliability across waves

This section considers the degree of consistency in reported behaviour across two accounts of the same event or characteristic from two separate interviews. Not only does this highlight potential problems that might arise in attempting to combine the activity histories across waves within the Families and Children Study (FACS), but it also provides evidence on potential recall error which might arise in other surveys which collect information by similar methods.

The following subsection carefully describes the sample of consecutive interviews and how information from these pairs of interviews can be tested for consistency. The subsequent subsections analyse the consistency across reported activity; spell start dates; the last worked date; and work characteristics. The final subsection summarises the findings.

6.1　The consecutive wave sample

There are 33,426 pairs of consecutive waves for respondents and partners in the first five waves of the FACS (Table 6.1). Individuals were matched across waves using the household identifier variable *serialno* and the individual's household grid position[22]. Whether these variables are capturing the same individuals was checked using the individual's sex and age, with an age difference of 0, 1 or 2 being considered acceptable between an initial interview and the subsequent interview. As the top panel in Table 6.1 shows, the vast majority (99.73 per cent) of respondents and partners in consecutive waves did have consistent sex and age values. The problem cases (91 including one with missing sex) were omitted from the cross wave analysis to guard against including potentially incorrectly matched individuals. Similar data from the British Household Panel Survey (BHPS) (where individuals are matched using the individual identifier *pid*) show just three cases where the age was not consistent and these observations were also dropped from the analysis.

---

[22] This is not the same as simply matching respondents or partners across waves because the respondent in the household may change between waves.

The bottom panel in Table 6.1 presents the type of work and activity history data collected for each pair of waves. Most pairs (53.7 per cent) in the FACS data had detailed work and activity histories reported at both interviews, with the majority of these cases coming from the wave C-D and D-E pairings (6,238 and 6,182 respectively of the 17,884 pairs of interviews). Some 16.9 per cent of the pairings have only the current state at both interviews, indicating individuals who have been persistently out of work. The third largest group are those who have persistently failed to have been interviewed directly: 9.6 per cent of the pairings only have information in the household grid at both waves.

Using the BHPS 'mimicked' data (assuming that those without any recent work in the activity history would only have had the current state reported), a much higher proportion of consecutive waves in the BHPS (73.3 per cent) had two activity histories, while the proportions with two current activities or a combination of activity history and current state were roughly the same as in the FACS. The difference between the two surveys in the proportion reporting two activity histories is roughly matched by the proportion with at least one household grid report in the FACS, suggesting that most household grid reports would have been activity history interviews if the individual had been interviewed.

Table 6.1   Sample of consecutive waves

	FACS		BHPS	
	Number of individuals	Percentage of individuals	Number of individuals	Percentage of individuals
Matching across waves:				
– sex and age matched	33,335	99.73	28,663	99.99
– sex not matched	4	0.01	0	0.00
– age not matched	74	0.22	3	0.01
– sex and age not matched	12	0.04	0	0.00
– sex or age missing in one wave	1	0.00	0	0.00
Total	33,426	100.00	28,663	100.00
Interview types for those matched across wave:				
– activity history/activity history	17,884	53.7	21,007	73.3
– activity history/current state	1,903	5.7	1,246	4.4
– activity history/household grid	1,782	5.4	0	0.0
– current state/activity history	1,088	3.3	1,377	4.8
– current state/current state	5,636	16.9	5,030	17.6
– current state/household grid	143	0.4	0	0.0
– household grid/activity history	1,462	4.4	0	0.0
– household grid/current state	123	0.4	0	0.0
– household grid/household grid	3,203	9.6	0	0.0
– one state missing	111	0.3	0	0.0
Total	33,335	100.0	28,660	100.0

The FACS data matches individuals across waves using the household identifier variable *serialno* and household grid position. The BHPS data matches individuals across waves using the individual identifier variable *pid*.

The type of cross-wave consistency tests that can be performed depend upon the type of interview pairings, as summarised in Table 6.2.

Table 6.2   Data overlap across consecutive waves

Interview type at first wave	Activity history	Current activity	Household grid
	Interview type at second wave		
Activity history	(A) Initial spell from second interview matches current spell at first interview: – state, start date and employment variables should match	(C) Initial spell from second interview is non-work starting before first interview: – current state at first interview should be non-work – last worked date match for waves A-B/B-C	(F) Only current state at second interview: – no implications for first interview
Current activity	(B) Current spell from first interview is non-work: – initial spell at second interview should be non-work		
Household grid	(D) Initial spell from second interview matches current spell at first interview: – state should match	(E) Initial spell from second interview is non-work starting before first interview: – current state at first interview should be non-work	

For those with an activity history reported in both interviews (group (A)), there is an overlapping spell: the current spell at the initial interview and the first spell from the subsequent interview. The same information is therefore collected twice and can be checked for consistency: the spell state and spell start date[23] and the recalled work variables if the spell is reported as work in both interviews. For those with an activity history reported at the second interview and only current (non-work) activity at the first interview (group (B)), the initial spell at the second interview should correspond to being non-work at the current state in the first interview. Similarly, for those with an activity history at the second interview and only a household grid report of current activity at the first interview (group (E)), the state from the first spell at the second interview should match the household grid report of the current activity at the first interview. For those with only the current (non-work) activity reported at the second interview (groups (C) and (E)), it is implied that the current activity at the first interview should be non-work. In addition, for the wave A-B and B-C pairings in group C (those with just their current activity at the second interview), the last worked date should be the same at both interviews[24]. For those with only a household grid

---

[23] End dates are truncated at the interview date for the report from the first interview and cannot therefore be compared with those reported in the second interview.

report of current activity at the second wave (group (F)), there is no retrospective information that can be checked against the prior wave.

6.2   The consistency of reported activity

Table 6.3 presents the consistency of reported activity for overlapping spells across waves for those with activity histories reported at both waves (group (A)) using the broad definition of activity based on five states[25]. It should be noted that the current state reported at the first interview was employment or self-employment for the vast majority of individuals in this group, which would be expected as the group consists of those currently in work or recently worked. For the FACS, some 93.9 per cent of the reported activity matched across both interviews. However, the proportion matched varies enormously across the type of activity initially reported. For those initially reporting work, there is a high degree of consistency: some 97.3 per cent of the initially employed match their report at the subsequent interview and 88.2 of the self-employed are also matched. Most of the non-matching in the case of the self-employed is due to the activity being recalled as employment at the second interview. For those not reporting work at the initial interview, the matching is very poor: only 41.1 per cent for those initially reporting themselves as unemployed, 56.5 per cent for those initially out of the labour force and 62.0 for those initially in full-time education give consistent accounts at the subsequent interview. Most of the non-matching reflects a redefinition of the activity into work at the subsequent interview, although there are also sizable shifts between non-work states.

---

[24] In waves A-C, individuals not currently in work were asked whether they had ever done any work and the last worked date recorded for that work. In waves D-E, individuals not currently in work were asked whether they had done any work since the last interview and therefore last worked dates were only recorded for those who were routed into the activity histories and not those with only a current (non-work) activity recorded.

[25] The sample sizes are smaller than the numbers with consecutive pairs of waves with activity histories at both interviews for both surveys due to the dropping of cases where the first spell in the second interview had a missing start date or the spell started after the prior interview or ended before the prior interview.

Table 6.3 Matching of state for overlapping spells across interview using broad state for type (A)

Current state in initial interview	No. of cases	Matching with first spell at subsequent interview		
		Percentage matched	Redefined as (main categories only)	Percentage redefined
FACS				
Employed	15,026	97.3	Out of labour force	1.6
Self-employed	1,535	88.2	Employed	8.8
			Out of labour force	2.5
Unemployed	285	41.1	Employed	32.3
			Out of labour force	23.2
			Self-employed	2.8
Out of the labour force	711	56.5	Employed	30.1
			Unemployed	8.4
			Self-employed	3.8
			Full-time education	1.1
Full-time education	50	62.0	Employed	26.0
			Out of labour force	10.0
			Self-employed	2.0
All states	17,607	93.9		
BHPS				
Employed	15,844	97.6	Self-employed	1.1
Self-employed	2,025	88.6	Employed	9.8
			Out of labour force	1.0
Unemployed	257	51.4	Employed	30.7
			Out of labour force	12.5
			Self-employed	5.5
Out of the labour force	326	52.5	Employed	35.6
			Unemployed	7.4
			Self-employed	4.0
Full-time education	24	37.5	Employed	41.7
			Out of labour force	16.7
			Unemployed	4.2
All states	18,477	95.1		

These results are consistent with previous findings on recall error of a tendency for individuals to recall activity at a later date as something which is the common activity for their group. This group of individuals with activity histories reported at both waves has a high attachment to the labour market by definition and it is not surprising therefore that there is a high rate of redefinition of activity into work. The substantial shift from unemployment to out of the labour force may also reflect that those who did not subsequently move into work reinterpreted the spell out of work as something other than looking for employment, another common finding in the literature on recall error.

Comparable figures for the BHPS show a remarkably similar picture. The overall consistency is slightly better in the BHPS (95.1 per cent of activity pairs matched

compared to 93.9 per cent in the FACS), with the match rate somewhat higher for those initially reporting unemployment and somewhat lower for those initially reporting themselves as being in full-time education, although, in both cases, the sample sizes are small. The distribution of redefinition categories is also proportionally similar.

Table 6.4 presents the consistency of reported and implied activity for all types of pairs of interviews. The work state definition of activity (simply work or non-work) is used because the implied activity at the initial interview can only be defined in terms of the two states for those not currently or recently worked at the second interview.

Table 6.4   Matching of state for overlapping spells across waves using work state for types (A) to (E)

Type of pairs of interview	Initial state	FACS Number of cases	FACS Percentage matched	BHPS Number of cases	BHPS Percentage matched
(A) Activity history/activity history	Work	16,563	98.0	17,869	98.7
	Not work	1,046	66.1	607	61.8
	All states	17,609	96.1	18,476	97.3
(B) Current activity/activity history and (C) Activity history or current activity/current activity	Work	352	99.4	481	99.4
	Not work	8,275	96.4	7,157	93.3
	All states	8,627	96.5	7,638	93.7
(D) Household grid/activity history and (E) Household grid/current activity	Work	1,429	98.5	n/a	n/a
	Not work	156	88.5	n/a	n/a
	All states	1,585	97.5	n/a	n/a

The initial rows of the table use the work state definition for those with activity histories at both interviews (group (A)) as a point of comparison. Using the broader definition of activity generates an overall consistency rate of 98.0 per cent for those initially in work in the FACS and 98.7 per cent for the corresponding group in the BHPS. Those initially reporting non-work only give a consistent account at the second interview in 66.1 per cent of cases in the FACS and in 61.8 per cent of cases in the BHPS. Overall, the matching rate is marginally higher in the BHPS (97.3 per cent compared to 96.1 per cent in the FACS).

By definition, those in interview types (B) and (C) have lower labour market commitment and most report a current activity of non-work at the first interview. Interestingly, not only is the matching rate for those initially reporting that they are not working much higher in both surveys than for group (A) (96.4 per cent in the FACS and 93.3 per cent in the BHPS), but consistency is also slightly higher for those initially reporting themselves as working than in group (A) (99.4 per cent in both surveys). For the (B) and (C) groups, consistency is slightly better in the FACS than BHPS. While the better matching rate for non-work activity for the group less committed to work is consistent with the idea that matching will be best for the more 'common' activity, the evidence suggests that consistency is better for work spells regardless of the type of labour market commitment. Overall, inconsistencies across

waves arise primarily from non-work activity being redefined as periods of work for those with higher levels of involvement in work.

The final rows of Table 6.4 consider the accuracy of proxy reports of activity in the household grid (groups (D) and (E)). If the individual's own account at the second interview of what they were doing at the time of the first interview was considered to be perfectly correct, the lower percentage matched for those initially reported by their partner as being out of work (88.5 per cent) than those initially reported by their partner as being in work (98.5 per cent) might suggest a bias in the proxy household grid report towards not working. However, given that this group is similar in their labour market attachment to group (A), the evidence above suggests that there may be some inaccuracy in the individual's account at the second interview towards redefining non-work activity as work. Indeed, the match rates for both activity types for the household grid groups is higher than that for group (A) and the overall consistency in reported state is better than any of the other groups, suggesting a high degree of accuracy in the household grid proxy report of current activity.

6.3   The consistency of reported spell start dates

Spell start dates can be compared for overlapping spells from consecutive interviews with activity histories. Table 6.5 presents the differences between the start date reported at the first interview and the one for the same spell reported at the second interview. The analysis is divided by whether the overlapping spells had a matched activity, as this is indicative of whether the same periods of activity are being matched in the overlapping spell.

Table 6.5   Differences in overlapping spell start dates across interviews

Change in spell start date	State matched		State not matched	
	FACS	**BHPS**	**FACS**	**BHPS**
Average change in months	- 0.6	0.7	- 11.2	- 9.0
Percentage of second reports with start date:				
– earlier by 10 years or more	1.6	1.3	4.3	2.7
– earlier by 5-10 years	2.5	1.9	6.3	5.7
– earlier by 2-5 years	3.1	3.3	9.1	9.4
– earlier by 1-2 years	3.9	3.1	7.4	6.6
– earlier by 7-12 months	9.1	7.1	9.3	9.1
– earlier by 2-6 months	4.6	3.4	6.6	12.0
– earlier by 1 month	4.4	4.5	4.3	5.4
– matched	47.4	49.7	22.4	23.6
– later by 1 month	4.0	3.9	4.5	4.3
– later by 2-6 months	3.5	3.1	6.9	6.0
– later by 7-12 months	6.4	7.0	6.3	4.7
– later by 1-2 years	2.9	3.8	4.8	3.7
– later by 2-5 years	2.6	4.4	4.1	3.9
– later by 5-10 years	2.2	2.3	2.3	1.8
– later by 10 years of more	1.7	1.2	1.5	1.1
Percentage of second reports with start date:				
– earlier	29.2	24.6	47.3	50.9
– matched	47.4	49.7	22.4	23.6
– later	23.4	25.7	30.3	25.5
Number of spells	15,896	16,899	1,711	877

The state is defined as matched using the original eleven activity categories in the FACS and the original ten categories in the BHPS.

In cases where the reported activity in the spell was matched in the FACS, only 47.4 per cent of spell start dates also matched, while 29.2 per cent had a subsequent report of an earlier start date and 23.4 per cent had a subsequent report of a later start date. Even including start dates which differ by a month only raises the match rate to 55.8 per cent. Not surprisingly, spells which do not match in activity are less likely to match in their start date: only 22.4 per cent match exactly and only 31.2 per cent if those with a one month difference are included. Moreover, when the activity does not match, there is a tendency for the start date reported at the second interview to be earlier than the initial report (47.3 per cent of spells) than to be later (30.4 per cent), with substantial proportions of the spell start dates beginning considerably earlier than that initially reported. Indeed, on average, the start date reported at the second interview is 11.2 months earlier than that reported at the first interview for overlapping spells where the activity does not match compared to 0.6 months earlier for overlapping spells with a matched activity. This suggests that a large proportion of the spells that do not have the same activity reported at the subsequent interview are being omitted from the latter report, implicitly being subsumed into a longer spell of a different activity.

The overall matching rate is slightly higher in the BHPS: 49.7 per cent compared to 47.4 per cent for the FACS for spells with matched state and 23.6 per cent compared to 22.4 per cent for spells without the state matched. For the overlapping spells with a matched activity in the BHPS, the spell start date reported in the second interview is, on average, 0.7 months later than the start date reported in the first interview and the distribution of differences is fairly balanced around matching. Overlapping spells which do not match in state in the BHPS, are, as in the FACS, likely to have a start date considerably earlier in the second interview than that reported in the first interview, with an average difference of 9.0 months and the distribution of differences being heavily skewed towards the negative side.

The matching results for the spell activity and for the start date are combined in Table 6.6. The start dates are categorised as matched in this table if they are within one month of each other. Just over half (52.4 per cent) of the pairs of interviews in the FACS have the same state and start date reported at both interview for the overlapping spell. The best consistency rate is for those initially reporting employment (55.8 per cent) and the worst for those initially reporting that they are out of the labour force (22.6 per cent). However, the types of inconsistencies differ across types of activity. While spells of employment and self-employment suffer from inconsistencies in the start date in both directions, non-work spells are more likely to have inconsistencies in the reported activity, most commonly with the start date at the second interview being earlier than that reported at the first. This suggests that while work spells may be subject to random inconsistencies in the reporting of the start date, there may be a systematic recall error in the reporting of non-work spells towards the subsuming of these spells into other types of longer spells at the subsequent interview. However, it should be noted that these results apply to a group of individuals with relatively high attachment to the labour market.

Table 6.6   Matching of spell state and start dates for overlapping spells across interviews by broad state and work state

	Percentage of second interview reports (row per cent)					
	State matched			State not matched		
Current state in	Start date:			Start date:		
first interview	Match	Earlier	Later	Match	Earlier	Later
FACS						
Employed	55.8	23.3	18.2	0.4	1.5	0.8
Self-employed	37.7	28.0	22.6	2.5	4.4	4.8
Unemployed	24.6	9.8	6.7	17.2	27.7	14.0
Out of labour force	22.6	22.5	11.4	6.8	24.6	12.1
Full-time education	48.0	4.0	10.0	8.0	22.0	8.0
Total	52.4	23.4	18.1	1.1	3.2	1.8
BHPS						
Employed	56.8	19.3	21.6	0.7	1.0	0.6
Self-employed	49.5	21.3	18.4	4.6	4.1	2.3
Unemployed	36.7	6.6	7.8	14.1	29.9	5.9
Out of labour force	36.2	11.5	5.3	14.9	24.8	7.4
Full-time education	37.5	0.0	0.0	12.5	50.0	0.0
Total	55.3	19.1	20.8	1.6	2.2	1.0

The start dates are categorised as matched if they lie within one month of each other. The states are defined as matched using the broad 5-category definition of activity.

Reporting is slightly more consistent in the BHPS than the FACS: some 55.3 per cent have matched activity and start date compared to the 52.4 per cent in the FACS, while there is considerably better matching for spells of self-employment, unemployment and out of the labour force. The patterns of inconsistencies across work and non-work spells are very similar to those for the FACS.

6.4   The consistency of reported last worked dates

For type (C) pairs of interviews in the initial two pairs of waves of the FACS, the reported last work date can be checked for consistency (Table 6.7).

Table 6.7   Matching of last worked dates across interviews

Change in reported last worked date	Percentage of interview type (column percentage)		
	Activity history/ current activity	Current activity/ current activity	Both types
Average change in months	- 7.1	5.3	1.2
Percentage of second interviews with:			
– date earlier by 24 months or more	9.8	9.8	9.8
– date earlier by 12-23 months	8.1	6.9	7.3
– date earlier by 6-11 months	8.3	4.8	6.0
– date earlier by 2-5 months	6.8	6.1	6.4
– date earlier by 1 month	6.4	4.8	5.3
– date matched	35.7	22.7	27.0
– date later by 1 month	6.4	5.6	5.9
– date later by 2-5 months	7.3	7.5	7.4
– date later by 6-11 months	3.7	6.7	5.7
– date later by 12-23 months	5.4	9.5	8.1
– date later by 24 months or more	2.1	15.4	11.1
Percentage of second interviews with			
– date earlier	39.4	32.4	34.8
– date matched	35.7	22.7	27.0
– date later	24.9	44.7	38.2
Average number of months since worked from initial interview	18.4	115.0	84.5
Number of cases	840	1,743	2,583

In 27.0 per cent of cases, the date by month matches exactly, with a further 25 per cent within six months of each other (Table 6.7, final column). However, 15.4 per cent are between a year and two years different and 20.9 per cent are two years or more different. There is a slight tendency for the second date reported to be later rather than earlier the first date, with an average difference of 1.2 months. Those who have worked recently at the initial interview (those with an activity history), are more likely to have an exact match (35.7 per cent) than those who have not (22.7 per cent), with the second interview report much more likely to report an earlier than later date than the first. This is not surprising: by definition, those working recently have a more recent date to recall (an average 18.4 months prior to interview compared to 115 months for those who have not worked recently) which may help consistency or mean that any error in the initial date is more likely to be towards more recent months than earlier months. Overall, even 35.7 per cent seems a low match rate for recalling a date which lies within the last two to three years.

6.5   The consistency of reported work characteristics

6.5.1   Comparing work characteristics across waves

Three types of work characteristics are collected in the activity histories: whether the individual is employed or self-employed, the weekly hours of work and the weekly pay (the last of which is captured in the two variables usual take-home pay and usual pay period). Comparing cross-interview reports of these variables for a particular work spell is complicated by the fact that these characteristics are not constant within a spell. At the first interview, the reported value for the overlapping spell is that current at the time of the first interview date. At the second interview, the reported value for the overlapping spell is one of two cases:

(a) The current value at the time of the second interview if a single work spell covers both interviews. In this case, differences between the two reports may arise from (i) genuine changes within the spell or (ii) measurement or reporting error at either interview.

(b) The average or 'usual' value from a past work spell which covered the first interview date and ended before the second interview. In this case, differences in the two reports may arise from (i) genuine differences between the spell average and that current at the first interview date; (ii) measurement or reporting error at either interview; or (iii) recall error at the second interview.

In the analysis below, case (a) is termed 'ongoing spell' indicating that a single work spell covers both interviews and case (b) is called 'completed spell' indicating that the reported value at the second interview is not the current value but the average from a past work spell.

6.5.2   Employment versus self-employment

As already indicated in the analysis of consistency in the state reported for overlapping spells, those reporting their current state as employment tend to be consistent in the state reported retrospectively at the following wave. Narrowing the sample to those reporting work at both interviews shows a similar degree of consistency in the employment versus self-employment distinction (Table 6.8).

Table 6.8   Matching of work characteristics for overlapping spells across interviews: Employment versus self-employment

| | FACS | | BHPS | |
	Ongoing spell	Completed spell	Ongoing spell	Completed spell
Percentage matched				
Initial state:				
– employed	99.3	99.0	99.0	98.1
– self-employed	92.2	82.9	92.3	76.2
– all	98.6	97.8	98.2	96.0
Number of cases:				
– employed	12,112	2,625	13,114	2,535
– self-employed	1,284	205	1,720	273

For those in the same ongoing work spell between interviews in the FACS, 99.3 per cent of those who report being employed at the first interview give a consistent response at the second interview. In contrast, only 92.2 per cent of those initially reporting self-employment are consistent in their reports. For those reporting on a completed retrospective work spell, consistency is similarly high at 99.0 per cent for those initially reporting being employed, but for those initially reporting that they were self-employed, only 82.9 per cent are consistent in the their account at the second interview. The proportions in the BHPS are very similar for those with an ongoing work spell covering both interviews, but the fraction being consistent is lower than in the FACS for those with a completed retrospective spell. This suggests that, particularly for the self-employed, there may be a degree of recall error when recalling employment status for a spell that has been completed in the past, with a tendency to redefine spells of self-employment as employment in both surveys.

6.5.3   Weekly hours of work

Table 6.9 considers an analogous analysis for the reported usual weekly hours. Weekly hours are not collected in the retrospective spells collected in the BHPS so that comparisons can only be drawn in the case of completed spells for the BHPS.

Table 6.9   Matching of work characteristics across interviews: Usual weekly hours

Change between first and second interview	FACS		BHPS
	Ongoing spell	**Completed spell**	**Ongoing spell**
Average change in hours	**+ 0.3**	**+ 0.1**	**+ 0.2**
Percentage of spells with:			
– hours less by 10 or more	6.6	8.6	4.8
– hours less by 5-9	7.7	7.7	6.0
– hours less by 1-4	13.2	15.0	10.6
– hours matched	42.0	38.9	54.8
– hours more by 1-4	13.8	13.5	11.4
– hours more by 5-9	8.7	8.0	6.6
– hours more by 10 or more	7.9	8.3	5.8
Number of cases	12,983	2,691	14,470

The average change in reported hours across the two interviews is fairly similar across both types of FACS pairs and the BHPS: an increase of 0.3 hours for the FACS ongoing spells, 0.1 hours for the FACS completed spells and 0.2 hours for the BHPS ongoing spells. The distribution of differences is also similar across the three samples, but the proportion matched is slightly higher in the FACS ongoing spells than the FACS completed spells (42.0 per cent compared to 38.9 per cent), while the proportion matched for BHPS ongoing spells case is considerably greater (54.8 per cent).

The similarities across samples and the evenness of the distribution of differences in Table 6.9 suggest that the inconsistencies may arise from random reporting or measurement error. However, Figures 6.1 and 6.2 present the proportions matched and average difference in reported hours by the level of initial hours reported and suggest a slightly different interpretation.

Figure 6.1 Percentage matched in weekly hours between interviews by initial hours
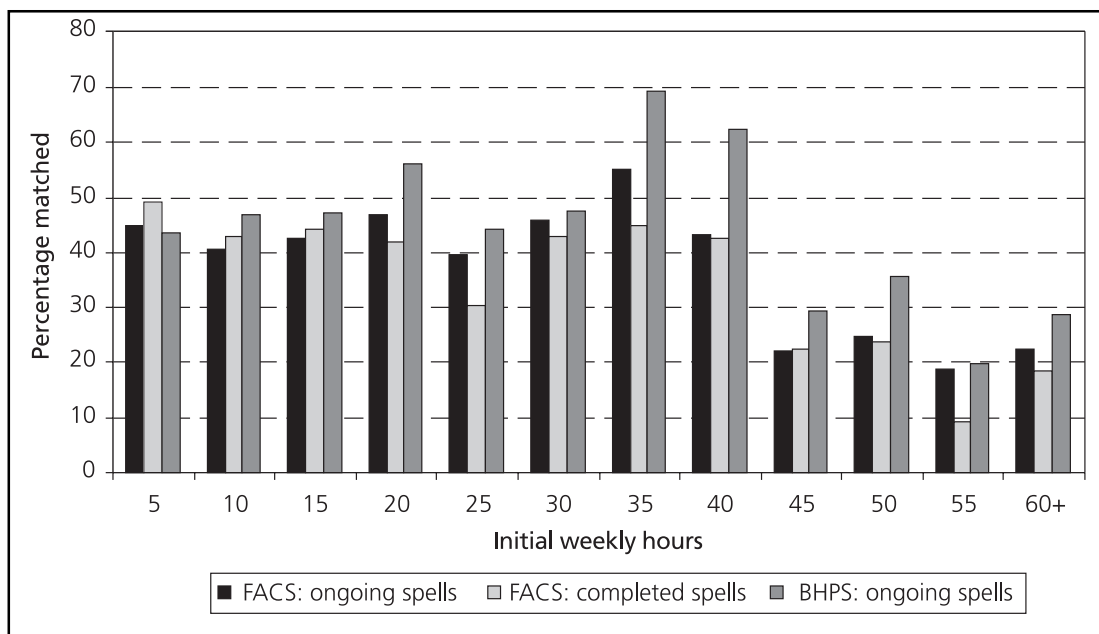
Figure 6.2 Mean change in hours between interviews by initial hours
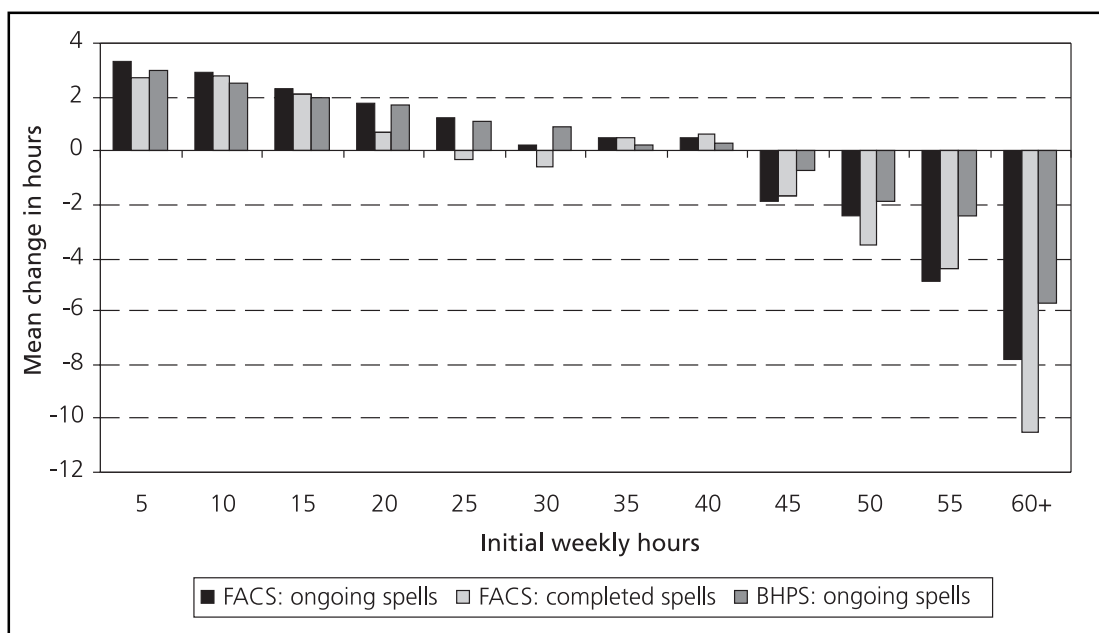
Matching is particularly poor at unusually high levels of reported initial hours (45 hours each week or more) and there is a tendency for reported hours to have risen at the second report if the initial report is low and to have fallen substantially if the initial report is high. These patterns are evident across all three samples, suggesting a kind of mean reversion in the hours reporting. In the case of ongoing spells, these may arise because of genuine differences between the two interviews: periods of unusually low or high hours may have been temporary within the spell and the

second report reflects a return to 'normal' hours. In the case of completed retrospective spells, this could reflect either that (i) the average weekly hours for the overlapping spell were more 'normal' than that temporarily current at the first interview date or (ii) there is systematic recall error whereby unusually short or long hours tend to be forgotten. Given that explanation (i) is very similar to the possible explanation for the case of ongoing spells and that matching is slightly poorer in the case of completed spells, it seems plausible that all three explanations may be playing a role (in addition to any random measurement error). Nevertheless, it should still be noted that the inconsistencies are of a greater magnitude in the FACS than the BHPS.

6.5.4 Earnings

A summary of the differences in reported earnings between the two interviews is presented in Table 6.10. It should be noted that the weekly earnings measure has not been indexed and is derived from two variables (usual pay and usual pay period) which increases the potential for measurement error.

In the case of ongoing spells in the FACS, 30.6 per cent of the pairs of reports of weekly earnings are within five per cent of each other, while 61.3 per cent are within 15 per cent. A greater proportion of consecutive interviews have an increase in the reported earnings between interviews than decrease, with an average rise of 17.7 per cent. This is not surprising as earnings tend to rise within a work spell, both with inflation and in real terms, and a substantial proportion of the inconsistent cases may simply reflect this wage growth. In the case of completed spells, the rate of matching is slightly lower (27.4 per cent for within five per cent and 53.4 per cent for within 15 per cent), but the proportions of consecutive waves showing decreases or increases between the two interviews is much more balanced, even though the average change is still 12.0 per cent. Nevertheless, it does suggest that the differences in the reports between interviews may be due to random measurement error or unsystematic recall error.

Table 6.10   Matching of work characteristics for overlapping work spells across interviews: Usual weekly earnings

	FACS		BHPS	
	Ongoing spell	**Completed spell**	**Ongoing spell**	**Completed spell**
Average percentage change	17.7	12.0	10.4	7.3
Matching within five per cent Percentage of second interviews with:				
– earnings decreased	21.4	34.1	17.3	32.2
– earnings matched	30.6	27.4	35.3	32.4
– earnings increased	48.0	38.5	47.4	35.4
Matching within 15 per cent Percentage of second interviews with:				
– earnings decreased	11.7	21.8	7.6	16.9
– earnings matched	61.3	53.4	70.5	64.2
– earnings increased	26.9	24.7	21.9	18.9
Number of cases	11,911	2,139	12,225	2,144

Weekly earnings are unindexed net earnings, trimmed to values between £1 and £2,000 per week.

The reporting of usual weekly earnings is more consistent in the BHPS than in the FACS, particularly using the within 15 per cent matching criteria: some 35.3 per cent of consecutive waves with ongoing spells had earnings reports within five per cent of each other compared to 30.6 per cent in the FACS and 70.5 per cent within 15 per cent of each other compared to 61.3 per cent in the FACS.

6.5   Summary of the consistency across waves

This section has examined the consistency in the reporting of labour market activity, spell start dates and work characteristics for spells reported independently at two interviews.

Most individuals give consistent accounts of their main activity: 94 per cent of spell states (defined by five broad categories) are matched for those providing an activity history at both waves and 97 per cent of spell states (defined by work/non-work) match for those only providing their current state at one of the waves or both. The consistency rates are much lower for non-work activities than employment or self-employment. In accordance with the previous literature on recall error, inconsistencies across waves in reported activity arise primarily from non-work activity being redefined as periods of work for those with higher levels of involvement in work. However, the degree of inconsistency is slightly higher in the FACS than the BHPS. The reporting of current activity by proxy in the household grid is as consistent with subsequent accounts given directly by the individual at the following wave as for two accounts given directly by the individual at both interviews. This strongly suggests the proxy reports are reliable.

The matching of spell start date is poorer: only half of those with activity histories at both waves provide consistent reports of the state and start date (even allowing for the start date to vary by one month). However, the matching rate for spell state and start date is only slightly higher in the BHPS. While work spells appear to be subject to random inconsistencies in the reporting of the start date, there may be a systematic recall error in the reporting of non-work spells towards the subsuming of these spells into other types of longer spells at the subsequent interview. The matching of the last worked date across waves is very poor, but comparisons with the BHPS are not available.

Consistency in reporting a work spell as being employment is very good, but there is a tendency for spells of self-employment to be redefined as employment at the subsequent interview. This inconsistency is slightly smaller in the FACS than the BHPS. Consistency in the reporting of weekly work hours across waves is poor in the FACS and less consistent than in the BHPS. There is a mean reversion in the hours reporting whereby unusually short or long hours tend to be reported as being closer to normal at the subsequent interview. Finally, consistency in the reporting of weekly earnings is also low and poorer in the FACS than the BHPS. However, it should be noted that weekly earnings is derived from two variables increasing the scope for measurement error. In addition, in cases of an ongoing work spell, it would be expected for earnings to have risen between interviews and this could explain much of the inconsistency.

7   Labour market statistics

This section derives some simple statistics to compare the activity history data from the Families and Children Study (FACS) with that from the British Household Panel Survey (BHPS). The samples used to derive the dynamic statistics include interviews with activity histories which consistently cover the 13 month period prior to interview, this period being the longest available for most of the interviews. The statistics include the division of time between labour market states, the number of spells and the monthly transition rates between states. As so many spells are truncated within the 13 month period examined, analysing transition rates is more meaningful than considering spell lengths. For some of the groups of family types (particularly the lone parents) and certain statistics (particularly some transition rates), the sample sizes are quite small and discrepancies between the two surveys may arise just from sampling error. Hence, it is necessary to test whether differences between the surveys are statistically significant to allow for the possible effect of small sample sizes.

To ensure that the derived statistics should generate the same picture from both surveys, some modifications to the sample and data were required. In addition, several different samples were tested to attempt to isolate the impact of different sources of discrepancies on the final statistics. These modifications and samples are described in subsection 7.1. The following four subsections present the comparison in labour market statistics for mothers in couples, single mothers, fathers in couples and single fathers. The analysis is divided into these groups as discrepancies between the two surveys are markedly different between the family types. The final subsection summarises the findings across all family groups.

7.1   Ensuring comparability between the surveys

An initial group of five modifications relate to ensuring that the samples used from the two surveys are as similar as possible. First, the analysis is disaggregated by gender and partnership into the four groups of mothers with partners, single mothers, fathers with partners and single fathers. Labour market behaviour differs considerably across these groups, but the balance of interviews across the groups

differs substantially between the surveys[26] making it necessary to disaggregate the data. In addition, discrepancies in the labour market statistics between the two surveys take very different forms across the family groups. Second, the BHPS sample is restricted to waves 9 to 13, covering the years 1999 to 2003 to make it comparable to the FACS data period. Removing this potential source of differences between the two surveys is especially important given the rise in mothers' employment rates over the 1990s. Third, the FACS sample is restricted to waves C to E. Only low income couples were interviewed in the first two waves and are obviously not a representative sample of couples. In addition, interviews in the first two waves were conducted in the summer rather than the autumn as in the remaining FACS waves and in all the BHPS waves and this may have impacted on measured labour market behaviour in the initial two waves in the FACS. Fourth, weighted samples for each panel are compared with unweighted samples. The BHPS is a longer panel than the FACS and panel attrition may have had greater impact on the nature of the remaining sample in the BHPS than the FACS. In addition, the FACS did not interview a substantial proportion of fathers in couples and the selection of those interviewed may well have been related to labour market behaviour. Using survey weights to rebalance the sample to represent the true populations can help address both of these issues.[27] Fifth, in analysing the current activity state, an original sample of the BHPS is compared with the sample selected to analyse the dynamic labour market statistics. While most of the original FACS sample was used to estimate the dynamic statistics, a large proportion of the original BHPS sample could not be used due to missing data[28] and comparing the two samples checks for selection bias.

A second group of four modifications adjust for differences in the routeing into and collection of the activity history data between the two surveys. First, where there was a gap of one month between spells in the FACS, the end of the initial spell was adjusted forward one month. Second, those not currently in work and not recently

---

[26] Of the total of 43,455 interviews for individuals with dependent children in the FACS, 47.3 per cent are mothers with partners, 27.8 per cent are fathers with partners, 23.8 per cent are lone mothers and 1.1 per cent are lone fathers. Of the sample of 34,892 from the BHPS, 46.7 per cent are mothers with partners. 42.4 per cent are fathers with partners, 10.0 per cent are lone mothers and 0.9 per cent are lone fathers.

[27] How well this is achieved depends upon how good the weights are at capturing any biased selection in the variables under consideration, which in this case are the labour market statistics. For example, while a particular set of weights may perfectly rebalance a sample in terms of, say, age and education, if there is selection bias by employment within these age and education groups, the weights will not completely address the issue for estimating average work rates. The weights used are *grossp* for the FACS and *xrwght* for the BHPS.

[28] For waves C-E in the FACS, 99.8 per cent of interviews could be used for the dynamic labour market statistics, compared to 89.7 per cent for waves 9-13 in the BHPS.

in work who were not routed into the activity history in the FACS were assumed to have been in the current non-work category since the previous interview or cut-off point.

Third, those not currently in work and not recently in work according to the activity history in the BHPS were assumed to have been in the current non-work category since the previous September in a 'mimicked' BHPS data set. This is compared with the 'original' BHPS data without this modification. It should be noted that the mimicked BHPS dataset differs from the original data in the following ways:

- the current activity is unaffected;

- the proportions of time over the previous 13 months spent in employment and self-employment will be unaffected, but the division between unemployment, out of the labour force and full-time education may be affected;

- the number of work spells in the previous 13 months should not be affected, but the number of non-work spells could be smaller;

- the transition rate between work spells and between work and non-work spells in the previous 13 months should not be affected, but the transition rate between non-work states could be lower.

Comparing FACS with the original BHPS data shows the impact that the routeing differences have on the dynamic statistics, while comparing FACS with the mimicked BHPS data should generate the same statistics.

Fourth, comparisons were also made with a BHPS dataset with a potential 'recall error'. It is hypothesised that asking individuals 'when they last worked' rather than collecting an activity history may generate a recall error in the FACS whereby non-current work spells within the history time frame may fail to be recalled.[29] To test the impact that such a recall error may have had on the FACS data, the BHPS data set is modified with this recall error by assuming that all individuals not currently in work did not report any previous work spells within the history time frame; were therefore not routed into the activity history; and are recorded as being in the current non-work state for the entire period. It should be noted that this is an extreme modification, effectively assuming that all individuals had completely made the recall error. The 'recall error' BHPS data set may be expected to differ from the mimicked BHPS data set in the following ways:

- the current activity is unaffected;

- the proportions of time over the previous 13 months spent in employment and self-employment may be lower and that in unemployment, out of the labour force and full-time education may be higher;

---

[29] The theoretical argument for this type of recall error is that asking for a single general date will not elicit as accurate a response as carefully working back through all previous spells.

- the number of work spells and non-work spells in the previous 13 months may be lower;

- the transition rates between all types of spells in the previous 13 months may be lower.

Comparing FACS with the 'recall error' BHPS data shows whether the pattern of any differences with the 'mimicked' BHPS data is consistent with the presence of the hypothesised recall error in the FACS.

There is one source of difference between the FACS and BHPS which cannot be addressed. The original activity categories differ between the two surveys (see footnotes 7, 11 and 13). The activity can be regrouped into the broad five state activities which are consistent between the two surveys, but the spell divisions within these categories cannot be made consistent because the information required is not available in all spells. As a result, the BHPS data may differ from the FACS in the following ways:

- the current activity defined by the broad five categories is unaffected;

- the proportions of time over the previous 13 months in each of the five broad categories is unaffected;

- the number of work spells and non-work spells[30] over the previous 13 months may differ in unpredictable ways;

- the transition rates between work and non-work spells in the previous 13 months may differ in unpredictable ways.

The number of spells and the transition rates may differ in the BHPS data because (i) work spells are divided by changes between employers and between employment and self-employment in the BHPS whereas the FACS may possibly divide work spells by these criteria and, in addition, divides work spells by switches in hours across 16 hours each week and (ii) out of the labour force spells are divided into slightly different categories. To the extent that these may be considered minor differences, the differences in the original categories between the surveys may have little impact on the final dynamic statistics.

7.2   Mothers with partners

Comparisons of the labour market statistics for mothers with partners are presented in Tables 7.1 and 7.2. The top panel in Table 7.1 presents the percentage in each current state for the FACS sample and the 'complete' and 'history' samples for the original BHPS data. The 'complete' sample includes all those interviews with a

---

[30] More specifically, the number of unemployment and full-time education spells should not be affected but the number of out of the labour force spells may be affected.

current activity reported while the 'history' sample includes those with sufficiently complete and consistent data to be included in the calculation of the dynamic statistics. In all cases, the statistics are presented unweighted and weighted.[31]

The proportions of mothers with partners reporting that they are currently in employment and in self-employment are considerably higher in the FACS than the BHPS, while the fraction out of the labour force is substantially lower and the percentage in unemployment slightly lower in the FACS than the BHPS. These differences are slightly greater for the BHPS history sample than for the complete BHPS sample, showing that selection into the history sample for the BHPS is slightly biased towards those not in work. Weighting the samples raises the proportions in employment and reduces the fraction out of the labour force in both samples, while also increasing the percentage reported as being self-employed and slightly reducing the proportion unemployed in the BHPS, but does not alter the pattern of differences between the two samples. These differences are statistically significant for all samples (except for the percentage unemployed for the weighted complete BHPS sample).

Table 7.1   Current state and division of time for mothers with partners

	Employed	Self–employed	Unemployed	Out of the labour force	Full-time education
Percentage in current state					
FACS					
– unweighted	65.9	5.6	1.0	26.8	0.8
– weighted	66.2	5.6	1.0	26.4	0.7
BHPS: complete sample					
– original	61.3	4.6	1.4	31.8	0.9
– original weighted	62.6	5.0	1.2	30.4	0.8
BHPS: history sample					
– original	59.6	4.1	1.4	33.9	0.9
– original weighted	60.9	4.3	1.3	32.6	0.9
BHPS significantly different from FACS	complete history	complete history	complete[u] history	complete history	
					Continued

Table 7.1   Continued

	Employed	Self–employed	Unemployed	Out of the labour force	Full-time education
Average percentage of time in state					
FACS:					
– unweighted	65.2	5.5	0.9	27.7	0.8
– weighted	65.7	5.5	0.9	27.3	0.8
BHPS:					
– mimicked	58.9	3.8	1.4	35.0	1.0
– mimicked weighted	60.4	4.0	1.2	33.5	0.9
– recall error	56.7	3.7	1.7	36.7	1.1
– recall error weighted	58.3	3.9	1.5	35.2	1.1
BHPS significantly different from FACS	mimick recall error	mimick recall error	mimick recall error	mimick recall error	recall error

[u] denotes significant difference only for unweighted samples.

The FACS sample restricted to those with complete activity history generated no substantial differences for the current state. The BHPS original and mimicked samples also generated no substantial differences for the distribution of time across states.

The bottom panel in Table 7.1 presents the average percentage of time spent in each state in the 13 months prior to interview. The results presented for the 'mimicked' BHPS sample were almost identical to those for the original BHPS sample and the latter are not shown.[32] In comparing the current activity with this dynamic division of time, there is a small shift towards being out of the labour force in both surveys (noting that the BHPS mimicked data should be compared with the history sample for the current activity). As with the current activity, weighting the data creates a slight shift towards the work category. However, using the 'recall error' BHPS data widens rather than diminishes the discrepancies between the two surveys, suggesting that the FACS data is not subject to the hypothesised recall error for mothers with partners. Overall, the pattern of differences between the two surveys using the BHPS mimicked data is the same as that for the current activity: the FACS has higher proportions of time spent in employment and self-employment and lower proportions in unemployment and out of the labour force than the BHPS. While a small part of this may be explained by the selection of individuals into the calculation of the dynamic statistics in the BHPS, the remaining differences are unexplained. In addition, the same pattern being observed in the current activity as the history data suggests that the source of differences lies either in the sample or the survey questioning for activity rather than in the collection of retrospective spells.

The average number of spells and transition rates for mothers with partners are reported in Table 7.1. The number of reported work spells is significantly lower in the BHPS than in the FACS with no difference between the BHPS original data and

[32] This is the case for all the family types. As already explained, the two samples could only differ in the proportions reported in the non-work states.

mimicked data by construction and little impact from weighting the data. In addition, the recall error BHPS data only widens the gap further. There are significantly more non-work spells in the BHPS than in the FACS, with the gap slightly smaller for the mimicked date over the original BHPS data (as would be expected from the construction of the data sets) and slightly smaller again for the recall error data, although a large discrepancy between the two surveys remains even allowing for this potential error in the FACS.

Table 7.2 Number of spells and transition rates for mothers with partners

	Average number of spells		Transition rates (percentage transit each month)			
	Work	**Non-work**	**Work to work**	**Work to non-work**	**Non-work to work**	**Non-work to non-work**
FACS:						
– unweighted	0.86	0.36	1.03	1.58	4.56	0.19
– weighted	0.86	0.35	1.02	1.57	4.53	0.19
BHPS:						
– original	0.79	0.48	1.04	2.38	5.49	0.68
– original weighted	0.80	0.46	0.97	2.26	5.57	0.62
– mimicked	0.79	0.47	1.04	2.38	5.49	0.32
– mimicked weighted	0.80	0.44	0.97	2.26	5.57	0.28
– recall error	0.73	0.45	1.07	0.57	5.13	0.14
– recall error weighted	0.75	0.43	0.99	0.52	5.25	0.13
BHPS significantly different from FACS	original mimick r. error	original mimick r. error	–	original mimick r. error	original mimick r. error [w]	original mimick[u]

[u] denotes significant difference only for unweighted samples.

[w] denotes significant difference only for weighted samples.

There are no significant differences between the FACS and BHPS in the work to work transition rates.[33] However, the other three types of transition rates are all higher in the original and mimicked BHPS samples than in the FACS. That the original BHPS data should have higher transition rates is not surprising as the original BHPS routeing ensures more spells are recorded. However, the mimicked data source should have similar transition rates. Interestingly, incorporating the recall error into the BHPS sample brings all three measures much closer to the FACS.

---

[33] State x to state y transition rates are defined as the percentage of those currently in state x in one month who move to state y in the following month. Non-work to non-work transitions measure the likelihood of moving from one spell of non-work to another.

7.3   Lone mothers

Comparisons of the labour market statistics for lone mothers are presented in Tables 7.3 and 7.4.

Table 7.3   Current state and division of time for lone mothers

	Employed	Self-employed	Unemployed	Out of the labour force	Full-time education
Percentage in current state					
FACS:					
– unweighted	46.8	2.9	4.9	42.8	2.7
– weighted	48.7	2.9	4.9	40.9	2.6
BHPS: complete sample					
– original	55.1	3.1	5.6	33.9	2.3
– original weighted	53.1	3.2	5.9	35.8	2.0
BHPS: history sample					
– original	53.8	2.2	5.5	36.0	2.5
– original weighted	51.2	2.4	6.0	38.1	2.2
BHPS significantly different from FACS	complete history [u]			complete history	
Average percentage of time in state					
FACS:					
– unweighted	45.5	2.8	4.8	44.3	2.6
– weighted	47.8	2.8	4.8	42.4	2.5
BHPS:					
– mimicked	52.4	2.2	5.5	37.0	2.9
– mimicked weighted	50.4	2.7	5.9	38.8	2.2
– recall error	50.4	2.1	6.3	38.1	3.0
– recall error weighted	48.1	2.4	6.8	40.0	2.7
BHPS significantly different from FACS	mimick r. error [u]		recall error	mimick r. error [u]	

[u] denotes significant difference only for unweighted samples.

The FACS sample restricted to those with complete activity history generated no substantial differences for the current state. The BHPS original and mimicked samples also generated no substantial differences for the distribution of time across states.

The figures presented in the top panel of Table 7.3 present a reversed picture from that for mothers with partners: in this case, the proportion reported as currently in employment is considerably lower in the FACS than in the BHPS and the fraction out of the labour force significantly higher. As in the case of mothers with partners, selection into the 'history' sample is slightly biased towards those not working, while the use of weights has relatively little impact on the overall picture. The lower panel shows, as with mothers with partners, that the average percentage of time spent in employment over the previous 13 months is slightly lower than the proportion reporting employment as their current activity in both surveys while the average percentage of time out of the labour force is slightly higher than the proportion

currently reporting themselves as out of the labour force. In the case of single mothers, however, none of the differences in the time proportions can be attributed to the selection into the history sample for the BHPS as the selection reduces the discrepancies between surveys rather than widening them. Inclusion of the recall error in the BHPS sample brings the two surveys closer together: indeed, for the weighted sample, the recall error creates average proportions of time in employment and out of the labour force which are no longer significantly different between the two surveys.

Table 7.4   Number of spells and transition rates for lone mothers

	Average number of spells		Transition rates (percentage transit each month)			
	Work	**Non -work**	**Work to work**	**Work to non-work**	**Non-work to work**	**Non-work to non-work**
FACS:						
– unweighted	0.64	0.60	1.36	2.48	3.28	0.23
– weighted	0.66	0.54	1.37	2.34	3.44	0.23
BHPS:						
– original	0.72	0.59	1.30	2.47	4.76	1.26
– original weighted	0.69	0.61	1.26	2.34	4.12	1.42
– mimicked	0.72	0.54	1.30	2.47	4.75	0.55
– mimicked weighted	0.69	0.56	1.26	2.34	4.11	0.65
– recall error	0.66	0.53	1.34	0.58	4.35	0.36
– recall error weighted	0.63	0.55	1.31	0.41	3.70	0.36
BHPS significantly different from FACS	orig.[u] mimick[u]	mimick[u] r. error		r. error	orig.[u] mimick[u] error[u]	original mimick

[u] denotes significant difference only for unweighted samples.

Turning to the numbers of spells and transition rates presented in Table 7.4, it can be seen that applying weights to the data means that there are no significant differences between the FACS and either the original or mimicked BHPS samples, except in the case of non-work to non-work transitions. While the substantially higher rate of these transitions might be expected for the original BHPS sample, the more moderately higher rate for the mimicked sample is not expected. Incorporating the recall error in the BHPS sample lowers the transition rate sufficiently further to no longer being significantly different from the FACS. This lends support to the hypothesis that such recall error is present in the FACS. However, including the recall error in the BHPS sample also makes the number of non-work spells significantly lower than in the FACS and the work to non-work transition rate significantly and substantially lower than in the FACS, which runs counter to the recall error hypothesis.

7.4   Fathers with partners

Comparisons of the labour market statistics for fathers with partners are presented in Tables 7.5 and 7.6. The most obvious feature of Table 7.5 is that while weighting has virtually no impact on the statistics for the BHPS samples, it has an extremely dramatic impact on the FACS sample. Given that weighting the FACS sample of fathers with partners does not create any better match with the combined interview and household grid accounts of current activity in the FACS[34] and that the proportions in different activities are so substantially different from the BHPS, the discussion will focus only on the unweighted samples.

The BHPS sample has slightly, but significantly, higher proportions of fathers with partners reporting their current activity as employment or self-employment than the FACS, and a significantly lower proportion reported as currently being out of the labour force. The history BHPS sample shows little difference across the proportions from the original sample, indicating little bias in current activity in the selection into the history sample. The average proportions of time spent in each activity over the previous 13 months are very similar to the distribution across current activity for both surveys. Reflecting the differences in reported current activity, the average proportion of time spent in employment is slightly higher in the BHPS and the fraction of time spent out of the labour force slightly lower, but, unlike the current activity, there is no significant difference in the time spent in self-employment and a small, but significant, discrepancy in the proportion of time in unemployment. Incorporating the recall error into the BHPS sample makes the proportion of time in employment and out of the labour force closer to those for the FACS, but increases the differences between surveys for the other activities.

[34] The proportions in work, unemployment, out of the labour force and full-time education are 92.2 per cent, 2.9 per cent, 4.6 per cent and 0.3 per cent respectively for the combined interview and household grid accounts, while the respective proportions are 88.4 per cent, 3.3 per cent, 8.0 per cent and 0.3 per cent for the unweighted data in table 19a and 95.3 per cent, 2.1 per cent, 2.6 per cent and 0.1 per cent for the weighted data in Table 7.4.

Table 7.5 Current state and division of time for fathers with partners

	Employed	Self-employed	Unemployed	Out of the labour force	Full time education
Percentage in current state					
FACS:					
– unweighted	75.1	13.3	3.3	8.0	0.3
– weighted	94.9	0.4	2.1	2.6	0.1
BHPS: complete sample					
– original	76.5	14.4	3.3	5.4	0.4
– original weighted	76.5	14.6	3.1	5.4	0.4
BHPS: history sample					
– original	76.8	13.2	3.5	6.1	0.4
– original weighted	76.8	13.2	3.4	6.1	0.5
BHPS significantly different from FACS	complete history	complete history [w]	complete [w] history [w]	complete history	complete [w] history [w]
Average percentage of time in state					
FACS:					
– unweighted	75.8	12.9	3.1	8.0	0.3
– weighted	95.7	0.6	1.5	2.1	0.1
BHPS:					
– mimicked	77.0	12.7	3.5	6.3	0.4
– mimicked weighted	77.0	12.7	3.3	6.6	0.4
– recall error	75.9	12.6	4.3	6.6	0.5
– recall error weighted	75.9	12.6	4.1	6.8	0.5
BHPS significantly different from FACS	mimick r. error [w]	mimick [w] r. error [w]	mimick r. error	mimick recall error	mimick [w] recall error

[w] denotes significant difference only for weighted samples.

The FACS sample restricted to those with complete activity history generated no substantial differences for the current state. The BHPS original and mimicked samples also generated no substantial differences for the distribution of time across states.

Table 7.6   Number of spells and transition rates for fathers with partners

	Average number of spells		Transition rates (percentage transit each month)			
	Work	**Non-work**	**Work to work**	**Work to non-work**	**Non-work to work**	**Non-work to non-work**
FACS:						
– unweighted	1.04	0.16	1.05	0.93	7.62	0.34
– weighted	1.09	0.08	0.81	0.80	11.95	0.56
BHPS:						
– original	1.09	0.16	1.35	0.90	11.84	1.36
– original weighted	1.07	0.16	1.21	0.80	11.07	1.26
– mimicked	1.09	0.15	1.35	0.90	11.84	0.91
– mimicked weighted	1.07	0.15	1.21	0.80	11.07	0.76
– recall error	1.06	0.15	1.32	0.40	11.06	0.27
– recall error weighted	1.04	0.14	1.16	0.35	10.31	0.23
BHPS significantly different from FACS	original mimick r. error	orig. [w] mimick[w] r. error	original mimick r. error	r. error	orig. [u] mimick[u] r. error [u]	original mimick[u]

[u] denotes significant difference only for unweighted samples.

[w] denotes significant difference only for weighted samples.

Consideration of the numbers of spells and transition rates (Table 7.6) will also focus on the unweighted samples. The number of work spells is significantly higher in the BHPS samples with the incorporation of recall error reducing the gap between the surveys, while the number of non-work spells is not significantly different between the surveys unless recall error is introduced into the BHPS sample. Correspondingly, the work-to-work transition rate is significantly higher in the BHPS, as are the non-work to work rate and the non-work to non-work transition rate. Incorporating recall error into the BHPS sample reduces the discrepancies between surveys in these three transition rates, but generates a large difference between surveys in the work to non-work transition rate.

7.5   Lone fathers

Comparisons of the labour market statistics for lone fathers are presented in Tables 7.7 and 7.8. In spite of the large differences in many of the statistics between the FACS and BHPS, few of the discrepancies are statistically significant and random sampling error can not often be ruled out as the explanation for the difference due to the small sample sizes for this group.

Table 7.7   Current state and division of time for lone fathers

	Employed	Self-employed	Unemployed	Out of the labour force	Full time education
Percentage in current state					
FACS:					
– unweighted	41.3	12.5	7.0	37.7	1.6
– weighted	44.1	11.8	6.7	36.1	1.4
BHPS: complete sample					
– original	55.9	12.6	11.7	18.9	0.9
– original weighted	53.0	13.8	12.4	20.2	0.7
BHPS: history sample					
– original	54.6	12.1	12.1	20.2	1.0
– original weighted	52.1	14.0	11.6	21.5	0.8
BHPS significantly different from FACS	complete[u] history[u]			complete history	
Average percentage of time in state					
FACS:					
– unweighted	42.1	11.9	7.2	37.3	1.6
– weighted	44.7	11.3	6.7	36.0	1.4
BHPS:					
– mimicked	54.8	13.8	11.9	19.3	0.2
– mimicked weighted	52.5	15.4	11.2	20.8	0.1
– recall error	53.8	12.1	12.7	20.4	1.0
– recall error weighted	51.3	14.0	12.2	21.8	0.8
BHPS significantly different from FACS	mimick[u] r. error[u]			mimick recall error	mimick

[u] denotes significant difference only for unweighted samples.

The FACS sample restricted to those with complete activity history generated no substantial differences for the current state. The BHPS original and mimicked samples also generated no substantial differences for the distribution of time across states.

The proportion of lone fathers currently in employment and the proportion of time spent in employment are significantly higher in the BHPS than the FACS, although only for the unweighted samples (Table 7.7). The proportion currently out of the labour force and the proportion of time spent out of the labour force are substantially and significantly higher in the BHPS than the FACS for both the weighted and unweighted samples. The incorporation of recall error closes the gaps in the average proportions of time to a very small degree and substantial differences between the surveys remain unexplained.

Table 7.8   Number of spells and transition rates for lone fathers

	Average number of spells		Transition rates (percentage transit each month)			
	Work	**Non-work**	**Work to work**	**Work to non-work**	**Non-work to work**	**Non-work to non-work**
FACS:						
- unweighted	0.63	0.49	0.76	1.07	0.91	0.0
- weighted	0.65	0.46	0.75	0.94	0.83	0.0
BHPS:						
- original	0.80	0.39	0.82	1.24	1.79	1.43
- original weighted	0.79	0.40	0.76	1.34	2.30	1.18
- mimicked	0.80	0.37	0.82	1.24	1.79	0.95
- mimicked weighted	0.79	0.38	0.76	1.34	2.30	0.70
- recall error	0.75	0.36	0.88	0.15	1.79	0.0
- recall error weighted	0.74	0.38	0.82	0.22	2.30	0.0
BHPS significantly different from FACS	original mimick r. error[u]	mimick[u] r. error[u]	–	r. error	–	–

[u] denotes significant difference only for unweighted samples.

The average number of work spells is significantly higher in the BHPS than the FACS, while the number of non-work spells is significantly lower for the unweighted mimicked sample only (Table 7.8). Incorporating the recall error into the BHPS sample closes the gap for the number of work spells slightly (removing all significant difference for the weighted data), but does not reduce the discrepancy for the number of non-work spells. Given the small sample sizes, it is not surprising that no significant differences in the transition rates between the FACS and BHPS original or mimicked data can be observed.

7.6   Summary of the comparison of labour market statistics

This section has examined differences between the FACS and BHPS in key labour market activity statistics. The samples were modified to enhance the degree of comparability by disaggregating the analysis by gender and partnership; matching the period of analysis by restricting the BHPS sample to the 1999-2003 waves; removing the unrepresentative couple samples and summer interviews from the FACS sample by restricting the FACS to the C to E waves; and weighting the data to allow for differences in panel attrition.

Some of the differences in the statistics were shown to be possibly due to biased sample selection for the dynamic statistics for the BHPS; differences in the routeing into the activity histories in the FACS and BHPS; and random sampling error in cases where substantial differences were not statistically significant. But there are remaining unexplained differences:

- For mothers with partners, a higher proportion of time in work; more work spells; fewer non-work spells and lower transition rates were reported in the FACS.

- For lone mothers, a lower proportion of time in employment and lower non-work to non-work transition rate were reported in the FACS.

- For fathers with partners, a lower proportion of time in employment and unemployment; a higher proportion of time out of the labour force; fewer work spells; and lower transition rates were reported in the FACS.

- For lone fathers, a lower proportion of time in employment; a higher proportion of time out of the labour force; and fewer work spells were reported in the FACS.

None of the potential explanations for these unexplained differences are completely satisfactory. The hypothesis of recall error in the FACS arising from the questions used for routeing into the activity history is consistent with explaining some of these differences, but it is inconsistent with the observed patterns in other statistics. Differences between the surveys in the way the spells are divided in the activity histories could explain some of the discrepancies in the numbers of spells and transition rates, but it seems unlikely that such minor differences in the spell divisions could completely explain discrepancies of such magnitude. In addition, most of the differences between the surveys in the division of time across labour market activities are also evident in differences in the distribution of current activity, suggesting that the source of these discrepancies may lie in the nature of the sample or in the framing of the activity questions rather than the manner in which spell information is collected.

8   Conclusion

This report has closely examined the consistency and reliability of the data collected in the Families and Children Study (FACS) activity history. Using data from the first five waves of the FACS and from the first thirteen waves of the British Household Panel Survey (BHPS), carefully matched samples have been analysed to calibrate this degree of consistency and to test whether the FACS generates labour market statistics similar to the comparison survey.

The consistency and completeness of the data collected within each wave is very good in the FACS. The following points should be noted in particular:

- The FACS has very little missing activity codes or dates for the spells collected, which compares particularly favourably with the BHPS where a substantial proportion of starting dates are missing.

- There is a sizable proportion of spell gaps of exactly one month, but this is logically consistent with reality. Adjusting the initial spell's end date forward by one month enables a consistent calculation of spells lengths within the data.

- Around four per cent of interviews have first spells which do not cover the intended start point for the activity history, which is slightly higher than the proportion in the BHPS. Cases where the first spell begins after the intended start point may create problems for merging the activity histories across waves.

- The currently available version of the FACS contains end dates for the current spell in the activity history which are incorrect and should be replaced with the interview date as the truncated end date.

Comparisons across consecutive waves where information reported at one interview can be compared with a second retrospective report at the next interview reveals mixed degrees of consistency. Specifically:

- The vast majority of individuals matched across waves using the variable *serialno* and their position in the household grid have consistent sex and age reports at the two interviews.

- Most individuals give consistent accounts of their main activity, although consistency rates are much lower for non-work activities than for employment or self-employment. In accordance with the previous literature on recall error, inconsistencies across waves in reported activity arise primarily from non-work activity being redefined as periods of work for those with higher levels of involvement in work. However, the degree of consistency is slightly lower in the FACS than the BHPS.

- The matching of spell start date is poorer than for the main activity, but is only slightly lower than that in the BHPS. While work spells appear to be subject to random inconsistencies in the reporting of the start date, there may be a systematic recall error in the reporting of non-work spells towards the subsuming of these spells into other types of longer spells at the subsequent interview. The matching of the last worked date across waves is very poor, but comparisons with the BHPS are not available.

- Consistency in the reporting of weekly work hours and weekly earnings across waves is poor in the FACS and slightly less consistent than in the BHPS. These inconsistencies may reflect some genuine changes as the two reports are not always capturing the same point in time, but this cannot explain why the matching is poorer in the FACS than the BHPS.

Finally, a number of differences in the reported dynamic labour market behaviour arose between the FACS and BHPS which could not be explained in any obvious way. In particular, the proportion of time spent in employment and the number of work and non-work spells differ in significant ways between surveys, while transition rates between states are generally lower in the FACS than the BHPS. Differences in questionnaire structure (including routeing via the question of when the respondent last worked and the way spell divisions are defined) does not appear to explain these discrepancies. Indeed, work-to work transition rates are similar to those in the BHPS, indicating that work spells are likely to have been divided by employer and between employment and self-employment in a similar way to those as in the BHPS. However, most of the differences between the surveys in the division of time across labour market activities are also evident in differences in the distribution of current activity, suggesting that the underlying source may lie in the nature of the two samples or in the framing of the activity questions rather than the manner in which spell information is collected.

Overall, the FACS survey provides a reasonably complete and consistent account of the activity history spells, which is of a similar quality to that provided by the BHPS. One of the main irresolvable areas of weakness is the poor consistency in the reporting of spells and work characteristics across interviews, although this concern may be common across all surveys collecting activity history data in this manner. Indeed, the analysis has confirmed several previously known types of recall error and has uncovered fresh concerns about the recall of work characteristics. The unexplained differences in the resultant labour market statistics from the FACS and the BHPS calls for some caution in its use, but it is an open question as to which of the two surveys comes closest to reality.

However, there are two important limitations to the use of the FACS activity histories. First, the omitted transitions between non-work states due to the failure to route all individuals into the activity history is idiosyncratic to the FACS and means that it cannot be used for any analysis involving transitions between non-work states. Comparisons using the BHPS data show that the routeing reduces the aggregate number of non-work spells reported for all family types and substantially reduces the estimated non-work to non-work transition rates. Second, the failure to interview a substantial and biased proportion of male partners means that the activity history data should not be used for fathers. The reporting of current activity by proxy in the household grid for these partners is reasonably consistent with subsequent accounts given directly by the individual at the following wave, indicating that the use of current activity including the proxy reports for this group may be reasonable. However, the current activity reported by male partners who were interviewed was not representative of the entire group and the activity histories, even with the aid of the FACS weights, were not consistent with those reported by fathers with partners in the BHPS. However, for studies considering mothers' transitions between work and non-work and other changes in employment characteristics, the FACS provides a superior data source to most other surveys, both on account of its unusually large sample of mothers and on account of it providing reasonably consistent and complete activity history data for this group.

References

Akerlof, G. A. and Yellen, J. L. (1985). 'Unemployment Through the Filter of Memory', *Quarterly Journal of Economics*, August, pp. 747-773

Bowers, N. and Horvath, F. W. (1984). 'Keeping Time: An Analysis of Errors in the Measurement of Unemployment Duration', *Journal of Business and Economic Statistics*, vol. 2(2), pp. 140-149

Clark, K. B. and Summers, L. H. (1979). 'Labor Market Dynamics and Unemployment: A Reconsideration', *Brookings Papers on Economic Activity*, vol. 1, pp. 13-72

Dex, S. and McCulloch, A. (1998). 'The Reliability of Retrospective Unemployment History Data', *Work, Employment and Society*, vol. 12(3), pp. 497-509

Duncan, G. J. and Hill, D. H. (1985). 'An Investigation of the Extent and Consequences of Measurement Error in Labor-Economic Survey Data', *Journal of Labor Economics*, vol.3(4), pp. 508-532

Elias, P. (1997). 'Who Forgot They Were Unemployed ?', Working Paper Number 97-19, ESRC Research Centre on Micro-Social Change, University of Essex

Horvath, F. W. (1982). 'Forgotten Unemployment: Recall Bias in Retrospective Data', Monthly Labor Review, March 1982

Kalton, G., Kasprzyk, D. and McMillen, D. B. (1989). 'Nonsampling Errors in Panel Surveys', in (D. Kasprzyk, G. Duncan, G. Kalton & M. P. Singh, eds) *Panel Surveys*, New York: Wiley

Levine, P. B. (1993). 'CPS Contemporaneous and Retrospective Unemployment Compared', *Monthly Labor Review*, August, pp. 33-39

Mathiowetz, N. A. and Duncan, G. J. (1988). 'Out of Work, Out of Mind: Response Errors in Retrospective Reports of Unemployment', *Journal of Business and Economic Statistics*, vol. 6(2), pp. 221-229

Morgenstern, R. D. and Barrett, N. S. (1974). 'The Retrospective Bias in Unemployment Reporting by Sex, Race and Age', *Journal of the American Statistical Association*, vol. 69(346), pp. 355-357

Paull, G. (1997). 'Dynamic Labour Market Behaviour in the British Household Panel Survey: The Effects of Recall Bias and Panel Attrition', The Labour Market Consequences of Technical and Structural Change Discussion Paper Series no. 10, Centre for Economic Performance

Paull, G. (2002). 'Biases in the Reporting of Labour Market Dynamics', IFS Working Paper W02/10, June

Peracchi, F. and Welch, F. (1995). 'How Representative are Matched Cross-Sections ? Evidence from the Current Population Survey', *Journal of Econometrics*, vol. 68, pp. 153-179

Pierret, C. (2001), 'Event History Data and Survey Recall: An Analysis of the National Longitudinal Survey of Youth 1979 Recall Experiment', Journal of Human Resources, vol 36(3), Summer, pp. 439-466

Poterba, J. M. and Summers, L. H. (1984). 'Response Variation in the CPS: Caveats for the Unemployment Analyst', *Monthly Labor Review*, March, pp. 37-43.

Poterba, J. M. and Summers, L. H. (1986). 'Reporting Errors and Labor Market Dynamics', *Econometrica*, vol. 54(6), pp.1319-1338.