

# **The HILDA Survey and the Potential to Contribute to Population Research**

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# The HILDA Survey and the Potential to Contribute to Population Research

## *Abstract*

In 2001 the first wave of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, Australia's first ever large-scale household panel survey, was conducted. This paper presents an introduction to this survey. It provides a summary of the design and the process by which the sample was selected, the type of information being collected, and the procedures employed for data collection during wave 1. The paper then concludes with a brief discussion of some of the population issues that could potentially be examined with these data.

## **1. Introduction**

Arguably the main force motivating research in the social sciences is change, with researchers concerned with the forces behind change, its consequences, and how individuals, organisations and societies react and adapt to it. A major weakness of much of this research, especially in Australia, however, has been the reliance on cross-section data. As discussed in Rose (2000, p. 8), most surveys provide point-in-time snapshots and thus tell us very little about change. Cross-section surveys that are repeated are more useful, but nevertheless only permit analyses of net change. Moreover, that analysis can only be conducted at the level of group aggregates. Ultimately, the analysis of change at the level of individuals, families and households requires longitudinal designs where the same units are followed over time.

Recognition of this, together with the vast improvement in the technology for handling complex data sets, has seen the emergence in many countries of large household-based panel surveys. Indeed, the first major survey of this type – the Panel Study of Income Dynamics (PSID) in the USA – commenced back in 1968, and the interviewing of original sample members still continues today. Further, it has spawned literally hundreds of research articles covering a diverse range of topics (see Brown, Duncan and Stafford 1996 for a review). Similar studies were eventually established in the mid-1980s in Germany and The Netherlands and in the early 1990s in the UK and Canada (see Haisken-DeNew 2001). Australia, however, did not have a large-scale survey of this type until 2001 when the first wave of the Household, Income and Labour Dynamics in Australia (HILDA) Survey was conducted. Funded by the Commonwealth Government, but designed and managed by a team based at the Melbourne Institute of Applied Economic and Social Research, the University of Melbourne, the HILDA Survey is modelled on other international panel studies, and especially the British Household Panel Survey (BHPS) and the German Socio-Economic Panel (GSOEP).<sup>1</sup> The funding initially covers the first three years of data collection, but with a strong expectation that funding for data collection will continue well beyond this initial window.

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<sup>1</sup> Extensive documentation on the GSOEP and the BHPS can be found on the World Wide Web. Their respective web addresses are:

<http://www.diw.de/english/sop/>

<http://www.irc.essex.ac.uk/bhps/>

It is important to note that while other longitudinal data collections do exist in Australia, their scope has been limited in a number of ways. First, most focus on relatively small sub-groups of the population (such as youth or immigrants). Second, they typically provide limited information about household structure. Third, they generally have not been designed to follow their samples for very long. Finally, where these weaknesses are not present, the samples involved are often very small. Australian policy-makers and researchers have thus not had access to data that are both representative of the Australian population and provide information on the dynamic nature of events and how they interact in influencing the changing behaviour and fortunes of Australian households, families and individuals. This has been consistently identified as a major problem in reviews of policy-relevant research literature in areas such as the labour market and social policy (e.g., Richardson 1978, p. 39; Creedy 1994; Norris and Wooden 1996, p. 107; Barr 1999, pp. 22-23). The HILDA Survey is thus intended to rectify this deficiency.

This paper provides an introduction to this survey. It provides a summary of the design and the process by which the sample was selected, the type of information being collected, and the procedures employed for data collection procedures during wave 1. A brief discussion of some of the issues of interest to demographers and other social scientists interested in population matters that could be examined with these data then follows.

## **2. Who is Surveyed?**

The broad objective of the HILDA Survey is to select a nation-wide sample of private households and then attempt to trace all of the individual members of these households, including children, over time. Individuals would only drop out of the sample in the event of death, emigration from Australia, the acquisition of some disability that prevented further participation (such as the onset of dementia), and incarceration.

Furthermore, and in line with the designs used in most of the household panel studies conducted overseas, the sample is automatically extended over time by ‘following rules’. That is, any new children of members of the selected households (including both biological and adopted children) as well as any new household members resulting from changes in the composition of the original households are added to the sample. Compared with other possible designs, such as a classic single cohort panel (e.g., the National Longitudinal Survey of Youth — NLSY — in the USA) or a rotating medium-life panel (e.g., the Survey of Labour and Income Dynamics — SLID — in Canada), this design is generally thought to be superior in terms of delivering high quality information about family, income and labour dynamics. The lengths of medium-life panels, for example, are often too short to provide an understanding of some of the issues and questions that are of highest priority in the HILDA. Very differently, by adding new household members into the sample, the power of research into questions concerning the influences on, and impact of, changing household structure is much enhanced. Finally, with time, the indefinite life panel approach is clearly superior in terms of addressing questions concerning the socio-economic links between successive generations.

### ***Wave 1 Reference Population***

The reference population for the first wave of the HILDA Survey is all Australian residents who live in private households. That is, and consistent with previous longitudinal surveys of this type, the scope of the population excludes most persons living in institutions (such as hospitals and other health-care institutions, military and police installations, correctional and

penal institutions, convents and monasteries, and boarding schools) and other non-private dwellings (such as hotels and motels). The only exception here is persons listed as household members who spent part of the year at boarding schools, halls of residence and university colleges. In line with the practice adopted in the BHPS, these individuals were included in the reference population for wave 1.

Further, to ensure that all members of the in-scope population have the same probability of selection, dwellings that are not primary places of residence (e.g., holiday homes) were also excluded.

The other major exclusion was persons living in remote and sparsely populated areas. This exclusion was dictated by cost considerations but is consistent with the practice adopted by the Australian Bureau of Statistics (ABS) in its supplements to the monthly Labour Force Survey. It results in about 80,000 persons being omitted from the scope of HILDA.

Finally, an Australian resident was defined to include overseas residents living in Australia provided they had stayed, or intended to stay, in Australia for at least one year.

### ***Data Collection Unit***

The data collection unit is the household. Following the ABS, this is broadly defined as “a group of people who usually reside and eat together” (ABS, *Statistical Concepts Library*, ABS Cat. No. 1361.30.001), with emphasis given to the making of common provision for food.

The ABS makes the further observations about households.

- A household resides wholly within one physical dwelling. A group of people who make common provision for food but are living in two separate dwellings are two separate households.
- Lodgers, who receive accommodation only (not meals), are treated as a separate household.
- Boarders, who receive accommodation and meals (board), are treated as part of the household.

In general, persons who live in more than one household will only be treated as members of the household where they spend most of their time.

We do, however, vary from the ABS practice in how children attending boarding schools and halls of residence while studying are treated. As noted earlier, while these dwellings are out of scope, such individuals are treated as members of sampled households provided they spend at least part of the year in the sampled dwelling.

Note that while all members of the household are defined as members of the sample, interviews will only be conducted with those persons who are at least 15 years of age (on June 30 in the year each survey wave commences).

### ***Sample Selection***

Households were selected using a multi-stage approach. First, a random sample of 488 Census Collection Districts (CDs), based on 1996 Census boundaries, was selected from across Australia (each of which consists of approximately 200 to 250 households). To ensure

the sample provided good coverage of all parts of Australia, the frame of CDs was stratified by State, and within the five most populous States, by metropolitan and non-metropolitan regions. The CDs were sampled with a probability proportional to their size, as measured by the number of dwellings recorded in the 1996 Census.

Second, within each of these CDs, a sample of 22 to 34 dwellings were selected, depending on the expected response and occupancy rates within each area. This resulted in a total of 12,252 dwellings being selected and given an assumed 70 per cent response rate and an estimated dwelling occupancy rate of 91 per cent, was expected to produce a responding sample comprising just over 7800 households.

The selections were made after all dwellings within each of the CDs were fully listed by a trained team of interviewers, thus permitting calculation of accurate probabilities of selection (that is, probabilities that take into account changes in population between 1996 and 2001). Within each CD an initial dwelling was selected at random from the list of all dwellings. An interviewing route was then determined and every fifth dwelling in urban areas, and every second dwelling in rural areas, along this route was then selected until the total number of selections was achieved.

Finally, given dwellings can contain more than household, rules were devised for the selection of households. These rules stipulated that where a dwelling contained three or fewer households, all such households should be sampled. Where there were four or more households occupying one dwelling, all households had to be enumerated and a random sample of three households obtained (based on a predetermined pattern). The selection of households within dwellings was undertaken by the interviewer at the time of first contact.

### ***Following Rules***

Since this is a panel survey, interviews in wave 2 are sought with all members of responding households in wave 1 (including those members who declined to be interviewed in wave 1). The sample, however, is designed to have an indefinite life. This is achieved through the use of following rules that are intended to ensure that the sample replaces itself in the same manner as the population (see Duncan and Hill 1989). In the BHPS, for example, persons not included in the first wave but who subsequently became members of households containing an original sample member (e.g., as a result of birth or marriage, or because of other changes in household composition and formation) become eligible for sample inclusion. Similar following rules have been implemented in the HILDA Survey.

Essentially, eligibility for sample inclusion after wave 1 can occur in the following ways.

- (i) A child is born to, or is adopted by, an 'original' or 'continuing sample member'. This child automatically counts as an original sample member and information about that child will be collected from parents until age 15 (after which they too will become eligible for interview).
- (ii) An original sample member moves into a different household with one or more new people. These new people will now become eligible for interview, but are only treated as 'temporary sample members'.

- (iii) One or more new people move in with an original sample member. Again, these new people will now become eligible for interview, and are counted as temporary sample members.

All temporary sample members remain in the sample for as long as they remain resident in a household that includes an original sample member. Temporary sample members, however, are converted to continuing sample members if they become the parents of a new sample member birth.

### **3. What Type of Information is Collected?**

As defined by the principal client, the Commonwealth Department of Family and Community Services, the primary objective of the HILDA Survey is to support research questions falling within three broad and inter-related areas. These are: (i) income dynamics; (ii) labour market dynamics; and (iii) family dynamics. Thus we would expect to include in each wave of the survey a set of like (if not identical) questions covering each of these three broad areas.

The income module in wave 1 is designed to provide a measure of previous financial year income of all individual household members. Household income, therefore, has to be calculated by summing across individual household members. Further, our approach, which is based closely on that used in the ABS Survey of Income and Housing Costs, involves deducing total individual income from the sum of different components. The HILDA data will thus provide measures of each of the different components of income – wages and salaries, pensions and benefits, business income, and so on. Measures of current income, but only for wages and salaries and for government pensions and benefits, are also sought.

Questions about employment and job search activity are primarily concerned with job characteristics for those employed at the time of interview, and with work intentions and job search activity for those not in employment. In addition, one of the novel features of the HILDA Survey is the inclusion of a calendar covering the period between July 1 in the preceding year and the time of interview. This calendar will be used to collect data on the length and timing of different spells of employment and unemployment and periods spent in study.

The family oriented components of the survey include a section on childcare arrangements, asked of one member in the household, a section on family formation, with a particular emphasis on child-parent contact in families that are no longer intact, and a section on partnering. In addition, additional questions about parenting and other aspects of family life are included in a self-completion questionnaire.

However, and as can be seen from Table 1, which provides a summary of the content of the HILDA Survey instruments used in wave 1, the range of topics covered extends well beyond these three broad areas, and includes such diverse issues as housing, health, and lifestyle. In addition, during wave 1 an extensive array of personal characteristics was also collected. This array extends well beyond the standard demographic variables to include, for example, parental and family background, marital history and labour market history variables.

A particularly novel feature of the HILDA Survey, at least relative to its international counterparts, is the amount of subjective data that is being collected. While a very limited range of attitudinal questions are included in both the BHPS and GSOEP, the addition of a

leave-behind self-completion instrument as part of the suite of HILDA Survey instruments has facilitated the collection of far more information of this kind.<sup>2</sup>

In future waves, while much of the content will remain stable, it is expected that there will be scope for up to 10 minutes of interview time to be devoted to special topics. The topic for wave 2 is household assets and debts, with the broad objective being to measure net household wealth.

In summary, while the full power of the HILDA Survey will take many years to be realised, even the first wave of data is likely to prove attractive to many users given the diverse nature of topics covered.

#### **4. Wave 1 Outcomes**

The first wave of the HILDA Survey was conducted during the latter half of 2001 with a public release data file becoming available in October 2002. In what follows we describe the fieldwork process for wave 1, report on achieved response rates and provide an assessment of the representativeness of the achieved sample.

##### *How Were the Data Collected?*

The data collection task, at least for the first three waves, has been sub-contracted to ACNielsen, a private market research company with a strong background in undertaking survey research in the area of social policy. The majority of the wave 1 data were collected through face-to-face interviews<sup>3</sup>, which mostly took place between 24 August 2001 and 21 December 2001.<sup>4</sup> The workload was spread across a total of 139 interviewers, all of who were expected to have a minimum of 100 hours of interviewing experience prior to commencing work on the HILDA project.

After establishing contact with a member of the household, an interview lasting, on average, around 10 minutes was conducted with at least one member of the household. This interview involved the administration of both the Household Form and the Household Questionnaire (see Table 1). While any adult member of the household could complete these two instruments, interviewers requested to speak with the household member knowing most about the finances. The option was also provided for the deferment of the childcare section of the Household Questionnaire should that person not be in the best position to respond to questions about the household's child care arrangements.

Interviews, using the Person Questionnaire, were then pursued with each household member aged 15 years and over (on 30 June 2001), and averaged 34 minutes in length. Once an individual completed this interview they were then provided with the Self-Completion Questionnaire (SCQ) to complete in private. The interviewer returned to the household at a later date to pick up the SCQ. If the SCQ was still not complete or could not be collected in person, instructions were left with the respondent to return it by mail.

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<sup>2</sup> A self-completion instrument is administered as part of the BHPS. That instrument, however, is very short (taking just five minutes to complete) and is completed while the interviewer is still in the household.

<sup>3</sup> A very small proportion (0.3 per cent) of personal interviews were conducted by telephone.

<sup>4</sup> Some additional calls were made to a very small proportion of households between 10 January and 23 January 2002. This additional fieldwork period was mainly due to the difficulties completing two areas involving an ill interviewer.

In most cases, selected households were sent a primary approach letter and a brochure approximately one week prior to when the interviewer was scheduled to make contact with the household.<sup>5</sup> This pre-interview material marketed the survey to respondents as a study about 'Living in Australia' and, among other things, emphasised that participation was voluntary and provided a means for sample members to opt out of the survey prior to an interviewer calling.

To encourage response, a \$50 cash incentive was offered to households where all eligible household members completed the Person Questionnaire. If this did not occur, a \$20 payment was offered to households if at least one interview was obtained. The availability of this incentive was made clear in both the primary approach letter and the brochure.

The fieldwork was conducted in two stages. The first stage involved the interviewer working in an area over a three-week period. They called each selected household according to a specified call-back pattern. This required that, if needed, at least six calls would be made to all selected households until a final household outcome was achieved. These calls were made over a minimum of five different days, with typically three calls made on weekdays and at least three calls made on weekends.

This achieved approximately 65 per cent of the interviews from each area. The remainder of each workload was then consolidated into intensive follow-up workloads and reassigned to the most experienced interviewers. They again called at each of these households according to the specified call-back pattern. These interviewers obtained the remaining 35 per cent of the interviews from each area.

### ***Response Rates***

A summary of the outcomes of the Wave 1 fieldwork is provided in Tables 2 and 3. Table 2 reveals that from the 11,693 households identified as in scope, interviews were completed with all eligible members of 6872 households and with at least one eligible member of a further 810 households. The household response rate was, therefore, 66 per cent.

How does this compare with international best practice? At first glance HILDA might appear to have been a relatively poor performer. The initial (that is, wave 1) response rate usually reported for the PSID is 76 per cent while the BHPS obtained interviews at 74 per cent of selected households. The first point to note, however, is that the calculation of response rates is often subject to sleight of hand. As noted in Wooden (2001), part of the initial sample used in the PSID was pre-screened, which was not taken into account when calculating response rates. Doing so would have resulted in a response rate of 69 per cent. Second, there is growing evidence that the willingness of populations to cooperate with surveys fell during the 1990s. For example, both the GSOEP and the BHPS added new samples in recent years. In both cases the rates of response were well down on the initial response rates reported for their original samples. In wave 9 of the BHPS, conducted in 1999, two additional household samples were recruited in Wales and Scotland. Partial coverage was only achieved at 63 per cent of the selected sample, which represents an 11-percentage point decline compared with the rates achieved in 1991. Similarly, in 2000 the GSOEP added a major new refresher sample. As with the BHPS, achieved response rates were much lower than those reported for

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<sup>5</sup> In 18 of the selected CDs, the listing of dwellings was undertaken immediately prior to interviewing commencing. In these cases the primary approach letter and brochure were hand delivered on the first call attempt.

the original sample surveyed in 1984. Interviews were obtained at only 51 per cent of their new households sampled in 2000, compared with 63 per cent in 1984.<sup>6</sup>

The person-level outcomes are provided in Table 3. Within the 7682 households interviewed, there were 19,917 people, resulting in an average of 2.6 persons per household (which is identical to the figure reported in the 1996 Census: ABS 1999). Of this group, 4790 were under 15 years of age on the preceding 30 June and hence were ineligible for an interview in Wave 1. This left 15,127 persons eligible for a personal interview, 13,969 of who completed the Person Questionnaire. Additionally, of this group, 13,159 (94%) completed and returned the Self-Completion Questionnaire (though 103 of these could not be successfully matched to a Person Questionnaire).

### ***Sample Characteristics***

Non-response is only a problem if the respondents differ systematically from the non-respondents. It is thus important to establish in what ways the responding sample differs from the population. We can assess this by first comparing the responding sample with the selected sample. This is possible since all selected dwellings were fully enumerated prior to interviews commencing. The range of information we have about the full sample, however, is extremely small, limited to just location, type of dwelling structure, security features possessed by the dwelling, an interviewer assessment of the external condition of the dwelling, and the visibility of high-rise buildings in the immediate vicinity. A comparison between the selected and responding samples on each of these five criteria is thus provided in Table 4. Furthermore, as a guide to the quality of the sample selection and listing process we also provide, for two of these criteria, some comparative data from the 2001 Census, which was conducted just prior to commencement of wave 1 of the HILDA Survey. Note that comparisons between the selected and responding samples are not strictly valid given the former relates to dwellings whereas the latter relates to households. For most purposes, however, this distinction can be safely ignored, with dwellings with more than one household representing less than three per cent of our sample of in-scope dwellings with respondents.

Table 4 indicates that non-response is not entirely random. Most obviously, there is a difference in the geographic distribution of the responding sample compared with the selected sample, with residents in Sydney under-responding compared with residents elsewhere in Australia. This is not particularly surprising, and is a common feature of other voluntary surveys in Australia (Bednall, Cavenett and Shaw 2000). The usual explanation provided is that people in Sydney are under more time pressures and hence are far more reluctant to spend part of their time participating in surveys. In addition, we also suspect that part of the explanation lies in greater difficulties making contact with the occupants of selected dwellings in Sydney because of a relatively high incidence of dwellings with locked gates, gatekeepers and other devices intended to screen access. Table 4 provides some support for this hypothesis, with response rates significantly lower in dwellings with both locked gates or doors and intercom access.

With respect to the other dwelling characteristics considered – dwelling structure, condition of dwelling and the visibility of high-rise buildings – differences are small and statistically insignificant. The main conclusion we draw from Table 4, therefore, is that analyses using the

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<sup>6</sup> Incomplete households were discarded in the GSOEP and so these response rates refer to the incidence of fully responding households.

HILDA Survey data will need to take into account the under-representation of households in Sydney.

As a check on the quality of the selection process we also report in Table 4 figures from the 2001 Census on the distribution of private dwellings by both location and structure type. As can be seen, the selected sample for the HILDA Survey appears to conform closely to the Census data and thus suggests that, as was intended, the initial sample was not biased in any major way.

What about the characteristics of the individual members of our responding sample? Obviously we cannot know what the characteristics of the members of non-responding households are. Any assessment of the representativeness of the sample of individual household members will thus have to be based on a comparison with some benchmark sample. The most obvious choice here is the Monthly Population Survey (MPS), conducted by the ABS. The sample for the MPS is large (with the sampled dwellings covering about 0.5 per cent of the Australian population), the scope of coverage is broad, and response rates are acknowledged to be high.

In Table 5, therefore, we compare the distribution of selected characteristics of the sample of individual respondents to wave 1 of the HILDA Survey with those from a comparable month of the MPS – typically October 2001.<sup>7</sup> Before proceeding, it should be noted that the comparisons are not completely straightforward. Most importantly, the coverage of the MPS is broader than that of the HILDA Survey and includes persons living in both institutions and in remote areas.

Table 5 indicates that the HILDA sample is noticeably different from the broader population in a number of ways. First, and as expected given the distribution of responding households, Sydney residents are under-represented in the HILDA individual sample. The first column in Table 5 indicates that according to the MPS for October 2001, persons living in Sydney comprised 21.5 per cent of the Australian population aged 15 years and over. In contrast, Sydney residents make up only 17 per cent of the sample of persons completing a Person Questionnaire (PQ). Note that close to one quarter of the lower response rate in Sydney is due to a relatively high incidence of non-response within households. This can be seen by comparing column 2 with column 3. Sydney residents actually comprise 18 per cent of all HILDA sample members (as determined from the Household Form), which is just over a full percentage point higher than the proportion that completed a PQ.

Second, the HILDA sample has an under-representation of men and an over-representation of women, which is not uncommon in voluntary surveys. A large proportion of this differential (just over half), however, is explained by male household members not participating in the PQ interview.

Third, married persons are over-represented (and unmarried persons under-represented). In part, this was to be expected given the population for HILDA excludes persons living in institutions. It was also expected that it would be more difficult to make contact with persons living alone. Nevertheless, the size of the differential is much larger than expected (though possibly might reflect differences in the way de facto partnerships are defined and treated in the HILDA Survey compared with the MPS).

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<sup>7</sup> Fifty per cent of all of the personal (PQ) interviews in wave 1 were completed by early October 2001.

Fourth, immigrants from a non-English-speaking background comprise only 14.7 per cent of the HILDA sample, which compares with a population estimate of 17.5 per cent. We suspect this difference reflects both the greater difficulties communicating with persons for whom English was not their first language and the greater suspicion of government-backed surveys among this sub-population.

Of the other characteristics considered, the differences are typically small and often insignificant. The age composition of the HILDA individual sample, for example, is quite close to the MPS, even though the HILDA sample excludes persons living in institutions, which will tend to mean a lesser representation of older people. That said, it is true that people in their early 20s are under-represented in the HILDA Survey. The breakdown by labour force status is also similar, though persons working part-time are slightly over-represented while persons outside the labour force status are under-represented. We suggest that these differences might be explained by both the over-representation of married women and by the exclusion of persons living in institutions. Finally, when comparing our sample of employed persons with that reported in the August 2001 MPS, we again find only small differences. Specifically, there does appear to be a slight under-representation of own account workers (that is, the self-employed) in the HILDA sample.

Overall, while there are clear sources of bias in the HILDA data, we do not believe that the size of these discrepancies is so large as to discredit the data. Further, the sources of bias which appear to of greatest importance – differences in rates of response across both sex and location – are relatively easily corrected through the application of population weights.

## **5. Possible Research Uses**

To illustrate the many and varied research uses that could be made of the HILDA data, we only have to look to the overseas experience. For example, according to the PSID website, at more than 2000 articles have been published in academic journals and books using PSID data, with the number rising exponentially over time. Similarly, the literature database available from the GSOEP website currently contains 2250 different entries.

While much of this research has been focused on issues concerning poverty, income mobility and labour market outcomes, these data have also been widely used overseas to examine issues of interest to demographers. The PSID website, for example, provides a bibliography with extensive references to the topics of aging, fertility, marriage, marital separation and divorce, changing family composition, health and geographic location and mobility. The HILDA Survey has been designed with a similarly broad range of issues in mind.

Ultimately, it is impossible to do justice to the research potential of these data in the brief space allocated to it here – there are just too many issues and topics that are being covered by the various HILDA Survey instruments. Nevertheless, we highlight below four broad topics that demonstrate the potential power of the HILDA data for analysing population issues.

### *Marriage, Separation and Divorce, and Cohabitation*

One of the more important social changes in recent decades has been the apparent transformation in the structure of families and households. The various cross-section data sources compiled by the ABS, for example, reveal an increase in the proportion of single persons, mostly as a result of rise in the age at first marriage, and an increase in the incidence

of cohabitation without marrying. In addition, rates of divorce remain high, though seemingly no longer trending upwards.

Cross-section data, however, are not ideal for analysing the affect of these trends on individuals and their families. With cross-section data the only way the question can be broached is retrospectively, which immediately raises concerns about recall bias. For example, if we want to know how divorce has impacted on income then we need to know income levels prior to separation. Longitudinal surveys that follow individuals over time as their circumstances change are the best vehicles for collecting such data. Further, longitudinal data provide the means to control for unobserved heterogeneity, a problem that affects almost every cross-section study.

It thus should not be surprising that longitudinal data sources overseas, and especially the PSID, have been extensively used to analyse the economic consequences of marital separation, especially in terms of the differential impact on men and women (Duncan and Hoffman 1985, Burkhauser et al. 1990, 1991, McManus and DiPrete 2001). Longitudinal data sources have also been used to examine the consequences of marital separation for subsequent labour market participation (e.g., Johnson and Skinner 1988, Montalto 1998), intergenerational transfers of income (Furstenberg, Hoffman and Shrestha 1995), mortality (Smith and Zick 1991, Lillard and Waite 1995), parent-child relationships (Amato and Booth 1996) and behavioural and educational outcomes for children (e.g., Cherlin et al. 1991, Cherlin, Chase-Lansdale and McRae 1998, Sun and Li 2001).

Longitudinal data can also add enormously to our understanding of the factors that contribute to marital separation. There are, for instance, numerous studies that have used data from the PSID to model the factors influencing marital dissolution (e.g., Waite and Lillard 1991, Lillard and Waite 1993, Hoffman and Duncan 1995, Heckert, Nowak and Snyder 1998). Similar studies have been undertaken in both Germany and Great Britain using the GSOEP and BHPS data respectively (Kraft 2001, Boheim and Ermisch 2001).

Longitudinal data have also been central to recent research into patterns, and consequences, of cohabitation. It is well recognised, for example, that cohabitation and likelihood of a future marriage ending are positively correlated. Lillard, Brien and Waite (1995), however, show that this effect disappears once the self-selected nature of cohabitants is controlled for. On the other side of the Atlantic, Ermisch and Francesconi (2000) have also examined patterns in cohabitation, but using data from the BHPS.

Most (if not all) of the types of analyses undertaken in the studies cited above should be replicable with the HILDA Survey data given time. Note that a key feature of the HILDA Survey is that objective data on marital and living arrangements is complemented by subjective data about the quality of partnerships. This is potentially of large importance given separations often only occur after extended periods of marital difficulty, and hence much of the adjustment to separation may take place before the separation actually occurs, an hypothesis that receives support from studies investigating the impact of marital separation on child outcomes (e.g., Amato and Booth 1996, Sun and Li 2001).

### *Fertility*

Closely related to the trends in marriage and partnering observed above is a decline in the fertility rate. Indeed, the seminal analysis undertaken by Lillard and Waite (1993) indicates that risk of marital separation has a major bearing on the likelihood of conception. As

outlined in McDonald (2000), completed fertility rates in Australia have fallen from 2.8 births per women for the cohort born in 1940, to 2.1 for those born 20 years later. Moreover, all indications are that fertility rates among more recent cohorts will be even lower, with many women now delaying parenthood until well into their 30s and increasing numbers choosing to remain childless (see Merlo and Rowland 2000).

But what contribution can a longitudinal survey make to our understanding of fertility issues? Obviously we would like to know a lot more about why fertility is falling, especially given trends internationally are far from uniform. Unfortunately, we already know from the international experience that micro-level data will not provide all the answers. Indeed, compared with other topics (like marriage and partnering), longitudinal data has generated relatively little published research on fertility issues, and much of what has been published is concerned with the consequences of non-marital and teenage childbearing (a major social issue in the US). Nevertheless, compared with the other leading household panel studies, the HILDA Survey provides a very rich set of data for examining many of the causal hypotheses explaining fertility decline. Further, we have borrowed from the ANU Negotiating the Life Course Study and included in wave 1 a measure of fertility intentions, which has been complemented in wave 2 by the addition of a variable on the expected timing of births. These data will thus support research into both fertility intentions and whether and how quickly these intentions translate into subsequent births. More importantly, as additional waves of data are accumulated the data should facilitate an analysis of the factors intervening between intentions and realised births.

### *Population Aging and Retirement*

Like almost every other industrialised nation, the average age of the Australian population is rising (McDonald and Kippen 1999). At the same time, the age at which workers are leaving the labour force has been falling (at least among men). Such trends have led many to express concern about the implications for future economic growth and welfare. Most importantly, the concern is often raised that the working population will not be able to support the expanding demand for health and welfare services that will occur as our population ages.

While survey-based research cannot directly address this issue, what it can do is help us understand what factors influence work retirement and how tax and income support policies influence those decisions. Economists, for example, have been developing increasingly sophisticated models of retirement, which are then tested with longitudinal datasets (see Lumsdaine and Mitchell 1999). Hopefully, researchers using the HILDA Survey data will be able to add to this literature, especially given the capacity in the HILDA data to link work behaviours to income, housing, health and family variables. Of course, critical to the retirement decision is wealth holdings. This is an area where in wave 1 the HILDA Survey is not strong. In wave 2, however, an attempt has been made to collect data on virtually the full range of asset and debt types held by households, with the strong prospect of repeating these questions in a subsequent wave.

Longitudinal data can also be of obvious value in monitoring both subjective and economic well-being among the elderly, and in particular, the impact of aging on well-being (given some of the poor older persons will always have been less well off). Burkauer, Butler and Holden (1991), for example, have demonstrated using PSID data, that economic well-being among older persons is most adversely affected by the death of a spouse, thus poverty tends to be most acute among widows and widowers.

### *Residential Mobility / Housing Tenure Type*

Finally, longitudinal data are an obvious vehicle for studying population movement (though how good a vehicle does depend on rates of attrition, given it is the movers who are typically the hardest to re-interview). Most research on this issue, especially in Australia, however, either makes use of aggregated data to derive net measures of mobility across localities (e.g., Maher and Whitelaw 1995), and hence can ultimately say relatively little about the factors that motivate or inhibit mobility, or, when using micro-level data, employ a single cross-section, and hence the key variables are derived from retrospective information (e.g., Hassan, Zang and McDonnell-Baum 1996). With longitudinal surveys, however, information is collected both prior to and after moves. As Buck (2000) notes, this means both a wider range of information about events and circumstances that occur prior to potential moves and higher data quality, given retrospective data are typically contaminated by subsequent events and affected by recall problems. Examples of the types of analyses that can be undertaken are provided in Buck (2000), who uses data from the first four waves of the BHPS. He estimates relatively simple models of both the desire to move and subsequent decision to migrate. A relatively novel feature of the analysis was conditioning mobility on preferences to move held prior to relocation. A similar question on preferences to move is also included in the HILDA Survey.

The importance of longitudinal data for understanding housing location choices is further exemplified in the work of Kan (1999, 2000). In his later paper, he utilises the full potential of longitudinal data (this time from the PSISD) by specifying and estimating a dynamic model of housing tenure choice where both type of tenure (ownership versus renting) and future length of stay are jointly determined. Further, he employs a random effects specification to control for unobserved heterogeneity. All of these features would not have been possible without longitudinal data. Further, the results indicate that the specification makes a difference. For example, his results suggest that more simple specifications lead to overstating the role of socio-economic characteristics on tenure choice.

Ultimately the HILDA Survey provides the potential to undertake rich analysis into both residential mobility and housing outcomes. Analyses of mobility, for example, should be able to go well beyond simply correlating mobility with individual demographics and housing characteristics to a consideration of the role played by changing family and work circumstances and the role of neighbourhood effects (especially given the initial sample was clustered on an area basis). In addition, and as already noted, information about changing preferences to move could also be incorporated into the analysis.

### **6. Want to Know More?**

Persons who are interested in knowing more about the HILDA Survey should log on to the HILDA web site at:

<http://www.melbourneinstitute.com/hilda>

At this web site you can download copies of all survey instruments, download copies of discussion and technical papers, monitor the development and progress of the survey, and find out how you can obtain the unit-record data collected during wave 1, a public version of which will be released on 15 October 2002.

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**Table 1 HILDA Survey Instrument Content, Wave 1**

<i>Questionnaire</i>	<i>Section</i>	<i>Examples of data items</i>
Household Form	Household composition	Date of birth Sex English language speaking ability Disability Marital status Employment status Relationship between household members
	Dwelling characteristics	Type of dwelling Condition of dwelling
Household Questionnaire	Childcare	Amount of childcare used by type of care Weekly cost of childcare used by type Childcare difficulties
	Housing / Household finances	Number of bedrooms Ownership status Value of home Rent / mortgage payments Value of outstanding home loan Number of motor vehicles Weekly expenditure on groceries / meals Perceived adequacy of household income
Person Questionnaire	Country of birth and language	Country of birth Year of arrival in Australia (if born o/s) English language background Indigenous origin
	Family background	Parental presence at age 14 Age when first left home Parents' birthplace Parents' occupation
	Education	Age left school Highest year of school attended Post-school qualifications obtained Current educational activities
	Employment history and status	Years since leaving full-time education Summary measures of labour force history Current labour force status Current employment status Time since last worked (if not employed) Characteristics of last job (if not employed)

**Table 1 (cont'd)**

<i>Questionnaire</i>	<i>Section</i>	<i>Examples of data items</i>
	Persons in paid employment	Characteristics of main job (occupation, hours, tenure, etc.) Employer characteristics (industry, size, sector) Perceived employment prospects Job satisfaction Retirement intentions
	Persons not in paid employment	Job search activity Types of difficulties experienced in finding a job Desire to work (if not looking) Reasons for not looking for work (if not looking) Reservation wage Perceived employment prospects
	Calendar	History of employment, job search and education history since July 1 of preceding year Mutual obligation activities
	Income	Current income from: wages and salaries government pensions and benefits Financial year income from: wages and salaries government pensions and benefits businesses savings and investments other sources Credit card use
	Family formation	Characteristics of children Child support payments Patterns of contact parents and children (where they live apart) Likelihood of having children
	Partnering	Marital history De facto relationships Marriage intentions

**Table 1 (cont'd)**

<i>Questionnaire</i>	<i>Section</i>	<i>Examples of data items</i>
	Life situation	Health status Life satisfaction Attitudes to life in Australia Reasons for moving (if moved in last year)
	Interview situation	Respondent cooperation and understanding Problems affecting interview
Self-completion Questionnaire	General health and well-being	SF-36 Health Survey
	Lifestyle and living situation	Smoking Frequency of alcohol consumption Time stress Neighbourhood characteristics Housing adequacy Satisfaction with family life Frequency of social interaction Social support Time use
	Personal and household finances	Financial well-being (self assessed prosperity) Stressful financial events Savings habits Savings time horizon Risk preference
	Attitudes and values about work and gender roles	
	Job / Workplace	Job characteristics (stress, pay fairness, security, skills utilisation and development, autonomy) Workplace support for family role Family-friendly work practices
	Parenting	Parental stress Work-family gains and strains

**Table 2 Wave 1 Household Outcomes**

<i>Sample outcome</i>	<i>Number</i>	<i>%</i>
Addresses issued	12252	
less out-of-scope (vacant, non-residential, foreign)	-804	
plus multi-households additional to sample	+245	
<i>Total in-scope households</i>	<i>=11693</i>	<i>100.0</i>
Refusals to interviewer	2670	22.8
Refusals to fieldwork company (via 1800 number or email)	431	3.7
Non-response with contact	469	4.0
Non-contact	441	3.8
Fully responding households	6872	58.8
Partially responding households	810	6.9

**Table 3 Wave 1 Person Outcomes**

<i>Sample outcome</i>	<i>Number</i>	<i>%</i>
Enumerated persons	19917	
less ineligible children (under 15)	-4790	
<i>Eligible adults</i>	<i>=15173</i>	<i>100.0</i>
Refusals to interviewer	597	3.9
Refusals to fieldwork company (via 1800 number or email)	31	0.2
Non-response with contact	218	1.4
Non-contact	312	2.1
Responding individuals	13969	92.3

**Table 4 Characteristics of Wave 1 HILDA Survey Samples<sup>a</sup>**

	<i>HILDA selected sample (dwellings)</i>	<i>HILDA responding sample (households)</i>	<i>Prob. of diff. b/w selected &amp; responding samples</i>	<i>2001 Census (dwellings)</i>	<i>Prob. of diff. b/w Census &amp; selected sample</i>
<b>Area of usual residence</b>					
Sydney	21.0	16.9	<0.01	20.3	ns
Rest of NSW	13.4	14.6	<0.05	12.8	ns
Melbourne	17.6	16.7	ns	17.6	ns
Rest of Victoria	6.7	7.5	<0.05	6.9	ns
Brisbane	8.8	8.8	ns	8.5	ns
Rest of Queensland	10.4	11.8	ns	10.6	ns
Adelaide	6.1	6.1	ns	6.1	ns
Rest of South Australia	1.9	2.3	<0.05	2.2	<0.05
Perth	7.3	7.7	ns	7.2	ns
Rest of Western Australia	2.4	2.8	ns	2.6	ns
Tasmania	2.6	2.8	ns	2.6	ns
Northern Territory	0.6	0.5	ns	0.9	ns
ACT	1.4	1.5	ns	1.6	<0.01
<b>Dwelling structure<sup>b</sup></b>					
Separate house	75.9	77.3	ns	75.3	ns
Semi-detached	9.7	10.0	ns	8.9	ns
Flat	13.3	11.7	ns	13.1	ns
Other	0.9	0.9	ns	1.9	<0.01
<b>Condition of dwelling</b>					
Very good / excellent	33.7	33.8	ns		
Good	35.6	36.2	ns		
Average	25.2	25.0	ns		
Poor	4.9	4.6	ns		
Very poor / almost derelict	0.5	0.4	ns		
<b>Security features of dwelling</b>					
Locked gate (w/o intercom)	3.3	2.8	ns		
Locked door / gate (w i/c)	5.6	4.1	<0.05		
Security guard, doorman, etc.	1.3	1.1	ns		
Bars on windows	4.9	4.9	ns		
Security door	37.0	37.4	ns		
No trespassing sign	0.5	0.5	ns		
Beware of dog sign	2.2	2.2	ns		
Evidence of a dangerous dog	2.5	2.3	ns		
No junk mail sign	3.5	3.3	ns		
Neighbourhood watch sign	3.7	3.6	ns		
<b>High-rise buildings in area</b>					
A lot – more than 50%	1.7	1.0	ns		
A fair bit – 20-50%	1.0	0.8	ns		
One or two	2.4	2.1	ns		
None at all	94.9	96.1	ns		

Notes: a The raw data from the HILDA Survey have been adjusted to account for the variability in the probability of selection across Census Collection Districts.

b Excludes a small proportion of cases where dwelling structure type not able to be classified.

ns Denotes difference not significantly different at the 95% confidence level.

**Table 5 Selected Wave 1 Individual Sample Characteristics and Population Estimates from the ABS Monthly Population Survey Compared (persons aged 15 years or over)**

	<i>MPS<sup>a</sup></i>	<i>HILDA PQ respondents</i>	<i>HILDA: All household members</i>
<b>Area of usual residence</b>			
Sydney	21.5	16.9**	18.0**
Rest of NSW	12.2	14.5**	14.1**
Melbourne	18.4	17.3*	17.5
Rest of Victoria	6.7	7.5	7.3
Brisbane	8.6	8.8	8.8
Rest of Queensland	10.0	11.5*	11.4
Adelaide	5.8	6.1	5.8
Rest of South Australia	2.0	2.4*	2.3
Perth	7.3	7.5	7.4
Rest of Western Australia	2.5	2.8	2.7
Tasmania	2.4	2.8	2.7
Northern Territory	0.9	0.5**	0.5**
ACT	1.6	1.6	1.6
<b>Sex</b>			
Male	49.3	47.4**	48.6*
Female	50.7	52.6**	51.4*
<b>Age (years) at 30 June 2001</b>			
15-19	8.8	8.7	9.4*
20-24	8.9	7.4**	7.8**
25-34	18.7	18.7	18.7
35-44	19.0	21.7**	21.4**
45-54	17.1	17.1	17.1
55-64	11.8	12.0	11.7
65 or over	15.6	14.4*	13.9**
<b>Marital status</b>			
Married (including de facto)	58.7	63.4**	62.7**
Not married	41.3	36.6**	37.3**
<b>Indigenous status</b>			
Indigenous	1.7	1.8	
Non-indigenous	98.3	98.2	
<b>Birthplace</b>			
Born in Australia	72.4	74.4**	
Born outside Australia			
Main English-speaking country	10.2	10.9	
Other country	17.5	14.7**	
<b>Labour force status<sup>c</sup></b>			
Employed			
Full-time	42.1	41.7	
Part-time	17.4	19.5**	
Unemployed	4.3	4.4	
Not in the labour force	36.3	34.5**	

**Table 5 (cont'd)**

	<i>MPS<sup>a</sup></i>	<i>HILDA: PQ respondents<sup>b</sup></i>	<i>HILDA: All household members<sup>b</sup></i>
Employment status in main job (employed persons only)			
Employee	86.0	87.0	
Employer	3.6	43.9	
Own account worker	10.0	8.4**	
Contributing family worker	0.4	0.8**	

Notes: \*\* and \* denotes significantly different from the MPS estimate at the 99% and 95% confidence levels respectively. Standard errors have been adjusted to take account of both the stratified and clustered nature of the design employed in the HILDA Survey.

- a With the exception of indigenous status and employment status, the MPS estimates come from the October 2001 survey. In the case of the two exceptions, data for August 2001 are used. With the exception of country of birth, the population that these estimates apply to is all civilians aged 15 years and over. The figures for country of birth exclude persons living in an institution.
- b The HILDA estimates are also for people aged 15 years and over, but include defence force personnel and exclude people living in remote areas of Australia and those living in special dwellings. The HILDA estimates have also been adjusted to account for variability in the probability of selection across CDs.
- c We vary from the usual ABS definition in defining full-time work solely on the basis of usual hours worked (rather than on a combination of usual hours and actual hours worked).

Source: ABS data are from *The Labour Force, Australia* (cat. no. 6203.0), August 2001 and October 2001 issues.