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Options for a Top-up Sample to the HILDA Survey

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Introduction

As the Household, Income and Labour Dynamics in Australia (HILDA) Survey becomes more established as a panel, we need to plan for its long-term viability. Our funding body, the Department of Families, Community Services and Indigenous Affairs (FACSA), requested that we consider the options for an immigrant sample top-up.

The motivation for the sample top-up originates from the sample design and the under-coverage of the Australian population that occurs over time. The HILDA sample was selected in 2001 from people living in private dwellings in non-remote parts of Australia. The people from wave 1 responding households are followed over time and interviewed. Other people they subsequently live with are also interviewed, but not followed. The exception to this rule is that when children are born to or adopted by sample members, they become part of the sample followed over time (along with their other parent if they are not already part of the permanent sample).

Over time, the HILDA sample will, therefore, not adequately represent the following groups of people:

- Immigrants arriving in Australia since 2001;¹
- Australians returning from overseas that were not in Australia in 2001;
- People who lived in non-private dwellings in 2001;
- People who lived in remote parts of Australia in 2001; and
- Australian-born children of people in the above four groups.²

The most sizeable group is the first group, recent immigrants, and this group is steadily growing each year. The size of the second group is reasonably small and stable in size, since the large majority would have returned by 2003. The third and fourth groups are also relatively small, especially when we restrict our attention to people who are now living in private non-remote dwellings and can be readily approached for an interview. The size of the fifth group, being of children from the previous four groups, is expected to be relatively small, but also growing each year due to the increasing number of immigrants to Australia since 2001.

To retain contemporary cross-sectional representativeness there is clearly a need for the HILDA sample to be extended at some future date to include people from the largest of these groups with characteristics dissimilar to those already in the survey. For the reasons outlined later in this paper, recent immigrants and their children are the primary focus of the discussion of the top-up sample for non-coverage. However, obtaining a new sample of recent immigrant households will be challenging. The proposed method for recruiting such a sample will need to be carefully tested.

As we discussed the various top-up options with the HILDA External Reference Group, the HILDA Technical Reference Group and various people working on similar panels in other countries, it became apparent that we should also consider a general sample extension in place of an immigrant top-up. This would not only solve the problem of recent immigrants being excluded from the sample but would provide a cost effective vehicle for increasing the overall sample size. A larger sample size would permit more detailed analysis of various policy groups.

This paper discusses the various frame, sampling and fieldwork options for extending the HILDA sample. The method tested in the first half of 2006 is described and recommendations for future work on this issue are provided. Interested readers are invited to make comments or suggestions regarding this paper to Nicole Watson (n.watson@unimelb.edu.au).

¹ We are interested in immigrants who stay in Australia for 12 months or more. Overseas people who intended to stay in Australia for less than 12 months were not included in the wave 1 HILDA sample.

² Unless one of the child's parents was living in a private dwelling in non-remote parts of Australia in 2001.

Size of the problem

Number of recent arrivals

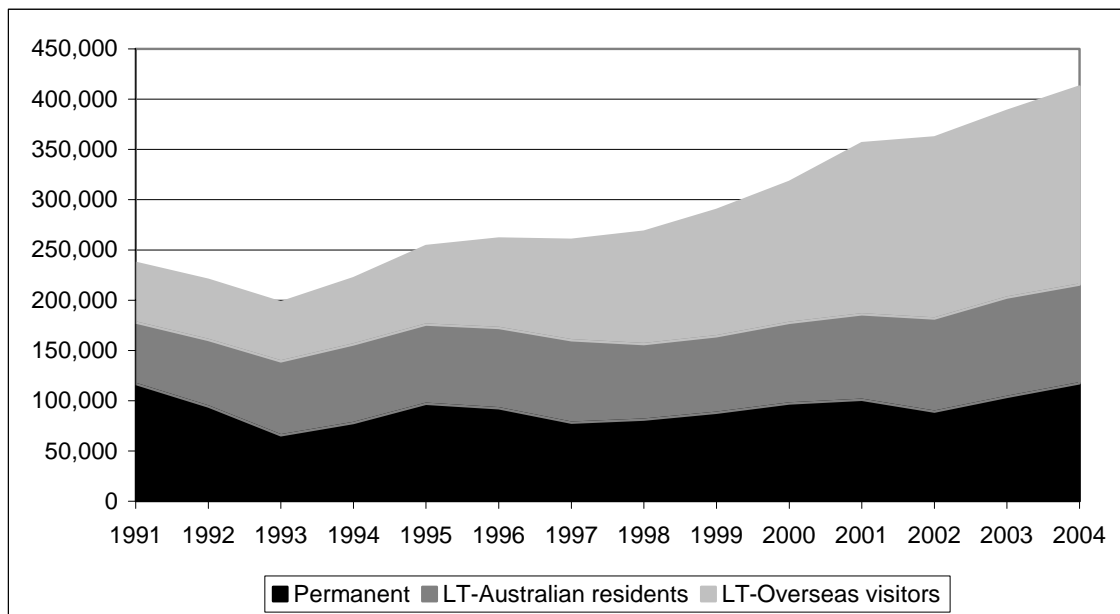
There are just under 400,000 permanent and long-term overseas arrivals each year, comprised of approximately:

- 100,000 permanent arrivals (settlers),
- 100,000 Australians returning long-term, and
- just under 200,000 long-term overseas visitors (intending to stay in Australia for 12 months or more).

While these numbers are based on the intended length of stay on arrival and some category jumping occurs, the final numbers are similar. Category jumping includes, for example, short-term arrivals who end up staying long-term, long-term arrivals who end up staying short-term or permanent arrivals who end up leaving.³

Graph 1 below shows the number of arrivals each year from 1991 to 2004. The number of permanent arrivals and returning Australians has remained relatively stable over this period. However, there has been a three-fold increase in the number of long-term arrivals of overseas visitors. This reflects a recent paradigm shift in immigration with the creation of new visa categories to attract temporary visitors to work in Australia.

Graph 1: Permanent and long-term arrivals to Australia, 1991 to 2004



Source: ABS Cat. No. 3101.0 Sept 1997, Sept 2000 and Sept 2005.

³ In 2003, based on the stated intention on arrival, there were 103,887 permanent arrivals and 284,562 long term arrivals (including Australian residents and overseas visitors). After adjustments made for category jumping, these figures are revised to 101,596 permanent arrivals (i.e., revised downward by 2 per cent) and 312,746 long-term arrivals (i.e., revised upward by 10 per cent). (Source: ABS Cat. No. 3101.0 Sept 2004.)

Length of time stayed in Australia

To understand the significance of the arrival numbers for a longitudinal study such as the HILDA Survey, it is also important to know how long these people stay in Australia. If it is only for a year or two, then the cost may well outweigh the benefits of including these people in the sample.

Permanent arrivals

The first cohort of the Longitudinal Survey of Immigrants to Australia (LSIA) provides an indication of the retention of permanent arrivals. Of those interviewed in Wave 1 during the period of 1993 to 1995 (the interview was approximately six months after their arrival to Australia), 5 per cent had emigrated out of Australia three years later and a further 3 per cent expected to do so in the future (VandenHeuvel and Wooden, 1999, p 112). The people more likely to move back overseas were those who had come into Australia in the Skilled Migration stream (that is, those with Business/Employer Nomination Schemes visas and Independent visas).

Long term overseas visitors

We would expect many of the long-term arrivals would come into Australia and leave within a 5 year period. Using the 2001 Census we can look at the stock of recent immigrants in Australia at a point in time. In 2001, there were 626,266 people who arrived in Australia in the previous 5 years (Hugo, 2004). There were also a further 195,856 people in 2001 who did not report how long they had been in Australia, some of whom would be recent immigrants and some would be longer-standing immigrants. Based on the permanent arrivals figure between 1997 and 2001 and the retention rate of permanent arrivals experienced in the LSIA, we would expect approximately 65 per cent of these people identified in the Census were permanent arrivals and the remainder were long-term arrivals.

Knowing the total number of long-term arrivals does not mean that they can be readily identified from all of the arrivals to Australia. The ABS adjusts the arrivals data to allow for category jumping between short- and long-term arrivals. For example, in 2001-02, there were 264,500 long-term arrivals of which 136,400 (51.6 per cent) actually stayed long-term.⁴ In the same period, there were 8,113,300 short-term arrivals of which 182,500 (2.2 per cent) actually stayed long-term. As a result, the long-term arrival figures were adjusted upward from 264,500 to 318,900 (that is, upward by 20.6 per cent).

Returning Australians

Little information is available about returning Australians, either in terms of their length of stay in Australia after returning or of their length of stay overseas. In the 2002-03 *Migration* publication, the ABS (2003) did report that 82 per cent of the returning Australians in 2002-03 had returned home within two years of their departure.⁵ The portion of returning Australians important to the HILDA Survey are those that had left Australia in 2001 or earlier and who had returned in 2002 or later. The majority of these people will have left Australia in 2000 and returned in 2002 or left in 2001 and returned in 2003.

Stock of recent arrivals

Given the very limited amount of data available on the length of time permanent and long-term arrivals stay in Australia, it is estimated that approximately 300,000 people fall into the population missed by the original HILDA sample each year. This does not mean that after a 10 year period, we

⁴ ABS Cat. No. 3412.0, 2002-03, p66.

⁵ ABS Cat No 3412.0, 2002-03, p49.

would be missing 10 times this amount as many of these people are long-term arrivals who would have left in the meantime. Further, an estimated 190,000 returning Australians have also been missed by the HILDA sample.

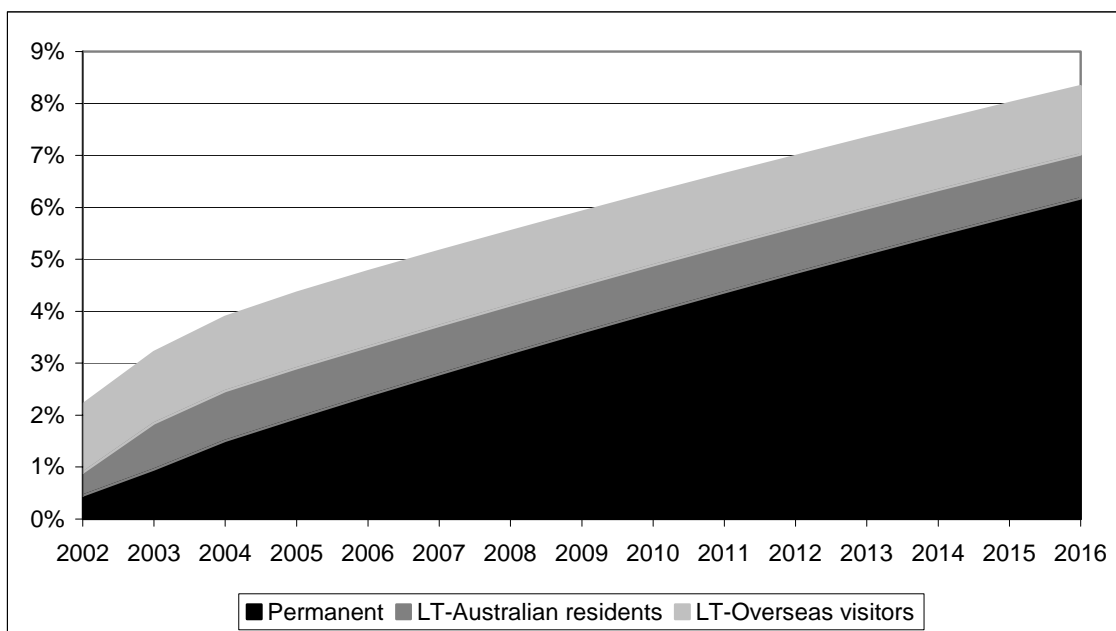
As shown in Table 1, the portion of the Australian population omitted from the HILDA sample will grow from an estimated 4.8 per cent after five years to 6.6 per cent after ten years and 8.3 per cent after 15 years. Graph 2 shows the estimated proportion of the Australian population omitted each year. The size of this omitted group is considerable and growing, and is primarily driven by the permanent arrivals.

Table 1: Estimated stock of recent arrivals excluded from HILDA Survey after sample selection in 2001

	<i>Permanent arrivals^a</i>	<i>Long-term overseas visitors^b</i>	<i>Returning Australian residents^c</i>	<i>Total</i>
Number arrive each year ^d	100,000	200,000	100,000	400,000
Percent that stay for 3 years	95%	11%	99%	
Percent that stay for 5 years	92%	1%	99%	
Percent that stay for 10 years	92%	>0.1%	99%	
Percent that stay for 15 years	92%	>0.1%	99%	
After 5 years				
Accumulated arrivals	490,000	300,000	200,000	980,000
Percent of Australian population ^e	2.4%	1.5%	1.0%	4.8%
After 10 years				
Accumulated arrivals	950,000	300,000	200,000	1,440,000
Percent of Australian population ^e	4.4%	1.4%	0.9%	6.6%
After 15 years				
Accumulated arrivals	1,410,000	300,000	200,000	1,900,000
Percent of Australian population ^e	6.2%	1.3%	0.9%	8.3%

- Notes:
- a Assumes emigration rates as observed in LSIA (5 per cent left after 3 years and a further 3 per cent intended to do so in near future).
 - b Assumes two-thirds of the remaining long-term arrivals leave each successive year. (This assumption, in combination with the above assumption for permanent arrivals, resulted in an estimate of the stock of immigrants observed in the 2001 Census for those arriving in the 1997 – 2001 period.)
 - c Assumes 82 percent of departing Australians are away for 2 years, 97 per cent are away for 3 years and 99 per cent are away for 4 or more years. A retention rate of 99 per cent of returning Australians has been applied (that is, of those returning to Australia, 1 per cent subsequently depart long-term again). Only those returning after 2001 are counted in the accumulated arrivals.
 - d The number of permanent arrivals, long-term visitors and returning Australians used in these calculations are actual for 2002 to 2004 and then are assumed to be static over the 2005 to 2016 period. The static figures are reported in these tables.
 - e Series B of population projects were used (ABS Cat. No. 3222.0 November 2005).

Graph 2: Proportion of recent arrivals omitted by the original HILDA sample design, 2002 to 2016



Characteristics of recent immigrants

If the characteristics of the population not covered by the HILDA Survey are very similar to those of people included in the survey, then the bias from the undercoverage will be small. However, recent immigrants do differ from the Australian born population and the immigrants who have been in Australia for a while in a number of important ways.

In a recent publication entitled *Australia's Most Recent Immigrants*, Hugo (2004) undertook a comparative analysis of the immigrants arriving in the five years prior to the 2001 Census to the long-standing immigrants and to the Australian born population. He concluded that international migration is one of the major sources of social change in the 1996-2001 intercensal period. A number of key findings about the characteristics of recent immigrants are summarized below:

- The single largest origin of permanent arrivals to Australia is New Zealand, with 24.1 per cent of all permanent arrivals being New Zealand citizens. However, 26.0 per cent of these were born outside of New Zealand.
- There has been a shift in immigrant origins over time. Over a third of all the people who have arrived in Australia from the following groups did so between 1996 and 2001: Indonesia, Iraq, Bosnia and Herzegovina, Japan, Korea, Taiwan, South Africa, Singapore, and Thailand.
- Migrants tend to settle in large urban areas – 89.1 per cent are in major urban areas, 7.8 per cent in other urban areas, and 3.1 per cent in rural areas. This can be compared to the distribution of the Australian-born population where 59.9 per cent live in major urban areas, 25.3 per cent in other urban areas, and 14.8 per cent in rural areas.
- New South Wales and Western Australia attract disproportionately more of the recent immigrants compared to the population distribution of Australia.

- Recent immigrants have a higher rate of unemployment, lower rate of labour force participation, and higher levels of education than the Australian-born and long-standing migrants. Recent migrants are more likely to go into either managerial/professional occupations or become labourers and related workers.
- A higher proportion of recent immigrants are married, have on average a younger age at first marriage, and a lower proportion are divorced or separated than the Australian-born and long-standing migrants.
- A recent shift of incorporating the English ability of the applicant into the immigration process has resulted in fewer immigrants being unable to speak English. In 2001, 14.8 per cent of the recent immigrants could not speak English well or at all, compared to 21.1 per cent of the recent immigrants in 1996.
- Recent immigrants are less likely to live in separate detached dwellings, which is a result of the group having a large number of students and temporary business migrants and of the group being more likely to live in the inner and central areas of major cities.
- Recent immigrants are more likely to be renting (60.9 per cent compared to 24.8 per cent for the Australian-born population). They also pay higher rents and have larger mortgages than the Australian-born population.

It is clear from the above that recent immigrants are different from the long-standing immigrants and the Australian-born population.

Characteristics of returning Australians

No specific information appears to be available on the characteristics of returning Australians. However, we can make some inferences about this population from what we know about the characteristics of Australians leaving on a permanent or long-term basis.

Emigration from Australia is selective to the more highly educated, more skilled and younger sections of the population (Hugo, Rudd and Harris, 2001). Over two-thirds of the Australian-born departures are managers, administrators, professionals and associate professionals.⁶ The UK, US, New Zealand and Asia are the main recipients of emigrating Australians. The Australian-born emigrants to the UK are typically in their 20s and are most likely on working holidays who will return to Australia in a year or two. Those emigrating to the US are typically in their 30s and are already in the workforce, rather than being recent graduates. More than half of the movers to other major destinations are aged between 20 and 39.

Reporting on a survey of recent graduates from Australian universities who had moved overseas, Hugo, Rudd and Harris (2003) state that 50 per cent of the graduates intended to return to Australia and a further third were undecided. Males were less likely than females to say that they intended to return to Australia. Also, as age increased, the proportion of graduates who said they would return declined.

As the emigrating Australian-born population is different to the population remaining in Australia, it would be reasonable to assume that the returning Australians are also different to those that never left. However, the returning Australians who were living overseas in 2001 would not be markedly different from those that lived overseas at other times but were living in Australia in 2001.

⁶ This is compared to one third of the Australian working population having these occupations.

Number of people in other non-sampled groups

The three other groups omitted from the original HILDA sample design were people in remote parts of Australia, people in institutions and Australian born children of people in the omitted groups.

People in remote parts of Australia

The number of people excluded from the sample in remote parts of Australia for operational cost reasons is estimated to be 80,000 (Watson and Wooden, 2002). While many of these people will still be in remote parts of Australia and would still be excluded from the top-up sample for cost reasons, some may now be living in non-remote parts of Australia. A search for information about the mobility of people in remote parts of Australia did not reveal anything of use. The experience of the HILDA sample can tell us about migration into remote areas, but not about any outward migration. By wave 4, 25 sample members from 12 households had moved into the remote areas originally excluded. If the outward migration from these remote areas is of a similar size then this would mean that, by 2004, approximately 16,000 people originally living in remote parts of Australia will have moved to non-remote parts.

People in non-private dwellings

In 2001, there were 331,000 people living in non-private dwellings in Australia and half of these were aged 65 and over.⁷ The types of non-private dwellings these people would have lived in include nursing homes, aged care hostels, retirement villages, staff quarters, religious institutions, boarding schools, colleges, university residences, boarding houses, or prisons.

A portion of those living in boarding schools, colleges and university residences would have been included in the original HILDA sample as we counted them as part of their family household if they returned to their family during the holidays.

The remainder of these people living in non-private dwellings in 2001 can be divided into three groups with different considerations for the HILDA top-up sample:

- People living in cared accommodation – Typically, people who enter nursing homes, aged care hostels and retirement villages do not return to live in a private dwelling at a later date. Also, many would have died by the time a top-up sample is implemented.
- People living in boarding schools, colleges and university residences who are not attached to a family household – Many of these people will be overseas students who will return to their home country once their study is completed. Some will also stay and work in Australia. Only those people who form a family with someone living in an Australian private dwelling in 2001 would be represented by the HILDA sample.
- People living in staff quarters, religious institutions and prisons – These people would not be represented in the HILDA sample unless they form a family with someone who could have been selected in the sample in 2001. The number from this group who now live in private dwellings would be relatively small and probably less than 50,000.

Children born to people in the omitted groups

The number of children born to people in the groups omitted from the HILDA Survey will be small, but will grow with time (due to the increasing number of omitted immigrants). As the survey is household-based, a top-up sample of at least the larger omitted groups will also include the children living in those households, provided the top-up is conducted before many of these children leave home.

⁷ ABS (2006), *2006 Year Book*, Cat. No. 1301.0, p144.

Who is essential to the top-up sample and who is desirable?

To reduce the bias in cross-sectional and longitudinal estimates from the HILDA Survey due to the omitted parts of the population, the top-up sample should include groups that meet the following three criteria:

- comprise a significant portion of the missing population,
- have quite different characteristics from the sample selected in 2001, and
- are likely to be part of the Australian population for some time.

The permanent arrivals are, therefore, essential to the top-up sample. They are a large group and are growing in number over time. They also have very different characteristics from the Australian-born and long-standing immigrants. As a result, the HILDA sample will drift away from the true characteristics of the Australian population over time. Without a top-up sample, the HILDA sample can only be representative of a smaller portion of the Australian population over time.

Long-term arrivals (being those that stay in Australia for 12 months or more) are a medium sized group and are unlikely to stay in Australia for a very long time. They will not have any bearing on long-run longitudinal analyses, but will have a small impact on the short-run longitudinal and cross-sectional analyses. It would be desirable to include them in the top-up, but it is not essential. Without a frequent top-up of these types of people (which would be costly for limited gain), the sample would fairly quickly lose representation of these people over time. We would certainly want to include into the top-up any individuals who jumped categories (i.e., who initially thought they would be staying long-term but ended up staying permanently).

The impact of missing the returning Australians who were away in 2001 is relatively small. The size of this group is reasonably small and they likely to be similar to other Australians who lived overseas at a different time but who were selected into the sample in 2001. Their inclusion in the top-up is not essential, but is desirable if it does not add much to the cost. Once these people have been included in one top-up sample, they would not need to be included in any future top-up samples as the vast majority would be covered by the first top-up sample.

People living in remote parts of Australia who now live in non-remote parts are not essential or desirable for the top-up. They are small in number and would be hard to accurately identify.

People who were living in non-private dwellings in 2001 are not essential to the top-up, especially given the relatively small proportion that would now be living in private dwellings. While we do follow people into non-private dwellings, it would be much harder to select people from non-private dwellings and attempt an interview.⁸ Therefore our attention is restricted to people who were in non-private dwellings in 2001 and are now living in private dwellings. Determining when and how long they were in a non-private dwelling in 2001 via a screening process would be problematic. Their move into a non-private dwelling may not be clear cut and some may also be reluctant to disclose details of their stay. As a result, their inclusion in the top-up sample is not desirable.

Given the above discussion, the top-up should focus on permanent arrivals, long-term arrivals, and returning Australians. The children of these people who are still living with their parents will automatically be included due to the household nature of the HILDA Survey. Depending on how long after 2001 the top-up sample is conducted, some thought should also be given to whether children born after 2001 who no longer live with their parents/guardians should be identified and interviewed.

⁸ Following people into non-private dwellings is relatively straight forward as the interviewer knows their name and on many occasions also has a telephone or mobile number. Also, the interviewer will often have some knowledge of their capacity to provide an interview.

Should a general sample extension be done instead?

A general sample extension should be considered if the recent arrival sample is identified via a screening process. The households earmarked for screening could be interviewed instead. As it is more costly to interview than to screen households, adjustments would need to be made to the funding or the sample size (or ideally both) to undertake a general sample extension.⁹ There would also be higher costs in maintaining the general sample extension beyond the first year compared to a recent arrival sample. However, the cost per household included into sample in the initial year will be much lower in a general sample extension than in the recent arrival top-up.

A general sample extension would result in:

- a larger sample for cross-sectional analyses from the wave the top-up was introduced and all subsequent waves;
- a larger sample for longitudinal analyses for the panel starting on or after the wave the top-up was introduced; and
- less bias in these cross-sectional and longitudinal estimates due to attrition.

The help form a view on whether a general top-up would be worthwhile, firstly let's consider various policy groups that could be studied in greater detail if more cases were available. Table 2 provides some examples of populations with reasonably small sample sizes in the current HILDA dataset. As a guide, a sample size of over 400 permits reasonable analysis of the population of interest – that is, population estimates can be created for sub-groups allowing the exploration of the characteristics of this group. For example, the HILDA survey has sufficient numbers for meaningful analysis of the unemployed, people who are separated or widowed, people receiving the disability support pension and people with long term health conditions. However, when the sample size falls below 400, analysis of the characteristics of the group becomes more difficult and researchers would often be limited in how far they can drill down into the population. Cross-tabulations within the population of interest can quickly have cell sizes of less than 20 and result in unreliable estimates. The populations with very small samples include: single mothers with young children; single fathers; people who have separated, divorced or widowed in the last year; people who have moved off the Disability Support Payment in the last three years; those that are long term unemployed; nurses; teachers; and people who have recently retired (especially if we want to look at males and females separately, or those from a particular age group, or those with a certain level of superannuation).

Secondly, a brief summary of the key issues of the initial wave non-response bias and subsequent wave attrition bias is provided (for details see Watson 2005, Watson and Wooden, 2004). The non-response rate in wave 1 was highest among people with the following characteristics:

- living in Sydney;
- males;
- married or living in a de facto relationship;
- not in the labour force; and
- immigrants from a non-English-speaking country.

⁹ If the sample size were reduced for the general sample extension, this would result in fewer recent arrivals with higher weights compared to the recent arrivals obtained from a recent arrival top-up.

Table 2: Examples of small sample sizes in HILDA, Wave 4 respondents

<i>Population</i>	<i>Sample size</i>	<i>Population</i>	<i>Sample size</i>
Single parents		Immigrants	
Single mothers with youngest child 0-5	160	Arriving between 1997-2001	257
Single mothers with youngest child 6-15	235	Born in NZ	256
Single fathers	50	Indigenous origin	243
Single parents receiving benefits ^a	296	Unemployed	
Single parents using childcare	167	All unemployed	413
Single mothers in all 4 waves	213	Unemployed more than 1 year	48
Registered marital status		Occupation	
Separated	438	Nurses	203
Widowed	673	Primary school teachers	168
Change of registered marital status ^b		Secondary school teachers	145
Just married	200	Retirement	
Just separated	119	Retired in last year	55
Just divorced	84	Retired less than 5 years ago	273
Just widowed	65	Males retiring less than 5 years ago	133
Disability		Females retiring less than 5 years ago	140
Disability support pension (DSP) recipients	505	Retired in last year with super \geq \$200k	8
Exits from DSP in 4 waves	74	Retired $<$ 5 years ago with super \geq \$200k	41
Has severe long term health condition ^c	582	Retired $<$ 5 years ago at age 51-55	36
Has severe long term health condition and aged 25-54 ^c	200	Retired $<$ 5 years ago at age 56-60	76
		Retired $<$ 5 years ago at age 61-65	92

Notes: a. Benefits other than Family Tax Benefit Part A and B, and Child Care Benefit.
b. Changed marital status between W3 and W4.
c. Has long term health condition (lasting 6 months or more) which limits them in what they can do (that is, they score themselves as 8 or higher out of 10 on a scale where 10 means they are unable to do any work because of their condition and 0 means they are not limited at all by their condition).

The attrition was highest among people with the following characteristics:

- living in Sydney, Melbourne and rural Western Australia;
- aged 15 to 34 years;
- single or living in a de facto relationship;
- born in a non-English speaking country;
- low levels of education; or
- unemployed in the previous wave.

There were also higher rates of attrition in wave 2 for people living in Tasmania or in flats or units. For wave 3, there were higher rates of attrition for people living in rural Victoria, rural South Australia, or for employers.

The conventional belief is that bias is likely to increase as a panel ages. If this is true, then there is merit in a general top-up sample. However, in a study on the effect of non-response and attrition on income estimates from the European Community Household Panel (ECHP), Sisto (2003) found that the initial wave non-response was responsible for much of the bias in the estimates. She also found that there was no apparent trend towards larger bias due to attrition during the panel. Fitzgerald, Gottschalk and Moffit (1998) demonstrated that after 21 waves of the Panel Study of Income Dynamics the sample retained cross-sectional representatives, despite a loss of 50 per cent of the original sample. Further, Rendtel (2005) found the surprising result in the ECHP that the bias due to non-response in the initial wave declines in subsequent waves. While further analysis of the representativeness of the HILDA sample is needed, these results from other studies do cast some doubt on the general view of increasing bias in aging panels.

The experiences of other longitudinal household panels

Before embarking on an immigrant sample top-up, it is worth reflecting on the experiences of other longitudinal household panels. The following section provides a brief summary of the approaches several large household panel studies have taken in addressing the immigrant issue.

German Socio-Economic Panel

The German Socio-Economic Panel has had five additions to the original sample selected in 1984 (Haisken-DeNew and Frick, 2003). The first addition was to extend the scope of the survey to the German Democratic Republic in 1990. The second addition to the sample was an immigrant top-up that was recruited in 1994. The next two additions to the sample were made in 1998 and 2000 to add to the overall sample size from the general German population. The final addition to the sample was made in 2002 to incorporate an over-sample of high income households.

British Household Panel Study

The British Household Panel Study began in 1991 and an immigrant sample has not been added to date. Booster samples were selected in 1999 to add to the relatively small samples for Wales and Scotland. The fact that the BHPS excludes immigrants to Britain since wave 1 is acknowledged along with the statement that the size of this exclusion grows over time (Lynn, 2003).

The BHPS team are, however, currently considering a major sample enhancement in the order of 20,000 households.¹⁰ If this sample extension does go ahead, it will not occur before at least wave 18. This additional sample will obviously include many immigrants that are missing from the original sample.

Survey of Labour and Income Dynamics

The Canadian Survey of Labour and Income Dynamics (SLID) has a medium-term rotating panel design. The SLID sample is comprised of two panels. Approximately 15,000 households are recruited to a SLID panel from the Labour Force Survey (LFS) once the households have completed their six month term with the LFS. As a result, the SLID sample shares the area-based sample design of the LFS. Each panel is surveyed for a period of six consecutive years and a new panel is introduced every three years.

As a new panel is regularly introduced, the SLID sample will incorporate recent immigrants to Canada. An adjustment is made to the cross-sectional weights of recent immigrants in the new panel to account for the fact that similar immigrants have been excluded from the older panel.¹¹ At most, the SLID sample will exclude approximately 40 per cent of the recent immigrants who have arrived in Canada in a 5 year period.¹²

Panel Study of Income Dynamics

The Panel Study of Income Dynamics added a new sample of 2,000 Latino families in 1990, which was 22 years after the study began. While this sample did represent the three major groups of immigrants (being those from Mexico, Puerto Rico and Cuba), it missed out on the full range of post-1968 immigrants. Because of this shortcoming and lack of sufficient funding, the Latino sample was dropped after 1995. In its place, a small sample of 441 immigrant families was added in 1997 and a further 70 families were added in 1999.

¹⁰ Personal communication with Heather Laurie, University of Essex, 26 July 2005.

¹¹ Personal communication with Michel Latouche, Statistics Canada, 23 August 2005.

¹² This will occur in the sixth year of the first panel and in the third year of the second panel. All immigrants in the last two years will be missed but the youngest panel will pick up the immigrants in the three years prior to that.

The experience of the Longitudinal Survey of Immigrants to Australia

In an Australian context, the experience of the Longitudinal Survey of Immigrants to Australia (LSIA) can provide some valuable guidance in the development of a strategy for a recent arrival sample extension to the HILDA Survey.

Details of the LSIA sample can be found in the *LSIA User Documentation* (DIMIA, 2002), or in appendices 1 and 3 of *New Settlers Have Their Say* (VandenHeuvel and Wooden, 1999). A brief summary is provided here.

The frame for the LSIA sample was based on the list of principal visa applicants who intended to settle in Australia which is maintained by the Department of Immigration and Multicultural Affairs (DIMA). This list is known as the Settlement Database. The LSIA frame *excluded*:

- on-shore applicants;
- principal applicants less than 15 years old;
- principal applicants who settled outside of State and Territory capital cities and major urban centres close to capital cities such as Newcastle and Wollongong.

Only offshore visaed immigrants were of interest in the LSIA as the focus of the survey was on the integration of recent immigrants into Australian life. The onshore applicants would have been in Australia for a substantial period prior to the first interview.

Two LSIA samples were selected and interviewed. The first cohort related to immigrants arriving between September 1993 and August 1995. The second cohort related to those arriving between September 1999 and August 2000.

Contact details for the immigrants were taken from the Settlement Database, which lists the intended address of the off-shore immigrants. Where an address was not available from this database, passenger arrival cards were used. Not all of the addresses were useable due to insufficient detail or the address was clearly for temporary accommodation. Further some immigrants had since moved from their initial address. In the first LSIA cohort, 18 per cent of the sample could not be traced prior to the first interview. This figure fell to 16 per cent in the second cohort. The improvement to the currency of the address information made by the shorter sampling timeframe was partly eroded by a greater proportion of business and independent migrants for which the address information is less reliable.

Attempts were made to locate individuals where it was found that they were not living at the last known address and this included checking the white pages.

The interviews were conducted face-to-face and the first interview was conducted approximately five or six months after the immigrant's arrival. The second interview was conducted one year later. The third interview (which was only applicable to the first cohort) was conducted two years after that.

The wave 1 response rate for both of the LSI samples were around 60 percent after excluding those who had permanently left Australia.

Approximately one third of the LSIA interviews were conducted in a language other than English. Of these, more than half were conducted with the assistance of a family member or friend and the remainder involved a bilingual interviewer or qualified interpreter.

DIMA conducted a new survey of immigrants in 2005 – called the Survey of Recent Immigrants – which had a different design to the LSIA.¹³ The sample consisted of principal applicants who were

¹³ Personal communication with David Smith, DIMA, 1 July 2005.

either off-shore visaed immigrants or were granted on-shore visas in the last six months. The sample was contacted by mail and asked to complete a 4-page self-completion questionnaire. Telephone assistance was provided to respondents with English-reading difficulties in six languages; Chinese, Tagalong, Vietnamese, Hindustani, Thai and Arabic.

The respondents will be contacted one year later for an update and then again one year after that. The first mail out occurred in August 2005 with a targeted sample size of 6000 responses.

Frame options

Several options are available for constructing the list of people from which a sample of recent arrivals could be taken. The list from which a sample is drawn is called the frame. The various frame options are discussed below.

Area-based

The frame closest to that used in the original HILDA sample design is an area-based frame which provides a list of the geographical areas in Australia. There are two main options for an area-based frame: use the areas already selected; or select new areas.

Dwellings are then selected from these areas and screened for permanent arrivals, returning Australians and long-term overseas visitors. If the general top-up from the Australian population were pursued, then the screening step could be dropped and all people in the selected households would be approached for inclusion into the survey.

The area-based frame provides the best coverage of the omitted populations, but a large screening exercise would need to be done to identify those in-scope and this is costly.

Near neighbour method

As a major cost for face-to-face interviewing is the travel time to an area, we could select dwellings that are close to the current sample and screen these dwellings for permanent arrivals, returning Australians and long-term overseas visitors. Several 'neighbours' could be considered:

- dwellings that are next to or near those originally selected in 2001;
- dwellings that are next to or near those households currently responding;
- dwellings in a neighbouring Census Collection District (CD) to those originally selected in 2001; or
- dwellings in a neighbouring CD to those currently responding.

Using the addresses of the dwellings originally selected as the starting point for selecting the neighbour means that we are using an out of date frame. As a result, we would under-represent people living in new estates created since 2001. Also, as we would not undertake a full block listing of the CD, we could not make any adjustments to the probability of selecting the neighbouring dwelling beyond what was made in 2001 sample. This is really only a concern in areas that have had a dramatic increase or decreases in the number of dwellings in the CD since 2001, of which there are likely to be few aside from the new estates.¹⁴

To provide for selections in new estates, the addresses of the households currently responding could be used as the starting point for selecting neighbouring dwellings. Via this method, we gain access to the new estates as some people who were living in the areas originally selected have since moved into these new areas. The downside of this method is twofold. Firstly, the variability in the weights will be higher than if we started with the original selections due to non-response and attrition in the current sample. Secondly, the interviewers will be required to make contact with neighbouring dwellings in some areas where there are very few other selections which will erode part of the cost effectiveness of this neighbour-based selection.

As an alternative to selecting neighbouring dwellings, neighbouring CDs should be considered. A neighbouring CD would, for the most part, still provide travel cost savings as the interviewer is in

¹⁴ Dramatic decreases in the number of dwellings that occur evenly across the CD will be picked up in this design as we would not be able to identify suitable neighbours.

the general vicinity to interview the ongoing sample. The advantage of this method is that we are not highly clustering the top-up sample within the current respondents, thus reducing the variance of the survey's estimates and avoiding confidentiality concerns from respondents.¹⁵

In deciding between selecting a neighbouring CD of the original selections and the current selections, similar issues arise as those discussed for selecting neighbouring dwellings above. In addition, a count of the number of dwellings in the neighbouring CD needs to be conducted so the sampling probabilities can be determined. In some rural areas, the neighbouring CD could actually be quite large and travel gains from this method could be quite small.

New areas

Rather than using the neighbouring CDs, new CDs could be selected from the list used in the 2006 or 2011 Census, excluding those in remote Australia.¹⁶ Within each of these areas a number of dwellings would be selected. This approach would ensure the new estates have an equal chance of selection and avoids clustering the top-up sample close to the ongoing sample.

List-based

The alternative to an area-based frame is a list-based frame, where the individuals or households available for selection are listed. The three main issues to be concerned about with a list-based frame are:

- the under-coverage of the list – does it contain all units in the population that we wish to sample?
- the over-coverage of the list – does it contain many units that we don't wish to sample?
- the accuracy of the list – are the contact details of the units on the frame up-to-date?

The following sections discuss the various options for a list-based frame.

DIMA Settlement Database

DIMA maintains a Settlement Database, which is a list of permanent visaed immigrants in Australia, including both off-shore and on-shore applications.¹⁷ This list may be accessible for survey purposes to organizations outside of DIMA.

There are a number of issues with the coverage of this frame. The first problem is that the list only includes visaed immigrants, so the frame will exclude New Zealanders. Under the Trans-Tasman Travel Agreement, New Zealand citizens can travel freely to Australia and remain indefinitely without applying for a visa. As noted earlier in this report, of all the recent immigrants arriving between 1996 and 2001, 24.1 per cent were from New Zealand and just over a quarter of these were born outside of New Zealand.

The second problem with this DIMA Settlement Database is that it only includes permanent immigrants, so excludes long-term arrivals. The identification of long-term arrivals to Australia using DIMA information would have to be from all non-permanent arrivals to Australia as there is substantial category jumping between short- and long-term arrivals. There were just under 8.4 million non-permanent arrivals to Australia in 2001-02 of which less than 4 per cent were long-term

¹⁵ Where the top-up sample is very close to the existing sample, some respondents may observe the interviewer approaching people they know.

¹⁶ Note that if the top-up were done in wave 11 (ie 10 years after the original selection), then the 2011 Census would only just have been conducted and information about the CDs would not be available for at least another 18 to 24 months. As a result, the CDs from the 2006 Census would most likely be used.

¹⁷ The visa category codes identify whether the application is on-shore or off-shore.

arrivals. Sampling from such a large frame with so few people in-scope would be extremely costly. It would also yield little value to the HILDA Survey given only a small portion of these long-term visitors will remain in Australia for longer than a couple of years.

The third problem with the DIMA Settlement Database is that it excludes returning Australians. This is only a minor problem given the small number of returning Australians missed by the HILDA sample.

The over-coverage of the DIMA Settlement Database is small. Firstly, there will be a small proportion (between 3 and 5 per cent) of immigrants who subsequently leave Australia permanently. Secondly, there may be a small number of on-shore applicants who were resident in Australia in 2001.¹⁸

The address details on the DIMA Settlement Database are current as at the date of the latest contact with the immigrant. Address details are available for 87 per cent of the onshore applications and 60 per cent of the offshore applications, however there is significant variation in the availability of address details by visa categories and those provided for offshore applicants are often of friends or relatives.¹⁹ The address details are updated via a voluntary settler questionnaire and the immigrant contacting DIMA for language or other services. As a result, this frame would be best used on a regular basis (such as selecting a small sample of permanent arrivals each year) rather than infrequently (such as adding a top-up sample of permanent arrivals every 10 years or so). Even when using the list on a regular basis, households that have moved will need to be traced. As noted earlier in this report, 16 per cent of the sample for the second cohort of LSIA could not be found for the first interview conducted between five to six months after the immigrant's arrival.²⁰

While the Settlement Database includes all visa applicants, we would select Principal Applicants and then interview their household. We may also want to follow other members listed on their visa application if the family has separated after their arrival in Australia.

In summary, the DIMA Settlement Database would exclude New Zealanders, long-term arrivals to Australia, and returning Australians. It would include some people who would have been resident in Australia in 2001 and some recent immigrants who have subsequently left Australia. The address details have a limited life-span.

HIC Medicare Enrolments Database

Another list-based frame option considered is the Medicare Enrolments Database held by the Health Insurance Commission (HIC). To gain access to health care in Australia, immigrants need to apply for a Medicare card. The Medicare list includes:

- immigrants with Australian or New Zealand citizenship;
- immigrants with a permanent visa;
- some immigrants who have applied for a permanent visa; and
- returning Australians who have let their Medicare card lapse while they were overseas for more than five years.

The Medicare list, therefore, excludes the following people:

- long-term overseas visitors; and

¹⁸ There has been a rapid increase in the number of people gaining permanent residence while already in Australia. In addition to the 104,000 permanent arrivals in 2002-03, there were an extra 32,000 Migration and Humanitarian visas granted onshore. This rose from 24,000 onshore visaed applicants in 2000-01. (DIMIA, 2004)

¹⁹ Personal communication with David Smith, DIMA, 1 February 2006.

²⁰ For LSIA, the address information from the Settlement Database was supplemented by arrival card information.

- returning Australians who have maintained an active Medicare registration.

Medicare records contain data on the entry date to Australia, the reason for entry and whether the individual is a returning Australian, so it should be possible to isolate a list of recent immigrants and some returning Australians.

The Medicare Enrolment Database also have the advantage over the DIMA Settlement Database in that the address details are more likely to be correct over a longer term. That is, when a person moves, they are supposed to inform the HIC of their new address. In reality, however, many people do not update their address until they make a patient claim, request a replacement for a lost or stolen card, or when their card expires every seven years. An example of the accuracy of the Medicare records comes from the Longitudinal Study of Australian Children (LSAC). A sample of 0 and 4 year olds was drawn from Medicare records and interviews were conducted in 2004. Of the primary approach letters sent out to households containing these children, 2 per cent were returned. A further 12 per cent of the addresses proved to be inaccurate when an interviewer was sent out to the household.²¹ It is expected that the address accuracy rate of immigrants and returning Australians would be lower than that of young families.

If we used the Medicare Enrolment Database, an invitation to participate in the HILDA Survey would be sent by the HIC. The letter would give individuals the chance to opt-in to the study and the address details of only those that opt-in would be passed on to the fieldwork agency.²² Having an opt-in process rather than an opt-out process is a significant drawback in this method as very few people would opt-in and they would have quite different characteristics of those choosing not to opt-in.

The main problem with the Medicare Enrolment Database is that it would be an opt-in process. A secondary problem is that it is unclear exactly what population the sample would relate to – some New Zealanders, long-term visitors and returning Australians would be on the frame and others would not. A consequence of the opt-in process, this method is not considered any further in this paper.

FaCSIA benefit recipients

Another list-based option investigated was the Department of Families, Community Services and Indigenous Affairs (FaCSIA) customer database for receipt of benefit payment. The database records the payment details and basic demographic information, including the year of arrival to Australia. Using the Administrative Longitudinal Dataset (LDS), the number of people who received a benefit payment at any time between January 1995 and December 2004 and who were recorded as arriving in Australia in 1991 to 2003 was calculated.²³ This was compared against the official number of permanent arrivals in 1991 to 2003 in Graph 3.

A divergence in recent years between the number of immigrants receiving benefits at some point in the ten year interval and the number of immigrants arriving to Australia is immediately apparent in Graph 3. The drift in the benefit recipient coverage of all immigrants to Australia from 1997 onwards may be explained by:

²¹ Personal communication with Carol Soloff, LSAC Project Manager, Australian Institute of Family Studies, 29 July 2005.

²² For the LSAC, an opt-in process was used and 15 per cent of the selected sample opted-out of the study at this stage (Soloff et al, 2005). HIC have since changed their procedures to only allow opt-in samples to be taken from the Medicare Enrolments Database. Even if we could have an opt-in process, it is expected that the opt-out rate would be higher for an immigrant sample than for LSAC, as a weaker connection can be drawn between the HILDA Survey and the HIC than what could be drawn between LSAC and HIC.

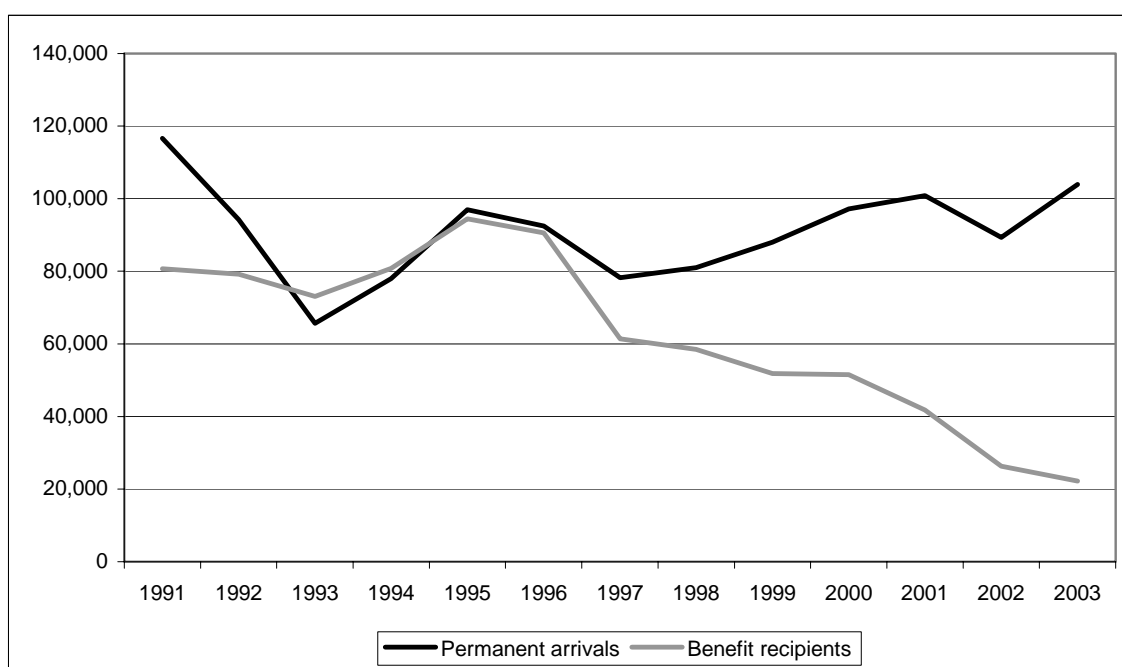
²³ The number of benefit recipients who arrived in Australia between 1991 and 2003 were calculated by Doug Gordan, FaCSIA.

- a two year waiting period for benefit payments for immigrants that was introduced in March 1997; and
- low unemployment rates around this time.²⁴

Also, the difference between the two measures up to 1995 may be explained by the LDS only including people who were on benefit payments in the ten year window from 1995 to 2004. That is, some people who arrived before 1995 may have been on benefits for a short period which finished before 1995.

Due to the undercoverage of recent immigrants on the FaCSIA benefit recipient database, this list is not considered any further in this paper.

Graph 3: Number of permanent arrivals to Australia and number arriving who received benefits (between 1995 and 2004), 1991 to 2003



Random Digit Dialing

Compared to the area-based screening approach, a less costly alternative would be to screen using a telephone list. As the electronic version of the White Pages is no longer available for sampling purposes, random digit dialing (RDD) provides the only option for telephone screening.²⁵ In RDD, a list of all possible telephone numbers is generated based on a list of telephone prefixes known to be in use. While silent numbers and recently issued numbers are included in list, there are many more 'dead' numbers that need to be dialed in the selected sample of phone numbers. Bennett and Steel (2000) found that 54 per cent of their RDD numbers for their Queensland sample were disconnected numbers, fax numbers, or numbers for non-private dwellings.

Households with silent numbers that are reached by the RDD method are more likely to be suspicious of how the fieldwork company obtained their telephone number.

²⁴ Personal communication with Doug Gordon, FaCSIA, 1 December 2005.

²⁵ The White Pages, had they been available, would have also had coverage problems with unlisted numbers and recent connections not being included.

This telephone method excludes households who do not have a home phone. As of 1996, 2.5 per cent of Australian households were without a home phone.²⁶ It is likely that this number may have increased to around 6 per cent in recent times with some households using mobile phones only.

By screening via telephone rather than face-to-face, it will be harder to convince the selected households of the importance of the study. Response rates to telephone surveys are typically six percentage points below those of face-to-face surveys (de Leeuw and van der Zouwen, 1988). Primary approach letters could not be sent to households to tell them about the study before the household is called. Households will also screen their telephone calls (via caller id or answering machine) to a much greater extent than they would screen visits to their household. Households may also be reluctant to give their address over the phone for future interviews, whereas this would already be known by the interviewer if the approach to the household was made face-to-face. However, telephone interviews offer greater flexibility over face-to-face interviews in using interpreters as they are needed.

Multiplicity sampling

One sampling method that has been used in studies of rare populations is multiplicity sampling. This is where information is provided by a selected household about those people in the household plus those who are connected to the household in clearly defined ways (such as close relatives). The probability that an individual is included in the sample is proportional to the number of different households in which that person and their close relatives are living.

The main problem with this approach is obtaining accurate information from the sample members on their multiplicity (Kalton and Anderson, 1986). Item non-response to the questions designed to elicit information on a sample member's probability of inclusion in the sample creates difficulties in appropriately weighting the sample.

For some parts of the population missed by the HILDA Survey, such as immigrants who come into Australia under family migration schemes, it may be possible to implement a multiplicity sample design. However, this design may not have any advantages over other designs for segments of the missing population that are probably less well connected with each other. It would be simpler and most likely just as cost effective to either sample directly from an immigrant list or undertake a general screening exercise. For these reasons, this method is not considered any further.

Snowball

Snowball sampling is sometimes used to find extremely rare populations but it requires the members of that population to know each other. The idea is to find a few members of that population and ask each of them to identify other members, then to contact those identified and ask them to for the contact details of other members, and so on. Those people with many contacts in the rare population are more likely to be included in the sample than those with few contacts.

The main problem with this approach is that the resulting sample is not a probability sample and objective weights cannot be calculated. Kalton and Anderson (1986) suggest that this method is best used for exploratory qualitative investigations rather than for statistical surveys. This shortcoming strikes this method from any serious consideration and it is not discussed further in this paper.

Airport arrival gate

The final sampling frame considered is that of all flights arriving in Australia each year from overseas destinations. The passengers arriving on a sample of these flights could be approached each year on their arrival into Australia (ideally before they collect their luggage) to determine if

²⁶ ABS Cat. No. 4103.0, September 1996.

they meet the appropriate criteria. If they do, then the interviewer would then collect their intended address details.

While this method would have the advantage of identifying returning Australians and New Zealand citizens, it does have a number of major problems:

- There are between 8.5 to 8.7 million arrivals to Australia each year (approximately 56 per cent are short term visitors to Australia and 39 per cent are Australians returning from short overseas trips). Finding the 5 per cent of arrivals that would be in-scope of the top-up sample would be reasonably tedious.
- The selection of a sample of people to approach from a particular flight may be biased as the sampling is occurring in a highly uncontrolled environment. The interviewers are more likely to approach those people who they think might be part of the target population or those that appear more friendly, etc.
- The individuals approached will be at their least co-operative after a long flight to Australia and their wait in the customs queue.

Therefore, this approach is not considered further in this paper.

Sampling options

Once the population frame has been decided, there are a number of ways to actually take a sample of all units on the frame. These are discussed below.

Clustering

To ensure face-to-face interviewing costs are not prohibitive, the sample would be clustered into areas. For the area-based frame we would cluster by CD as was done in the original HILDA sample. For the DIMA frame, we would cluster by postcode or Statistical Local Areas (if this is available on the frame). For the telephone frame, we would cluster the sample into suburbs as defined by the prefixes pre-dominantly used in those suburbs.²⁷

Another issue that needs to be considered is whether we need to cluster the new sample close to the current sample, as the near neighbour method does. Over time, the original sample has partially unclustered.²⁸ In the metropolitan and large rural centres, there would be some cost savings from clustering the new sample near the old sample, but these savings will decline with time. In small rural towns and other rural areas it may be necessary to locate the sample in similar areas (if a new sample is selected in these areas at all).

Targeted sample

It has been noted earlier in this paper that immigrants tend to be clustered in certain areas (that is, they settle in areas where other immigrants are). This fact could be used to help target the screening process (either face-to-face or by telephone) into areas where there is known to be a large proportion of immigrants. This could be done in two ways:

- oversample the areas that are thought to have more immigrants; or
- exclude areas from the frame which have few immigrants.

In deciding between oversampling and excluding areas, the following points should be kept in mind. If the areas with a high concentration of immigrants were sampled, then the immigrants found in the under-sampled areas would have higher weights (as they had a lower probability of selection). Exclusions made on Census data will be out-of-date and Kalton and Anderson (1986) warn that if the distribution of the immigrants has changed markedly in the interim then a serious bias can result. It is unknown whether returning Australians are concentrated in areas in a similar manner as immigrants, but it seems unlikely.

Sample size

At a minimum, the top-up sample should have a similar sampling fraction as the original sample. The contribution that the top-up sample makes to the cross-sectional estimates will then be similar to those people from the original sample.

The minimum achieved sample sizes would be:

- approximately 100 immigrants each year if a yearly sample of permanent immigrants were selected;

²⁷ If we plan to interview this top-up sample by phone in all waves, clustering is not necessary. However, we will more than likely wish to interview them face-to-face in the future, so it will be necessary to cluster the sample from the outset.

²⁸ The experience of the HILDA Survey is that around 18 per cent of the Australian population moves every year, though half of these move within 5 kilometers of their previous location.

- approximately 1000 immigrants and returning Australians if a 5 yearly sample of permanent and long-term immigrants and returning Australians were selected;
- approximately 1,500 immigrants and returning Australians if a 10 yearly sample from the three omitted groups were selected; and
- approximately 1,900 immigrants and returning Australians if a 15 yearly sample from the three omitted groups were selected.

However, should there be interest in analysing sub-groups of the omitted population, the sample sizes would need to be increased appropriately.

As the HILDA Survey is household based, we will want to sample immigrants and their households. The LSIA offers some guidance on the clustering of immigrants within households: there are on average 1.9 immigrants living together in households with 1.7 non-immigrants after six months of arriving in Australia. As a result, the minimum number of responding households would be:

- approximately 55 immigrant households each year if a yearly sample of permanent immigrants were selected;
- approximately 530 immigrant and returning Australian households if a 5 yearly sample of permanent and long-term immigrants and returning Australians were selected;
- approximately 790 immigrant and returning Australian households if a 10 yearly sample from the three omitted groups were selected; and
- approximately 1000 immigrant and returning Australian households if a 15 yearly sample from the three omitted groups were selected.

Sample integration and following rules

Sample integration

The current HILDA sample and the recent arrival top-up sample will need to be combined to provide a coherent cross-section and longitudinal sample of the Australian population from the wave the top-up sample is introduced.

As the HILDA sample is household-based rather than individual-based, this brings various complexities to the weighting process. So let us consider a simpler situation first to understand how two samples could be brought together. If both samples were of individuals rather than households, combining the sample would be relatively straight forward. The current sample would be from the population in Australia in 2001 and the top-up sample would be from a different population of people who were not in Australia in 2001 and who arrived after 2001. These two populations together represent the entire Australian population as of the year of the top-up sample is selected (say wave n). Weighting these two samples to represent the entire Australian population in the first year the top-up was included (wave n) would involve:

- determining the probabilities of selection for individuals in both samples;
- adjusting for non-response in both samples (and attrition in the original sample);
- combining the samples and benchmarking to key individual characteristics of the total Australian population in the year corresponding to wave n (it would not be possible to benchmark these samples to their specific populations as these population benchmarks are not known at this level).

Each subsequent year, the samples would be adjusted for non-response and attrition separately and benchmarked together to the Australian population to produce cross-sectional weights. The top-up sample would be included in the longitudinal weights for the balanced panel from wave n to wave $n+i$. To calculate the longitudinal weights, the cross-sectional weights from the year the top-up sample was introduced (wave n) would be adjusted for attrition in each sample and their wave n characteristics would be benchmarked to key characteristics of the total Australian population in the year corresponding to wave n .

Now, let us consider the more complicated situation where the sample is household-based rather than individual-based. Individuals in the originally selected households are followed over time and people can join their household. These new people are only followed over time independently of the individuals in the originally selected households in a few special circumstances: they are a new born or adopted child of an individual originally selected or are the partner of an individual originally selected with a new born or adopted child. The new people are opportunistically included in the cross-sectional person weights and their probability of selection into the survey is approximated. Details of the weighting strategy for the current sample are found in Watson (2004). With the introduction of a top-up sample in wave n , the cross-sectional household weights for wave n for incorporating the two samples would be determined in the following way:

- determining the household probabilities of selection for both samples;
- adjusting the household probabilities of selection for the probability of inclusion in both samples (that is, a household with recent immigrants and people who were in Australia in 2001 falls into both populations and could have been selected in either sample);
- adjusting for household non-response in both samples (and attrition in the original sample);
- combining the samples and benchmarking to key household characteristics of the total Australian population in the year corresponding to wave n .

The cross-sectional person weights, once the cross-sectional household weights are determined, would be constructed in the same way they are in the current sample. The longitudinal person weights would be constructed as described earlier (that is, the cross-sectional person weights in wave n would be adjusted for attrition and benchmarked to the population characteristics at a point in the year corresponding to wave n).

Obviously, for the top-up approach actually selected, the details of the weighting strategy will need to be worked out, but the above discussion gives the broad methodology for combining the samples.

Following rules

The above discussion about the weights raises a number of questions about the following rules that need to be addressed:

- Should all of the people from the immigrant or returning Australian household become part of the permanent HILDA sample and followed over time?
- What selection probabilities should be given to the people in these selected households who are not immigrants or returning Australians?

Under the current HILDA following rules, a recent immigrant or returning Australian who shared a household with a permanent sample member would be interviewed for as long as they live with this permanent sample member and then dropped from the sample.

With the introduction of a top-up sample, there are three possible ways to extend the following rules to this sample:

- Option 1: Only treat the immigrants or returning Australians in the top-up sample as permanent sample members which are followed over time. Anyone else living in their household are treated as temporary sample members and interviewed for as long as they live with the immigrant or returning Australian.
- Option 2: Follow all people from the immigrant or returning Australian household in the top-up sample. Those who are not immigrants or returning Australians would have to have their weight reduced as they would have had a chance of selection in 2001 and again when the top-up sample was selected. The major problem with this approach is that we do not know what probability of selection these other people had in 2001 (as they were not selected) nor do we know by what mechanism they came to be part of the household of the immigrant or returning Australian and therefore what probability of selection they have there. Their probability of selection would have to be estimated from what we know about similar people in the main HILDA sample.
- Option 3: This approach seeks to capitalize on the fact that some immigrants and returning Australians are coming into the main HILDA sample as temporary sample members by the virtue of living with a permanent sample member. These people could be converted to permanent sample members as they join existing households. The top-up sample could then be restricted to households containing only recent immigrants or returning Australians who have *not* shared a household with people who had a chance of selection in the original HILDA sample.²⁹ All of these people can then be followed as permanent sample members.

While it would be relatively simple to change the following rules as suggested in this third approach with some changes to the questionnaires to enable the identification of returning Australians, it would be difficult to operationalise the inclusion of households in the top-up sample.³⁰ We would need to ask whether the recent immigrant or returning Australian had ever shared a household (not just a dwelling) with a person who wasn't a recent immigrant or returning Australian. We would need to ensure that they considered themselves as a resident of the household and not just a visitor. These types of questions may seem irrelevant to the respondent if asked as part of a screener questionnaire – they would be better placed in section K of the person questionnaire with the questions about moving house.

The approach that ties in best with the current following rules and has fewer complications is the first approach. It is recommended that this first approach be adopted for an immigrant sample top-up. However, if a complete sample extension were to be undertaken, then the current following rules can then be applied to all of these new households and the cross-sectional weights of all people who could have been selected in the original sample and the extension would need to be modified.

²⁹ Strictly speaking, we would need to add a further qualification that the immigrants would *never* live with someone who could have been selected in the 2001 sample. Without doing this, they would have a multiple chance of being included in the sample – first when they lived in a household consisting of only immigrants or returning Australians, and second when they moved into a household with people who could have been selected in the original sample. It is clearly impossible to base the immigrant screening process on what they may or may not do in the future.

³⁰ As at the end of Wave 4, there had been 51 recent immigrants who joined an existing HILDA household (representing about 14 per cent of the omitted recent immigrant population in 2004). Almost half were married spouses or defacto partners of a permanent sample member, a further 40 per cent were family members of a permanent sample member and a small portion were in group households. Only seven of these people have been dropped from the sample under the current following rules. Note that the questionnaire would need to be changed to enable the identification of returning Australians.

Frequency options

Infrequent sampling

A large top-up sample might be undertaken every 10 to 15 years. As there is not a list from which the appropriate people could be identified with reasonable up-to-date addresses, an infrequent top-up would need to be done by face-to-face or telephone screening.

The advantage of the infrequent sampling is that it would be a major operation with a large infrequent cost plus a small interviewing cost each year to maintain the top-up sample. There would be an opportunity to use specialized fieldwork staff in the top-up year. Infrequent sampling would also allow the identification of the three groups of the omitted population – returning Australians, permanent arrivals and long-term arrivals.

The disadvantage of the infrequent sampling is that between the top-up years, the cross-sectional results of the survey would start to drift from the true Australian population.

Annual sampling

Alternatively, the sample might be topped-up every year by sampling the permanent arrivals within the last year from the DIMA Settlement Database. It would be too costly to sample the short-term and long-term arrivals to find those people who actually stay long term. Returning Australians could not be identified nor could New Zealand citizens. It would be far too costly to undertake an annual screening exercise.

The advantage of annual sampling is that it is a small and manageable task that could be rolled into the general operations of the HILDA Survey. The cost would then exclude the expensive screening component of an infrequent sampling method, but may involve some tracking of recent immigrants if the addresses are inaccurate. The annual sampling may also be started earlier than the large infrequent sampling as it is a smaller less costly task.

The disadvantage of the annual sample is that it is restricted to permanent non-New Zealander arrivals only (though this is the majority of the omitted population over the longer term).

One large top-up followed by annual sampling

Given the HILDA Survey has not had any top-up to date, it may be preferable to undertake one large top-up around wave 10 to 15 followed by annual sampling thereafter.

The advantage of this approach is that the majority of the omitted population can be covered by this method. If the top-up were conducted in wave 15, then the permanent immigrants to Australia between 2001 and 2016 could be captured via this method, along with the vast majority of the returning Australians (many of whom would have returned around 2003 and 2004). The long-term visitors in Australia in 2016 would be picked up, but many of these would then leave Australia in the following few years. The permanent arrivals arriving after 2016 (excluding those from New Zealand) would be picked up with the subsequent annual sampling. The long-term visitors who decide to stay in Australia permanently after 2016 could be picked up in both the large top-up and the annual sampling, so they would need to be identified and excluded from the annual sampling.³¹

The main disadvantages of this approach are the cost and that New Zealanders that arrive in Australia after the conduct of the large top-up are not included.

³¹ They would be identified as onshore permanent visa applications who arrived before 2016.

Data use and implications for top-up frequency

In determining the frequency of the top-up sample, it is worth contemplating what the top up will mean for those using the data.

Figure 1 shows which analyses could incorporate the top-up sample if a large top-up sample were added in wave n . Figure 2 shows how the data could be used with annual top-up samples. The analyses that could incorporate the top-up sample are shown in black, while those that could not include the top-up sample are shown in gray.

Researchers interested in the long-run analyses will gain no benefit from the top-up sample until their window of research starts on or after the wave the top-up is introduced, which may not be for quite some time after the top sample has been included. Such researchers would want the top-up sample to be as comprehensive as possible and as large as possible. The annual top-ups would be inferior to the large infrequent top-up as it offers lower coverage of the missing population and would have a higher cumulative attrition rate.³²

For researchers undertaking short-run analyses, they will be able to incorporate the top-up sample into their analysis as soon as their window of research starts on or after the top-up occurs. They would want the top-up to occur more frequently than the long-run analysts, though not necessarily annually. They would also want the top-up to have a good coverage but may be willing to sacrifice on the inclusion of some population groups. They would be content with either annual sampling or infrequent sampling.

The cross-sectional analysts will gain the most in the shortest amount of time from the top-up sample. Their preference would be for the top-up to be done annually with adequate coverage of the key groups. While they would enjoy the better coverage of the infrequent top-up in the wave it was done and the few waves after that, their sample would again gradually drift from the Australian population with time.

The HILDA Survey has been set up as an indefinite life panel to permit long-run analyses. If researchers were only interested in short-run analyses, then the panel would have been best constructed as a rotating panel. The top-up strategy that fits the best with both long run and short run analyses is a large infrequent top-up sample.

³² The attrition rate would be higher as portions of the frequent top-up sample will have been followed over time for longer than other parts and immigrants are more mobile than the average population in their first years in Australia.

Figure 1: Incorporation of the infrequent top-up sample into analyses

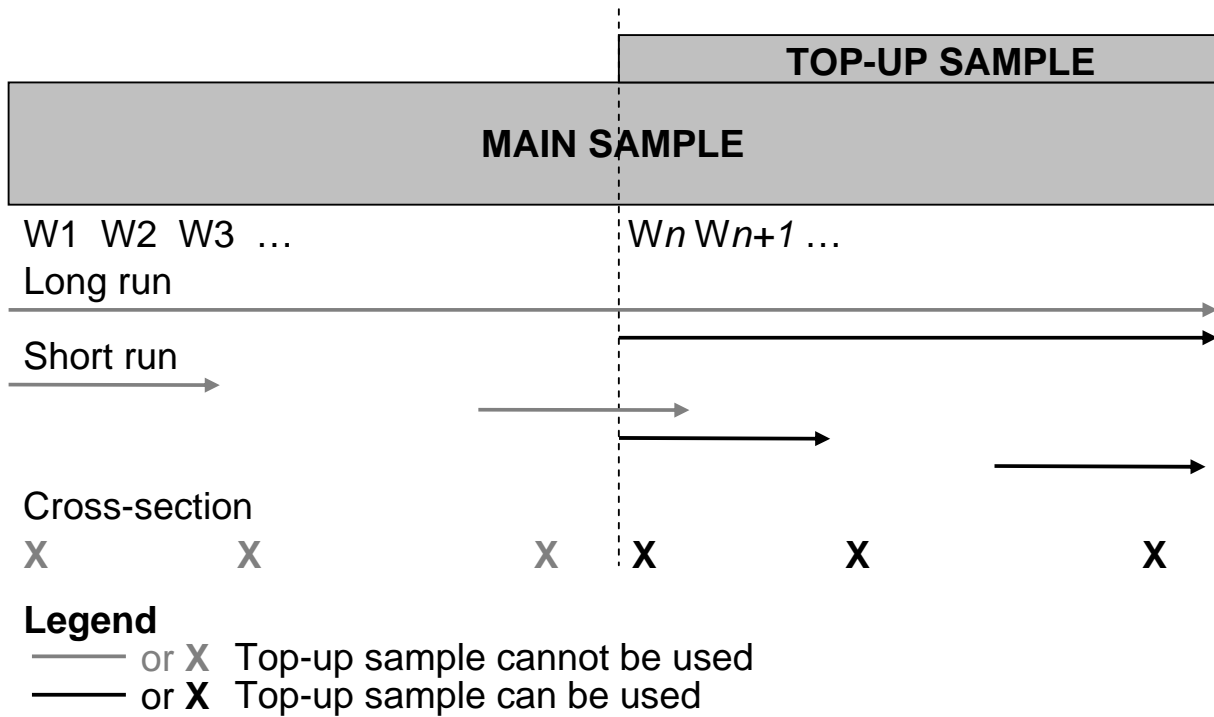
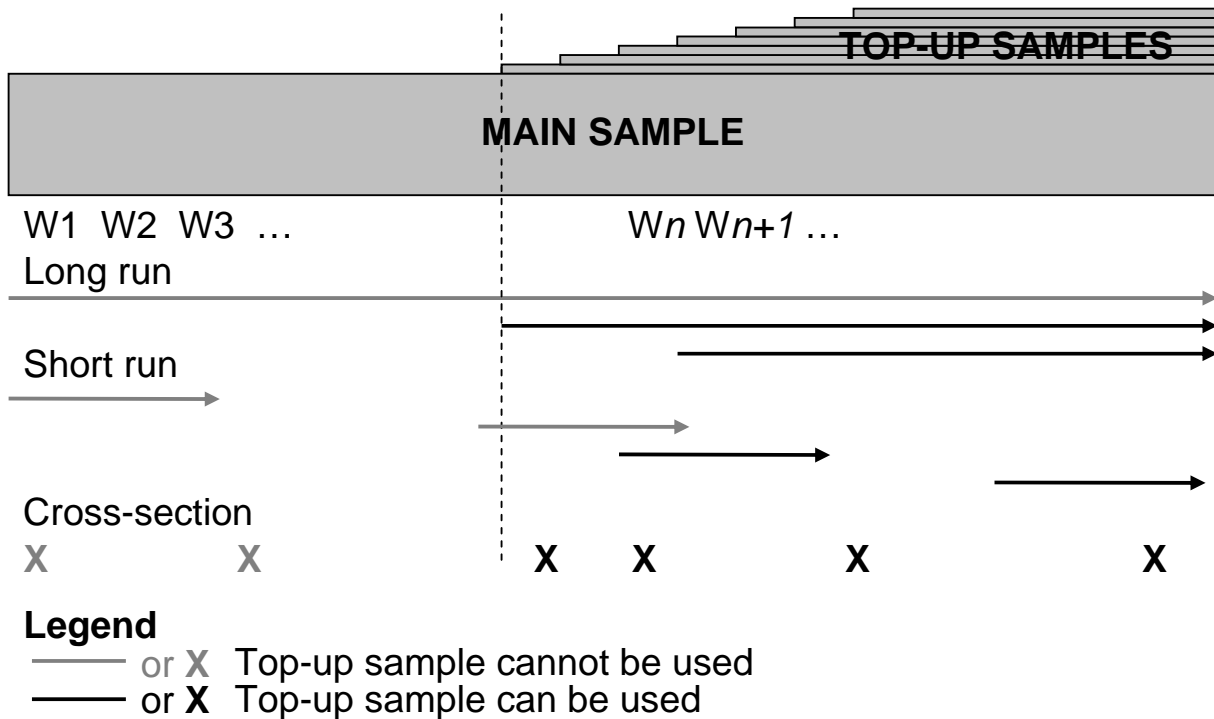


Figure 2: Incorporation of the frequent top-up samples into analyses



Fieldwork issues

There are several key issues associated with the conduct of the fieldwork of a recent arrival sample top-up that need to be raised and discussed in this paper. These issues primarily relate to the engagement of the selected households to ensure high response rates. The survey must sound interesting and relevant to them, they need to be confident in the interviewer and the survey process.

Pre-fieldwork advertising

When targeting hard-to-reach populations, higher response rates can be achieved by getting the support agencies of that population on board with the survey. That is, if the awareness of the survey or the request for participation comes through an organisation an individual has had some positive involvement with then they are more likely to be willing to participate.

While we are not in a position to target all of the immigration agencies and community centres in immigrant areas, we could seek the support of organisation such as the Federation of Ethnic Communities' Councils of Australia.

In addition, some thought should be given to whether public awareness of the survey and the issues would be raised through the print media. Again, this may be prohibitively expensive given the size of the sample we want to obtain.

Pre-interview notification

It is helpful to provide a letter to the sample households to let them know about the survey and that an interviewer will be contacting them shortly. This means that the interviewer will not be approaching the household cold and that the household has had time to consider the merits of the survey.

With random digit dialing, households cannot be sent a letter in advance of the call to the household.

Interviewer training

The interviewers may need to overlay the top-up sample activities with the usual HILDA interviewing (as would be the case if the near neighbour method or DIMA Settlement Database were used). As a result, careful thought needs to be given to how and when the interviewers are trained to take on these two quite different activities. For example, should the interviewers be trained on the top-up sample first and then the current sample, or visa versa? Should the interviewers be given some time in the field with one of the samples before they are trained to work on the other sample? Can the interviewers work effectively on both samples simultaneously?

Mode of contact

Face-to-face interviews are generally accepted as superior to telephone interviews for creating the best possible positive environment between the interviewer and the respondent. Higher response rates in the order of six percentage points are typically achieved in face-to-face interviews compared to telephone surveys (de Leeuw and van der Zouwen, 1988).

Screening and interviewing

One of the difficulties with conducting a screening interview is ensuring the part of the population that you are not ultimately interested in will be co-operative at the screening stage. For example, if we say in the pre-interview notification letter we are looking for people who have migrated to Australia since 2001, then all of the Australian-born population and those arriving in Australia prior

to 2001 may not be interested in speaking with the interviewer as the survey does not concern them. This would result in a low response rate to the screener questionnaire which casts doubt on the validity of the sample ultimately achieved. The advantage of the screening questionnaire is that it is short and this will help raise response rates to the screener stage.

The challenge is to make the request for an interview as appealing as possible to all parts of the community. As stated earlier, the recent arrival top-up sample would be an ideal opportunity to add to the current sample of Australian born people and longer-term immigrants.

If we were sampling from a list of recent immigrants, then we can tailor the pre-interview information to exactly why their participation in the survey is important.

Use of interpreters

If a frequent sampling strategy was adopted, then a higher proportion of interviews will need to be assisted due to language difficulties than under an infrequent sampling strategy. Immigrants who do not speak English well or at all when they arrive will improve their English speaking proficiency over time. In the LSIA for example, the proportion of immigrants who could not speak English well or at all six months after arriving in Australia was 37 per cent. This had fallen to 25 per cent three years later.³³ If we sampled New Zealand citizens and long-term arrivals along with permanent arrivals, the rate of non-English speaking people would fall. In the 2001 Census, for example, 14.8 per cent of the immigrants arriving in the previous five years did not speak English well or at all.

In many face-to-face interviewing situations, a friend or family member may be able to help with the translation of the questions rather than having to set up an interview with a professional interpreter. Note that in wave 4 of the HILDA Survey, 2.0 per cent of the interviews are conducted with assistance of a friend or family member, whereas 0.2 per cent of interviews are conducted with a professional interpreter.

If the interviews were conducted by telephone, then bilingual interviewers are often used. When a household is contacted, the language that the household speaks can usually be identified and the appropriate bilingual interviewer can call that household back.

Use of translated materials

In addition to interpreters, translated materials are often used to gain the confidence and response of people who do not speak English well. This would normally involve the translation of key materials (such as the introductory letter or brochure) into six or so different languages. For face-to-face interviews, some introductory cards may be translated along with the showcards for the interview. The translation should also be back-translated into English to ensure the meaning is consistent in the translated material.

Motivation of interviewers

One issue that we should be aware of in designing the top-up sample is that interviewers are likely to become discouraged with the job if they have a very low hit rate of in-scope households. If an interviewer spends hours and hours in the field making contact with households and finds only one or two households that they can interview, they may see it as an enormous waste of their time. Obviously, from a cost point of view, we would not want to have an interviewer spend vast portions of their time just trying to find in-scope households.

³³ See <http://www.immi.gov.au/research/lisia/examples/english.htm>.

The interviewer motivation needs to be addressed in the training. The key message should be that screening is just as important as interviewing. Any time spent screening households to identify they are out-of-scope is just as valuable as identifying a household is in-scope.

Response rates

The household response rates that can be expected from a top-up sample of immigrants and returning Australians will be around 50 to 60 per cent, depending on the sampling strategy.

Immigrants typically have lower response rates than the general population. This was found in wave 1 of the HILDA Survey where people born outside of Australia were underrepresented in the respondents. Note, however, it has been demonstrated in the context of a Statistics Netherlands survey that nearly 90 per cent of the difference in response rates is a result of the social, economic, location and age variables of the ethnic population rather than ethnicity itself (Feskens et al, 2004).

It should be noted that the response rates in a pilot test are generally going to be lower than in the main study for a number of reasons:

- difficult areas are often included in a pilot to test the methodology;
- the trainers, interviewers, questionnaires and procedures are not as polished; and
- some procedures that affect response rates may be tested on a portion of the sample.

Cost considerations

In deciding which sampling option to test, the cost, coverage of the frame, and expected response rates are considered along with the main advantages and disadvantages. Table 3 provides a summary of six different options considered.

The costs, frame coverage and response rates are indicative only and provide a general guide to the trade-offs between the methods.

The complete sample extension (option 6) is the preferred approach if the funds to support both the recruitment and the maintenance of the sample over time were available. A sample size resulting in a smaller number of recent arrivals could be considered given the benefits of increasing the sample size of various policy groups. The cost per household is very low compared to the screening methods which makes this approach attractive. For example, the funding would need to increase by a factor of 2.8 to adopt the complete sample extension compared to the near neighbour method if the same number of recent arrivals were recruited. For each recent arrival household, 14 households from the general population could be included into the sample. This method does not need to be tested as a general sample extension was added to the Dress Rehearsal for wave 5.³⁴

However, if funds are more limited, then a screening approach should be considered. The face-to-face screening and interviewing method (option 1) is the gold-standard version as it is most closely aligned to the way the original HILDA sample was selected. Unfortunately, it is very costly. This option is primarily provided as a comparison point for the other options. If option 1 were being seriously considered, we should definitely contemplate going one step further and convert it into a complete sample extension.

The near neighbour method (option 2) provides a cheaper alternative to option 1 but still permits face-to-face screening. It offers the same coverage and response rates as option 1.

The RDD CATI screening methods (options 3 and 4) are less costly than face-to-face screening, but there are tradeoffs to be made on response rates and coverage of the sample. To avoid a change in mode between the initial wave and the following waves, telephone screening and face-to-face interviewing have also been considered (options 4). While this will remove any change of mode effects between waves 1 and 2, the trade-off is on the response rate as people will be more reluctant to provide their address early on in the screening process or may be unavailable or change their mind when the face-to-face interviewer arrives.

The DIMA database (option 5) offers an alternative to screening as it provide a list of immigrants which can be directly sampled. The trade-off in using this list is on the coverage of the list as it does not include New Zealand citizens or long-term visitors and the addresses are not updated. As a result, use of the DIMA Settlement Database is only recommended on a frequent basis.

³⁴ In the wave 5 Dress Rehearsal, an additional 519 responding households were added to the existing sample of approximately 180 responding households.

Table 3: Summary of immigrant sampling options

Option	Method				Indicative cost ratio vs opt 1	Indicative per HH cost vs opt1	Indicative coverage ^a	Indicative response rate	Main advantages	Main disadvantages
	Frame	Screening	Interview	Frequency						
1	Area-based	F2F	F2F	10-15 yr	1.00	1.00	100%	60%	<ul style="list-style-type: none"> • Explain importance of study F2F • Build rapport with respondent 	<ul style="list-style-type: none"> • Cost • Low screening rate (ivwrs could become discouraged) • Cannot use interpreters easily
2	Near-neighbour	F2F	F2F	10-15 yr	0.71	0.71	100%	60%	<ul style="list-style-type: none"> • As above for option 1 	<ul style="list-style-type: none"> • As above for option 1, but cost is lower.
3	RDD	CATI	CATI	10-15 yr	0.49	0.49	92%	54%	<ul style="list-style-type: none"> • Easier access to interpreters • Can interview eligible respondent immediately after screening to avoid drop-outs • Respondent more likely to give address at end of full interview than at end of screening interview 	<ul style="list-style-type: none"> • Response rate • Harder to build rapport with respondents by phone
4	RDD	CATI	F2F	10-15 yr	0.57	0.57	92%	49%	<ul style="list-style-type: none"> • Easier access to interpreters • Same interview mode as main HILDA Survey (avoids changes in responses over time due to mode) 	<ul style="list-style-type: none"> • Response rate • Harder to build rapport with respondents by phone • Some respondents will not give address after screening interview
5	DIMA	-	F2F	1 yr	0.10	0.10	20% (66% over 10 years)	60%	<ul style="list-style-type: none"> • Regular updating process each year 	<ul style="list-style-type: none"> • Coverage of frame
6	Complete sample extension	-	F2F	10-15 yr	2.00	0.09	100%	66% (60% for immigrant portion)	<ul style="list-style-type: none"> • Extra non-immigrant sample for more detailed analyses • Helps counteract biases introduced to cross-section estimates over time 	<ul style="list-style-type: none"> • Ongoing costs after initial year will be much higher

Note: a. Of permanent arrivals, long-term overseas visitors and returning Australians

Dress Rehearsal, February-May 2006

The near neighbour method was tested in the Wave 6 Dress Rehearsal between February and May 2006. This method offers the highest expected response rates and coverage of the recent arrival population for a reasonable cost out of the methods discussed in this paper. The Dress Rehearsal was used to test the procedures and determine better ways to approach, screen and interview the sample. This section outlines the procedures used in the Dress Rehearsal.

Sample selection

The current addresses of the existing Wave 6 Dress Rehearsal sample were used as the starting point for the recent arrival sample, rather than the original addresses. While it is recognised that using the original addresses is probably better than the current addresses, using the current addresses will uncover the practicalities of using both address lists. As an additional sample was added to the Dress Rehearsal in Wave 5 and many of the Wave 1 sample members have not moved, the current address will be the same as the original address for 85 to 90 per cent of the sample.³⁵

The recent arrival sample was doubled in the metropolitan areas and halved in the rural areas to test the more complex selection procedure with the interviewers. That is:

- In the metropolitan areas, the second and fourth dwellings along from the current addresses were screened.
- In the non-metropolitan urban areas, the third dwelling along from every second current address was screened.
- In rural areas, the next dwelling along from every second current address was screened.

Interviewer training

The recent arrival sample training occurred in conjunction with the usual Dress Rehearsal training. The interviewers that worked on the HILDA Survey in previous waves were randomly split into two groups. The first group received the recent arrival training on the day prior to their usual training, while the second group received the recent arrival training on the day after their usual training. This was done to test which order was the most effective for the interviewers.

As there were concerns about the new interviewers being swamped by the recent arrival sample procedures on top of the usual sample procedures, these interviewers were trained on the recent arrival sample one week after their usual training. This allowed the interviewers time to settle into the usual procedures and get to know their areas before being given the new task.

Screening

The interviewers selected dwellings to be screened following set procedures. They approached each of these dwellings to undertake a short screening questionnaire face-to-face with a responsible adult. The questions are provided in figure 1 below. The questions identify whether any member of

³⁵ The Dress Rehearsal sample was boosted in Wave 5 by a factor of 4. As a result, 75 per cent of the households are new to the sample in Wave 5 and the current address for almost all of these households will be their original address (unless they had informed the office of their move). For the remaining 25 per cent of the households who were selected in Wave 1, approximately half will still be living in the same Wave 1 address.

the household lived overseas in 1997. This equates to a nine year top-up sample similar to what would be obtained if the top-up sample in the main study were introduced in Wave 10.³⁶

Respondent communication, translated material and use of interpreters

The interviewers were given translated showcards in six languages to use on the door-step to help communicate with the household member. The interviewers could then contact an interpreter to assist with the screening interview. This resulted in either on-the-spot assistance via the telephone or an appointment was made with the interpreter to visit the household with the interviewer.

A primary approach letter and brochure was provided to households after they were screened in-scope (that is, someone in their household arrived in Australia after 1997 or was an Australian living overseas during 1997). A portion of the letter and the entire brochure were translated into six different languages. The interviewer provided the appropriate translation to the respondent.

The interview with of in-scope household members could be undertaken with the assistance of a friend, family member, or professional interpreter.

Testing parameters

The primary objective of the near neighbour pilot was to test the fieldwork procedures. The key questions we expect to answer from this test include:

- Can the immigrant screening occur along side the normal fieldwork without adverse effects?
- How well will the listing instructions be followed?
- Are any problems caused by different sampling fractions in different areas?
- Are there problems with using either current or original addresses as the starting point?
- What ballpark response rates will be achieved for the screener and the main interviews with recent immigrants?
- How do we best train the interviewers on this separate sample?
- Will the new interviewers be able to cope with the added complexities?
- What is the cost of adopting a similar approach (with any enhancements believed reasonable from the testing) to the main HILDA fieldwork?

We do not expect to determine much from the Dress Rehearsal on the following issues, due to the small number of recent immigrant households involved:

- The use of interpreters and translated materials.
- Detailed response rates for sub-groups.

At the time this paper was completed, the Dress Rehearsal was still underway so the outcomes of the test are not reported here. It is expected that a revision to this paper will occur later in 2006 to incorporate the major outcomes of the Dress Rehearsal.

³⁶ Wave 10 is the earliest the top-up could proceed. The project is currently funded to Wave 8 and the recent arrival sample would be funded out of future resources. It is anticipated that Wave 9 will see the introduction of computer assisted personal interviewing and it would be unwise to attempt a major top-up at the same time.

Figure 1: Questions used to screen households for recent immigrants and returning Australians

<p>S1 How many people, including yourself and children, usually live in your household?</p> <p>Enter number of people <input type="text"/></p>	
<p>S2 Have [you/ any members of this household] ever lived outside Australia for <u>more than 6 months</u>?</p> <p>Yes- single person household (S1=1) 1 →S5</p> <p>Yes- multi person household (S1 is 2 or more) 2</p> <p>No..... 3 →S8 (Code 2)</p>	
<p>S3 How many of these household members have lived overseas for <u>more than 6 months</u>?</p> <p>Enter number lived overseas for more than 6 months <input type="text"/></p>	
<p>S4 And how many of these people were born before 1997?</p> <p>Enter number born before 1997..... <input type="text"/></p>	
S5	S6
<p>Are you one of those people? What is your first name? What are the first names of all the (other) household members (born before 1997) who have lived overseas?</p>	<p>Did [you/ name from S5] <u>live in Australia at any time in 1997</u>?</p> <p>Yes.....1</p> <p>No.....2</p> <p><i>If person only had a short term visit to Australia in 1997, record code 2</i></p>
<p>S8 Outcome of screening</p> <p>Screened and in-scope (<u>any</u> code 2 at S6) 1</p> <p>Screened and all household members out of scope (S2=3 <u>or all</u> code 1 at S6) 2</p> <p>Not screened (non response) 3</p>	

Recommendations

It is recommended that:

1. The HILDA sample be extended 10 to 15 years after wave 1.
2. A large infrequent top-up should be adopted, repeating in approximately 10 to 15 year intervals (rather than a small annual top-up or a large top-up followed by a small annual top-up).
3. The additional sample be geographically clustered.
4. Consideration be given to a complete sample extension.
5. Unless a complete sample extension is undertaken, the scope of the first top-up be restricted to permanent arrivals, long-term arrivals and returning Australians since 2001 (collectively termed 'recent arrivals').
6. The recent arrival sample methodology includes the following features:
 - a. A variation of the near neighbour method.
 - b. Face-to-face screening of households for in-scope sample members.
 - c. Exclusion of rural and remote parts of Australia.
 - d. Target a responding sample size of 890 to 1000 households, depending on when the top-up is undertaken.
 - e. Use of translated materials and interpreters.
 - f. Only recent arrivals in the in-scope households should be treated as permanent sample members. The other household members should be treated as temporary sample members and dropped from the sample when they cease living with the permanent sample members.

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