



Queensland

The Economic Society
of Australia Inc.

**Proceedings
of the 37th
Australian
Conference of
Economists**

**Papers
delivered at
ACE 08**



**30th September to 4th October 2008
Gold Coast Queensland Australia**

ISBN 978-0-9591806-4-0

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Published November 2008
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The Paper following forms part of - *Proceedings of the 37th Australian Conference of Economists*
ISBN 978-0-9591806-4-0

The Dynamics of Australian Poverty Persistence

Abstract

There are a number of reasons why people experience poverty for only a short period of time. For example, those who are transiting between jobs and live out of past savings are likely to be in poverty only briefly. This kind of poverty is considered to be transitory poverty and significantly differs from persistent poverty, where an individual has insufficient permanent income to meet the basic needs regarded to be normal in the communities in which they reside.

Numerous studies have been undertaken on the rates of annual poverty in Australia. However, much less research has been done on rates of poverty persistence and even less on the dynamics of poverty. One of the main reasons for this has been the lack of available longitudinal data in Australia, which would enable the study of the dynamics of poverty. Therefore, the main aim of this paper is to contribute to the analysis of persistent poverty dynamics in order to assist those Australians who are, on a permanent basis, living in conditions that are below the minimally acceptable standard of living in Australia. This has been possible with the use of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, to measure the rates of poverty transitions and persistence in Australia from 2001 to 2004, using the first four waves of the HILDA dataset.

The results presented in this paper suggest that the rates of poverty persistence are significantly lower than point-of-time estimates of poverty. The annual poverty rates for each wave of the HILDA is approximately 20 per cent, the rate of poverty persistence for the first two waves is approximately 14 per cent, the rate for the first three waves is approximately 11 per cent and the rate of poverty persistence for all the four waves is approximately 9 per cent. These results indicate that the overall rates of poverty persistence in this paper are some function of time, and tend to decrease at a decreasing rate for each subsequent wave. The paper also focuses on the year-to-year dynamics of poverty, that is, the churning rate of those moving in and out of poverty in subsequent years, as this assists in providing a detailed account of poverty dynamics. This supports the production of a much richer set of poverty estimates on which appropriate policy decisions can be based upon.

I Introduction

In a developed country like Australia, the rate of absolute poverty is relatively low while that of relative poverty, depending on how it is defined, is relatively high. Absolute poverty is generally conceived as referring to subsistence living, such as, not having enough food to put on the table, not having anywhere to live, being unable to buy clothes for your children and so on. Estimates of absolute poverty are, however, artificially low as the survey-based evidence on which most research in Australia is based on does not include the homeless Australians, who generally live in absolute poverty conditions (Hunter 1999).

Relative poverty on the other hand, refers to a condition in which people live below some benchmark norm of acceptable living standards, where people have insufficient resources to maintain a socially acceptable standard of life. Most poverty studies in Australia adopt a relative poverty approach and use an income-based measure of relative poverty. In order to make efforts to help those Australians who are living in relative poverty, a sound understanding of the dynamics of poverty is required, to assist policy makers to develop appropriate policies designed to combat poverty.

In Australia, most studies on poverty in the past have taken a cross-sectional approach to the study of poverty by estimating annual rates of poverty. Though they provide some insights on the nature of poverty, annual rate measures of poverty are incapable of providing the necessary information to implement effective public policies to mitigate poverty. This is because annual rates of poverty do not separate out those who are persistently in poverty from those who are only experiencing transitory poverty at a particular point of time.

There are numerous reasons why individuals may find themselves in relative income poverty for a short period, which could include people between jobs, off-work sick, self-employed people who hit a lean patch, students, young people taking a year off after school or university, and older workers who cut back on their working hours to increase their leisure time. During these times, these individuals may rely on their savings, severance pay, holiday pay, credit cards, and other sources of stored wealth to maintain their usual lifestyles until they can restore back to their previous levels of income. Nevertheless, these periods of temporary hardships (transitory poverty) no matter how undesirable, do not require such large scale intervention or dramatic changes in social policies, as this does not necessarily prevent people from participating effectively in their society, nor does it forcibly 'socially exclude' (low participation) people from normal activities over a prolonged period of time (Saunders[2] 2002). What is more important is to pin point those who are persistently in poverty over a prolonged period of time, as it is this group that will require greater governmental intervention.

Hence, this paper seeks to highlight the dynamics of poverty persistence in Australia to provide a better understanding of the nature and characteristics of poverty persistence. While doing so, close attention is paid to the churning rates of poverty in order to generate a much wholesome set of results which account for poverty dynamics. This empirical analysis has been possible with the availability of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, which is a household based panel study. The paper is organized as followed. Section II aims to provide an overview of the Australian and international literature on poverty transitions and persistence. Section III describes the data and outlines the adopted methodology. Section IV presents the main results and discusses the findings. The final section concludes.

II Literature Review

One misconception often made in poverty studies is the assumption that the individuals who are in poverty in one year, are also in poverty in the following years. In Australia, it is quite common to find poverty or deprivation in certain cohorts of the population at any particular given time. This is because there are many people and many reasons why individuals or households will experience poverty at some time in their lives. There are multitudes of reasons for why a particular household could experience poverty (income poverty) for a particular period. This could be due to variations in such dimensions as labour force status, education, family formation, illnesses, and other factors. For example, while undertaking their degrees, tertiary students would most likely be considered income poor, however, upon completion of their degrees, many of them would have escaped poverty. A similar reasoning would apply to people who are transiting between jobs and have to temporarily live out of past-accumulated savings.

There is a stark difference between being temporarily in poverty and being persistently in poverty. The former, which is typically known as transitory poverty, can be defined as a situation where the household's permanent income exceeds a given minimum standard, but, the annual income falls below that standard in some years. This is completely different to the definition of persistent or chronic poverty, which can be defined as a condition where a household¹ on a continuous basis, has insufficient amount of permanent income to meet the minimal basic requirements, to effectively participate and contribute to their economy and community. Chronic poverty forms a very essential aspect of poverty, especially for decision-making purposes for policy makers, welfare organizations, charities and other related bodies. Both these strands of transitory and chronic poverty may arise from different causes and will tend to generate different policy responses.

There has been much debate based on the assumptions that much of poverty is persistent rather than transitory. Some of the main issues that have revolved around this include 'the working poor', the 'cycle of poverty' and 'intergenerational poverty'. Clearly, in terms of public policy implementations designed to combat poverty, precedence must be given to chronic poverty as compared to transitory poverty, as transitory poverty is relatively, the 'lesser of two evils'. This is because, although experiencing relatively short episodes of poverty can be distressing, however, it would be obvious that the longer an individual lives in poverty, the worse-off they would be in terms of having better prospects for their future. The resulting future consequences for them would be much worse than those experiencing only one-off episodes of poverty. This makes it imperative to distinctly separate chronic from transitory poverty and not treat the two as one when undertaking poverty analysis.

Australian poverty studies nowadays (and only until recently) tend to focus a lot more on poverty dynamics, to gain a better understanding of the causes and effects of chronic poverty, though this was not the case in the past. One of the main reasons was that in order to do this, a longitudinal panel data was required. In the past, Australian poverty researchers did not have easy access to reliable longitudinal data on household incomes, which impeded a more thorough understanding about chronic poverty.

This is because poverty researchers need to be able to track those households who were in poverty in one particular year, to observe if they were still in poverty in the following consecutive years and so on, which would provide a better understanding about the drivers of poverty persistence and material deprivation. However, with the subsequent data releases by the Household, Income and Labour Dynamics in Australia (HILDA) Survey², which is a longitudinal data set, made the study of poverty dynamics a much more feasible task as it provides the opportunity to conduct medium-term analysis of poverty persistence.

(i) International Findings

One of the key sources of information on the issue of the persistence of poverty is the US Panel Study of Income and Dynamics that started in 1968. This survey gathered data for almost a decade and its findings suggested that, slightly over half of those

¹ Since the unit of analysis in the paper is at the household level – references are made to households, however, it would also apply to individuals.

² The HILDA Survey is discussed in Section III.

individuals who were experiencing poverty in one year were still in poverty in the following year (Hill 1981). The survey revealed that about one-quarter to one-third of the US population were estimated to be in poverty in at least one year over the 10-year period, but, this largely depended on where the poverty line was set. It also indicated that the proportions who were persistently in poverty – defined as being in poverty in eight consecutive years or more – ranged from 2.6 to 5.1 per cent (Duncan, Coe and Hill 1983).

By using both the data from the European Community Household Panel and the Cross-National Equivalence File (which collectively incorporates data for US, UK, Canada and Germany), the OECD reported results for 14 countries, for a three year period, from 1993 to 1995 (OECD 2001). A common denominator of poverty was used for all the 14 countries where the poverty line was set at 50 per cent of median equivalised disposable income. There were quite significant variations of those who were living in poverty over the three years amongst those countries. For instance, the fraction of the population observed to be residing beneath the poverty threshold in at least one of the three years ranged from 9 per cent in Denmark to almost 24 per cent in the US. The mean rate of poverty for these 14 countries in each year was about 18.2 per cent. As for those who were persistently in poverty in all the three years, the lowest ranged from less than 1 per cent to almost 10 per cent and the mean rate of the three years for all the 14 countries was 4 per cent (OECD 2001).

The results reported from other developed countries including Britain (Jarvis and Jenkins 1998), Canada (Finnie and Sweetman 2003), Germany (Krause 1998) and the Netherlands (Muffels 2000) present resembling conclusions with that of the US. The estimations of poverty persistence for many other European countries have also been calculated using data from the European Community Household Panel. The panel collected data on households during the 1990s and ran for a period of six years (OECD 2001; Whelan, Maitre and Nolan 2002). In 2001, amongst the member countries of the European Union (EU), Ireland had the highest annual rate of relative poverty at 15 per cent, followed by Greece at 14 per cent. In comparison, income poverty rates of Northern European countries were much lower, which could possibly be the result of higher levels of income support and narrower income distributions through the tax system (Dennis and Guis 2004). Some have indicated that Australian income poverty rates stand closely to the highest levels in the European Union, giving Australia a relatively high ranking (Buddelmeyer 2006).

(ii) Australian Findings

Numerous studies of relative income poverty have produced a wide variety of estimates on the number of people living in relative income poverty in Australia. However, as mentioned earlier, study on poverty dynamics in Australia have been hampered because of the lack of longitudinal data. Even in circumstances where such data has been available, it has usually not been well accustomed to the task of measuring poverty.

Therefore, it will be worthwhile to first discuss some findings of poverty which did not use the HILDA data and then to compare the results with those studies which had used the HILDA data. This will be beneficial especially when analyzing the results obtained in Section IV with these results. A study conducted by Breusch and Mitchell (2003) on poverty dynamics found that 29 per cent of households in the lowest equivalent income quintile in 1997 were still in the same quintile three years later. This may or may not have been consistent with relatively low rates of chronic poverty, because, even though it followed the same individuals over two waves,

notwithstanding that, there was in fact a break, in between the two waves. The events that occurred in terms of the dynamics of poverty during that period did not seem to have been reflected and would have certainly been important in drawing better conclusions.

Another finding of poverty, which does not wholly relate to the analysis of poverty dynamics, was the Senate Inquiry into Poverty and Financial Hardship report in 2004, where seven different sources of providing estimates of the incidence of poverty were pointed out. The estimates were wide ranging, for at one end of the spectrum the incidence of poverty was estimated to be 5 per cent, whereas at the other extreme end it was close to 23 per cent of the population (Senate Community Affairs Reference Committee 2004).

Of those studies done on the persistence of medium-poverty that had used the HILDA data, include the studies by Buddelmeyer and Verick (2006) and Headey, Marks and Wooden (2005), both of which used the first three waves of the HILDA Survey, and the study by Rodgers and Rodgers (2006) which used the first four waves of the HILDA Survey. The study of poverty dynamics by Buddelmeyer and Verick (2006) was on the dynamics and persistence of income poverty using the first three waves of the HILDA data from 2001 to 2003. They set the poverty line at 50 per cent of median equivalised disposable income using the modified OECD equivalence scale. They found the annual rate of relative poverty to be 14.2 per cent in the initial year of study (that is, in 2001). The rate subsequently dropped to 13.1 per cent in 2002 with a further drop to 11.5 per cent in 2003. They suggested that this declining trend reflected an improving Australian economy. Only 4.1 per cent of those who were living in income poverty in the first wave continued to be in poverty (persistently) in the following two waves. It was also stated that the estimate of 4.1 per cent was an overstatement of poverty persistence; this was because the estimate did not account for the left and right censoring of the data, suggesting that even a smaller number of households were prone to be at risk of pro-longed poverty.

The next study, which utilized the first three waves of the HILDA Survey, was a study done by Headey, Marks and Wooden (2005) on the dynamics of income poverty. They too, set the poverty line at 50 per cent of median equivalised disposable income using the modified OECD equivalence scale. Though they did, in addition, provide poverty estimates based on the 40 and 60 per cent thresholds for comparison reasons. Basing on the 50 per cent threshold, their annual relative poverty rates were 14.2, 13.2 and 12.1 per cent respectively for 2001, 2002 and 2003, which displayed a gradual declining trend and is quite identical to the results of Buddelmeyer and Verick (2006). It was indicated by them that the declining trend might possibly be a reflection of non-random sample attrition that the weighting regime had not been able to correct. They found the rate of poverty persistence to be 4.2 per cent.

The third study by Rodgers and Rodgers (2006) which used the first four waves of the HILDA Survey was on chronic and transitory poverty. As with the previous two studies just mentioned, the poverty line was set at 50 per cent (also at both the 40 and 60 per cent thresholds) of median equivalised disposable income and the modified OECD equivalence scale was used. The annual poverty rates for each of the four consecutive years from 2000-01 to 2003-04 were 15.7, 15.0, 14.4 and 12.8 per cent respectively. Overall, they do reveal a declining trend as with the other two studies done using the first three waves, though with comparably higher poverty rates.

III Methodology

There are in essence, six primary methodological decisions that critically affect poverty results. They include which unit of analysis to use; which would be a good indicator of resources in measuring the living standards of individuals; over what time period should the analysis be based upon; which equivalence scale to use for making comparisons; where the poverty line should be drawn and how it should be indexed over time; and what measure of poverty to use that will best capture the true extent of poverty, particularly for the persistence of poverty.

i) Data Description: Household, Income and Labour Dynamics in Australia Survey

This empirical analysis has been possible with the availability of the Household, Income and Labour Dynamics in Australia (HILDA) Survey, which is a household based panel study. It first began in 2001 and covers a broad range of aspects about the lives of the wider Australian population, such as the areas of family, income and labour market dynamics. This study uses the first four waves of the HILDA dataset, where each year sees the culmination of another wave of interviewing. In Wave 4, HILDA managed to successfully re-interview almost 92 per cent of respondents from Wave 3. This is a favourable comparison with 90.6 per cent in Wave 3 and 87 per cent in Wave 2 (Watson and Wooden 2004).

Furthermore, more than 78 per cent of the initial responding samples (households) from Wave 1 were interviewed in Wave 4 and the number interviewed in all four waves was 9855. The wave-on-wave attrition rates for Waves 2, 3 and 4 were 13.2 per cent, 9.6 per cent, and 8.4 per cent respectively. 13,969 respondents were successfully interviewed in Wave 1. Of this group, 11,993 were re-interviewed in Wave 2, 11,190 were re-interviewed in Wave 3 and 10,565 were re-interviewed in Wave 4. While the number of respondents have gradually declined in each wave, which is inevitable in any panel survey, comparisons of the attrition rate with similar studies suggests that there are good reasons to be extremely satisfied with the rate of response obtained (Watson and Wooden 2004). The primary reason for using the HILDA dataset for this study has been due to its longitudinal nature, which permits an assessment of the dynamics of poverty persistence, as individuals can be tracked from one wave to the other.

ii) Measuring Poverty

The unit of analysis used will be identified at the household level, ranking individuals by household income; the household income measure will be used as the indicator of resources and deprivation; the time period used is based upon yearly gross disposable income data; the modified OECD Equivalence Scale is used; the poverty line is based on half the median income; and the poverty gap is used as an index to measure aggregate poverty of a group of households.

The poverty gap is a poverty measure that accounts for both the numbers beneath the poverty line and the depth of poverty. This measure estimates the differences between the poverty line and the actual incomes for those in poverty. Consequently, the poverty gap enables the calculations of the full cost required to raise the incomes of those in poverty to that of the poverty line but no further than that. Nevertheless, just as the poverty gap is capable of measuring the depth of poverty, then logically, the 'anti-poverty' gap, should

certainly be able to measure the ‘height’ of non-poverty. That is to say, although both the depth of poverty and the height of non-poverty can go on and on in opposite directions ad infinitum, sensible cut-off points can be placed, which can to some reasonable degree, ascertain that a particular individual or household is considered to be safely out of poverty or to be dangerously in poverty. As such, a clearer perception of the severity of poverty persistence can be attained, by examining both the depth of poverty and the height of non-poverty. This concept of the height of non-poverty was developed in this paper to aid in establishing a more comprehensive picture of core poverty characteristics. Surely, those who have annual incomes, for example, that are more than 20 per cent below the poverty line would require relatively greater assistance than those whose incomes are hovering just 5 per cent below the line. Both the depth of poverty and height of non-poverty for waves 1 to 4 and for all the four waves are displayed in the appendix in Tables A.1 and A.2 respectively.

IV Results

In this section, sets of results estimating poverty persistence in Australia are presented, they highlight key differences between short (yearly) and medium-term (two or more years) poverty. The annual poverty rate for the years 2001 to 2004 are 20.6, 21.2, 20.6 and 19.9 per cent respectively and the average rate is around 20 per cent, suggesting that about one fifth of the Australian population experiences poverty in each year and this is, clearly, not a small proportion.

Table 1 Annual poverty rates of each wave

	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 3</i>	<i>Wave 4</i>
Poverty	20.6	21.2	20.6	19.9
Not in Poverty	79.4	78.8	79.4	80.1
Total	100.0	100.0	100.0	100.0

Source: HILDA, Release 4.1 (Waves 1 – 4), combined files for 2001, 2002, 2003 and 2004, respectively.

Notes: The poverty line for each wave is set at the half median equivalised disposable income and the modified OECD equivalence scale is used. Computations are based on 13,969, 13,041, 12,728 and 12,408 ‘successfully interviewed’ respondents present in HILDA households in 2001, 2002, 2003 and 2004, respectively.

i) Poverty Persistence

Table 2 Poverty persistence for two consecutive waves

		<i>Wave 1 & 2</i>	<i>Wave 2 & 3</i>	<i>Wave 3 & 4</i>
Poverty	Poverty	14.1	14.5	13.9
Poverty	Not in Poverty	6.4	6.4	6.5
Not in Poverty	Poverty	7.4	6.5	6.1
Not in Poverty	Not in Poverty	72.0	72.6	73.4
Total		100.0	100.0	100.0

Source: HILDA, Release 4.1 (Waves 1 – 4), combined files for 2001, 2002, 2003 and 2004.

Notes: The combined files for Wave 1 and 2 (2001 and 2002), Wave 2 and 3 (2002 and 2003) and Wave 3 and 4 (2003 and 2004) are merged together, respectively. Computations are based on 11,993, 11,482 and 11,276 “successfully interviewed” respondents present in HILDA households in 2001 – 2002, 2002 – 2003 and 2003 – 2004, respectively.

In contrast to the estimated results of annual poverty in Table 1, Table 2 above displays the estimated results of poverty persistence for two consecutive years. The rate of poverty persistence for Wave 1 and 2 is 14.1 per cent, Wave 2 and 3 is 14.5 per cent, and Wave 3 and 4 is 13.9 per cent. This gives an average rate of poverty for any two of the four consecutive years to be 14.2 per cent. This rate is about 6 per cent less than the mean annual rates of poverty for each of the four years, which is about 20 per cent. This may be the first indication that shows the rate of poverty persistence to be less than the rate of poverty transitions, as it distills those who experience poverty on a temporary basis from those who experience poverty on a longer-term basis. Yet, the results of Table 2 are unable to confirm, if this necessarily is the case, as the estimates of more years are required to reinforce this hypothesis.

Table 3 Poverty persistence for the first three waves

Wave 1	Wave 2	Wave 3	<i>Wave 1 & 2 & 3</i>
Poverty	Poverty	Poverty	11.2
Poverty	Poverty	Not in Poverty	2.7
Poverty	Not in Poverty	Poverty	2.1
Poverty	Not in Poverty	Not in Poverty	4.3
Not in Poverty	Poverty	Poverty	3.5
Not in Poverty	Poverty	Not in Poverty	3.8
Not in Poverty	Not in Poverty	Poverty	4.5
Not in Poverty	Not in Poverty	Not in Poverty	68.0
Total			100.0

Source: HILDA, Release 4.1 (Waves 1 – 3), combined files for 2001, 2002 and 2003.

Notes: The combined files for Wave 1, 2 and 3 (2001, 2002 and 2003) are merged together. Computations are based on 10,777 “successfully interviewed” respondents present in HILDA households in 2001, 2002 and 2003.

Table 4 Poverty persistence for all four waves

Wave 1	Wave 2	Wave 3	Wave 4	<i>All Four Waves</i>
Poverty	Poverty	Poverty	Poverty	9.3
Poverty	Poverty	Poverty	Not in Poverty	1.8
Poverty	Poverty	Not in Poverty	Poverty	1.1
Poverty	Poverty	Not in Poverty	Not in Poverty	1.5
Poverty	Not in Poverty	Poverty	Poverty	1.1
Poverty	Not in Poverty	Poverty	Not in Poverty	0.8
Poverty	Not in Poverty	Not in Poverty	Poverty	0.9
Poverty	Not in Poverty	Not in Poverty	Not in Poverty	3.3
Not in Poverty	Poverty	Poverty	Poverty	2.2
Not in Poverty	Poverty	Poverty	Not in Poverty	1.3
Not in Poverty	Poverty	Not in Poverty	Poverty	0.9
Not in Poverty	Poverty	Not in Poverty	Not in Poverty	2.8
Not in Poverty	Not in Poverty	Poverty	Poverty	1.9
Not in Poverty	Not in Poverty	Poverty	Not in Poverty	2.6
Not in Poverty	Not in Poverty	Not in Poverty	Poverty	3.3
Not in Poverty	Not in Poverty	Not in Poverty	Not in Poverty	65.1
Total				100.0

Source: HILDA, Release 4.1 (Waves 1 – 4), combined files for 2001, 2002, 2003 and 2004.

Notes: The combined files for Wave 1, 2, 3 and 4 (2001, 2002, 2003 and 2004) are merged together. Computations are based on 9,855 “successfully interviewed” respondents present in HILDA households in all the years of 2001, 2002, 2003 and 2004.

The results of Table 3 and 4 above display the rate of poverty persistence for the first three and four waves and the results assist in drawing a better picture on the trend rates of poverty persistence. The rate of poverty persistence for the first three waves, as shown in Table 3 is 11.2 per cent and for the all the first four waves is 9.3 per cent. Now, a much clearer trend can be observed in drawing some inferences. An obvious inference from the rates of poverty persistence is that those who are in poverty in any one of the given years over the four years under study is greater than those who are in poverty on a longer-term. In Wave 1, 20.6 per cent of the Australian population was in poverty, this dropped to 14.1 per cent for those in poverty in both Waves 1 and 2, with a further drop seen for those in poverty in Waves 1, 2 and 3 to 11.2 per cent. Finally, there was a drop to 9.3 per cent for those in poverty for all the four waves. There was a 30.6 per cent fall in poverty persistence for the poverty rate in Wave 1 when compared to those in poverty in Waves 1 and 2. There was a 20.6 per cent fall in the rate of poverty persistence for those in poverty in Waves 1 and 2, to those in poverty in Waves 1, 2 and 3. And, there was a 17 per cent fall in the rate of poverty persistence for those in poverty in all the first three waves to those in poverty in all the four waves.

Table 4 above displayed a full account of the dynamics of poverty for all the four waves. The sample size consists of close to 10,000 respondents who were successfully interviewed in all the four consecutive waves, providing a good longitudinal analysis for each of them. Two points should be brought to attention regarding this method of analysis. Firstly, in comparisons to previous studies on poverty dynamics and persistence, this data does not suffer from being based on a small sample size (Breusch and Mitchell 2003; Abello and Harding 2004). Secondly, although the sample size is relatively smaller than if imputed values are used for the missing values of those who are not successfully interviewed – it avoids biasness of the estimates that may result if missing values are imputed. Furthermore, a detailed account of the movements in and out of the survey in each wave has been accounted for to mitigate the possibility of non-random sample attrition. As can be seen, the rate of medium-term persistent poverty over the four-year period is 9.3 per cent, which is less than half the annual poverty rate in any of the four years. About a third (34.9 per cent) of Australians at least experienced poverty in one of the four waves, about one fifth (22.8 per cent) of Australians experienced poverty in at least two of the four waves and 15.9 per cent in at least three of the four waves. Comparatively, almost two-thirds (65.1 per cent) of Australians never lived in poverty in any of the four waves.

Some useful observations may be drawn from this finding. First, the longer the time period, the lower is the rate of persistent poverty. In this case, the annual rates of poverty for each wave is around 20 per cent, the rates decline over a two year period (from Wave 1 to Wave 2) with a further decline over a three year consecutive period (from Wave 1 to Wave 2 to Wave 3) and further for over four years. There seems to be a pattern emerging that may enable a relationship to be formed. As time tends to infinity, the rate of persistent poverty gradually diminishes to a certain level and from then on, remains constant (preferably at very minimal levels to be regarded as being insignificant). That is to say, every marginal increase in time (every subsequent year) would result in no negative change in the rate of poverty persistence; however, there should be some constraints put in place which would ensure that there is no positive change either, which would increase the rate of poverty persistence. Although, this is quite a vague

formulation on which to base rather strong conclusions, nonetheless, it does produce a hypothesis that links persistent poverty to be a function of time. Certainly, more waves from the HILDA data will be required to further support this postulation.

ii) Poverty Dynamics

The interesting question now becomes about discovering more about the year-to-year dynamics of poverty, which is, in how individuals churn between being in poverty and moving out of poverty on a yearly basis. The dynamic analysis of poverty undertaken here takes into account the dynamic structure of the HILDA survey itself. Inevitably, all longitudinal sample surveys will always have some respondents who would leave and some who would enter the survey in the following year. The longitudinal analysis undertaken consists of four consecutive years, which means there can be many different points of entries and exits within these periods. Such movements, if significant, can cause substantial biasness in the results obtained in such an analysis. Though there have been some studies done on the persistence of poverty in Australia, which were discussed in Section II - a detailed account of such movements has not been undertaken. This relatively new area of poverty dynamics should be explored for a better understanding of how to keep track of the estimated extent of poverty persistence in Australia.

Two key methodological issues need to be addressed when making inferences on the results of poverty dynamics. The first is to know how many respondents in the previous year left the survey in the following year and how many new respondents came into the survey in the following year. The second is to know how many of those who left the survey from the previous year were in poverty and how many were not in poverty. Similarly, of those new respondents who entered the survey in the following year, how many were in poverty, and how many were not in poverty. Taking into account these various movements provides a dynamical analysis of poverty persistence, which assists in forming a clearer picture of the extent of poverty persistence on a yearly basis, as it keeps account for sample biasness that occurs between respondents moving in and out of each wave. This complements an understanding of the persistence of poverty by providing references to the dynamics of poverty.

Table 5 Surveied in a wave but left in the following wave

		<i>Wave 1 & 2</i>	<i>Wave 2 & 3</i>	<i>Wave 3 & 4</i>
Poverty	Not In	21.2	23.3	21.8
Not In Poverty	Not In	78.8	76.7	78.2
Total		100.0	100.0	100.0

Source: HILDA, Release 4.1 (Wave 1 and 2, Waves 2 and 3 and Waves 3 and 4), combined files for 2001 and 2002, 2002 and 2003 and 2003 and 2004.

Notes: The combined files for Wave 1 and 2, Waves 2 and 3 and Waves 3 and 4 (2001 and 2002, 2002 and 2003 and 2003 and 2004) are merged respectively. Computations are based on 1,976, 1,559, 1,452 “successfully interviewed” respondents present in HILDA households in Wave 1 (2001) who were not “successfully interviewed” in Wave 2 (2002); Wave 2 (2002) who were not “successfully interviewed” in Wave 3 (2003); and Wave 3 (2003) who were not “successfully interviewed” in Wave 4 (2004) .

Table 6 Not surveyed in a wave but entered in the following wave

		<i>Wave 1 & 2</i>	<i>Wave 2 & 3</i>	<i>Wave 3 & 4</i>
Not In	Poverty	0.8	0.7	0.9
Not In	Not In Poverty	7.2	5.9	4.8

Source: HILDA, Release 4.1 (Waves 1 and 2, Waves 1, 2 and 3 and Waves 1, 2, 3 and 4), combined files for 2001 and 2002, 2001, 2002 and 2003 and 2001, 2002, 2003 and 2004.

Notes: The combined files for Waves 1 and 2 (2001 and 2002), Waves 1, 2 and 3 (2001, 2002 and 2003) and Waves 1, 2, 3 and 4 (2001, 2002, 2003 and 2004) are used respectively. Computations are based on 13,041, “successfully interviewed” respondents present in HILDA households in 2002, 2003 and 2004 respectively.

In Table 5, it can be seen that 21.2% of those from Wave 1 who left in Wave 2 were in poverty in Wave 1, 23.3% of those from Wave 2 who left in Wave 3 were in poverty in Wave 2 and 21.8% of those from Wave 3 who left in Wave 4 were in poverty in Wave 4. On average, about 22% of the population surveyed in each wave who left the survey in the following wave were in poverty. In Table 6, it can be seen that 0.8% of those of the population surveyed in Wave 2 who were not in Wave 1 were in poverty in Wave 2, 0.7% of those of the population surveyed in Wave 3 who were not in Wave 2 were in poverty in Wave 3 and 0.9% of those of the population surveyed in Wave 4 who were not in Wave 3 were in poverty in Wave 4. On average, about 0.8% of the population surveyed in each wave who were not surveyed in the preceding wave were in poverty in those waves. These findings provide useful insights in helping to draw resourceful conclusions about the robustness of the estimated results for the dynamical analysis of poverty persistence. About one fifth of respondents surveyed in a wave and who were not surveyed in the following wave were in poverty, although less than 1% of respondents not surveyed in a wave but surveyed in the following wave were in poverty.

Conclusion

A careful examination of the extent of poverty persistence in Australia has been provided by studying the dynamics of poverty, in order to help those Australians who are trapped within the confines of pro-longed poverty. This has been possible with the use of the first four consecutive waves of the HILDA Survey (Waves 1 to 4). The estimated rates of annual and medium-term (persistent) poverty and the poverty dynamics of those moving in and out between waves and their corresponding poverty status was discussed from 2001 to 2004. This has enabled better conclusions to be drawn from the annual poverty rates and the rates of poverty persistence for all the four waves. An in-depth account of the dynamics of poverty over the four years was presented and in doing so, this has allowed the rates of poverty persistence to be studied with references to the movements of those respondents within the scope of the four waves. By being able to keep an account of those moving in and out between the respective waves and churning between

being in poverty and not being in poverty, allowed for a more thorough understanding of the persistence of poverty.

The resulting estimates of poverty persistence, those of the first two, three and four waves, when put together with the results of the annual rates of poverty, indicate that the rate of poverty persistence decreases with the addition of each new wave. However, the rate decreases at a decreasing rate. It appears that new respondents coming in the survey in each year who were in poverty represented a relatively small proportion of those in that year's survey, suggesting it to be quite insignificant. The same can be said for those who move in and out of the four waves. Although this suggestion does not allow a strong conclusion to be drawn, it does indicate that such movements of poverty dynamics do not have major impacts on the rates of poverty transitions and persistence.

As for those who left the surveys in each wave, it can be said that more than one fifth of those respondents in one wave who were no longer in the following wave, were in poverty. Interestingly, this finding seems to have some correspondence with the rates of annual poverty, where about one fifth of Australians in each of the four waves experienced poverty. However, it is still difficult to draw any prospective conclusions. It also should be pointed out that there was no need for any imputations to be done for any missing data, because only respondents who were successfully interviewed in all waves were used. The reason for using only those who were successfully interviewed in all waves was to avoid the potential effects of income imputations, biasing poverty estimates, regardless if it was for cross-sectional or time series purposes. The alternative of not imputing income would be to omit any case where an imputation would be required, nevertheless, this could most likely lead to even further bias in the estimates.

In summary, the results attained from the poverty dynamics, accounting for the movements of respondents who move in and out of the different waves was done as an attempt to mitigate non-random sample attrition. The annual poverty rates were found to be approximately 20 per cent for each of the four waves. The rate of poverty persistence for Waves 1 and 2 is approximately 14 per cent and the rate for Waves 1, 2 and 3 is 11 per cent, while the rate for the all the four waves is approximately 9 per cent. These results appear to be suggesting that the rates of poverty persistence are some function of time and tend to decrease at a decreasing rate with the addition of each subsequent wave. Overall, the findings of this paper on the persistence of poverty are similar to other Australian and international studies, which show that the rates of poverty persistence are significantly lower than the annual rates of poverty.

The results presented in this paper may also have some policy implications. It seems that more attention should be paid to those Australians who are persistently experiencing poverty and may find it difficult to escape the poverty trap. Policies should be targeting this group and policy makers could formulate long term sustainable policy solutions to mitigate relative poverty persistence in Australia, to the greatest extent possible. Several studies have shown that employment, generally full-time employment, plays an instrumental role in keeping individuals safely out of poverty. However, in order to gain full-time employment, it is necessary for an individual to be equipped with the relevant skills required for the respective job. These skills, depending on the nature of the job can be attained by acquiring the appropriate levels of education and training, as "...unemployment is the greatest determiner of poverty and exclusion...it can only be won by concentrating on providing jobs and opportunities rather than penalties or slogans

(Raper 1999).

But, there may be poverty traps, such as, the trade-off between receiving income support and the non-cash benefits that go with it and having to lose that support and potentially pay taxes on income earned with being employed. These traps could provide disincentives for ushering the unemployed to gain employment, especially part-time work. Studies have shown that shorter hours of employment are a stepping-stone for the unemployed to gain full-time employment, which then significantly enables those in poverty to effectively emancipate themselves from poverty, "...there exists little incentive to engage in the labour market for those income support recipients seeking short-hours employment" (Flatau 2001).

Therefore, opportunity should be provided to those groups who are persistently in poverty to acquire the necessary skills which would make them more marketable to potential employers. This should be done in collaboration between those who are persistently in poverty, the respective government departments, educational and training institutions, employment agencies and prospective employers. Part-time employment may also provide the testing grounds for both the potential employees³ and employers to assess the suitability for longer-term permanent roles.

³ Employees in this context refer to those who are persistently experiencing poverty, although this approach may be applicable to other social cohorts to gain longer term employment.

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Appendix The Depth of Poverty

Table A.1 The depth of poverty and height of non-poverty for Waves 1 to 4

	<i>Wave 1</i>	<i>Wave 2</i>	<i>Wave 3</i>	<i>Wave 4</i>
0 - 5 % below	1.9	1.9	2.3	2.1
6 - 10 % below	1.9	2.4	2.1	2.2
11 - 20 % below	5.1	5.2	5.1	5.0
21 - 50 % below	8.6	8.9	8.2	8.1
> 50 % below	3.2	2.8	2.8	2.4
0 - 5 % above	2.0	2.0	2.2	1.9
6 - 10 % above	1.7	2.2	2.0	1.9
11 - 20 % above	3.8	3.8	4.1	4.2
21 - 50 % above	12.3	12.3	11.8	12.2
> 50 % above	59.5	58.6	59.2	59.9
Total	100.0	100.0	100.0	100.0

Source: HILDA, Release 4.1 (Waves 1 – 4), combined files for 2001, 2002, 2003 and 2004, respectively.

Notes: The poverty line for each wave is set at the half median equivalised disposable income and the modified OECD equivalence scale is used. Computations are based on 13,969, 13,041, 12,728 and 12,408 ‘successfully interviewed’ respondents present in HILDA households in 2001, 2002, 2003 and 2004, respectively.

Table A.2 The depth of poverty and height of non-poverty for all waves

	<i>All Four Waves</i>
0 -20 % below all waves	2.0
more than 20 % below all waves	3.7
Other Various Combinations	6.9
0 -20 % above all waves	0.5
more than 20 % above all waves	76.0
Other Various Combinations	11.0
Total	100.0

Source: HILDA, Release 4.1 (Waves 1 – 4), combined files for 2001, 2002, 2003 and 2004.

Notes: The combined files for Wave 1, 2, 3 and 4 (2001, 2002, 2003 and 2004) are merged together. Computations are based on 9,855 “successfully interviewed” respondents present in HILDA households in all the years of 2001, 2002, 2003 and 2004.