

Australian Family Income Dynamics: Preliminary Evidence from the NLC Project, 1997 & 2000

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Introduction

Over the past five years, discussion of family income dynamics has become a prominent topic in social policy, income distribution studies and in the more general analysis of the marked changes to the lifecourse observed in Australia. One of the indicators of the rising prominence of this issue is to be found in the number of longitudinal studies currently being conducted by academics and government agencies.¹ These studies start from the assumption – whether implicit or explicit – that standard cross-sectional data is increasingly unable to provide the kind of information required to accurately portray complex changes in household income formation. In turn, this lack of appropriate data also reduces the ability of government to design and implement policies and programs that respond to these changes.

The Negotiating the Life Course (NLC) Project which commenced in 1996, was one of the first studies in Australia to recognise, and respond to, the urgent need for the collection of data that would provide empirical evidence about a range of changes in the lifecourse of Australian individuals and families. One of the major aims of the project was to provide a better picture of how income flows changed for individuals as they: move from school to the labour market; partner [or separate] and have children; and finally move into retirement.² In addition to these major lifecourse transitions, the study also collects data on labour market participation, enabling the tracking of income flows as the respondents and other members of their household enter and exit the labour force. Taken together, mapping these changes over time should contribute to building a fairly comprehensive picture of the key events affecting family income dynamics in Australia.

In Australia, and elsewhere, studies of income dynamics have been partly prompted by the recognition that the lifecourse of a ‘typical’ individual in the OECD nations changed substantially in the post-war era. The extent of these changes can be gauged by examining one of the first representations of income flows over the lifecourse, devised by Rowntree in 1902. Figure 1 reproduces his view of a life course of a typical individual from birth to death. The

¹ For example, Negotiating the Life Course Project (NLC); Housing, Income and Labour Dynamics Survey (HILDA); Longitudinal Study of Australian Children.

² Other aims of the project and a general description of the survey methodology can be found on the NLC web site: <http://lifecourse.anu.edu.au/>

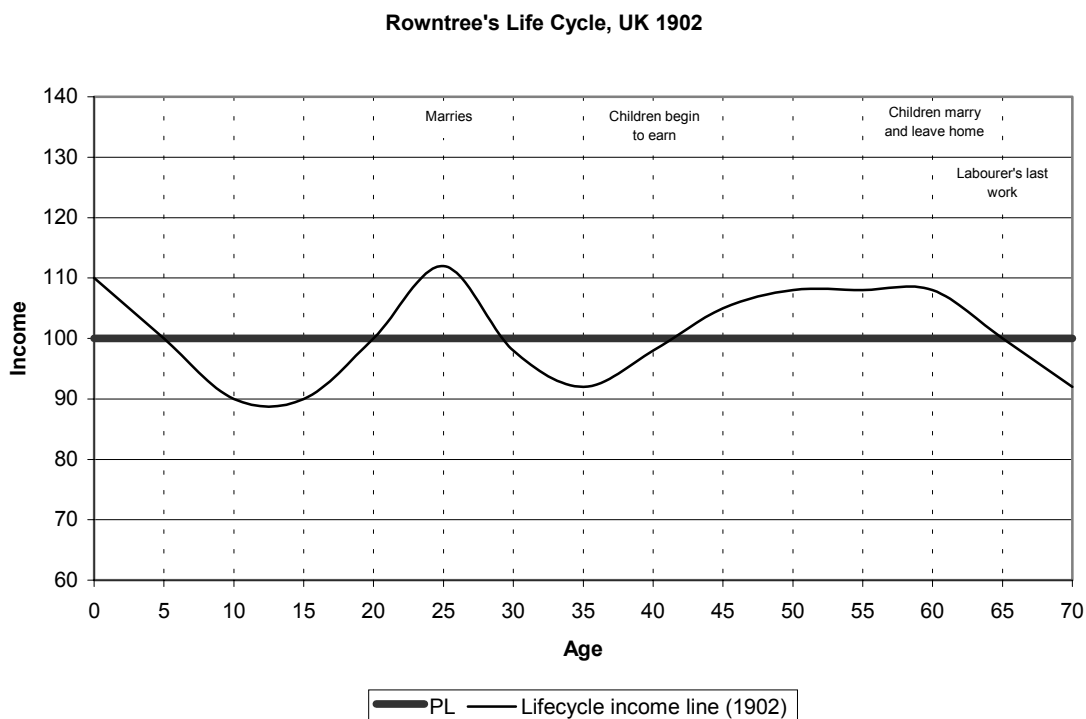
figure represents periods of income surplus and deficits, based on a manual worker's income, relative to Rowntree's subsistence poverty line.

As shown, the lifecourse of Rowntree's typical individual consists of relatively few transitions: marriage, birth of children, children leaving school, children leaving home and finally retirement. This contrasts quite strongly with the postwar lifecourse, which will often include separation or divorce, re-partnering, the creation of a second family or blending of two families

In addition to these changes, labour force participation has also changed dramatically, with delayed entry of young people who remain in secondary and tertiary education for longer periods. At the other end of the lifecourse, earlier exits to retirement mean that after 55 years of age a substantial proportion of men begin to exit to retirement, with the majority leaving before 65 years of age. In between these changed entry and exit points, continuity of participation has become increasingly less stable and predictable. Expectation of lifetime tenure in a job is the exception, rather than the norm; and the incidence of casual and part-time employment has risen steeply in Australia over the past decade. These reduced earning years may also include short exits to upgrade qualifications, followed by a re-entry to the labour force but in another occupation or industry.

Finally, the other marked change of the post-war era is the dramatic growth in women's labour force participation and most notably, their continuing participation after the birth of children.

Figure 1. Rowntree's depiction of income surplus and deficit over the lifecycle.



Source: Gray and Mitchell (2003)

Even though these fairly dramatic shifts in the post-war lifecycle in Australia have been apparent for several decades, the adaptation of policy to these changes has been extremely slow. Since the mid-1980s, many policy observers and analysts have noted that social policy in particular, continued to address the typical lifecycle patterns and needs of the 1950s male breadwinner family. By the mid-1990s, the combined impact of changes to various lifecycle events, educational patterns and substantial changes to labour market and wages policies, meant that a range of social policies were beginning to fail and/or exhibited a range of unintended consequences. The tax-transfer system had become extremely complex as policy solutions became stop-gap add-ons to the existing system. It is reasonable to suggest that some of the observed policy failures during this period were the result of lack of information about the income dynamics of the family [household].

In this paper we present an initial description of selected patterns of household income change over the first two waves of the NLC panel study, ie between 1997 and 2000. The main focus of this analysis is the exploration of income mobility as observed by changes in the quintile position

of NLC households – in particular, identifying the main lifecycle and labour market events associated with mobility between different income quintiles. The paper is drawn from a larger work in progress which explores a greater range of income dynamics observed in the NLC panel.³ The third wave of the NLC study will be conducted in mid-2003 and will provide clearer evidence about the patterns observed here.

Section 1 briefly describes the base sample of the NLC used in the paper and outlines how each household is assigned to an income quintile for waves 1 and 2, using Australian Bureau of Statistics (ABS) data. Based on these quintile assignments, Section 2 reports the observed mobility of households in each Wave 1 quintile, by the quintile position in Wave 2. In section 3 we explore these quintile changes to identify the lifecycle and labour market changes that are most likely to contribute to upward [downward] mobility. Based on the findings of Section 3, our concluding comments identify several areas where further work is required to establish those factors that drive the income dynamics of the household.

1. Description of NLC sample

The scope of the NLC study was restricted to those respondents who were aged 18-54 years when data was collected for Wave 1 (in late 1996 and early 1997). Thus, the NLC sample is not a random sample of the whole population of individuals or of income units, but covers a section of the population that is in – or is about to enter – the prime wage-earning years. As our earlier work shows, the NLC sample has substantially higher household incomes than found in ABS surveys (Breusch and Mitchell, 2002).⁴ Much of the incidence of higher income is explained by the age restrictions on the NLC sample, but even within age cohorts the NLC income figure is generally higher.

This bias in the original panel means that observing income mobility by distributional changes within the NLC sample will have little meaning. For this reason, the various analyses of income mobility of the NLC sample presented here are benchmarked against income distributional data from ABS Income Distribution Surveys for 1996-97 (Wave 1) and 1999-00 (Wave 2). Each NLC

³ See Breusch and Mitchell (2002), *Income Mobility of Australian Families: Evidence from the NLC Panel 1996-2000*. Canberra, 17-18 May, 2002.

household is assigned to the quintile position it would have occupied in the national income distribution at the time, and mobility is observed as movements between these relative quintile positions. With this approach, some adjustment can be made for the biased income sampling of the NLC survey, without explicit conditioning throughout on age. This allow stronger inferences to be drawn about the application of our findings to the wider population without more complicated analysis.

The concept of ‘family’ on which income is measured here is different from the ‘income unit’ of ABS income surveys. The NLC questionnaire asked information on the income of respondent and partner (if any) but not of any other person who may share incomes and expenditures in the same economic unit. The main effect will be to understate incomes, particularly for young adult respondents who are economically part of a larger parental household. The equivalence scale described below in Section 4 and used for much of the analysis omits adults in the economic unit other than the marital partner and children of the respondent. The data for equivalent incomes derived from the NLC is therefore more directly comparable with ABS data.

Wave 1 of the NLC survey contained 2231 respondents, of whom 2176 gave useful information that allows family income to be obtained. Attrition between the waves meant that 1768 of the respondents were re-interviewed in Wave 2, of whom 1668 gave usable family income data. The comparative analyses include only those households with valid income data in both waves of the survey (N=1656).

Table 1 reports the position of each household within the ABS quintiles of all households in each wave with usable family income data. Table 2 shows the ABS quintile positions of the 1656 households that have reliable income responses in both waves of the data. This is the subset that is analysed in greater detail in the following sections.

⁴ Attrition bias was evident between the two waves of data, especially among younger age groups and this issue is addressed in Breusch and Mitchell (2002).

Table 1: Distribution of NLC family incomes by ABS quintiles (full samples with income data)

Quintile	Wave 1	Wave 2
Lowest	194 (8.9)	61 (3.6)
Second	163 (7.5)	120 (7.2)
Third	351 (16.1)	222 (13.3)
Fourth	527 (24.2)	428 (25.7)
Highest	941 (43.2)	837 (50.2)
Total	2176	1668

Source: ABS Catalogue No. 6523.0, 1996-97 & 1999-2000.

Notes: The figures in brackets are percentages of the total.

Table 2: Distribution of NLC family incomes by ABS quintiles (sample with both Wave 1 and Wave 2 family income data)

Quintile	Wave 1	Wave 2
Lowest	133 (8.0)	61 (3.7)
Second	120 (7.3)	120 (7.3)
Third	247 (14.9)	220 (13.3)
Fourth	401 (24.2)	425 (25.7)
Highest	755 (45.6)	830 (50.1)
Total	1656	1656

Source: ABS Catalogue No. 6523.0, 1996-97 & 1999-2000.

Notes: The figures in brackets are percentages of the total.

2. Changes in the quintile position of NLC households

Using the quintile assignments set out in Table 2, we now examine the extent to which each household changed its position in the national income distribution between Waves 1 and 2. Tables 3 and 4 summarise the changes for the 1656 respondents who were present in both waves of data.

Table 3 reports a quite surprising degree of income mobility in the NLC sample, especially among the lower quintiles. As Table 3 indicates, around 57% of the NLC sample remained in the same quintile of the national income distribution as in Wave 1; 27% moved to a higher quintile; and 16% moved to lower quintiles. These results are broadly consistent with findings from the British Household Panel Study (BHPS) and the Michigan Panel Study of Income Dynamics (MPSID) for changes over three or four years (Jenkins, 2000; Burkhauser et al, 1990).⁵

The table confirms that in Australia, like many other OECD countries, only a minor proportion of very low income earners experience this state for prolonged periods. For our sample, especially in Wave 1 where there were no retirees on government age pensions, we would expect a reasonable degree of upward mobility. This is especially true for those who were under 30 in Wave 1 – the age group most likely to be entering the labour market; establishing stable relationships; and experiencing substantial wage growth as careers become established.

At the other end of the distribution, we observe considerable stability among those households in the top quintile in Wave 1, where 80% remained in this quintile in Wave 2. Again, this finding is similar to the early results of the BHPS where 80% of Decile 9 and 86% of Decile 10 remained in these deciles in the first two waves of the BHPS (Buck et al, 1994: 91).

⁵ Where the NLC study differs from these results is mainly in the higher level of mobility we observe among the bottom quintile of our sample. This is because the BHPS and MPSID panels include older age groups on retirement incomes that remain fixed throughout the period of their participation in the panel.

Table 3: Change in gross income quintile position between waves

	Wave 2 Quintile Change								
	<i>Negative change in quintile position</i>				No change	<i>Positive change in quintile position</i>			
Wave 1 Quintile	-4	-3	-2	-1	0	+1	+2	+3	+4
Lowest N=133					24.1	24.1	21.8	15.8	14.3
2nd N=120				10.0	24.2	30.8	21.7	13.3	
3rd N=247			4.1	13.4	33.2	33.6	15.8		
4th N=401		0.5	4.5	11.7	47.9	35.4			
Highest N=755	0.7	1.1	3.3	13.6	81.3				
Column totals (%)	0.3	0.6	3.2	11.8	57.3	17.8	5.7	2.2	1.2

Source: ABS Catalogue No. 6523.0, 1996-97 & 1999-2000.

Table 4 repeats this analysis, using equivalence adjusted household income. The equivalence scale used is the OECD standard of 0.7 for each additional adult in the household and 0.5 for each additional child, with the respondent equal to 1. As in the previous tables, these quintile assignments are based on the equivalence adjusted estimates provided by the ABS (also using the standard OECD equivalences).

Adjusting for household size and composition, we find an even greater level of mobility with just under half of the sample changing its position within the national income distribution between the two waves. In particular, nearly 12% of the 4th quintile of households appear to be the most affected by the equivalence adjustment.

Table 4: Change in equivalent gross income quintile position between waves

	Wave 2 Quintile Change								
	<i>Negative change in quintile position</i>				No change	<i>Positive change in quintile position</i>			
Wave 1 Quintile	-4	-3	-2	-1	0	+1	+2	+3	+4
Lowest N=212					29.3	16.0	16.0	16.0	22.6
2nd N=117				13.7	29.1	25.6	12.8	18.8	
3rd N=249			6.4	12.1	30.1	28.5	22.9		
4th N=337		3.0	2.7	20.5	36.2	37.7			
Highest N=744	1.3	1.1	4.5	13.2	79.9				
Column totals (%)	0.6	1.1	3.5	12.9	53.4	15.8	6.4	3.4	2.9

Source: ABS Catalogue No. 6523.0, 1996-97 & 1999-2000.

It is important to note that some of the changes reported in Tables 3 and 4 may be due to relative changes in the national distribution, rather than reflecting real increases [decreases] in household income. So, even though the income of a household may stay the same in real terms, if the incomes of other households are rising in real terms, then this household may end up in a lower quintile of the national distribution. Thus, some changes in quintile position are not necessarily associated with dramatic changes in living standards.

On the other hand, some changes in a household's position in the income distribution may be absolute and come about from real increases [decreases] in their income – for example when a wage earner leaves the labour market, or switches from part-time to full-time work.

Using equivalence adjusted measures is important in these kind of analyses is our preferred approach. For example, while a household may maintain its income in real terms over time, the composition of the household may change so that additional household members would usually imply a decrease in living standards; and, conversely lower household numbers, an increase in living standards.

In the following section, we explore some of these issues in greater detail using equivalence adjusted household income to observe changes in the income position of households and some of the factors associated with these changes.

3. Events associated with household income changes

The initial NLC panel concentrated on the prime earning years. As the panel 'ages', the younger cohort will move through various lifecourse changes, leaving home, partnering, birth of children, separation and divorce. Each of these changes will be associated with increases and decreases in income. In addition, younger wage earners in the sample will also be subject to wage changes – generally increasing with age – although periods of unemployment and less stable employment patterns will have a negative impact. For older members of the sample in Wave 1, transitions such as children leaving home, retirement and decreasing hours of work will also affect their position in the income distribution. In retirement, the impact of superannuation on 'smoothing income' will become apparent over time.

In Tables 5 and 6, we have separated the events likely to have an impact on household income into two groups. First, *lifecourse events* which affect the composition of the household, such as partnering, birth of children and children leaving home. Second, *labour market events* such as additions and losses to the number of wage earners in the household.

Table 5: Life course events associated with changes in equivalent income quintiles

Sample size	p-value chi-sq ^a	Lifecourse event	Wave 2 Quintile Change								
			Negative changes in quintiles				No change	Positive changes in quintiles			
			-4	-3	-2	-1	0	+1	+2	+3	+4
1656		Overall	0.6	1.1	3.5	12.9	53.4	15.8	6.4	3.4	2.9
842		No Change	0.7	0.8	2.4	9.1	58.3	16.4	6.9	3.3	2.1
263	0.000	Birth only	0.8	1.9	6.5	20.5	51.8	11.4	3.8	1.9	1.5
230	0.000	Yng Adult leaves	0.9	0.9	6.1	20.4	51.7	13.0	4.8	0.9	1.3
97	0.000	Resp leaves home	-	1.0	2.1	8.3	34.0	20.6	5.2	13.4	15.5
	0.000	Join with Partner									
62		Men	-	-	2.3	11.3	53.2	16.1	6.5	-	11.3
87		Women	-	2.3	3.5	11.5	39.1	13.8	10.3	10.3	10.3
	0.363 ^b	Gender difference									
	0.005	Separate/Divorce									
16		Men	-	-	-	18.8	37.5	25.0	-	18.8	-
47		Women	-	6.4	12.8	25.5	38.3	12.8	2.1	2.1	-
	0.004 ^b	Gender difference									
		Death of partner									
0	^c	Men	-	-	-	-	-	-	-	-	-
5	^c	Women	-	-	-	-	-	-	-	-	-
164	0.064	Youngest to school	-	0.6	3.05	14.0	42.7	23.8	9.8	3.7	2.4
144		More than 1 event	-	2.1	4.9	17.4	38.9	18.1	4.9	6.3	7.6

^a P-value in a test of no shift in the pattern of quintile changes between the groups that experienced the specified life course event or not.

^b P-value for the hypothesis of no difference in the impact on men versus women.

^c Sample sizes too small for reliable inference.

Table 5 shows that those households which experienced no major changes in composition were less likely to have experienced substantial income mobility. When these households do move the change is most likely to be positive.

Households where the only change has been a birth remain fairly stable over time. Of those households who do move, they tend to drop at least one quintile. The chi-square test indicates that the occurrence of this event is highly significant in determining mobility between quintiles.

When a young adult leaves home, household income changes vary, depending on whether he/she was a wage earner. So, around 20% of these households dropped one quintile after this event. On the other hand, nearly 20% of households moved up the equivalent income distribution, presumably because household income is distributed across fewer people. Again this event is highly significant.

In households where the only change is the departure of the respondent, we see that this is overwhelmingly associated with upward mobility in the income distribution and is highly significant. This is most likely to be associated with take-up of employment at the same time.

Similarly partnering, whether for male or female respondents, is generally associated with substantial changes in income mobility and these are largely positive changes. While women appear to experience significantly higher levels of upward mobility than men after partnering, a test of the differential impact on men and women is not significant. Overall (i.e., for both male and female respondents) partnering is a significant event in determining mobility.

Conversely, separation and divorce usually result in downward mobility, with women particularly experiencing large and significant drops in their household income position as compared with men.

Taking these last two findings together we see that, for women, the gains from partnering are moderately positive while the impact of separation/divorce is highly negative.

Very few respondents (N=5) in the sample had partners who died between these first two waves, so the impact of this kind of event cannot be reliably reported at this stage.

For those families with children, even though they may not experience a change in household composition, the effect of the youngest dependent child reaching school age is often associated with changes in the mother's labour force participation. As Table 5 shows, the youngest child becoming of school age is generally associated with upward mobility for households. This finding is just outside the 5% level of significance.

Finally, where more than one event occurs – for example, a respondent leaving home and partnering – the impact on mobility is quite high and generally positive. Less than a quarter of

those who experienced more than one of the identified events, experienced downward income mobility.

In summary, very large upward changes in mobility (moving up two or more quintiles) are associated with:

- a respondent leaving home (just under 35% of this category); and
- the partnering of the respondent (18% of men and 30% of women).

Significant downward mobility (down two or more quintiles) is associated with:

- separation and/or divorce for women respondents (around 20%), with a further 25% moving down one quintile. For men, these changes are respectively 0% and 18%.

Table 6: Labour market events associated with changes in equivalent income quintiles

Sample size	Labour market	Wave 2 Quintile Change								
		Negative changes in quintiles				No change	Positive changes in quintiles			
		-4	-3	-2	-1	0	+1	+2	+3	+4
1656	Overall	0.6	1.1	3.5	12.9	53.4	15.8	6.4	3.4	2.9
1113	No Change	0.1	0.4	3.0	13.2	58.5	15.5	5.7	1.9	1.8
77	No paid workers in both waves	-	1.3	10.4	9.1	46.8	14.3	9.1	3.9	5.2
	<i>Additional workers:</i>									
290	1	0.3	0.7	2.4	7.2	42.4	21.0	11.0	7.9	6.9
22	≥2	-	-	-	4.6	18.2	9.1	18.2	18.2	31.8
	<i>Fewer workers:</i>									
217	1	2.8	5.1	7.8	19.4	47.0	11.5	2.8	3.2	0.5
11	≥2	18.2	9.1	9.1	18.2	27.3	9.1	-	9.1	-

Turning to labour market events, we see that around two-thirds of the sample experienced no change in the number of members of the household who work.⁶ Among these households, 60% stayed in the same income quintile as Wave 1, while around 25% moved up one or more quintiles and around 15% moved down (usually one quintile).

⁶ Here we are confining our analysis to the number of workers, rather than the hours of those who work.

The sample includes a number of households that had no paid workers in either wave (around 5%). These are predominantly sole parents with children and some couples where both are reliant on social security support (for example, an invalid pensioner and partner receiving a carers allowance.) The position of these households in the income distribution will be largely determined by the extent to which pensions/benefits retain their real value, supplemented by other transfers such as child support payments by absent parents. These households show a surprising degree of upward income mobility, with one-third moving up one or more quintiles between the waves. Only 20% of these households conformed to the more usual expectation of downward mobility over time.

The other interesting aspect of these 'jobless' households, is the relatively small number that remained jobless over the two waves. The McLure Report (and other government reports) have repeatedly expressed concern about long-term joblessness in households, especially those with children. Our data suggest that the percentage of households remaining in this state for long periods is extremely small.

Of those households where an additional member joined the labour force, just under half moved up at least one quintile in the distribution. Around 40% stayed in the same quintile, and less than 10% moved down. This latter finding seems counter-intuitive but might be associated with the full-time/part-time participation responses of other workers in the household.

Not surprisingly, the addition of two workers between the waves results in very large upward changes, with most of these households (nearly 70%) moving up two or more quintiles.

Between Waves 1 and 2, around 14% of NLC households reported least one less working member. Of the households who report one less worker, around half were able to maintain their position in the income distribution. Just over one-third of these households moved down the distribution by one or two quintiles, with very few falling into either of the two bottom quintiles.

Very few households (N=11) in the reported the loss of two income earners between the two waves, so the impact of this kind of event cannot be reliably reported at this stage.

In summary, changes to the number of workers in a household have a reasonably predictable impact on the income position of the household. As would be anticipated, the addition of one worker will generally lift a household at least one quintile in the distribution. The addition of two or more workers will lift the household at least two and generally three or more quintiles. Conversely, the loss of one or more workers results in downward mobility of at least one, and usually two, quintiles.

Conclusion

The findings reported in Section 3 indicate that virtually all the life course events we have examined to date exert a strong influence on family income dynamics. The next steps in our analysis will be a more detailed examination of the following:

- Decomposing household income changes due to changes in real wages
 - in other words, ‘netting out’ changes due to wage increases in order to identify the size and direction of specific lifecourse events.
- The impact of dual events, i.e. where both life course and labour market events occur.
- Investigating those events where social security (or other income transfers) appear to be ‘smoothing’ income changes due to labour force changes.

With respect to labour market events – all of which were highly significant– we intend to:

- Examine the impact of labour market changes, based on hours, as well as number of workers.
 - in particular, the hours responses of other household members.
- Examine the circumstances of young adults leaving home, paying attention to the characteristics of the unit from which they left and the new household that they enter.