The influence of unstable housing on children's wellbeing and development

Evidence from a national longitudinal study

Matthew Taylor and Ben Edwards

Australian Institute of Family Studies

Australian Government
Australian Institute of Family Studies

Executive summary

Very little is understood about the influence of housing on children's development in Australia. For example, a recent review of the literature on this issue suggests that: "there is noticeably a lack of empirical research conducted in Australia on the links between housing and child development" (Dockery et al., 2010, p. 2). In this report, we begin to fill the gap in the Australian evidence by providing the first national data on the influences of unstable housing on children's development, using data from *Growing Up in Australia*: The Longitudinal Study of Australian Children (LSAC). Specifically, we examine the association between residential mobility, unstable housing tenure and housing stress on children's cognitive development and learning, and social-emotional functioning. Parental relationship breakdown often leads to unstable housing, and both of these are also key risk factors for homelessness, so we focus separately on the experiences of children living in separated and couple families.

Key findings from this study are presented next.

Housing tenure, mobility and cost

For LSAC families, on average, there were minimal changes in housing tenure between 2004 and 2008:

- the percentage of families who owned their home outright was relatively stable (increased from 10% to 13%) as was the percentage who took out a mortgage (increased from 61% to 62%);
- private rentals were also stable (decreased from 17% to 16%);
- those in public housing increased marginally from 2% to 3%; and
- families living in other living situations decreased from 10% to 6%.

The majority of children did not move house between 2004 and 2008 (54%), and most children who experienced a house move did so only once (27%); however, a significant minority experienced two or more moves (18%).

On average, housing costs of families increased by 32%, from $239 in 2004 to $316 in 2008 across most tenure types. For example, housing costs of families who were:

- mortgagees increased by a little over $100 per week (33%);
- private renters increased by $74 per week (32%); and
- renting from a State/Territory housing authority increased substantially, up 82% or $88 in 4 years.

But there were negligible increases in housing costs for families living in the Other landlord/other tenure types (up $8 from 2004 to 2008).

Housing in separated compared to couple families

There were stark differences in the type of housing tenure of separated families compared to couple families. Separated families, compared to couple families, were:

- far less likely to own their home outright or be paying off a mortgage;
- more likely to be in private rentals;
- more likely to be residing in public housing (one in ten compared to one in a hundred); and
- more likely to be living in the "Other" tenure type (renting in caravan parks and living with other family members) (one in ten compared to one in twenty).

Housing mobility was also much higher in separated families. Since 2004, two in three separated families had moved at least once, compared to couple families, two out of three of whom had

not moved at all. Over one-tenth of separated families had moved at least three times in the last four years, while just over three in a hundred of couple families had moved at this rate.

In terms of housing stress, 33% of separated families were in housing stress, whereas only 9% of couple families were in this category.

The sample of separated families in LSAC was smaller than couple families. Consequently, estimates based on smaller samples should be treated with more caution.

Changes in housing circumstances following a relationship separation

When families separate, the resident parent experiences large declines in equivalised family income. Among LSAC separated families, this decrease on average was just under $230 per week, whereas LSAC couple families experienced an increase in equivalised family income of $126 per week over the same period. Although these were substantial changes in family income for separated families, there was on average no increase in their housing costs following separation. How does this occur? Many separated parents moved to cheaper types of housing tenures; in particular private rentals and the "Other" tenure category. Private rentals and the "Other" tenure category were, on average, $100 and $200 a week less than a mortgage. For most separated families in private rentals, the transition meant that apart from their children, they were either living alone or with a new partner (69% and 22% respectively). However, for the separated families in the "Other" tenure category, they were primarily relying on their relatives for low-cost housing (for example, 43% were living with their parents). While we did not examine this issue in this report, overcrowding may be an issue for these households.

Housing and child wellbeing

There were some very large differences in children's developmental outcomes for housing tenure in particular, some differences for housing stress and little statistically significant difference for residential mobility. The evidence from the regression modelling in particular suggests that the largest differences in levels of receptive vocabulary and being at risk of clinical levels of emotional or behavioural problems are found when examining the housing tenure type of children in couple families. Children in couple families who were living in public housing had lower levels of receptive vocabulary and higher rates of emotional or behavioural problems than children living in families who owned or were paying off their own home. Children in couple families who were private renters also had lower levels of receptive vocabulary than children of home owners, and 8–9 year old children in this group also had higher rates of clinical levels of emotional or behavioural problems.

A different pattern of differences is evident by housing tenure for children living in separated families. Only 4–5 year old children in public housing had lower levels of receptive vocabulary, while 8–9 year old children living in separated families where the parent owned the home outright had far lower rates of emotional or behavioural problems than any other group of separated children.

Although separated families had much higher levels of housing stress than couple families, there were no statistically significant differences in their level of children's receptive vocabulary or rates of clinical levels of emotional or behavioural problems. Although there was evidence that children living in couple families who were in housing stress had significantly lower levels of receptive vocabulary than children living in couple families who were not, these differences were no longer evident once other demographic characteristics were taken into account. This suggests that the characteristics of couple families predispose them to housing stress and not housing stress per se, and explains the differences in the levels of receptive vocabulary by housing stress.

Surprisingly, residential mobility was not associated with children's receptive vocabulary or their emotional or behavioural problems. While the level of residential mobility of children in the LSAC sample was not very high, many studies have found statistically significant differences using a lifetime number of moves of three or more for adolescents (Jelleyman & Spencer, 2008). Perhaps the distance moved and whether children shifted schools may be one explanation for the lack of differences in the Australian context. Future research could investigate this issue; however, it may also be explained by the fact that compared to the United States, family supports in Australia are far more substantial.

Having a "home" is a fundamental need of all children. Findings from this report suggest that while residential mobility does not undermine children's development, living in types of housing tenure associated with instability—such as "doubling up"—is associated with some adverse effects. Even more substantial is the role played by the type of housing tenure, with those children living in public housing having much worse receptive vocabulary and much higher rates of behavioural or emotional problems. One explanation is that to be eligible for public housing, families need to have significant, long-term and ongoing needs, whereas a doubling up arrangement can be entered into fairly quickly. Housing costs may be another possible explanation, as families who were doubling up with relatives and those living in public housing had much lower housing costs. Compared to those living in public housing, those who were doubling up had housing costs that were $100 per week lower. Given that there were more limited adverse outcomes for these children compared to those in public housing, then perhaps one reason for this finding is the more limited financial burden of doubling up.

Further work could examine the role played by the financial stress of paying rent or a mortgage in undermining the ability of parents to provide resources for their children, or the financial stress of housing on the ability to parent effectively, so that housing policies can work to enhance the development of Australian children.

Acknowledgements

This paper uses unit record data from *Growing Up in Australia*: The Longitudinal Study of Australian Children (LSAC). The study is conducted in partnership between the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). The findings and views reported in this paper are those of the author and should not be attributed to FaHCSIA, AIFS or the ABS.

1 Introduction

Very little is understood about the influence of housing on children's development in Australia. For example, a recent review of the literature on this issue suggests that: "There is noticeably a lack of empirical research conducted in Australia on the links between housing and child development …" (Dockery et al., 2010, p. 2). In this report, we begin to fill the gap in the Australian evidence by providing the first national data on the influences of unstable housing on children's development using data from *Growing Up in Australia*: The Longitudinal Study of Australian Children (LSAC). Specifically, we examine the association between residential mobility, unstable housing tenure and housing stress on children's cognitive development and learning, and social-emotional functioning. Parental relationship breakdown often leads to unstable housing, and both of these are also key risk factors for homelessness, so we focus separately on the experiences of children living in separated and couple families.

The remainder of this report is structured as follows. Section 2 presents a review of the Australian and international literature on the association between residential mobility, housing stress and housing tenure on child outcomes. Section 3 provides an overview of some definitions relevant to housing and homelessness in Australia and the data used in this report. Section 4 provides a description of these aspects of the housing circumstances of Australian children. Section 5 focuses on the housing circumstances of children living in families where their parents have separated and where their parents are still coupled. Section 6 examines the relationships between child outcomes and housing characteristics for 4–5 and 8–9 year old children in separated and couple families, while controlling for other socio-economic characteristics of children's families. The final section discusses these findings and their implications.

2 Unstable housing and children's development

This section provides an overview of research examining the influence of residential mobility, housing stress and housing tenure on children's development. Given that unstable housing can lead to homelessness, we briefly discuss the implications of homelessness for children's development (see also Appendix A for a discussion of the definition of homelessness).

2.1 Residential mobility

High levels of residential mobility have consequences for the development of the children in these households. A recent systematic review of 22 studies reported higher levels of behavioural and emotional problems, increased teenage pregnancy rates, faster initiation of illicit drug use and reduced continuity of health care (Jelleyman & Spencer, 2008). Apart from these key findings, there are several other important points that were noted about the studies that were reviewed. First, although there was no agreed definition of "high levels of residential mobility", it was most often defined as being greater than 3 moves in the lifetime of primary school and adolescent children, and this level of mobility had statistically significant associations with negative outcomes (Jelleyman & Spencer, 2008). Second, there were only three studies that examined the influence of residential mobility on the outcomes of preschool-aged children and the evidence on the association with child outcomes was mixed, primarily because the studies had a small sample size and were unrepresentative. Third, Jelleyman and Spencer did not identify any Australian studies in their review—17 of the 22 studies were from the United States and a further three studies from Canada. Given that the Australian context is very different, it is important to have some nationally representative evidence.

There are several large-scale studies from the United States that also suggest that children who experience higher rates of residential mobility are at higher risk of school dropout (Astone & McLanahan, 1994), repeating a grade at school, or being suspended or expelled (Simpson & Fowler, 1994; Wood, Halfon, Scarlata, Newacheck & Nessim, 1993). The reasons that higher levels of residential mobility influence children negatively usually centres around associated disruptions to social connections within neighbourhoods, particularly if children have to move schools and make new friends (Dockery et al., 2010; Jelleyman & Spencer, 2008).

Newly divorced parents and their children have a higher rate of residential mobility than couple families. US evidence from a large longitudinal study suggests that parental divorce increases the probability that children will move out of their neighbourhoods (South, Crowder, & Trent, 1998). Australian data also suggest that the mobility rates of single-parent families are higher than couple families with children (Bell & Hugo, 2000), although the rates were equivalent to couple families without children and lone-person households. Also in Australia, 21% of single parents who moved did so as a result of separation, while a further 15% moved to reduce housing costs (Wulff & Bell, 1997).

High levels of residential mobility are also a characteristic of the homeless population (Bartholomew, 1999; McCaughey, 1992; Chamberlain & MacKenzie, 1998, 2008; Chamberlain, Johnson, & Theobald, 2007; Johnson, Gronda, & Coutts, 2008). While longitudinal data on families experiencing homelessness is sparse, there is some evidence that Australian families who experience homelessness had a history of being highly mobile. The most recent available Australian data indicate that 31% of children accompanying adults accessing homelessness support services had lived in 3 or more homes in the 12 months prior to receiving support and over 20% had lived in 2 or more homes in the month prior to receiving support (Australian Institute of Health and Welfare [AIHW], 1999). Over 60% of these children had experienced a house move in the previous 12 months, compared to the national average of 15% of all families.[1]

[1] The latter percentage is based on the authors' calculations using Table 2 of ABS (2009a).

2.2 Housing stress

Even where families are not highly mobile, financial problems—such as having difficulties paying the rent or mortgage (i.e., housing stress)—can have significant impacts on children. At 2003–04, 23% of Australian households in the bottom 40% of the income distribution were in housing stress. This equates to approximately 719,000 households (Yates, 2007).

Several studies have documented that housing affordability has negative consequences for children, although the findings are not clear cut. Bartfield and Dunifon (2005) found that there was a large and robust link between food insecurity of households with children and greater median rents in the United States. Harkness and Newman (2005) reported that children living in areas with the least affordable housing markets had worse educational outcomes than those who did not. Their study suggests the effect may be cumulative, as associations between housing affordability and educational outcomes were stronger for older children (12–17 years) than younger children (6–11). However, another large-scale US study suggested that children living in areas with higher housing costs fared no worse on cognitive tests and a measure of behaviour problems than those living in lower cost areas (Harkness, Newman, & Holupka, 2009).

There are two possible explanations given in the literature for the influence of housing costs on children's development. The *material hardship* explanation suggests that higher housing costs can significantly affect parents' ability to provide adequately for their children; for example, being able to afford food, school books, clothes and health care. The other potential explanation is derived from the *family stress* model of economic hardship, which postulates a series of mediated relationships between financial hardship, parents' mental health, conflict between caregivers, parenting practices and children's mental health (Conger & Donnellan, 2007). The experience of low income and lack of parental employment influences the number of financial hardship events experienced by the family, such as having difficulty paying the rent or mortgage. The experience of this hardship in turn, produces elevated levels of parental mental health problems, which has been associated with housing stress (Evans, 2006). The distress from this experience in turn produces aggression in the form of increased conflict in the parental relationship. Both parental relationship conflict and parental mental health problems are proposed to decrease warm parenting, and increase angry, critical and inconsistent parenting behaviours towards the child.

2.3 Housing tenure

Secure housing tenure gives people a sense of autonomy, certainty and control that leads to lower levels of stress and increases residential stability. It has been found to affect the mental health of parents and family stability, including children attending a fewer number of schools and having better educational performance and rates of school completion (Australian Housing and Urban Research Institute [AHURI], 2006).

Home ownership has also been associated with children performing better at school in terms of maths and reading (Haurin, Parcel, & Haurin, 2002), lower drop-out rates (Green & White, 1997), higher levels of school completion (Aaronson, 2000), and higher earnings as adults (Boehm & Schlottman, 1999). Better health and behavioural outcomes are also evident, with children having better health (Fogelman, Fox, & Power, 1989) and fewer behavioural problems (Boyle, 2002; Haurin et al., 2002). Dockery and colleagues (2010) reviewed possible explanations for the link between home ownership and children's outcomes, and found that where there were high levels of home ownership and higher quality housing, children had greater levels of consistency and stability in their lives, fewer school transitions and more stable school environments.

Public housing provides low-cost housing options and thus increases housing affordability and minimises housing stress. There is also greater security of tenure in public housing and therefore any detrimental impacts of residential mobility on children are also likely to be reduced. Regulation around the provision of public housing would also suggest that compared to other

low-cost options, housing quality should be greater; however, there is mixed evidence in this regard, with more overcrowding in public housing but lower rates of exposure to health hazards such as infestation and lead (see Dockery et al., 2010, for a review). To the extent that public housing is placed in disadvantaged neighbourhoods or concentrated in particular locations, another potential flow-on effect for children living in these dwellings is that they are exposed to lower quality neighbourhoods, which has been found to be detrimental to children's emotional and behavioural and learning outcomes in Australia as well as overseas (Edwards, 2005; Edwards & Bromfield, 2009).

Very little is known about the impact on children of "doubling up"—sharing housing with friends or relatives. There is some evidence to suggest that there are higher rates of childhood asthma in households that double up (Sharfstein & Sandel, 1998). One of the few large empirical studies examining the impact of doubling up on children found that in low-income families, doubling up had few adverse effects on children's physical or mental health, cognitive development or health care use (Park, Fertig & Allison, 2011).

2.4 Homelessness

Homeless families include, among others, those "sleeping rough"—in public places or, more commonly, in makeshift forms of accommodation such as motor vehicles (Chamberlain & Mackenzie, 2008). Homeless families also include those staying in emergency or other forms of supported accommodation; those doubling up with family and friends; and, to a lesser extent, those in accommodation with little security of tenure, such as boarding houses.

Over seven thousand families are homeless on any given night in Australia and this number is increasing (Chamberlain & Mackenzie, 2008). The most recent estimates of the number of homeless households conducted by the Australian Bureau of Statistics indicate an 11% increase in the number of households with accompanying children experiencing homelessness between 2001 and 2006. These families represent over 16,000 children who lack access to housing commensurate with the minimum culturally acceptable standard in Australia. These numbers are likely to underestimate the total number children touched by homelessness, as many homeless adults who access homelessness services report having children elsewhere (Chamberlain & Mackenzie, 2008).

Evidence from the Supported Accommodation Assistance Program (AIHW, 2007) suggests that three-quarters of the 54,700 children who accompanied their parents (86% accompanied a female parent) into Supported Accommodation Assistance Program services in 2005–06 were under 10 years old. The main reason for seeking support for females with children was domestic or family violence (54%) and relationship or family breakdown (8%). For children accompanying males, the main reasons were relationship or family breakdown (20%) and eviction or being asked to leave (14%), while for couples with children, the main reasons were eviction or their previous tenancy had ended (24%) or financial difficulties (20%). Couples with children had the highest rates of being turned away from services compared to other groups (78% compared to 54%), mainly because of insufficient accommodation being available.

Homeless families and children are difficult to reach and their circumstances can change rapidly, so the available evidence is not of high quality; however, it does suggest that homeless children and families have particularly poor health outcomes. For families, these poorer outcomes can include experiencing respiratory disease, alcohol and drug dependence, mental health problems and suicide, accidents and violence (Shaw, 2004). For children who are homeless, the research evidence suggests that they have more problems in the following areas than the general population: mental health and behavioural problems, developmental delay, health problems including iron-deficiency anaemia, asthma, otitis media, being overweight and obese, and cognitive and learning difficulties (Buckner, 2009; Grant et al., 2007). However, US evidence suggests that the difference between homeless children's outcomes compared to other children in low-income housing is not that large, suggesting that many of the drivers of the poorer health

outcomes in children are related to poverty and not homelessness per se (Buckner, 2009; Grant et al., 2007; Park et al., 2011).

3 Definitions and data

This section introduces *Growing Up in Australia*: The Longitudinal Study of Australian Children and explains some of the terminology used in the housing literature.

3.1 Growing Up in Australia: The Longitudinal Study of Australian Children

LSAC is a nationally representative large-scale longitudinal survey of two birth cohorts of Australian children who were aged 0–1 years (baby or B cohort) and 4–5 years (kindergarten or K cohort) when the first wave of interviews was conducted in 2004.[2] The second wave was conducted in 2006, at which time the B cohort was aged 2–3 years and the older K cohort was aged 6–7 years. At the time of the third wave in 2008, the B cohort was aged 4–5 years, the same age the K cohort had been in 2004, and the K cohort was aged 8–9 years. Combining both cohorts gives us a large, representative sample of children 4 years and under in 2004 who were surveyed approximately every two years between 2004 and 2008. The longitudinal nature of LSAC provides a rich source of information on the housing transitions of the children sampled over this period.

LSAC provides detailed information on a range of measures of child wellbeing in addition to the socio-economic and demographic characteristics of the study child's family. It also contains detailed information on the circumstances of the study child's housing, including the type of dwelling in which the child's family lives, the tenure arrangement under which the child's family resides in their dwelling and the number of dwellings the child has lived in between waves. LSAC is therefore a good source of data for analysing the impact of unstable housing on the developmental outcomes of Australian children.

The majority of information about the study children and their families is collected from the "person who knows the child best" (Parent 1). This person is in most cases the study child's biological mother. In addition, information is collected about the child from "another parent of the study child … or the partner of Parent 1". Where present, this person is designated Parent 2 and is generally the biological father of the study child. Parent 1 and Parent 2 are generally the same person in both waves of the study.

3.2 Defining the characteristics of housing in LSAC and the Survey of Income and Housing

The survey instrument used in LSAC to elicit information on families' housing tenure is similar to that used by the ABS in its Survey of Income and Housing (SIH) (ABS, 2007). Since both LSAC and the SIH gather data using similar methods, it is possible to construct tenure statistics from the LSAC data that allow comparison with those released by the ABS. It also follows that any statistics constructed from the LSAC data should be interpreted according to the definitions used by the ABS in the SIH. Text box 1 summarises the most relevant definitions.

[2] The study children of the B cohort were born between March 2003 and February 2004. The children of the older K cohort were born between March 1999 and February 2000.

Text box 1 Housing definitions

Owner (of dwelling): A household in which at least one member owns the dwelling in which the household members usually reside. Owners are divided into two classifications:

- *owner with a mortgage*—there is any outstanding mortgage or loan secured against the dwelling; and
- *owner without a mortgage*—there is no mortgage or loan secured against the dwelling.

Landlord type: For renters, the type of entity to whom rent is paid or with whom the tenure contract or arrangement is made. Renters are classified into one of the following categories:

- *State/Territory housing authority*—where the unit (i.e., household, income unit or person, where applicable) pays rent to a state or territory housing authority or trust;
- *private landlords*—where the unit pays rent to a real estate agent or to another person not in the same household;
- *person in the same household*—where the unit pays rent to a person who resides in the same household; and
- *other*—where the unit pays rent to the owner/manager of a caravan park, an employer (including a government authority), a housing cooperative, a community or church group, or any other body not included elsewhere.

Other tenure type: A unit that is neither an owner (with or without a mortgage) or a renter. Includes rent free, life tenure, rent/buy and shared equity schemes.

Source: ABS (2009), pp. 104–106

Housing tenure

The ABS classifies households where at least one member owns the dwelling as "Owner without a mortgage". If the household reference person states that they currently have a mortgage or a secured loan against the dwelling then the household is classified as an "Owner with a mortgage". Households that state that someone in the household rents the dwelling are classified as renters. The SIH enumerates two different types of renters according to the type of landlord to whom the renter pays their rent. Those who pay rent to a State or Territory housing authority are classified as "Renter—State/Territory housing authority"—more often referred to as public renters. Those who state that they pay rent to a private landlord who does not reside in the same household are classified as "Renter—Private landlord".

The balance of tenure includes those who rent their dwelling from "other" landlords and those who have an alternative tenure type ("Other landlord/Other tenure type"). This includes those who rent in caravan parks, those who rent from housing cooperatives or community organisations, those who occupy a dwelling rent free and those who occupy their dwellings as part of a life tenure, rent/buy or shared equity scheme. According to the 2007–08 SIH, this represents 6% of all Australian households (ABS, 2009b).

Residential mobility

While those parts of the LSAC questionnaire pertaining to tenure are similar to the instrument used in the SIH, this is not the case for the questions used to elicit information on the mobility of the child's household. In the first wave of LSAC in 2004 in both cohorts, Parent 1 was asked "How many homes has [child] lived in since he/she was born?"

It is difficult to infer how mobile the child's household was prior to 2004. This is particularly problematic for children in the K cohort who, at Wave 1 in 2004, were 4–5 years of age. In the absence of knowledge of the timing of moves prior to 2004 for the K cohort, it is not possible to construct a measure of mobility prior to the first wave that is consistent across the cohorts. It is for this reason that we consider housing mobility experienced by both cohorts between the first

data collection in 2004 and the most recent data collection 2008, for those study children whose parents responded in all three waves.[3]

Housing stress

In addition to house moves and tenure type, Parent 1 was also asked, in all three waves of LSAC, how much the family—not the household—pays in board, rent, mortgage and cite payments for their residence. LSAC also contains information on the gross income of both parents in addition to "income of members of your household aged 15 years or over".[4] We use these data to construct measures of weekly parental and household income which are used to create a measure of housing stress. For the purposes of this report, families are defined as being in housing stress if they are:

- in the bottom two quintiles (or bottom 40%) of the equivalised gross income distribution as measured by the 2007–08 Survey of Income and Housing; and
- spend at least 30% of their gross family income on housing costs.

This measure of housing stress is commonly referred to as the 30/40 rule. We use gross income for the reason that this measure of income is included in LSAC. This is in contrast to the Survey of Income and Housing, which includes measures of both gross and disposable income. As noted by Yates and Gabrielle (2006) "Refinements of this basic measure will give (sometimes only marginally) different estimates of the numbers and types of households in housing stress but the incidence of housing stress amongst different household types is relatively robust to different measures..." (Yates and Gabrielle, 2006 p. ix). While the income threshold and housing cost percentage are ultimately arbitrary, they are based on the assumption that families with higher equivalised incomes who choose to spend more than 30% of their gross income on housing costs are making housing expenditures that are discretionary.

[3] We focus on the non-attriting sample because the Wave 3 questionnaire asked parents who had not responded to Wave 2 "How many homes has the child lived in the last two years?". We cannot therefore ascertain the housing mobility these children may have experienced over the two years following the first data collection.

[4] This question was not asked in Wave 1.

4 Dimensions of housing: Tenure, mobility and cost

This section describes the housing circumstances of LSAC families.

Table 1 presents the tenure type of LSAC families who responded in each wave of LSAC. Not surprisingly, the percentage of families who own their home outright increased by 1.6–1.7% in the two years between each data collection. Interestingly, the number of families who took out a mortgage to buy a home increased by 2% between 2004 and 2006 before declining by 1.1% between 2006 and 2008. The largest decrease between 2004 and 2006 was in the percentage of families living with relatives, followed closely by those classified as "Other landlord/other tenure type". Between 2004 and 2005 there was a small increase in the percentage of families living in public housing, with little change in these percentages between 2006 and 2008. In contrast, the percentage of families living in private rental fell by 1.6% between 2004 and 2006, but remaining at about 16 per cent of families thereafter.

Table 1 Housing tenure type, LSAC families in 2004, 2006 and 2008

Housing tenure type	2004	2006	2008
		%	
Owner without a mortgage	9.6	11.3	12.9
Owner with a mortgage	61.1	63.1	62.0
Renter—Private landlord	17.1	15.6	15.8
Renter—State/Territory housing authority	2.1	3.1	3.1
Other landlord/Other tenure type	10.1	7.0	6.2
Total number	8,432	8,335	8,362

Table 2 presents the number of house moves experienced by LSAC families over the four years between 2004 and 2008. Forty-five per cent of families experienced at least one move, suggesting that moving house is a common experience for children within these age groups. Most children who experience a house move experienced a single move (27.4%); however, a significant minority experienced two or more moves (17.7%).

Table 2 Number of house moves between 2004 and 2008, LSAC families

House moves	*N*	%
None	4,636	54.9
One	2,314	27.4
Two	1,013	12.0
Three	321	3.8
Four	101	1.2
Five or more	59	0.7
Total	8,444	100.0

The type of housing tenure in which families live depends in large part on need, but also to a large degree on what they can afford. Table 3 provides the nominal housing costs paid by LSAC families per week for each tenure type in 2004, 2006 and 2008. As would be expected, housing costs rose from an average across tenure types of $239 in 2004 to $316 in 2008, a 32% increase. The housing costs of families who were mortgagees increased by a little over $100 per week (33%) from 2004 to 2008. Costs for families who were private renters increased by 32% or $74 per week during this time. The housing costs of families living in a State or Territory housing authority dwelling also increased substantially by $88, or an 82% increase in 4 years. There were much smaller increases in housing costs for families living in premises covered by the other landlord/other tenure type—the increase in weekly costs was $8 or 9% from 2004 to 2008.

Table 3 Housing costs per week, by housing tenure type, LSAC families in 2004, 2006 and 2008

Housing tenure type	2004	2006	2008
Owner without a mortgage	$0.00	$0.00	$0.00
Owner with a mortgage	$308.93	$353.78	$411.03
Renter—Private landlord	$228.20	$253.93	$302.41
Renter—State/Territory housing authority	$107.04	$132.01	$194.99
Other landlord/Other tenure type	$88.15	$90.87	$95.69
Total	$238.72	$273.84	$316.37
Number	7,767	8,032	7,981

Different types of housing tenure have the potential to offer more housing security. Table 4 presents the average number of house moves by LSAC families between 2004 and 2008. The families who were living in private rental accommodation had, on average, the highest rates of house moves, with families in this tenure type in 2008 reporting 1.4 moves on average in a four-year period. Next highest in terms of mobility were those families in the other landlord/other tenure type, who had moved 1.2 times in a four-year period. Families living in public housing (Rent—State/Territory housing authority) in 2008 had fewer number of house moves, with less than one move in a four-year period. Families who owned their home outright or who had a mortgage had the lowest number of moves, with 0.4 and 0.5 moves respectively.

Table 4 Average number of house moves between 2004 and 2008, by housing tenure type of LSAC families in 2008

Housing tenure type	Average no. of house moves	N
Owner without a mortgage	0.4	8,12
Owner with a mortgage	0.5	5,150
Renter—Private landlord	1.4	1,441
Renter—State/Territory housing authority	0.8	176
Other landlord/Other tenure type	1.2	848
Total	0.7	8,427

Table 5 gives an indication of the level of housing costs, and equivalised and gross family income by housing stress for each wave of LSAC. Together, this information provides a picture of the extent to which housing stress is related to housing costs, and equivalised and gross family income. There are several points to note. First, the table shows that, on average, families who were not in housing stress had higher family incomes than those who were not, which is to be expected given that only families living in the lowest 40% of the household income distribution can be in housing stress by definition. Second, the trends over time suggest that for those in housing stress, housing costs increased by a greater amount between 2004 and 2006 and again between 2006 and 2008 than for those who were not in housing stress. Moreover, for those in housing stress, families' equivalised and gross family incomes did not increase at the same rate as for those who were not in housing stress.

Table 5 Average housing costs, equivalised family income and gross family income by housing stress experienced by LSAC families in 2004, 2006 and 2008

Year	Not in Housing Stress		Housing Stress	
2004	Mean	N	Mean	N
Housing Cost	$233	6,582	$249	1,281
Equivalised Family Income	$767	6,582	$277	1,281
Gross Family Income	$1,576	6,582	$552	1,281
2006				

Housing Cost	$268	7,089	$294	1,158
Equivalised Family Income	$819	7,089	$292	1,158
Gross Family Income	$1,735	7,089	$612	1,158
2008				
Housing Cost	$323	6,635	$372	1,176
Equivalised Family Income	$948	6,635	$346	1,176
Gross Family Income	$2,055	6,635	$743	1,176

5 The role of parental separation in housing mobility and housing stress

In this section, we investigate the role that parental separation plays in unstable housing by comparing separated and couple families on their tenure type, residential mobility and housing stress. In addition to describing changes in the level of housing stress that coincide with parental separation, we examine changes in equivalised parental income and housing cost. Our definition of separated families concerns where the study child has a biological or adoptive parent living elsewhere (these parents may or may not have cohabited with the resident biological parent). This definition includes biological parents who have re-partnered with non-biological parents. We include these families because (a) we know that factors that predispose couples to separate are likely to make them fundamentally different to never-separated couples (Baxter, Edwards & Maguire, in press), and (b) because the act of separation often precipitates changed housing circumstances. Couple families are essentially couples that have never separated, which is sometimes referred to as "intact" families.

Table 6 highlights the stark differences between the type of housing tenure of separated families and couple families. Families who have separated prior to Wave 3 are far less likely than couple families to own their home outright or be paying off a mortgage, and they are also far more likely to be in private rentals. One in ten separated families are residing in public housing, compared to one in one hundred couple families. Over one in ten separated families are living in the other tenure types, compared to one in twenty couple families. These findings suggest that housing costs drive decisions about housing choices in the face of separation or divorce. In a later section, we will examine the dynamics of this decision.

Table 6 Housing tenure type, LSAC families, by family form at Wave 3

Housing tenure type	Couple	Separated	All
		%	
Owner without a mortgage	14.4	5.6	12.9
Owner with a mortgage	68.3	33.8	62.3
Renter—Private landlord	11.1	37.6	15.7
Renter—State/Territory housing authority	1.3	10.9	3.0
Other landlord/Other tenure type	4.9	12.2	6.2
Total	100.0	100.0	100.0
Number	6,642	1,387	8,029

As with housing tenure, there are also very large differences in housing mobility of couple and separated families (Table 7). Two out of three couple families had not moved since 2004, whereas two in three separated families had moved at least once. A further 26% of couple families had moved only once, compared to 33% of separated families, but 14% of separated families, compared to only 7% of couple families, had moved at least three times in the four years.

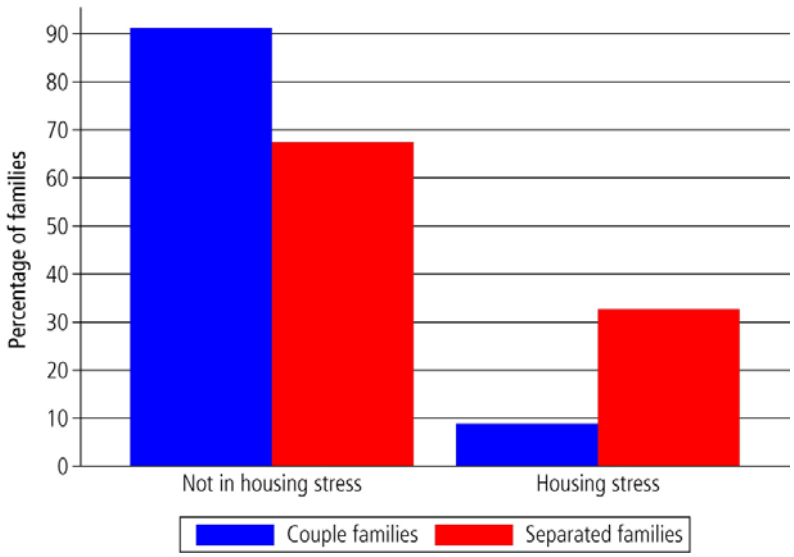
Table 7 Number of house moves between 2004 and 2008, LSAC families, by family form

House moves	Couple	Separated	All
		%	
None	59.9	31.6	55.0
One	26.2	32.9	27.4
Two	10.0	21.7	12.0
Three	2.8	8.3	3.8
Four	0.8	3.3	1.2
Five or more	0.3	2.3	0.7
Total	100.0	100.0	100.0
Number	6,693	1,415	8,108

Separation is likely to affect the amount of equivalised household income available in the study child's household. Separation often involves the parent earning the higher income leaving the household, leading to a reduction in the household's income (Qu, Weston & Parker, 2007). This reduction in income may, however, be offset (though often only partly) by eligibility for, or increases in, income support and child support payments.

It is also likely that separation will precipitate a change in housing costs. This may happen immediately following the separation if the child's primary caregiver leaves the family home, with the child taking up a new tenure. This may also happen in those instances where the primary caregiver remains in the family home immediately following the separation, but subsequently moves house. This would be due to the reduction in household income available to finance housing costs that accompany the loss of income earned by the parent who leaves the child's household. In short, separation will, over time, influence both components of housing stress—family income and housing cost.

Figure 1 presents the proportion of couple and separated households in housing stress at Wave 3 of LSAC. The key point to note is that separated families are more likely to be in housing stress than couple families. There were 33% of separated families in housing stress compared to 9% of couple families.

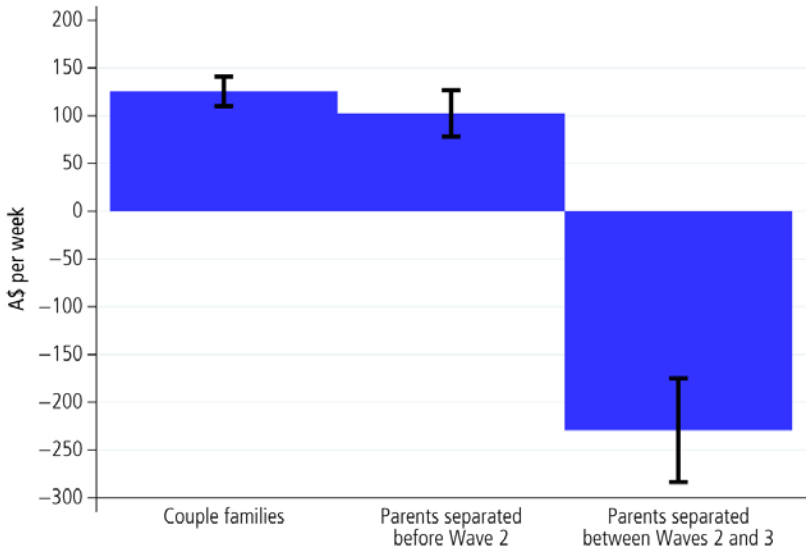


Source: LSAC

Figure 1 Proportion of couple and separated families, by housing stress at Wave 3

Figure 2 illustrates the average change in equivalised parental income between the second and third LSAC waves for families where the study child's parents remained partnered and for those

whose parents had separated at some point prior to the third wave in 2008. We present results for children who had experienced separation according to whether their parents were recently separated; that is, had separated between Waves 2 and 3, in addition to estimates for all other separated parents at Wave 3.



Source: LSAC

Figure 2 Change in weekly equivalised family income between Waves 2 and 3, by family form

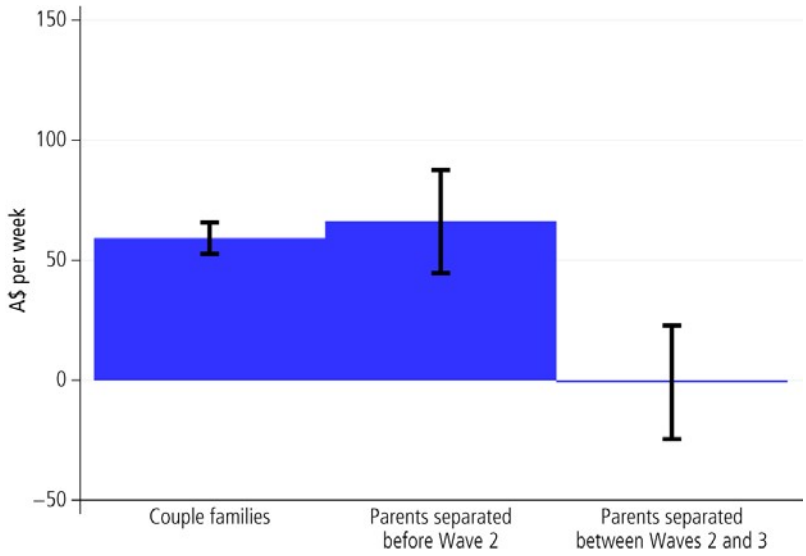
The first two bars in the figure show that families where parents remained partnered and where the study child's parents had separated prior to the second wave increased their equivalised income over time. Couple families experienced an increase in average equivalised family income of about $126 dollars per week. For parents who separated prior to Wave 2, this increase was somewhat smaller at $102 per week on average.

These increases in equivalised family income may at first appear strange. It is important to keep in mind that these are nominal dollar values relevant to the years in which these data were collected—2006 and 2008. Equivalised family income would be expected to increase over a two-year period, in line with wage and salary increases and income support payments that are tied to Male Total Average Weekly Earnings and the Consumer Price Index (Harmer, 2008). In addition to these income increases, some separated parents will have re-partnered since the first wave in 2004. These parents' new partners could therefore bring additional income into the child's household.

The final bar in Figure 2 indicates the negative impact of separation on equivalised family income. Adjusting for the change in household composition, the loss of the income of the child's other parent results in a reduction in equivalised family income of just under $230 per week. This represents a 34% decline in equivalised income from an average of $701 per week in 2006. Had these families experienced increases in equivalised family income similar to those whose parents remained partnered at Wave 3, this would represent an average decline in equivalised family income of 52%.

It is important to keep in mind that the figure provides *average* changes in equivalised income over a two-year period between Waves 2 and 3. While families whose parents separated between the first and second wave may experience a similar increase in their equivalised family income, these increases occur from markedly different levels of income at Wave 2. Families whose parents remained partnered at Wave 3 had an average weekly equivalised family income of $813 per week in 2006, approximately double that of families whose parents had separated prior to Wave 2.

Figure 3 presents the average change in weekly housing costs between Waves 2 and 3 for the same types of families as those presented in Figure 2. There were increases in average housing costs between the second and third waves for families where the study child's parents remain partnered and for those whose parents separated prior to Wave 2. The average increase in housing costs for these parents was approximately $60 per week. For parents who separated before the second wave, the increase in average weekly housing costs was higher at $66 a week. It is interesting to note that the families of children who had separated most recently did not experience a statistically significant increase in their average weekly housing costs. This indicates that the housing costs of the recently separated decreased in real terms after separation. How could this occur?



Source: LSAC

Figure 3 Change in weekly housing costs between Waves 2 and 3, by family form

Table 8 illustrates transitions between tenure types from the second to third waves of LSAC for those parents who separated at some point between these waves. Overall, the table indicates transitions toward private rental and the "other" tenure category. Of the parents who separated between Waves 2 and 3, 163 (61%) had been mortgagees prior to separation at Wave 2. While many remained mortgagees after separation, 39% of these (24% of the total sample) moved into private rental. The second largest tenure type at Wave 2 was private rental at 21%. While the vast majority of this group (70%) remained in private rental after separation, just over 21% moved into the "other" tenure type. While only a fairly small proportion of parents who separated between Waves 2 and 3 owned their own home prior to separation, 25% of these parents moved to "other" tenure.

Table 8 Transitions between housing tenure types from Waves 2 to 3 for parents who separated between Waves 2 and 3

Wave 2 housing tenure type	Wave 3 housing tenure type					Total	
	Owner without a mortgage	Owner with a mortgage	Renter—Private landlord	Renter—S/T housing authority	Other landlord/ Other tenure type		
			%			%	*N*
Owner without a mortgage	25.0	25.0	25.0	0.0	25.0	100.0	20
Owner with a mortgage	6.1	46.6	39.3	1.2	6.8	100.0	163
Renter—Private landlord	1.8	1.8	70.2	5.3	21.1	100.0	57
Renter—State or Territory housing authority or Other landlord/Other tenure type	0.0	19.2	38.5	15.4	26.9	100.0	26
Total	6.0	32.7	44.7	3.4	13.2	100.0	266

This pattern of tenure transitions explains the real decrease in average housing costs experienced by recently separated parents. As was indicated in Table 3, the average housing costs of LSAC families for private rental is about $100 a week less than the average weekly mortgage payment. The public housing and "other" tenure types are the most affordable tenure types. At Wave 3, families in "other" tenure types were, on average, paying one third of the housing costs paid by private renters while families in public housing were paying two-thirds.

Table 9 gives an indication of the role that tenure type played in housing stress among all separated families at the time of the third data collection in 2008. It is not surprising that none of the separated parents who owned their home outright were in housing stress. Despite having experienced a substantial decline in equivalised household income following separation, these families had limited financial costs associated with their tenure[5]. A smaller percentage of separated parents whose tenure type was "other" or were in public housing were in housing stress than those who were mortgagees or in the private rental market. Over half of separated parents were in housing stress if they were mortgagees or private renters.

Table 9 Separated parents by housing stress at Wave 3, by housing tenure type

Wave 3 Tenure	Not in Housing Stress	Housing Stress	Total
Owner without a mortgage	100.00	0.00	100.00
Owner with a mortgage	49.65	50.35	100.00
Renter - Private landlord	47.06	52.94	100.00
Renter - State/territory housing authority	65.71	34.29	100.00
Other landlord / Other tenure type	76.99	23.01	100.00
Total	55.74	44.26	100.00

In summary, the reduction in average equivalised household income following separation is accompanied by a reduction in real housing costs for many families. Separated parents achieve this reduction in real housing costs by moving into private rental arrangements, public housing or into "other" tenure. This raises two questions: What precisely does "other" tenure involve? And why is it that the housing costs of these separated parents are so low? Table 10 suggests some answers to these questions.

[5] While these families would not pay a mortgage, they would pay council rates and the costs of upkeep of their home.

Table 10 presents the percentage of households that contain various types of relatives, or a partner, for a given tenure type for all separated parents at Wave 3. The second row of the penultimate column of the table indicates that 43% of separated parents who had the "other" tenure type lived with at least one of their parents, 19% had re-partnered and 14% lived with at least one sibling, while a further 19% lived with another relative. These percentages are not mutually exclusive; that is, there may have been some separated parents who lived with their parents *and* siblings after separation.[6] Those whose tenure type was "other" were also the least likely to be sole parents. While some of the percentages in this "other" column are based on small sample sizes and are therefore less reliable, the broad conclusion from all these percentages in Table 10 is that the "other" tenure type was primarily made up of separated parents who were "doubling up". Table 3 would suggest that where these parents pay rent to their family members, it is often a nominal amount compared to the market rents paid in the private rental market.

The first two columns in Table 10 suggest the importance of a dual income in the maintenance of home ownership. Twenty-two per cent of all those who owned their homes outright had re-partnered at the time of the third wave in 2008, while 44% of home owners with mortgages had re-partnered. It is interesting to note that only sole parents' living arrangements were well represented among home owners (68%), as many of the separated parents would have only recently separated and may have been in the process of finalising the sale of the family home at the time of Wave 3. Sole parents' living arrangements were also well represented among those in public housing (69%).

Table 10 Separated households containing other family members, by each housing tenure type that contains relatives, Wave 3

Relatives	Owner without a mortgage	Owner with a mortgage	Renter—Private landlord	Renter—S/T housing authority	Other landlord/ Other tenure type	Total
			%			
Partner	22.1	43.7	31.7	21.9	18.9	452
Parent	6.5	4.7	3.8	3.3	43.2	125
Sibling	1.3	2.1	3.3	2.0	13.6	54
Other	3.9	4.9	8.1	8.0	18.9	112
Sole parents	67.5	48.6	57.6	68.9	33.1	647

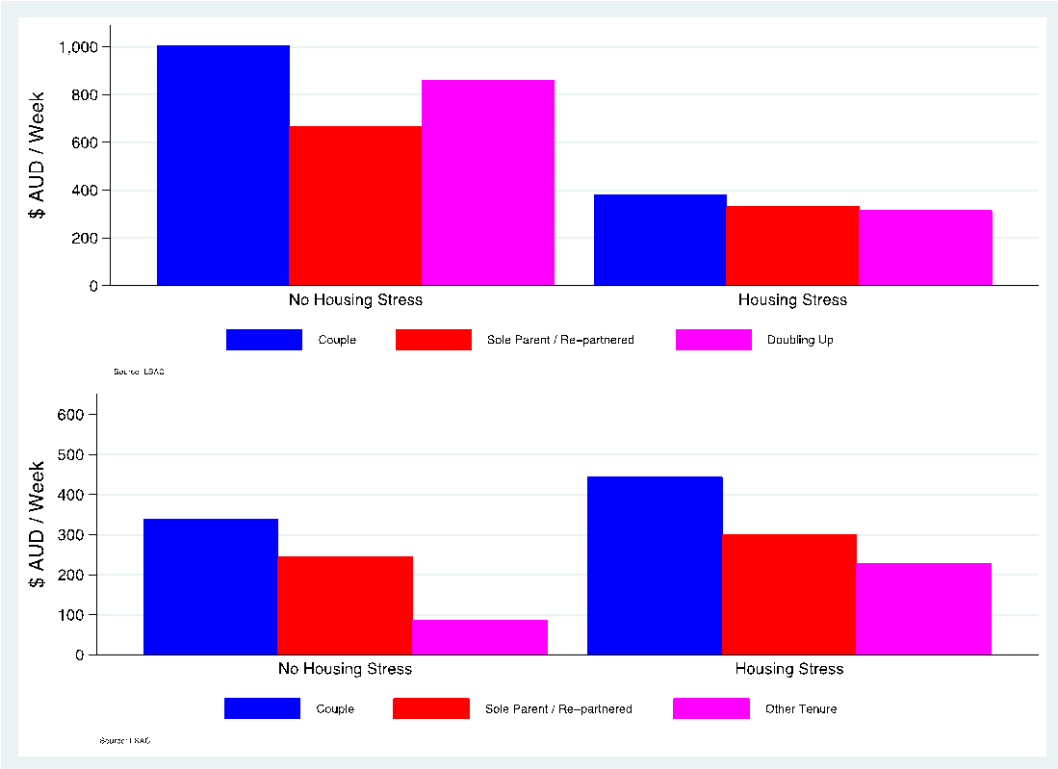
As illustrated earlier in this section, parental separation changes the equivalised household income of the LSAC study child's household and this would appear to have consequences for tenure choices made by the resident parent. These tenure transitions often involve a move to private rental and, in many instances, doubling up with family members. We now examine in more detail the role that equivalised household income and tenure played in the determination of the relative housing stress of separated and couple households at Wave 3.

Figure 4 plots average equivalised household income and average nominal housing costs at Wave 3 for families in housing stress and those who were not, by different types of housing tenure. The top panel shows that couple families and separated households who were doubling up and were in housing stress had lower equivalised household incomes than those who were not. Couple families who were not in housing stress had an equivalised household income of $1,006, compared to $382 ($p < .05$) for those were in housing stress, and separated families who were doubling up also had significantly higher equivalised incomes when not in housing stress ($856, compared to $314, $p < .05$, for those in housing stress). However, this was not the case for sole parent or re-partnered families who did not double up, for whom the equivalised household

[6] Another consequence of this is that adding down all but the final rows in a column and subtracting this figure from 100 does not necessarily provide the percentage of sole parents for that tenure type. These percentages are, however, not all that different.

income was not significantly different ($244 for those not in housing stress, compared to $300, $p > .05$, for those in housing stress).

The bottom panel of Figure 4 shows that average housing costs were significantly lower for couple families, separated or re-partnered families, and separated or re-partnered families in other tenure who were not in housing stress, compared to those who were in housing stress. These differences were all statistically significant, with fairly large differences in housing costs for couples ($337, compared to $443, $p < .05$, for those in housing stress), sole-parent or re-partnered families ($667, compared to $331, $p < .05$) and those sole-parent or re-partnered households who were in other tenure ($87, compared to $228, $p < .05$). For separated parents who were in housing stress and not in "other" tenure, it seems higher housing costs were the main factor contributing to housing stress, while for couple families, the combination of lower equivalised household income and higher housing costs seems to contribute to being in housing stress.



Source: LSAC

Figure 4 Average equivalised household income and housing costs for all couple and separated families at Wave 3, by housing stress

6 Housing and child wellbeing

This section examines the extent to which child outcomes vary according to their family's tenure, housing mobility and housing stress for children in couple and separated families. First, we display children's outcomes by each of the three housing variables in 2008 for couple and separated families without taking into account any other factors. Then we use regression modelling to take account of child and parent demographic variables—such as child gender and age, child Indigenous status, the highest level of parental education, family income[7] and whether any parent was born overseas—to see whether systematic differences in these variables explain the differences in children's outcomes. We run separate regression models for each housing variable (tenure, mobility and housing stress).[8] Summary results of the regression models are included in the body of the report and full details of the results are included in Appendix B.

LSAC contains a comprehensive set of measures of child wellbeing. One such measure is the short form of the Peabody Picture Vocabulary Test (PPVT). The PPVT is designed to measure a child's knowledge of the meaning of spoken words (receptive vocabulary) and verbal ability. The specific version of the PPVT used in LSAC[9] uses a book of 40 display pictures. The child points to (or says the number of) a picture that best represents the meaning of the word read out by the interviewer. These have been standardised so that they are presented in standard deviation units. Standard deviation units are a standard measure of the size of effect or an effect size. One standard deviation difference (an effect size of 1.0) between two groups represents a 34% improvement in the mean of the whole population. Presenting results in effect sizes enables a discussion of the strength of differences between groups or associations between variables. A general rule of thumb is that effect sizes between 0.1 and 0.2 are "small"; effect sizes between 0.3 and 0.5 are "medium" and effect sizes 0.6 and above are "large" (Cohen, 1988). However, these rules of thumb are very broad generalisations (Hill, Bloom, Black, & Lipsey, 2007).

Child behavioural and emotional outcomes are measured using the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). The four subscales included in the total score are:[10]

- *Hyperactivity*—fidgetiness, concentration span and impulsiveness;
- *Emotional Symptoms*—frequency of display of negative emotional states (e.g., nervousness, worry);
- *Peer Problems*—ability to form positive relationships with other children; and
- *Conduct Problems*—tendency to display problem behaviour when interacting with others.

Each subscale is calculated from the mean score of five questions and all the subscales are added together to form a total SDQ score. From the total SDQ score, cut-offs can be derived that suggest that children who score above these are at risk of clinical diagnoses of behavioural or emotional problems.

The verbal ability and behavioural and emotional outcomes of the LSAC cohorts used in this report are those measured at the time of the third wave in 2008, when the K cohort were aged 8–9 years and the B cohort were aged 4–5 years. LSAC contains both parent and teacher responses to the SDQ. We chose parent reports to ensure consistency in the respondent across the cohorts and to minimise the amount of missing data. The child's "teacher" at Wave 3 is likely to have

---

7 We control for family income using a binary indicator of whether the family is in the bottom two quintiles of family income for the wave.

8 For the continuous outcomes we use ordinary least squares (OLS) regressions, while for the binary outcomes we use probit regressions.

9 The Peabody Picture Vocabulary Test, Third Edition (PPVT-III) Form IIA is copyrighted by Lloyd Dunn, Leota Dunn, Douglass Dunn. American Guidance Service, Inc., 1997, and published exclusively by AGS Publishing. Permission to adapt and create a short form for LSAC was granted by the publisher. The PPVT- III–LSAC Australian Short-Form was developed by S. Rothman, Australian Council for Educational Research (ACER), Melbourne, from the PPVT-III Form IIA, English edition.

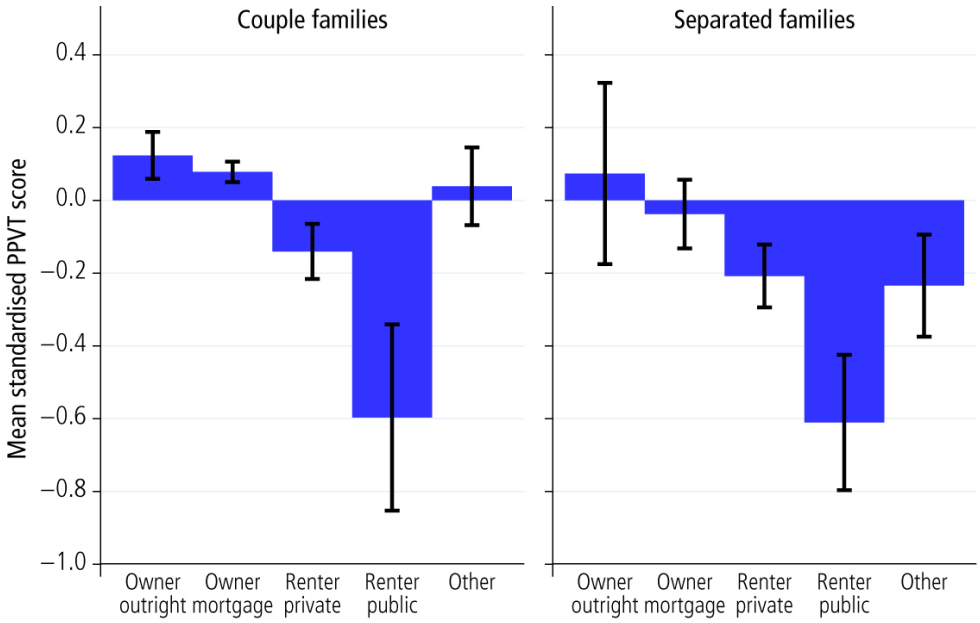
10 There is also an additional SDQ subscale that measures prosocial behaviour. We exclude this since it is not one of the subscales used in the formation of the total SDQ scale.

been a kindergarten teacher or child care provider for the B cohort, while for the K cohort, the child's teacher would almost certainly have been a primary school teacher.

6.1 Housing and cognitive outcomes

Figure 5 presents mean standardised PPVT scores for LSAC children according to their family's tenure type at the time of the third wave of LSAC in 2008. The "**I**" bars overlaying the columns represent 95% confidence intervals; non-overlapping "**I**" bars across two columns mean that we are 95% confident that they are different from one another.[11] Results are presented separately for couple and separated families. For couple families, children whose parents own their home outright had PPVT scores that are 12% of a standard deviation higher than that of the average child at Wave 3, a difference that is statistically significant at a 5% level of significance. The PPVT scores of the children of mortgagees were also higher than average, at 8% of a standard deviation. The children of public housing tenants were observed to have by far the lowest PPVT scores, 60% of a standard deviation lower than the mean. Children whose parents were renting also had lower PPVT scores compared to the average child, by 14% of a standard deviation. Among separated families, the pattern of children's receptive vocabulary scores is very similar to couple families, except that the 95% confidence intervals are much wider, reflecting the statistical imprecision that arises due to the smaller numbers of children living in separated families.

Overall, there was a considerable amount of variation in the receptive vocabulary of children across tenure type. The difference in verbal ability between the children of homeowners and those of public housing tenants was large—about two-thirds of standard deviation—and this is statistically significant for children in couple and separated families. There were also large differences in verbal ability between children living in public housing and private rental properties for both couple and separated families. Compared to homeowners and private renters, children in couple families who double up had average levels of verbal ability, while children in separated families who double up had lower levels; however, these differences were not statistically significant. Even though children living in separated families that double up had low scores on the PPVT, their levels of receptive vocabulary were significantly higher than children from separated families living in public housing.



Source: LSAC Wave 3

Figure 5 Children's receptive vocabulary, by housing tenure type at Wave 3, B and K cohorts

[11] Standardised PPVT scores are calculated for each cohort separately.

Table 11 presents the mean differences in receptive vocabulary for children in the various types of housing tenure, using children who live in homeowning families as the reference. Using regression modelling, these results take account of child gender, Indigenous status and age as well as the highest level of parents' education, parents' country of birth and equivalised household income.[12] To test to see whether there are sensitive periods in children's development, we present the results separately for children aged 4–5 and 8–9 years. Given that the housing experiences of children of parents who have separated were so different, the results for children from separated families are presented separately to those from couple families.

In broad terms, the results are very similar to those presented in Figure 5, suggesting that the demographic variables included in the regression modelling are not confounding the simple descriptive results. For couple families, the level of receptive vocabulary was significantly lower for private renters when compared to homeowners. There was no statistically significant difference between homeowners and those in the "Other" category. For children living in couple families, there was an indication that 4–5 year olds were more sensitive to housing tenure than the older age cohort. Children living in public housing who were aged 4–5 years had significantly lower levels of receptive vocabulary compared to children of the same age in families who owned their home outright. This was the case for children living in couple families and for separated families in particular. In this instance, 4–5 year old children from separated families living in public housing had receptive vocabulary almost one standard deviation lower than children who lived in homeowner families, which is a very large difference.

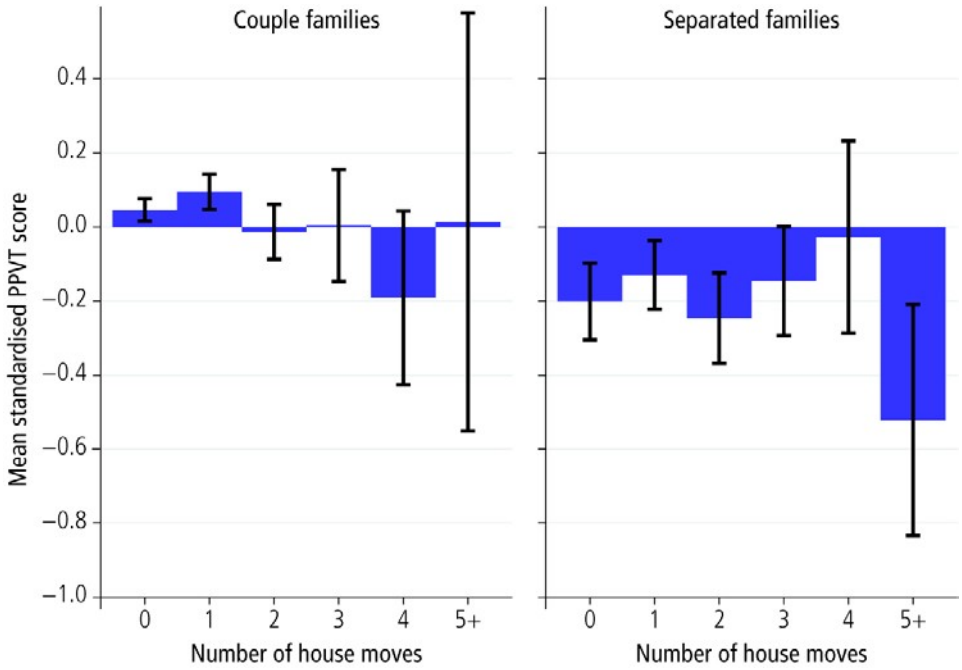
Table 11 Receptive vocabulary of children aged 4–5 and 8–9 years, by housing tenure type and family form at Wave 3, OLS regression coefficients

Housing tenure type	Couple families		Separated families	
	4–5 years	8–9 years	4–5 years	8–9 years
Owners without a mortgage (reference)				
Owner with a mortgage	0.01 (0.05)	–0.07 (0.05)	–0.24 (0.20)	–0.06 (0.18)
Renter—Private landlord	–0.19** (0.07)	–0.16* (0.07)	–0.36 (0.20)	–0.14 (0.17)
Renter—State/territory housing authority	–0.69** (0.20)	–0.35* (0.16)	–0.91** (0.22)	–0.28 (0.21)
Other landlord/Other tenure type	0.02 (0.08)	–0.07 (0.09)	–0.29 (0.22)	–0.21 (0.19)
Number	3,427	3,154	593	788

Notes: OLS regressions take account of child gender, Indigenous status and age as well as the highest level of parents' education and parents' country of birth. Receptive vocabulary scores are standardised within each age bracket so that results are comparable across ages. See Appendix B for details. OLS = ordinary least squares. * $p < .05$; ** $p < .01$.

Figure 6 presents mean standardised PPVT scores at Wave 3 according to the number of times the child moved house between 2004 and 2008. For children living in couple families, there were no statistically significant differences in the receptive vocabulary of children by the number of moves. As outlined in Table 7, children in separated families were more likely to move house; however, there were no statistically significant differences in the level of receptive vocabulary by the number of house moves. The only significant differences in receptive vocabulary were evident when comparing children in couple families who had not moved and children in separated families who had moved 5 or more times, with the latter group having much lower levels of receptive vocabulary. Regression modelling of the number of moves for 4–5 and 8–9 year old children living in couple and separated families while taking into account child and parental demographic variables also did not suggest any consistent statistically significant differences in children's receptive vocabulary by residential mobility (see Appendix B, Table B1).

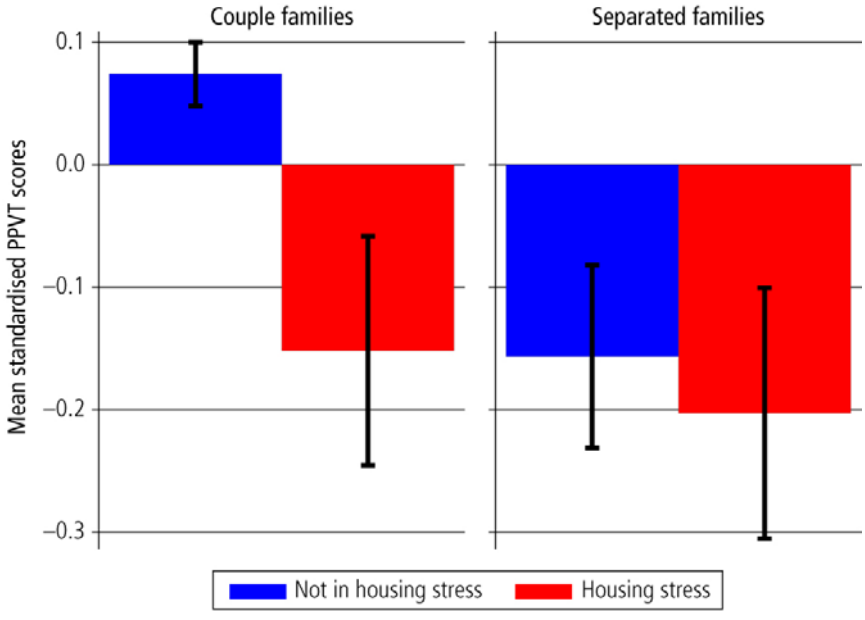
[12] For the equivalised household income measure we operationalise this measure via a dummy variable indicating whether families are in the bottom 40% of the equivalised household income distribution. Given that labour force status is very closely associated with household income, we do include parent's labour force status.



Source: LSAC Wave 3

Figure 6 Children's receptive vocabulary at Wave 3, by number of house moves between 2004 and 2008, B and K cohorts

Figure 7 presents mean standardised PPVT scores by housing stress experienced by the children's families. For children living in couple families there is a statistically significant difference in the level of receptive vocabulary for those who were in housing stress compared to those who were not. There is no evidence of any significant differences by housing stress for the receptive vocabulary of children living in separated families by housing stress.



Source: LSAC Wave 3

Figure 7 Children's receptive vocabulary at Wave 3, by housing stress at Wave 3, B and K cohorts

Findings from the regression modelling of the receptive vocabulary of children aged 4–5 and 8–9 years suggest that once other demographic characteristics are taken into account, there is no

statistically significant differences in the receptive vocabulary of children in couple families for whether or not they were experiencing housing stress (Table 12). In fact, there are no statistically significant differences in the level of receptive vocabulary of children aged 4–5 and 8–9 years by whether they were in families experiencing housing stress or whether they had ever lived in a separated family.

Table 12 Receptive vocabulary of children aged 4–5 and 8–9 years, by housing stress and family form at Wave 3, OLS regression coefficients

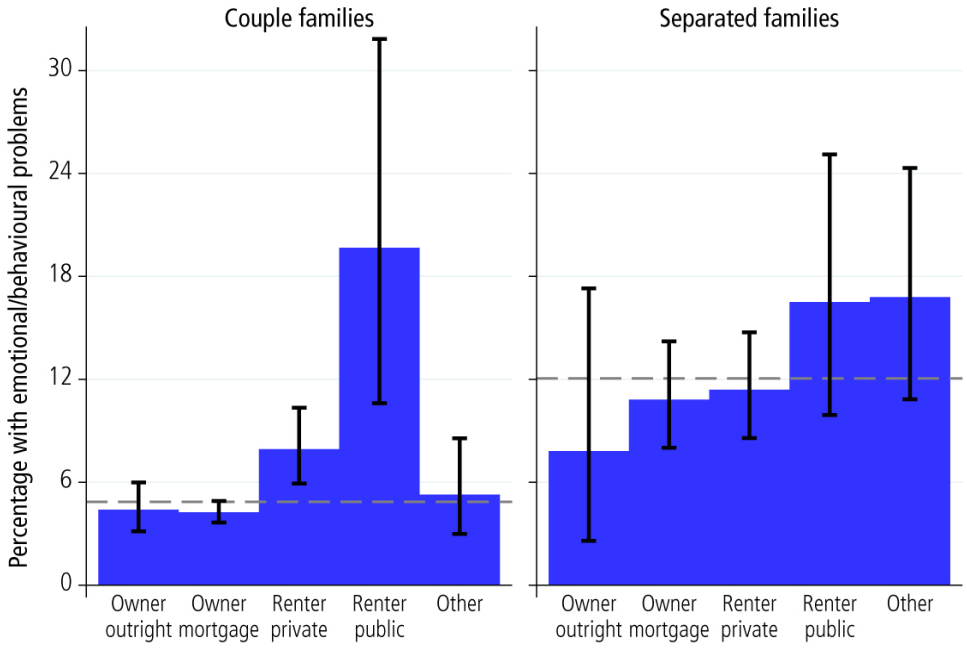
Quintiles of housing stress	Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort
No housing stress (reference)				
Housing stress	-0.02 (0.04)	–0.07 (0.05)	0.07 (0.09)	0.06 (0.08)
Number	3,427	3,154	593	788

Notes: OLS regressions take account of child gender, Indigenous status and age as well as the highest level of parents' education and parents' country of birth. Receptive vocabulary scores are standardised within each age bracket so that results are comparable across ages. See Appendix B for details. OLS = ordinary least squares. * $p < .05$; ** $p < .01$.

6.2 Housing and emotional and behavioural problems

Figure 8 presents the proportion of children at risk of emotional and behavioural problems by housing tenure type. These proportions represent the proportion of children with SDQ scores in the clinical range. The broken line depicts the overall average proportion of emotional and behavioural problems for the LSAC cohorts at Wave 3 (5% for children in couple families and 12% for children in separated families).

Children in couple families who owned their own home (with or without a mortgage) had the lowest rate of problems, at below 5%. Children in couple families who were living in public housing had the highest rates of emotional or behavioural problems (20%), which was significantly higher than any other group of children living in a couple family. Children in couple families who were living in "Other" types of housing had lower levels of emotional or behavioural problems than the other non-home owner groups (5%), although, except in relation to public renters, this was not statistically significant. About 8% of children in couple families living in private rental properties had emotional or behavioural problems, which was significantly higher than children living in couple families who were paying off their mortgage.



Source: LSAC Wave 3

Figure 8 Children with emotional and behavioural problems in the clinical range, by housing tenure type at Wave 3, B and K cohorts

For children in separated families, there was a very different pattern of results. First, the average level of emotional or behavioural problems was much higher (12%). Second, there was more limited statistical precision in the estimates due to the smaller numbers of children who were in separated families, and hence there were no statistically significant differences between the groups at the 95% level of confidence. Children living in separated families who owned their home outright had the lowest levels of emotional or behavioural problems (8%), followed by children living in separated families who were mortgagees or in the private rental market (11%). Children from separated families living in public rental properties or "Other" types of housing tenure had highest level of emotional or behavioural problems (17%).

There are several noteworthy comparisons to be made between the level of emotional or behavioural problems of children in couple and separated families by housing tenure type. First, there was no statistically significant difference between children living in different family forms who were living in public housing; in fact, children who were in couple families in this living situation had higher levels of emotional or behavioural problems. Although children in separated families who were living in private rentals had a higher proportion experiencing behavioural or emotional problems, this was not significantly different from children in couple families who were renting privately. A similar pattern was also evident for children living in the two family forms where their families owned the house outright. Children in couple families did have a significantly lower proportion who had emotional or behavioural problems than in separated families. This was also the case for children living in other housing arrangements where there was a 12 percentage point difference in the percentage of children with emotional or behavioural problems (5% compared to 17%). This finding may be explained by the reasons behind families living in the "Other" housing tenure type—for separated families, this may have been a necessity, whereas for couple families it could be a choice.

The regression models presented in Table 13 model the probability having emotional or behavioural problems in the clinical range for children aged 4–5 and 8–9 years living in couple and separated families. Children who lived in families who own their own home with no mortgage are the reference case against which comparisons are made.

The regressions show that children in couple families living in public housing had far higher rates of emotional or behavioural problems, with 4–5 year olds having problems that were 11 percentage points higher than the reference group, and 8–9 year old children having an even higher difference, at 14 percentage points. There was only one other significant difference among children in couple families, with 8–9 year olds in private rentals having emotional or behavioural problems that were 4 percentage points higher than the reference group.

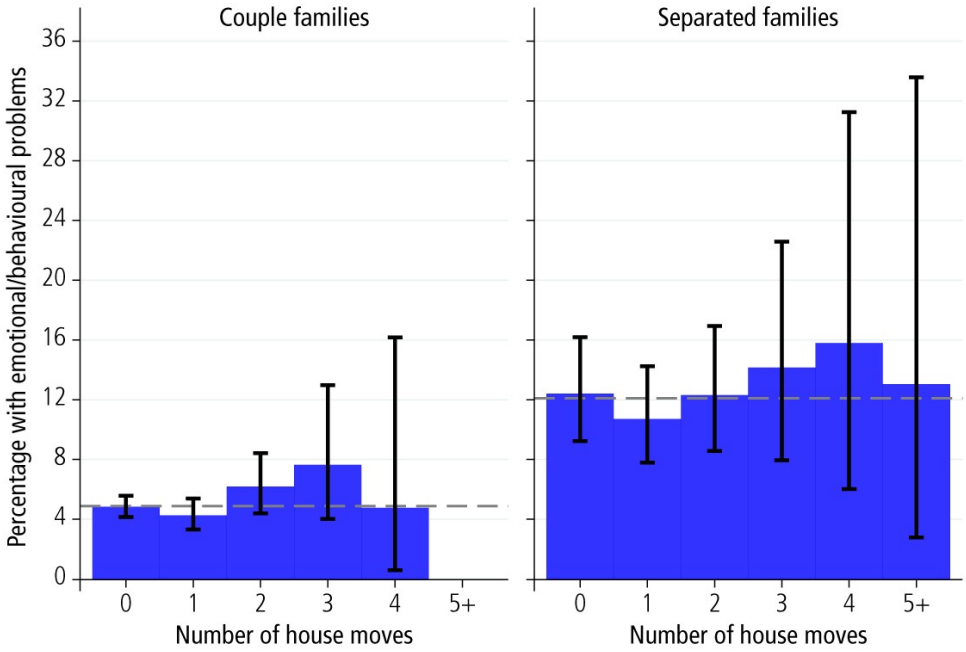
Table 13 Children with emotional and behavioural problems in the clinical range aged 4–5 and 8–9 years, by housing tenure type and family form at Wave 3, probit regression coefficients

Housing tenure type	Couple families		Separated families	
	4–5 years	8–9 years	4–5 years	8–9 years
Owners without a mortgage (reference)				
Owner with a mortgage	–0.01 (0.01)	0.01 (0.01)	–0.07 (0.06)	0.15* (0.07)
Renter—Private landlord	0.02 (0.02)	0.04* (0.02)	–0.05 (0.07)	0.14 (0.08)
Renter—State/territory housing authority	0.10* (0.06)	0.14** (0.08)	–0.04 (0.06)	0.28** (0.13)
Other landlord/Other tenure type	0.01 (0.02)	0.00 (0.02)	–0.03 (0.06)	0.28** (0.13)
Number	3,110	2,838	472	668

Notes: Probit regressions take account of child gender, Indigenous status and age as well as the highest level of parents' education and parents' country of birth. See Appendix B for details. * $p < .05$; ** $p < .01$.

For children living in separated families, there were no significant differences between 4–5 year old children from separated families living in the other housing tenure types compared to the reference group, but there were very large and statistically significant differences among the 8–9 year old children. Compared to 8–9 year old children living in separated families who owned their home with no mortgage, children who were living in families who were paying a mortgage, in public housing and in "Other" types of housing had significantly higher rates of emotional or behavioural problems (15, 28 and 28 percentage points respectively) than children living in families who owned their homes with no mortgage. The difference between children's emotional or behavioural problems in separated families in private rental compared to the reference group was not statistically significant but was also much higher at 14 percentage points. The results suggest that children living in separated families where the residential parent owns the home outright are advantaged.

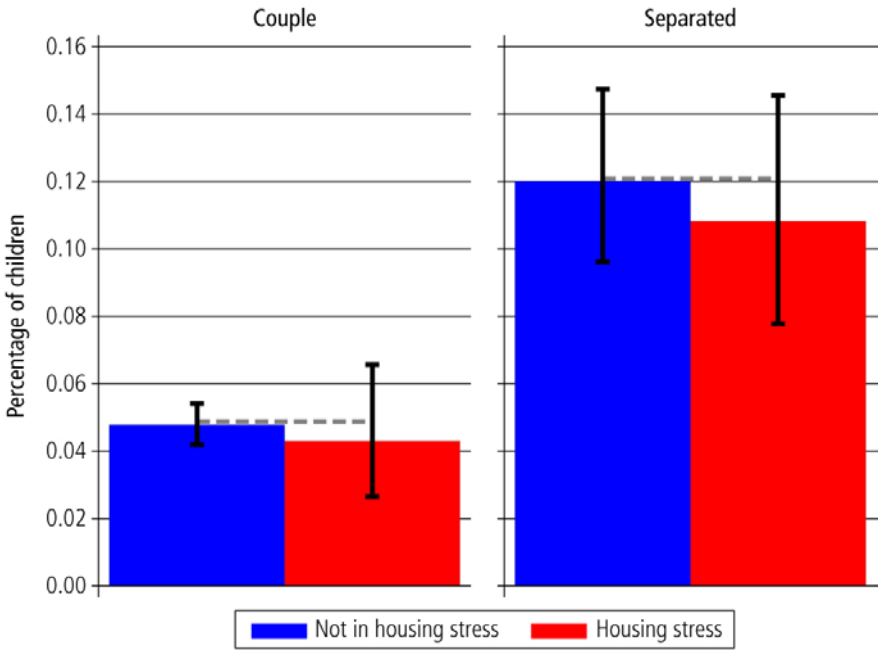
Figure 9 presents the percentage of children at risk of emotional or behavioural problems by the number of house moves experienced between 2004 and 2008 for children in couple and separated families. The figure suggests that the number of house moves was not related to higher levels of emotional or behavioural problems, with any differences not being statistically different. The results from the probit regression were also consistent with the descriptive statistics, with no statistically significant differences in the rate of children's emotional or behavioural problems in the clinical range for children of either age group or for children in different family forms.



Source: LSAC Wave 3

Figure 9 Children with emotional and behavioural problems in the clinical range, by number of house moves between 2004 and 2008, B and K cohorts

Figure 10 shows the proportion of children who were at risk of emotional or behavioural problems by housing stress and family form. There were no statistically significant differences for emotional or behavioural problems of children in couple families and separated families between those who were in housing stress and those that were not.



Source: LSAC Wave 3

Figure 10 Children with emotional and behavioural problems in the clinical range, by housing stress and family form at Wave 3, B and K cohorts

The regression models examining the association between housing stress and children's rate of emotional or behavioural problems in the clinical range were similar to Figure 10, with no

statistically significant differences between children living in households in housing stress and those that were not (Table 14).

Table 14 Children with emotional and behavioural problems in the clinical range, aged 4–5 and 8–9 years, by housing stress and family form at Wave 3, probit regression coefficients

Quintiles of housing stress	Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort
No housing stress (reference)				
Housing stress	–0.01 (0.01)	–0.01 (0.01)	–0.01 (0.03)	–0.04 (0.03)
Number	3,110	2,838	472	668

Notes: Probit regressions take account of child gender, Indigenous status and age as well as the highest level of parents' education and parents' country of birth. See Appendix B for details. * $p < .05$; ** $p < .01$.

7 Discussion and conclusion

Findings from this study begin to fill the gap in our understanding of the influence of housing on children's development. In addition, the longitudinal nature of the *Growing up in Australia:* The Longitudinal Study of Australian Children means that this report has been able to document changes in tenure and costs over a four-year period. Given that two in five children will experience parental separation (de Vaus & Gray, 2003), it was also important to document the housing circumstances of children living in this family form and examine how the resident parent adjusts to the changed financial circumstances following separation. In this section, we summarise the key findings from this study.

7.1 Housing tenure, mobility and cost

For LSAC families, on average, there were minimal changes in housing tenure between 2004 and 2008:

- the percentage of families who owned their home outright was relatively stable (increased from 10% to 13%) as was the percentage who took out a mortgage (increased from 61% to 62%);
- private rentals were also stable (decreased from 17% to 16%);
- those in public housing increased marginally from 2% to 3%; and
- families living in other living situations decreased from 10% to 6%.

The majority of children did not move house between 2004 and 2008 (54%), and most children who experienced a house move did so only once (27%); however, a significant minority experienced two or more moves (18%).

On average, housing costs of families increased by 32%, from $239 in 2004 to $316 in 2008 across most tenure types. For example, housing costs of families who were:

- mortgagees increased by a little over $100 per week (33%);
- private renters increased by $74 per week (32%); and
- renting from a State/Territory housing authority increased substantially, up 82% or $88 in 4 years.

But there were negligible increases in housing costs for families living in the Other landlord/other tenure types (up $8 from 2004 to 2008).

7.2 Housing in separated compared to couple families

There were stark differences in the type of housing tenure of separated families (where one biological parent is living elsewhere) compared to couple families. Separated families, compared to couple families, were:

- far less likely to own their home outright or be paying off a mortgage;
- more likely to be in private rentals;
- more likely to be residing in public housing (one in ten compared to one in a hundred); and
- more likely to be living in the "Other" tenure type (renting in caravan parks and living with other family members) (one in ten compared to one in twenty).

Housing mobility was also much higher in separated families. Since 2004, two in three separated families had moved at least once, compared to couple families, two out of three of whom had not moved at all. Over one-tenth of separated families have moved at least three times in the last four years, while just over three in a hundred of couple families had moved at this rate.

In terms of housing stress, 33% of separated families were in housing stress, whereas only 9% of couple families were in this category.

The sample of separated families in LSAC was smaller than couple families. Consequently, estimates based on smaller samples should be treated with more caution.

7.3 Changes in housing circumstances following a relationship separation

When families separate, the parent with whom the child predominately resides experiences large declines in equivalised family income. Among LSAC separated families, this decrease on average was just under $230 per week, whereas LSAC couple families experienced an increase in equivalised family income of $126 per week over the same period. Although these were substantial changes in family income for separated families, there was on average no increase in their housing costs following separation. How does this occur? Many separated parents moved to cheaper types of housing tenures; in particular private rentals and the "Other" tenure category. Private rentals and the "Other" tenure category were, on average, $100 and $200 a week less than a mortgage. For most separated families in private rentals, the transition meant that apart from their children, they were either living alone or with a new partner (69% and 22% respectively). However, for the separated families in the "Other" tenure category, they were primarily relying on their relatives for low-cost housing (43% were living with their parents, 14% with siblings and 19% with other relatives). While we did not examine this issue in this report, overcrowding may be an issue for these households.

7.4 Housing and child wellbeing

There were some very large differences in children's developmental outcomes for type of housing tenure, some differences for housing stress and little statistically significant difference for residential mobility. The evidence from the regression modelling in particular suggests that the largest differences in levels of receptive vocabulary and clinical levels of emotional or behavioural problems are found when examining the housing tenure type of children in couple families. Children in couple families who were living in public housing had lower levels of receptive vocabulary and higher rates of emotional or behavioural problems than children living in families who owned or were paying off their own home. Children in couple families who were private renters also had lower levels of receptive vocabulary than children of home owners, and 8–9 year old children in this group also had higher rates of clinical levels of emotional or behavioural problems.

A different pattern of differences is evident by housing tenure for children living in separated families. Only 4–5 year old children in public housing had lower levels of receptive vocabulary, while 8–9 year old children living in separated families where the parent owned the home outright had far lower rates of emotional or behavioural problems than any other group of separated children.

Although children who lived in separated families had much higher levels of housing stress than those in couple families, there were no statistically significant differences either in their level of receptive vocabulary or the rates of clinical levels of emotional or behavioural problems. Although there was evidence that children living in couple families who were in housing stress had significantly lower levels of receptive vocabulary than children living in couple families who were not, these differences were no longer evident once other demographic characteristics were taken into account. This suggests that these demographic characteristics of couple families predispose them to housing stress explains the differences in the levels of receptive vocabulary between those experiencing housing stress and those who aren't.

Surprisingly, residential mobility was not associated with children's receptive vocabulary or their emotional or behavioural problems. While the level of residential mobility of children in the LSAC sample was not very high, many studies have found statistically significant differences using a lifetime number of moves of three or more for adolescents (Jelleyman & Spencer, 2008).

Perhaps the distance moved and whether children shifted schools may be one explanation for the lack of differences in the Australian context. Future research could investigate this issue; however, it may also be explained by the fact that compared to the United States, family supports in Australia are far more substantial.

While this is the first large-scale study of the influence of housing on children's development that we are aware of, it is not without its limitations. It is important to note that the associations between children's development and housing tenure cannot be considered to be causal. Section 4 of the report highlights that there were very large differences in the housing costs of different tenure types and therefore the types of families who chose to live in different types of tenure were very different. While the regression models have taken account of many of these variables (child gender, age and Indigenous status; highest level of parental education; household income; mother born overseas), there may be others that explain these significant associations. To identify causal effects of housing on children's development and state differences in the availability of different types of housing may offer the best approach. Differences in state/territory education policies have been examined using LSAC data (Edwards, Taylor, & Fiorini, 2011). It is also important to note that the developmental outcomes of children who were living in separated families have been compared with other children living in separated families and then contrasted by housing variables. This avoids confounding differences in children's outcomes due to family form with differences due to housing circumstances; however, given that children from separated families were a small proportion of the total sample, the ability to detect statistically significant differences was more limited due to a smaller sample size. As more children experience parental separation, the statistical power to detect significant differences is less likely to be an issue.

Having a "home" is a fundamental need of all children. Findings from this report suggest that although residential mobility does not undermine children's development, living in types of housing tenure associated with instability—such as "doubling up"—is associated with some adverse effects. Even more substantial is the role played by the type of housing tenure, with those children living in public housing having much worse receptive vocabulary and much higher rates of behavioural or emotional problems. One explanation is that to be eligible for public housing, families need to have significant, long-term and ongoing needs, whereas a doubling up arrangement can be entered into fairly quickly. Housing costs may be another possible explanation, as families who were doubling up with relatives and those living in public housing had much lower housing costs. Compared to those living in public housing, those who were doubling up had housing costs that were $100 per week lower. Given that there were more limited adverse outcomes for these children compared to those in public housing, then perhaps one reason for this finding is the more limited financial burden of doubling up.

Further work could examine the role played by the financial stress of paying rent or a mortgage in undermining the ability of parents to provide resources for their children, or the financial stress of housing on the ability to parent effectively, so that housing policies can work to enhance the development of Australian children.

References

Aaronson, D. (2000). A note on the benefits of homeownership. *Journal of Urban Economics*, *47*, 356–69.

Astone, N. M., & McLanahan, S. S. (1994). Family structure, residential mobility, and school dropout: A research note. *Demography*, *31*, 575–583.

Australian Bureau of Statistics. (2007). *Survey of Income & Housing 2007–08: Paper questionnaire*. Canberra: ABS.

Australian Bureau of Statistics. (2009a). *Housing mobility and conditions 2007–08* (Cat. No. 4130.0). Canberra: ABS.

Australian Bureau of Statistics. (2009b). *Housing occupancy and cost 2007–08* (Cat. No. 4130.0). Canberra: ABS.

Australian Institute of Health and Welfare. (1999). *SAAP National Data Collection accompanying children report 1998 Australia* (AIHW Cat. No. HOU 39). Canberra: AIHW.

Australian Housing and Urban Research Institute. (2006). *How does security of tenure impact on public housing tenants?* (Research and Policy Bulletin No. 78). Melbourne: AHURI. Retrieved from <www.ahuri.edu.au/publications/download/rap_issue_78>.

Australian Institute of Health and Welfare. (2007). *Homeless people in SAAP: Supported Accommodation Assistance Program National Data Collection Agency annual report 2005–06* (Cat. No. HOU 156). Canberra: AIHW.

Australian Institute of Health and Welfare. (2010). *Government funded specialist homeless services: Supported Accommodation Assistance Program National Data Collection Agency annual report 2008–09*. Canberra: AIHW.

Bartfield, J., & Dunifon, R. (2005). *State-level predictors of food insecurity and hunger among households with children* (Contractor and Cooperator Report No 13). Retrieved from <hdl.handle.net/10113/32791>.

Bartholomew, T. (1999). *A long way from home: Family homelessness in the current welfare context*. Geelong: Deakin University Press.

Baxter, J., Edwards, B. & Maguire, B. (in press). New father figures and fathers who live elsewhere. *LSAC Research Report 3*.

Bell, M., & Hugo, G. (2000). *Internal migration in Australia 1991–996: Overview and the overseas born*. Canberra: AGPS.

Boehm, T. P., & Schlottman, A. M. (1999). Does home ownership by parents have an economic impact on their children? *Journal of Housing Economics*, *8*(3), 217–232.

Boyle, M. H. (2002). Home ownership and the emotional and behavioral problems of children and youth. *Child Development*, *73*(3), 883–892.

Buckner, J. C. (2009). Understanding the impact of homelessness on children: Challenges and future research directions. *American Behavioral Scientist*, *51*, 721–736.

Chamberlain, C., Johnson, G., & Theobald, J. (2007). *Homelessness in Melbourne*. Melbourne: RMIT Publishing.

Chamberlain, C., & MacKenzie, D. (1992). Understanding contemporary homelessness: Issues of definition and meaning. *Australian Journal of Social Issues*, *27*(4), 274–297.

Chamberlain, C., & MacKenzie, D. (1998). *Youth homelessness: Early intervention and prevention*. Sydney: Australian Centre for Equity through Education.

Chamberlain, C., & Mackenzie, D. (2008). *Counting the homeless 2006*. Canberra: Australian Bureau of Statistics.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd Ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology*, *58*, 175–199.

Department of Families, Housing, Community Services and Indigenous Affairs. (2010). *Housing Assistance Act 1996 Annual Report 2007–08 and 2008–09*. Canberra: FaHCSIA. Retrieved from <www.fahcsia.gov.au/sa/housing/pubs/housing/ann_report_top/ann_report_07_08/Documents/HAA_report_07_08.pdf>.

de Vaus, D., & Gray, M. (2003). Family Transitions among Australia's Children. *Family Matters, 65*, 10-17.

Dockery, A. M., Kendall, G., Li, J. H., Mahendran, A., Ong, R., & Strazdins, L. (2010). *Housing and children's development and wellbeing: A scoping study* (AHURI Final Report No. 149). Melbourne: Australian Housing and Urban Research Institute.

Edwards, B. (2005). Does it take a village? An investigation of neighbourhood effects on Australian children's development. *Family Matters*, *72*, 36–43.

Edwards, B., & Bromfield, L. M., (2009). Neighborhood influences on young children's conduct problems and pro-social behavior: Evidence from an Australian national sample. *Children and Youth Services Review*, *31*, 317–324.

Edwards, B., Taylor, M., & Fiorini, M. (2011). Who gets the "gift of time"? Child, parent and education system factors that are associated with delayed primary school entry in Australia. *Australian Review of Public Affairs*.

Evans, G. W. (2006). Child development and the physical environment. *Annual Review of Psychology*, *57*, 423–451.

Fogelman, K., Fox, A., & Power, C. (1989). Class and tenure mobility: Do they explain social inequalities in health among young adults in Britain? In J. Fox (Ed.), *Health Inequalities in European countries* (pp. 333–352). Aldershot, UK: Gower.

Goodman, R. (1997) The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, *38*, 581–586.

Grant, R., Shapiro, A., Joseph, S., Goldsmith, S., Rigual-Lynch, L., & I. Redlener. (2007). The health of homeless children revisited. *Advances in Pediatrics*, *54*, 173–187.

Green, R., & White, M. (1997). Measuring the benefits of homeowning: Effects on children. *Journal of Urban Economics*, *41*, 441–461.

Harkness, J., & Newman, S. J. (2005). Housing affordability and children's well-being: Evidence from the National Survey of America's Families. *Housing Policy Debate*, *16*(2), 635–666.

Harkness, J., Newman, S., & Holupka, S. (2009). Geographic differences in housing prices and the well-being of children and parents. *Journal of Urban Affairs*, *31*(2), 123–146.

Harmer, J. (2008). *Pension Review background paper*. Canberra: Department of Families, Housing, Community Services and Indigenous Affairs. Retrieved from <www.fahcsia.gov.au/sa/seniors/progserv/PensionReview/Documents/pension_review/pension_review_paper.pdf>.

Haurin, D. R., Parcel, T. L., & Haurin, R. J. (2002). Does homeownership affect child outcomes? *Real Estate Economics*, *30*(4), 635–666.

Hill, C. J., Bloom, H. S., Black, A. R., & Lipsey, M. W. (2007). Empirical benchmarks for interpreting effect sizes in research (MDRC Working Paper on Research Methodology). New York: MDRC.

House of Representatives Standing Committee on Community Affairs. (1995). *A report on aspects of youth homelessness*. Canberra: AGPS. Retrieved from <www.aph.gov.au/house/committee/reports/1995/1995_PP86report.htm>.

Jelleyman, T., & Spencer, N. (2008). Residential mobility in childhood and health outcomes: A systematic review. *Journal of Epidemiology and Community Health*, *62*, 584–592.

Johnson, G., Gronda, H., & Coutts, S., (2008). *On the outside: Pathways in and out of homelessness*. Melbourne: Australian Scholarly Publishing.

McCaughey, J. (1992). *Where now? Homeless families in the 1990s* (Policy Background Paper No. 8). Melbourne: Australian Institute of Family Studies.

Park, J. M., Fertig, A., & Allison, P. (2011). Physical and mental health, cognitive development, and health care use by housing status of low-income young children in 20 American cities: A prospective cohort study. *American Journal of Public Health*. doi <10.2105/AJPH.2010.300098>.

Qu, L., Weston, R., & Parker, R. (2007). *Financial circumstances of divorced mothers relative to married mothers: Is the gap narrowing?* Paper presented at the 2007 Australian Social Policy Conference, Social Policy Research Centre, University of New South Wales, Sydney.

Sharfstein, J., & Sandel, M. (1998). *Not safe at home: How American's housing crisis threatens the health of its children*. Boston: Boston Medical Centre, Department of Pediatrics.

Shaw, M. (2004). Housing and public health. *Annual Review of Public Health*, *25*, 397–418.

Simpson, G. A., & Fowler, M. G. (1994). Geographic mobility and children's emotional/behavioral adjustment and school functioning. *Pediatrics*, *93*(2), 303–309.

South, S. J., Crowder, K. D., & Trent, K. (1998). Children's residential mobility and neighbourhood environment following parental divorce and remarriage. *Social Forces*, *77*(2), 667–693.

Wood, D., Halfon, N., Scarlata, D., Newacheck, P., & Nessim, S. (1993). Impact of family relocation on children's growth, development, school function, and behavior. *Journal of the American Medical Association*, *270*(11), 1334–1338.

Wulff, M., & Bell, M. (1997). *Internal migration, social welfare and settlement patterns: Impacts on households and communities*. Canberra: Department of Immigration and Multicultural Affairs.

Yates, J. (2007). Housing affordability and financial stress (AHURI Research Paper No. 6). Melbourne: Australian Housing and Urban Research Institute.

Appendix A Enumerating the homeless population

Some of the survey design issues confronted in the enumeration of the homeless are outlined prior to a discussion of some of the specific issues surrounding the enumeration of homeless families in LSAC.

According to Chamberlain and Mackenzie (2008), 105,000 Australians were "homeless" on Census night in 2006. While the term "homeless" brings to mind a literal definition of rooflessness, this is not the way in which homelessness is defined for the purposes of the enumeration of the homeless population by the Australian Bureau of Statistics, nor is it a requirement for access to assistance from Supported Accommodation Assistance Program (SAAP) services.

There has been considerable debate (outlined in Chamberlain and Mackenzie, 1992), both in Australia and internationally, as to how best to define homelessness. The utility of any specific definition of homelessness depends upon the purpose of the definition. This may be to enumerate and describe a population or to ascribe eligibility for certain types of government services. From this debate has emerged a consensus among policy-makers that the cultural definition proposed by Chamberlain and Mackenzie provides a useful means of enumeration of the homeless population. This definition considers homelessness as a cultural construct measured on a continuum relative to a "minimum community standard", something specific to a culture at a particular point in time. These authors argue that in the contemporary Australian social context, this minimum standard is such that "an independent person (or couple) should be able to expect at least a room to sleep in, a room to live in, kitchen and bathroom facilities of their own, and an element of security of tenure—because that is the minimum accommodation that most people who rent in the private market".

The House of Representatives Standing Committee on Community Affairs (1995) report on aspects of youth homelessness has suggested this cultural definition has utility for framing "recommendations relating to public policy initiatives … [however] this definition is not necessarily appropriate for targeting benefits and programs, but does reflect an emerging community consensus" (p. 26).

Chamberlain and Mackenzie's (1992) model of homelessness is based on a shared minimum community standard embodied in current housing practices, which is equivalent to a small rented flat with a bedroom, living room, kitchen and bathroom. The authors presented definitions on four points of the continuum of homelessness:

- *marginally housed*: people in housing situations close to the minimum standard;
- *tertiary homelessness*: people living in single rooms in private boarding houses without their own bathroom, kitchen or security of tenure;
- *secondary homelessness*: people moving between various forms of temporary shelter including friends, emergency accommodation, youth refuges, hostels and boarding houses; and
- *primary homelessness*: people without conventional accommodation (e.g., living on the streets, in deserted buildings, improvised dwellings, under bridges, in parks, etc.) (p. 26).

Chamberlain and Mackenzie (1992) also suggested that there are culturally recognised exceptions where it is inappropriate to apply the minimum standard; for example, seminaries, gaols, and student halls of residence.

According to Chamberlain and Mackenzie (1992) the marginally housed include "people who are staying *permanently* with relatives (doubling up) and who share kitchen and bathroom facilities; and it might include a couple renting a caravan with their own kitchen and shower but without security of tenure or separate sleeping accommodation. In each case the people are below the minimum standard, but their accommodation has some characteristics that are consistent with the community norm" [emphasis added] (p. 292).

Beginning in 1996, the ABS has attempted to count the number of homeless Australians using Chamberlain and Mackenzie's (1992) cultural definition on Census night. Its *Counting the Homeless* publications use the Census of Population and Housing, the SAAP National Data Collection and, since 2003, the National Census of Homeless School Children to construct estimates of the number of homeless individuals and households. While the cultural definition represents a consensus among researchers and policy-makers, a number of issues arise in its practical application to enumerate the homeless population in Australia. These include:

- undercounting of those without conventional accommodation;
- undercounting those in hostels for the homeless, night shelters and refuges, as these often appear to be conventional houses;
- undercounting young people who have run away from home;
- undercounting those living in boarding houses, which may also appear to be conventional houses; and
- differentiating between those living in boarding houses who are tertiary homeless from those who are secondary homeless.

Similar issues arise in the application of the cultural definition using the information collected in LSAC. This section provides a general outline of some of these complications.

Since 1996, the ABS has adopted a number of different strategies to ensure the accuracy of their estimates of the total number of homeless Australians reported counted in the Census of Population and Housing (Chamberlain, 1996). The starting point for the enumeration of the primary homeless population involves an individual, or a household's, response to the Census dwelling category: "improvised homes, tents and sleepers out". This is a starting point, because the primary homeless are the least likely to enumerate themselves. Those without conventional accommodation are less likely to be contacted by Census field staff, and some may not be inclined to provide information to the Government (Chamberlain & McKenzie, 2008).

During the 2006 Census, field staff were encouraged to work closely with homelessness services providers in their collection districts, who would know of locations were the primary homeless sleep rough. In some instances, these agencies were involved in the collection of Census forms. The ABS also developed forms for use where the primary homeless were observed but not directly approached.

The secondary homeless were primarily enumerated via individuals stating that their dwelling was a hostel for the homeless, a night shelter or refuge. This is, however, likely to undercount the number of Australians living in youth or women's refuges, as these are often conventional houses. There is always the danger that some people living in these circumstances might respond to the Census question regarding their dwelling in terms of a literal description of their dwelling, which would result in an undercounting of the number of secondary homeless. This is equally possible in LSAC, as the questionnaire does not specifically ask Parent 1 whether they are living in a women's refuge or some other form of emergency accommodation. This can only be imperfectly inferred from whether they are paying rent to a "community or cooperative housing group".

In 2006, the ABS asked the relevant State Government departments to provide a list of all SAAP properties so that Census field staff could appropriately reclassify properties that would otherwise appear as private dwellings.[13] Where Census forms were collected by service providers, the ABS asked service providers to attach a green sticker to identify SAAP properties. These forms were returned directly to the ABS processing centre to protect the confidentiality of these locations. Mackenzie (1996) and Chamberlain and Mackenzie (2003, 2006) used data obtained

[13] Chamberlain and McKenzie (2008) noted that this "list strategy" worked better in some states than others "All states provided lists but they were of uneven quality. Some states provided a comprehensive list of their supported accommodation. Other states provided a list but excluded women's refuges (for security reasons), while other states provided partial lists of their SAAP properties" (p. 12).

from the SAAP National Data Collection to adjust the Census count in order to provide a more accurate count of those living in SAAP properties who make up the secondary homeless population.[14]

Young people who have run away from home and are staying with family or friends are also classified as secondary homeless under the cultural definition, provided that they are not staying with another household permanently. Those who reside with another household on an ongoing basis are termed marginally housed. The householder of the dwelling in which the young person resides on Census night is likely to state that they have a usual address elsewhere if the arrangement is temporary and they believe the young person will return to the parental home. It is therefore unclear whether this young person is secondary homeless or merely a visitor on Census night.[15]

This is less of a concern in the LSAC questionnaire, as Parent 1 would be asked if any of those who usually reside in the household are temporarily living away from home and, if so, why this is. This gives Parent 1 an opportunity to report that the study child has run away from home and is therefore homeless; however, it does not allow us to ascertain what the child's housing circumstances are, even in those instances where these might be known to the parent. We could not, for instance, say for certain whether the child is sleeping rough or secondary homeless or in the care of another household.

Having outlined the issues that arise in the enumeration of homeless individuals and households using the cultural definition of homelessness, we now consider the issues that arise in applying this definition to families sampled in LSAC.

Primary homelessness is defined in the cultural definition to include individuals or families living "on the streets, in deserted buildings, improvised dwellings, under bridges, in parks". Families living in these circumstances are obviously extremely difficult to trace. While it may be that some LSAC families experience an episode of primary homelessness at some point between waves, it is unlikely that we will capture families who are "primary homeless" at the date of interview. In the unlikely event that primary homeless families are traced, the categories provided for responses for dwelling type currently preclude the identification of families living in improvised dwellings. Chamberlain and Mackenzie (2008) estimated that there were 1,496 families living in improvised dwellings on Census night in 2006.[16] These families contained 3,275 children.

In addition to the problems of capturing the primary homeless population, the LSAC survey does not explicitly set out to measure whether the housing circumstances of LSAC families meet the "minimum community standard" per se. In each wave, Parent 1 was asked: "How many bedrooms are there here in this (house/flat/unit etc)? Please count all bedrooms, even if not currently used as such (e.g.. studies)". We cannot therefore be certain whether a family has access to "a room to live in, kitchen and bathroom facilities of their own"; however, this is implicit in most of the dwelling types listed in the questionnaire. Similarly, it is not obvious which families enjoy "an element of security of tenure".

Aside from questions of which families are literally without a home and which have housing that meets the minimum community standard, the LSAC survey instrument presents some challenges for determining which families are marginally housed, as opposed to those experiencing secondary or tertiary homelessness. Mobility is a differentiating characteristic with respect to those who are marginally housed and those who are secondary homeless. According to Chamberlain and McKenzie's (1992) definitions, those "people who are staying *permanently* with relatives (doubling up) and who share kitchen and bathroom facilities" [emphasis added] are

14 See p. 14 of Chamberlain and McKenzie (2008) for a discussion of these adjustments.

15 Chamberlain and Mackenzie (2003, 2006) suggested that the Census is likely to dramatically understate the number of homeless school students and therefore they used data from the *National Census of Homeless School Children* to construct estimates of the number of school students who were secondary homeless on Census night. See p. 19 of Chamberlain and McKenzie (2008) for a discussion of these adjustments.

16 Authors' calculations from Table 4.3, Chamberlain and Mackenzie (2008), p. 24.

marginally housed, whereas those "moving between various forms of temporary shelter including friends, emergency accommodation, youth refuges, hostels and boarding houses" are secondary homeless.

One of the challenges is the absence in LSAC of "boarding house" as a response category for dwelling type, and it is assumed to be included in the miscellaneous category "Other". Secondary homelessness also includes those who state that their dwelling is a hostel for the homeless, a night shelter or a refuge; none of which are presently captured in the LSAC questionnaire. While referral to boarding houses is widely considered inappropriate for families by SAAP agencies[17] (Bartholomew, 1999; Chamberlain, Johnson & Theobald, 2007), just under 30 per cent of all SAAP support periods for the financial year 2008–09 were provided to families (AIHW, 2010). While not all of these support periods would have involved a period of accommodation in a shelter or a refuge, it does indicate that a non-trivial number of families experience at least a short stay in a shelter or a refuge over the course of a year.

Chamberlain and McKenzie (2008) defined those residing in a household who report "no usual address" as being secondary homeless. Those living in multiple family households who usually reside there are marginally housed. Chamberlain and McKenzie discuss in detail how this approach might undercount young people who have run away from home. It is, however, equally likely that this approach would undercount women escaping domestic violence with accompanying children who turn to family and friends rather than SAAP services or, indeed, any family temporarily doubling up for any reason.

The LSAC questionnaire does not specifically ask Parent 1 whether the dwelling in which they resided at the date of interview is their usual address, making it difficult to determine which of those families who are doubling up are marginally housed, secondary homeless or temporarily housed and visiting another family. The questionnaire does enquire as to whether the family makes rental payments to "relatives or friends"; however, many families who are doubling up may not pay rent if it is understood that the arrangement is temporary. While it is easily ascertained from the LSAC household roster which families were doubling up at each wave, it is less clear which of the families contains the householder, unless one of the families is in fact paying rent to the householder. Chamberlain and McKenzie (2008) estimated that there were 1,945 families containing 4,261 children who doubled up on Census night,.

Chamberlain and McKenzie (2008) discussed some of the issues raised with respect to the classification of families living in caravan parks, which was not considered in their initial work on definitions of homelessness. Here they argue that cabins, as distinct from caravans, typically have a separate room for eating and sleeping, and private bathroom and kitchen facilities, and might therefore constitute the minimum community standard. Caravans, on other hand, generally have a single room for eating and sleeping and communal bathroom facilities. Chamberlain and McKenzie (2006) likened these to boarding houses, noting that "in some communities, there are no boarding houses and SAAP workers send people to the local caravan park if there is no emergency accommodation available" (p. 4).

At this time, caravan and cabin are not provided as separate responses to the LSAC question regarding type of dwelling. This makes it difficult to differentiate families who are securely housed in cabins from those insecurely housed in caravans. It is also not clear whether these families are securely housed elsewhere while living in a caravan or cabin on vacation.

In summary, the cultural definition of homelessness provided by Chamberlain and Mackenzie (1992) indicates that rooflessness, although the most extreme, is but one form of homeless and that each level encompasses one or more dimensions of the amenity of the subjects dwelling, and

[17] Chamberlain and McKenzie (2008) estimated that there were 299 families containing 486 children living in boarding houses on Census night in 2006. A further 3,741 families containing 8,160 children were estimated to be living in SAAP-funded accommodation.

the number of people who reside in the subject's dwelling, in addition to their security of tenure and mobility between dwellings.

Appendix B Regression models

Table B1 Receptive vocabulary of children aged 4–5 and 8–9 years, by number of house moves and family form, OLS regression coefficients

Number of house moves	Couple families		Separated families	
	4–5 years	8–9 years	4–5 years	8–9 years
No moves (reference)				
One move	0.03 (0.04)	0.07 (0.04)	0.00 (0.11)	0.07 (0.09)
Two moves	–0.04 (0.05)	–0.12 (0.06)	0.01 (0.12)	–0.10 (0.11)
Three moves	–0.19* (0.10)	0.10 (0.12)	0.14 (0.13)	–0.02 (0.14)
Four moves	–0.21 (0.14)	–0.16 (0.163)	0.25 (0.17)	0.27 (0.23)
Five or more moves	–0.10 (0.30)	–0.20 (0.46)	–0.35 (0.21)	–0.10 (0.245)
Number	3,427	3,154	593	788

Notes: OLS regressions take account of child gender, Indigenous status and age as well as the highest level of parents' education and parents' country of birth. Receptive vocabulary scores are standardised within each age bracket so that results are comparable across ages. OLS = ordinary least squares. * $p < .05$; ** $p < .01$.

Table B2 Children with emotional and behavioural problems in the clinical range aged 4–5 and 8–9 years, by number of house moves and family form, probit regression coefficients

Number of house moves	Couple families		Separated families	
	4–5 years	8–9 years	4–5 years	8–9 years
No moves (reference)				
One moves	–0.01 (0.01)	0.00 (0.01)	–0.02 (0.04)	–0.01 (0.03)
Two moves	0.01 (0.01)	0.03 (0.02)	–0.04 (0.03)	0.06 (0.04)
Three moves	0.03 (0.03)	0.02 (0.03)	0.04 (0.05)	–0.01 (0.05)
Four moves	0.01 (0.04)	–	0.03 (0.09)	0.00 (0.07)
Five or more moves	–	–	0.04 (0.10)	–0.03 (0.11)
Number	3,097	2,825	484	667

Notes: Probit regressions take account of child gender, Indigenous status and age as well as the highest level of parents' education and parents' country of birth. * $p < .05$; ** $p < .01$.

Table B3 Children with emotional and behavioural problems in the clinical range and receptive vocabulary of children aged 4–5 and 8–9 years, by number of house moves and family form, regression coefficients

	PPVT				SDQ			
	Couple families		Separated families		Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort
No moves (reference)								
One move	0.03 (0.04)	0.07 (0.04)	0.00 (0.11)	0.07 (0.09)	–0.01 (0.01)	0.00 (0.01)	–0.02 (0.04)	–0.01 (0.03)
Two moves	–0.04 (0.05)	–0.12 (0.06)	0.01 (0.12)	–0.10 (0.11)	0.01 (0.01)	0.03 (0.02)	–0.04 (0.03)	0.06 (0.04)
Three moves	–0.20* (0.10)	0.10 (0.12)	0.14 (0.13)	–0.02 (0.14)	0.03 (0.03)	0.02 (0.03)	0.04 (0.05)	–0.01 (0.05)
Four moves	–0.21 (0.14)	–0.16 (0.16)	0.25 (0.17)	0.27 (0.23)	0.01 (0.04)	–	0.03 (0.09)	0.00 (0.07)
Five or more moves	–0.10 (0.30)	–0.19 (0.46)	–0.35 (0.21)	–0.10 (0.25)	–	–	0.04 (0.10)	–0.02 (0.11)
Missing number of moves	–0.38 (0.56)	–	–	–1.07** (0.17)	–	–	–	–
Bachelor degree (reference)								
Postgraduate degree Level	0.07 (0.09)	0.32** (0.11)	0.01 (0.23)	0.06 (0.24)	–0.01 (0.02)	–0.01 (0.03)	–0.01 (0.10)	0.00 (0.08)
Graduate diploma and graduate certificate level	–0.08 (0.10)	–0.02 (0.13)	–0.10 (0.30)	0.13 (0.23)	0.00 (0.02)	0.03 (0.03)	–	0.13 (0.10)
Advanced diploma and diploma level	–0.16** (0.06)	–0.28** (0.08)	–0.08 (0.18)	–0.03 (0.20)	0.01 (0.02)	0.00 (0.02)	–0.03 (0.07)	–0.01 (0.06)
Year 12 Certificate I/II	–0.40** (0.04)	–0.47** (0.05)	–0.35* (0.14)	–0.36* (0.17)	0.02* (0.01)	0.02* (0.01)	0.06 (0.04)	0.01 (0.04)
Inadequately described/not stated	–0.64* (0.28)	–0.92 (0.50)	–	–0.55 (0.34)	–	–	–	–
Missing education	–0.21 (0.55)	–0.66** (0.17)	–0.50 (0.27)	–0.50* (0.23)	–	0.20 (0.21)	0.24 (0.18)	0.13 (0.11)
Income – bottom two quintiles	0.12 (0.06)	-0.01 (0.06)	0.21 (0.12)	-0.08 (0.10)	-0.01 (0.02)	-0.02 (0.02)	-0.04 (0.06)	-0.04 (0.04)
Missing income	–	–	–	–	–	–	–	–
Australian-born (reference)								
Oceania/Antarctica	–0.15 (0.09)	–0.15 (0.09)	–0.41* (0.21)	–0.08 (0.21)	–0.03 (0.01)	0.03 (0.03)	0.05 (0.08)	0.10 (0.08)
Europe—North East	0.09 (0.07)	–0.01 (0.08)	0.41** (0.15)	0.24 (0.16)	–0.02 (0.01)	–0.02 (0.01)	–0.01 (0.07)	–0.05 (0.04)
Europe—South East	–0.55** (0.15)	–0.20 (0.15)	–0.49 (0.43)	–0.90* (0.45)	0.02 (0.04)	0.02 (0.04)	–	0.20 (0.20)

	PPVT				SDQ			
	Couple families		Separated families		Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort
North Africa/Middle East	–1.23** (0.16)	–1.01** (0.13)	–1.10** (0.30)	–0.89** (0.19)	0.12** (0.07)	–0.03 (0.02)	0.21 (0.27)	0.23 (0.17)
Asia—South East	–0.81** (0.12)	–0.14 (0.12)	–0.77 (0.40)	–0.28 (0.22)	0.02 (0.03)	0.04 (0.03)	0.18 (0.18)	–0.01 (0.07)
Asia—North East	–0.99** (0.14)	–0.20* (0.10)	–0.42 (0.40)	0.04 (0.25)	0.03 (0.05)	0.000 (0.03)	–	0.40* (0.25)
Asia—South and Central	–0.89** (0.13)	–0.26* (0.11)	0.13 (0.10)	–0.50** (0.11)	0.01 (0.03)	–0.03 (0.02)	–	–
America—North and South	–0.04 (0.11)	0.10 (0.14)	–0.07 (0.36)	–0.13 (0.31)	–0.02 (0.03)	–0.01 (0.03)	0.07 (0.15)	0.26 (0.18)
Africa—Sub-Saharan	–0.26 (0.14)	–0.03 (0.13)	–0.74 (0.51)	–0.15 (0.33)	0.02 (0.04)	0.01 (0.04)	–	–
Missing mother's country of birth	–	–0.24 (0.13)	0.80** (0.11)	–0.08 (0.26)	–	–	–	–0.06 (0.07)
Non-ATSI (reference)								
ATSI	–0.39** (0.15)	–0.21 (0.11)	–0.33* (0.14)	–0.44** (0.16)	0.05 (0.04)	0.01 (0.03)	–0.03 (0.04)	0.02 (0.06)
Missing ATSI	–	–1.03 (0.54)	–	–	–	–	–	–
Girl (reference)								
Boy	–0.15** (0.03)	0.05 (0.03)	–0.19* (0.08)	0.17* (0.07)	0.01 (0.01)	0.04** (0.01)	0.01 (0.03)	0.09** (0.03)
gender_N_VMI	–	–	–	–	–	–	–	–
Age	0.89** (0.07)	0.37** (0.07)	0.87** (0.16)	0.64** (0.15)	0.03* (0.02)	0.03 (0.02)	0.02 (0.05)	–0.09 (0.05)
Constant	–3.92** (0.34)	–2.84** (0.65)	–4.22** (0.78)	–5.47** (1.37)	–	–	–	–
R^2	0.15	0.07	0.13	0.10	–	–	–	–
Adjusted R^2	0.14	0.06	0.10	0.07	–	–	–	–
Number	3,427	3,154	593	788	3,097	2,825	472	667

Notes: For PPVT these are OLS regressions and SDQ probit regressions. * $p < .05$; ** $p < .01$.

Table B4 Children with emotional and behavioural problems in the clinical range and receptive vocabulary of children aged 4–5 and 8–9 years, by housing stress and family form, regression coefficients

	PPVT				SDQ			
	Couple families		Separated families		Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort
1st quintile (reference)								
No housing stress (reference)								
Housing stress	-0.02 (0.04)	–0.07 (0.05)	0.07 (0.09)	0.06 (0.08)	–0.01 (0.01)	–0.01 (0.01)	–0.01 (0.03)	–0.04 (0.03)
Miissing housing stress	0.10 (0.09)	0.02 (0.09)	0.15 (0.23)	-0.03 (0.15)	0.00 (0.02)	0.01 (0.02)	-0.01 (0.09)	0.03 (0.07)
Bachelor degree (reference)								
Postgraduate degree level	0.08 (0.09)	0.33** (0.11)	-0.01 (0.23)	0.08 (0.24)	–0.02 (0.02)	–0.01 (0.03)	0.00 (0.11)	-0.01 (0.10)
Graduate diploma and graduate certificate level	–0.08 (0.10)	–0.01 (0.13)	–0.11 (0.31)	0.13 (0.23)	0.00 (0.02)	0.03 (0.03)	–	0.13 (0.10)
Advanced diploma and diploma level	–0.15* (0.06)	–0.28** (0.08)	–0.09 (0.18)	–0.07 (0.21)	0.01 (0.02)	0.00 (0.02)	–0.02 (0.07)	0.00 (0.07)
Year 12 Certificate I/II	–0.40** (0.04)	–0.46** (0.05)	–0.34* (0.14)	–0.36* (0.17)	0.02* (0.01)	0.02 (0.01)	0.06 (0.05)	0.01 (0.04)
Inadequately described/not stated	–0.63* (0.28)	–0.88 (0.51)	–	–0.52 (0.33)	–	–	–	–
Missing education	–0.20 (0.56)	–0.63** (0.16)	–0.47 (0.27)	–0.48* (0.23)	–	0.19 (0.20)	0.28 (0.19)	0.13 (0.11)

	PPVT				SDQ			
	Couple families		Separated families		Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort
Income – bottom two quintiles	0.23 (0.11)	0.02 (0.10)	–	-0.12 (0.17)	-0.02 (0.03)	-0.01 (0.02)	-0.05 (0.13)	0.01 (0.07)
Missing income	–	–	-0.33 (0.25)					
Australian-born (reference)								
Oceania/Antarctica	–0.16 (0.09)	–0.14 (0.09)	–0.46* (0.20)	–0.06 (0.21)	–0.03 (0.01)	0.03 (0.03)	0.04 (0.08)	0.09 (0.08)
Europe—North East	0.09 (0.07)	–0.01 (0.08)	0.40** (0.15)	0.23 (0.16)	–0.02 (0.01)	–0.02 (0.01)	0.00 (0.07)	–0.05 (0.04)
Europe—South East	–0.54** (0.15)	–0.19 (0.15)	–0.45 (0.44)	–0.93* (0.45)	0.02 (0.04)	0.02 (0.04)	–	0.22 (0.21)
North Africa/Middle East	–1.21** (0.16)	–1.01** (0.13)	–1.11** (0.26)	–0.87** (0.20)	0.12** (0.07)	–0.03 (0.02)	0.19 (0.26)	0.23 (0.17)
Asia—South East	–0.80** (0.12)	–0.14 (0.12)	–0.79* (0.40)	–0.27 (0.22)	0.02 (0.03)	0.03 (0.03)	0.16 (0.17)	–0.02 (0.07)
Asia—North East	–0.98** (0.14)	–0.20* (0.10)	–0.42 (0.39)	0.06 (0.27)	0.03 (0.05)	0.00 (0.02)	–	0.39 (0.25)
Asia—South and Central	–0.90** (0.13)	–0.26* (0.11)	0.10 (0.06)	–0.51** (0.11)	0.01 (0.03)	–0.03 (0.02)	–	–
America—North and South	–0.03 (0.11)	0.09 (0.14)	–0.03 (0.34)	–0.10 (0.33)	–0.02 (0.03)	–0.01 (0.03)	0.09 (0.18)	0.23 (0.16)
Africa—Sub-Saharan	–0.25* (0.14)	–0.03 (0.13)	–0.76 (0.49)	–0.11 (0.26)	0.01 (0.04)	0.01 (0.04)	–	–
Missing mother's country of birth	–	–0.26* (0.13)	0.76** (0.10)	–0.11 (0.26)	–	–	–	–0.06 (0.06)

	PPVT				SDQ			
	Couple families		Separated families		Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort
Non-ATSI (reference)								
ATSI	–0.39** (0.15)	–0.19 (0.10)	–0.33* (0.14)	–0.44** (0.16)	0.05 (0.04)	0.01 (0.03)	–0.03 (0.04)	0.03 (0.06)
Missing ATSI	–	–1.01 (0.57)	–	–	–	–	–	–
Girl (reference)								
Boy	–0.15** (0.03)	0.05 (0.03)	–0.21* (0.08)	0.18* (0.07)	0.01 (0.01)	0.04** (0.01)	0.01 (0.03)	0.09** (0.03)
Age	0.89** (0.07)	0.36** (0.07)	0.87** (0.16)	0.64** (0.15)	0.03* (0.02)	0.03 (0.02)	0.01 (0.06)	–0.10 (0.06)
Constant	–4.03** (0.35)	–2.83** (0.66)	–4.03** (0.78)	–5.41** (1.35)	–	–	–	–
R^2	0.15	0.07	0.13	0.10	–	–	–	–
Adjusted R^2	0.14	0.06	0.09	0.07	–	–	–	–
Number	3427	3154	593	788	3110	2838	472	668

Notes: For PPVT these are OLS regressions and SDQ probit regressions. * $p < .05$; ** $p < .01$.

Table B5 Children with emotional and behavioural problems in the clinical range and receptive vocabulary of children aged 4–5 and 8–9 years, by tenure and family form, regression coefficients

	PPVT				SDQ			
	Couple families		Separated families		Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort
Owners without a mortgage (reference)								
Owner with a mortgage	0.01 (0.05)	–0.07 (0.05)	–0.24 (0.20)	–0.06 (0.18)	–0.01 (0.01)	0.01 (0.01)	–0.07 (0.06)	0.15* (0.07)
Renter—Private landlord	–0.19** (0.07)	–0.16* (0.07)	–0.36 (0.20)	–0.14 (0.17)	0.02 (0.02)	0.04* (0.02)	–0.05 (0.07)	0.14 (0.08)
Renter—State/territory housing authority	–0.69** (0.20)	–0.35* (0.16)	–0.91** (0.22)	–0.28 (0.22)	0.10* (0.06)	0.14** (0.08)	–0.04 (0.06)	0.28** (0.13)
Other landlord/other tenure type	–0.02 (0.08)	–0.07 (0.09)	–0.29 (0.22)	–0.21 (0.19)	0.01 (0.02)	0.00 (0.02)	–0.03 (0.06)	0.28** (0.13)
Missing tenure	–0.25 (0.17)	0.07 (0.16)	0.11 (0.47)	–0.30 (0.28)	–0.01 (0.04)	0.05 (0.07)	–0.04 (0.10)	0.19 (0.18)
Bachelor degree (reference)								
Postgraduate degree level	0.06 (0.09)	0.32** (0.11)	0.03 (0.23)	0.05 (0.24)	–0.01 (0.02)	–0.01 (0.03)	0.00 (0.11)	0.02 (0.10)
Graduate diploma and graduate certificate level	–0.08 (0.10)	–0.01 (0.13)	–0.04 (0.29)	0.13 (0.23)	0.00 (0.02)	0.03 (0.03)	–	0.14 (0.11)
Advanced diploma and diploma level	–0.16** (0.06)	–0.28** (0.08)	0.04 (0.18)	–0.04 (0.21)	0.01 (0.02)	0.00 (0.02)	–0.03 (0.06)	–0.01 (0.06)
Year 12 Certificate I/II	–0.39** (0.04)	–0.46** (0.05)	–0.25 (0.14)	–0.32 (0.17)	0.02* (0.01)	0.02 (0.01)	0.05 (0.05)	0.01 (0.05)

	PPVT				SDQ			
	Couple families		Separated families		Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort
Inadequately described/not stated	–0.63* (0.26)	–0.90 (0.52)	–	–0.56 (0.33)	–	–	–	–
Missing education	–0.15 (0.57)	–0.61** (0.16)	–0.30 (0.28)	–0.42 (0.22)	–	0.12 (0.14)	0.27 (0.19)	0.13 (0.11)
Income – bottom two quintiles	0.12 (0.06)	-0.01 (0.06)	0.26* (0.13)	-0.08 (0.10)	-0.01 (0.02)	-0.02 (0.01)	-0.03 (0.06)	-0.02 (0.04)
Missing income	–	–	–	–	–	–	–	–
Australian-born (reference)								
Oceania/Antarctica	–0.11 (0.09)	–0.11 (0.09)	–0.35 (0.19)	–0.04 (0.22)	–0.03 (0.01)	0.02 (0.02)	0.04 (0.08)	0.07 (0.08)
Europe—North East	0.09 (0.07)	–0.01 (0.08)	0.34* (0.16)	0.21 (0.16)	–0.02 (0.01)	–0.02 (0.01)	0.01 (0.08)	–0.05 (0.04)
Europe—South East	–0.54** (0.15)	–0.18 (0.15)	–0.72 (0.47)	–0.95* (0.45)	0.02 (0.04)	0.01 (0.04)	–	0.22 (0.20)
North Africa/Middle East	–1.18** (0.16)	–0.97** (0.13)	–0.81* (0.37)	–0.84** (0.17)	0.09* (0.06)	–0.03 (0.02)	0.21 (0.26)	0.24 (0.18)
Asia—South East	–0.77** (0.12)	–0.15 (0.12)	–0.77* (0.38)	–0.28 (0.22)	0.02 (0.03)	0.04 (0.03)	0.17 (0.18)	–0.02 (0.06)
Asia—North East	–0.98** (0.14)	–0.20* (0.10)	–0.54 (0.36)	0.08 (0.25)	0.02 (0.05)	0.00 (0.03)	–	0.38 (0.25)
Asia—South and Central	–0.88** (0.13)	–0.26* (0.11)	0.11 (0.09)	–0.55** (0.11)	0.00 (0.03)	–0.03 (0.02)	–	–
America—North and South	–0.01 (0.11)	0.07 (0.14)	–0.03 (0.35)	–0.10 (0.30)	–0.02 (0.02)	–0.01 (0.04)	0.09 (0.17)	0.26* (0.17)

	PPVT				SDQ			
	Couple families		Separated families		Couple families		Separated families	
	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort	B cohort	K cohort
Africa—Sub-Saharan	–0.23 (0.13)	0.00 (0.13)	–0.48 (0.33)	–0.08 (0.32)	0.01 (0.04)	0.01 (0.04)	–	–
Missing mother's country of birth	–	–0.31* (0.13)	0.69** (0.10)	–0.16 (0.25)	–	–	–	–0.02 (0.09)
Non-ATSI (reference)								
ATSI	–0.30* (0.14)	–0.18 (0.10)	–0.26 (0.14)	–0.37* (0.16)	0.02 (0.03)	0.00 (0.03)	–0.03 (0.04)	0.00 (0.05)
Missing ATSI	–	–1.03 (0.54)	–	–	–	–	–	–
Girl (reference)								
Boy	–0.15** (0.03)	0.05 (0.03)	–0.23** (0.08)	0.19* (0.07)	0.01 (0.01)	0.04** (0.01)	0.01 (0.03)	0.09** (0.03)
Age	0.90** (0.07)	0.37** (0.07)	0.86** (0.16)	0.62** (0.15)	0.03* (0.02)	0.03 (0.02)	0.02 (0.05)	–0.09 (0.05)
Constant	–3.94** (0.34)	–2.79** (0.65)	–3.93** (0.80)	–5.21** (1.36)	–	–	–	–
R^2	0.16	0.07	0.17	0.10	–	–	–	–
Adjusted R^2	0.15	0.06	0.13	0.07	–	–	–	–
Number	3,427	3,154	593	788	3,110	2,838	472	668

Notes: For PPVT these are OLS regressions and SDQ probit regressions. * $p < .05$; ** $p < .01$.