

Intergenerational transmission of disadvantage in Australia

Deborah A. Cobb-Clark, School of Economics, University of Sydney.

Institute of Labor Economics (IZA).

Australian Research Council Centre of Excellence for Children and Families over the Life Course (the Life Course Centre).



2

Globally, there is a widening divide in the wellbeing of people at the top of the socioeconomic ladder and people at the bottom. Despite tremendous economic growth, more than 75% of people in developing countries are living in societies that are more unequal today than they were in the 1990s (UNDP 2013). In Organisation for Economic Co-operation and Development (OECD) countries, the ratio of average disposable income in the top versus the bottom decile now stands at 9.5; up from around 7 in the 1980s (Keeley 2015).

Australia has not been immune to these global trends. Although the exact level and trend in income inequality depends on the data source and measure considered, income inequality today is higher than it was in the 1980s, though there appears to have been little change since the mid-2000s (see ABS 2019; Whiteford 2015; Wilkins 2014, 2015). Wealth is also becoming more unequally distributed. The latest data from the Australian Bureau of Statistics (2019) suggests that while the middle 20% and the top 20% of Australian households have experienced a real increase in average net worth from 2003-04 to 2017-18, the bottom 20% did not experience any real increase over this period. In 2017-18, the top 20% owned 63% of total household wealth, the middle 20% owned 11% and the bottom 20% owned less than 1%; the mean net worth of the wealthiest 20% was more than 90 times that of the lowest 20% of households. Rising property values and superannuation balances are the two most important contributors to increasing household wealth (ABS 2019).

Rising inequality pulls the rungs of the socioeconomic ladder further apart, reducing social mobility by making it harder for disadvantaged Australian children to avoid becoming disadvantaged adults.

This article provides an overview of the Australian evidence on the extent to which socioeconomic disadvantage is transmitted from one generation to the next. While there is a large literature on the intergenerational transmission of education, occupation and social status, the focus here is on disadvantage as seen through the lens of income (earnings) and welfare receipt.¹ The goal is to place the Australian evidence in the international context and identify key data and knowledge gaps.

The nexus between intergenerational disadvantage and social mobility

Socioeconomic disadvantage is a multifaceted concept reflecting not only people's lack of economic resources, but also their social exclusion, missing political voice and limited aspirations. Disadvantage can persist within communities—and across generations—whenever there is a lack of social and economic opportunities for vulnerable people and their families.

Constrained social mobility imposes costs on society. A lack of upward social mobility at the bottom of the distribution means that many people's talents are squandered, undermining productivity and economic growth (OECD 2017). At the same time, a lack of social mobility at the top of the distribution 'may translate into persistent rents for a few at the expense of many, due to unequal access to educational, economic or financial opportunities' also resulting in inefficiencies (OECD 2018:13). Perceptions matter. The prospects for upward mobility have been linked to greater life satisfaction and improved wellbeing, while pessimism about social mobility can undermine social cohesion and the democratic process (OECD 2018).

Ultimately, any reduction in intergenerational disadvantage in Australia must come from reducing the persistence in socioeconomic position and increasing the opportunities for social mobility.

Intergenerational earnings and income

Economists rely on intergenerational earnings elasticities as a simple indicator of the persistence of economic advantage. A larger elasticity implies a greater degree of intergenerational persistence. An elasticity of 0.3, for example, implies that a 10% increase in parents' earnings is associated with a 3% increase in their children's earnings. An elasticity of zero indicates that the earnings of parents and children are unrelated, while the elasticity will be closer to 1 if parents and children occupy the same position in the earnings distribution. Greater earnings persistence across generations results in less social mobility, leaving children's feet more firmly fastened to their parents' rung on the socioeconomic ladder.

Constructing intergenerational elasticities is both data intensive and methodologically difficult; estimates are sensitive (sometimes highly sensitive) to the way they are constructed. We virtually never observe the earnings of parents and their adult children at the same stage of life, for example, implying that earnings must be predicted for one generation or the other. Short study periods (Mazumder 2005; Page 2004) and measurement error (Bowles & Gintis 2002; Solon 1992; Zimmerman 1992) both tend to result in attenuation bias, leading to smaller estimates of intergenerational persistence. Consequently, it is important to consider the underlying data and method when comparing estimates across studies. See Table 2.1 at the end of this article for an overview of the studies discussed below.

Early Australian evidence

Leigh (2007) is the first to document the degree of intergenerational earnings mobility in Australia. He estimates earnings elasticities for sons born between 1911 and 1979 using occupation-specific predictions of their fathers' earnings. His results imply that if an Australian father's earnings increased by 10%, his son's earnings would rise by 2%–3%. Applying the same method to United States data results in a significantly higher intergenerational elasticity, indicating that mobility is higher in Australia than in the United States. Earnings mobility for native-born fathers and sons is very similar in the 2 countries; however, immigrants are less socially mobile, particularly in the United States.

Leigh's work has been particularly influential in allowing Australian evidence to weigh in on the international debate on social mobility. Many experts have noted that countries with high social mobility tend to have low inequality—a relationship that former United States presidential adviser Alan Krueger dubbed 'The Great Gatsby Curve' (see Corak 2013; Mendolia & Siminski 2016). Leigh's (2007) elasticity estimates imply that, in the international context, Australian social mobility is relatively high given its degree of inequality (Corak 2013).

New Australian evidence

Five new studies re-examining Leigh's (2007) original estimates of Australian social mobility have been published since 2016. Four of them utilise similar estimation samples drawn from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, allowing researchers to replicate results and draw inferences about the impact of alternative methods on the resulting estimates. The fifth uses tax records to estimate the intergenerational mobility of people born between 1978 and 1982.

Mendolia and Siminski (2016) estimate intergenerational earning elasticities for men (sons) aged 25–54 using 12 waves of HILDA data. They closely follow Leigh's (2007) estimation approach in predicting fathers' earnings (using their 4-digit occupations) and rescaling estimates using a United States benchmark to adjust for the attenuation bias that results from this imputation.² They use considerably more data than Leigh, however, which increases estimation precision. Mendolia and Siminski's preferred estimates imply that a 10% increase in a father's earnings is associated with a 3.5% increase in his son's earnings; a substantially higher degree of intergenerational persistence than that estimated by Leigh. They conclude that Australian social mobility is not particularly high and is consistent with its level of inequality.

Huang and others (2016) adopt a different methodological approach, estimating father–son earnings elasticities using a 2-stage panel data model estimated with HILDA data from 2001 to 2013. Unlike Mendolia and Siminski (2016), they do not adjust for the measurement error associated with imputing fathers' earnings. They make a contribution in examining the sensitivity of their elasticity estimates to: (i) alternative earnings measures (hourly, weekly, annual); and (ii) the level of occupational aggregation (2-, 3- or 4-digit) used in predicting fathers' earnings. The preferred estimates of Huang and others (2016) imply that a 10% increase in fathers' hourly earnings results in a 2.4%–2.8% increase in their sons' hourly earnings. Estimates range, however, from 1.1% to 3.0%, confirming the sensitivity of estimated earnings elasticities to the method and data used.

Fairbrother and Mahadevan (2016) provide the only Australian estimates of intergenerational earnings elasticities for mothers and daughters as well as for fathers and sons. Like others, they also rely on multiple waves of HILDA data (specifically from 2001 to 2013) and predict parental earnings based on their occupation when the respondent was aged 14. Their estimates imply that a 10% increase in fathers' hourly earnings is associated with a 2.0% increase in their sons' hourly earnings and a 0.8% increase in the hourly earnings of their daughters (see Table 2.1). In comparison, a 10% increase in mothers' annual earnings is linked to a 1.5% increase in their daughters' hourly earnings and a 1.6% increase in the hourly earnings of their sons. Interestingly, the gender pattern in annual earnings elasticities is substantially different; father–son and mother–son annual earnings elasticities are slightly lower than are hourly earnings elasticities, while father–daughter annual earnings elasticities are slightly higher and mother–daughter annual earnings elasticities more than double. Thus, decisions about how much to work contribute to the intergenerational persistence in economic advantage between Australian mothers and their daughters.

None of the previous 4 studies discussed above (including Leigh's) use truly intergenerational data. Murray and others (2017) provide the first estimates of intergenerational mobility for Australia that are based on directly observed incomes for parents and their children. They focus on young people born between 1984 and 1986 who were aged 15–17 in 2001 when the HILDA Survey commenced. This allows them to identify 489 parent–child pairs with HILDA earnings data for both generations. Adopting a methodological approach used by Chetty and others (2014) to estimate intergenerational elasticities from United States federal income tax data, the authors calculate that a 10% increase in parental household income is associated with a 2.8% increase in the household income of adult children. This estimate rises to 4.1% once an adjustment for potential attenuation bias is made.³

In recent work, Deutscher and Mazumder (2019) estimate intergenerational mobility using income tax data—the Australian Taxation Office (ATO) Australian Longitudinal Individuals File—from 1991 to 2015. The data cover over a million Australians born between 1978 and 1982, 90% of whom can be linked to their parents through applications for tax file numbers (see Deutscher 2018 for details). The authors find that the intergenerational elasticity in total income is 0.185, while the rank correlation is 0.215, suggesting that Australia is among the most mobile countries in the world. Producing the first regional estimates of intergenerational mobility in Australia, Deutscher and Mazumder (2019) conclude that while mobility is rapid throughout most of the country, there is meaningful dispersion—with the mining boom, in particular, driving strong upward mobility over this period.

Intergenerational welfare receipt

Intergenerational welfare receipt is a broader marker of intergenerational disadvantage than is traditional income poverty. It reflects not only a lack of income, but also low levels of wealth, poor health, inadequate housing and limited aspirations.⁴ Growing up in a family receiving social assistance is a marker for compromised long-term development (Weitoft et al. 2008). At the same time, receiving welfare is not the same thing as being dependent on welfare (Penman 2006); we know very little about the extent to which receipt translates into dependence.

Early Australian evidence

Australian evidence on intergenerational welfare receipt first emerged in the late 1990s—more than a decade before Leigh’s (2007) research on the intergenerational persistence in earnings. Although large-scale data linking welfare receipt across generations are virtually non-existent elsewhere in the world (Corak 2006; Dahl et al. 2014), Australian public servants successfully linked administrative social security data for a birth cohort of children to their parents. Analysis of the Transgenerational Data Set (TDS) (see Box 2.1) indicated that although only 1 in 6 young Australians (aged 16–18) in welfare-reliant families received income support themselves, they were much more likely to do so than their advantaged peers (McCoull & Pech 2000; Pech & McCoull 2000). Moreover, the data indicated that ‘a large proportion of total income support receipt is concentrated among relatively few families, and that there may be little long-term mobility out of the income support system’ (Pech & McCoull 2000:50).

Box 2.1: The Transgenerational Data Set

The TDS links the social security records of a birth cohort of young adults to those of their parents. Multiple versions of the TDS have been constructed over the years. The initial TDS was constructed in the 1990s and was the basis for the early work of departmental officers on intergenerational disadvantage (McCoull & Pech 2000; Pech & McCoull 2000). In the early 2000s, a second version of the data (TDS2) was created and matched to survey data as part of the Youth in Focus project which ended in 2008 (Breunig et al. 2009). In 2014, the TDS2 data were extended (referred to as TDS2-E) to include updated administrative records for the period 2008–2014.

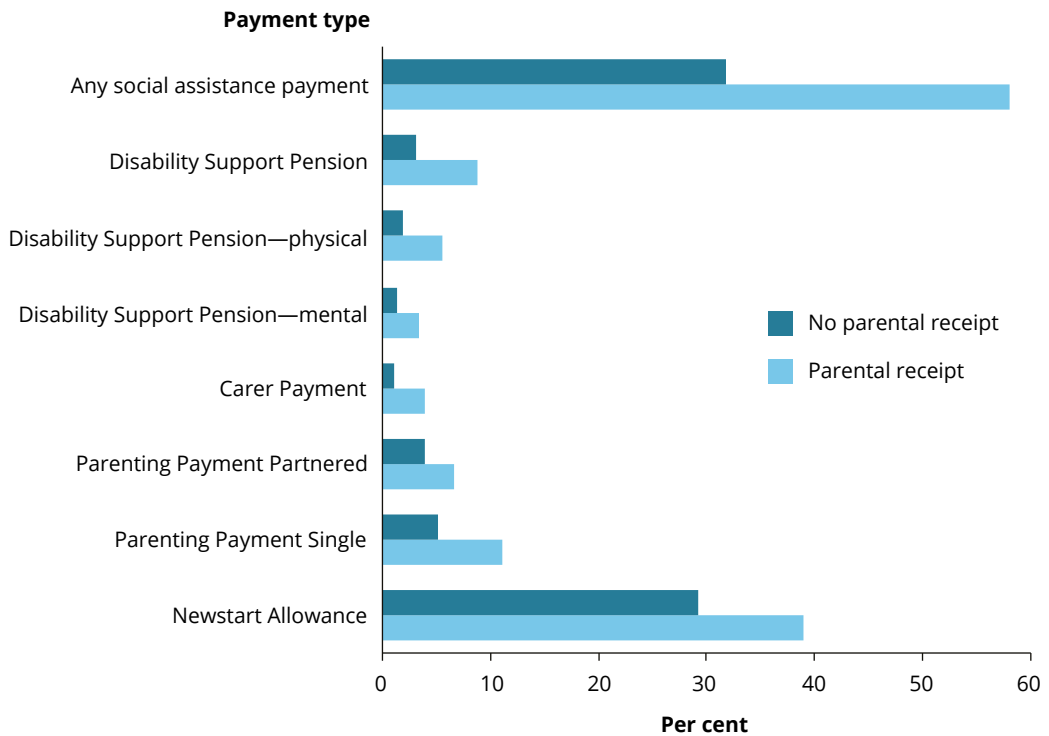
In the intervening years, considerable effort has been devoted to identifying the ways that Australian welfare receipt is passed from one generation to the next. The Youth in Focus project linked survey data for a representative sample of Australian youth (aged 18–20) and their mothers to the family's intergenerational social security records updated to 2008 (TDS2) (Breunig et al. 2009). Analyses of Youth in Focus data have been particularly important in establishing that Australian young people in welfare-reliant families: (i) engage in more risky behaviour (Cobb-Clark et al. 2012), though this is reduced with participation in extracurricular activities (Le 2013); (ii) are less likely to reside with, and receive any financial support from, their parents (Cobb-Clark & Gørgens 2014); (iii) are more socially isolated (Ryan & Sartbayeva 2011); and (iv) are more likely to be in favour of generous, publicly funded unemployment benefits (Barón et al. 2015). Each of these represents a potential pathway linking socioeconomic disadvantage across generations.

New Australian evidence

While the early Australian research discussed above highlights crucial differences in the experiences of disadvantaged youth as they complete their education and prepare to enter the labour market, aged just 18–20, they are too young to be completely informative about the extent to which growing up in a welfare-reliant family is associated with long-term disadvantage in adulthood. A recent extension of the TDS2 (TDS2-E) (see Box 2.1) to include the years 2008–2014 is supporting new research which seeks to fill this gap by following disadvantaged youth into their mid-20s.

Analysing TDS2-E data, Cobb-Clark and others (2017) find that 58.0% of young Australians receive welfare between the ages of 18 and 26 if their parents ever received welfare compared with 31.8% if they did not—a ratio of 1.8 (see Figure 2.1). Given that welfare receipt is concentrated at the younger end of this age range because of Youth Allowance, this ratio would rise if the focus were limited to those in their mid-20s. In comparison, Page (2004:231) estimates that women in the United States are 2.8 times more likely to receive welfare if their mothers also received welfare. Similarly, Stenberg (2000:231, Table 1) estimates that, in Sweden, the likelihood of adults receiving social assistance is approximately 2.5 times higher if their families received social assistance while they were growing up. The intergenerational correlation in welfare receipt varies across payment types, however, indicating that some forms of disadvantage may be more easily transferred from parents to children than others (see Figure 2.1).

Figure 2.1: Young Australians’ chances of receiving welfare (aged 18–26) by parental welfare receipt



Note: A larger disparity in the relative chance of receiving welfare given parental welfare receipt indicates a larger intergenerational correlation in welfare receipt.

Source: Cobb-Clark et al. 2017: Table 5.

Cobb-Clark and others (2017) also provide evidence that parental disability—particularly when related to mental health issues—is linked not just to higher rates of disability among their adult children, but also to a greater need for a range of welfare payments. Young adults are also much more likely to receive a range of welfare payments if they grow up in single- rather than couple-headed families receiving parenting payments, suggesting that family structure matters for intergenerational disadvantage. Finally, age matters; young people are 1.6 times more likely to receive unemployment payments before age 22 (1.3 times after age 22) if their parents received unemployment payments while they were growing up (Cobb-Clark et al. 2017).

On balance, this Australian evidence is consistent with the international literature. Dahl and others (2014) and Dahl and Gielen (2018), for example, also provide evidence of an intergenerational relationship in the take-up of disability benefits in Norway and the Netherlands. Similarly, Cobb-Clark and others (2017) estimate young people's likelihood of receiving single-parent payments is 2.2 times greater if their families also received single-parent payments. This is consistent with United States' evidence that children of separated parents are twice as likely to become single parents themselves (McLanahan & Sandefur 2009). Finally, the intergenerational correlation in Australian unemployment benefits is similar to that of men in Canada and Sweden (Cobb-Clark et al. 2017; Corak et al. 2004:255).

Moving forward

There is clear evidence that Australian parents pass some part of their social and economic position on to their children. Social mobility is likely lower in Australia than in some developed countries (principally Scandinavian and Nordic countries) and higher than in others (most notably the United States). While this is good to know, 'obtaining precise and accurate estimates of intergenerational mobility can only inform relatively narrow understanding of equality of opportunity in Australia' (Murray et al. 2017:29).

Going forward, it will be important to move beyond international benchmarking exercises to develop a better understanding of the process underlying Australian social mobility. In particular, the emerging Australian evidence hints at several key pathways through which intergenerational disadvantage may be occurring—for example, family structure, parental disability and labour supply decisions (see Perales et al. 2014). There are no doubt others yet to be discovered.

Which lines of inquiry are pursued and which fall through the cracks will, in the end, be driven by the available data. Better data allow researchers to utilise more advanced methods and expand the scope of their investigations. Our understanding of social mobility in Australia is quickly evolving as the HILDA Survey and TDS data sets mature and other administrative data sets like the ATO Australian Longitudinal Individuals File become more widely available. Five of the 6 studies estimating Australian intergenerational earnings elasticities have been published in the past 3 years; all rely on these data.

On balance, the Australian data story is a positive one. We have several data sets—HILDA, TDS, Journeys Home, the Longitudinal Survey of Australian Children—which are both world-class and informative about intergenerational disadvantage in Australia. A lot of progress will continue to be made in the future by analysing these data. At the same time, investigating intergenerational disadvantage is methodologically challenging and data intensive. There is little doubt that access to richer and more varied data sources has afforded countries such as the United States and the United Kingdom with a much deeper understanding of intergenerational disadvantage than exists in Australia (see Perales et al. 2014).

In particular, while the international literature has begun to make strides in isolating causation from correlation using random (exogenous) variation in policy rules or administrative arrangements (see, for example, Dahl & Giesen 2018; Dahl et al. 2014; Edmark & Hanspers 2015; Hartley et al. 2017), this is yet to be done in Australia. The Australian evidence to date is strictly correlational. This limitation must be overcome. Correlational evidence is useful in telling us where to look for policy solutions; causal evidence is needed to tell us what those solutions in fact are. Linking administrative data sources like the TDS and ATO Australian Longitudinal Individuals File with data on program participation raises the possibility of establishing causality in a cost-effective way using quasi-experimental methods.

Importantly, we must remember that a positive intergenerational correlation in welfare receipt does not imply that poor children would have been better off had their parents not received social assistance. Intergenerational welfare correlations confound the beneficial effects of having additional financial resources with the harmful effects of the socioeconomic disadvantage that led to a need for welfare in the first place. Once children in welfare-reliant households are compared with equally disadvantaged children whose families did not receive welfare, there is little evidence that parental social assistance has a detrimental effect on children (Levine & Zimmerman 2005). Similarly, Cobb-Clark and others (2017) find that long-term exposure to social assistance as a child does not have the compounding effects on youth disadvantage that we might expect if there were a widespread welfare culture in Australia in which disadvantage is increasingly entrenched.

Finally, poor children experience a range of adult outcomes. 'There is nothing inevitable about socio-economic advantage or disadvantage being passed from one generation to another' (OECD 2018:17). Institutions are important in shaping intergenerational disadvantage. Families, labour markets, public policy and the broader national context all interact to drive the extent to which children's opportunities and outcomes depend on their family background (Corak 2013). The way that social and economic policy is designed, delivered and paid for, all matter for intergenerational mobility (d'Addio 2007; Fairbrother & Mahadevan 2016; Solon 2004; Whiteford 2015). It is crucial to translate the Australian evidence on intergenerational disadvantage into effective policy design.

Acknowledgments

This research was supported by the Australian Research Council through the Centre of Excellence for Children and Families over the Life Course (project number CE140100027). The Centre is administered by the Institute for Social Science Research at the University of Queensland, with nodes at University of Western Australia, University of Melbourne and University of Sydney. Email: deborah.cobb-clark@sydney.edu.au. Telephone: +61435961387. Address: School of Economics, Level 5, Social Sciences Building, The University of Sydney, NSW 2006, Australia.

¹ For excellent reviews of the international research on the intergenerational transmission of socioeconomic status see Solon (1999, 2002); Corak (2006); d'Addio (2007); and Black and Devereaux (2011).

² The imputation of fathers' earnings introduces measurement error which subjects estimates to attenuation bias, i.e., biases them towards zero.

³ Murray and others (2017) also compute rank correlation, which helps mitigate sample selection problems as negative and zero incomes can be included in the analysis.

⁴ For reviews of the literature on intergenerational welfare receipt, see Moffitt (1992); Page (2004); and Black and Devereux (2011). For reviews of the Australian literature on intergenerational welfare receipt, see Penman (2006) and Perales and others (2014).

Table 2.1: Comparison of the Australian studies on income (earnings) persistence

Paper	Data	Empirical strategy	Results
Leigh 2007	<p>1. <i>Data:</i> Social Stratification in Australia (1965), Social Mobility in Australia Project (1973), National Social Science Survey (1987) and 4 waves of HILDA Survey (2001–2004). Panel Study of Income Dynamics (PSID) (2001) is used for United States (US) benchmarking.</p> <p>2. <i>Sample:</i> Employed men with reported earnings, aged 25–54.</p>	<p>1. <i>Imputation:</i> Father's hourly earnings are imputed using the predicted hourly earnings of a 40 year old with the same occupation.</p> <p>2. <i>Intergenerational elasticity (IGE):</i> Ordinary least squares (OLS) regression of son's hourly earnings (log) on father's imputed hourly earnings (log) and control variables is used to estimate IGE. IGE is coefficient on imputed father's earnings.</p>	<p>1. <i>Preferred estimate:</i> 0.2–0.3 if true US IGE is 0.4–0.6.</p> <p>2. <i>US comparison:</i> 0.181 (Australia, 2004) versus 0.325 (US, 2001). Result suggests intergenerational earnings mobility is higher in Australia.</p>
Mendolia & Siminksi 2016	<p>1. <i>Data:</i> Australian data are 12 waves of HILDA Survey (2001–2012) and US data are 4 waves of PSID (2001, 2003, 2005, 2007).</p> <p>2. <i>Samples:</i> Men aged 25–54 who report positive earnings, occupation and father's occupation.</p>	<p>1. <i>Imputation:</i> Predict father's earnings using method of Leigh (2007).</p> <p>2. <i>IGE:</i> Unadjusted IGE using the method of Leigh (2007). Adjusted IGE using US benchmarks to circumvent measurement error problems (attenuation bias).</p>	<p>1. <i>Preferred estimate:</i> 0.350 (adjusted IGE based on US benchmarking).</p> <p>2. <i>Pooled estimates:</i> 0.227 (Australia unadjusted), 0.350 (Australia adjusted), 0.306 (US estimate).</p>

continued

Table 2.1 (continued): Comparison of the Australian studies on income (earnings) persistence

Paper	Data	Empirical strategy	Results
Fairbrother & Mahadevan 2016	<p>1. <i>Data</i>: 13 waves of HILDA Survey (2001–2013).</p> <p>2. <i>Samples</i>: Individuals aged 30–54 with positive weekly earnings in their primary source of income. The samples are divided by gender.</p>	<p>1. <i>Imputation</i>: Mother/father earnings are imputed using a similar method to Leigh (2007). Key difference is that earnings are measured as 13-year average hourly wages to account for transitory fluctuations.</p> <p>2. <i>IGE</i>: IGE with respect to father/mother earnings uses the same method as Leigh (2007).</p>	<p>1. <i>Preferred estimates</i>:</p> <ul style="list-style-type: none"> a. Son–father: 0.202 b. Son–mother: 0.160 c. Daughter–father: 0.081 d. Daughter–mother: 0.151.
Huang et al. 2016	<p>1. <i>Data</i>: 13 waves of HILDA Survey (2001–2013).</p> <p>2. <i>Sample</i>: Employed men aged 30–54 with positive earnings and report analytical variables.</p>	<p>1. <i>Imputation</i>: Coefficients from between effects model are used to predict father's earnings. Father's age when son is 14 is used rather than assume age 40. Such specification attempts to minimise measurement error problems.</p> <p>2. <i>IGE</i>: Estimated using a random effects model that includes father's and son's age (centred at 40) as controls. Also estimates IGE based on weekly and annual earnings; deemed less reliable as cannot control for hours worked.</p>	<p>1. <i>Preferred estimates</i>: 0.24–0.28 IGE for Australia.</p> <p>2. <i>Different earnings measures</i>:</p> <ul style="list-style-type: none"> a. Hourly IGE range: 0.24–0.28 b. Weekly IGE range: 0.17–0.23 c. Annual IGE range: 0.18–0.24.

continued

Table 2.1 (continued): Comparison of the Australian studies on income (earnings) persistence

Paper	Data	Empirical strategy	Results
Murray et al. 2017	<p>1. <i>Data</i>: 15 waves of HILDA Survey (2001–2015).</p> <p>2. <i>Sample</i>: Data use 489 parent–child pairs. Direct use of parent–child pairs avoids measurement error problems associated with imputation.</p>	<p>1. <i>I GE</i>: OLS regression of child’s household income (log) on parent’s household income (log), child and parent’s ages (quadratic) and a child gender indicator.</p> <p>2. <i>Rank correlation</i>: OLS regression of child’s percentile rank in child income distribution on parent’s corresponding measure, parent’s age (quadratic) and child gender indicator. Allows for zero or negative income (IGE does not), which mitigates sample-selection problems.</p>	<p>1. <i>Preferred estimates</i>:</p> <p>a. IGE: 0.409 (gross household income, adjusted for attenuation bias)</p> <p>b. Rank correlation: 0.273.</p> <p>2. <i>Estimation based on hourly earnings</i>:</p> <p>a. IGE: 0.096</p> <p>b. Rank correlation: 0.151.</p> <p>Authors suggest this is due to measurement error associated with obtaining parental earnings.</p>
Deutscher & Mazumder 2019	<p>1. <i>Data</i>: ATO intergenerational data (1991–2015).</p> <p>2. <i>Sample</i>: People born between 1 July 1978 and 30 June 1982 who registered for a tax file number, remained resident in Australia through 2015 and could be matched to their parents (90%).</p>	<p>1. <i>I GE</i>: OLS regression of child’s income (log) on average parental household income (log) and financial year of birth indicators.</p> <p>2. <i>Rank correlation</i>: OLS regression of child’s percentile rank in child income distribution on parent’s corresponding measure.</p>	<p>1. <i>Preferred estimates</i>:</p> <p>a. IGE: 0.185 (individual total pre-tax income)</p> <p>b. Rank correlation: 0.215.</p> <p>2. <i>Regional estimates of intergenerational income mobility</i>: Authors find some regional differences in mobility.</p>

References

- ABS (Australian Bureau of Statistics) 2019. Household income and wealth, Australia, 2017–18. Media release, 12 July 2019. ABS cat. no. 6523.0. Canberra: ABS. Viewed 12 July 2019, <<https://www.abs.gov.au/ausstats/abs@.nsf/mf/6523.0>>.
- Barón JD, Cobb-Clark DA & Erkal N 2015. Cultural transition and the intergenerational correlation in welfare receipt. *Southern Economic Journal* 82(1):208–34.
- Black SE & Devereux P 2011. Recent developments in intergenerational mobility. In: Ashenfelter O & Card D (eds). *Handbook of labor economics*. Vol. 4B. Amsterdam: Elsevier, 1487–542.
- Bowles S & Gintis H 2002. The inheritance of inequality. *Journal of Economic Perspectives* 16(3):3–30.
- Breunig R, Cobb-Clark D, Gørgens T, Ryan C & Sartbayeva A 2009. User's guide to the Youth in Focus data version 2.0. Youth in Focus project discussion paper no. 8. Canberra: Research School of Social Sciences, Australian National University. Viewed 30 May 2019, <https://www.rse.anu.edu.au/media/381974/yif_user_guide_20_10dec2009.pdf>.
- Chetty R, Hendren N, Kline P & Saez E 2014. Where is the land of opportunity? The geography of intergenerational mobility in the United States. *Quarterly Journal of Economics* 129(4):1553–623.
- Cobb-Clark DA, Dahmann SC, Salamanca N & Zhu A 2017. Intergenerational disadvantage: learning about equal opportunity from social assistance receipt. IZA (Institute of Labor Economics) discussion paper no. 11070. Bonn: IZA. Viewed 30 May 2019, <<https://www.iza.org/publications/dp/11070>>.
- Cobb-Clark DA & Gørgens T 2014. Parents' economic support of young-adult children: do socioeconomic circumstances matter? *Journal of Population Economics* 27(2):447–71.
- Cobb-Clark DA, Ryan C & Sartbayeva A 2012. Taking chances: the effect of growing up on welfare on the risky behavior of young people. *Scandinavian Journal of Economics* 114(30):729–55.
- Corak M 2006. Do poor children become poor adults? Lessons from a cross-country comparison of generational earnings mobility. In: Creedy J & Kalb G (eds). *Dynamics of inequality and poverty (Research on economic inequality. Vol. 13)*. Bingley, UK: Emerald Group Publishing, 143–88.
- Corak M 2013. Income inequality, equality of opportunity, and intergenerational mobility. *Journal of Economic Perspectives* 27(3):79–102.
- Corak M, Gustafsson B & Österberg T 2004. Intergenerational influences on the receipt of unemployment insurance in Canada and Sweden. In: Corak M (ed.). *Generational income mobility in North America and Europe*. Cambridge, UK: Cambridge University Press, 245–88.
- d'Addio AC 2007. Intergenerational transmission of disadvantage: mobility or immobility across generations? A review of the evidence for OECD countries. OECD social, employment and migration working papers no. 52. Paris: OECD. Viewed 30 May 2019, <<http://www.oecd.org/els/38335410.pdf>>.
- Dahl GB & Gielen AC 2018. Intergenerational spillovers in disability insurance. NBER (National Bureau of Economic Research) working paper no. 24296. Cambridge, MA: NBER. Viewed 30 May 2019, <<https://www.nber.org/papers/w24296>>.

- Dahl GB, Kostøl AR & Mogstad M 2014. Family welfare cultures. *Quarterly Journal of Economics* 129(4):1711–52.
- Deutscher N 2018. Place, jobs, peers and the teenage years: exposure effects and intergenerational mobility. Tax and Transfer Policy Institute working paper no. 10/2018. Canberra: Tax and Transfer Policy Institute, Australian National University. Viewed 30 May 2019, <<https://taxpolicy.crawford.anu.edu.au/publication/ttqi-working-papers/12673/place-jobs-peers-and-teenage-years-exposure-effects-and>>.
- Deutscher N & Mazumder B 2019. Intergenerational mobility in Australia: national and regional estimates using administrative data. Life Course Centre working paper no. 2019-02. Brisbane: Life Course Centre. Viewed 30 May 2019, <<https://www.lifecoursecentre.org.au/research/journal-articles/working-paper-series/intergenerational-mobility-in-australia-national-and-regional-estimates-using-administrative-data/>>.
- Edmark K & Hanspers K 2015. Is welfare dependency inherited? Estimating the causal welfare transmission effects using Swedish sibling data. *European Journal of Social Security* 17(3):338–60.
- Fairbrother D & Mahadevan R 2016. Do education and sex matter for intergenerational earnings mobility? Some evidence from Australia. *Australian Economic Paper* 55(3):212–26.
- Hartley RP, Lamarche C & Ziliak JP 2017. Welfare reform and the intergenerational transmission of dependence. IZA (Institute of Labor Economics) discussion paper no. 10942. Bonn: IZA. Viewed 30 May 2019, <<https://www.iza.org/publications/dp/10942>>.
- Huang Y, Perales F & Western M 2016. A land of the ‘fair go’? Intergenerational earnings elasticity in Australia. *Australian Journal of Social Issues* 51(3):361–81.
- Keeley B 2015. *Income inequality: the gap between rich and poor*. Paris: OECD Publishing.
- Le T 2015. Does participation in extracurricular activities reduce risky behaviour? Melbourne Institute working paper no. 35/13. Parkville: Melbourne Institute of Applied Economic and Social Policy, University of Melbourne. Viewed 30 May 2019, <<https://melbourneinstitute.unimelb.edu.au/publications/working-papers/search/result?paper=2156483>>.
- Leigh A 2007. Intergenerational mobility in Australia. *The B.E. Journal of Economic Analysis and Policy* 7(2):Article 6.
- Levine PB & Zimmerman DJ 2005. Children’s welfare exposure and subsequent development. *Journal of Public Economics* 89(1):31–56.
- McCoull F & Pech J 2000. Trans-generational income support dependence in Australia: early evidence. In: Saunders P (ed.). *Reforming the Australian welfare state*. Melbourne: Australian Institute of Family Studies, 91–111.
- McLanahan S & Sandefur G 2009. *Growing up with a single parent: what hurts, what helps*. Cambridge, MA: Harvard University Press.
- Mazumder B 2005. Fortunate sons: new estimates of intergenerational mobility in the United States using social security earnings data. *Review of Economics and Statistics* 87(2):235–55.
- Mendolia S & Siminski P 2016. New estimates of intergenerational mobility in Australia. *Economic Record* 92(298):361–73.

- Moffitt R 1992. Incentive effects of the U.S. welfare system: a review. *Journal of Economic Literature* 30(1):1–61.
- Murray C, Clark R, Mendolia S & Siminski P 2017. Direct measures of intergenerational income mobility for Australia. IZA (Institute of Labor Economics) discussion paper no. 11020. Bonn: IZA. Viewed 30 May 2019, <<https://www.iza.org/publications/dp/11020>>.
- OECD (Organisation for Economic Co-operation and Development) 2017. *The productivity-inclusiveness nexus*. Paris: OECD Publishing.
- OECD 2018. *A broken social elevator? How to promote social mobility*. Paris: OECD Publishing.
- Page ME 2004. New evidence on the intergenerational correlation in welfare participation. In: Corak M (ed.). *Generational income mobility in North America and Europe*. Cambridge, UK: Cambridge University Press, 226–44.
- Pech J & McCoull F 2000. Transgenerational welfare dependence: myths and realities. *Australian Social Policy* 2000:43–68.
- Penman R 2006. Psychosocial factors and intergenerational transmission of welfare dependency: a review of the literature. *Australian Social Policy* 2006:85–107.
- Perales F, Higginson A, Baxter J, Western M, Zubrick SR & Mitrou F 2014. Intergenerational welfare dependency in Australia: a review of the literature. Life Course Centre working paper no. 2014-09. Brisbane: Life Course Centre. Viewed 30 May 2019, <<https://www.lifecoursecentre.org.au/research/journal-articles/working-paper-series/intergenerational-welfare-dependency-in-australia-a-review-of-the-literature/>>.
- Ryan C & Sartbayeva A 2011. Young Australians and social inclusion. *Australian Social Policy Journal* 10:1–26.
- Solon G 1992. Intergenerational income mobility in the United States. *American Economic Review* 82(3):393–408.
- Solon G 1999. Intergenerational mobility in the labor market. In: Aschenfelter O & Card D (eds). *Handbook of labor economics*. Vol. 3A. Amsterdam: Elsevier, 1761–800.
- Solon G 2002. Cross-country differences in intergenerational earnings mobility. *Journal of Economic Perspectives* 16(3):59–66.
- Solon G 2004. A model of intergenerational mobility variation over time and place. In: Corak M (ed.). *Generational income mobility in North America and Europe*. Cambridge, UK: University Press, 38–47.
- Stenberg S 2000. Inheritance of welfare reciprocity: an intergenerational study of social assistance. *Journal of Marriage and the Family* 62(1):228–39.
- UNDP (United Nations Development Programme) 2013. *Humanity divided: confronting inequality in developing countries*. New York: UNDP, Bureau for Development Policy. Viewed 30 May 2019, <<http://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/humanity-divided--confronting-inequality-in-developing-countries.html>>.

Weitoft GR, Hjern A, Batljan I & Vinnerljung B 2008. Health and social outcomes among children in low-income families and families receiving social assistance: a Swedish national cohort study. *Social Science and Medicine* 66(1):14–30.

Whiteford P 2015. Inequality and its socioeconomic impacts. *Australian Economic Review* 48(1):83–92.

Wilkins R 2014. Evaluating the evidence on income inequality in Australia in the 2000s. *Economic Record* 90(288):63–89.

Wilkins R 2015. Measuring income inequality in Australia. *Australian Economic Review* 48(1):93–102.

Zimmerman DJ 1992. Regression toward mediocrity in economic stature. *American Economic Review* 82(3):409–29.