

Unemployment and the wellbeing of children aged 5 to 10 years



About The Benevolent Society

The Benevolent Society is Australia's oldest charity. Established in 1813 we have been caring for Australians and their communities for nearly 200 years. We are a secular, non-profit, independent organisation working to bring about positive social change in response to community needs. Our purpose is to create caring and inclusive communities and a just society.

Prepared for:

The Benevolent Society
Level 1, 188 Oxford Street
Paddington NSW 2010

t +612 9339 8000
f +612 9360 2319
e mailben@bensoc.org.au
www.bensoc.org.au

Prepared by:

The Australian Institute of Family Studies
Level 20, South Tower
485 La Trobe Street
Melbourne VIC 3000

t +613 9214 7888
f +613 9214 7839
www.aifs.gov.au

Written by: Matthew Taylor, Ben Edwards and Matthew Gray

Matthew Taylor is a Senior Research Officer, **Ben Edwards** is a Senior Research Fellow and **Matthew Gray** is Deputy Director (Research) at the Australian Institute of Family Studies (AIFS). This research was funded by the Benevolent Society.

This report uses data from LSAC confidentialised unit record file. LSAC was initiated and is funded by the Department of Families and Housing, Community Services and Indigenous Affairs, and is undertaken in partnership with AIFS and the Australian Bureau of Statistics (ABS). The views expressed in this report are those of the authors and may not reflect those of AIFS or the Australian Government.

Date of publication: October 2010
ISBN: 978-0-9807720-4-3

© This publication is copyright. It may be reproduced in part or in whole for educational purposes provided appropriate acknowledgment is given to The Benevolent Society and the Australian Institute of Family Studies.

Contents

Executive summary	1
1 Introduction	3
2 Empirical approach	4
2.1 Overview	4
2.2 Data sets	5
2.3 Unemployment scenarios	7
2.4 Empirical approach in detail	10
3 The impact of joblessness on child wellbeing.....	13
4 The effects of an economic downturn on child wellbeing.....	14
5 Geographic distribution.....	16
6 Concluding comments	23
References	24
Appendix A. Results of the regression modelling	25

Executive summary

Unemployment typically has adverse financial consequences and can have negative social and health impacts. The negative effects of unemployment may flow on to affect children, either because of the negative financial impact or because of the impacts on parenting and parental mental health. However the likely impact of increases in the unemployment rate on children's wellbeing and the extent to which there are differences in these effects between geographic areas are not well understood.

This report begins to fill this gap by estimating the potential impact of an increase in the unemployment rate on children's behavioural and emotional outcomes in New South Wales (NSW). It also examines the extent to which the negative impacts are concentrated within particular geographic areas. In this report we focus on family joblessness rather than unemployment in the household as it is a more useful measure for families with dependent children.

Data from the first three waves of *Growing Up in Australia: The Longitudinal Study of Australian Children* (LSAC) are used to estimate the impact of living in a jobless family on the likelihood of NSW children aged 4–5 years to 8–9 years of age experiencing a range of behavioural or emotional problems. The results of the analysis of the LSAC data are combined with information from the 2006 Census on the number of children in each Statistical Local Area (SLA) to estimate the impact of changes in the unemployment rate on the proportion and number of children who experience behavioural or emotional problems.

Living in a jobless family is estimated to have a negative impact upon a range of

measures of children's behavioural and emotional problems, and these effects are quite large—an increased risk of between 7 to 13 percentage points, depending upon the particular measure. Given that during economic downturns only a minority of children experience living in a jobless family as a result of the economic downturn, the increase in the proportion of children aged 5–10 years who have behavioural problems is relatively small when averaged across all children in NSW.

Our estimates suggest that if NSW had experienced an increase in the unemployment rate similar to the increase in the 1990s recession, there would have been a 0.8 percentage point increase in the number of children who had behavioural and emotional problems in the clinical range. The number of additional children with behavioural problems as a result of an increase in the unemployment rate is estimated to be 3,095. Assuming that the risk of recession for child behaviour problems are similar for other age groups (0–4 years and 10–14 years) and given that these age groups are similar in number to the cohort of 5–10 year old NSW children, then our findings would be even more significant.

In general, the areas that had the greatest number of children at risk of behavioural or emotional problems were confined to the high population areas around Sydney, from Newcastle in the north to Wollongong in the south. This was because the increases in family joblessness are projected to be fairly consistent across most NSW areas and these regions have the largest numbers of children aged 5–10 years. In particular, Blacktown South West had the largest increases, with Canterbury, Penrith West, Blacktown North and Warringah the next four areas with the greatest projected

October 2010

increases in the number of children experiencing an increased risk of clinically significant behavioural or emotional problems.

The findings from this study suggest that an increase in the aggregate unemployment rate has a negative effect on children who are living in a jobless family as a consequence of the economic downturn.

This finding underscores the importance of having macro-economic policies that limit the increase in the level of joblessness during economic downturns, policies that are aimed at reducing the rate of family joblessness and in attempting to minimise the potential negative effects on children of living in jobless families.



1. Introduction

Becoming unemployed typically has a range of negative economic and social effects (Gray, Edwards, Hayes and Baxter, 2009), and these effects can flow on to have a negative impact upon children¹. An important but not well understood question is what impact an increase in the unemployment rate is likely to have on children's wellbeing and the extent to which there are differences in these effects between geographic areas. This report aims to begin to fill this gap by estimating the potential impact of an increase in unemployment on children's behavioural and emotional outcomes in New South Wales (NSW). The report also examines the extent to which the negative impacts are concentrated within particular geographic areas.

The remainder of this paper is structured as follows. Section 2 gives an overview of the methodology and data used, presents information used for the unemployment scenarios, and describes how the statistical analyses were conducted. Section 3 presents the impact of joblessness on children's behavioural problems. The effects of an economic downturn on the behavioural and emotional outcomes of NSW children are documented in Section 4, while Section 5 focuses on the SLAs that are likely to be most affected. Section 6 provides concluding comments.



¹ Examples of studies that have examined this issue include Bolger, Patterson, Thompson, & Kupersmidt (1995), Brooks-Gunn and Duncan (1997), Coelli (2005), Elder (1999), Evans (2004) and Solantaus, Leinonen, and Punamäki (2004).

2. Empirical approach

2.1 Overview

Ideally, in order to estimate the impact of changes in the unemployment rate on children's wellbeing in different geographic regions, data on a large number of children of various ages and their parents in each geographic area would be used². This would allow the impact of a change in the unemployment rate on children's wellbeing in each geographic region to be estimated directly. These data are not available for Australia and so an alternative approach is needed. The approach used in this report is to combine data from two sources. Data from the first three waves of Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC)³ are used to estimate the impact of living in a jobless family on the likelihood of New South Wales children aged 4–5 years to 8–9 years of age experiencing a range of behavioural or emotional problems. The results of the analysis of the LSAC data are combined with information from the 2006 Census on the number of children in each Statistical Local Area (SLA)⁴, which in New South Wales correspond roughly to Local Government Areas (LGAs). Parental educational attainment⁵ along with the number of children in SLAs are used to estimate the impact of changes in the unemployment rate on the proportion and number of children who experience behavioural or emotional problems.

Given that the focus of this report is on the impact of increases in unemployment that occur during a recession, it is important to consider the ways in which parental

employment is affected during a recession. While unemployment is used as a summary measure of the state of the labour market, it is a less useful measure for families with dependent children. Only a relatively small proportion of mothers with children are classified as unemployed, as most will be not-in-the-labour force (NILF) rather than unemployed. In addition, with the increase in dual-earner families with children, there are good reasons to expect that the impacts of recessions on child wellbeing will be more likely to occur via family joblessness (i.e., where no adult in the family is employed) rather than when just one parent becomes unemployed. In this report, the focus is therefore on family joblessness. Australia has a relatively high proportion of families with children where no adult has a job compared to most other OECD countries, and family joblessness is the most important single cause of child poverty in Australia (Whiteford, 2009)⁶.

At the time the research for this report commenced, it was projected that the Global Financial Crisis (GFC) would lead to Australia's unemployment rate increasing substantially from a low of 3.9% in February 2008 to a high of 8.5% in June 2011 (Australian Government, 2010). The projected increase in unemployment was similar to the increase that had occurred in the most recent recession in the early 1990s, although the increase was from a lower unemployment rate and therefore was anticipated not to reach the same level as the 1990s recession. However, at the time of writing it seems as if Australia has avoided a major increase

2 The Australian Early Development Index (Centre for Community Child Health & Telethon Institute for Child Health Research, 2009) has small-area information on the children in the first year of school, but not for other age groups.

3 The LSAC samples children in 163 of the 199 SLAs that existed under the 2001 Australian Standard Geographical Classification (ASGC). On average, 10 children were sampled from each of these SLAs in the first wave of LSAC.

4 There are 199 SLAs in NSW, with an average of 8,435 families in each SLA. SLAs are the smallest unit of geography for which the necessary information is available in order to estimate the impact of changes in the unemployment rate on children's wellbeing.

5 More detail about the technical approach are included in Section 2.4.

6 In contrast, Australia's rate of individual joblessness is relatively low compared to the OECD average.

October 2010

in unemployment, with unemployment appearing to have peaked at 5.8% in June 2009, dropping to 5.1% in May 2010.

The potential impact of increases in the unemployment rate for child wellbeing can be illustrated by comparing what the estimates suggest would have happened to child behavioural or emotional problems if the unemployment rate following the Global Financial Crisis had reached the projected peak of 8.5%, compared to what actually occurred and is projected to continue. The difference in predicted child wellbeing between these two unemployment scenarios provides a measure of the negative impacts on children's wellbeing, which are avoided by not experiencing a large increase in the unemployment rate.

While we estimate the impact on child wellbeing of the high and low unemployment scenarios by SLA, it is important that the methods and data used in the report are not designed to produce accurate estimates of child wellbeing for small geographic areas. The estimates should not be used to identify areas with high proportions of children with behavioural or emotional problems. Rather, these estimates are designed to produce SLA-level estimates of the impact of a change in the unemployment rate on child wellbeing. That is, the number of additional children who experience behavioural or emotional problems in each SLA during a recession.

2.2 Data sets

This section provides a summary of the key data sets used to implement the empirical approach described in general in Section 2.1 and in detail in Section 2.4.

LSAC is a nationally representative large-scale longitudinal survey of two birth cohorts of Australian children who were aged 0–1 (B cohort) and 4–5 years (K cohort) when the first wave of interviews was conducted in 2004. The second wave was conducted in 2006, at which time the older K cohort were aged 6–7 years, and the third wave in 2008, when the K cohort were aged 8–9 years⁷.

LSAC data provide detailed information on a range of measures of child wellbeing and parental labour force status, which allows a measure of family joblessness to be constructed, as well as socio-economic and demographic characteristics of the study child's parents. The measures of family joblessness and parental educational attainment are similar to the measures that are available from the 2006 Census.⁸

This report examines behavioural and emotional outcomes of children in NSW. This area of child wellbeing was selected because they are the most likely to be affected by unemployment and parental joblessness. Child behavioural and emotional outcomes are measured using the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). The SDQ comprises five subscales as well as an overall measure, but we do not report findings from the fifth subscale (prosocial behaviour) as it captures positive behaviours that were largely unaffected by parental joblessness. The other four subscales measure:

- 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

⁷ A detailed overview of the LSAC study, including attrition rates, is provided by Gray and Smart (2008).

⁸ See Baxter, Gray, Strazdins, and Bittman (2007) for a discussion of how the LSAC measure of employment compares to the standard ABS definition.

October 2010

- conduct problems—tendency to display problem behaviour when interacting with others.

Each subscale is calculated from the mean score of 5 questions. The four subscales listed can be added together to form a total SDQ score. The SDQ has cut-offs that suggest that children who score above these are at risk of being in the clinical range for behavioural or emotional problems. LSAC contains both parent and teacher responses to the SDQ. We chose parent reports to try and ensure consistency in the respondent and to minimise the amount of missing data. The child’s ‘teacher’ was likely to be a kindergarten teacher or child care worker in the first wave and was unlikely to be the same primary school teacher in the second and third wave. These measures have been chosen because they are available for children at ages 4–5, 6–7 and 8–9 years.

Table 1 shows the proportion of children who were at risk of behavioural problems in the clinical range for 2004–08. Overall,

the total score suggests that the prevalence of children at risk of clinical levels of behavioural problems was highest when they were aged 4–5 years (2004) and then dropped to 7% when the children were aged 6–7 and remained stable thereafter. The percentage of children in the clinical range for peer problems, emotional symptoms and hyperactivity were fairly stable over the time period except for conduct problems. There were much higher percentages of children in the clinical range for conduct problems in 2004; however, this dropped substantially from 2004 to 2006, followed by a slower decline from 2006 to 2008. In part, this reflects the well-known child development trajectory, where conduct problems peak early (when children are toddlers) and then decline (Petticlerc & Tremblay, 2009). Of the remaining measures of behavioural and emotional problems, peer problems had the highest percentage of children in the clinical range, followed by hyperactivity and then emotional symptoms.

Table 1 Proportion of LSAC children in NSW who are in the clinical range for behavioural and emotional problems, 2004–08

Year	Behavioural/ emotional problems (total SDQ score)	Conduct problems	Peer problems	Emotional symptoms	Hyperactivity
	%				
2004	11	29	13	7	10
2006	7	11	12	7	10
2008	7	9	12	8	10
Average 2004–08	8	17	13	7	10

Source: LSAC Waves 1–3

October 2010

The only regular information on labour market conditions in relatively small geographic areas is the Small Area Labour Market (SALM) data.⁹ The SALM data provide quarterly estimates of the unemployment rate for every SLA in Australia (DEEWR, 2009). Quarterly data on the unemployment rate of each SLA in NSW over the period 2004 to 2010 are used in this report.¹⁰

The 2006 Census provides the best source of information on the characteristics of families living in each SLA and is therefore used as the source of information on the highest level of parental educational attainment, the number of children aged 5–10 years and the rate of parental joblessness of families with a child aged 5–10 years in each SLA.

2.3 Unemployment scenarios

This section describes the unemployment scenarios used to estimate the impact of an increasing unemployment rate on the likelihood that children have behavioural and emotional problems. As outlined above, low and high unemployment rate scenarios are used.

The low unemployment rate scenario is

based on the Australian Government's forecasts of the future path of unemployment reported in its 2010–11 Budget. The high unemployment rate scenario is the unemployment rate that would have resulted if Australia had experienced a serious recession, such as that experienced in the early 1990s.¹¹ The unemployment rates for 2006 and 2008 in both scenarios are the actual rates for those years. Under the low unemployment scenario, the unemployment rate increases from 4.7% in 2008 to 5.2% in 2010 and then falls to 4.7% in 2012. Under the high unemployment rate scenario, the unemployment rate increases from 4.7% in 2008 to 8.2% in 2010 and then to 9.4% in 2012 (Table 1).

The unemployment rates for each SLA for the low and high unemployment scenarios are obtained by calculating the change in the national unemployment rate between each time period and then adding this amount to the previous period's SLA unemployment rate.¹² This method is perhaps best illustrated using an example. For the high unemployment rate scenario, the national increase in the unemployment rate was 3.5% between June 2008 and June 2010 and forecast to be 1.2% between 2010 and 2012. These percentage increases are then applied to the actual SLA unemployment rate as of June 2008.¹³

9 Data are provided by DEEWR.

10 The boundaries of SLAs are revised periodically and this needs to be taken into account when examining changes in the unemployment rate in SLAs over time. Longitudinally consistent SLAs are constructed using a methodology proposed by Biddle (2009). This methodology involves using the Census Districts (CDs) of an earlier edition of the Australian Standard Geographical Classification to apportion population estimates—or in our case labour force estimates—across the SLA boundaries of a later edition of the ASGC, thereby enabling the construction of historical labour estimates for the most recent statistical geographical areas that are consistent across time.

11 Data on the increase in unemployment rates during the 1990s recessions for the whole of Australia is from the Labour Force Survey (ABS, 2010). The unemployment rates forecasted in the 2010–11 Australian Government Budget are taken from Budget Paper No. 1, Statement Number 2: Economic Outlook (Australian Government, 2010). The unemployment rate for each SLA in NSW, given the state of the labour market implied by the Budget forecasts, are calculated by converting the forecast's annual changes into quarterly changes and applying these changes to our quarterly SLA unemployment rates, beginning in June 2009.

12 The projections of the annual change in unemployment rates are distributed equally across quarters.

13 An alternative method of projecting the effects of a change in the national unemployment rate on SLA unemployment rates is to increase the unemployment rate in each SLA by the proportional change in the national unemployment rate. Using this method means that the absolute increase in the SLA unemployment rate is smaller for SLAs with a lower unemployment rate and larger for SLAs with a higher unemployment rate. The results are quite similar, albeit somewhat weaker, because although the SLAs that had the worst unemployment rates in 2008 were more affected, the increases in the SLAs with the low unemployment rates were much smaller.

October 2010

The family joblessness rates for the two scenarios are derived from the correlation between the unemployment rate in the area and its estimated impact upon family joblessness (as described in Section 2.2). The trends in family joblessness track the SLA unemployment rate (Table 2).

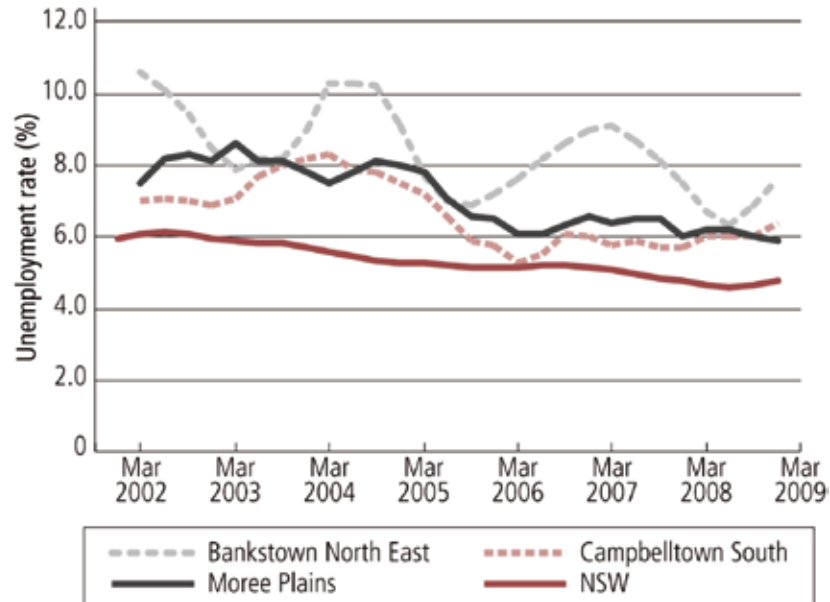
Table 2 SLA unemployment rate and family joblessness rate in NSW, two unemployment scenarios, 2006–12

	Low unemployment scenario		High unemployment scenario	
	Unemployment rate	Family joblessness rate	Unemployment rate	Family joblessness rate
	%		%	
2006 (actual)	5.6	16.2	5.6	16.2
2008 (actual)	4.7	14.5	4.7	14.5
2010 (projected)	5.2	15.5	8.2	21.2
2012 (projected)	4.7	14.5	9.4	23.5

Figure 1 shows the unemployment rates for selected SLAs (Bankstown North East, Campbelltown South and Moree Plains) and for New South Wales as a whole. There are substantial differences between SLAs and how their unemployment rates vary. To illustrate how the high and low unemployment rate scenarios affect the unemployment rates of specific SLAs, we show the unemployment rates for Bankstown South, Campbelltown South and Moree Plains for the two scenarios (Figure 2).

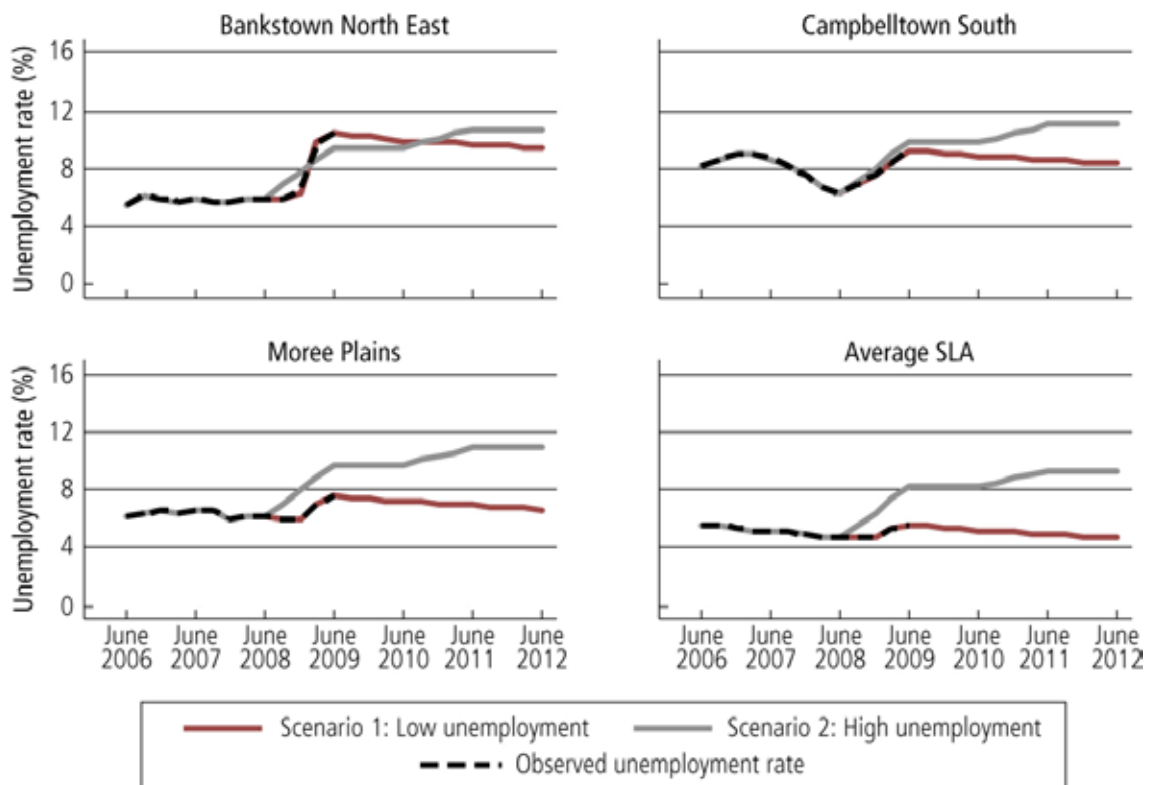
October 2010

Figure 1 Actual unemployment rates for selected SLAs, March 2002 to March 2009



Source: DEEWR Small Area Labour Market Data

Figure 2 Projected and actual unemployment rates for selected SLAs, June 2006 to June 2012



Source: DEEWR Small Area Labour Market Data

October 2010

2.4 Empirical approach in detail

Given that the primary purpose of the statistical modelling is to estimate the possible effect of a change in the NSW unemployment rate on the average wellbeing of children in different SLAs, the specification needs to include explanatory variables that are available at the SLA level both in LSAC and from another source.

Estimating the impact of a change in the area-level unemployment rate on the wellbeing of children living in different geographic areas in New South Wales involves a number of steps. We have defined child behavioural or emotional problems as binary variables (i.e., they take the value of 1 if the child has a behavioural or emotional problem and otherwise take the value of 0).

Step 1: This step involves estimating the impact of living in a jobless family on children's wellbeing using data from Waves 1–3 of LSAC. The explanatory variables included are whether the child is living in a jobless family and the highest level of parental educational attainment (specified as a set of dummy variables). Given the measures of children's wellbeing are binary variables, logistic regression is used:¹⁴

$$\text{Prob}(Y_{it} = 1 | \text{JOBLESS}_{it}, \text{EDUC}_{it}) = \alpha + \delta \text{JOBLESS}_{it} + \gamma \text{EDUC}_{it} + \varepsilon_{it} \quad (1)$$

Where

$$\begin{aligned} i &= \text{child/family } i \\ t &= \text{time } t \\ Y_{it} = \{1, 0\} &= 1 \text{ if child has a behavioural problem and 0 if child does not have a behavioural problem} \\ \text{JOBLESS}_{it} &= \{1, 0\} = 1 \text{ if child } i \text{ is living in a jobless family at time } t \\ \text{EDUC}_{it} &= \text{highest level of parental education in family } i \end{aligned}$$

Step 2: This step involves estimating the relationship between the SLA unemployment rate¹⁵ and the percentage of children living in a jobless family in the SLA using data from the 2006 Census of Population and Housing. The results of this regression are used to predict the joblessness rate in each SLA for the two (high and low) unemployment rate scenarios examined:

$$\text{JOBLESS}_j = a + b \text{UR}_j + \eta_j \quad (2)$$

where JOBLESS_j is the proportion of children in SLA j that are living in a jobless family and UR_j is the unemployment rate of SLA j at the time of the 2006 Census. The data on joblessness are from the 2006 Census and those on the SLA unemployment rate are from the Department of Education, Employment and Workplace Relations (DEEWR) Small Area Labour Market (SALM) data (DEEWR, 2009).

Equation (2) is estimated using ordinary least squares (OLS) regression.

¹⁴ It was found that the effects of unemployment on child wellbeing occur for children whose parents are jobless and that there is no evidence of differences in the unemployment rate in the areas in which children live having an impact upon children whose parents are not jobless.

¹⁵ The SLA unemployment rate is obtained from local labour market data produced by the Department of Education, Employment and Workplace Relations.

Step 3: In this step, the results of estimating equation (2) are combined with information on the unemployment rate under each of the unemployment scenarios to produce a predicted time series of SLA joblessness rates for each SLA:

$$JOBLESS^*_{jt} = a + bUR^*_{jt} \quad (3)$$

where $JOBLESS^*_{jt}$ is the predicted proportion of jobless families in SLA j at time t .

Step 4: The results of estimating equations (1), (2) and (3) are combined with information from each SLA on the average educational attainment of the adults in households that contain children. This SLA average educational attainment¹⁶ is obtained from the 2006 Census by averaging the highest educational attainment of all the adults in households that contain children aged between 5 and 10. This is used to estimate the probability that a child of average characteristics has a level of behavioural problems that is above the abnormal cut-off under the different unemployment rate scenarios (see Section 4).

The equation is:

$$\text{Prob}(Y^*_{jt} = 1 | JOBLESS^*_{jt}, EDUC_j) = \frac{\exp(\alpha + \delta JOBLESS^*_{jt} + \gamma EDUC_j)}{1 + \exp(\alpha + \gamma JOBLESS^*_{jt} + \gamma EDUC_j)} \quad (4)$$

where Y^*_{jt} is the predicted probability that a child living in area j at time t has behavioural or emotional problems that are at risk of being in the clinical range.

The number of children in each SLA that have behavioural problems in the abnormal range at time t , $KIDS@RISK_{jt}$, is then calculated using the estimate obtained from equation (4), multiplied by the number of children between the ages of 5 and 10 in each SLA:

$$KIDS@RISK_{jt} = \text{Prob}(Y_{jt} = 1 | JOBLESS^*_{jt}, EDUC_j) \times KIDS_j \quad (5)$$

where $KIDS_j$ is the number of 5–10 year old children living in area j .

This method of simulating the impact of a change in the national unemployment rate on child wellbeing requires a number of assumptions be made. First, because the relationship between area-level unemployment and the rate of family joblessness is estimated using data that was collected at a time of low unemployment (August 2006 Census), it is necessary to assume that the relationship remained unchanged during a period when the unemployment rate was increasing. Similarly, because the LSAC data was also collected during a period of low unemployment, it is assumed that the relationship between family joblessness and child wellbeing does not depend upon the state of the economic cycle.

16 Estimated using the 2006 Census. This variable is classified according to the Australian Standard Classification of Education: Level of Highest Educational Attainment (ABS, 2007). The highest parental education variable contained in equation (1) also uses this classification of education level.

October 2010

Second, it is assumed that average parental education attainment and the number of children living in each SLA remains at their 2006 levels. We therefore are ignoring any impact of population changes on our estimates. Third, it is assumed that the impact of living in a jobless family is the same for children aged 4–5 years through to those aged 8–9 years. Fourth, it is assumed that the impact of living in a jobless family is immediate and disappears once the family is no longer jobless.¹⁷

The empirical approach is designed to estimate the impact of an increase in the unemployment rate on the proportion of children in different geographic regions with behavioural problems. The method and data are not designed to produce accurate estimates of child wellbeing for small geographic areas and therefore should not be used to identify areas with high proportions of children with behavioural or emotional problems.



17 While this assumption is unlikely to be strictly true, with only three waves of LSAC data available and only being collected every two years, it is difficult to estimate the speed of recovery of children following a period of family joblessness.

October 2010

3. The impact of joblessness on child wellbeing

This section provides a summary of the estimates of the impact of joblessness on child wellbeing obtained from the analysis of LSAC data. For all five measures of child wellbeing, living in a jobless family is estimated to increase the probability that a child has behavioural or emotional problems in the clinical range. The logit model results themselves are not straightforward to interpret and therefore the impact on wellbeing of a child living in a jobless family compared to living in a family in which there is an employed parent is best illustrated using marginal effects, which hold all other variables constant.¹⁸ The marginal effects show the impact of living in a jobless family on the probability of the child having an emotional or behavioural problem compared to if the child lived in a family with at least one employed parent holding everything else constant.

Living in a jobless family increases the probability that a child will have behavioural problems (overall measure) by 13.0 percentage points, conduct problems by 13.4 percentage points, peer problems by 7.6 percentage points, emotional problems by 7.5 percentage points and hyperactivity by 7.2 percentage points (Table 3). These effects are quite large. For example, the mean rate of behavioural problems (total SDQ) in the LSAC samples is 8.0 percentage points and the effect of living in a jobless family is to increase the likelihood of a child having behavioural problems by 13.0 percentage points.¹⁹

Table 3 Increase in probability that a child living in a jobless family will have behavioural and emotional problems

	Increase in probability of child behaviour and emotional problems (%)
Behavioural/emotional problems (total SDQ score)	13.0*
Conduct problems	13.4*
Peer problems	7.6*
Emotional symptoms	7.5*
Hyperactivity	7.2*

Notes:* indicates that the marginal effect is statistically significant at the 5% or better confidence level.
Source: Derived from estimates in Appendix Table A2.

18 This is because the effect of a change in an explanatory variable on the dependent variable depends on the value taken by all other explanatory variables.

19 The statistical model used to estimate the relationship between family joblessness and behavioural and emotional problems was necessarily simple so that it could feed into the simulations. It included the highest level of parental education in the household but no other variables that may be associated with children's outcomes. To address this limitation we also ran fixed effects regressions that control for any fixed differences over time that may influence the association between family joblessness and children's behavioural and emotional problems. This analysis comes closer to establishing a causal link between family joblessness and child wellbeing but cannot control for other variables that change over time unless they are explicitly included in the statistical model. Family joblessness has a statistically significant association with conduct problems and emotional symptoms but there were not statistically significant associations for the other outcomes (Table A3).

October 2010

4. The effects of an economic downturn on child wellbeing

The previous section focused on the impact of living in a jobless family on children's behavioural and emotional problems. This section uses this information and the estimates of the change in the proportion of children living in jobless families to estimate the proportion and number of children aged 5–10 years old living in NSW who have an emotional or behavioural problem for the low and high unemployment scenarios.

Under the continuing low unemployment scenario, there is no change in the proportion of children with behavioural or emotional problems (Table 4).

Under the high unemployment scenario (with the national unemployment rate reaching 9.4% in 2012, compared to 4.7% in the low unemployment rate

scenarios) is projected to increase the proportion of NSW children experiencing behavioural problems by between 0.5% and 0.9%, depending upon the aspect of behaviour being examined (Table 4).²⁰ For example, the proportion of children with behavioural problems is estimated to increase from 7.2% in the low unemployment scenario to 8.0% in the high unemployment scenario. The relatively small increase in the proportion of children experiencing behavioural problems under the high unemployment rate scenario is a consequence of the fact that only those children directly affected by joblessness are affected and the increases in the number of jobless families in the higher unemployment scenario, while quite large, still only affect a minority of children.²¹

Table 4 Effect of increased unemployment on proportion of 5–10 year old children in NSW having behavioural and emotional problems, 2006–12

	Behavioural/ emotional problems (total SDQ score)	Conduct problems	Peer problems	Emotional problems	Hyperactivity
	%				
2006	7.3	14.6	11.1	6.8	8.8
2008	7.2	14.4	11.0	6.7	8.7
Low unemployment scenario					
2010	7.3	14.5	11.1	6.8	8.8
2012	7.2	14.4	11.0	6.7	8.7
High unemployment scenario					
2010	7.8	15.1	11.4	7.1	9.1
2012	8.0	15.3	11.6	7.2	9.2

²⁰ One indicator of whether the approach used is reasonable is the extent to which the predicted percentages of children experiencing behavioural and emotional problems presented in Table 4 for 2006 and 2008 are similar to the within-LSAC sample average (Table 1). The proportions are reasonably close.

²¹ The National Centre for Social and Economic Modelling (NATSEM) have developed a child social exclusion index from the 2006 Census of Population and Housing (Harding, McNamara, Daly & Tanton, 2009). We find that there was some correlation between the rates of behavioural problems and the child social exclusion index. The average proportion of children at risk of behavioural problems for each of the child social exclusion quintiles was higher in the most disadvantaged child social exclusion index quintile and lowest in the most advantaged quintile, and followed a linear trend downwards from the most disadvantaged to the advantaged quintile of the SLAs.

October 2010

Although the increases in the proportion of children experiencing behavioural or emotional problems are relatively small across the state of NSW, there are still several thousand additional children aged 5–10 years who will develop clinically significant behavioural or emotional problems (Table 5). For the total behavioural problems measure, an additional 3,095 children would have significant clinical-level problems, while for conduct problems, this would be even greater at 3,685. The increases in the numbers of children at risk of clinically significant peer problems, emotional problems and hyperactivity are 2,207, 2,007 and 2,023 respectively. There is about 6.0% of the NSW population aged 5–10 years of age and a similar percentage of the population aged 0–4 years and 10–14 years respectively. If it is assumed that the increase in the unemployment rate would have a similar impact on the numbers of children with behavioural or emotional problems in these other age groups, the number would be approximately tripled.

Another way to consider the estimates of the increased numbers of children at risk is to consider the costs associated with behavioural or emotional problems. While it is difficult to estimate the costs associated with children's mental health, there are some Australian examples. For instance, Mihalopoulos, Sanders, Turner, Murphy-Brennan, and Carter (2007) provided Australian estimates of the costs of conduct disorder in 2002–03 Australian dollars. They estimated that the total additional public sector costs were \$140,667 per additional child diagnosed with conduct disorder from the ages of 10 to 28 years of age. While it would be inappropriate to extrapolate our findings on the basis of these costs, given that our measure of conduct problems is a measure of risk of clinically significant problems, and the age group for which the costs were estimated was different, it does highlight that there would be significant costs to the public of the increase in the number of 5–10 year old children having behavioural or emotional problems as a result of an economic recession.

Table 5 Effect of increased unemployment on number of 5-10 year old children in NSW having behavioural and emotional problems, 2012.

	Number of children
Behavioural/emotional problems (total SDQ score)	3,095
Conduct problems	3,685
Peer problems	2,207
Emotional symptoms	2,007
Hyperactivity	2,023

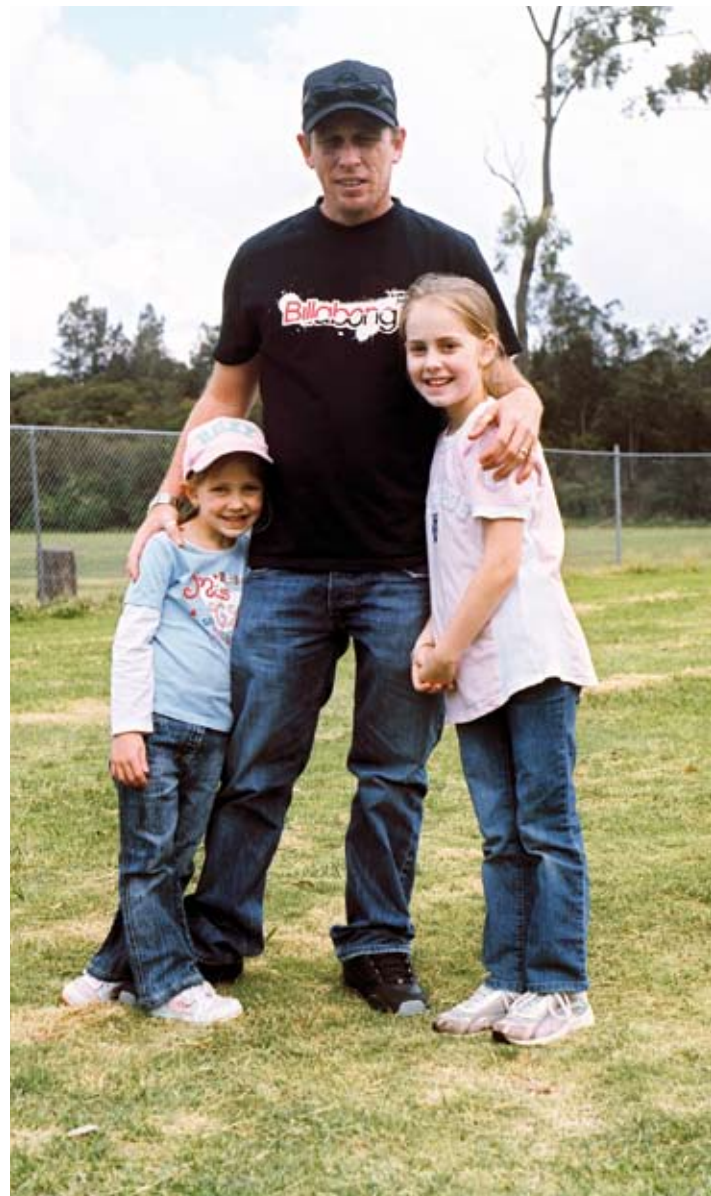
5. Geographic distribution

The effects of an economic downturn are likely to hit some areas harder than others. This section describes the geographic areas that are likely to experience the greatest increase in the number of 5–10 year old children at risk of having behavioural and emotional problems as a result of an increase in the unemployment rate. The information presented is the difference in the projected estimates between the number of children at risk of behavioural or emotional problems in each SLA under the low and high unemployment scenarios for 2012.

The SLA level change in the number of children at risk of having behavioural and emotional problems will be heavily influenced by the number of children, aged 5–10 years, living in the area. Figure 3 shows the SLAs that are estimated to have the biggest increases in the number of children with behavioural/emotional problems. Blacktown South West has the largest increase in the number of children, with 80 children at risk of such problems, followed by Canterbury (60), Penrith West (60) and Blacktown North (60). It is interesting to note that Blacktown South East also has one of the larger increases in the number of 5–10 year olds with behavioural/emotional problems (55). The increased number of children for the three Blacktown SLAs is 197 additional children. Similarly, for the two Penrith SLAs there are 110 children and for the two Wollongong SLAs there are 107 children at risk.

Figures 4 to 7 show a similar pattern for the other SDQ subscales, with Blacktown South West having the largest increases. Canterbury, Penrith West, Blacktown North and Warringah are the next four SLAs with the greatest projected increases in the number of children experiencing an increased risk of clinically significant

conduct problems, peer problems, emotional problems and hyperactivity. Much of this stability can be explained by the fact that these SLAs have a large number of 5–10 year old children, as well as having higher unemployment rates.²² These results underscore the importance of population demography.



²² Canterbury has children aged 5–10 years 9,239 (ranked 1st), Warringah 9,026 (2nd), Blacktown South West has 8,987 (3rd), Blacktown North 7,533 (6th) and Penrith West 6,099 (14th).

Figure 3 NSW SLAs that are likely to have the biggest increases in the number of children with behavioural/emotional problems (total SDQ score)

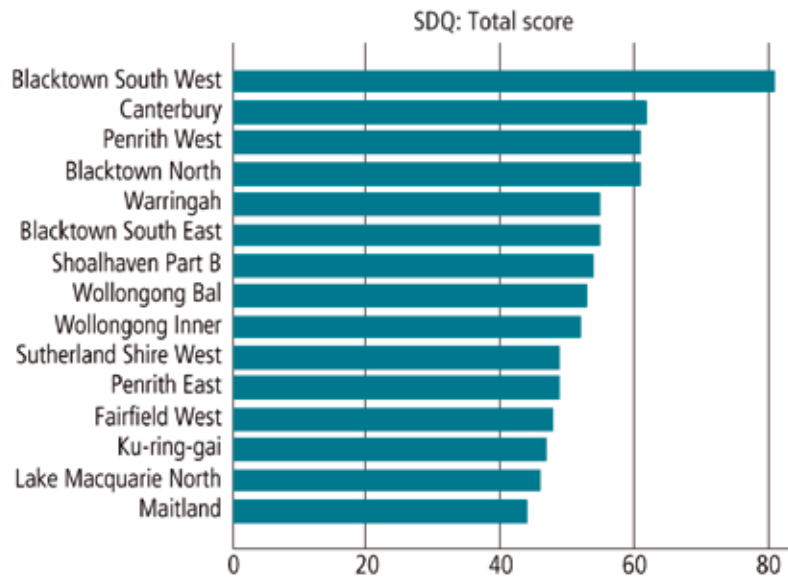


Figure 4 NSW SLAs that are likely to have the biggest increases in the number of children with conduct problems

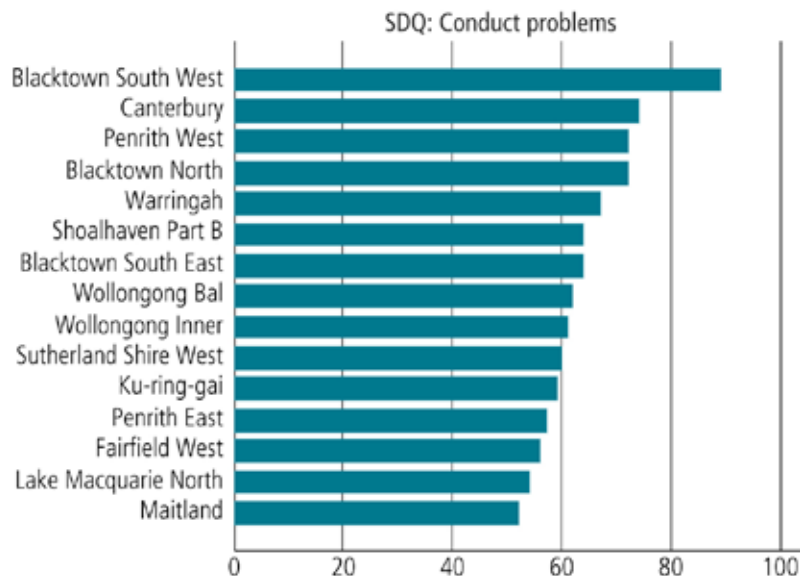


Figure 5 NSW SLAs that are likely to have the biggest increases in the number of children with peer problems

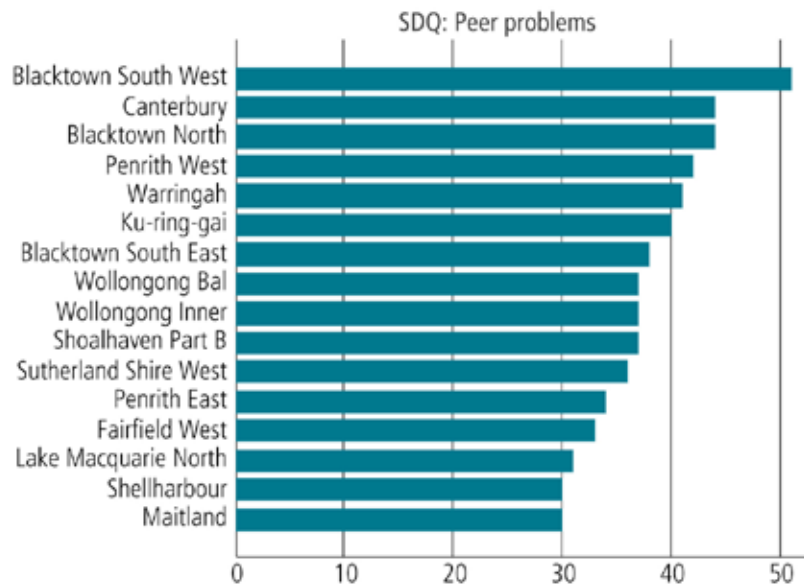


Figure 6 NSW SLAs that are likely to have the biggest increases in the number of children with emotional problems

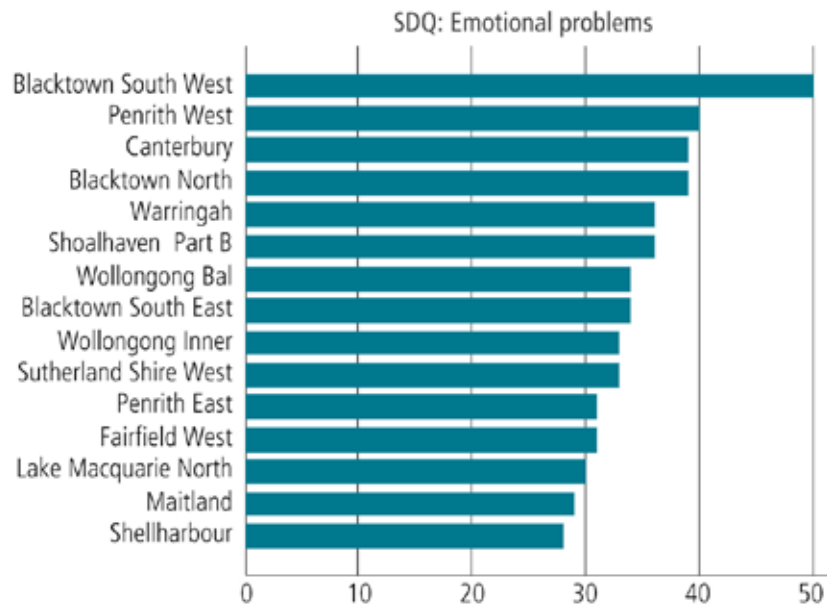
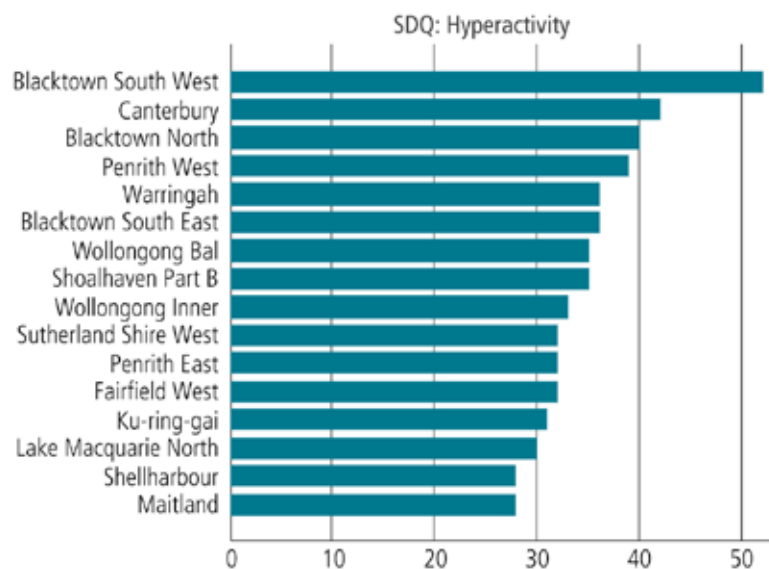


Figure 7 NSW SLAs that are likely to have the biggest increases in the number of children with hyperactivity



Another way to look at these increases in the number of children at risk of behavioural/emotional problems is to examine their spatial distribution in maps of NSW SLAs. This has the added benefit of being able to more easily identify whether there are particular clusters of SLAs that are more affected.

Figures 8 and 9 present information on family joblessness for families with children of 5–10 years. Figure 8 presents the family jobless rate based on the 2006 Census. In Sydney, the SLAs that had a family jobless rate of over 25% were Blacktown South West, Fairfield East, Paramatta South, Auburn, Bankstown North East and Inner Sydney (the red shading). Outside of Sydney, in the remainder of NSW, there are several SLAs that also have a jobless rate over 25%—Urana in the south and Brewarrina and Walgett in the north of NSW.

Inland from the Tweed Coast, the SLAs of Tenterfield, Kyogle and Clarence Valley and, a bit further south, Nambucca and Kempsey, all had family jobless rates over 25%.

Figure 9 documents the increase in the family jobless rate in 2012 under the high compared to the low unemployment rate scenarios. For the majority of SLAs in NSW, the family jobless rate is likely to increase by between 8 and 12 percentage points (the orange shading). There are some SLAs outside of Sydney where the increase in the family jobless rate is over 12 percentage points—Shoalhaven Part A and B, Wingelcaribee, Great Lakes, Walcha and Guyrn. In Sydney, the only SLA to increase by over 12 percentage points is likely to be Bankstown South.

October 2010

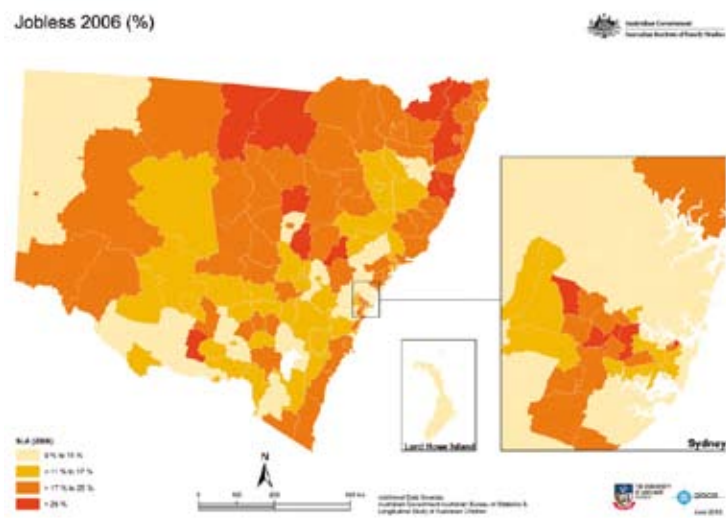
Next, we present maps projecting the increase in the number of children at risk of clinically significant behavioural problems from the difference between the high and low unemployment scenarios. We focus only on the total number of 5–10 year old children at increased risk of experiencing clinically significant behavioural and emotional problems (total SDQ) and conduct problems. We do not focus on the increases in peer problems, emotional symptoms and hyperactivity because the increases in any one of the SLAs does not exceed 60 children. Figure 10 shows that the SLAs with the largest increases in the number of children experiencing behaviour and emotional problems (60 or more) are Blacktown South West, Blacktown North, Blacktown South East, Penrith West, Penrith East, Fairfield West and Canterbury. Figure 11 also shows that there are large numbers of SLAs in Sydney where the number of 5–10 year old children at risk of

conduct problems is predicted to increase to between 41 and 60. The only SLA that is projected to increase by over 60 children is Sutherland Shire West.

Although the maps of family joblessness suggest that there is a high degree of differentiation between SLAs in 2006, the increases in family joblessness are fairly consistent for most SLAs. These changes flow through to projected changes in behavioural and emotional problems, with relatively small increases in the number of children for most SLAs. However, there are some areas with large numbers of children aged 5–10 years that, coupled with larger projected increases in family joblessness, have larger projected increases. In the main, the spatial distribution of high-risk areas is confined to the high population areas around Sydney, from Newcastle in the north to Wollongong in the south.

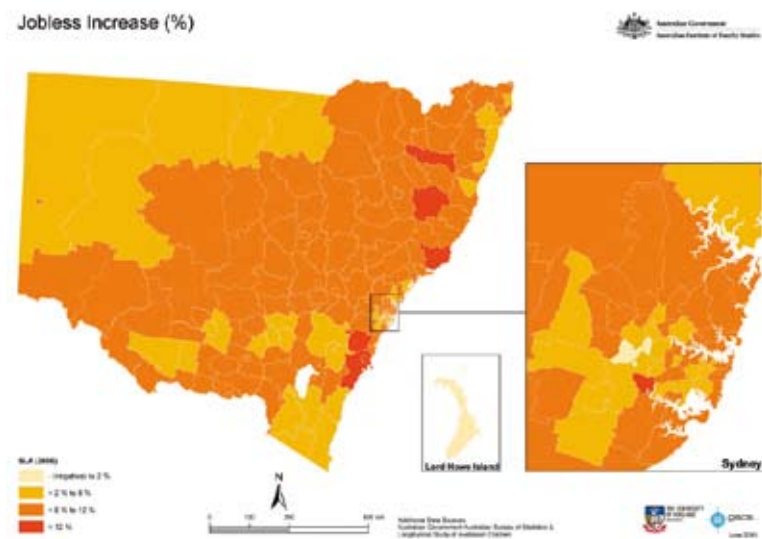


Figure 8 Family jobless rate for each NSW SLA, 2006



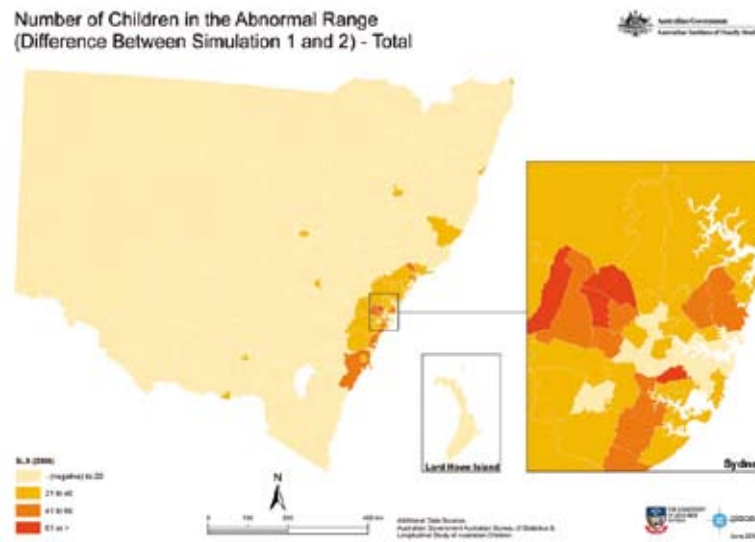
Source: 2006 Census of Population and Housing

Figure 9 Projected increase in family jobless rate for each NSW SLA, 2012



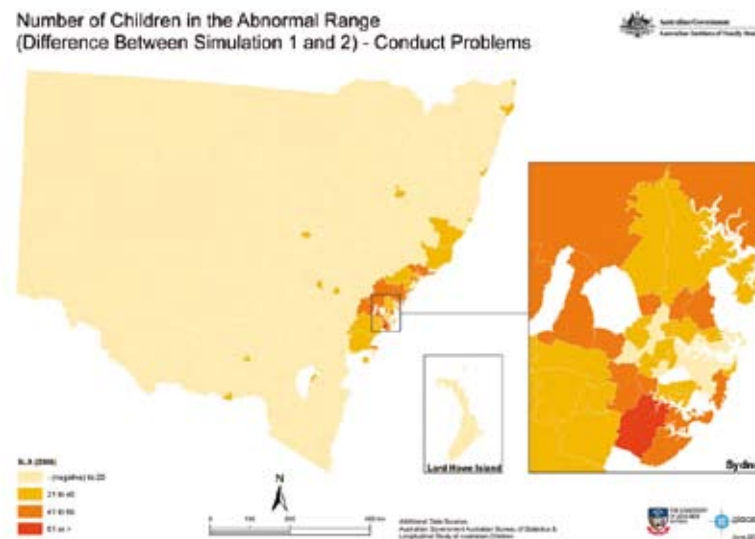
Source: 2006 Census of Population and Housing; DEEWR SALM data

Figure 10 Projected increase in number of 5–10 year old NSW children in the abnormal range for behavioural and emotional problems (total SDQ score)



Source: 2006 Census of Population and Housing, DEEWR SALM data; LSAC

Figure 11 Projected increase in number of 5–10 year old NSW children in the abnormal range for conduct problems



Source: 2006 Census of Population and Housing, DEEWR SALM data; LSAC

6. Concluding comments

Unemployment typically has adverse financial consequences and can have a range of adverse social and health impacts. The negative effects of parental joblessness are also likely to affect children, either because of the negative financial impact of unemployment or because of the impacts of unemployment on parental mental health and parenting. However, relatively little is known about how the changes in the macro-economy flow through to affect children's wellbeing via parental joblessness. This report begins to address some of the gaps in our understanding of the impact that an increase in the unemployment rate is likely to have on children's behavioural and emotional outcomes in New South Wales. It also examines the extent to which the negative impacts are concentrated within particular geographic areas.

Living in a jobless family has a negative impact upon a range of measures of children's behavioural and emotional problems, and these effects are quite large—an increased risk of between 7 to 13 percentage points, depending upon the particular measure. Given that during economic downturns only a minority of children experience living in a jobless family as a result of the economic downturn, the increase in the proportion of children aged 5–10 years who have behavioural problems is relatively small when averaged across all children in NSW.

Our estimates suggest that if NSW had experienced an increase in the unemployment rate similar to the increase in the 1990s recession, there would have been a 0.8 percentage point increase in the number of children who had behavioural and emotional problems in the clinical range. Nonetheless, the number of additional children with behavioural

problems as a result of an increase in the unemployment rate is estimated to be 3,095. Assuming that the risk of recession for child behaviour problems are similar for other age groups (0–4 years and 10–14 years) and given that these age groups are similar in number to the cohort of 5–10 year old NSW children, then the additional number of children age 0 to 15 years with behavioural problems as a result of an increase in the unemployment rate is estimated to be over 9,000.

In general, the areas that had the greatest number of children at risk of behavioural or emotional problems were confined to the high population areas around Sydney, from Newcastle in the north to Wollongong in the south. This was because the increases in family joblessness are projected to be fairly consistent across most NSW areas and these regions have the largest numbers of children aged 5–10 years. In particular, Blacktown South West had the largest increases, with Canterbury, Penrith West, Blacktown North and Warringah the next four areas with the greatest projected increases in the number of children experiencing an increased risk of clinically significant behavioural or emotional problems.

The findings from this study suggest that an increase in the aggregate unemployment rate has a negative effect on children who are living in a jobless family as a consequence of the economic downturn. This finding underscores the importance of having macro-economic policies that limit the increase in the level of joblessness during economic downturns, policies that are aimed at reducing the rate of family joblessness and in attempting to minimise the potential negative effects on children of living in jobless families.

References

- Australian Bureau of Statistics. (2005). The population Census: A brief history. *In Year Book Australia 2005* (Cat. No. 1301.0). Canberra: ABS.
- Australian Bureau of Statistics. (2006). *How Australia takes a Census* (Cat. No. 2903.0). Canberra: ABS.
- Australian Bureau of Statistics. (2006). *Statistical geography: Volume 1. Australian Standard Geographical Classification* (ASGC). Canberra: ABS.
- Australian Bureau of Statistics. (2007). *2006 Census of Population and Housing fact sheets: Level of Highest Educational Attainment* (HEAP) (Cat. No. 2914.0). Canberra: ABS.
- Australian Bureau of Statistics. (2010). *Labour force Australia* (Cat. No. 6202.0). Canberra: ABS.
- Australian Government. (2010). *Budget strategy and outlook*: Budget paper No. 1. 2010–11. Canberra: Commonwealth of Australia.
- Baxter, J., Gray, M., Strazdins, L. & Bittman, M. (2007). *Mothers and fathers with young children: Paid employment, caring and wellbeing* (Social Policy Research Paper No. 30). Canberra: Department of Families, Community Services and Indigenous Affairs.
- Bolger, K., Patterson, C., Thompson, W. & Kupersmidt, J. (1995). Psychosocial adjustment among children experiencing persistent and intermittent family economic hardship. *Child Development*, 66(4), 1107–1129.
- Brooks-Gunn, J. & Duncan, G. (1997). The effects of poverty on children. *The Future of Children*, 7(2), 55–71.
- Biddle, N. (2009). *A note on concordances and indigenous population change, 2001 to 2006* (Mimeo). Canberra: Centre for Aboriginal Economic Policy Research, Australian National University.
- Centre for Community Child Health and Telethon Institute for Child Health Research. (2009). *A snapshot of early childhood development in Australia. Australian Early Development Index (AEDI) National Report 2009*. Canberra: Australian Early Development Index.
- Coelli, M. (2005). *Parental income shocks and the education attendance of youth*. Unpublished manuscript, Department of Economics, University of British Columbia.
- Conger, R. D. & Elder, G. H. J. (1994). *Families in troubled times: Adapting to change in rural America*. New York: Aldine De Gruyter.
- Conger R. D. & Donnellan, M. B. (2007). An interactionist perspective on the socio-economic context of human development. *Annual Review of Psychology*, 58, 175–199.
- Department of Education, Employment and Workplace Relations. (2009). *Small area labour markets*. Canberra: DEEWR.
- Elder, G. (1999). *Children of the Great Depression: Social change in life experience* (25th Anniversary Ed.). Chicago: University of Chicago Press.
- Evans, G. (2004). The environment of childhood poverty. *American Psychologist*, 59(2), 77–92.
- Goodman, R. (1997) The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586.
- Gray, M., Edwards, B., Hayes, A. & Baxter, J. (2009). The impacts of recessions on families. *Family Matters*, 83, 7–14.
- Gray, M. & Smart, D. (2008). *Growing Up in Australia: The Longitudinal Study of Australian Children is now walking and talking*. *Family Matters*, 79, 5–13.
- Harding, A., McNamara, J., Daly, A. & Tanton, R. (2009). Child social exclusion: An updated index from the 2006 Census. *Australian Journal of Labour Economics*, 12, 41–64.
- Mihalopoulos, C., Sanders, M. R., Turner, K. M. T., Murphy-Brennan, M. & Carter, R. (2007). Does the Triple P Positive Parenting Program provide value for money? *Australian and New Zealand Journal of Psychiatry*, 41, 239–246.
- Petticlerc, A. & Tremblay, R. E. (2009). Childhood disruptive behaviour disorders: Review of their origin, development, and prevention. *Canadian Journal of Psychiatry*, 54, 222–231.
- Solantaus, T., Leinonen, J. & Punamäki, R.-L. (2004). Children's mental health in times of economic recession: Replication and extension of the family economic stress model in Finland. *Developmental Psychology*, 40, 412–429.
- Whiteford, P. (2009). *Family joblessness in Australia*. Paper prepared for the Social Inclusion Unit of the Department of the Prime Minister and Cabinet, Canberra.

Appendix A. Results of the regression modelling

Table A1 Descriptive statistics for regression models

	Mean	Standard deviation	Minimum	Maximum
Emotional and behavioural problems				
Total score	0.09	0.28	0	1
Conduct problems	0.17	0.38	0	1
Peer problems	0.13	0.33	0	1
Hyperactivity	0.1	0.3	0	1
Labour force variables				
Unemployment rate	5.3	2.41	0.6	19.8
Family joblessness	0.11	0.32	0	1
Highest educational attainment				
Postgraduate degree	0.03	0.17	0	1
Graduate diploma/Certificate	0.03	0.17	0	1
Advanced diploma	0.09	0.29	0	1
Year 12/Certificate I, II	0.7	0.46	0	1
Not stated	0	0	0	0
Missing	0.01	0.09	0	1

Table A2 Coefficient estimates associated with the estimated effect of joblessness on child wellbeing, logistic model

	Total score	Conduct problems	Peer problems	Emotional problems	Hyperactivity
Joblessness	1.208*** (0.159)	0.794*** (0.126)	0.594*** (0.149)	0.850*** (0.173)	0.682*** (0.171)
Highest level of parental education (omitted category = Bachelor degree)					
Postgraduate degree	-0.305 (0.711)	-0.079 (0.409)	0.58 (0.39)	-1.336 (1.018)	0.004 (0.485)
Grad. dip./ Certificate	0.301 (0.472)	0.357 (0.317)	0.189 (0.418)	0.854** (0.387)	0.595 (0.434)
Advanced diploma	0.161 (0.356)	0.044 (0.266)	-0.031 (0.306)	-0.117 (0.326)	0.115 (0.354)
Year 12/ Cert I, II	0.371 (0.257)	0.560*** (0.186)	0.409** (0.196)	0.143 (0.229)	0.565** (0.249)
Not stated	-	-	-	-	2.429*** (0.246)
Missing	0.739 (0.669)	0.891* (0.533)	0.985** (0.443)	0.426 (0.765)	0.85 (0.594)
Constant	(0.243)	(0.176)	(0.183)	(0.212)	(0.238)
Percentage correct	91.44%	82.66%	87.40%	92.43%	90.17%
McFadden R2	0.037	0.023	0.013	0.022	0.018
Number of observations	3,832	3,834	3,834	3,833	3,835

Notes: All logit standard errors are clustered on families. Significance levels: * p < .1, ** p < .05, *** p < .01.
Source: LSAC Waves 1 to 3

Table A3 Estimated effect of joblessness on child wellbeing, fixed effects model

	Total score	Conduct problems	Peer problems	Emotional problems	Hyperactivity
Joblessness	0.489 (0.353)	0.319** (0.144)	-0.093 (0.120)	0.237* (0.131)	0.026 (0.152)
Constant	8.420*** (0.067)	1.827*** (0.028)	1.592*** (0.023)	1.616*** (0.025)	3.386*** (0.029)
R ² (total)	0.001	0.002	0.000	0.001	0.000
R ² (within)	0.001	0.002	0.000	0.001	0.000
R ² (between)	0.059	0.047	0.042	0.025	0.025
Number of observations	3,834	3,836	3,836	3,835	3,835
Average waves per child	2.395	2.396	2.396	2.395	2.395
Number of children	1,601	1,601	1,601	1,601	1,601

Notes: All standard errors are clustered on individuals. Significance levels: * p < .1, ** p < .05, *** p < .01.
Source: LSAC Waves 1 to 3

Table A4 Estimated effect of SLA unemployment rate on the probability of living in a jobless family, OLS model

	Joblessness
SLA unemployment rate	0.019*** (0.002)
Constant	0.057*** (0.009)
R ²	0.43
Number of observations	199

Notes: All logit standard errors are clustered on families. Significance levels: * p < .1, ** p < .05, *** p < .01.
Source: LSAC Waves 1 to 3; DEEWR SALM data

Level 1, 188 Oxford Street
Paddington NSW 2021
PO Box 171
Paddington NSW 2021

t 02 9339 8000
f 02 9360 2319

mailben@bensoc.org.au
www.bensoc.org.au

The Benevolent Society
ABN 95 084 695 045

