THE DISTRIBUTIONAL AND REGIONAL IMPACT OF THE AUSTRALIAN GOVERNMENT'S HOUSEHOLD STIMULUS PACKAGE

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ABSTRACT: This paper analyses the distributional impact of the Australian Federal Governments Household Stimulus package across different types of Australian families and also at a regional level. The paper finds that nearly 7.3 million families benefited from the package with an average gain of $30 per week. In terms of the number of winners, single person families led at 3 million, followed by couple families with children, at nearly 2.2 million. There were 1.5 million married couples without children, and 600,000 sole parent families who also gained. Looking at the proportion of families in these groups that gained, nearly 99 per cent of sole parent families gained something through the package; 95 per cent of married couples with dependants gained; and just over 50 per cent of married couples with no dependants and single persons gained. In terms of absolute gains, the sole parent families gained the most, with $46.80 per week and single person families gained the least, with $17.30 per week.

Looking at each of the components of the package, the tax bonus delivered an average gain of more than $22 per week to 6.6 million families. The single income family bonus increased the weekly disposable income for 1.25 million families by $17.30. The back to school bonus gave 1.3 million families an additional disposable income of $31.20 per week. The training and learning bonus, on the other hand, only impacted on about 400 thousand families with an additional income of around $20 per week per family. Regarding the regional picture, our analysis showed that most of the money went to new growth areas on the outskirts of the capital cities. These areas were also areas with young families and young children, and possibly with two income earners, giving them the maximum tax bonus.

1. INTRODUCTION

Over the past decade or so, Australia has been enjoying the success of an economic boom. Overall strong economic growth in the rest of the world, particularly in the main trading countries like China and Japan, in the context of favourable terms of trade for Australia's mineral commodities, has helped Australia achieve good economic growth. The real GDP growth rate for the 1999-00 to 2007-08 period was 3.3 per cent per year on average (ABS 2008). In addition, the average GDP per capita grew by almost 70 percent during the 1996-97 to 2006-07 period (ABS 2009a).

High economic growth also helps keep the unemployment rate at a relatively low level. The monthly average unemployment rate was 6.3 percent for the 1996-97 to 2006-07 period and even lower, at 5.7 percent, for the 2000-01 to

2006-07 period (ABS 2009b). In addition, favourable economic conditions have contributed to boosting workers' earnings. Average weekly earnings for full-time employees increased by 57 percent, from $666 in 1996 to $1,045 by 2006 (ABS various years). The growth of earnings increase, however, was not even across different income ranges with weekly earnings for the top two quintiles of employees increasing at a slightly faster pace than for the bottom two quintiles, around 59.5 and 53.5 per cent respectively (Harding et al. 2009).

Despite the uneven increases in gross income between different income ranges, the highly redistributive tax and transfer payment system in Australia (Harding et al. 2009) means that the distribution of disposable incomes in Australia is much more equal. The Australian Bureau of Statistics calculates a Gini coefficient from each of their Surveys of Income and Housing using equivalised disposable household income, and these show that for the period from 1994-95 to 2005-06, there was a slight increase in inequality as measured by the Gini coefficient, from 0.302 to 0.307(ABS 2007).[1]

While the Gini coefficient says something about income inequality across the whole of Australia, it does not say much about income inequality in small areas. Research in Australia has shown that income and disadvantage in small areas can be very different (Lloyd et al. 2001; Hunter 2003; Baum et al. 2005; Vinson 2007; Vu et al. 2008). A recent report by NATSEM showed that when looking at small areas across Australia, income grew by about 29 percent for both the poorer and middle income areas - but by 36.5 percent for the most affluent neighbourhoods (Vu et al. 2008). Other studies have also shown that poverty rates in some areas are triple the average (Tanton et al. 2009a) and that child social exclusion is greater outside the capital cities (Daly et al. 2008; McNamara et al. 2008).

Being a small and open economy, Australia is directly affected by any change in the global economic situation. Its good economic performance appears to have halted in the context of current global economic crisis, when economic growth in major advanced economies, particularly China and India, is expected to slow markedly (IMF 2009). Treasury forecasts that the Australian economy will grow by only 1 percent in 2008-09 and ¾ of a percent in 2009-10, compared to growth rates of 3.7 percent in 2007-08 and 3.3 percent in 2006-07 (Treasury 2009). On a more pessimistic side, however, the Economist Intelligent Unit forecasts that Australia's real GDP will contract by 1.2 percent in 2009, but grow by 0.5 percent in 2010 (Economist Intelligence Unit 2009). The economic contraction in Australia can be seen from the unemployment rate, which rose from around 4.2 percent during the first half of 2008 (around 465 thousand people) to 4.7 percent (around 534 thousand people) in December 2008, and to 5.4 percent (or around 613 thousand people) in March 2009(ABS 2009b). The Treasury also forecasts the rate to rise to 7 percent by June 2010 (Treasury 2009).

[1] The Gini coefficient is a measure of inequality used by researchers to indicate how different high incomes are from low incomes. A Gini coefficient of 0 means everyone earns the same income; and a Gini coefficient of 1 means that one person earns all the income and everyone else earns nothing.

In response to the global financial crisis, the Australian Government tried to stimulate domestic demand by introducing various measures. Among these was the $42 billion Nation Building and Jobs Plan (the so-called stimulus package) which was introduced in February 2009. The package consisted of various spending items such as building or upgrading schools; building new social and defence homes; cash payments to eligible families, workers, and students; giving tax breaks for small and general businesses buying eligible assets; and building local community infrastructure and local roads. It is estimated that the package would support up to 90,000 jobs in 2008-09 and 2009-10. It will also provide a boost to economic growth of around 0.5 percent of GDP in 2008-09 and around 0.75 percent to 1 percent of GDP in 2009-10 (Prime Minister of Australia 2009).

One of the interesting aspects of the Australian stimulus package was that it was designed to both stimulate the economy, and assist certain families in the community. So one part of the stimulus package was a tax bonus, which was paid to anyone who paid tax and who earned below a certain income. While this payment was designed to stimulate the economy, it was also targeted at low to middle income earners (those earning less than $100,000). It was also tapered for those earning between $80,000 and $100,000. Another two parts of the stimulus package were designed to assist certain types of families who may be struggling in the global financial crisis because they are a family with a single income and young children,[2] or have a number of children at school. The final payment was to encourage people to study.

So the stimulus package was not a simple dollar amount for every person in Australia designed to stimulate spending; it was also targeted in many ways to give greater assistance to single income families with young children, families with children at school and individuals earning less than $100,000.

Because of this complex targeting, it is interesting to look at what types of families and people, and what areas, the stimulus package benefited most. This paper analyses the distributional impact of one particular item of the package: the cash payments to eligible families, workers, and students (the household stimulus package). The analysis is conducted at both a national and a regional level, and the effect of the stimulus package on different types of families is studied.

The next section summaries the stimulus package items modelled in this paper. Section 3 explains the data and methodology for the modelling. The distributional impact of the package at the national level is given in section 4. The impact at the regional level is analysed in section 5. Section 6 concludes the paper.

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[2] The single income family bonus was only paid to those who receive Family Tax Benefit Part B (FTB-B). To receive FTB-B, the family must have a dependent child aged under 16; or a dependent full time student up to age 18, and satisfy income test. FTB-B is normally paid to single income families but families with two income earners may also receive FTB-B if the second income is lower than a certain limit.

2. DESCRIPTION OF THE HOUSEHOLD STIMULUS PACKAGE

The household stimulus package consisted of the following 4 main items:

2.1 Tax Bonus

The Tax bonus was a one off payment to individuals who paid tax in the 2007-08 financial year. The amount of payment depended on the taxable income. It was:

- $900 for those with a taxable income of less than or equal to $80,000
- $600 for those with a taxable income between $80,001 and $90,000
- $250 for those with a taxable income between $90,001 and $100,000

Note that the payment was made to individuals, not families. If there are two individuals paying tax in a family, and both earn less than $80,000, then both got the $900 payment.

2.2 Single Income Family Bonus

The single income family bonus was also a once off payment to those families who received Family Tax Benefit Part B on the 3 February 2009, no matter how many children they have. The amount ($900 per family) was the same across all families.[3]

2.3 Back to School Bonus

The back to school bonus was a once off payment of $950 per eligible child to families who were eligible for FTB-A on 3 February 2009. The eligible child should be of school age i.e. aged 4-18. The payment was also available for the recipients of Carer payment or Disability Support Pension on 3 February 2009, and who were less than 19 years old.

2.4 Training and Learning Bonus

This was a payment of $950 for the recipients of Youth Allowance, Austudy, ABSTUDY, or students who received sickness allowance and special benefits. The payment was also available to families which received FTB-A, and had full-time students aged 21 to 24. Those who received the back to school bonus were not eligible for this bonus.

3. DATA AND METHODOLOGY

3.1 National Results

The simulation results at the national level were undertaken using the STINMOD model. STINMOD is NATSEM's static microsimulation model of tax and transfer payments in Australia, and is used by a number of Commonwealth departments for their analysis of the impact of policy reforms (Bremner 2005; Treasury 2007). This model was first developed in 1994 and has

[3] See footnote number 2 on single and double income families.

been continuously updated since by the National Centre for Social and Economic Modelling at the University of Canberra. It is used to estimate the aggregate fiscal impact of a change in tax and/or transfer policy on revenue or government expenditure, as well as to estimate the distributional impacts of policy change at the household level, for groups of people and individuals - that is, who wins, who loses and by how much.

STINMOD works by applying the current and possible alternative settings of the tax and transfer system, which have been coded and regularly updated to reflect major changes in tax/transfer policies every year, to a sample population (basefile) which is constructed from the latest ABS Surveys of Income and Housing Costs. In addition, various demographic and administrative benchmarks are used to increase the accuracy of the modelling, and economic indicators are used to inflate the earnings and other monetary values reported by those Australians captured in the ABS surveys to current and future values (as the surveys are always some years out of date when they are incorporated into STINMOD). The rates and payments settings of the tax and transfer system (parameters), which are also regularly updated, are used to determine and calculate different tax and welfare payment variables for each of the individuals and families in the sampled population.

For this analysis, STINMOD/08 was used. Financial figures were uprated to December 2008 for this paper as this date is closest to February 2009 - the time when the stimulus package was announced. The tax and social security parameters used, however, were those averaged over the 2008-09 financial year. When the current rules on tax and transfer payments are applied to this dataset, the entitlements for each type of pension, allowance, or family payment are determined for each individual within each family. Based on this information, STINMOD then calculates various bonuses using the criteria specified in the household stimulus package and listed in previous section. As the amount of tax bonus payment is determined by the taxable income for the 2007-08 financial year, a dataset based on figures for December 2007 was used to determine the taxable income and hence the relevant tax bonus payment for each individual in the December 2008 dataset. Once all bonuses have been calculated for each of the individuals, the total change in equivalised disposable income as well as each bonus is derived for each household.

In this paper, we have used equivalised disposable household income, a common measure of incomes for poverty researchers (Saunders 1994; Lloyd et al. 2000; Tanton et al. 2009a). In order to assign equivalised disposable income quintiles to each income unit, the disposable income of each income unit is adjusted to take into account the impact of the number and age of each person in the income unit using the modified OECD equivalence scale (which assigns 1 to the first adult, 0.5 to second and following adults, and 0.3 to children aged less than 16).

3.2 Regional Results

In recent years, NATSEM has moved beyond the national and State level results produced using STINMOD, by using spatial microsimulation to show the

effect of a policy change at the small area (or neighbourhood) level (Chin et al. 2005; Chin and Harding 2006; Chin et al. 2006a; Chin et al. 2006b; Chin and Harding 2007; McNamara et al. 2007; Tanton et al. 2009a; Tanton et al. 2009b).

When the ABS issues the microdata files from its national sample surveys, it attaches a 'weight' to the record of every household within the sample. For example, the weight attached to the first household within the sample file represents the number of households within Australia that the ABS believes are the same as that particular household. These weights are the mechanism used to 'gross up' from the sample survey results to estimates for the whole of Australia. In a series of recent research projects, NATSEM has been refining the technology to weight the ABS sample survey files to small area targets derived from the census. This then creates a synthetic household microdata file for each Statistical Local Area (SLA) in Australia. In essence, the technique creates a set of synthetic households who replicate, as closely as possible, the characteristics of the real households living within each small area in Australia. The procedure used for creating these new weights is exactly the same procedure that the ABS uses to benchmark their surveys to Australian totals, and is implemented in a SAS procedure called GREGWT.

In this paper, a set of weights for every SLA in Australia was derived by benchmarking 2003-04 and 2005-06 survey data from the Survey of Income and Housing (with all financial data uprated to 2006 financial values) to 2006 small area Census data. This benchmarking was done using a number of benchmarks (see Table 1). The weights derived from this benchmarking were then inflated to 2008 populations using the ABS population projections (ABS 2004). This is the simplest method of inflating the weights to represent future years. More information on the detail of how SpatialMSM calculates these new weights can be found in the many articles outlining the spatial microsimulation method (Chin and Harding 2006; Chin et al. 2006b; Harding et al. 2009a).

Table 1. Benchmarks used in the Procedures

Number	Benchmark
1	Age by sex by labour force status
2	Total number of households by dwelling type (Occupied private dwelling/Non private dwelling)
3	Tenure by weekly household rent
4	Tenure by household type
5	Dwelling structure by household family composition
6	Number of adults usually resident in household
7	Number of children usually resident in household
8	Monthly household mortgage by weekly household income
9	Persons in non-private dwellings
10	Tenure type by weekly household income
11	Weekly household rent by weekly household income

Source: ABS Census of Population and Housing, 2006.

One of the issues with the SpatialMSM method is that the GREGWT SAS macro used does use an iterative procedure to calculate the weights, and in some cases this iterative procedure will not be able to derive reasonable estimates within a set number of iterations. Experimentation has also shown that the convergence criteria used by the GREGWT program is too strict for our purposes, and can exclude SLAs where the results in terms of small area estimates are reasonable, so an alternative criteria is used called the Total Absolute Error (TAE).

This measure was developed by Paul Williamson for a combinatorial optimisation reweighting method (Williamson et al. 1998), and is calculated as the sum of the absolute differences between the estimated population and the actual population in each category of each benchmark table for every SLA. The TAE will be 0 if all the benchmarks in the SLA are matched perfectly, and will increase as the estimation procedure fails to meet the benchmarks. A 'failed' TAE will be to do with the population of the SLA – so for an SLA with a population of 100, a TAE of 50 is bad; but for an SLA with a population of 10,000, a TAE of 50 is good. So the criteria we use in this paper is that if the TAE divided by the population of the area is greater than 1 then the area has a failed accuracy, and is dropped from further analysis.

Using a version of our model called SpatialMSM/08C, we have been able to produce weights for 1214 SLAs. There were 138 SLAs where the method did not appear to work, and this was shown in the failed accuracy criteria. These SLAs have been dropped from further analysis. We found that most of the SLAs with failed accuracy criteria were usually industrial areas, office areas or military bases with very low population size. Therefore, the proportion of persons living in these SLAs is very small (Table 2). Only 0.7 percent of the total Australian population in 2006 were lost due to the failed accuracy criteria. Having said this, the process did not work for many areas in the Northern Territory, and 25 percent of the Northern Territory population had to be dropped due to failed accuracy. Therefore, small area estimates for the Northern Territory from SpatialMSM/08C should be treated cautiously.

Table 2. Number of SLAs dropped due to failed accuracy criteria.

State/Territory	SLAs with failed accuracy	Total SLAs	Percent of SLAs with failed accuracy	Percent of population in SLAs with failed accuracy
NSW	2	200	1.0	0.4
VIC	4	210	1.9	0.0
QLD	43	479	9.0	0.8
SA	7	128	5.5	0.4
WA	17	156	10.9	0.9
TAS	1	44	2.3	0.1
NT	48	96	50.0	25.2
ACT	16	109	14.7	1.0
Australia	138	1422	9.7	0.7

Source: SpatialMSM/08C.

The two ABS income surveys used in our SpatialMSM/08C model are also the two surveys used as the basefiles for STINMOD/08, so we have exactly the same households, families and individuals in each model. This means the weights from the spatial microsimulation model can be linked to simulations from the STINMOD model to derive small area effects of changes to social security and tax policies.

The set of weights from the spatial microsimulation model used for this paper contains 1214 columns corresponding to 1214 SLAs across Australia where we have been able to derive good estimates using our SpatialMSM model. For each family on the two surveys, there will be a weight. When these weights are applied to corresponding families within STINMOD, then the average gain from the stimulus package as well as the number of winning families can be calculated for every SLA. When the results are calculated for all SLAs, the average gains can be compared across the SLAs to show which SLA benefits the most from the stimulus package.

It is important to note here that earlier validation of the results of the spatial microsimulation techniques has suggested sufficient reliability for the results to be used in analysing policy changes (Chin et al. 2005; Chin et al. 2006b; Harding et al. 2009a; Tanton et al. 2009a). In addition, for both the national and small area results, the simulations only show the first round effects of the policy change, before any Australians change their behaviour in response to these bonuses.

4. NATIONAL LEVEL ANALYSIS

Table 3 shows that the stimulus package appeared to affect quite a large number of families in Australia.[4] Out of around 11 million Australian families, nearly 7.3 million families (or 65.7 percent) benefited from the package with the average weekly gain of $30. When we look at this by income quintiles, a large number of families in quintiles 2 to 5 benefited from the package. They also accounted for a very high proportion of total Australian families within these quintiles. For example, more than 1.8 million families, or 94.4 percent, in the fourth quintile benefited from the package. On the other hand, not many families on the lowest income quintile benefited from the package. The absolute number of families was 560,000 representing only 18.5 percent of total Australian families in that income quintile.[5] This observation probably reflects the fact that

[4] Families in this paper refer to Income Units and technically speaking are not the same as normal defined families. Income units, as defined by the ABS, are a group of two or more persons who are usually resident in the same household and are related to each other through a couple relationship and/or parent/dependent child relationship; or a person not party to either such relationship.

[5] To calculate quintiles of equivalised disposable income, the income is first ranked from lowest to highest, and then the income units are weighted by the population weight and assigned a quintile number. By applying the population weights in calculating the quintiles, we ensure that each quintile consists of one fifth of the total Australian population.

the stimulus package was designed to stimulate the economy (rather than assist the very poor). Another factor is that the overall impact of the package is largely influenced by the tax bonus component, which most families on low incomes were not entitled to, due to their low income and hence no tax liability. Despite this, the average gain per week for those poorest families, at $29 per week, was more than that of the richest families, who on average benefitted the least from the package, at $25 per week.

Table 3. Overall impact of the stimulus package on families

Equivalised Disposable Income quintile	Families affected	Proportion of total Australian families	Average change
	Number	Per cent	$ per week
1	560,267	18.5	28.98
2	1,318,022	64.3	33.95
3	1,773,676	90.8	32.77
4	1,867,930	94.4	30.51
5	1,728,504	85.0	24.48
All	7,248,399	65.7	30.13
Family Type			
Married with dependents	2,149,705	95.0	46.3
Married couple only	1,489,806	56.2	26.74
Sole parents	562,318	98.6	46.81
Single person	3,046,507	54.8	17.31
All	7,248,399	65.7	30.13
State			
NSW	2,354,699	64.6	29.73
VIC	1,775,524	65.3	30.36
QLD	1,474,431	67.2	30.85
SA	525,375	63.4	30.43
WA	754,407	67.5	29.16
TAS	161,297	62.9	32.66
NT/ACT	202,666	73.5	28.38
All	7,248,399	65.7	30.13

Source: STINMOD/08.

Looking at the results by family type, we can see that the majority of the winners were single people, at more than 3 million families; followed by married couples with children, at more than 2.1 million families, and couple families only, at about 1.5 million families. Sole parents, on the other hand, were the group which had the smallest number of winners, at less than 600,000. Despite that small number, almost all sole parent families, at 98.6 percent, were the winners of the package. This is also true for married couples with children, at 95 percent. Looking at families without children, i.e. single people and couples without children, just more than 50 percent of these families gained from the package.

In terms of the actual benefits, sole parents gained the most from the package, at $46.81 per week, which is closely followed by married couples with children, at $46.30. Married couples with no children gained $26.74 per week, and single people benefited the least with average gains of only $17.31 per week. The

package clearly benefited families with children more than families without children.

Looking at the distribution of the winning families across States and Territories, although New South Wales, Victoria and Queensland had the largest number of winners, the proportion of winning families to total families in each state is not much different between states - between 63 and 67 percent. The only exception is the Northern Territory and the Australian Capital Territory (which were combined due to data limitations), where the proportion is 73.5 percent. It is likely that the proportion of winning families in the ACT is actually much higher than in the NT because there are more people employed in the ACT (200,000 compared to about 120,000 in the NT) (ABS, 2009b), and hence the number of families benefiting from the package will be greater in the ACT.

The next step in this analysis is to analyse each component of the package separately. Table 4 shows the number of families and persons affected by the tax bonus component as well as the average change in income. The distribution of the winners by quintile is somewhat similar to the overall picture, so most winners were in higher income quintiles while the lowest income quintile had the least winners. Again, this reflects the fact that these people were on low incomes, so they did not normally pay tax and therefore would not be eligible for the tax bonus, which was premised on the receiver paying tax. Similarly, the reason why the majority of winners were found in quintiles 3 and 4 and fewer in quintile 5 was because people in these income quintiles paid tax but their taxable income was not yet over $100,000, where no tax bonus was given.

Table 4. Number of families and persons affected by the Tax bonus.

Equivalised disposable Income quintile	Families affected	Average Change	Persons affected	Average Change
	Number	$ per week	Number	$ per week
1	254,677	17.42	256,282	17.31
2	1,081,241	19.05	1,190,301	17.30
3	1,755,290	20.93	2,142,231	17.15
4	1,837,765	24.03	2,599,470	16.99
5	1,707,038	23.94	2,565,757	15.93
All	6,636,010	22.12	8,754,041	16.77
Family Type				
Married with dependents	1,984,148	26.77	3,204,371	16.58
Married couple only	1,485,098	26.61	2,364,107	16.72
Sole parents	243,756	18.20	262,556	16.90
Single person	2,923,007	17.01	2,923,007	17.01
All	6,636,010	22.12	8,754,041	16.77

Source: STINMOD/08

One of the interesting aspects of the tax bonus was that because it was aimed at stimulating the economy, it was paid to individuals. So a family with four people working (two parents and two dependent working age children working

part time while studying but earning enough to put them over the tax threshold) would receive four payments.

What this means is that the average tax bonus per family can be higher for larger families with more income earners, but the average tax bonus per person was lower for richer individuals than it was for poorer individuals. Looking at Table 4, while the average gain per family in the bottom income quintile was $17.42 per week, that figure for a family in the top income quintile was $23.94. However, at an individual level, the corresponding figures were $17.31 and $15.93 respectively. This was because families with higher family incomes tend to also have more income earners.

While the tax bonus was calculated at an individual level, the single income family bonus and back to school bonus were calculated at a family level. The single income family bonus was paid as a fixed amount of $900 per family who receives Family Tax Benefit Part B. This bonus increased the income of more than 1.25 million Australian families, and because of the fixed amount, the average change per week was the same at $17.31 across all family types or income quintiles. Table 5 shows the single income family bonus and back to school bonus.

Table 5. Effect of single income family bonus and back to school bonus

Income quintile	Single income family bonus		Back to school bonus	
	Family Affected	Average Change	Family Affected	Average Change
	Number	$ per week	Number	$ per week
1	176,566	17.31	154,930	30.88
2	497,984	17.31	411,210	31.28
3	360,321	17.31	426,654	33.23
4	175,197	17.31	314,011	29.07
5	42,981	17.31	16,200	22.34
All	1,253,049	17.31	1,323,005	31.23
Family type				
Married with dependents	756,282	17.31	916,851	32.44
Married couple only	9,465	17.31	.	.
Sole parents	484,021	17.31	401,861	28.6
Single person	3,282	17.31	4,293	18.27
All	1,253,049	17.31	1,323,005	31.23

Source: STINMOD/08

In Table 5, it can be seen that most recipients of the single income family bonus were in income quintiles 2 and 3. While it is reasonable to expect that families in income quintiles 4 and 5 would not qualify for FTB-B, it does seem odd that not many families in the bottom income quintile received this benefit. This may be due to the fact that many families in this low income quintile were single low income people, like age pensioners; and because they were single, they did not qualify for FTB-B, which is a payment made to families with

children. This was confirmed when we look at the beneficiaries by family type, which shows that almost all families who received this bonus were families with children.[6]

Table 5 also shows that the back to school bonus affected slightly more families than the single income family bonus, at 1.32 million families. For the single income family bonus, the bulk of the recipients were families in quintiles 2 and 3, while the back to school bonus also extended to quintile 4. For both bonuses, the recipients tended to be married couples with children or sole parents. As the single family income bonus was paid at a fixed amount of $900 per the family, there was no difference in the average change in income across different income quintiles and family types (all at $17.31 per week per family).

Table 6 reports the distribution of the training and learning (T&L) bonus at both family and individual level. Similar to the tax bonus, because this bonus was paid to individuals and not families, it was calculated at the individual level and aggregated to family level. The bonus affected slightly more than 470,000 people. As the bonus was given to those who were studying and receiving youth allowance (YA), AUSTUDY or ABSTUDY, and these payments were subjected to an income test, the majority of the recipients of the T&L bonus were also in the lowest two quintiles of income. Most of the recipients were married with dependents, so they may be people retraining. The single persons receiving this allowance may be younger students without families on YA.

Table 6. Effect of training and learning bonus by income quintile and family type

Income quintile	Training and learning bonus			
	Families Affected Number	Average Change $ per week	Persons Affected Number	Average Change $ per week
1	203,475	19.46	216,704	18.27
2	132,358	20.22	146,459	18.27
3	49,334	19.64	53,025	18.27
4	31,117	21.55	36,709	18.27
5	16,534	20.28	18,352	18.27
All	432,818	19.89	471,248	18.27
Family type				
Married with dependents	166,279	21.51	195,736	18.27
Married couple only	7,471	20.09	8,214	18.27
Sole parents	102,206	19.74	110,435	18.27
Single person	156,863	18.27	156,863	18.27
All	432,818	19.89	471,248	18.27

Source: STINMOD/08

[6] While FTB-B is only paid to families with children, some married couples and single persons may also receive this payment. This might happen when they have children who are dependent students living away from home, and the students did not receive youth allowance but the family receives FTB-B as the latter gives the family higher payments.

As the bonus was fixed at $950, the average income change for individuals was constant at $18.27 per week at the individual level. At the family level, the average income change was only slightly different across the income quintiles and family types, although it was slightly higher for married couples with dependents, suggesting that in some families there will be more than one person receiving this allowance (possibly both parents, or a parent and a child).

5. REGIONAL LEVEL ANALYSIS

When the simulation results are calculated for each SLA using a spatial microsimulation model, the spatial impact of the stimulus package can be seen, and the marked differences of the effect of the package across SLAs is shown. Figure 1 shows the impact of all components in the stimulus package for SLAs across Australia. All the maps in this section use natural breaks to determine where the breaks for each category are. Using natural breaks, the classes were based on natural groupings inherent in the data. Break points were identified by picking the class breaks that best group similar values and maximize the differences between classes. The variable was thus divided into classes whose boundaries were set where there were relatively big jumps in the data values.

It can be seen from Figure 1 that most of the areas that received the most money from the stimulus package (so those with the darkest shading) were areas just outside capital cities. Areas in the centre of capital cities (so the metropolitan areas) received the least amount (the lightest areas); but also many remote areas received less than some regional areas. Areas that received the most included areas like Liverpool-West on the outskirts of Sydney or Hume-Craigieburn on the outskirts of Melbourne. Areas that received the least included Nathan in Brisbane, Cox-Finniss in the Northern Territory, and Stuart-Roseneath in Queensland.

Figure 2 shows the average amount each area has received from the tax bonus. It can be seen that areas on the outskirts of the capital cities received the most (dark shading). These included areas like Liverpool-West in Sydney and Nillumbik–South West in Melbourne. It is interesting to see that many areas in the ACT benefited from the tax bonus, possibly because of multiple workers in a family. In particular, the newer areas of Tuggeranong and Gungahlin in the ACT were beneficiaries of the tax bonus.

Figure 3 shows how the single income family bonus was distributed. Again, new areas on the outskirts of the capital cities like Blacktown-South West and North East or Fairfield in Sydney, Hume-Craigieburn or Hume-Broadmeadows in Melbourne and outer Tuggeranong and Gungahlin in Canberra received the most, while areas within the inner cities like Sydney-East in Sydney and Melbourne–Southbank Docklands or Port Phillip–St Kilda in Melbourne received the least.

Figure 4 shows how the back to school bonus was distributed. This bonus mainly went to areas on the outskirts of the capital cities, like Liverpool-West and Blacktown-South West in Sydney and Hume-Craigieburn in Victoria, where many families with children live. Rural areas in New South Wales and Queensland like Vincent, Kingston or Brewarrina also benefited from the back to

school bonus.

Figure 5 shows how the training and learning bonus is distributed. This benefit is going to be associated with access to higher education. It can be seen that this is fairly randomly distributed across Australia, so there does not appear to be any pattern in the distribution of this payment. There was a group of SLAs in remote Queensland receiving the lowest (lightest) benefit, possibly due to access to higher education.

Overall, these maps show that the main beneficiaries of the stimulus package were in new areas just outside capital cities, and these areas benefited from the tax bonus; the single income family bonus; and the back to school bonus. The benefits of the training and learning bonus appeared to be more randomly distributed across Australia.

6. CONCLUSIONS

This paper has analysed the effect of the Australian Government's stimulus package to see who benefits most, and where they are. We find that the stimulus package provides the greatest income increase to families on middle incomes. For families on the lowest incomes, the stimulus package provides an average of about $29 per week. However, the stimulus package does not benefit high income earners either, with an average income increase of about $24 per week.

In terms of which families benefit the most, we find that families with dependent children (whether sole parent or married couples) benefit the most. Single person families benefit the least, with only $17 per week.

When we looked at the different payments, we found that the tax bonus favoured families in the top two income quintiles and married couples (with or without children); but this was offset by the back to school bonus which favoured families below the top income quintile and families with children (married or sole parent).

Looking at the regional data, we found that the main beneficiaries of the stimulus package were in new areas just outside capital cities, and these areas benefited from the tax bonus; the single income family bonus; and the back to school bonus. The benefits of the training and learning bonus seemed to be more randomly distributed across Australia, with no real pattern.

Overall, our conclusion is that the mix of benefits in the stimulus package meant that most of the money went to people in the middle three quintiles of income. While we have not shown any analysis of what the stimulus package was spent on, this is a group who may be more likely to spend the money on goods and services that they would not normally purchase, and therefore stimulate the economy further. With the back to school bonus, most of the money went to families with children at school, who are again the families most likely to spend the money stimulating the economy.

In terms of the locations where most of the money went, it tended to go to new growth areas on the outskirts of the capital cities. These areas are also where new families with young children live.

Figure 1. Average change in total disposable income ($ per week)

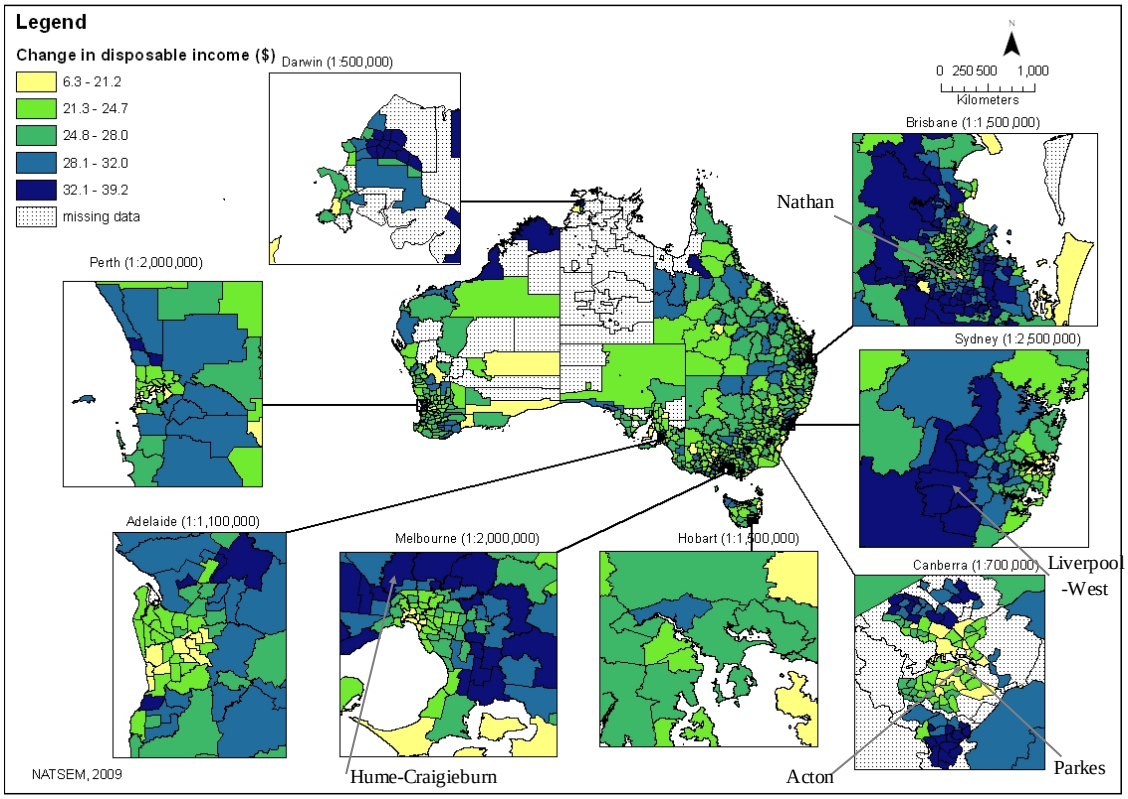


Figure 2. Average tax bonus ($ per week)

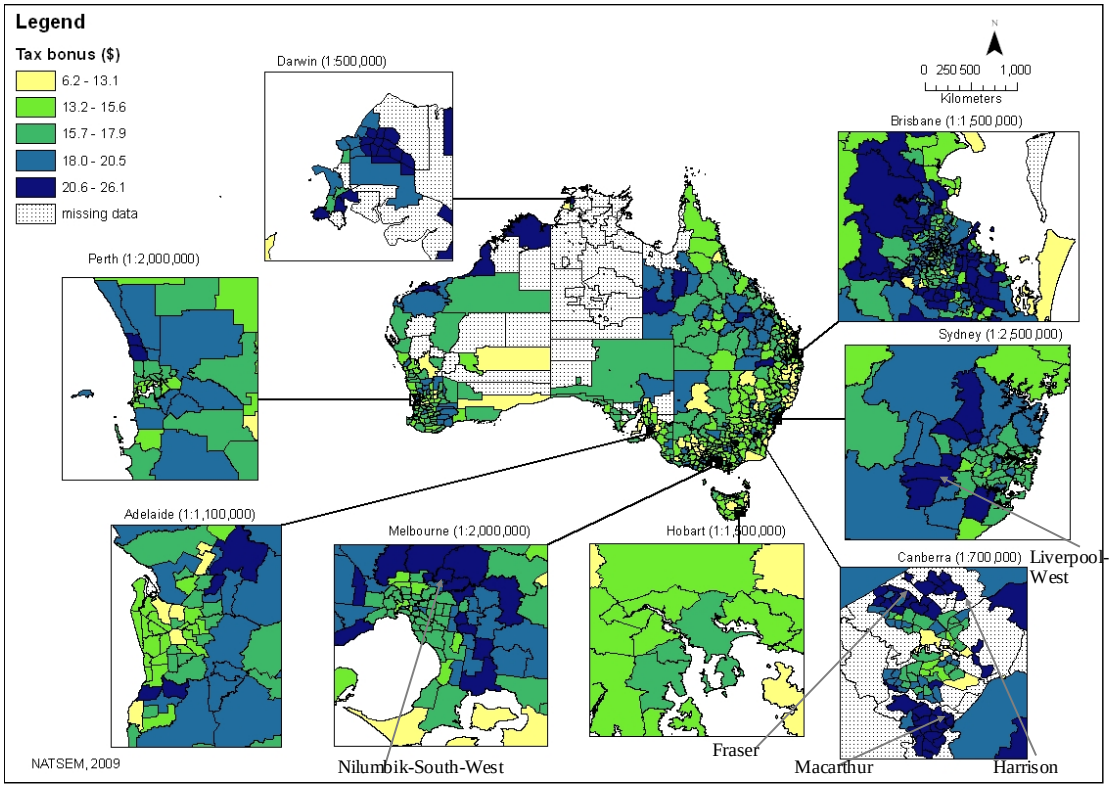


Figure 3. Average single income family bonus ($ per week)

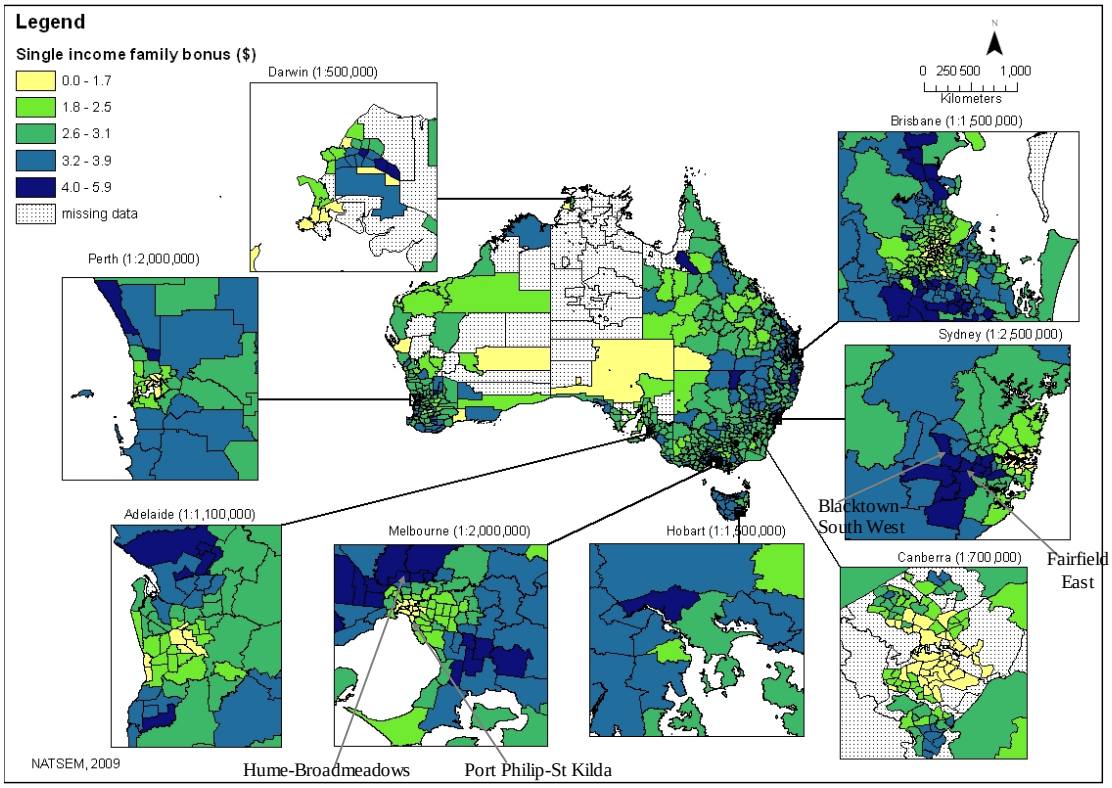


Figure 4. Average back to school bonus ($ per week)

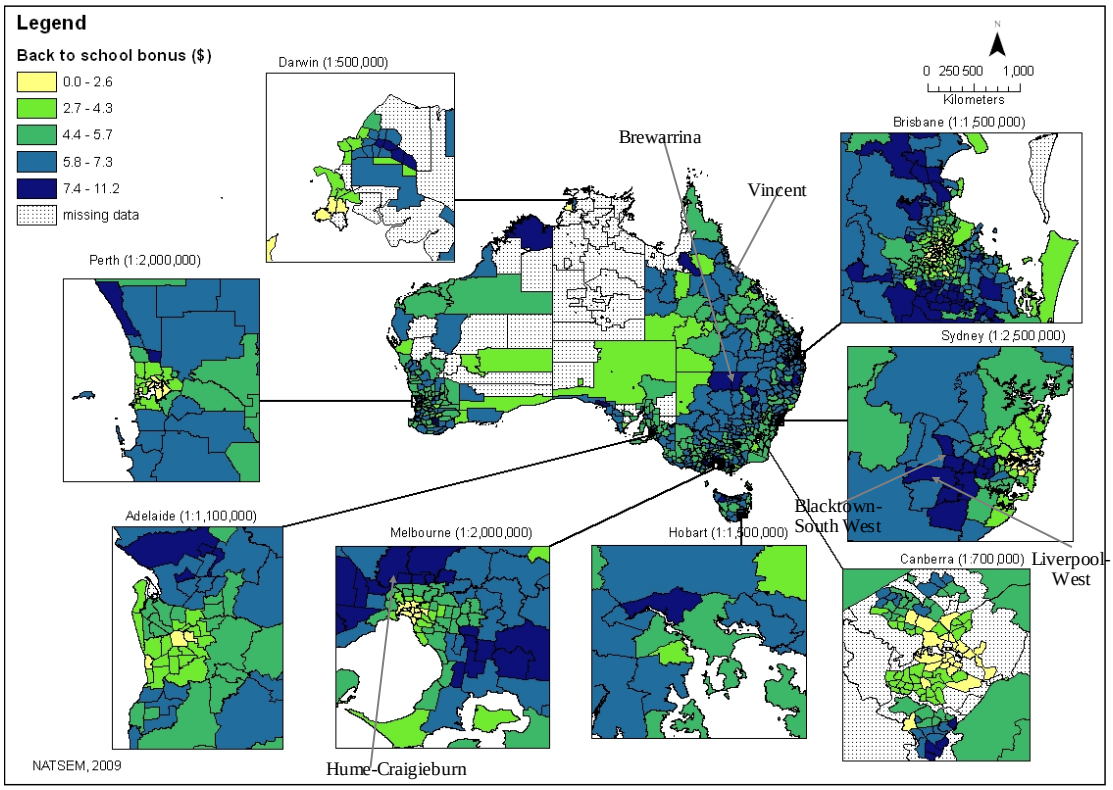
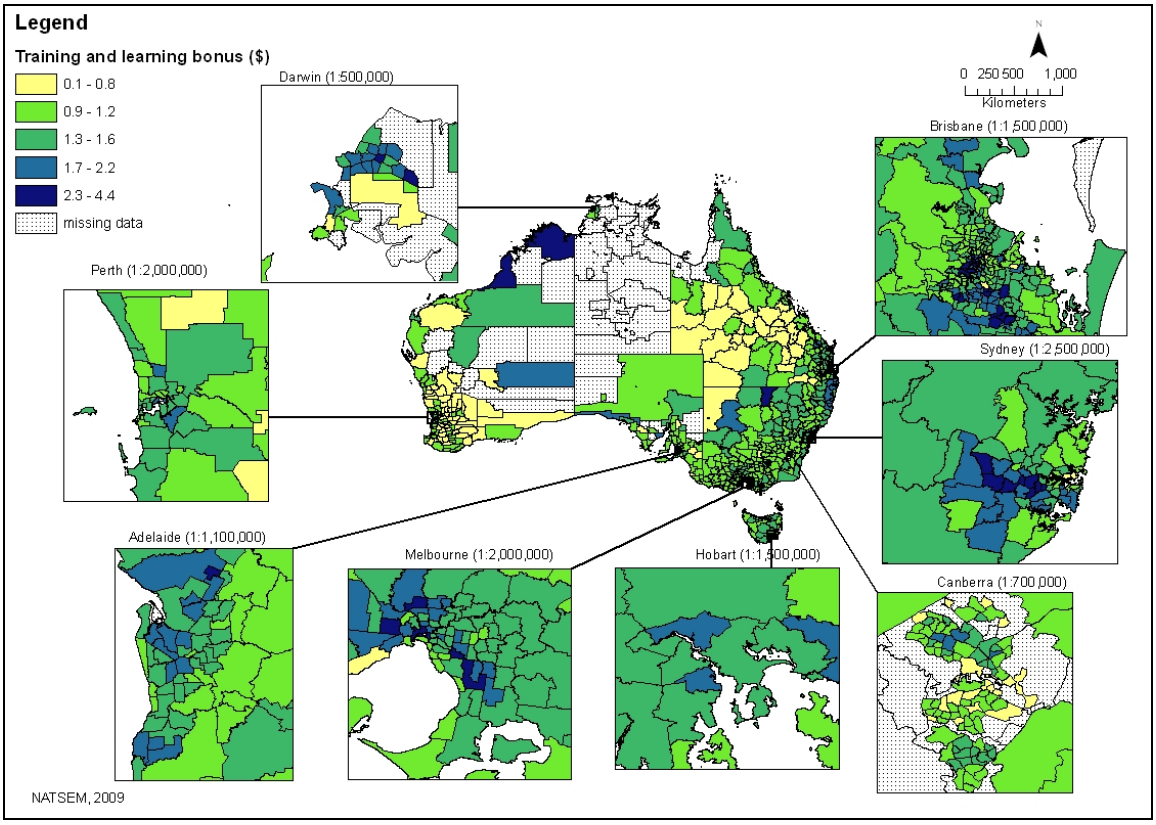


Figure 5. Average training and learning bonus ($ per week)



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