



**A spatially sensitive approach to
understanding the impact of public
expenditure on social exclusion**

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**Paper presented to the Social Change in the
21st Century Conference**

**Centre for Social Change Research
Queensland University of Technology
27th October 2006**

A spatially sensitive approach to understanding the impact of public expenditure on social exclusion

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Abstract

Efforts by Australian governments to restructure the welfare state since the 1990s have included the development of a plethora of performance indicators tied to the outputs of social programs. Performance measures can be misleading because they tend to be limited in their assessments to the target group. Social outcomes generated by public expenditure that are not related to the role and tasks of the agency services, tend not to be measured or are under reported. For example, the performance of state sponsored literacy programs can be measured by how well children learn in schools but the flow on effects of a more literate community and the social and economic implications thereof are rarely examined. Moreover, social welfare performance indicators do not consider the equity implications of gross and net public expenditure. That is, governments may spend money in a given area to achieve social outcomes but also tax the same community in ways which moderate the effectiveness of social programs. This paper reports on a project that aims to deploy geographical information systems (GIS) to investigate these processes. The equity implications of gross and net public expenditure are considered in a discussion of the development of a process to map the impact of public expenditure on social exclusion.

Keywords: Equity; Social Exclusion; Public Expenditure; Social Outcomes

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Introduction

Human service provision in Australia accounts for two thirds of government spending and a third of GDP (Hugo 2001). The allocation principle of targeted social expenditure by the state is that it should be needs based and therefore take into account the extent and dimensions of disadvantage among groups and areas. Much of the current expenditure on human service provision is ostensibly targeted at reducing social exclusion on a needs basis.

However, in practice, social expenditure has been allocated according to an historically fixed allocation, a per capita approach, or a response based or demand based approach. Analyses of the existing situation in Australia suggest genuine needs based allocations of scarce resources are limited (Hugo 2001). A small improvement in efficiency and effectiveness by matching the expenditure on these services by social outcomes would have a massive pay-off in terms of economic prosperity, community well-being and social justice.

This paper discusses work in progress on an ARC Linkage Project at the University of Adelaide that seeks to assess the effectiveness of public expenditure in reducing social exclusion. The project seeks to benchmark and measure the impact of public expenditure on social exclusion in the region of Northern Adelaide. Northern Adelaide has been designated under the Commonwealth Government Initiative in Regional Australia as a region characterised by persistently high unemployment rates, poverty and social exclusion. In collaboration with the SA Government the project team are seeking to use GIS spatial information systems to match public expenditure patterns with social outcomes, using an array of public expenditure data, ABS data, census data, social indicator data and other appropriate sources of information.

Work in progress to data has focused on developing measures that consider the equity implications of gross and net public expenditure. This paper explores these issues and discusses measures of net social expenditure which might be adapted so that they can be mapped against a given region to evaluate the effectiveness of resource allocation.

Public expenditure to reduce social exclusion

In Australia, the pattern of social expenditure has shifted in recent years away from universalist welfare approaches towards tight targeting of service provision to those most in need. There is now considerable emphasis placed on defining who is most in need of welfare in terms of gender, race, age, education, work status, work experience, health, disability and sole parent status (Jamrozik 2005).

Much of the focus of current thinking on welfare reform relates to ways of reducing social exclusion and encouraging social inclusion within the new parameters imposed by the restructuring of the welfare state (Jamrozik 2005). According to the Organisation for Economic Cooperation and Development (OECD) (1998), social inclusion policies are those which encourage the integration of communities and prevent exclusion and stigmatisation. A recent draft report by the European Council on Employment and Social Policy (European Commission 2001: 1) refers to the socially excluded as people being 'prevented from participating fully in the economic, social or political life of the nation'. There appears to be general agreement in the literature about the dimensions of social exclusion, which Atkinson (2002: 4) summarises as: 'poverty, income inequality, low educational qualifications, labour market disadvantage, joblessness, poor health, poor housing or homelessness, illiteracy and innumeracy.'

There has been significant research in recent years into whether social exclusion is exacerbated by where people live (Greive et al. 2002, Carson and Martin, 2001, Maher 1999, Fincher and Nieuwenhuysen 1998, Badcock 1997). Increasingly, researchers have uncovered the social and spatial polarisation brought about through the restructuring of labour markets, financial deregulation, the dismantling of tariff protection and the emergence of a knowledge based economy. An increasing division has become evident between the highly paid professional elites who are increasingly separated from a growing service class of low paid part-time and casually employed labour (Jamrozik 2005, Gregory and Hunter 1995). Social-spatial exclusion can be driven by conditions of geographic isolation, lack of access to transport, sub-standard housing, vulnerability to crime, poor education, inability to communicate in English, inadequate family support, limited social networks, the absence of good role models, lack of access to affordable telephone communications, poor health and physical and intellectual disabilities (Leigh 2001).

Policy responses to social-spatial polarisation have focused on identifying regions like that of Northern Adelaide, which the available social data suggests are sites of social exclusion and disadvantage. In South Australia, the notion of active state intervention in regional development has been manifest in the creation of the SA Regional Development Taskforce in the late 1990s and the institution of special regional departments such as the Office for the North in 2003. 'Whole of government' models of regeneration are showcased in current policy discourses as the way to address inequality in disadvantaged areas. It is held in these discourses that inequality can be addressed by coordinated and integrated models of service delivery at the local level but this must be achieved within the ongoing requirements of governments to achieve outcomes for communities within existing budget outlays (Arthurson 2003).

The current policy focus on the efficient and effective delivery of equitable social outcomes to address social exclusion within existing budget outlays begs the question of: how do we know government expenditure on social programs is delivering good outcomes?

Efforts in recent years to restructure the public sector have been accompanied by the development of performance measures tied to the budgets of social programs (Spoehr 1999, Sharp 2003). Performance measures are reporting requirements which the agency delivering programs must meet as part of its contract in order to continue to receive funding from the state. The focus of performance measures is on results in the form of service outputs and outcomes.

Sharp (2003), points out that performance measures can be misleading because they tend to be limited in their assessments to the immediate clients or target group of the agency. Social outputs and outcomes generated by public expenditure that are not related directly to the role and tasks of the agency delivering services, even though they are products of an agency's services, are not measured. For example, the performance of state sponsored literacy programs can be measured by how well children learn in schools but the flow on effect of a more literate community and the social and economic implications thereof are not measured. Sharp's (2003) analysis suggests the limitations of measuring the impact of spending at an agency level and the for structural level measures to assess the impact of public expenditure on social outcomes.

Gross and net public expenditure

In discussing the social impact of public expenditure it is important to consider the equity implications of gross and net public expenditure. As recent work by Adema and Ladaique (2005) have shown, gross (before tax) spending data in government budgets and in national accounts do not account for the impact of taxation on the value of social expenditures. Public budgets do not capture private social arrangements to which sections of the population are obliged to subscribe, or which social policy objectives encourages by means of financial support (for example, tax rebates for private health insurance). Moreover governments can collect direct taxes and social security contributions (eg the Medicare Levy) on cash transfers, and levy indirect taxes on goods and services (eg the GST), which are bought by social benefit recipients. Australian and State governments can also pursue social policies through the tax system, by giving tax relief that are either similar to cash benefits, or by awarding tax advantages aimed at stimulating the provision of private social benefits.

Furthermore, the provision of social protection is also provided by Non-Government Organisations (NGOs) and the private sector. In South Australia and other States many forms of social protection once delivered directly by the State are now outsourced to private providers. Private social arrangements can also complement existing arrangements, for example when state child endowment payments are enhanced by employers who offer maternity leave. Assessing the size of public and private social benefits as well as the impact of the tax system, allows us to estimate net social expenditure.

That is, governments may spend money in a given area to achieve social outcomes but also tax the same community in ways which moderate the effectiveness of social programs. If we are to know government expenditure on social programs is delivering good outcomes then we must understand the impact of this process. Understanding the level of net public expenditure on social programs might provide a more accurate assessment of the impact of social programs in a given region.

The Australian Bureau of Statistics developed some years ago a framework to estimate the full effects on private incomes of taxing and spending by the Commonwealth, States and Local Governments (ABS 2001). The methodology draws data from the Household Expenditure Survey (HES) and the Fiscal Incidence Study (FIS). The latter provides information on the effect of government benefits and taxes on household income.

The benefits and taxes included in the study related to particular types of households and household expenditure. That is, household income was considered by the ABS to be increased directly by benefits in the form of regular cash payments, which included age pension and family payments, and indirectly by government expenditures on items such as health and education. Conversely household income was considered to be reduced by personal income taxes (direct taxes) and by indirect taxes passed on in the prices households pay for goods and services. The study excluded government taxes and expenditure that did not relate directly to particular types of households or household expenditure, such as government revenue from corporate taxes and spending on defence, public order and safety, transport and communications.

The ABS methodology began with private income, broken into quintiles and calculates final income from the effects of all government cash benefits (pensions, job search allowances, etc) less direct taxes plus non-cash benefits (education, health, housing, etc) less indirect taxes i.e.

1. private income
2. plus cash benefits
3. less direct taxes
4. plus non-cash benefits
5. less indirect taxes
6. equals final income.

The analysis is summarised in the following table drawn from the ABS (2001) study:

Table 1 The effect of government expenditure and revenue raising on income groups, % shares by income quintile

	Lowest 20%	2nd quintile	3 rd quintile	4 th quintile	5 th quintile
Private income	0.4	5.3	16.1	27.4	50.8
Taxes:					
Direct	0.3	2.6	11.8	24.9	60.4
Indirect	9.7	14.2	19.6	24.4	32.1
Total Tax	3.2	6.2	14.2	24.8	51.8
Benefits:					
Direct	28.7	38.1	18.4	10.1	4.7
Indirect	16.8	23.0	20.9	19.8	19.5
Total Benefits	21.8	29.3	19.8	15.7	13.3
Final Income	7.1	13.5	18.0	24.1	37.3

Source: ABS (2001), Cat. No. 6537.0

In summary, the table shows that private income, before government taxing and spending is highly unequal, with more than 50 percent going to the richest 20 percent. But direct (i.e. income) taxes are more heavily paid by the rich and this reduces the level of inequality in post tax incomes. Indirect taxes are spread more evenly but the incidence still increases with income. Direct benefits go predominantly to poorer households and indirect benefits are relatively evenly spread. The net result suggests that final incomes are made more equal by government spending and taxing. Interestingly it suggests that the only real redistributive mechanisms are income tax

and direct income transfers. Expenditure on services such as education, health and housing, appear to actually benefit the bottom quintile less than the top. As a measure of the effect of government expenditure and revenue raising on income groups it offers a guide to how government expenditure on social programs is delivering outcomes.

However, there are a number of limitations to this methodology as a means for comparing public expenditure with social outcomes. First, the ABS data used in this study is dated. The last FIS was released in 2001 and related to data from 1997-1998, albeit a new study appears to have been undertaken for 2003-2004 but is yet to be released.

Moreover, the ABS model does not appear account for private expenditure on what are classed as “non-cash benefits” and how these might moderate or complement government spending and affect social outcomes. Such expenditure might include items such as private school fees and private health insurance, which the Australian government actively encourages citizens to pay, through subsidies and rebates. It is in this context that Adema and Ladaique (2005) have developed international indicators of net social expenditure for the OECD. Social expenditure to GDP ratios are used for international comparisons of welfare states by the OECD. These indicators are an attempt to account for the impact of tax systems on the value of social expenditures, and also private social arrangements to which parts of the population are obliged to subscribe to, often through tax penalties and incentives.

The OECD (2005) notes that tax policy can affect social expenditure in three ways

1. Governments can levy direct taxes and social security contributions on cash transfers
2. Governments can levy indirect taxes on goods and services bought by benefit recipients
3. Governments can pursue social policies through the tax system, by giving tax reliefs that are either similar to cash benefits, or by awarding tax advantages aimed at stimulating the provision of private social benefits.

The OECD’s net public social expenditure indicator is said to account for these effects and provide a picture of what governments actually devote to social spending.

The concept is one of determining the total amount a nation spends on social purposes, expressed as a percentage of GDP. Its prime purpose is to provide a means of comparing the relative weight nations give to social issues but it arrives at a grand mean, which could then be modified by knowledge of usage rates and spending criteria by income group. The model includes mandatory and voluntary private social expenditure as well as public and therefore includes items such as superannuation contributions. These private contributions are important in Europe where many countries require that welfare recipients use up their previous private contributions before they become eligible for the less generous public assistance.

The calculation made is as follows:

1. Begins with gross public social expenditure (i.e. pensions, unemployment and sickness benefits, etc)).
2. Subtracts taxes (direct and indirect) and then adds direct benefits and add tax breaks provided for social purposes (e.g the Medicare Levy rebate). This gives net current public social expenditure.

3. The OECD then adds mandatory private social expenditure (net of taxes) to give net publicly mandated social expenditure. Voluntary social expenditure (net of taxes) is then added to obtain net current private social expenditure.
4. Total net social expenditure is then the sum of the public and private portions.

The following table compares the calculations for Australia in 2005 with those for the US, Germany and the UK.

Table 2. Net social expenditure in selected countries, % GDP

	Australi a	Germany	UK	US
1. Gross public social expenditure	20.4	30.6	25.4	15.7
2. Net total social expenditure	24.0	30.8	24.5	22.5

Source: Derived from data appearing in Adema and Ladaique (2005).

The value of the OECD approach is that it accounts for the mandatory and voluntary private contributions to net social expenditure. The important role these contributions play in social expenditure is illustrated by the difference between countries in terms of gross social expenditure and net public social expenditure. In terms of gross public expenditure Australia spends much less than Germany, less than the UK, but much more than the US as a proportion of GDP. But when net public expenditure is considered Australia, the UK and the US spend about the same proportion of GDP reflecting the relative roles of private social expenditure in their economies.

The OECD indicator, as does the ABS indicator provide guides to the amount of resources devoted to the social needs of the country. Moreover considering all social benefits and differences in tax rates assists in the identification of the proportion of the gross domestic product to which recipients of social benefits can lay claim.

Assessing the indicators

Beer (1994) observed more than a decade ago that social indicator data is often difficult to match against other sources of social data and it tends to reflect historical events rather than the current reality. Although this observation still holds true to some extent, GIS technologies have the potential to address these issues.

The extent to which such data can be mapped against social outcomes is a work in progress for the project team. The quality of data on the impact of tax systems and private spending is not as high as the quality of information on budgetary allocations. Budgetary allocations are set out in detail in Commonwealth and State Budgets and through comprehensive data available through the Grants Commission. Micro-simulation modelling on the impact of income, tax and social security has been undertaken by the National Centre for Social and Economic Modelling (NATSEM) (see Chin et al. 2005) by attempting to develop synthetic estimates from ABS survey data. However, ABS data on private spending is drawn from the Household Expenditure Survey and the Survey of Income and Housing, as is data used by NATSEM. Disaggregating data from national surveys to small areas raises issues over the

reliability of data in terms of how well it reflects the circumstances of individuals living within areas at this level, with implications for how well this data can be represented in GIS. Albeit NATSEM have developed a method of checking ABS survey data against the Census to address this issue (Chin et al. 2005).

If we are to assess whether government expenditure on social programs is delivering good outcomes indicators must be developed that examine equity and distribution but also questions of incidence. In the period of the last released ABS study of the effect of government expenditure and revenue raising on income groups in 1998-99 (see Table 1) the Australian Government allocated approximately \$33 Billion for education and health spending. The ABS (2000, 2001) has calculated that 20.6 percent of this expenditure went to households in the highest quintile and 15.1 percent to households in the lowest income quintile. However the value of incidence of these expenditures was such that households in the lowest quintile received a benefit to the equivalent of 25.8 percent of their income in comparison with 4.7 percent for the highest quintile (Jamrozik 2005). Moreover, this calculation does not suggest relative need, simply the relative value of the expenditure. To assess expenditure against outcomes requires an understanding of the dimensions of the social need that is to be addressed by expenditure. Our work in this area remains in progress.

Thus far we have identified that social exclusion can be exacerbated by where people live. Place can represent identifiable patterns of polarisation or alienation, patterns which then become part of the processes of social exclusion which create a spatial concentration of excluded people in a particular place at a particular time (Hutchinson 2000). Consideration of place is important for policy makers because decisions about planning, resource allocation and structuring of the economic and social environment can be framed in terms that recognises the consequences they have for communities within particular localities.

Geographic Information Systems (GIS) provide a means for considering space. In the Australian context GIS remains an under-developed resource in social policy research. Major barriers to a more widespread use of GIS have been a lack of understanding of the role GIS can play in the private and public sectors, the slowness of Australia's social and economic data systems to adapt to the new technology, lack of trained personnel, and a lack of coordination among relevant groups (Hugo 2001).

Nevertheless GIS enables the creation of visual representations of social indicators over geographic areas. Representing social data spatially highlights geographic variations that may remain hidden by aggregate accounts; it is a powerful visual representation of complex information that is easy to understand; it facilitates understanding of the determinants of social exclusion; and, maps may be used to inform policy makers on what intervention to select in what areas (World Bank 2005).

The project will seek to expand awareness about the potential of GIS technologies by testing their potential to improve social programs and community development. Most significantly, the project will attempt to integrate data on public expenditure with an array of social indicators on social exclusion, including measures developed by the project team for a survey of social exclusion in the same region (Wilson 2006). Among some of the challenges facing the research team are the links between policy efforts and social outcomes, and accounting for policy effects that are not easily quantifiable. Concentration of unemployment in a small area, for example, may be a consequence of globalisation and economic restructuring that requires change at a national level rather than being directed at the area itself. Some policies may also affect the levels of 'social capital' within an area and improve the levels of informal support and assistance that are available within particular communities. How these issues and other issues identified earlier in calculating net expenditure will be factored into our model require further consideration.

Conclusion

In summary, addressing the question of the impact of the government expenditure on social outcomes requires the development of indicators that are capable of measuring gross and net public expenditure

Such indicators may include models which assess final income by considering private income; cash benefits, direct and indirect taxes and non-cash benefits, as developed by the ABS. The ABS model might be used in conjunction with or as an alternative to the model developed by the OECD to measure net social expenditure. These models enable consideration of social benefits and differences in tax rates to assist in the identification of the proportion of the gross domestic product to which recipients of social benefits can lay claim.

However, the quality of available data on the impact of tax systems and private spending in Australia is not as high as the quality of information on budgetary allocations, posing issues for researchers seeking to develop these models. Moreover, to assess whether government expenditure on social programs is delivering good outcomes, indicators must be developed that enable the examination of questions equity and distribution but also questions of incidence and an understanding of the dimensions of the social need that is to be addressed by expenditure.

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