Comparing Income Transfer Systems: Is Australia the Poor Relation?

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Introduction.

Throughout the 1970s and 80s Australia has been consistently characterised as the 'poor relation' among the OECD countries when it comes to welfare spending. As Castles (1987:2) notes:

> Virtually all international comparisons of welfare state spending of Australia and other advanced western societies have shown Australia to be a welfare laggard.

While comparisons of aggregate expenditure - often referred to as 'welfare effort'- provide a useful guide to the relative generosity of welfare states and by implication the welfare of their citizens, such analyses have two major limitations. First, there is an implicit assumption that 'more is better', in other words, that higher levels of expenditure necessarily reflect a greater commitment to social well-being. Esping-Andersen (1989:19) rejects this equation and argues that:

> By scoring welfare states on spending we assume that all spending counts equally. But, some welfare states, the Austrian for example, spend a large share on benefits to privileged civil servants... Some nations spend enormous sums on fiscal welfare in the form of tax privileges... that mainly benefit the middle classes. In Britain, total social expenditure has grown during the Thatcher period; yet, this is almost exclusively a function of very high unemployment. Low expenditures on some programs may signify a welfare state more seriously committed to full employment.

Second, such measures cannot account for the impact of taxes, the efficiency of program delivery nor the incidence of welfare benefits and services. Commenting on these problems, Gilbert and Moon (1988:339) argue that the theoretical equation of welfare effort with the actual outcomes of these expenditures may not hold empirically:

> The measure of welfare effort should not be confused with that of welfare outcome. Theoretically we would expect higher welfare efforts ... to result in higher welfare outcome (e.g., reduction of poverty and improvement of other social conditions.) But that remains an empirical question, which among other things depends upon the actual distribution of welfare benefits, how efficiently they are delivered, and their unanticipated consequences for the well being of recipients.

In this chapter I confine my analysis to a major component of welfare expenditures, namely income transfers. There are two aims of the chapter, one is to examine the extent to which Australia's image as a welfare 'laggard' is justified in terms of the outcomes from its transfer system; the other is to compare the general level of economic well-being of families in ten OECD countries from the perspectives of poverty and income inequality.

While most studies of income transfers concentrate exclusively on direct transfers through the social security system, this study takes a comprehensive view of transfer policies by using microdata to examine the incidence and impact of both social security transfers and income taxes.

Using microdata to compare the impact of income transfers.

The type of data which is required to examine the distribution of benefits, the impact of taxes and the efficiency of transfers is collected in most OECD countries in the form of income, expenditure (consumption) or tax file surveys. This data is referred to as *microdata* and in Australia, the Australian Bureau of Statistics conducts such surveys for example, the 1985-86 Income and Housing Survey. Until recently, the comparability of the individual microdata sets for each country has been extremely low and could not be used with any confidence to make cross-national comparisons of the incidence of income transfers. This study uses a new data set which has been constructed from the survey data of a number of countries and is referred to as the Luxembourg Income Study (LIS).

The outstanding feature of the LIS data is that a number of income and demographic variables have been drawn from reliable, usually government sponsored, survey sources in participating countries and re-coded to form a common framework. The LIS database is comprised of microdata collected in sixteen countries[1] over two time periods: 1979-82 and 1985-87. Through extensive consultation with country co-ordinators, around 60 income and demographic variables have been made comparable across the data sets.[2]

In the analysis below, I have selected nine countries from the LIS database for comparison with Australia: Canada, France, Germany, Netherlands, Norway, Sweden, Switzerland, UK, US. These countries represent a wide range of transfer systems in terms of the balance between direct and indirect transfers, types of transfer programs *ie* selective versus universal programs and diverse levels of government expenditures.

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[1] Australia, Belgium, Canada, France, Germany, Hungary, Italy, Israel, Luxembourg, Netherlands, Norway, Poland, Sweden, Switzerland, UK, US.

[2] A fuller description of the LIS database can be found in Buhmann et al (1988).

It is important to stress here that the analysis presented below draws on the first wave of the LIS data (circa 1980). At the time of writing, the coverage of countries in the second wave of data (circa 1985) was considerably smaller. Therefore, income transfer policies in many of these countries may have undergone considerable transformation in the intervening period and the outcomes observed, may well be radically different today. Despite this, the analysis presented here maintains its relevance at the general level in terms of tracing the relationship between expenditure and outcomes.

In this paper (because of space limitations) I will not be discussing the comparative institutional arrangements of these countries in detail. For a detailed account of the institutional arrangements, readers are referred to Flora (1986) and Dixon and Scheurell (1989).

Who are the 'leaders' and 'laggards' in the income transfer field?

The analysis of aggregate expenditures presented here differs from conventional welfare effort measures in two respects; it is confined to expenditures on social security payments *ie* it does not include expenditures on 'social welfare' in general which is the measure most frequently used in such comparisons; it takes account of what are termed tax expenditures.[3]

The rationale for including tax expenditures is as follows: two countries may make allowance for the cost of raising children, in country A such allowances may be paid in the form of a direct child benefit; in country B a tax deduction/concession/rebate may serve exactly the same purpose. Thus, to exclude these tax expenditures is to underestimate the true level of support country B gives to the raising of children.

Table 1 sets out the transfer expenditures described above. Column 1 is social security program expenditures *ie* the amount of expenditure which goes directly on benefits and does not include administrative costs. Tax expenditures are shown in Columns 2 and 3. I have separated non-superannuation expenditures (Column 2) for two reasons: where superannuation deductions or concessions are available they are generally the largest single item of tax expenditure; and secondly because

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[3] Tax expenditures are so-called since they represent the taxation revenue foregone by governments through the operation of deductions, concessions and rebates and are thus retained in household disposable income in much the same way as a direct benefit.

Table 1: Social security and related tax expenditures in the LIS countries, 1980.

	[1] Social security expenditure	[2] Tax expenditure non-super	[3] Tax expenditure super	[4] Net transfer expenditure (=1+2+3)
Australia	9478	926	1226	11630
Canada	22727	3626	3140	29493
France	470580	7198	1240	479018
Germany	242210	2720	3996	248926
Netherlands	64050	3914	9717	77681
Norway	31334	*	*	31334
Sweden	85090	11037	11832	107959
Switzerland	15260	*	*	15260
UK	21361	2623	1644	25628
USA	218796	19869	36745	275410

	[5] Social Security/GDP	[6] Social Security per capita	[7] Net transfers /GDP	[8] Net transfers /per capita
	%	1980 $US #	%	1980 $US #
Australia	6.9	624	8.5	765
Canada	7.4	838	9.6	1087
France	16.8	1597	17.1	1625
Germany	16.4	1638	16.8	1684
Netherlands	19.0	1836	23.1	2226
Norway	11.0	1136	*	*
Sweden	16.2	1926	20.6	2443
Switzerland	9.0	984	*	*
UK	9.3	771	10.3	897
USA	8.1	906	10.2	1140

Notes to table: * Data not available
Converted to 1980 $US using purchasing power parities
Social security transfers: millions of currency unit
Tax expenditures non-super: millions of currency unit
Tax expenditures super: millions of currency unit
Net transfer expenditure: millions of currency unit
Social security transfers as a percentage of GDP
Social security transfers per capita in 1980 $US
Net transfer expenditure as a percentage of GDP
Net transfer expenditure per capita in 1980 $US

Sources: Social security transfers- Varley, R (1986)
Tax expenditures- OECD (1984); McDaniel,P and Surrey,S (1985)
GDP- OECD National Accounts (1986)
Purchasing Power Parities- OECD National Accounts (1986)

their distribution is generally regressive it may be argued that it is inappropriate to include these expenditures alongside of social security transfers. In this analysis I include superannuation expenditures as part of social security effort because of its close connection with income maintenance provision for the aged, however readers may wish to compare this material separately.

Non-superannuation expenditures cover a wide range for example, the exemption of social security benefits from tax; child deductions; dependents rebates; additional exemption allowances for the aged, blind or disabled; rent concessions and so on.[4] Column 3 shows all expenditures on superannuation-related deductions. Column 4 is the net expenditure on both direct and indirect transfers.

Column 5 shows the percentage of GDP expended on social security transfers. Two distinct groupings emerge: those which spent less than ten percent of GDP ie the UK, Switzerland, US, Canada and Australia; and those which spent greater than ten percent ie Norway, Sweden, Germany, France and the Netherlands.

Country rank on SS/GDP			Country rank on SS/per capita		
Netherlands	1		Sweden	1	
France	2		Netherlands	2	
Germany	3	> 10%	Germany	3	>$US1000
Sweden	4		France	4	
Norway	5		Norway	5	
UK	6		Switzerland	6	
Switzerland	7		USA	7	
USA	8	< 10%	Canada	8	<$US1000
Canada	9		UK	9	
Australia	10		Australia	10	

Converting to an expenditure per capita basis (Column 6), changes the rankings considerably, notably Sweden moves from 4th to 1st and the UK drops from 6th to 9th. Moreover, the differences between the two groups becomes more marked with, for example, Sweden spending more than three times per capita than Australia.

The addition of tax expenditures (Column 7) results in an even more marked gap emerging between the welfare leaders and laggards: Australia and Canada remained the only countries spending less than ten percent of GDP on income

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[4] A full description of these may be found in OECD (1984) and McDaniel and Surrey (1985).

transfers (with the US and UK just marginally above.)[5] The leaders on the other hand, spent more than 20 percent of GDP on transfers.

Country rank on NTE/GDP			Country rank on NTE per capita		
Netherlands	1		Sweden	1	
Sweden	2	> 20%	Netherlands	2	>$US2000
France	3		Germany	3	
Germany	4		France	4	
UK	5	10-20%	USA	5	
USA	6		Canada	6	
Canada	7		UK	7	
Australia	8	< 10%	Australia	8	<$US1000

On a per capita basis (Column 8) Australia's net transfer expenditure falls even further behind with the nearest country (UK) spending nearly 20% more per capita.

Table 2 shows the composition of transfer expenditure for each country. Two patterns emerge: in France and Germany almost all transfers are directed through the social security system, with the remaining countries spending around 80% on direct transfers. Within this second group, the bulk of tax expenditures in the Netherlands and the US are directed toward superannuation concessions; while in Australia, Canada, Sweden and the UK tax expenditures are evenly split.

Table 2: Relative composition of transfer expenditure, 1980.

	Social security (%)	Tax expenditure non-super (%)	Tax expenditure super(%)	Total (%)
Australia	81.5	8.0	10.5	100
Canada	77.1	12.3	10.6	100
France	98.2	1.5	0.3	100
Germany	97.3	1.1	1.6	100
Netherlands	82.5	5.0	12.5	100
Norway	100.0	*	*	100
Sweden	78.8	10.2	11.0	100
Switzerland	100.0	*	*	100
UK	83.4	10.2	6.4	100
USA	79.4	7.2	13.3	100

Even allowing for demographically generated differences in spending patterns (eg age composition), Australia does indeed lag a long way behind this group of countries in transfer expenditure, whether measured as a percentage of GDP or on a per capita basis. The inclusion of expenditures through the tax system, serves to separate Australia even further from those countries to which it is compared.

The Australian social security system stands out in its institutional arrangements because of its reliance on category-based, means-tested programs as the vehicle for distributing social security expenditure. At the other extreme, the Scandinavian

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[5] Taxation expenditure data not available for Norway and Switzerland.

countries rely exclusively on universal policy instruments. As the analysis above shows, these extremes in institutional arrangements also correspond with extremes in the volume of expenditure. What then has been the impact of these levels of expenditure on poverty and income inequality and how effectively have these apparently diverse systems distributed this expenditure?

The impact of income transfers on poverty.

An enduring feature of the Australian social security system is its emphasis on 'targeting assistance to those most in need' as the most efficient means of alleviating poverty. How do the outcomes of this policy approach compare with other approaches? In a later section I examine whether efficiency considerations play a significant role in these outcomes.

The measurement of poverty, particularly on a cross-national basis, is a thorny issue: all measures are subjective and open to criticism on a variety of grounds. The best that can be claimed for the approach adopted here is that the poverty benchmark - 50% of adjusted median income - has been conventionally accepted in cross-national studies; and that the equivalence scale used to adjust family income is that recommended by the OECD and which is also becoming a conventional measure.[6]

Poverty estimates are frequently presented in the form of a *head-count* measure, that is, the proportion of the population below a given poverty line. The count itself may be based on persons, families or households. While the head-count is a useful presentational measure, by virtue of its simplicity, it does have a number of drawbacks which have been widely discussed in the poverty measurement literature.[7] Of these, there are two which most concern this analysis, first, the sensitivity of the head-count to where the poverty line is drawn; second, head-counts may be misleading in comparing the degree of poverty cross-nationally.

One way of overcoming such problems is to use the *poverty gap* measure. The poverty gap refers to the difference between household or family income and the poverty line. This difference may be expressed in actual monetary terms eg $X required to bring the family up to the poverty line income; expressed as a percentage of the poverty line rather than in monetary units; or aggregated across

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[6] See Mitchell (1990:14) for a fuller discussion of the poverty line used here.

[7] See for example, Sen (1979) and Foster's survey (1984).

the population and expressed as a percentage of GDP. The two latter approaches are frequently adopted in cross-national comparisons to standardise comparisons. Both the head-count and poverty gap measures have been calculated for these countries and are analysed below.

Using the poverty line described above, Table 3 sets out the poverty rates for families pre- and post- transfer for this group of countries. The poverty rates prior to transfer are generally highest in the larger welfare states and these ranks change considerably after social security transfers with the five largest spenders reducing their poverty rates quite dramatically. It is interesting to note that although Australia is the welfare laggard in this group, its post-transfer poverty rate is lower than the US, Canada and Switzerland using this particular poverty line. This indicates that the targeting aspect of the Australian system may well have some virtues.

Table 3: Comparison of poverty measures.

| | Pre- and post- transfer poverty measures: | | | | | |
| | Percentage of families in poverty | | | Poverty gap as % of GDP | | |
Country	Pre-	Post-	Red'n	Pre-	Post-	Red'n
Australia	28.0	10.3	63	4.5	0.9	79
Canada	24.9	12.5	50	4.2	1.3	70
France	36.4	7.9	78	6.7	1.0	85
Germany	31.0	6.8	78	6.4	0.6	91
Netherlands	32.5	7.0	78	6.5	1.4	79
Norway	30.6	5.3	83	4.6	0.5	90
Sweden	36.5	5.6	85	4.1	0.4	91
Switzerland	24.3	11.0	55	4.9	1.2	75
United Kingdom	30.0	8.2	73	3.3	0.2	93
United States	27.1	17.0	37	5.6	2.3	60

I noted earlier that the head-count approach gives a very crude picture of poverty, two further aspects need to be examined: the size of the poverty gap remaining after transfers and the composition of the poor in each country.

On the right hand side of Table 3, I have estimated the aggregate poverty gap (as a percentage of GDP) for those defined as poor pre- and post- transfer on the left hand side of the table. This measure gives a different view of the outcomes of the transfer process. Again the larger welfare states are prominent in the amount of reduction of the poverty gap achieved by their transfer systems. On the other hand, Australia and particularly the UK, which are considered as welfare laggards on the aggregate measures have transfer systems which are also effective in closing the poverty gap.

Combining the information from both sides of Table 3 helps to balance out some of the sensitivity problems associated with head-count measures and gives a clearer view of the impact of the transfer systems. For example, if we consider the UK we

see that while the number of families who are poor post-transfer is the sixth highest in this group, it has the smallest aggregate poverty gap, indicating that although there is a substantial number of families below the poverty line, these families fall short of the poverty line by only a small amount of income. Conversely, in The Netherlands the poverty gap for those below the poverty line is much larger.

Tables 4 and 5 show the percentage of different family types in poverty pre- and post- transfer. What is interesting about the breakdown of the poverty populations in these countries, is that while the rates of poverty vary quite widely, the make up of the poor populations both before and after transfers are fairly similar ie the various systems tend to treat the same groups badly and conversely, especially in respect of the aged, tend to do well by the same groups.

Table 4: Percentage of family types defined as poor pre-transfer.

	Aged (S)	Aged (C)	Single (NC)	Couple (NC)	Lone Parent	Couple (CH)	Other
Australia	82.1	70.2	26.6	12.1	59.3	11.6	25.5
Canada	71.5	55.2	23.5	8.0	50.4	13.5	26.3
France	87.5	77.7	23.2	17.9	39.4	21.5	34.1
Germany	85.8	70.6	24.8	11.5	22.8	4.5	25.1
Netherlands	72.9	64.0	45.2	18.6	73.0	13.5	41.5
Norway	82.7	61.8	26.7	8.1	35.7	4.4	*
Sweden	92.0	81.1	28.2	9.3	33.0	6.4	*
Switzerland	72.8	59.9	18.7	5.2	23.8	3.1	*
UK	86.2	70.1	27.9	6.1	54.3	8.5	29.8
USA	72.6	57.4	21.6	7.9	53.3	11.5	35.0

Table 5: Percentage of family types defined as poor post-transfer.

	Aged (S)	Aged (C)	Single (NC)	Couple (NC)	Lone Parent	Couple (CH)	Other
Australia	3.8	6.9	13.9	3.8	39.5	10.2	5.1
Canada	11.3	8.7	17.3	5.2	38.7	10.6	13.3
France	1.4	3.4	10.8	7.5	19.4	9.3	12.6
Germany	10.4	8.8	8.2	3.4	9.4	4.7	12.9
Netherlands	4.9	3.0	14.6	5.5	6.0	6.8	11.2
Norway	7.0	2.6	9.1	2.8	9.5	3.2	*
Sweden	0.0	0.0	8.5	1.0	5.4	1.6	*
Switzerland	18.6	11.9	14.2	2.3	17.1	5.8	*
UK	15.6	17.8	9.4	2.4	18.8	4.8	3.4
USA	31.9	16.4	17.3	5.3	45.7	11.7	18.4

First, some general points of similarity- in all countries the aged form the dominant pre-transfer poor group, followed by lone parents and single people without children. Post-transfer (with the exception of Sweden and the Netherlands) lone parents generally have the highest poverty rates of all these family types. Poverty

amongst lone parents is most prominent in the US, Australia and Canada where around 40% of these families remain in poverty after transfers.

The implications of this are important when we consider the third of the future demographic scenarios for Australia sketched out by Geoff McNicholl (1990) *ie* if Sweden is the pacesetter of family trends and lone parent households continue to rise at a rapid rate, the social security systems in these countries will need to radically transform their mechanisms of support for lone parents. The evidence from this data suggests that many of these countries have been unable to come to grips with existing trends.

The next group most likely to be in poverty in all these countries are single persons without children. This group is predominantly comprised of the young unemployed and students.

These results are consistent with the trends discerned in a recent OECD survey (1988:6) of social security programs which noted that poverty amongst the aged has declined dramatically in the OECD countries in the period since 1945:

> The available evidence indicates that the relative income position of the
> elderly has improved significantly in most countries; in some countries their
> average level of economic welfare equals or even slightly exceeds that of
> the non-elderly population.

The survey goes on to point out that among the OECD countries a number of new groups requiring income support have emerged over the past decade (*eg* sole parents, the young and long-term unemployed). Unlike the aged these groups do not attract the same level of popular support and these groups have increasingly come to dominate the poor population:

> In those OECD countries which have measures of poverty or low income,
> the general trend in recent years has been of a static or declining number of
> elderly poor, with the non-elderly increasingly to be found in the lower parts
> of the income distribution.

On this basis we see that countries such as Sweden, Norway and The Netherlands achieve greater balance in poverty alleviation than the other countries- this is an important outcome to be considered in relation to expenditures.

The Impact of transfers on income inequality.

A second enduring characterisation of Australia is that it has a highly egalitarian income distribution: a belief founded on the influential studies of Lydall (1968) and

Sawyer (1976).[8] The conclusions of both these studies from an Australian perspective have been questioned (Stark,1977; Ingles,1981) as Saunders (1989:7) comments:

> Although the statistical evidence to support this is surprisingly slim, the view has persisted throughout much of this century. It has also contributed to an unwarranted complacency in social policy ... as well as an undeserved egalitarian respect from others.

Using the LIS database I examine the extent of income inequality in the LIS countries from two perspectives. The first uses the Gini coefficient which summarises the degree of income inequality across the population.[9] The second distinguishes separately the redistributive effects of the social security and taxation systems.

Table 6 shows the Gini coefficient for each of these income measures, based on adjusted family income.[10] Starting with Column 1 wé see that Norway, Canada, the UK and Germany produce the most equal distribution of incomes in the market place. Switzerland, Australia and Sweden produce virtually identical outcomes and are ranked in the middle of this group. At the bottom end of the table is the USA and there is a considerable gap to the last two countries, the Netherlands and France, who as Table 1 shows, are two of the largest spenders on social security as a percentage of GDP.

After social security transfers considerable re-ranking takes place. As would be expected from the welfare effort table, the larger welfare states achieve redistributions of upwards of 25% (Sweden 42%), placing most of these countries in the top half of the table. It is interesting to note that although Australia lags considerably behind countries such as France and Germany on social security expenditure it achieves comparable rates of redistribution and maintains its position around the centre of this group. Again the explanation for this may lie with the extensive means testing of Australian social security transfers. The relegation of

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[8] Sawyer (1976:16) notes that Australia, Sweden and Japan record the lowest degree of inequality in the post-tax distribution.

[9] A discussion of the Gini coefficient can be found in Cowell (1977). The critical point to note here is that the lower the size of the Gini coefficient, the lower the level of income inequality within the population.

[10] The unit of analysis is the family, incomes have been adjusted by using the OECD equivalence scale: 1st adult= 1; second and subsequent adults=0.7; children=0.5. The use of equivalence scales in this type of analysis is not unproblematic, for further discussion see Buhmann et al (1988.)

Switzerland and the US to the bottom of the table may be similarly explained by poor targeting of expenditure.

Table 6: Ranks based on Gini coefficients pre- and post- transfer.

Rank	Pre-transfer Gini		Post- social security Gini		Post-tax Gini	
1	Norway	.385	Sweden	.241	Sweden	.197
2	Canada	.387	Germany	.280	Norway	.234
3	UK	.393	Norway	.285	Germany	.252
4	Germany	.407	UK	.293	UK	.264
5	Switzerland	.414	Canada	.325	Australia	.287
6	Australia	.414	Netherlands	.329	Canada	.293
7	Sweden	.417	Australia	.336	Netherlands	.293
8	US	.425	France	.344	France	.307
9	Netherlands	.467	Switzerland	.357	US	.317
10	France	.471	US	.369	Switzerland	.336
	range	*.086*		*.128*		*.139*
	coefficient of variation	*7.2%*		*12.6%*		*14.9%*

After taxes, Australia and the US move up the table partly due to greater progressivity in these tax systems. It should be noted however, that this apparent reduction in the Gini coefficient may also be explained by the disproportionate effect which transfers around the modal income class have on the Gini measure. Thus, tax expenditures accruing to middle income earners (eg: superannuation deductions) may overstate the true level of redistribution accruing to taxes.

Examining each country individually, at each stage of the transfer process, we see that Norway, Germany and the UK maintain a fairly constant position at the top of the table. Australia also holds its position around the middle of the table. Sweden jumps five ranks after transfers and maintains its position at the top of the table after taxes. Switzerland, on the other hand, is relegated to the bottom end of the table after transfers for the reasons discussed above. After transfers France rises to 7th position which it maintains after taxes. The Netherlands achieves considerable redistribution through the social security system, however the level of redistribution achieved by the taxation system is lower than that achieved by a number of the 'low spenders' on direct transfers, and so The Netherlands falls in the rankings. While Canada and to a lesser extent the US, begin with a better outcome from the market distribution of income as compared with France and The Netherlands, they achieve low levels of net redistribution (less than 25%) so that these countries are passed by the larger welfare states after income transfers.

It is also interesting to examine here whether the LIS countries diverge or converge in the distribution of income during the transfer process. At the market income

stage, the range of the Gini coefficients between the top country (Norway) and the bottom (France) is 0.08. After social security transfers, the range increases to 0.13 and post-tax it increases slightly to 0.14. This indicates that while social security and taxation systems do reduce the level of inequality within each country, the amount of reduction achieved varies considerably across countries and has the effect of increasing the inter-country differences in inequality.

Another question of interest is whether it is the social security or the taxation system which has the greatest impact in reducing inequality. In principle, social security and taxation are alternative (or complementary) instruments for lowering inequality. For example I noted earlier that support to low income parents can be achieved either through child benefit payments or through child tax allowances.

In Table 7 the net redistribution effected by the total transfer system is shown in the first column (net R). The second column shows the redistribution which occurs between market and gross incomes, ie the redistributive effect of the social security system (R post-ss). The final column shows the redistribution which occurs between pre-tax income and disposable income, ie the redistributive effect of taxation (R post-tax). Note that the second and third columns do not sum to equal the first because they have different denominators.

Table 7: Redistributive effects of social security and taxation systems (%)

	Net R		R post-ss		R post-tax
Sweden	53	Sweden	42	Sweden	18
Norway	39	Germany	31	Norway	17
Germany	38	Netherlands	30	Australia	14
Netherlands	37	France	27	US	13
France	35	Norway	26	France	11
UK	33	UK	25	Netherlands	11
Australia	31	Australia	19	Germany	9
US	25	Canada	16	Canada	9
Canada	24	Switzerland	14	UK	8
Switzerland	19	US	13	Switzerland	5

While social security transfers have the greatest impact on inequality, there are several countries whose taxation systems generate a significant amount of the overall redistribution most notably, the US, Australia, Canada and Norway. In Table 7 the net redistribution is broken down into the proportions carried out by the social security and taxation instruments. The social security share of net redistribution (R to SS) is calculated as [(R post SS)/net R] and the taxation share (R to taxes) is calculated as [1 - (R to SS)]. In all countries except the US social security transfers account for more than 60% of the net redistribution. In Germany, The Netherlands and Sweden the social security system is responsible for over 80% of the net redistribution.

In general, it is the countries which achieve the largest amount of redistribution through social security transfers which are the most successful in reducing income inequality. There is a positive correlation between net R and R to SS, the simple correlation coefficient is r=0.54. An important exception to this relationship is Norway which is ranked 2nd both in terms of amount of redistribution achieved and post-tax inequality. Unlike the other countries which are most effective in reducing inequality, Norway achieves sizeable redistribution through its tax instruments.

It appears, therefore, that although social security is the principal instrument for reducing inequality taxation can play an important and independent role.

Expenditures and outcomes.

In the preceding analysis I have pointed out several instances where expected outcomes, based on expenditure levels, are not observed. In this section I examine the relationship between aggregate expenditures on social security and outcomes more closely. I do not use the net transfer expenditure measure because this will exclude Norway and Switzerland from the comparisons. A comparison of the ranks of countries on the expenditure and outcome measures is shown in Table 8.

Table 8: Comparing expenditures and outcomes.

Rank on SS/per capita	Rank on post-transfer head-count	Rank on post-transfer poverty gap	Rank on post-transfer Gini coefficient
1 Sweden	2	2	1
2 Netherlands	4	9	7
3 Germany	3	4	3
4 France	5	6	8
5 Norway	1	3	2
6 Switzerland	8	7	10
7 USA	10	10	9
8 Canada	9	8	6
9 UK	6	1	4
10 Australia	7	5	5

A first point to note is that apart from Sweden, Germany and to a lesser extent Canada, using aggregate expenditures to predict outcomes would be highly misleading. Several countries - the UK, Norway and Australia - do considerably better than their aggregate expenditures would predict; while France, The Netherlands and the US all have a lower level of outcome than countries with lower expenditures.

Part of the explanation for the variance between expenditures and outcomes may be attributed to the role of taxation. As the analysis above shows, Norway and

Australia achieve substantial redistribution through their taxation systems, while France and The Netherlands do relatively less well in this respect.

In the following section I consider whether the targeting (selectivity) of social security transfers plays a role in the outcomes observed in these measures.

Selectivity: vice or virtue?

In earlier sections I have noted that some of the larger welfare states appear not to do as well as we might expect in redistribution/poverty alleviation given the size of their expenditures. Part of the explanation for this may lie with the fact that these countries start from a lower base: either very unequal income distributions and/or high poverty rates. Alternatively, the distribution of these expenditures may be 'inefficient' in the sense that a considerable proportion of this expenditure may accrue to the non-poor. Ringen (1987:13) for example, argues that:

> The large and/or universal welfare state may be seen as wasteful and as giving benefits to people who do not need them, at the cost of unnecessarily high taxes, and the small welfare state as more effective because selective and targeted policies give more bang for the buck.
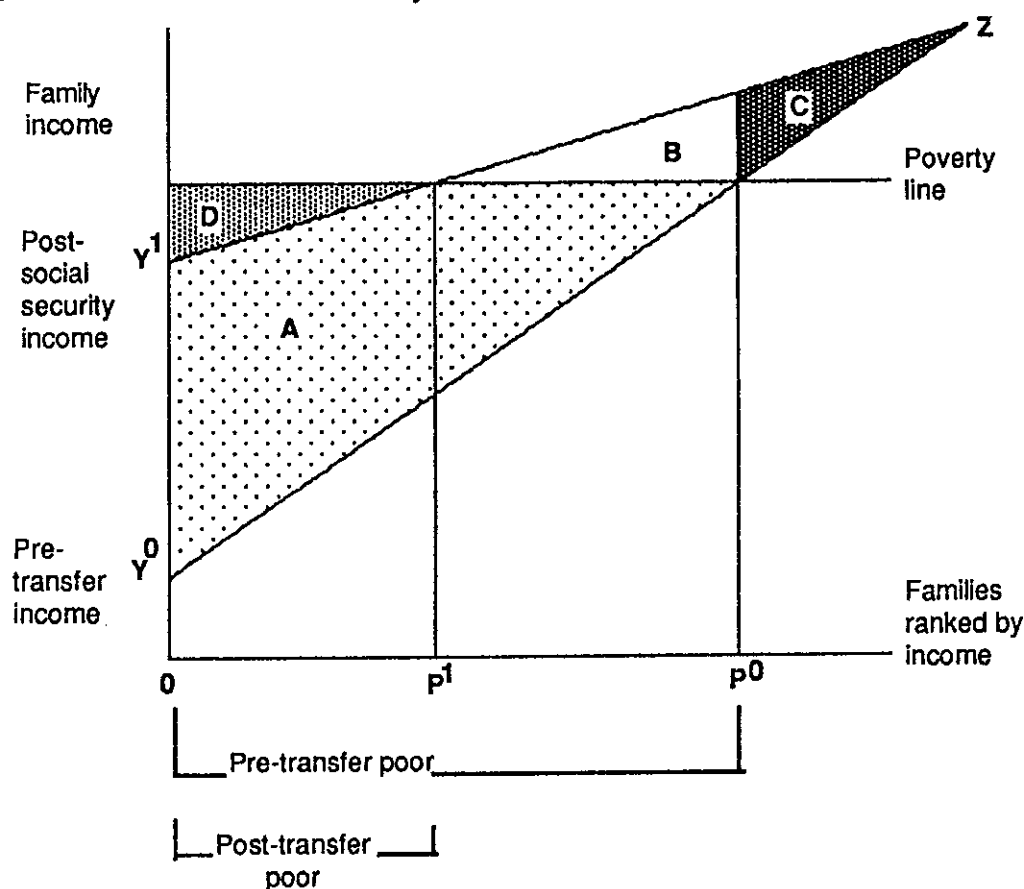
Limited support for this view has already been presented in this analysis where it appears that Australia, as the undeniable laggard in this group, does better than expected. Views on the efficacy of targeting in Australia are mixed, as Travers (1989:1) points out:

> Australia is notable for the degree of selectivity in its social security programs. This is seen by some as a virtue because of the efficiency with which benefits are targeted. Others point out ... that the redistributive impact of Australian income maintenance programs is low by international standards.

So which view is correct? To test the impact of program efficiency on poverty alleviation I use an approach to efficiency developed by Beckerman (1979) whose measures attempt to provide answers to the following questions: what percentage of social security expenditure accrues to the pre-transfer poor (targeting efficiency)? How much poverty does each unit of social security expenditure alleviate (poverty reduction efficiency)?[11] To make clear the ensuing analysis it is necessary to introduce Beckerman's methodology, the essential elements of which are summarised in Diagram 1.

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[11] Beckerman's study was one of the first serious attempts to make cross-national comparisons of the impact of income maintenance programs on poverty. For a more detailed account of the methodology readers are referred to Beckerman (1979).

Diagram 1: Beckerman's efficiency model.

Family income

Post-social security income

Y^1

Pre-transfer income

Y^0

Poverty line

D

A

B

C

Z

Families ranked by income

0 P^1 P^0

Pre-transfer poor

Post-transfer poor

Families classified as poor, prior to transfers, are found in the range 0 to P^0, the size of their poverty gaps being the distance from the line Y^0Z to the poverty line. Thus the areas marked A and D represent the total sum of the pre transfer poverty gap. After transfers, the poor are found in the range 0 to P^1, the size of their poverty gaps being the distance between Y^1Z and the poverty line. Thus the area D represents the sum of the post transfer poverty gap.

Pre-transfer poor families who are raised above the poverty line, are those in the range P^1 to P^0; and their distance above the poverty line is the distance between Y^1Z and the poverty line. The area B then represents the total amount by which transfers have raised these families above the poverty line. Beckerman argues that if we were to assume that the most efficient way of directing expenditures was to take families to the poverty line but not beyond, the area B represents some level of inefficiency ie where expenditures "spillover." There are a number of problems with this interpretation and these will be raised below. For the present, it may be that spillover is an indication of efficiency.

A more telling measure of targeting efficiency,however, is the size of the area C which represents the sum of the transfers which accrue to the non-poor.

Using these concepts, Beckerman defines three efficiency measures: vertical expenditure efficiency (VEE) or the proportion of transfers accruing to those who were poor prior to transfer; spillover (S); and poverty reduction efficiency (PRE) which combines the VEE and spillover measures.

To summarise, the areas defined in Diagram 1 correspond to the following magnitudes:

$A + B + C =$ total social security transfer expenditure
$A + B =$ total transfers received by the pre-transfer poor
$A + D =$ pre-transfer poverty gap
$D =$ post-transfer poverty gap

Beckerman's efficiency measures are given by:

$$VEE = (A + B) / (A + B + C)$$
$$S = B / (A + B)$$
$$PRE = A / (A + B + C) = (1-S) \times VEE$$

These measures have been calculated for each country and are shown in Table 9. Beginning with the spillover measures we see that those countries with elements of means-testing in their systems: Australia, Canada, the UK and US have significantly lower levels of spillover. On the other hand, the universal systems of Sweden and The Netherlands have much larger levels of spillover.

Table 9: Targeting efficiency measures.

	Vertical expenditure efficiency %	Spillover %	Poverty reduction efficiency %
Australia	68.4	24.1	51.8
Canada	51.7	25.2	38.7
France	69.4	50.6	34.3
Germany	65.1	44.4	36.2
Netherlands	64.0	57.3	27.3
Norway	67.0	44.8	37.0
Sweden	61.5	61.2	23.9
Switzerland	63.2	35.3	40.9
UK	44.3	27.6	32.1
USA	59.8	30.7	41.4

There are two ways of interpreting these results, on the face of it we might wish to conclude that means-testing does result in much greater expenditure efficiency than universal systems. A second, and equally plausible, explanation is that lower levels of spillover reflect lower levels of expenditure ie the less funding you put into a system the less likely that it will spillover. As Beckerman himself notes (1979:54): 'the easiest way to reduce spillover to zero, for example, is to spend nothing.'

In my view a stronger measure of efficiency is the second measure, vertical expenditure efficiency. Essentially this measure captures the overall level of targeting ie the level of expenditures which go to the pre-transfer poor. On this measure Australia and the larger welfare states succeed in directing 60% to 70% of their transfers to the poor. On the other hand, the UK, Canada and the US do not do as well as the larger welfare states.

The last measure, poverty reduction efficiency, is a composite of the two previous measures: it captures the extent to which transfers go to the poor and the extent to which these transfers take families up to the poverty line without spilling over. Given Australia's high degree of efficiency in both these areas it is not surprising that it is significantly ahead of all these countries, while Sweden with a much higher spillover and a moderate vertical expenditure efficiency ranks last.

These results suggest that efficiency may be a contributing factor to outcomes. For example, Australia's low level of expenditures appears to be efficiently directed to the poor - while the net redistribution of income is around 30%, the poverty gap is reduced by 80% and the number of families in poverty is reduced by just over 60%. This also partly applies to Norway which is the 5th largest spender but which arguably produces a welfare outcome second only to Sweden. On the evidence presented here, Norway's better than expected outcome would appear to be due to a combination of a high level of vertical expenditure efficiency (ie the percentage of transfers accruing to the poor, 67%) and the redistributive impact of its tax system.

These measures are also useful in explaining why it is for instance that France and The Netherlands, which are both large spenders on social security, do not achieve outcomes consistent with these expenditures. For example, The Netherlands which is the second largest spender in per capita terms is ranked 9th in terms of poverty reduction efficiency. This is consistent with its post-transfer poverty gap and Gini coefficient ranks. On the other hand, the post-transfer head-count measure puts The Netherlands in the top half of the table. One explanation for this seemingly contradictory evidence can be gleaned from the spillover result in Table 9. The Netherlands has the second highest level of spillover indicating that transfers lift recipients a long way above the poverty line and that perhaps, this may be to the cost of those who remain poor post-transfer. A similar but slightly weaker effect is observed for France.

Conclusions.

These findings present us with three sets of observations. First, there is clear evidence (from the income transfer aspect) to support the doubts raised by a number of writers concerning the relevance of aggregate expenditures as a means of comparing welfare states. For this reason, normative judgements concerning welfare leaders and laggards should be tempered by other considerations such as the outcomes of welfare programs.

Second, the poverty analysis shows that while there is a considerable variance in poverty rates, there is great deal of similarity between the countries in terms of the groups most/least likely to be in poverty. However an important issue which deserves further consideration, is that of the effectiveness of these countries (and indeed welfare states generally) in addressing poverty across a range of demographic groups. As Gruen (1989:23) has argued, aggregate measures disguise the extent of equitable treatment between different sub-groups in the poor population.

Third, which country is Australia most like among this group? Policy analysts here traditionally look to the English speaking world for comparison. It is true that this group of countries share many characteristics in terms of institutional arrangements, levels of spending, the size and composition of their poor populations. However, on this analysis the UK and Australia are clearly separated from Canada and the US for two reasons. First, on per capita expenditure comparisons the UK and Australia are well behind Canada and the US. Second, despite this, both countries have substantially better outcomes from the transfer process; while the UK uniformly provides better outcomes for the poor than any of the English speaking group.

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