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**The Redistributive Aim of Social Policy
A Comparative Analysis of Taxes,
Tax Expenditure Transfers and Direct Transfers
in Eight Countries**

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TRANSFERS IN EIGHT COUNTRIES

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1. INTRODUCTION

One central aspect or dimension according to which different welfare states may be classified is their capacity to redistribute income¹. Conventionally this is done through the means of transferring cash benefits and by taxation (negative transfers). But there is also a third way of transferring benefits which resembles direct transfers and that is by tax expenditure transfers. Tax expenditures are benefits in the form of reductions in tax liabilities operated through the tax systems by income or tax allowances, tax exempted income, and special rate relieves. They have identifiable effects on the economic income of persons and households that may be compared to the effects of direct transfers.

In this paper I will study in a comparative perspective how taxes, social transfers and tax expenditures effect the social policy goal of redistributing income. The following countries are included in the analysis: Australia, Denmark, Finland, Germany, Norway, Sweden, United Kingdom and United States. These countries reveal variation both with respect to the organisation of their welfare and taxation systems and in relation to income distribution. The aim of this study is threefold:

First, to show how these welfare states combines the tools of taxes and transfers differently, resulting in substantial variations of redistributive capacity. The main focus will be on the redistributive role of the income tax system.

Secondly, to identify and account for changes in the redistributive capacity of these welfare states through an analysis of data for the time period ca 1980-1995. The discussion will consider the institutional changes of the income tax system, resulting from the major tax reforms of the 1980s.

The third objective concerns the use of tax expenditures. Housing policy is a sub-area of social policy where tax expenditures are of great importance. Here the Luxembourg Income Study (LIS) has some limited data that may be used comparatively as a basis for estimation of tax expenditures. The aim here is to provide a comparison of the distributive profile of these transfers contrasted with the general distribution of direct income social transfers, to measure the impact of these provisions on the redistributive goal of social policy.

The comparison is general in the sense that it only considers differences in household income as the sole indicator of inequality. The analysis takes into account the effect of household size on income, but other characteristics of the household are not considered here.

The paper is organised in the following way: In Section Two I will give an account of the importance of income redistribution for the structure and functioning of the welfare state.

¹ Other dimensions involve the provision of public services, for example free public health care, that of course also has redistributive implications. The tax system is also important for the distribution of income in life- time perspective, for instance through the financing of public pension systems.

Section Three departs directly from the theoretical discussion of income distribution and will focus on an empirical description and comparison of countries with regard to income distribution and taxation. It also addresses empirically the question of how major tax reforms have affected income distribution in different countries. A definite answer to this question can not be given, as there is a complex relationship of factors that together explain these changes, for instance the presence and change of unemployment rates constitute one major factor. But one way to indicate the direction of tax reforms in regard of income distribution is to look at the actual distribution of taxes by different income layers and see how the distribution have changed between pre- and post tax reform time. This is the strategy opted for here.

Section Four will give an empirical and comparative account on the distributive effects of the two transfer routes of public welfare: direct transfers and tax expenditure transfers. Within housing policy a comparison is made between ordinary social transfers and a significant tax expenditure transfer. The theoretical basis for comparison rests on the assumption of some meaningful similarity between social transfers and tax expenditure transfers. The term 'similar' refers to two aspects: That there exist degrees of similarity between direct expenditure and expenditure in the form of revenue losses that legitimises the use of the term 'tax expenditure' and correspondingly the expression 'tax expenditure transfer'. The second aspect refers to the similarity of goals or functions of the respective tax expenditure and direct transfer items². In housing policy for instance, both the direct route of transfers, frequently in the form of means tested housing benefits, are used to support housing, but also the tax system functions as a vehicle of housing policy through tax benefits sponsoring homeownership.

In the fifth section a link is drawn between the results of the empirical comparison and the theoretical arguments put forward in the first section in order to establish some general conclusions on the redistributive capacity of different welfare states.

2. INCOME REDISTRIBUTION AND THE WELFARE STATE

With the introduction of progressive income taxation at the turn of the last century (1900) a new basis for the understanding of the concept of equity in taxation was created. It is the ability to pay principle that is institutionalised. The ability to pay principle represented a break with or a challenge to the then dominant benefit principle of taxation. This principle says that taxes are to be paid according to the utility that individual persons have of the goods or services that are financed by these taxes. This principle builds on a market analogy where

² It should be noted here that the goals of tax expenditures may be several, in most cases there is an ambiguity regarding the goals or the motivations of tax expenditures. They often have multiple goals from economic fiscal and social policy. One prime example is tax expenditure spending for private and occupational pension schemes that are motivated both by the goal of increasing saving in the economy and as a form of income maintenance policy, securing income sources in old age. For a treatment of tax expenditure arrangements in relation to a saving perspective see OECD 1994, 1994b.

taxes are seen as prices of public utilities. The principle of benefit puts emphasis on both the taxation and the expenditure side, whereas the ability principle focuses more exclusively on the tax side (Head 1993). Within income tax systems in general the first principle will imply a flat rate or proportional tax system, the second will imply progressive rates.

The ability principle implies that taxes are to be levied according to the taxpayer's ability to pay, usually measured by the size of income³. The ability principle shall serve the goal of distributional justice in taxation. In contrast to the market analogy of the utility principle, where public goods are divisible and utility can be individualised, public goods within the ability tradition are seen as indivisible and thus the individual utility can not be measured. A fundamental implication of this principle is that everyone contributes the same in relative ability terms and thus that no one have any prerogative as to deciding what is to be distributed from the taxes collected in this way. The poor man has contributed the same sacrifice as the middle income and the rich man. This can be seen in contrast to the functioning of the market, where influence or 'voting' is a result of effective purchasing power that is distributed unequally. Within this context 'one man, no vote' or 'one man, several votes' is possible and considered to be legitimate outcomes of the functioning of the market. Redistributive income taxation involves an effort to come closer to the principle of 'one man, one vote', that is one of the fundamental principle of democracy, manifested in the institution of universal suffrage⁴. This is said to stress that the tax institution is more than a revenue-raising machine. It fundamentally involves a normative or political component by expressing what a society understands as being a reasonable tax burden and an equitable distribution of this tax burden.

In practical terms the two processes of revenue raising and revenue spending are simultaneous and continuing processes, that in real welfare systems are closely interwoven. But let us temporarily make the analytical assumption that taxation always takes place before public spending. This will help us seeing more clearly the social and political implications from the normative component involved in the ability versus the benefit principle. In an income tax system based on ability to pay the relative share of total taxes rises with increasing income and a significant degree of social redistribution thus takes place. It brings about the strongest relative decrease in economic power of those most well off, thus modifying the original distribution of income

³ The ability principle can be related to two aspects of the equity concept: Vertical - and horizontal equity. Vertical justice in taxation implies that unequal incomes shall be taxed at different rates and hence the rich person shall pay a higher share of his income than the poor. Horizontal justice imply that the tax system shall take into account that tax payers with equal income, may have different burdens of care or different expenditures foregone in producing the income. A bachelor shall thus be taxed more heavily than a family with children with equal income. This principle may also be called the net income principle of taxation, the first is the gross income principle of taxation.

⁴ That this principle of taxation was coined 'democratic taxation' by contemporaries thus catches the intimate relation between democratisation, progressive taxation and social policy (In a Norwegian context confer for instance K. V. Hammer (1903/04)). Another important area of discussion was the financing of public poverty policy. The inadequacy of the utility principle for taxation in case of poverty was also stressed by contemporaries and thus opening up for the advent of the ability principle.

produced by market participation. In this way the initial position will be more equal between different income groups before redistributive policy through the transfer system takes place. In a tax system based on the benefit principle, in this case implying proportional taxes on income, the initial position is not changed relatively to the market distribution before redistributive policies through the public expenditure side is constituted. Such a starting position is characterised, not only by the effect on the private economy of individuals (reducing purchasing power) but also by possible social and political effects the two systems may have. In the first case 'social distance' (Smeeding 1997) of incomes is reduced. This may bring about an effect where the rich and middle class will direct their social needs toward the public system of transfers together with those of fewer means and the poor. The benefit principle in taxation does not bring about any reduction in social distance of incomes. Therefore the basis for constituting common interests together with those less well off in respect of satisfying social needs through political organisation and action directed towards the public domain may be more difficult to format in this situation. In light of the two main principles of taxation ability and benefit, real systems of taxation are hybrids.

Progressiveness is important, but it is not the same as redistribution. Redistribution of income taxation results from the combined effect of tax level or tax intensity and progressiveness. A formally progressive system may not bring about much redistribution if the tax level is very low, compared to a system with more substantial tax levels. Thus the concept of ability in taxation as used today also encompass some consideration of the question of a reasonable tax level. Taxation and tax revenue is one side of the total redistributive effort of welfare states. The spending of tax revenue through social transfers is the other. Some examples may illustrate the relations discussed above. Consider a system where we have two taxpayers A and B with income respectively 300 and 100. The table below shows how different levels of taxation, progressiveness and transfers affect redistribution:

Table 1: Taxes, transfers and redistribution.

Example:	Tax payer A	Tax payer B	Tax revenue	Measure of inequality: Gini coeff.	Social distance
Pre tax distribution	300	100		0.50	3
Perfect equality	200	200		0	1
1: Flat rate 10% tax	30	10	40		
Post tax distribution	270	90		0.50	3.0
Transfer	20	20			
Post tax transfer distribution	290	110		0.45	2.63
2: Flat rate 20% tax	60	20	80		
Post tax distribution	240	80		0.50	3.0
Transfer	40	40			
Post tax transfer distribution	280	120		0.40	2.33
3: Low tax level, (10%) with progressiveness 1.44:1	10.8%	7.5%			
Tax payment	32.5	7.5	40		
Post tax distribution	267.5	92.5		0.486	2.89
Transfer	20	20			
Post tax transfer distribution	287.5	112.5		0.437	2.55
4. Higher tax level (20%) with progressiveness: 1.44:1	21.6%	15%			
Tax payment	65	15	80		
Post tax distribution	235	85		0.453	2.64
Transfer	40	40			
Post tax transfer distribution	275	125		0.375	2.12

If we only take into account the effect of taxes, the following relations may be identified: Comparison of examples 1 and 2 with the original pre tax distribution show that a proportional tax system does not reduce overall inequality as measured by the Gini coefficient or as social distance⁵. Contrasting examples 1 and 3, and 2 and 4 indicate that for similar levels of taxation, a progressive tax system will reduce overall inequality, whereas a flat rate system will not. Example 3 and 4 reveal that for similar degrees of progressiveness a high tax level system enhances redistribution, compared to a system with lower tax levels⁶. The inclusion of the effect of transfers, when these are distributed equally between the two tax -payers shows that a combination of a flat rate tax and equally shared amounts of transfers will reduce inequality. Contrasting example 2 and 3, reveal that a proportional system combined with benefit equality and high tax level (2), may reduce equality more than a progressive system with lower overall tax level. On the other hand relating example 2 and 4 illustrates that for given tax levels, a proportional tax system must distribute benefits unequally to obtain the same redistributive effect as a progressive tax system.

The discussion of examples above illustrates how the tax system determines the private economy and thus also the freedom of action of households and individuals to buy or create effective demand for private welfare goods and services. This also entails that the tax system and changes of it is decisive in creating or inhibiting conditions for solidary action and the formation of common interests. The tax system therefore also has a political function (Braun 1975) and in the case of redistributive income taxation it certainly has a social political function.

In the next section we move into the real world of tax and transfer states to see how different welfare states compare with respect to the redistributive element of social policy.

⁵ The Gini coefficient departs from the Lorenz curve. The curve reports the cumulative distribution of an income item compared to the cumulative distribution of units receiving the income item. In the case that all incomes are equal a diagonal is created called the line of identical incomes. Usually the Lorenz curve will lie below the diagonal. The Gini coefficient is then defined as the area between the Lorenz curve and the diagonal expressed as proportion of the whole triangle. It is alternatively equal to the expected average difference in incomes, relative to the mean, between any two persons drawn at random from the population (Atkinson, Rainwater and Smeeding 1995, p.23). Social distance in this context is simply defined as the quotient resulting from dividing taxpayer A's income by taxpayer B's income.

⁶ For the sake of simplicity the examples above identify a system where all taxation is income taxation and where all spending consist of social transfers. The role of indirect taxes for redistribution and as source for funding expenditures is not considered here. Secondly the examples do not take into consideration the effect of standard deductions and zero rated first brackets, that may be part of both progressive as well as proportional income tax systems. And at last it does not consider possible secondary effects, for instance that progressive taxation may impact the supply of work negatively.

3. EMPIRICAL COMPARISONS OF DEVELOPMENTS OF INCOME AND TAX DISTRIBUTION IN THE PERIOD CA. 1980-1995

In this section I will show how different components of incomes and progressive income taxes are distributed and how this distribution changes during the time period covered. In the following tables Gini coefficients as measures of inequality are calculated for different income items and different aggregate income concepts for the countries and time period included in the analysis. The unit of analysis in the following tables is households. The study takes into account the economies of scale in different households by adjusting household income by household size, using so-called equivalence scales. The general form of these equivalence scales is given by the

following expression: $W = \frac{D}{S^E}$, where W is economic well-being or adjusted income, D is income

(disposable income), S is size (number of persons in household) and E is Equivalence elasticity (Confer Atkinson, Rainwater and Smeeding 1995 pp. 18-21). E varies between 0 and 1, The larger the value of E, the smaller is the economies of scale. In the case where E=1.0, we have per capita income, in the case where E=0, we have unadjusted household income. In the analysis made in this paper E is chosen to be 0.5. This imply that in order to have an equivalent income of a household of one person where D is 1.0, a household of two persons must have an income of $\frac{x}{2^{0.5}} = 1$, $x = 1.41$ to have equivalent incomes. Alternatively a one-person household must have 0.7 or 70% of the income of the total income of the two-person household to have equivalent income. If the two-person household has an income of 2, the one-person household must have an income of 1.41 to have equal income.

The treatment of cases with negative or zero amounts is significantly affecting the results, such as decile shares and summary measures of inequality such as the Gini coefficient. The original surveys are often top coded to protect anonymity of respondents. At the other end of the distribution there is no standardised bottom coding. To the extent that these coding processes differ between countries, ignoring this question may lead to non-comparable results. In this study all households with negative and zero values have been excluded when the different measures of inequality is calculated, whereas original country top coding is left unchanged⁷. The effect of different treatment of negative and zero incomes and the use of different equivalence scale on the Gini coefficient measure of inequality is revealed in table 1 of Annex A (p.) The results revealed here for the Gini coefficient, in general report smaller Gini coefficients (save for Sweden 1981 and UK 1979) than those given in

⁷ This is in line with Atkinson, Smeeding and Rainwater (1995) who notes: "Because the impact of top coding is unknown (i.e. the aggregate shares of income or maximum values without top coding.) No adjustments were done for top coding. A small number of experiments were done doubling the maximum value of the top incomes in two countries. This experiment produced less than a .001 change in the calculated Gini" (Atkinson, Rainwater and Smeeding 1995, p37).

Mitchell's study (1991), but higher figures than those reported in the OECD report (Atkinson, Smeeding, Rainwater 1995), where in both cases LIS data are used.

3.1. INCOME DISTRIBUTION

Starting with income distribution, a central source of income in modern capitalist market economies of different shapes, is market income. Market income consists of earned income from wages and salaries and self-employment, cash property income (but not capital gains or losses) and other private cash income transfers (occupational pensions, alimony, and child support) (Smeeding 1997, p.8). Table 1 below gives an overview of the development of market income distribution in the period ca 1980 -1994 for the eight countries. The table describes the decile shares of market income for all households with positive market income. Market income for all the different households is ranged according to adjusted household market income from lowest to highest score. Then this distribution is grouped into ten equally sized subgroups of households, each including ten percent (one decile) of the total households. The first decile thus gives the relative share of the decile with lowest market income of total market income for all households with positive market income.

Table 2: Decile shares for adjusted household market income 1980-1995:

	YEAR	DEC.1	DEC.2	DEC.3	DEC.4	DEC.5	DEC.6	DEC.7	DEC.8	DEC.9	DEC.10
AUS	1981	0.3	2.2	5.0	6.8	8.4	10.1	11.8	13.9	16.8	24.7
AUS	1985	0.3	1.9	4.5	6.4	8.1	9.8	11.6	13.8	16.8	26.8
AUS	1989	0.2	1.3	4.0	6.2	8.0	9.7	11.7	13.9	17.1	28.0
DEN	1987	0.0	0.5	2.4	5.6	8.4	10.9	12.9	15.0	17.8	26.5
DEN	1992	0.0	0.3	1.9	4.8	7.8	10.5	13.0	15.3	18.4	27.9
FIN	1987	1.0	2.9	5.0	6.9	8.5	10.0	11.7	13.5	16.1	24.5
FIN	1991	1.0	3.0	5.0	6.8	8.4	10.0	11.6	13.4	16.2	24.5
GER	1981*	1.6	4.6	6.2	7.4	8.6	9.8	11.2	12.8	15.1	22.5
GER	1984	0.1	0.2	2.4	6.3	8.4	10.2	12.2	14.4	17.8	28.0
GER	1989	0.0	0.3	2.5	6.1	8.3	10.1	11.9	14.2	17.5	29.0
NOR	1979	0.4	1.9	4.8	7.3	8.9	10.5	12.1	13.9	16.4	23.9
NOR	1986	0.4	1.8	4.7	7.2	9.0	10.6	12.2	14.1	16.7	23.3
NOR	1991	0.2	1.4	3.5	6.2	8.6	10.5	12.2	14.3	17.1	26.2
SWE	1981	0.3	1.2	2.8	5.7	8.4	10.8	12.8	15.0	17.7	25.4
SWE	1987	0.2	0.8	2.0	4.7	7.6	10.5	12.9	15.2	18.4	27.8
SWE	1992	0.1	0.6	1.5	3.6	6.9	10.3	13.1	15.6	19.1	29.4
UK	1979	0.2	1.5	4.2	6.7	8.4	10.1	12.0	14.2	17.4	25.2
UK	1986	0.1	1.1	3.0	5.5	7.6	9.6	11.8	14.5	18.2	28.7
UK	1991	0.1	1.1	3.0	5.3	7.4	9.5	11.5	14.2	17.8	30.1
US	1979	0.6	2.5	4.4	6.2	7.9	9.5	11.4	13.7	17.1	26.7
US	1986	0.5	2.3	4.1	5.8	7.5	9.2	11.2	13.7	17.3	28.3
US	1991	0.5	2.2	3.9	5.6	7.3	9.1	11.2	13.7	17.7	28.7
US	1994	0.4	2.0	3.6	5.3	6.9	8.7	10.8	13.4	17.4	31.4

Note: Decile shares are based on household with positive adjusted market income

Sources: LIS including country household files from the following countries and years: AUSTRALIA: 1981, 1985, 1989. DENMARK: 1987, 1992. FINLAND: 1987, 1991. GERMANY: 1981, 1984, 1989, NORWAY: 1979, 1986, 1991. SWEDEN: 1981, 1987, and 1992. UNITED KINGDOM: 1979, 1986, and 1991. UNITED STATES: 1979, 1986, 1991, and 1994.

* This result should be interpreted with care, since only 76.8 % of total households reported positive household market income. Source: LIS ORIGVIEW 1997.

In general the two top deciles of the distribution have shares ranging from 40.3% (Norway 1979) to 48.8 % (US 1994) of total market income. The bottom four deciles have market income shares ranging from 5.8 (Sweden 1992) to 15.8 (Finland 1987 and 1991). (Germany 1981 is omitted). In seven out of the eight countries there is an observable trend toward an increasing share of market income for the two top deciles, combined with a reduction of the income share for the bottom four market income deciles. This development is strongest in Germany, Sweden UK, and the US. In Finland there is no change at the top or the bottom of the market income distribution, their relative shares remain unchanged.

Another descriptive measure of inequality is the P90/P10 measure. It measures the 'social distance' (Smeeding 1997) in income terms of the ninetieth percentile relative to the tenth percentile. The higher the value, the greater is the social distance. Table 2 gives an overview of the development of the social distance in the eight countries during the period ca 1980-1995. It also includes the P10/P50 and the P90/P50 measure. Lastly the

much-used summary measure of inequality, the Gini coefficient, is included. Table 3 describes the development of Gini coefficients for adjusted total market income for households.

Table 3: Social distance and inequality of market incomes 1980-1995: Decile ratios and Gini coefficients for adjusted market income.

	YEAR	Households with positive amounts	P90/P10 (Decile ratio)	P10/P50	P90/P50	Gini Coefficient
AUS	1981	90.2	21.45	9.3	201	0.3895
AUS	1985	91.0	25.52	8.2	209	0.4144
AUS	1989	92.4	37.36	5.9	220	0.4366
DEN	1987	96.5	*17.55	*11.6	204	0.4547
DEN	1992	95.9	*24.40	*9.1	204	0.4795
FIN	1987	98.2	9.68	20.0	194	0.3685
FIN	1991	98.7	8.95	22.0	198	0.3685
GER	1981	76.8	4.69	38.7	182	0.3136
GER	1984	90.8	*36.29	*5.8	214	0.4621
GER	1989	81.8	*19.46	*11.0	215	0.4680
NOR	1979	88.0	20.02	9.4	188	0.3796
NOR	1986	91.2	20.54	9.2	188	0.3789
NOR	1991	96.5	29.61	6.7	198	0.4244
SWE	1981	92.4	30.07	6.8	205	0.4323
SWE	1987	95.5	43.01	5.2	224	0.4714
SWE	1992	95.5	74.06	3.4	252	0.5038
UK	1979	90.8	31.70	6.6	209	0.4106
UK	1986	86.8	46.77	5.2	242	0.4623
UK	1991	89.4	48.71	4.9	240	0.4723
US	1979	92.5	12.66	17.7	224	0.4077
US	1986	92.0	14.40	16.7	240	0.4283
US	1991	92.3	15.52	16.2	252	0.4370
US	1994	91.3	17.08	15.2	259	0.4630

Notes: The decile ratios and the Gini coefficients are based on household with positive market income. Source for share of households with positive market income: LIS ORIGVIEW 1997⁸.

* The figures reported for Denmark 1987, 1992 and Germany 1984, 1989 are P90/P20, since these countries show a zero income share of the first decile (confer table 1)⁹.

Looking first at the decile ratio, measuring social distance a wide range of social distance in market income is identified between countries and over time. Excluding Denmark and Germany, we see that the smallest social distance of market income is found in Finland for both years where data are available. Here the income of the ninetieth percentile was nine times the income of the tenth percentile. The largest social distance of market income is to be found in the UK and Sweden followed by Australia, Norway and the US. The ninetieth percentile

⁸ For gross income (GI) and disposable net income (DPI) the share of households with positive income items is between 99 and 100 % for all the eight countries. A notable exception is Germany of 1989 where the share is only 86,7% both for gross- and net disposable income (LIS ORIGVIEW 1997).

⁹ The P90/P10 and the P10/P50 gave the following results: Denmark 1987: P90/P10: 271.00, P10/P50: 0.0075. Denmark 1992: 492.13 and 0.0045. Germany 1984: 256.63 and 0.0083. Germany 1989: 368.52 and 0.0058.

in UK for the year 1991 had a market income almost 49 times the income of the tenth percentile. In all countries save for Finland, there is an increasing social distance in market incomes. The next column gives the income of the tenth percentile as percentage share of the median income (P50). Also here Finland and the US have the highest shares, Finland with around 20% and the US between 15 and 17%. Again Sweden and the UK have the lowest share, from 3 to 7% of median income. A decreasing share of the median income is observed in seven out of the eight countries, when comparing the beginning and the end of the 1980.ies. At the other end of the income distribution there is also a development towards increasing distance from the median incomes. Whereas in 1980 the lowest observed P90/P10 ratio was 188 for Norway and the highest was 224 for the US, in the beginning of the 1990.ies, the lowest ration was 198 for Finland and Norway, and the highest ratio was 252 in Sweden and the US.

Based on the summary measure of inequality we observe the following variation and trends in inequality. Starting in 1980 we observe that Norway and Australia had the most equal distribution of market income with Gini coefficients of 0.3796 and 0.3895. Sweden had the most unequal distribution of market income in 1980 with a Gini coefficient of 0.4323. Moving to the mid- eighties there is an increasing variation between countries, now also including data from Denmark and Finland. Finland together with Norway now stands out with the most egalitarian distribution of market income with a Gini coefficient of 0.3685 and 0.3789 respectively. On the other hand Germany, Sweden and the UK now have the most unequal distribution of market income, all with Gini coefficients above 0.46. Around 1990 we find Sweden at the top with Gini coefficient above 0.50, followed by Denmark and the UK. Finland is holding its position as the most egalitarian in market income distribution among the eight countries. There is a general trend toward increasing inequality. All countries save for Finland that reports no change have higher Gini coefficients at the end of the period compared to the beginning of the period. Whereas three out of six countries observed Gini coefficients below 0.40 around 1980, in 1990 only one of the eight countries included did so. In 1980 none of the six countries observed Gini coefficients above 0.45, whereas in the beginning of the 1990.ies four out of eight countries observe Gini coefficients above this level of inequality. (Including US data from 1994 adds one more country to this group).

On the basis of the limited data presented above there seems to be no systematic variation between market income inequality and the models of welfare these countries often are referred to (Titmuss 1974, Erikson et.al 1987, Esping- Anderson 1990, Castles and Mitchell 1993). Countries representing the Institutional or Scandinavian/Nordic Welfare Model reveal combinations of high degree of market inequality as in the case of Sweden and low inequality, as observed for Finland and Norway. The UK and the US classified as residual or liberal welfare states also vary on this dimension, UK with high degree of inequality and US with moderate observed inequality, at least when referring to 1991 and earlier surveys. Including Australia in the liberal family a

case of moderate/low inequality is present. The reason for addressing this question is this. If there is no systematic variation between market income, or pre tax, pre transfer income, and the tax/transfer system of the welfare state, changes in income distribution effected by social transfers (and taxes) as measure of the redistributive efforts of welfare states is unproblematic. On the other hand if such systematic variation could be identified then this measure would have been less valid as a measure of redistributive effort. Castles and Mitchell (1993) note the following on this subject matter in their 'Worlds of Welfare and Families of Nations':

The absence of any link between pre-transfer inequality and configurations of welfare linkages is, of course, not very surprising. Redistributive effort is designed to redress prior inequalities and might well be expected to demonstrate an inverse relationship to primary income distribution.... In addition, to the degree that high levels of state-provided welfare have squeezed private insurance provision, we would expect high expenditure states to be those with the most unequal initial distribution of income (Castles and Mitchell 1993, p. 111).

The authors do not reflect further on the implication of their last sentence, but clearly if this relationship were to be the case, it would have exaggerated the redistributive capacity of these welfare states. Welfare states using for instance regulatory policies to reduce wage differences and the initial distribution of market income would have been disadvantaged by the measures used here. (Change from market to gross income). Available information on this relationship concentrating on households with heads of prime age, reveal that primary income was most equally distributed in Norway, Germany and Finland followed by Australia and Sweden and least equally distributed in the UK and the US (Atkinson, Rainwater and Smeeding 1995)¹⁰. The following discussion of redistribution does not take into account the possible effect of regulatory policy on market income distribution, although such effects may be present within the different welfare states. It also assumes that taxes and transfers do not impact primary market income distribution.

In the next two tables we move to the distribution of gross income, that includes in addition to market income: social insurance cash benefits, universal cash transfers and social assistance¹¹. Thus we are now entering the welfare state and its capacity to change income distribution by the means of social transfers.

¹⁰ The Gini coefficients reported for primary income distribution for prime age households heads aged 25 to 54 was as follows: Norway 1979: 25.4, Germany 1984: 27.6, Finland 1987: 29.1, Australia 1985/86: 29.6, Sweden 1987: 29.7, UK 1986: 32.2, US 1986: 35.7 (Atkinson, Rainwater and Smeeding 1995, p.85, table 6.3.).

¹¹ Social insurance transfers include: accident or short term disability pay, social retirement benefits (old age and survivors), unemployment pay, maternity allowances, military or veteran's benefit, other social insurance. Universal cash transfers include child and/or family allowances if paid directly by governments. Universal cash transfers paid as refundable income tax credits are counted as negative amounts in the income tax of some countries. Social assistance includes all income tested and means tested benefits, both cash and near-cash (Atkinson, Rainwater and Smeeding 1995, Table 2.1, p.14).

Table 4: Decile shares for households with positively adjusted household gross income:

	YEAR	DEC.1	DEC.2	DEC.3	DEC.4	DEC.5	DEC.6	DEC.7	DEC.8	DEC.9	DEC.10
AUS	1981	2.2	3.6	4.8	6.4	8.0	9.7	11.4	13.4	16.3	24.1
AUS	1985	2.4	3.5	4.5	6.1	7.7	9.4	11.2	13.3	16.1	25.8
AUS	1989	2.1	3.5	4.5	5.9	7.6	9.2	11.1	13.2	16.3	26.6
DEN	1987	2.5	4.2	5.4	7.1	8.8	10.2	11.5	13.0	15.2	22.2
DEN	1992	2.6	4.4	5.5	6.9	8.5	10.0	11.4	13.0	15.2	22.6
FIN	1987	3.0	4.6	6.0	7.3	8.5	9.8	11.1	12.6	14.8	22.3
FIN	1991	3.0	4.7	6.1	7.3	8.5	9.7	11.0	12.6	14.9	22.1
GER	1981	3.0	4.8	6.0	7.1	8.4	9.6	11.0	12.8	15.1	22.3
GER	1984	3.0	4.5	5.7	6.8	8.1	9.4	10.8	12.6	15.3	24.0
GER	1989	2.7	4.4	5.7	6.8	8.0	9.3	10.6	12.5	15.2	25.0
NOR	1979	2.9	4.3	5.6	7.1	8.5	9.9	11.3	13.0	15.3	22.1
NOR	1986	2.9	4.4	5.9	7.4	8.7	9.9	11.2	12.9	15.2	21.5
NOR	1991	3.0	4.7	6.0	7.3	8.5	9.7	11.0	12.6	14.8	22.4
SWE	1981	3.4	5.4	6.6	7.8	8.8	9.9	11.2	12.5	14.5	20.0
SWE	1987	2.7	4.9	6.3	7.6	8.8	10.0	11.2	12.6	14.7	21.3
SWE	1992	2.7	5.1	6.4	7.6	8.7	9.8	11.0	12.5	14.6	21.7
UK	1979	3.0	4.1	5.1	6.6	8.2	9.7	11.3	13.3	16.0	22.8
UK	1986	2.8	4.2	4.9	5.9	7.4	9.0	10.9	13.1	16.3	25.5
UK	1991	2.5	3.5	4.3	5.6	7.1	8.9	10.8	13.2	16.5	27.7
US	1979	1.8	3.4	4.8	6.3	7.8	9.3	11.0	13.3	16.5	25.8
US	1986	1.6	3.1	4.5	6.0	7.4	9.0	10.9	13.2	16.7	27.4
US	1991	1.7	3.2	4.5	5.9	7.3	9.0	10.8	13.2	16.9	27.5
US	1994	1.5	3.0	4.2	5.5	7.0	8.6	10.5	12.9	16.7	30.1

Sources: LIS including country household files from the following countries and years: AUSTRALIA: 1981, 1985, 1989. DENMARK: 1987, 1992. FINLAND: 1987, 1991. GERMANY: 1981, 1984, 1989, NORWAY: 1979, 1986, 1991. SWEDEN: 1981, 1987, and 1992. UNITED KINGDOM: 1979, 1986, and 1991. UNITED STATES: 1979, 1986, 1991, and 1994.

As expected the adding of social transfers has effected a change of the income distribution whereby the bottom deciles now have higher shares of total income. The development of gross income distribution is towards increasing inequality in Australia, Germany, Sweden, UK and the US. In all five countries the bottom four deciles reduce their share of total gross income, whereas the two top deciles of the distribution increase their share. The three Nordic countries of Denmark Finland and Norway show an increasing share for the four bottom deciles, and a marginal decrease for the top deciles in Finland. Denmark and Norway show a marginal increase for the two top deciles.

In table five another way of looking at the distribution of gross income is presented, by reporting decile ratios and Gini coefficient developments:

Table 5: Social distance and inequality of gross incomes 1980-1995: Decile ratios and Gini coefficients for adjusted gross income.

	YEAR	P90/P10 (Decile ratio)	P10/P50	P90/P50	Gini Coefficient
AUS	1981	5.67	36.4	206	0.3514
AUS	1985	5.71	36.9	211	0.3672
AUS	1989	6.01	36.8	222	0.3777
DEN	1987	4.68	38.0	178	0.3125
DEN	1992	4.42	41.3	182	0.3146
FIN	1987	4.13	43.9	181	0.2966
FIN	1991	4.18	43.4	182	0.2937
GER	1981	4.10	45.4	187	0.2988
GER	1984	4.35	45.1	197	0.3196
GER	1989	4.43	44.4	197	0.3306
NOR	1979	4.48	41.2	185	0.3049
NOR	1986	4.51	39.5	178	0.2954
NOR	1991	4.15	43.4	180	0.2973
SWE	1981	3.35	50.6	169	0.2581
SWE	1987	3.86	44.5	172	0.2848
SWE	1992	3.68	47.3	174	0.2841
UK	1979	4.77	41.9	200	0.3228
UK	1986	4.92	46.1	227	0.3544
UK	1991	6.08	38.7	236	0.3881
US	1979	7.00	31.8	223	0.3723
US	1986	7.69	30.2	233	0.3940
US	1991	7.77	31.4	244	0.3955
US	1994	8.19	31.0	254	0.4228

Notes: The decile ratios and the Gini coefficients are based on household with positive disposable income.

Through the distribution of social transfers, the social distance of incomes is substantially reduced in all countries when we move from market income to gross income. The result shows that Sweden now have the smallest social distance of gross income varying from 3.35 (1981) to 3.68 (1992). On the other extreme we find the US with social distance between 7.0 (1979) and 8.19 (1994). Compared to pre transfer income, the US lags markedly behind the other countries in its capacity to reduce the social distance in incomes through social transfers.

Sweden is followed by the three other Nordic countries and Germany, with social distance between 4.10 and 4.68. The UK has social distance scores from 4.77 to 6.08, whereas Australia has ratios from 5.67 to 6.01.

Moving to the second column, the picture is roughly the same for the P10/P50 measure. The US has a significantly lower ratio than the Nordic countries and Germany. The tenth percentile in US have a gross income just over 30% of the median income, while in the Nordic countries they have a share of more than 40% of the median income and in the case of Germany and Sweden it is close to 45%. The UK is initially close to the Nordic countries, but drop below 40% of median income in 1991. Australia is closer to the US with a percentage share around 36% of median income.

The development of the distribution of gross incomes through the last decade to fifteen years discloses the following picture. The third column shows an increasing distance of the ninetieth percentile from the median income in Australia, Germany, UK and the US. Denmark and Finland show almost no change, Norway show a decreasing distance and Sweden a small increase in distance of the ninetieth percentile compared to the median gross income. The summary measure of the Gini coefficient indicates the overall development in gross income inequality. This measure shows a change towards increasing inequality in Australia, Germany, Sweden, UK and the US. Finland and Denmark reveal almost no change whereas Norway reveals a small change towards greater equality of gross income distribution.

What is of particular interest in this perspective is of course how disposable net income for household is distributed. Subtracting taxes and social contributions from gross income gives us net disposable income. Table 6 shows the decile distribution of net income in the eight countries:

Table 6: Decile shares for households with adjusted positive disposable income:

	YEAR	DEC.1	DEC.2	DEC.3	DEC.4	DEC.5	DEC.6	DEC.7	DEC.8	DEC.9	DEC.10
AUS	1981	2.8	4.5	5.7	7.1	8.4	9.9	11.4	13.2	15.6	21.3
AUS	1985	3.0	4.5	5.5	6.9	8.3	9.8	11.3	13.2	15.6	22.0
AUS	1989	2.7	4.4	5.5	6.7	8.1	9.6	11.2	13.1	15.7	23.2
DEN	1987	3.2	5.2	6.3	7.4	8.6	9.8	11.0	12.4	14.4	21.6
DEN	1992	3.4	5.6	6.6	7.6	8.7	9.8	11.1	12.5	14.2	20.4
FIN	1987	3.8	5.6	6.7	7.8	8.8	9.9	10.9	12.2	14.0	20.1
FIN	1991	3.7	5.5	6.7	7.8	8.8	9.8	10.9	12.2	14.2	20.3
GER	1981	3.7	5.6	6.7	7.6	8.6	9.6	10.9	12.3	14.3	20.8
GER	1984	3.7	5.5	6.6	7.6	8.5	9.6	10.8	12.1	14.1	21.5
GER	1989	3.5	5.6	6.8	7.7	8.5	9.7	10.7	12.1	14.1	21.3
NOR	1979	3.8	5.5	6.7	7.9	8.9	10.0	11.1	12.4	14.2	19.6
NOR	1986	3.7	5.3	6.5	7.8	8.9	9.9	11.0	12.4	14.3	20.1
NOR	1991	3.7	5.5	6.7	7.9	8.8	9.9	10.9	12.2	14.1	20.2
SWE	1981	4.1	6.5	7.5	8.4	9.1	10.0	11.0	12.1	13.7	17.4
SWE	1987	3.2	5.8	7.0	8.1	9.1	10.1	11.2	12.4	14.2	18.8
SWE	1992	3.2	5.8	6.9	7.9	8.9	9.9	11.0	12.4	14.3	19.8
UK	1979	3.7	4.9	5.9	7.1	8.3	9.6	11.1	12.9	15.2	21.5
UK	1986	3.5	5.1	5.8	6.7	7.8	9.2	10.7	12.6	15.2	23.4
UK	1991	2.9	4.1	5.0	6.2	7.5	9.0	10.7	12.8	15.8	26.1
US	1979	2.2	4.1	5.6	7.1	8.5	9.8	11.3	13.2	15.8	22.4
US	1986	2.0	3.8	5.2	6.7	8.0	9.5	11.2	13.3	16.2	24.1
US	1991	2.0	3.8	5.2	6.5	7.9	9.4	11.1	13.2	16.3	24.5
US	1994	1.8	3.6	4.9	6.2	7.6	9.1	10.9	13.1	16.3	26.6

Sources: LIS including country household files from the following countries and years: AUSTRALIA: 1981, 1985 and 1989. DENMARK: 1987 and 1992. FINLAND: 1987 and 1991. GERMANY: 1981, 1984 and 1989. NORWAY: 1979, 1986 and 1991. SWEDEN: 1981, 1987 and 1992. UNITED KINGDOM: 1979, 1986 and 1991. UNITED STATES: 1979, 1986, 1991 and 1994.

Starting with the four bottom deciles of disposable income the largest cumulative share is found in Sweden for 1981, this year they received 26.5% of total disposable income. The US reveals the lowest take home cumulative share: In 1994 the four bottom deciles received 16.5% of total income. The general picture is characterised as follows: The Nordic countries and Germany have cumulative shares around 23%, Australia and UK around 20% and at last the US has average cumulative share just above 17.5%. At the other end of the distribution the highest cumulative share for the two top deciles is observed in the US in 1994, the take home share was 42.9 % of total disposable income. The lowest share is found in Sweden in 1981 with 31.1%. The Nordic countries and Germany have fairly similar shares varying between 34 to 36%, Australia follows next with shares from 37 to 39%. The UK has similar shares, but reveal a sharp increase in 1991 with a share of 41.9%. The most fortunate of the two top deciles are to be found in the US, with shares ranging from 38% in 1979 to 42.9% in 1994. The development of inequality could be summarised as follows with reference to the table above: In four of the countries an increasing distance between the bottom and the top of the income distribution can be observed. The two top deciles increase their share and the four bottom deciles take home a lower share of disposable household

income. This picture is evident in Australia, Sweden, UK and the US. Finland, Germany and Norway reveal a picture where stability of the distributional profile is the dominant trait. Denmark is the only country where a slight decrease in inequality may be observed from 1987 to 1992.

Table six gives us decile ratios and Gini coefficients for adjusted disposable income for households with positive income:

Table 7: Social distance and inequality of disposable income 1980-1995: Decile ratios and Gini coefficients for adjusted disposable income.

	YEAR	P90/P10 (Decile ratio)	P10/P50	P90/P50	Gini Coefficient
AUS	1981	4.24	44.5	189	0.3005
AUS	1985	4.22	45.1	191	0.3070
AUS	1989	4.49	44.0	198	0.3228
DEN	1987	3.41	50.7	173	0.2777
DEN	1992	3.02	54.9	166	0.2593
FIN	1987	3.05	53.8	165	0.2491
FIN	1991	3.23	51.9	168	0.2534
GER	1981	3.18	54.5	174	0.2595
GER	1984	3.22	53.8	174	0.2643
GER	1989	3.15	54.2	171	0.2632
NOR	1979	3.14	52.0	164	0.2460
NOR	1986	3.35	49.6	167	0.2559
NOR	1991	3.15	52.3	165	0.2516
SWE	1981	2.53	61.2	155	0.2054
SWE	1987	3.02	52.4	159	0.2403
SWE	1992	3.09	53.6	166	0.2515
UK	1979	3.72	50.3	187	0.2848
UK	1986	3.70	54.4	202	0.3028
UK	1991	4.82	44.5	215	0.3525
US	1979	5.28	36.7	194	0.3211
US	1986	5.99	34.7	208	0.3473
US	1991	5.96	35.8	214	0.3508
US	1994	6.38	34.9	223	0.3754

Notes: The decile ratios and the Gini coefficients are based on household with positive disposable net income.

Also when considering the social distance in disposable net income the US and Sweden are the extreme cases in this context of countries. The smallest distance is 2.53 as observed in Sweden in 1981; the US of 1994 with 6.38 represents the largest distance. The US forms a 'group' of its own with social distance above 5.0 and close to 6.0 since 1986. The two other English speaking countries Australia and the UK form a pair where social distance is varying between 3.7 and 4.8. The Nordic countries and Germany form a group where social distance is fairly similar, from 3.0 to 3.4, save for Sweden 1981. This picture is roughly identifiable if we move to the P10/P50 measure. The US has incomes of the tenth percentile at 34 to 36% of median income. The Nordic countries and Germany all have percentage shares above 50% of median income. Australia have shares around 45%, whereas the UK initially had shares close to the Nordic countries and Germany, but the share has fallen close to the Australian level in the latest available survey from 1991.

The development of income distribution can be illustrated by looking at the P90/P50 ratio. In four of the countries Australia, Sweden, UK and the US there have been a clear increase in this ratio. In Denmark and Germany a small decrease in the ratio is revealed, whereas in Finland and Norway a similar small increase is identified.

The Gini coefficient gives a summary view of differences in inequality between countries, and identifies changes in inequality over time. Again a division into three categories of inequality is in its place. The Nordic countries and Germany all have Gini coefficients around 0.25, differing from 0.205 for Sweden in 1981 to 0.277 for Denmark in 1987. Australia and the UK have Gini coefficients between 0.30 to 0.35, whereas the US has coefficients ranging from 0.32 in 1979 to 0.37 in 1994. The change observed through the 1980ies also here reveal a division between Sweden and the Anglo -American family of countries, where an significant change towards increasing inequality may be identified, and the other three Nordic countries and Germany where changes are small. In the case of Denmark a small change towards increasing equality is present, but here we only have two points of data not knowing the situation of the beginning of the decade as is also the case in Finland where a small change towards increasing inequality is identified¹². Also in Germany and Norway a small change towards increasing Gini coefficients is disclosed.

¹² Although the LIS data files on Denmark and Finland do not include surveys covering the beginning of the period; there are of course other studies on income distribution that may be consulted. For Denmark Aaberge et al (1995) analysing the period 1981 to 1990 found that inequality increased over the period. The Gini coefficient changed by 10 to 15% both for market income and disposable income. Uusitalo (1995) identified a strong increase in market income inequality for the period 1981-1992 for Finland, but no change in disposable income inequality. Both sources cited from Gottschalk and Smeeding (1997).

3.2. THE DISTRIBUTION OF DIRECT TAX BURDENS AND THEIR REDISTRIBUTIVE EFFECTS

To effectuate the goal of redistributing income, governments have at their disposal the tool of taxation. How do taxes influence the distribution of income? To spur this effect we must start with the gross income aggregate (GI) of the LIS database. From this amount is subtracted the following taxes and contributions to obtain disposable income after taxes: Mandatory contributions for self - employed, mandatory employee contributions and income taxes. Thus we have the following relationship between gross- and disposable income within the LIS database variables: $GI - (V7 + V13 + V11) = DPI$. The total redistributive effect of these taxes and social insurance contributions, may be identified by comparing the differences in Gini coefficients between gross income and net disposable income distribution: The change, or rather the reduction in the Gini coefficient is caused by these taxes paid. In table 7 the progressiveness of taxes is measured in this way, enabling us to compare between countries and covering the time span 1980-95.

Table 8: Redistributive capacity of tax systems: Reduction in Gini coefficients between gross and net disposable income ca. 1980-1995.

COUNTRY	INCOME TYPE AND GINI REDUCTION	1980	1985	1990	1995
AUSTRALIA	GROSS INCOME	0.3514	0.3672	0.3777	
	NET INCOME	0.3005	0.3070	0.3228	
	GINI RED.	0.0509	0.0602	0.0549	
	% GINI RED.	14.5%	16.4%	14.5%	
DENMARK	GROSS INCOME	-	0.3125	0.3146	
	NET INCOME	-	0.2777	0.2593	
	GINI RED.	-	0.0348	0.0553	
	% GINI RED.	-	11.1%	17.5%	
FINLAND	GROSS INCOME	-	0.2966	0.2937	
	NET INCOME	-	0.2491	0.2534	
	GINI RED.	-	0.0475	0.0403	
	% GINI RED.		16.0%	13.7%	
GERMANY	GROSS INCOME	0.2988	0.3196	0.3306	
	NET INCOME	0.2595	0.2643	0.2632	
	GINI RED.	0.0393	0.0553	0.0674	
	% GINI RED.	13.2%	17.3%	20.4%	
NORWAY	GROSS INCOME	0.3049	0.2954	0.2973	
	NET INCOME	0.2460	0.2559	0.2516	
	GINI RED.	0.0589	0.0395	0.0457	
	% GINI RED.	19.3%	13.4%	15.3%	
SWEDEN	GROSS INCOME	0.2581	0.2848	0.2841	
	NET INCOME	0.2054	0.2403	0.2515	
	GINI RED.	0.0527	0.0445	0.0326	
	% GINI RED.	20.4%	15.6%	11.5%	
UNITED KINGDOM	GROSS INCOME	0.3228	0.3544	0.3881	
	NET INCOME	0.2848	0.3028	0.3525	
	GINI RED.	0.0380	0.0516	0.0356	
	% GINI RED.	11.8%	14.6%	9.2%	
UNITED STATES	GROSS INCOME	0.3723	0.3940	0.3955	0.4228
	NET INCOME	0.3211	0.3473	0.3508	0.3754
	GINI RED.	0.0512	0.0467	0.0447	0.0474
	% GINI RED.	13.8%	11.9%	11.3%	11.2%

AUSTRALIA: 1981, 1985 and 1989. DENMARK: 1987, 1992. FINLAND: 1987, 1991. GERMANY: 1981, 1984, and 1989. NORWAY: 1979, 1986 and 1991. SWEDEN: 1981, 1987 and 1992. UNITED KINGDOM: 1979, 1986 and 1991. UNITED STATES: 1979, 1986, 1991 and 1994.

The table reveals the following general findings. We observe that the relative reduction in inequality varies between countries, ranging from a 20.4 % reduction in observed Gini coefficient from gross to net income in Sweden in 1981 and Germany in 1989 to 9.2% in the UK for 1991. At the beginning of the period we see that the two Nordic countries Norway and Sweden had the most redistributive tax systems, with relative reductions of inequality close to 20%. The UK had the least redistributive system measured in this way reducing inequality by 11%. The other three countries Australia, Germany and the US had slightly more redistributive tax systems with reductions around 13 to 14%. Around 1990 another picture appears, now with Germany as the most

redistributive tax system (with relative reduction at 20.4%). At the other end we now still find the UK together with the US and Sweden. These three countries form a group with reductions from 9 to 11%. The rest of the countries have reductions varying from 13.7% (Finland 1991) to 17.5% (Denmark 1992).

In five of the countries there have been a change toward less redistributive taxes (Finland, Norway, Sweden, UK and the US) In Australia there have been almost no change, whereas Denmark and Germany observe more redistributive taxes. Thus there is no uniform direction toward less redistributive tax systems in the countries observed, and there is considerable variation in the extent of change between countries. The most dramatic changes when comparing 1980 figures with 1990 figures is identified in Sweden reducing the redistributive capacity of its tax system in relative terms by 43.6%, followed by UK with 22%, Norway 20.7%, US 18.8% and Finland 14.4%. Australia shows no change in relative terms, whereas Germany increases its redistribution by 17.9% (1985 to 1989) and Denmark improves the redistributive capacity by 57.7%. Again for Denmark and Finland the results reflect changes over a short time period of four to five years, so they must be interpreted carefully. The absolute figures reveal less redistributive taxes in Finland, Norway, Sweden, UK and the US, and more redistributive taxes in absolute terms in Australia, Denmark and Germany.

In table 9 I have made a simple rank of countries both regarding their relative and their absolute figures of Gini reductions.

Table 9: Country ranking by relative and absolute Gini coefficient reductions.

Country		1980	1985	1990	1980-90	1980-90
					Average score and ranking ()	Total average score and ranking ()
Germany	Absolute	5	2	1	2.7 (1)	2.5
	Relative	5	1	1	2.3 (1)	(1)
Australia	Absolute	4	1	3	2.7 (1)	2.85
	Relative	3	2	4	3.0 (2)	(2)
Norway	Absolute	1	7	4	4.0 (3)	3.9
	Relative	2	6	3	3.7 (3)	(3)
Sweden	Absolute	2	6	8	5.3 (7)	4.5
	Relative	1	4	6	3.7 (3)	(4)
Finland	Absolute	-	4	6	5.0 (5)	4.5
	Relative	-	3	5	4.0 (5)	(4)
Denmark	Absolute	-	8	2	5.0 (5)	5.0
	Relative	-	8	2	5.0 (6)	(6)
US	Absolute	3	5	5	4.3 (4)	5.2
	Relative	4	7	7	6.0 (7)	(7)
UK	Absolute	6	3	7	5.3 (8)	5.8
	Relative	6	5	8	6.3 (8)	(8)

Making an index based on relative and absolute Gini reductions covering the period ca 1980- 1990, places Germany on the top of the list followed by Australia, Norway, Finland and Sweden. Both Finland and Sweden ranks fourth when basing ranks on both absolute and relative figures. At the bottom of the list we find Denmark, the US and at last the UK with the least redistributive tax system, measured by relative and absolute reductions of Gini scores. Sweden has the most dramatic change of the redistributive capacity of its tax system: From being the most redistributive system in the beginning of the 1980s it drops to ranking only sixth in 1991 in relative terms. Germany moves upward from ranking fifth in 1980, to ranking as number one in 1990.

How can these changes in the redistributive efforts of income taxes be explained? I do not intend to give a complete account of changes in income tax systems, but will concentrate on some main factors within the income tax institution.

3.3 INSTITUTIONAL CHANGES OF INCOME TAX SYSTEMS 1980-1995

The reform of income tax systems of the 1980s had some common denominators, as they all aimed at broadening the tax base combined with a reduction in the marginal tax rates. A third important goal was to promote a more equal treatment of different sources of income. Efforts at simplifying a complex tax code by closing tax loopholes would give a more transparent and a fairer tax system. This third wave of tax reforms (Messere 1993) occurred between 1984 and 1992. The reforms encompassed drastic reductions in most of the OECD countries in rates of personal and corporate income taxes. It was accompanied by a widening of the personal income tax base and in most cases also an extension of the corporate tax base (Messere 1993). In most countries the tax reforms were made under the precondition of more or less revenue neutrality: The tax reforms did not aim at raising or reducing the total tax revenue share of GDP compared with pre tax reform levels.

In practical terms the widening of the tax base was accomplished through including more substantially or to a fuller extent than previous gains from capital, the value of fringe benefits, different social security benefits. And on the other side by reducing or eliminating the deductability of certain interest payments, social security contributions and local taxes. A move from the net income to the gross income principle of taxation was also part of this tax base broadening process in some countries.

The rate restructuring implied apart from the lowering of top schedule rate of tax, a rate flattening and a reduction of the number of tax brackets. The goal of increasing tax neutrality towards different income sources have been enforced by removing differences in tax rates or the valuation method between different income items.

The reforms of the corporate tax have implied the following changes: A removal or reduction of tax incentives biasing investment decisions. Reforms have generally eliminated special investments, removed many tax shelters relating to property investment and particular industries and moved tax depreciation nearer to economic depreciation. Irrespective of whether the tax base have been widened, the statutory rates of the tax have been reduced in nearly all countries (Messere 1993, p. 38). Table 10 presents information on the change of top and first positive rates of taxation, the different years for extensions of the tax base, change of the number of tax brackets and some update on present and future changes:

TABLE 10: INSTITUTIONAL CHANGES OF INCOME TAX SYSTEMS CA. 1980-1995.

COUNTRY:	MAJOR TAX REFORM INITIATED	BROADER TAX BASE	NUMBER OF BRACKETS	RED. OF TOP TAX RATES TO CENTRAL GOV.	CHANGE IN FIRST POSITIVE RATES	CHANGE IN TAX RATE ON CAPITAL (UN-EARNED) INCOME ¹³	RECENT AND FUTURE CHANGES
AUS	1989	1987 1989 1990	1975: 6 1985: 5 1992: 7	1975: 65 1985: 60 1986: 57 1990: 57 1992: 48	1975:20 1985: 30 1992: 22		-
DEN	1987	1987	1975: 3 1985: 3 1992: 3	1975: 40 1985: 40 1986: 45 1992: 40 1994: 36 1998: 29	1975: 14 1985: 14 1992: 22	1985: 50% 1993: 34%	New tax reform 1994-1998: lowering tax rates and implementation of earmarked social security contributions based on employees gross earnings
FIN	1989 1990	1989 1990 1991	1975: 14 1985: 11 1992: 6	1975: 51 1985: 51 1992: 39	1975: 10 1985: 6 1992: 7	1993: 25%	1993: Introduction of separate tax on capital income, at a flat rate of 25%. Further change in tax treatment of interest income: Tax exempt savings deposits will no longer be available, but the tax-exemption of lower interest rate deposit accounts will remain.
GER		1990	-	1975: 56 1985: 56 1990: 56 1992: 53	1975: 22 1985: 22 1992: 19		1995-1996. A solidarity surcharge of 7.5% on the income tax liability was levied from 1.1.95. Decision of the Constitutional Court implying that tax payers with net income below the level of social assistance have to be exempted from income tax. Implying major changes in the income tax schedule beginning in 1996
NOR	1987 1992	1987 1988 1989 1991 1992	1975: 10 1985: 8 1992: 2	1975: 48 1985: 40 1992: 14	1975: 6 1985: 3 1992: 8	1992:28%	1992: A surtax levied on higher gross incomes
SWE	1990 1991	1987 1988 1989 1990 1991	1975: 10 1985: 15 1992: 1	1975: 56 1985: 54 1986: 50 1992: 20	1975: 7 1985: 3 1992: 20		1994: Dividends on shares are tax exempt and for capital gains on shares only 50% is subject to the flat ratetax. 1995: The net wealth tax abolished and the general tax rate on capital is reduced from 30% to 25%.
UK		1988	1975: 10 1985: 6 1992: 2	1975: 83 1985: 60 1986: 60 1992: 40	1975: 35 1985: 30 1992: 27		-
US	1986 1987	1987	1975: 25 1985: 14 1992: 2	1975: 70 1985: 50 1986: 50 1992: 28	1975: 14 1985: 11 1992: 15		-

Sources: Ken Messere (1993): Tax policy in OECD countries. Choices and Conflicts, IBFD Publications, Amsterdam. OECD (1994): Taxation and household saving, OECD, Paris. OECD (1994a): Taxation and household saving. Country practices, OECD, Paris.

¹³ A unique feature common for the tax reforms of the Nordic countries, is that capital or unearned income now is taxed separately at a flat rate, while other incomes is taxed at progressive rates. Therefore this new tax system have been christened as the 'Nordic dual Income tax system' (Nordic Council for Tax Research 1993, p. 9). In all the Nordic countries capital income tax rate have been drastically reduced, from levels in most cases above 50% at pre tax reform time, to 25% in the case of Finland and Sweden, 28% for Norway and 39% for Denmark. On the other hand the tax base of capital income at the same time was widened.

On the background of the institutional changes described above we may ask how these changes have effected the distribution of the income tax and social security contributions. It is not possible to tell from the general institutional changes how these have effected the goal of vertical equity. A reduction of the top rate do imply a less progressive system, but one the other hand a widening of the tax base may increase the redistributive effect. Thus although the pre –tax reform systems were formally progressive with very high marginal rates of taxation, these rates were often applied on a narrow tax base. The erosion of the tax base was a result of the use of several exclusions of income items, deductions and allowances, in short by the use of tax expenditures. To secure sufficient tax revenue, the erosion of the tax base had to be compensated through increasing rates. A vicious circle was created and in this context the tax reforms of the eighties spearheaded by the US Tax Reform Act of 1986, should be seen as an attempt to break this vicious circle. The important point to make is that a narrow focus on the top rate reduction may be misleading and exaggerate the effect of rate reduction on redistributive capacity if it is not connected to the tax base issue.

To see how these changes have effected the real distribution of the tax burden in vertical equity terms the next table give an account of how these taxes are distributed by different quintiles of gross income of households over the last ten to fifteen years. The information given here adds to the findings reported in table 8 and 9 by showing in a more transparent way than the comparisons of Gini coefficient reductions, the change in tax burden distribution. The gross income concept is chosen as a base since it reflect better than net income the ability to pay in vertical terms. This because the net income is a result of allowances that in horizontal equity terms should be regarded as legitimate, but also of tax expenditures that is not considered to be part of the net income definition. The general move toward extended use of gross income as a basis for taxation is also in line with the choice taken here¹⁴.

¹⁴ Of course also the gross income concept may have deficiencies related to vertical equity considerations because of tax expenditures in the form of income exclusions or preferential valuation rules. This problem will be discussed in the next section on tax expenditures in housing.

TABLE 11: THE DISTRIBUTION OF AVERAGE INCOME TAXES BY QUINTILES OF GROSS INCOME FOR HOUSEHOLDS: AVERAGE TAXES PAID AS PERCENTAGE OF GROSS INCOMES, CA.1980-1995

COUNTRY	YEAR	QUINTILES TOTAL AVERAGE	Q1	Q2	Q3	Q4	Q5	Progressiveness: Q5/Q1	Progressiveness: Q5/Q2
AUS	1981	15.5%	1.3%	9.2%	18.1%	21.7%	26.9%	20.7	2.9
AUS	1985	14.8%	0.4%	7.2%	17.5%	21.4%	27.7%	69.3	3.8
AUS	1989	14.5%	0.7%	7.4%	16.6%	20.8%	26.9%	38.4	3.6
DEN	1987	*26.8%	*68.3%	23.7%	31.2%	33.0%	34.4%	-	1.5
DEN	1992	27.9%	11.9%	22.3%	31.4%	34.9%	38.9%	3.3	1.7
FIN	1987	21.1%	7.3%	17.2%	23.2%	26.5%	31.5%	4.3	1.8
FIN	1991	19.6%	7.5%	16.0%	21.5%	24.3%	28.7%	3.8	1.8
GER	1981	17.5%	3.0%	12.0%	19.4%	23.9%	29.4%	9.8	2.5
GER	1984	18.3%	3.1%	11.0%	19.7%	25.8%	31.9%	10.3	2.9
GER	1989	19.3%	3.2%	10.9%	20.5%	28.0%	34.0%	10.6	3.1
NOR	1979	19.5%	3.2%	12.8%	22.1%	27.1%	32.2%	10.1	2.5
NOR	1986	19.3%	4.2%	16.6%	22.0%	25.3%	28.6%	6.8	1.7
NOR	1991	18.1%	4.5%	14.1%	20.0%	23.6%	28.2%	6.2	2.0
SWE	1981	25.0%	10.5%	20.4%	26.9%	30.4%	36.9%	3.5	1.8
SWE	1987	29.4%	18.8%	25.8%	30.5%	33.3%	38.8%	2.1	1.5
SWE	1992	22.0%	11.5%	20.7%	24.0%	25.2%	28.9%	2.5	1.4
UK	1979	15.5%	4.7%	9.3%	18.2%	21.2%	24.1%	5.1	2.6
UK	1986	*15.9%	*134.6%	7.0%	17.5%	22.9%	27.2%	-	1.6
UK	1991	14.4%	2.1%	6.3%	16.1%	21.8%	25.8%	12.3	4.1
US	1979	14.6%	2.8%	8.7%	14.9%	19.6%	27.2%	9.7	3.1
US	1986	15.1%	3.6%	9.9%	15.4%	19.8%	26.6%	7.4	2.7
US	1991	14.6%	4.0%	9.2%	14.7%	18.9%	26.1%	6.5	2.8
US	1994	*14.3%	*34.2%	8.7%	14.1%	18.8%	25.8%	-	2.9

* The very high percentages for Denmark 1987, UK 1986 and for the US 1994 for the lowest quintile of gross incomes results from cases, where a combination of low gross incomes and high tax payments are present. For these three country files the total average tax payments as share of household gross income is based on an average of Q2 to Q5 and the Q1 value of the previous nearest data file. (For Denmark the 1992 Q1 rate is used).

The table informs us that average income taxes as percentage of gross income have been reduced in Australia, Finland, Norway, Sweden, UK and the US. Denmark and Germany have experienced an increase in the average tax take. The three Nordic countries of Finland, Norway and Sweden together with the US show a change toward a relaxation of taxation of the top quintile combined with increased average taxes on the bottom quintile. Germany and the UK show a change in the opposite direction, whereas Denmark increase the tax take from the top quintile, while Australia eases the burden of the bottom decile. In the two last columns of the table I have calculated the Q5/Q1 and the Q5/Q2 ratio as indicators of progressiveness and they may be seen as a parallel to the social distance measure used previously. The first observation to notice is that by the indicators used here, the Anglo- American countries have more progressive tax systems than the Nordic countries. Also Germany have a more progressive tax system than the Nordic countries. These results seem to confirm Sven Steinmo's (1993)

findings in his important historical comparative study of the British, Swedish and American tax system, where he demonstrates that the UK and the US have more progressive taxes than the Swedish. These findings may now be extended to cover also the other three countries of the Nordic model and on the other hand Australia fit well into the family of English speaking countries. Considering the whole time span, progressiveness has been reduced in Norway, Sweden and the US and has increased in Australia, Germany and the UK. Finland reveals no change or a small decrease in progressiveness, whereas Denmark reveals a small positive change.

As noted in section Two progressiveness is not the same as redistribution. To obtain measures of the redistribution of the income tax system we must also take into account the general tax level on income. It is both these factors that interact on producing redistributive capacity of income taxes. Thus in a comparative perspective the English speaking family of countries combine stronger progressiveness with a lower tax take (on average 14-15% of gross income), whereas the Nordic countries combine less progressiveness with a higher tax level. Germany is closer to the first group on progressiveness but closest to the Nordic countries on tax level¹⁵. Therefore as the previous tables on redistributive capacity revealed a different picture emerge when both factors are accounted for. Whereas Australia is still retaining a top position, only second to Germany in redistribution, the UK and the US now occupy the bottom of the list in this respect. In relative terms the main difference is between UK and the US with reductions around 12% and the rest of the countries with relative reductions in the range from 14 to 17%.

There is no uniform direction regarding the real progressiveness of tax systems as a result of the tax rate reductions and the base broadening elements of the tax reforms. But in respect of redistribution the effect of reducing marginal tax rates and the reduction of average tax burden in general has been negative. A definitive answer to this question cannot be given, since the data files available do not cover the completion of tax reforms in all countries. The forthcoming fourth wave of LIS income data covering the mid- nineties will enable a more complete evaluation of the effect of tax reforms on the redistributive capacity and the progressiveness of different tax systems.

To complete the description and analysis of redistribution the next section cover both income taxes and social transfers and their role for this aspect of social policy.

¹⁵ The analysis made here is focused on the income tax system and does not take into the account the effect of indirect taxes such as the value-added tax or other general consumption taxes. In a recent OECD paper on 'Net social expenditure' (Adema, Einerhand, Eklind, Lotz and Pearson 1996) the authors have identified average indirect tax rates in different countries including five of the countries handled here. The maximum indirect tax rate (calculated as Taxes on Goods and services/ Private consumption) was 30.2 % for Denmark, 21.6 % in Germany, 24.9% in Sweden 18.5% in the UK and finally 7.5% in the US. An indirect tax rate for the lowest quartile of household income based on expenditure surveys, was calculated and gave the following results: Germany 11.0%, Sweden 18.3%, and UK 9.9%. Information on Denmark and the US was not available (Adema et.al. 1996). Clearly the substantial variation indicated by these figures impacts the overall redistribution of the tax system as a whole.

3.4.THE REDISTRIBUTIVE EFFECTS OF TAXES AND TRANSFERS

The tax system is one part of the redistributive system of welfare state; another part is made up of the social transfer system. An overall picture of the changes in distribution of incomes as we move through the redistributive functions of the tax- and transfer institutions is provided in the next table. It presents the findings of changes in Gini coefficients as we move from market income (MI), via gross income (GI) (market income +social transfers) to net disposable income (DPI) [gross income - (income taxes (v11) +mandatory contribution for self employed (v7) + mandatory employee contribution (v13)= DPI]

Table 12: The redistributive aim of social policy: The effect of taxes and transfers on reducing income inequality ca. 1980-1995

Country file and year	MI	GI (MI+ SOC- TRANS	Gini red.	% Gini red.	DPI (GI- Taxes/ contr.	Gini red	% Red.	Total Gini Red. Transfers and taxes	Total % red.
AS81H	0.3895	0.3514	0.0381	9.8%	0.3005	0.0509	14.5%	0.0890	22.8%
AS85H	0.4144	0.3672	0.0472	11.4%	0.3070	0.0602	16.4%	0.1074	25.9%
AS89H	0.4366	0.3777	0.0589	13.5%	0.3228	0.0549	14.5%	0.1138	26.0%
DK87H	0.4547	0.3125	0.1422	31.3%	0.2777	0.0348	11.1%	0.1770	38.9%
DK92H	0.4795	0.3146	0.1649	34.4%	0.2593	0.0553	17.5%	0.2202	45.9%
FI87H	0.3685	0.2966	0.0719	19.5%	0.2491	0.0475	16.0%	0.1194	32.4%
FI91H	0.3685	0.2937	0.0748	20.3%	0.2534	0.0403	13.7%	0.1151	31.2%
GE84H	0.4621	0.3196	0.1425	30.8%	0.2643	0.0553	17.3%	0.1978	42.8%
GE89H	0.4680	0.3306	0.1374	29.4%	0.2632	0.0674	20.4%	0.2048	43.8%
NW79H	0.3796	0.3049	0.0747	19.7%	0.2460	0.0589	19.3%	0.1336	35.2%
NW86H	0.3789	0.2954	0.0835	22.0%	0.2559	0.0395	13.4%	0.1230	32.5%
NW91H	0.4244	0.2973	0.1271	29.9%	0.2516	0.0457	15.3%	0.1728	40.7%
SW81H	0.4323	0.2581	0.1742	40.3%	0.2054	0.0527	20.4%	0.2269	52.5%
SW87H	0.4714	0.2848	0.1866	39.5%	0.2403	0.0445	15.6%	0.2311	49.0%
SW92H	0.5038	0.2841	0.2197	43.6%	0.2515	0.0326	11.5%	0.2523	50.1%
UK79H	0.4106	0.3228	0.0878	21.4%	0.2848	0.0380	11.8%	0.1258	30.6%
UK86H	0.4623	0.3544	0.1079	23.3%	0.3028	0.0516	14.6%	0.1595	34.5%
UK91H	0.4723	0.3881	0.0842	17.8%	0.3525	0.0356	9.2%	0.1198	25.4%
US79H	0.4077	0.3723	0.0354	8.7%	0.3211	0.0512	13.8%	0.0866	21.2%
US86H	0.4283	0.3940	0.0343	8.0%	0.3473	0.0467	11.9%	0.0810	18.9%
US91H	0.4370	0.3955	0.0415	9.5%	0.3508	0.0447	11.3%	0.0862	19.7%
US94H	0.4630	0.4228	0.0402	8.7%	0.3754	0.0474	11.2%	0.0876	18.9%

The picture revealed in table 12 shows the following characteristic of these welfare states' total redistributive effort. In relative terms the reduction in income inequality measured as reduction of the Gini coefficient between market income and net disposable income disclose significant variations between the eight countries. The relative reduction range from 18.9% for the US in 1986 and 1994 to 52.5% for Sweden in 1981. Sweden stands out as

the most redistributive welfare state by reducing inequality of incomes with 50%. On the other hand the US have the least redistributive welfare state, reducing inequality by less than 20 %. Also the two other English speaking countries have relatively modest reductions, the UK in the range between 25 to 30 %, and Australia with reductions from 22 to 26%. Behind Sweden follows Denmark and Germany with reductions above 40%, and Norway have reductions between 32 to 40%. Finland have the least redistributive welfare state of the Nordic countries, with reductions around 31 to 32%.

On the basis of the data presented above we may ask whether the redistributive welfare state have gained or lost ground through the last ten to fifteen years? Again there is no uniform development in either direction; some countries show a trend toward more redistribution others show less redistributive efforts. Australia, Denmark, Germany and Norway increase their redistribution, whereas Finland, Sweden, UK and the US are reducing the redistributive capacity of their welfare states. As the table display, there is difference in the magnitude of relative change. Finland and Germany (Germany 1981 is not considered here) reveal only small relative changes -3.7% and +2.3% respectively. Sweden also discloses only a modest relative decrease with – 4.6%. For Australia, Denmark and Norway the increase is ranging between +14-18%. Two clear cut cases of a negative trend is identified first and foremost in the UK with relative change of -17% and to a lesser extent within the US, with relative reductions at –10.8%.

It is of interest to see how countries representing different welfare models accomplish their goal of reducing income inequality by the use of transfers and direct taxes. On the basis of the Gini reduction figures presented in table 12 it is possible to give an account of the relative importance of each of the two means of redistribution. Table 13 gives information on this issue and enables us the see how this relationship develops through the time period analysed:

Table 13: Total Gini reduction and the relative importance of taxes and transfers.

Country file and year	MI	DPI	Total Gini red. Transfers and taxes	Total % red.	Relative importance of social transfers %	Relative importance of taxes %
AS81H	0.3895	0.3005	0.0890	22.8%	42.8%	57.2%
AS85H	0.4144	0.3070	0.1074	25.9%	44.0%	56.0%
AS89H	0.4366	0.3228	0.1138	26.0%	51.8%	48.2%
DK87H	0.4547	0.2777	0.1770	38.9%	80.3%	19.7%
DK92H	0.4795	0.2593	0.2202	45.9%	74.9%	25.1%
FI87H	0.3685	0.2491	0.1194	32.4%	60.2%	39.8%
FI91H	0.3685	0.2534	0.1151	31.2%	65.0%	35.0%
GE84H	0.4621	0.2643	0.1978	42.8%	72.0%	28.0%
GE89H	0.4680	0.2632	0.2048	43.8%	67.1%	32.9%
NW79H	0.3796	0.2460	0.1336	35.2%	55.9%	44.1%
NW86H	0.3789	0.2559	0.1230	32.5%	67.9%	32.1%
NW91H	0.4244	0.2516	0.1728	40.7%	73.6%	26.4%
SW81H	0.4323	0.2054	0.2269	52.5%	76.8%	23.2%
SW87H	0.4714	0.2403	0.2311	49.0%	80.7%	19.3%
SW92H	0.5038	0.2515	0.2523	50.1%	87.1%	12.9%
UK79H	0.4106	0.2848	0.1258	30.6%	69.8%	30.2%
UK86H	0.4623	0.3028	0.1595	34.5%	67.6%	32.4%
UK91H	0.4723	0.3525	0.1198	25.4%	70.3%	29.7%
US79H	0.4077	0.3211	0.0866	21.2%	40.9%	59.1%
US86H	0.4283	0.3473	0.0810	18.9%	42.4%	57.6%
US91H	0.4370	0.3508	0.0862	19.7%	48.1%	51.9%
US94H	0.4630	0.3754	0.0876	18.9%	45.9%	54.1%

There is a decisive difference identified in the table between the majority of countries where the transfer system account for the largest share of total Gini reductions and Australia and the US where the tax system account for

the largest share of Gini reductions. Again Sweden exemplify the extreme case, where social transfers account for more than eighty percent of the total Gini coefficient reduction observed. In the US system of redistribution, the system of income taxes is much more important in reducing inequality, as it contributes with more than 50% of total Gini reductions. A similar division of labour of direct taxes and transfers is visible in Australia. Both countries are exemplars of selective welfare state policies, where targeted programs especially towards the poor dominates and where the general tax level is relatively low compared with the Nordic countries and Germany. Germany and the Nordic countries combine relatively high tax levels and universal social transfers aimed at covering the whole population.

There are some observable changes in the composition of the redistributive means of the welfare states included here for the time period analysed. In six of the eight countries the relative importance of the direct tax system have been reduced. The most dramatic changes in this direction are observed in Sweden and Norway. For instance the system of direct taxes accounted for 23.2% of total Gini reduction in Sweden in 1981, whereas in 1992 this share dropped to 12.9%, the lowest share observed for all countries and years. This imply a drop of relative importance by 44.4 % for Sweden, and only Norway compares in reduction of relative importance with a drop by 40.1% for the time period 1979 to 1991. Australia show a reduction by 15.7% implying that at end of the period the transfer system now accounts for more than half of the total Gini reduction, so that Australia is now more in line with the majority of countries. The UK is characterised by a stability of the division of labour between the two systems, revealing a minor reduction of the relative importance of direct taxes by 1.7%. The US also shows a downward trend, where the relative importance of the tax system has dropped by 8.5%. Denmark and Germany witness a move towards greater reliance on income taxes in their redistributive policy. The figures provided here imply a general drive toward less reliance on the tax system as a tool for redistribution.

In the next section the aim is to give an account of how tax expenditure transfers for social goals effect the redistributive aim of social policy. The analysis will focus on the use of tax expenditures in housing policy to promote the goal of homeownership in the eight countries.

4.0 EMPIRICAL COMPARISONS OF TAX EXPENDITURE AND DIRECT TRANSFERS FOR SOCIAL GOALS 1980-1995

Within income distribution analysis the separate effect of tax expenditures is generally not accounted for. Since tax expenditures in the form of income and tax allowances have the effect of reducing tax liabilities, these are generally not separated from other tax reducing measures that are considered to be part of the tax base structure. Thus their effect is hidden in the income distribution as we move from gross to disposable net income. In the form of income exclusion tax expenditures are not accounted for as items of primary income distribution. A more accurate picture of the redistribution process should include the benefits from tax expenditures. Ideally we therefore should aim at splitting up the diverse effects of transfers, taxes and tax expenditures (or tax expenditure transfers) into the following sequences of Gini coefficients:

1. Gini coefficient for registered market income + tax exempted income.
2. Gini coefficient for market income (as reported in table 3).
3. Post transfer, pre taxation Gini coefficient (Gross Income distribution).
4. Post- transfer, post tax -expenditure transfers, pre taxation Gini coefficient, and finally
5. A post- transfers (direct and tax expenditure), post- tax coefficient (DPI distribution).

Such a sequence of coefficients would enable us to follow the linkages between different welfare instruments and their outcomes more closely than what will be the case if tax expenditures are ignored in questions of the redistributive aim and outcome of social policy. Unfortunately there is a vast distance between ideal and reality in relation to empirical data on tax expenditure transfers.

At present the data files of the LIS does not include information to give an account of this process of redistribution at aggregate level. But what we can do is to identify part of this process of redistribution at the intermediate level, that is within fields or aspects of social policy, in this case housing.

4.1. HOUSING: DIFFERENT ROUTES TO WELFARE AND THEIR DISTRIBUTIVE CONSEQUENCES

A major field of fiscal welfare is housing. The goal of securing adequate housing facilities at reasonable cost have since the initiation of modern social policy been identified as one of basic importance and have been encompassed with a broad consensus among the public. In most countries a central feature of this policy have been pursued through the tax system, by way of favourable tax treatment of homeowners. This have generally included very liberal deduction rules for mortgage interests combined with only modest or in some countries the absence of

taxation on imputed income from homeownership. The tax expenditure concept in relation to housing focus on the asymmetry of taxation of income and expenditures. Symmetry lacks if the following conditions are present:

-Expenditures is fully deductible and assessed at market values, but imputed income is assessed below market value.

-Expenditures are restricted by ceilings combined with no taxation of imputed income

The countries included here have somewhat different tax treatment of housing.

In table 14 I have identified the similarity and differences present in current taxation rules:

Table 14: Taxation of homeownership:

Mortgage interest deductibility	Taxation of imputed income	Immovable property tax	Disposal of housing
AUS: Interest expenses incurred on the purchase of a house are not deductible	No taxation	Most states exempt owner-occupiers from land -tax. Local property taxes are levied on property values	Capital gains realised on the sale of the principal residence are exempt from capital gains tax
DEN: Interest expenditure is fully deductible, regardless of the asset to which the expenditure relates	Imputed rent from owner occupation of 2.5% of an assessed value (approximately market value)	Local authorities levy a land tax on market value that varies between 1.6 and 3.4%.	Owner occupied houses are exempt from capital gains tax
FIN: Mortgage interest is generally deductible from capital income	Imputed income from owner-occupation is not taxed	A tax on immovable property is levied on fair market value, as assessed by local tax boards	Capital gains derived from the sale of a residential building, which have served mainly as the owner's or his/her permanent home for at least two years before the sale, is exempt from tax
GER: interest expenditure incurred on loans connected with the acquisition or the construction of owner occupied housing may be deducted from the income tax as a special expense, if it relates to the prior period of occupation. Mortgage interest is, under certain conditions, also deductible up to DM 12000 per annum in the year of construction and the two subsequent years	Taxation of imputed income from owner occupation was abolished in 1986, with the option for those still owning homes taxed under the previous system to continue with it until 1998, i.e. having fictitious market rent taxed as income from letting and leasing (with deductions for income related expenses)	For the purpose of net wealth tax, housing in the old Länder is valued at 140% of the 1964 standard value (which itself is generally less than 20% of market value). For the new Länder, the 1935 standard value, increased by variable multipliers, is used	A real property transfer tax is imposed on the acquisition of a piece of property located in Germany. The rate is 2% and the base depends from the consideration, i.e. every payment or service provided by the purchaser to the seller or to another person for the acquisition of the property
NOR: Fully deductible	Imputed rent from owner-occupation is taxed as ordinary income; the rent is assumed to be 2.5% of the property's taxable value (as assessed for net wealth tax purposes), above a threshold of NOK 35000. Actual rental income is generally taxed as ordinary income. Where the tax taxpayer lets out less than 50% of his own house, the rental income is not subject to tax. Income from rent accrued from the letting of a house for half a calendar year is also free of tax	Liable to net wealth tax, which is estimated to be four or five times less than the market value	Capital gains realised from the disposal of owner-occupied housing are exempt from tax if the building has been occupied by the owners for at least one year in the last two; otherwise they are taxable as part of ordinary income. Capital losses are not deductible where capital gains are tax- exempt

Table 14: Taxation of homeownership continued:

Mortgage interest deductibility	Taxation of imputed income	Immovable property tax	Disposal of housing
<p>SWE: As a general rule, interest expenditure is fully deductible against positive capital income (including capital gains), and then against other income up to a ceiling of SEK 100 000, after which only 70% of the expense incurred is deductible against tax</p>	<p>There is no longer a tax on imputed rent from owner-occupation</p>	<p>Liable to tax at 75% of fair market value</p>	<p>The full nominal gain is taxed at the flat rate of 30%. Alternatively, to limit the tax burden in times of high inflation, capital gains on a permanent residence can be calculated at the taxpayer's option as 30% of the sale price of the house, so that with the capital gains tax of 30%, a final tax of 9% is levied on the selling price</p>
<p>UK: Interest incurred on a loan up to a ceiling of £ 30000 per residence, for the purchase of the borrower's principal residence, is allowed as a deduction at the basic rate of 25%. The rate of relief was reduced to 20% in 1994/95 and to 15% in 1995/96</p>	<p>Imputed income from owner-occupied housing is not liable to income tax</p>	<p>The sole tax on immovable property in the UK (non-domestic rates) as of 1 January 1993, was levied on non-domestic property only and was not payable in respect of owner-occupied housing or houses which are let, with the exception of Northern Ireland. However a new tax on immovable property, the council tax, took effect in April 1993.</p>	<p>The principle residence is exempt from capital gains tax where occupied throughout the period of ownership. Secondary residences are subject to capital gains tax upon disposal</p>
<p>US: Taxpayers are allowed to deduct interest expenses on acquisition or home equity indebtedness with respect to a qualified residence. A qualified residence includes a taxpayer's principal residence and one secondary residence. Acquisition indebtedness is debt incurred in acquiring, constructing, or substantially improving a qualified residence and secured by the residence, and it may not exceed \$ 1million. Home equity indebtedness is all debt secured by a residence minus the acquisition indents, and it may not exceed \$ 100 000. Interest expenditure attributable to debt above these limits is treated as personal interest and is therefore not deductible as of 1991</p>	<p>Imputed income from owner-occupation is exempt from taxation</p>	<p>Not applicable at the federal level</p>	<p>Capital gains on a principal residence are theoretically subject to tax. However, liability is deferred when the realised gain is used to purchase another principal residence within two years.</p>

Sources: OECD (1994b): Taxation and household saving: Country Surveys.

The table shows that in general imputed income from owner- occupation is exempt of taxation in most cases, notable exceptions are Norway and Denmark. Countries who do not tax imputed income have ceilings of some form on mortgage interest deductibility, this in contrast again to Denmark and Norway with no restrictions on deductions on mortgage and other interests. Australia constitute a deviant case, combining no imputed income taxation with any deduction of interests, thus principally no tax expenditures in relation to imputed income/interest deduction exist. Preferential tax treatment still exists in relation to immovable property tax and the disposing of asset.

Thus on the basis of the information given in the table above, Denmark and Norway conform to the first condition, while the other countries, with the exception of Australia; conform to the second condition. It should of course be noted that there is a question of degree in relation to asymmetry of taxation. Some countries are more biased toward favourable tax treatment of housing than others. Tanzi (1994) have classified tax regimes for housing in respect of treatment of interest deductions and places Finland, Norway, Sweden and the US in the category of most generous treatment, whereas Australia, Germany and the UK have least generous treatment of interest deductions. On the basis of the information given in table 14 we may safely place Denmark in the first category.

In general housing policy in relation to the social transfer system encompasses direct transfers in the form of housing benefits¹⁶. These are usually designed in the form of targeted benefits aimed at compensating households with low incomes and relatively high housing expenditures. As transfers both favourable tax treatment and direct expenditures have an identifiable effect on the distribution of income, and it is to this effect I will now turn. But first some words on data availability in this field. When it come to direct transfer within the housing area LIS include two variables that is of interest here, they are v28: Housing benefits and the variable NEARCHB (Near cash housing benefits). Data on these targeted transfers within the housing sector is poorly covered in the LIS database. The variable Near-cash housing benefits only include information from Spain 1980. Two of the countries included here have information on V28: Housing benefits, these are Germany and the US (LIS ORIGVIEW 1997). Tax expenditures on housing are not so easily accessed, as there are no variables on this item included in the transfer variable of the LIS study. Therefore we have to use a more indirect method of measuring the distribution of this form of transfer.

Thus in the two following tables I have given the distribution of variable V9: Non cash property income (or imputed income from homeownership) and of V10: Market value of own residence by different quintiles of

¹⁶ A major area outside the direct transfer system, at least in some countries, is of course public housing where the public sector builds and/or finances a sector of publicly owned houses for hire at reasonable cost. Again these are usually considered as selective policies aimed at helping disadvantaged group to secure them basic or sufficient housing.

gross income. The figures reported are average amount within the respective quintile, total average and in addition 'social distance' is measured as average of Q5 divided by average of Q1. The point here is to clarify how the primary distribution of these income items (V9) or bases for income flows (V10) looks like, before they enter the tax system that transforms the income into a distribution of tax expenditure transfers.

Table 15: Non cash property income by quintiles of gross income (Average amounts in national currency).

COUNTRY	YEAR	QUINTILES TOTAL AVERAGE	Q1	Q2	Q3	Q4	Q5	Q5/Q1 Social distance
AUS	1989	3592	3021	3123	2948	3445	5422	1.8
DEN	1987	3764	1263	1872	3197	4804	7687	6.2
DEN	1992	3608	857	1634	3065	4624	7860	9.7
FIN	1987	3002	2660	2437	2716	3012	4185	1.6
FIN	1991	5747	4993	4780	5001	5736	8225	1.6
GER	1989	2575	1458	1619	2537	2758	4466	3.1
NOR	1979	642	169	522	693	608	1217	7.2
NOR	1991	1464	460	1173	1263	1723	2701	5.9
SWE	1981	4560	2168	3129	3163	4772	9550	4.4
UK	1986	426	294	218	375	509	732	2.5
UK	1991	866	523	575	815	1001	1414	2.7
US	1979	364	336	359	354	359	416	1.2

With reservations on comparability (Confer Annex B, pp.) there is some marked differences between the countries regarding the inequality in these income items. All the Nordic countries with the exception of Finland show on average a wider social distance than the Anglo-American countries, whereas Germany is in the middle range between these two groups. The extreme cases in this context are Denmark of 1992 with social distance at 9.2 and the US of 1979 with a very low score at 1.2. The next table gives an additional basis for evaluating the distributive profile of this income item.

Table 16: Market value of own residence by quintiles of gross income. (Average amounts in national currency).

COUNTRY	YEAR	QUINTILES TOTAL AVERAGE	Q1	Q2	Q3	Q4	Q5	Q5/Q1 Social distance
AUS	1989	66710	51919	55256	55330	66152	105187	2.1
DEN	1987	205372	114410	124412	171133	240400	376535	3.3
DEN	1992	200705	81096	120772	174397	238204	389075	4.8
NOR*	1979	17292	6570	14607	17806	21168	29454	4.5
US	1979	22348	12173	16236	19675	23606	40032	3.3

* Norway reports tax value that is assessed far below market value.

The figures here based on fewer data files indicate a smaller range of differences in social distance. Australia has the smallest distance (2.1), whereas Denmark now has the greatest social distance at 4.8. Within LIS a previous more comprehensive study of non-cash income including housing in the form of imputed value of homeownership and non-cash income from education and health (Smeeding, Saunders, Coder, Jenkins, Fritzell, Hagenaars, Hauser and Wolfson 1992) has been made. The general finding of this study in regard of inequality was that non-cash income from education and health had an equalising effect, increasing the income share at the bottom and decreasing it at the bottom (Smeeding et.al. 1992, p17)¹⁷. In the case of housing, the effect on inequality was mixed¹⁸. For Germany the effect was to reduce substantially the gains in distributional equality made by health and education. For Netherlands, Sweden, Canada and the US adding housing benefits reinforced the effect of health and education (Confer Smeeding et.al.1992, table 5 and 6). An indirect and rough comparison of the results found in their study and the results reported in table 15 and 16 can be made by comparing the social distance (Q5/Q1) of housing income with that of disposable income. In case of the US (1979) the result of Tables 15 and 16 is in line with the findings of Smeeding et.al. (1992). Social distance is found to be wider for disposable income (6.05) than for non-cash property income (1.2) and for home equity (3.3). For Sweden (1981) social distance in non-cash income (4.4, confer table 15) is wider than that of disposable income (2.9). For the rest of the countries Australia (1989), Finland (1987 and 1991), Germany (1989) and UK (1986 and 1991) reveal smaller social distance in non-cash property income than of disposable net income. Denmark and Norway disclose an opposite pattern, where social distance in housing benefits for homeowners is wider than for disposable net income¹⁹. Thus we may conclude that there is no uniform pattern identified regarding how the inclusion of imputed income from housing affects income distribution. But leaving this item of income without considering how the tax treatment of imputed income of homeownership affects income distribution is insufficient. It means that the question of how favourable tax treatment of homeowners, conceptualised as a tax expenditure transfer is ignored in distributional analysis of income. Therefore to incorporate fully the fiscal element of Titmuss' (1963) social division of welfare spending (public, occupational, and fiscal) must imply more than recognising that: "tax expenditures are implicitly incorporated into the LIS framework because they affect taxable income and are thus allowed for when deriving disposable income from gross income" (Smeeding et.al. 1992, p. 8). To make visible the distributive consequences of tax expenditures imply explicit and separate

¹⁷ The study includes the following countries: Australia, Canada, Netherlands, Sweden, United Kingdom, United States and (West) Germany. Data on non-cash income from education and health was available for all countries, whereas in the case of housing data was lacking for Australia and United Kingdom. The data reflected the time period 1979-1983.

¹⁸ The method for estimation of imputed rent was to use a 2 percent real return on top of the change in overall consumer prices for a country in the year of study. This percentage was multiplied by home equity to estimate imputed rent (Smeeding et.al. 1992, p11).

¹⁹ Social distance for disposable income measured as Q5/Q1 of disposable net income of households with positive net income were as follow: Australia 1989: 5.5. Denmark 1987: 4.2, 1992: 3.8. Finland 1987: 3.6, 1991: 3.7. Germany 1989: 3.9. Norway 1979: 3.6, 1991: 3. UK 1986: 4.5, 1991: 6.0.

analysis of them. The question is how the primary distribution of imputed income for housing is converted into a distribution of tax expenditure transfers for housing made possible by passing a preferential tax treatment of this income type.

On the basis of the very limited data available I have made an indicative estimate of the distribution of tax expenditure transfers for housing. The following two tables give the results based on the two different variables V9 and V10. In the case of V9 (non cash property income) I have estimated tax expenditures by using the average tax rates paid of the relevant quintile adapted from table and multiplied with the imputed value of V9. Using V10 as a basis I have calculated tax expenditures by first using a net interest rate for imputation at 5%. In this case tax expenditures are calculated as $(V10 * 0.05) * \text{tax rate}$. The calculations are made under the assumption of identical systems of favourable tax treatment of imputed income from housing in all countries: imputed net income from homeownership is tax exempt. Thus, this comparison does not take into account the real differences in taxation of imputed income. As table 14 reported in the case of Australia, there is no taxation of imputed income. But on the other hand there is no option for the deduction of mortgage interests. Therefore theoretically symmetry exists between the treatment of income and expenditure, and therefore no tax expenditure exists. As long as income and expenditure cancel out each other in practice there will be no difference in revenue terms between this system and a system where imputed income is taxed and expenditures are fully deductible, since net income will be zero. But if there exist on average a positive net income as is indicated in the tables above then symmetry of the first kind imply a preferential tax treatment of imputed income²⁰. On the other hand if a negative net income on average is present, than this symmetry indicate a tax penalty. The Danish and the Norwegian system combines taxation of imputed rent with full deduction of mortgage interest. Full symmetry lacks because income imputation is modest and below market value (particularly in the Norwegian case) whereas expenditures are included at market value. There have been some changes in the two systems. Since 1987 in Denmark and 1992 in Norway imputed income is now taxed at a flat rate. In Denmark the flat rate was 40% and in Norway 28% in 1992. These changes will affect the distribution of tax expenditure transfers toward less inequitable distribution of this transfer. Taxed at a flat rate the distribution of tax expenditures will now only reflect the primary distribution of this income item²¹. Therefore in the Danish case the figures reported in table 17

²⁰ This does not mean that all homeowners under such a system would benefit, but will depend on whether their net income would be positive or negative. For taxpayers with a positive net income the existing system of symmetry is preferable. For taxpayers with negative net income a tax system with taxation of imputed income and fully deductible expenditures would be preferable. In a life time perspective we may expect that homeowners will start with a negative net income, because of high expenditures in the form of mortgage interest payments, and than as payments are reduced over the time span a net income will accrue. If on average and seen in a life time perspective a positive net income from homeownership accumulate than a system of non taxation of imputed rent or income imply a preferential tax treatment of homeownership and hence a tax expenditure do exist.

²¹ In practice however there will be some progression since both systems countries have some lump sum standard deductions built into their system. In the Norwegian case a standard deduction of 35000NOK for the assessed value, whereas in Denmark a standard deduction in imputed income of 2000DK is given.

and 18 will overstate the social distance and inequality present in this tax expenditure. The real distribution will be closer to the primary distributions reported in tables 15 and 16. On the other hand the importance of this transfer for the highest quintile of gross income will be understated since the tax rate used is significantly lower than the flat rate 40% tax. For the other countries the figures below should give a reasonably good account of the distributive profile and relative importance for different income groups of this transfer.

In order to compare the distributional differences of the hidden and the visible welfare state I have included the distribution of total social transfers for different quintiles of gross income. Where data are available on housing benefits as for Germany 1984 and the US 1979 the distribution of this targeted benefit is also included in the two tables.

Table 17: The distribution of tax expenditure transfers for housing (based on v9) and total social transfers by quintiles of gross income (Amounts in national currency).

COUNTRY	YEAR	TYPE OF TRANSFER:	QUINTILES TOTAL AVERAGE	Q1	Q2	Q3	Q4	Q5	Q5/Q1 Social distance
AUS	1989	TAXEXP	520	211	231	489	716	1458	69.40
AUS	1989	SOCTRANS	2294	4724	3996	1345	887	517	0.11
DEN	1987	TAXEXP	1008	150	443	997	1585	2644	17.60
DEN	1987	SOCTRANS	34573	40039	46150	27103	22164	37410	0.93
DEN	1992	TAXEXP	1006	101	364	962	1613	2987	29.60
DEN	1992	SOCTRANS	42258	51589	69256	44376	27128	18935	0.36
FIN	1987	TAXEXP	633	194	419	847	798	1318	6.80
FIN	1987	SOCTRANS	9947	16736	12553	8333	6844	5286	0.31
FIN	1991	TAXEXP	1126	374	764	1075	1393	2360	6.30
FIN	1991	SOCTRANS	14266	21697	17935	12607	10399	8703	0.40
GER	1989	TAXEXP	496	46	176	520	1606	2796	60.80
GER	1989	HOUSING BENEFITS	73	250	90	8	7	11	0.04
GER	1989	SOCTRANS	6649	9547	11044	7020	3690	1954	0.20
NOR	1979	TAXEXP	125	5	66	138	164	391	78.2
NOR	1979	SOCTRANS	9888	16639	15014	7909	5374	4491	0.27
NOR	1991	TAXEXP	264	20	165	252	406	761	38.0
NOR	1991	SOCTRANS	33074	49648	50966	28017	22342	14427	0.29
SWE	1981	TAXEXP	1140	227	638	850	1450	3523	15.5
SWE	1981	SOCTRANS	21303	21144	27252	20110	18143	19864	0.94
UK	1986	TAXEXP	66	13	20	68	107	176	13.5
UK	1986	SOCTRANS	1473	2070	2395	1363	932	605	0.29
UK	1991	TAXEXP	124	10	36	131	218	364	36.4
UK	1991	SOCTRANS	1734	2895	2879	1560	821	518	0.18
US	1979	TAXEXP	53	9	31	52	70	113	12.5
US	1979	HOUSING BENEFITS	24	87	23	4	2	1	0.01
US	1979	SOCTRANS	1056	1627	1462	927	607	660	0.41

Table 18: The distribution of tax expenditure transfers (based on V10) and total social transfers by quintiles of gross income. (Amounts in national currency).

COUNTRY	YEAR	TYPE OF TRANSFER	QUINTILES TOTAL AVERAGE	Q1	Q2	Q3	Q4	Q5	Q5/Q1 Social distance
AUS	1989	TAX EXP	483	18	204	458	687	1414	78.50
AUS	1989	SOCTRANS	2294	4724	3996	1345	887	517	0.11
DEN	1987	TAXEXP	2751	680	1474	2669	3966	6476	9.50
DEN	1987	SOCTRANS	34573	40039	46150	27103	22164	37410	0.93
DEN	1992	TAX EXP	2799	482	1346	2738	4156	7567	15.70
DEN	1992	SOCTRANS	42258	51589	69256	44376	27128	18395	0.36
NOR*	1979	TAX EXP	873	52	467	983	1434	2370	45.60
NOR	1979	SOCTRANS	9888	16639	15014	7909	5374	4491	0.27
US	1979	TAX EXP	163	17	70	146	231	544	32.00
US	1979	HOUSING BENEFITS	24	87	23	4	2	1	0.01
US	1979	SOCTRANS	1056	1627	1462	927	607	660	0.41

*In this case calculations have been made on the basis of grossing up the v10 value from tax value (about 20% of full market value) as originally reported in the LIS variable to real market value.

The first point to notice is how the tax treatment convert the primary distribution of this income item into a highly inequitable distribution of tax expenditure transfers. In all countries the distribution of this indirect public social transfer is radically different from the pattern generally identified for public social transfers. Total social transfers are in all countries distributed progressively toward decreasing income. In this case we also see that the social distance is less than 1. Tax expenditure transfers in contrast distribute favourable toward increasing household income and the social distance in this transfer is well above 1.

The contrast is even more outspoken when we compare this program with the strongly targeted program of housing benefits. These benefits are distributed strongly in favour of households with low incomes as the German and US case reveal. The tax expenditure transfer for housing must also be classified as a targeted program, since it discriminates against hirers. In addition it also discriminates in favour of homeownership- households with higher incomes. Thus the general 'upside down effect' of many tax expenditures originally identified by Surrey (1973) is still present in the case of housing²².

If we calculate the share of tax expenditure transfers as percentage of total social transfers this will indicate the relative importance of the tax expenditure transfers for high-income households. For the top quintile of gross income in Australia the tax expenditure transfer program for housing on average amounts to 282% of

²² To this must be added the time perspective of this kind of social transfer. You qualify to receive benefits from this program by holding the status of a homeowner. Homeownership may be a status of almost lifelong duration or at least over three to four decades. This time perspective is in most cases radically much longer than in other situations where certain social conditions qualify for a status that imply the receiving of social benefits or transfers, such as unemployment, sickness and old age. Only under conditions of life long disability or invalidity as a result of chronic disease or accidents may the time perspective involved be as long or longer as in the case of homeownership.

total social transfers in the year of 1989. (Figures refer to v10, table 18). For the other countries the following figures are present for the top quintile of gross income: Denmark 1989: 17.3%. Denmark 1992: 41.1% (Figures based on v10, table 18). Finland 1987:24.9%. Finland 1991: 27.1% (Figures based on v9, table 17). Germany 1989: 143% (Figures refers to v9, table 17). Norway 1979: 52.7% (Figures refers to v10, table 18). Sweden 1981: 17.7% (Figures refers to v9, table 17). UK 1986: 29%. UK 1991: 70.2% (Figures refers to v9, table 17). US 1979: 82.4% (Figure refer to v10, table 18). In all countries for this group the tax expenditure transfers for homeowners of the hidden welfare state is of substantial importance if compared to the total social transfers of the visible welfare state. In two of the countries Australia and Germany, tax expenditures even exceeds total social transfers for this group. The general picture indicate that the relative importance of tax expenditures for housing to social transfers, is highest in the countries representing more residual systems of welfare, with the exception of UK of 1986. More moderate levels are observed in countries representing more universal models of welfare. The exception here is Germany.

5.0 SUMMARY AND CONCLUSIONS

The main aim of this paper has been to focus on how income taxes, social transfers and social tax expenditure transfers impact the goal of redistribution and reduction of income inequality. First it should be noted that in all of the eight countries the tax and transfer system does redistribute income in such a way that a substantial reduction in overall income inequality is accomplished. This is an important finding, since the view have been put forward especially by some economists that the welfare state does not effectuate any redistribution, but only represents a costly circulation of money by a public bureaucracy (Tullock 1983, cited in Rothstein 1994). Such a view can not be supported by the empirical findings of this study. There exists important variation between the countries regarding their general redistributive capacity. The Swedish tax/transfer system affects income inequality massively by reducing it by almost 50% from market income to disposable net income. On the other hand the US manage a much more modest reduction of inequality by just below 20%. The two other English speaking countries also have relatively modest reductions around 25%. Denmark and Germany both have reductions above 40% followed by Norway with reductions close to or below 40%. Finland reduces its overall income inequality by just above 30%.

This overall reduction is accomplished through the use of taxes and transfers. Regarding the income tax system, redistribution measured as relative reduction of Gini coefficient from gross to net income, showed that on average for the period the US and the UK had the least redistributive systems, with Gini reductions around 12%. For the other countries the similarity in respect of relative reduction is the striking feature. All the other

countries were placed within the range of 14.2 to 17% reduction. Within this bound Germany revealed the strongest reduction by this measure whereas Denmark revealed the lowest.

But fairly similar levels of Gini reductions may hide interesting variation of the design of the income tax institution as discussed in the section on income redistribution and the welfare state. Two factors are decisive here, income tax level and progressiveness and on both these dimensions the comparative analysis have identified interesting variations between the countries. Two extreme cases illustrate this relationship. The Australian income tax system of 1985 combined high levels of progressiveness (Q5/Q1: 69.3) with relatively low level of taxation (14.8 %). The Swedish tax system of 1987 by contrast combined low levels of progressiveness (Q5/Q1: 2.1) with substantially higher level of taxation (29.4%). This trade off between income tax level and progressiveness is present although to different extent, in all the countries. Again the family of English speaking countries form a group that combine low tax levels with relatively higher levels of progressiveness. The Nordic countries combine high tax levels with more modest levels of progressiveness, this profile is most outspoken in the Danish and Swedish case. Germany is placed in between these two groups both in respect of tax level and progressiveness.

The differences identified between the group of countries regarding the redistributive capacity and design of their tax system are paralleled even more pregnant when we move to the social transfer system. The distance in redistribution is vast between the US system of social transfers only reducing income inequality from market income to gross income by meagre 8 to 9% and on the other hand Sweden with reductions above 40%. Denmark, Germany and Norway (at least for 1991) joins with Sweden to form a group of countries with reductions in Gini- coefficients from 30 to 40%. Finland and the UK form a pair with more moderate levels of social transfer redistribution with reductions in the range 17 to 20%. And at last low reductions of income inequality ranging from 8 to 13% is found in Australia and the US systems of social transfers. Australia and the UK are unique in the sense that for these two countries the income tax system is more important for reducing income inequality than the social transfer system. This picture fits generally well with what we know about the welfare state systems of these countries. The Nordic welfare states and Germany combine high overall tax level with a universal social transfer system. The social transfer system is characterised by a generally high benefit level. In an income redistribution perspective this means a substantial transfer of income to households with low market income, but also significant transfers to households with medium and higher incomes. It is thus the high levels of transfers that explain their highly redistributive effects in these countries. This in contrast to the more selective welfare states where a low level of overall taxation goes together with the provision of lower levels of social transfers. In this context social transfers are and have to be more targeted towards those with lower incomes and the poor, whereas households of medium and higher incomes receives much more meagre social

transfers as share of their incomes. This is the case for the US and Australia, whereas the UK and Finland makes a pair of countries that in social transfer redistribution place themselves between the universal and the selective welfare states.

In the broader perspective levels of taxation and social transfers better explain the difference in redistributive capacity of welfare states, than the degree of progressiveness of these factors.

The broad logic of these two different systems could be described as follows. The low revenue capacity of the selective welfare states implies resource scarcity. In redistributive terms these scarce resources have to be distributed unequally and targeted towards the poor to have any redistributive effects at all. This selectivity of benefits is mirrored by a similar selectivity of taxation as revealed by a strong emphasis on progressiveness. Thus vulnerability is built into this system. This is so because a clash of interests between redistributive winners (the poor) and losers (rich tax- payers) is so clearly accentuated by the design of the tax and transfer institutions. In this sense the universal welfare states are more robust since the institutional design does accentuate an identity of interests between contributors and receivers. They have high revenue capacity enabling a system combining generous provision of transfers to the whole population and because of this also resulting in a strong redistributive effect. Thus a distinction between vulnerable and robust welfare states in respect of redistribution can be made to designate these institutional differences.

On the background of these broad characteristics I will now turn to the major changes of income distribution through the period analysed. There has been a change toward growing inequality of market incomes in seven out of the eight countries. Have this growing distance of market incomes also been converted into an increase in disposable income inequality and hence to a reduction of relative redistributive capacity? The data provided here show no uniform change in that direction. Australia, Denmark, Germany and Norway increase their redistribution, whereas Finland, Sweden, UK and the US reduce their overall redistributive efforts. For Sweden the last decade could be seen as a period of normalisation in income inequality terms. Whereas Sweden had a significantly lower inequality of disposable income than her neighbouring Nordic countries in the beginning of the period, the four countries now reports almost identical Gini coefficients of inequality.

Concentrating on the income tax system a more uniform direction towards less redistribution is identified. In five of the countries, Finland, Norway, Sweden, UK and the US this change are identified. Australia shows no change, whereas Denmark and Germany increase the redistributive capacity of their tax system. The most dramatic downward change of redistributive capacity is found in Sweden, which in redistributive terms of its tax system now is close to the US, both with Gini reductions around 11%. Income taxation as a tool for redistribution also decreases in relative importance over this time period when compared to the role of social transfers. In six of the eight countries the relative importance of taxes is reduced, whereas social transfers grow

in importance for total redistributive effort. Again Denmark and Germany change in the opposite direction, increasing the use of income taxes as a tool of redistribution. These countries also show an increase in average income tax payments as measured against gross income. Australia shows no change, whereas the other five countries reduce the average income tax take. Sweden has the welfare system that most heavily leans onto the pillar of social transfers to enforce its redistributive policy. This bias has been increasing so that social transfers now accounts for nearly 90% of total reductions in income inequality. This in sharp contrast to the US where the income tax system is more important than social transfers in reducing income inequality does. A similar division of labour was previously also present in the Australian case, but at the end of the period social transfers account for slightly more than 50% of total Gini coefficient reduction.

In light of the summary of changes described above the general impact of the major tax reforms of the eighties have been to weaken the income tax as an institution for redistribution. To explain this outcome a decisive factor to include is what may be called the revenue context of income tax reforms. In most countries tax reforms were made in a context of revenue neutrality or in practice revenue reduction. In no country was revenue increase a feasible option for the income tax reforms. Within these frames to keep or enhance redistributive efforts one solution would be to increase progressiveness. Again in most countries this was not a possible solution, since the goal of reducing the top tax rates was high on the tax reform agenda. In the two countries (Australia and the UK) combining reduction of average tax levels with increase of tax progressiveness only Australia managed to keep redistributive capacity unchanged. In spite of increased progressiveness, the UK experience a loss in redistribution. The effect of base broadening for redistribution can not be accounted for here, but a reasonable guess would be that it has contributed positively by dampening the negative effects of average tax reductions and reduced progressiveness.

In analysing the redistributive effect of tax expenditures within the area of housing a case have been made for integrating these items of income and transfers more fully into income distribution analysis. On the basis of the limited data available the finding is that in all countries the distribution of this tax expenditure transfer is radically different from direct social transfers. Whereas the last ones are distributed favourable towards decreasing household income, the former show the opposite profile. Clearly the inclusion of this tax expenditure transfer as a social transfer would have affected the redistributive capacity of social transfers negatively. Further research in this area should aim at extending the limited data coverage on these items both by country and in a time perspective. As tax expenditures are present within most areas of social policy, data should reflect this by covering their presence within, pension, health and family policy. The persistent problem of comparability of tax expenditures that results from differences in national definitions could within the LIS context been addressed adequately by overcoming such national biases in definitions.

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ANNEX A.

Table A1: Sensitivity of Gini coefficient on exclusion/top bottom coding of cases: Gini coefficients for market income distribution

COUNTRY FILE (LIS abbr.)	All households included. No re- coding	Households with positive market income	Households with market income gt 1% of p50 (all households included)	Castles and Mitchell (1993). Zero incomes included, negative recoded as zero (1)	Atkinson, Rainwater and Smeeding (1995) Negative incomes adjusted to a uniform bottom code)
AS81H	0.4493	0.3895		0.4140	0.3690
AS85H	0.4670	0.4144	0.3977		0.3910
AS89H	0.4794	0.4366			
DK87H	0.4738	0.4547			
DK92H	0.5008	0.4795			
FI87H	0.3799	0.3685	0.3642		0.3790
FI91H	0.3764	0.3685			
GE78H	0.4725	0.4064		0.4070	
GE84H	0.5113	0.4621	0.3715		0.3950
GE89H	0.5642	0.4680			
NW79H	0.4536	0.3796	0.3750	0.3850	0.3350
NW86H	0.4332	0.3789			
NW91H	0.4443	0.4244			
SW81H	0.4753	0.4323		0.4170	0.4110
SW87H	0.4952	0.4714	0.4563		0.4390
SW92H	0.5260	0.5038			
UK79H	0.4646	0.4106		0.3930	0.3650
UK86H	0.5328	0.4623	0.4402		0.4280
UC91H	0.5288	0.4732			
US79H	0.4519	0.4077		0.4250	0.3880
US86H	0.4738	0.4283	0.4144		0.4110
US91H	0.4803	0.4370			
US94H	0.5092	0.4630			

1. The data presented in Castles and Mitchell's (1993) is adapted from Mitchell's (1991) study: "Income transfers in ten countries". Treatment of negative and zero incomes: Zero incomes are included and negative incomes were recorded to zero.

ANNEX B: VARIABLE CONTENT AND COUNTRY COVERAGE OF LIS VARIABLES V9 FAMILY (UNIT) NON CASH PROPERTY INCOME AND V10 MARKET VALUE OF RESIDENCE (HOMEOWNERS)

The following country files include values on the V9 variable: AS89, CH82, DK87, DK92, FI87, FI91, FR79, GE84, GE89, HU91, HU94, IS79, IS92, IT86, NL83, NW79, NW91, RC86, RC91, SP90, SW91, UK86, UK91, US79.

There are differences in country definitions of this variable that reduce possibilities of meaningful comparisons. Table B1 sums up some of the differences.

Table B1: Variable content and country coverage of variable V9.

FAMILY UNIT CASH PROPERTY INCOME: No information on estimation/imputation given	FAMILY UNIT CASH PROPERTY INCOME: Countries where information on estimation/imputation is given.
CH82, GE84, GE89, IS79, IS92, RC86, SP90, UK86	AS89: Real return on homeownership: 2%p.a.
	DK87: inadequately filled, include imputed rental value.
	DK92: confer DK87
	FI87: imputed gross rent
	FI91: confer FI87
	FR79: rental value of owner occupied housing
	HU91: compensation for property confiscated under the former regime
	HU94: confer HU91
	IT86: net rental value
	NL83: implicit rent (tax law) or imputed rent
	NW79: imputed rent according to tax law
	NW91: Confer NW79
	RC91: imputed net rent
	SW91: Market value of owned house and vacation house minus debt
	UK91: imputed income from owner occupied housing
	US79: imputed rental value

Source: LIS ORIGVIEW 1997

The first column indicates that there are no deviations reported in relation to the variable heading. The second column includes those country files where background information is given and where there may be variation in definition compared to the variable heading.

The following country files include value on the V10 variable: AS89, CN91, DK87, DK92, GE81, GE84, HU91, HU94, IS79, IS92, IT91, NL83, NL91, NW79, NW91, RC86, RC91, SP90, SW81 AND US79.

There are problems of comparability involved, as there exist differences between countries regarding what is included under the heading 'market value of residence for homeowners'. Table B2 sums up the major differences of the figures reported for this variable:

Table B2: Variable content and country coverage of V10.

MARKET VALUE	ESTIMATED MARKET VALUE: Comments on estimation
AS89, CN91, HU91, HU94, IS79, IS92, IT91, NL83, SP90,	DK87,DK92: Value of own building (Not necessarily inhabited by owner) possible overestimation
	GE81, GE84: field in error
	NL91: What is the estimated market value
	NW79: Estimated according to tax assessment (strong underestimation, my comment)
	NW 91: Confer NW 79
	RC86,RC91: Book value -depreciation
	SW81: Assesed values times køpskillingskoefficienten (the purchasing value of houses actually sold this year).
	US79: Estimated market value.

Source: LIS ORIGVIEW 1997.