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Luxembourg Income Study Working Paper Series

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Inequality and Poverty in Old Age

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INEQUALITY AND POVERTY IN OLD AGE

A Comparison Between West Germany,
the United Kingdom, Sweden, and Switzerland

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Inequality and Poverty in Old Age.

A Comparison Between Germany, the United Kingdom, Sweden and Switzerland *

1. Introduction

The maintenance of adequate living standards and the abolition (or prevention) of poverty in old age are probably among the most commonly shared goals of social policy in Western welfare states. In a closer analysis, however, they appear to represent different goal dimensions of old age security policy which are not easily rendered compatible. Indeed, there are inherent tensions between the two goals which are often not fully recognized.

The maintenance of adequate living standards requires that retirement income be somehow related to previous income from employment, and that there be a certain degree of continuity in the relative income position (and hence the relative social status) of the individual. At the level of the social structure, this means that inequalities in the distribution of market-related income are to some degree to be preserved and transferred from the employment phase to the phase of retirement.

The goal of prevention of poverty in old age, on the other hand, is based on the assumption of a social right of every citizen to a basic minimum of existence to be secured by public policy. This basic minimum - however it may be defined in operational terms - is necessarily bound to be need-related (and not related to previous income). Hence it calls for at least a limited redistribution of resources (in favour of those with low or no income at all), but does not preclude the persistence of inequalities beyond that minimum level.

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Moreover, it is sometimes advocated for the sake of equality (as the legitimizing goal dimension of the welfare state) to reduce existing income distinctions, whether in work or in retirement income. This goal explicitly demands a redistribution of resources not only between generations (or between different periods of the life-cycle), but also between social classes or other social collectivities characterized by income differentials. In that sense, it apparently is in conflict with the aim of ensuring security of attained social status.

Despite the broad consensus on the major goals of old age security policy referred to in the beginning, it is likely therefore, that countries (and parties within countries) will differ in the emphasis they place on one or the other goal, due to cultural and ideological preferences. While such differences can be easily identified in policy statements of various parties, indeed not very much is known about actually existing patterns of inequality and poverty among the elderly - at least in a comparative perspective.

The first task is, therefore, to examine and assess empirically and in a cross-nationally comparable framework the structures of inequalities in living standards of the elderly. This will provide a basis for inquiring further into the causes and forces which generate these structures and, in particular, for considering the potential of social policy measures of various kinds to exert influences on them. The point has been made that "comparative research on income distribution should focus much more on the process of income attainment in old age and its cross-national variability" (HEDSTRÖM/RINGEN 1985: 33), because it is assumed that the impact of public policies can be studied most clearly in this field.

It is hypothesized here that the patterns of inequality and the incidence of poverty among the elderly are shaped by two main sets of factors:

- by the mix of different income sources as reflected in the "income packages" of elderly households, especially by the mix of market and state-provided income (or private and public provisions), and
- in addition, by the institutional arrangements of public pension schemes (to which other public transfer and tax schemes may be added).

This distinction is meant to draw attention to the fact, sometimes ignored, that public pension schemes form only part of the "societal" arrangements for old age and the respective "societal" outlays (with considerable cross-national variation). It does not mean, however, that the so-called private (and occupational) pension arrangements are (or should be) completely outside the range of political control and regulation. Given the usually large volume of public pension expenditures, their benefit (and financing) structure is then expected to be of crucial importance and to exert an independent influence.

For the empirical analysis, four countries have been selected which - based on preliminary knowledge - seem to represent different patterns of the public/ private mix as well as structurally different approaches in public pension schemes: the Federal Republic of Germany, the United Kingdom, Sweden, and Switzerland. In terms of total public pension expenditures, Germany and Sweden are among the "big spenders", whereas in the United Kingdom and in Switzerland expenditure levels are considerably lower, and occupational and private pension arrangements seem to be of greater importance.¹

In structural terms, the British and the Swedish public pension schemes are similar insofar as both countries have originally followed the "Beveridge model" of flat rate schemes and have later supplemented them with earnings-related supplementary schemes. The German and Swiss public pension schemes, on the other hand, are in principle earnings-related insurance schemes which are modified, however, - especially in the Swiss case - by minimum and maximum pensions. Thus, these four countries lend themselves for varied "matched comparisons".

But before any such hypotheses can be tested, it is first of all necessary to analyze and describe in sufficient detail and in a comparable way the empirical evidence concerning the dependent variable, i.e. the patterns of inequalities in living standards and the risks of poverty. This comparative description can in itself serve as a (broad) evaluation of the overall performance of the "societal" systems of old age security with regard to the above mentioned goal dimensions.

2. Concepts and measures

The following analysis is based on representative household income surveys carried out in the various countries around 1980 which have been made comparable and available for secondary analysis in the organizational framework of the LIS project.² These data sets probably provide the best data bases presently available for cross-national comparisons concerning problems of income distribution and redistribution.³

Some methodological notes seem to be in order, concerning the concepts and indicators used to describe the patterns of inequalities among the aged.

What we are finally interested in is the economic well-being and the living standards of elderly people in the different countries. These individuals live their lives, however, in the social context of families or households, and thus share the common living arrangements of the households to which they belong.⁴ Therefore, the family or the household, respectively, is the proper "accounting unit" for income and consumption by which the living standards and, in a wider sense, the life chances of the individual members are determined. It is in the social framework of the private households where resources of various kinds (cash income, above all) are pooled, combined and redistributed for satisfying the needs of its members. To be sure, this is a resource concept by means of which we measure indirectly the attainable living standards - not those actually attained which are modified, among others, by differences in consumption patterns and life styles.

It follows from this conceptual approach that we cannot study the income and living standards of the elderly individuals as such, but only the living standards of households the head of which is defined as "old". It may be, however, that members will belong to so-defined "elderly households" who are not old, but will contribute to and/or depend on their resources.⁵

For most of the following analyses, households are defined as "elderly" when the head of household is aged 60 years or more. Sometimes, however, the age limit of 55 years is applied in order to capture cross-national differences in the timing of the transition process from the workforce to retirement status. Not all elderly households, so defined, can be considered pensioners' households, since members may still be gainfully employed and receive larger shares of their household income from earnings. In accordance with LIS conventions, pensioners' (or "retired") households have operationally been defined as comprising only those households

- which receive at least some kind of retirement income (public or occupational pensions) and
- where income from work contributes less than 25% to their disposable household income (see ACHDUT/TAMIR 1985: 11).

The basic income measure, used here for distributional analyses, is "net disposable household income (after tax)". For this purpose, all the various kinds of market and transfer income received by the different household members are first aggregated to "household gross income" before personal income taxes are deducted (see below 4.1., Table 4).

The same disposable household income will, however, lead to highly differing standards of living if attributed, for instance, to a two-person household or a four-person household. Likewise, cross-national comparisons (and even comparisons of subgroups within nations) will be hampered because of differences in average household size. In order to arrive at a valid measure of economic well-being of individual household members, some adjustments are to be made for the different needs of households of various size. Economies

of scale in household equipment and living arrangements have to be taken into account, and it should be assumed that the living standard a household can afford is equally shared by all its members. These aims can be accomplished by using equivalence scales by means of which equivalent levels of economic well-being are defined for households of different size.⁶

Here, the standard LIS equivalence scale is applied which attributes a weight of 0.50 to the head of household and of 0.25 to each additional person, so that it is normalized to a three-person household (unit weight = 1).⁷ Thus, an equivalent income can be derived by dividing the net disposable income of the household by the appropriate equivalence factor. The resulting "net equivalent income" (or "adjusted disposable income", as HEDSTRÖM and RINGEN call it) characterizes the living standard attainable for the household as well as for the individual members. It can, therefore, justifiably be interpreted as an adequate measure of economic well-being rather than merely as an income measure. The distribution of net equivalent income, weighted by persons, is then the basis of our analysis of inequality of living standards and of poverty, respectively.

3. Patterns of inequality and poverty

3.1. Intergenerational inequality

There is first the question of how the elderly share in the general wealth of the country, how their average living standard compares to those of the younger age groups still engaged in economic activities. Insofar as it is an accepted goal of old age security policy, that the living standards attained during working-life should be preserved and continuity of income should be assured during retirement, no sudden drop in equivalent disposable income and certainly no further loss during the retirement period should occur.⁸

Strictly speaking, however, cross-sectional differences in relative income positions of different age groups should not (or only with some precaution) be interpreted in a longitudinal perspective as the income profiles of households growing older and passing through the various stages of the life-cycle. The reason is that the income profiles of subsequent cohorts are subject to historical events and economic vicissitudes (as well as perhaps different social security provisions) which are likely to work out differently.

Even so, it is an interesting question from a social structure perspective whether households of different age groups enjoy similar or markedly different living standards, and whether cross-national differences can be observed in this respect. In addition, from the view of social policy we are interested to know whether there are differences in living standards within the elderly population, systematically associated with age. Such differences are usually assumed to be avoided.

Indeed, as HEDSTRÖM and RINGEN have demonstrated for a larger sample of countries (1985: 17 ff., Table 5), the economic well-being of families fluctuates considerably over the life course. Typically, the relative economic position of younger households is depressed mainly because of child-rearing; it remains below the average for the age groups (of heads of household) up to 45 years. Households usually reach their economically most comfortable positions when household heads are between the ages of 45 and 60 years, but then experience a distinctive drop in welfare when they retire from working-life.

We have followed their methodological procedure, but - focussing on the elderly - we have specified 5-year age groups in order to get more detailed results (see Table 1).⁹

The general pattern is confirmed that the (already adjusted) disposable income of elderly households declines with increasing age (of head of household) indicating that old people will usually suffer from severe deterioration of their attainable living standards the older they grow.

Table 1: Relative Mean Net Equivalent Incomes Across Various Age Groups
(national average = 100)

Age group	Fed. Rep. of Germany	United Kingdom	Sweden	Switzer- land
- 24	89	99	86	81
25 - 34	87	97	100	94
35 - 44	92	97	98	92
45 - 54	128	120	112	105
55 - 59	116	122	121	124
60 - 64	94	109	113	130
65 - 69	94	81	102	115
70 - 74	78	70	91	98
75 +	81	67	78	91
all - 59	104	105	102	98
all 60 +	86	82	95	108

What is more interesting in our context, however, are the national deviations from the general trend. In West Germany, for instance, the decline in relative economic status of the elderly begins very early. As soon as they reach the age of 60 years, their income position is already below the national mean. But differences between the various age cohorts among the elderly people seem to be smaller than in the other countries.

The drop in economic well-being is most clearly pronounced for the elderly in Britain where the very old (75 years and over) only attain slightly more than half of the (adjusted) disposable income of those in the 55 - 59 years age group. The very old are also placed at disadvantage in Sweden, but here the relative income position of younger pensioners (below the age of 70 years) is above the national average.

The most surprising finding, however, is that Switzerland shows the most comfortable economic position for older people among all the four countries under study. Even the oldest age groups fall only slightly below the national average. Astonishingly enough, the maximum economic well-being is reached by households in the 60 - 64 years age group, later than in any other country.

Comparing the relative economic positions of all elderly households with heads over 60 years of age with those under 60 years, Switzerland still exhibits a more favorable position for the older than for the younger ones. In all the other countries, the older households are worse off (and the younger ones correspondingly better off) than the average. While in Sweden the difference is rather small (5%), they fall behind by 14% in Germany and even by 18% in Britain.

These findings are confirmed when comparing the situation of "retired" households (in the narrow sense defined above) to that of non-retired households among those aged 55 years and over. The economic situation of the "retired" households is worse in all countries, their level of living being on the average only about two thirds of the latter (KOHL 1987: 708).¹⁰ The distance is again most marked in Britain where "pure" pensioners' households dispose of slightly more than half of the resources available to non-pensioner elderly households. This points to a low level of retirement income (not only of statutory schemes).

3.2. Intragenerational inequality

The evidence presented so far referred to differences in the average standard of living between age groups, expressed as relative means. Such a perspective neglects, however, the distribution of income within each age-of-head group, i.e. differences among households of the same age groups, which are also - and perhaps more - interesting from a social policy perspective. Therefore we now turn to an examination of intragenerational inequality and, particularly, the degree of inequality among the elderly population.

How the existence of such inequalities is to be interpreted and evaluated, depends on the priorities attached to the distributional goals in old age security policy referred to in the beginning of this paper. If, for instance, the dominant goal is considered to be the maintenance of relative social status, such inequalities must be accepted as a corollary of the inequality structure generated before retirement. Besides, they can eventually be justified by reference to the principle of equivalence insofar as the levels of social benefits may be related to differences in the amount of contributions paid into insurance schemes. If, on the other hand, such inequalities in market income distribution are questioned as illegitimate or at least exaggerated in size, the policy goal should be to reduce the impact of existing inequalities at least for the retirement period. In fact, there seems to be a broad consensus at least that inequalities in living standards should not be widened during retirement. In particular, there is widespread agreement that retirement income should not fall short of a certain minimum level which is tantamount to say that poverty in old age should be avoided.

Apart from these normative considerations, it is an interesting and important matter-of-fact question whether and to what extent the inequalities of market income distribution are reproduced rather than reduced in the distribution of retirement income.

The interpersonal distribution of living standards, and hence, intragenerational inequalities among the elderly, are here analyzed by means of the following standard indicators:

- Gini coefficients which are comprehensive statistics characterizing the overall concentration of income in a given (sub-)population; the higher these coefficients - ranging from 0 to 1 -, the more unequal the distribution;
- the bottom and top quintile shares which provide additional information for the two most interesting sections of the income distribution; they show the shares of total income resources at the disposal of the lower and upper 20% of the population.

Table 2: Income Inequality Within the Elderly Population:
Gini Coefficients and Income Shares of Bottom and Top Quintiles (Based on Equivalent Net Income)

Age group (of head of household)	Fed. Rep. of Germany		United Kingdom		Sweden		Switzerland					
	Gini	Bottom Quintile	Top Quintile	Gini	Bottom Quintile	Top Quintile	Gini	Bottom Quintile	Top Quintile			
55 - 59	.336	8,5	42,5	.232	9,7	32,8	.194	10,6	29,9	.262	9,3	35,8
60 - 64	.257	9,3	35,4	.280	8,4	36,0	.193	10,9	30,0	.335	7,4	41,3
65 - 69	.280	8,9	37,0	.277	10,3	38,0	.150	13,5	28,6	.473	2,7	50,3
70 - 74	.243	9,6	34,4	.241	11,7	36,2	.125	14,9	27,6	.325	9,2	42,5
75 +	.287	9,0	38,4	.240	12,0	37,1	.126	14,8	27,6	.341	9,2	44,0
all elderly (55 +)	.298	8,6	38,4	.293	9,2	37,8	.191	12,1	31,1	.355	7,2	42,8
all elderly 60 +	.273	9,0	36,2	.287	10,1	38,8	.176	12,8	30,6	.380	6,8	45,0
all households (total population)	.338	8,6	42,4	.273	9,0	36,1	.205	10,6	31,2	.303	7,9	38,2

The different indicators serve as mutual validity checks; as the evidence in Table 2 shows, the ranking of countries is the same in most of the cases. Since the analysis is based on the distribution of equivalent net income which is attributed to each household member, it seems most appropriate here to use persons instead of households as weights for the sample. Thus, all individuals are ranked according to their attributed equivalent income so that each income quintile comprises an equal number of individuals, but a different number of households.

The results reveal remarkable cross-national differences in distributional characteristics, unexpected in such distinctiveness (see Table 2): Looking first at the totals for the elderly population, the inequality of living standards is unequivocally most pronounced in Switzerland and least pronounced in Sweden. West Germany and the United Kingdom find themselves in medium positions. These cross-national differences can equally be found (with only minor exceptions) within the more homogeneous age groups.

Compared to the inequality structure prevailing in the society at large, it is found that inequality among the elderly is less pronounced in West Germany and Sweden, and more pronounced in the United Kingdom and Switzerland. It may be tentatively concluded that the "societal" system of old age security (as explained above) tends to reduce inequalities in the primary distribution of market (especially employment) income in Germany and Sweden, while in Britain and Switzerland, it tends to reinforce them. This is the more surprising since Swedish society is already characterized by the most egalitarian distribution of the resources of economic well-being.

Within the same age brackets, the distribution is generally more homogeneous, i.e. inequality is less marked than in the elderly population at large. Moreover, it can be stated that in the case of Britain and Sweden the extent of inequality decreases as one moves to the older age groups (and, for instance, the lower 20% receive ever larger income shares. The British situation can then be characterized by the apparent paradox that despite low levels of inequality within age groups, the overall inequality among the elderly is even

more pronounced than in the population as a whole. This fact can be explained by reference to the average levels of living sharply decreasing with age. For the overall inequality structure can be conceived as composed of inter- and intra-group differences so that it appears quite compatible that overall inequality is greater than that within age groups.

3.3. Poverty

To compare the extent of poverty in old age (and in society at large) cross-nationally requires to define a poverty line which is equally applicable to each country, but conceptually uniform. It would not be very satisfactory, for instance, to use the official or quasi-official poverty lines institutionalized in the various countries (though they are certainly relevant to policy analyses in the national context), because they are likely to be constructed on the basis of different concepts. Empirical variations in poverty rates might then reflect differences in definition rather than in social reality.

It is here suggested to define poverty in relative terms, i.e. in relation to the prevailing standards of living in a given society at a given time-point. Individuals or families "who have incomes below this poverty line cannot be said to fully enjoy the same level of living as the typical family in any country" (SMEEDING/HAUSER et al. 1985: 12).

More precisely, it is suggested to define the poverty line as a certain percentage of the national median equivalent income, for the following reasons:

The median income divides the population into two equal parts: 50% below, and 50% above the median income.¹¹ It thereby characterizes the typical income situation better than the arithmetic mean which is likely to give a distorted picture. Because the typical income distribution curve is skewed to the left, the mean income will always be above the median income and, therefore, will be attained by sometimes substantially less than 50% of the population.¹²

For this reason, poverty lines based on median income provide more cautious estimates.

Linking the poverty line to the median income in this way thus constitutes a relative poverty line which is comparable across nations and across time. The choice of the exact level is, of course, always subject to a certain arbitrariness. LIS researchers have used, for the sake of convenience, the level of 50% of median equivalent income.¹³ To control for this arbitrariness, we have also computed the poverty rates at the 40% and 60% of median income level which can be regarded as defining a more severe and a milder poverty line.¹⁴ Applying these measures of poverty enables us not only to compare the poverty rates among the aged, but also to assess to what extent poverty is specifically a problem associated with old age.

The poverty rates obtained by using these measures are to some degree also influenced by the skewedness of the income distribution curve. This makes sense theoretically, for it is the logical consequence of defining relative poverty lines. SMEEDING/HAUSER et al. have termed this measure "economic distance poverty line" because it is defined in terms of relative distance from the typical income situation in a country. "Countries with more equal equivalent income distributions will have less poor than those countries with more unequal distributions" (SMEEDING/HAUSER et al. 1985: 12). The more equal the distribution, the more people will find themselves closer to the national average, and in this sense less deprived of the resources which characterize the societal standards.

But this consideration only applies to the poverty rates in the total population. Whether old people will face higher or lower risks of falling below the (national) poverty line so defined, is also dependent on their relative income position within the overall income structure. When, for instance, their average standard of living is low compared to other groups in society, they will cluster at the bottom of the income hierarchy even though the intra-group inequality may be low.

Table 3: Poverty Rates for Elderly Households
According to Different Poverty Lines

Age group (of head of household)	Fed. Rep. of Germany			United Kingdom			Sweden			Switzerland		
	40%	50%	60%	40%	50%	60%	40%	50%	60%	40%	50%	60%
55 - 59	3,2	4,7	7,1	0,9	4,0	6,4	2,2	4,0	5,7	1,3	3,8	6,0
60 - 64	3,0	5,0	9,4	1,9	8,1	15,2	2,2	3,8	6,7	3,2	5,5	10,7
65 - 69	3,0	7,4	9,7	1,7	14,1	34,1	0,2	0,4	2,5	3,8	6,7	13,8
70 - 74	5,1	10,2	14,8	1,7	18,6	43,6	0	0	3,2	2,9	7,6	15,6
75 +	4,8	9,9	19,1	1,7	22,0	51,6	0	0	10,5	3,7	10,8	22,7
all elderly 55 +	3,8	7,4	11,9	1,5	12,4	27,8	0,9	1,7	6,1	2,9	6,8	13,6
all elderly 60 +	4,1	8,4	13,7	1,8	15,6	36,0	0,6	1,1	6,2	3,4	7,8	16,0
for reference: all households (total population)	2,8	5,5	10,7	2,6	8,8	17,3	3,4	5,1	9,2	4,8	8,3	14,8

(of median net equivalent income)

The results exhibit dramatic cross-national differences (see Table 3):

First of all, poverty rates show much more diversity for the elderly than for the total population. This can be taken as an indication that public transfer schemes (and their underlying principles of construction) indeed make a lot of difference in shaping the extent of poverty, especially among the elderly.

While poverty in old age has most effectively and successfully been eradicated in Sweden, large numbers of old people in Britain are still living below the poverty line so defined. West Germany and Switzerland fall in between. As measured by the 50% of median level, the risk for people over 60 years old of falling into poverty in Germany and Switzerland is 7 - 8 times as high, and in the United Kingdom almost 15 times as high as in Sweden (!). More than one third of the aged in Britain is living below the more lenient level of 60% of median, as compared to every sixth or seventh in Switzerland and West Germany, respectively, but still only 6% of the aged in Sweden. At the more rigid 40% level, however, Britain performs better than Switzerland and Germany.

Interesting enough, poverty is in Sweden no longer a specific problem of old people (poverty rates are indeed lower than for the total population!), while in Germany and in Britain, the elderly are still disproportionately threatened by this fate. The only exception is for the 40% level in Britain. In Switzerland, older people seem similarly affected by the risk of poverty than the average population, a bit less at the more rigid level, and a bit more at the more lenient level.

Broken down by age groups (of head of household), there is clear evidence that the risk of poverty increases with age in Germany, Switzerland and most extremely in the United Kingdom, but not so in Sweden. This fits well with the finding that the average living standards in Britain deteriorate most dramatically with increasing age, thereby aggravating the risk of poverty.

These findings are further corroborated by a comparison of poverty rates between the "retired" households above 55 years of age (of head of household) (KOHL 1987: 712). Whereas in Sweden poverty is virtually non-existent

for pensioners, about every tenth pensioner household in Germany and Switzerland and almost every fourth in Britain suffers from a living standard below the standard 50% poverty line.

4. Explaining the patterns

The empirical evidence presented so far is somewhat puzzling:

While the average economic position of the elderly is most comfortable in Switzerland, intragenerational inequality is also most pronounced among them, even more than in the Swiss society at large.

In the United Kingdom, there is a sharp decline in the living standards of the elderly associated with increasing age, but intragenerational inequality among homogeneous age groups is not greater than in Germany and less than in Switzerland. The risk of old people to fall into poverty, however, is the highest of all the countries studied.

In Germany, the pattern of inequalities between as well as within the various age groups is somewhat irregular which points to certain inconsistencies of the social security system. Poverty is more wide-spread among the elderly than in the society at large, and the poverty rate at the most rigid level (40% of median) is the highest of all countries.

It is only in Sweden where intergenerational inequality is fairly moderate and the relative economic status of the aged fairly stable (except for the very old), and intragenerational inequality is lowest among the countries studied. But even here, an extremely high degree of equality among the very old pensioners (75 +) is associated with a distinctively low average standard of living for this age group. But despite this relative deprivation of the very old, the problem of poverty in old age (defined in relation to national standards) is virtually non-existent. Even the most deprived pensioners do not dispose of less than half the median income in society, due to the extraordinarily low level of inequality.

This evidence clearly demonstrates that inter- and intragenerational inequality and poverty are not only analytically different (though interrelated) dimensions, but that there are also empirically significant variations. How can these patterns be explained?

4.1. Household income composition

According to our hypothesis, the structure of household incomes, "the income packages" should have some impact on these patterns. For an empirical assessment, five different sources of income have been taken into account:

- earnings (whether employment or self-employment income),
- property (or capital) income,
- occupational pensions (whether public or private),
- social insurance transfers (including also benefits other than old age or retirement pensions),
- and means-tested benefits;

the latter two could conveniently be summed up as "public transfers".

These income items are added to form the household's gross income (pre-tax) which is set equal to 100% for the purpose of structural comparisons. Personal income taxes and employee social security contributions (payroll taxes) are then deducted in order to arrive at the household's net disposable income already referred to above (see Table 4).¹⁵

It should be noted that the various income shares can be calculated in two different ways which lend themselves to different interpretations:

First, we can ask what shares of the total resources available to the elderly (or to specific age brackets) are made up by income items A, B, C, etc.. This method gives the aggregated shares and finally represents something like the "collective income structure" of the respective group (col. a). On the other hand, we can compute the respective income shares for each household first, and then calculate the averages of these individual portions (col. b). This method gives a more realistic view of the income structure typical for the majority of households.¹⁶

Table 4: Income Composition of Elderly Households (60 +)
 a) aggregate shares in % of household gross income
 b) average individual shares in % of household gross income

Income component	Germany		United Kingdom		Sweden		Switzerland	
	a	b	a	b	a	b	a	b
Earnings	30	16	46	27	29	19	37	24
+ Property Income	2	2	7	6	8	8	25	16
+ Occupational Pensions	10	8	10	10	.	.	8	10
+ Social Insurance Transfers	57	73	34	52	60	68	27	47
+ Means-tested Transfers	1	1	3	5	3	5	1	1
= Gross Income	100	100	100	100	100	100	100	100
- Direct Taxes & Contributions	9	4	14	8	29	22	20	12
= Net Income	91	96	86	92	71	78	80	88

The technical difference between the two variants is that in the second case, each household is weighted equally, while in the first case it is weighted by the amount of household income (the mean of absolute numbers is counted). The differing findings result from the fact that income level and structure are systematically correlated. A high share of earnings tends to be associated with a high level of total gross income, while a high share of social transfers is usually to be found in the lower income brackets.¹⁷

It is, of course, not surprising that social insurance transfers and earnings (own or of other household members) constitute the most important items in the income packages of elderly households in all the countries. For the average household, social insurance transfers are the main income source

everywhere (ranging from 47% in Switzerland to 73% in Germany). But in terms of the total resources of all elderly households, earnings still contribute a larger share than social transfers in the United Kingdom and in Switzerland.

Income from private property contributes less than 10%, except for Switzerland where it makes up the extraordinarily high share of a quarter of total household resources and contributes almost as much as social transfers.

Likewise, occupational pensions do not contribute more than 10% of household gross income¹⁸ - even in the United Kingdom and in Switzerland, which is somewhat surprising given the smaller scale of public pension schemes in these countries. Apparently the low share of public transfers is not compensated by higher shares of occupational pensions, but by higher shares of employment income which points to relatively extended labour force participation even among the elderly in these countries.

For the elderly households as a whole, the contribution of means-tested transfers is negligible, but they are certainly of greater relevance for smaller subgroups of the aged otherwise threatened by poverty.

The analysis of household income composition can be broken down by age groups in order to trace the timing of the transition from employment to retirement and the ensued shifts in income composition from one age group to the other more accurately (Tables A-1 to A-4). Generally speaking, the cross-national differences found for all households are more or less confirmed in the age-specific analysis.

Variations in household income composition are assumed to affect the patterns of inequality in different ways:

To begin with, cross-national differences in living standards across age groups (intergenerational inequality) appear to be shaped, to a large extent, by the actual patterns of labour force participation of the elderly. Since in

the "younger" age groups more elderly people are still in employment, it is likely that earnings (which may be cumulated with retirement income) will contribute larger shares to total household income and thereby raise their attainable standard of living. In the older age groups when labour force participation is, of course, greatly reduced, the loss of earnings is not compensated by higher retirement income so that the overall level of living is depressed. Consequently, high rates of labour force participation will raise the living standards of the respective age group, but at the same time accentuate inequalities between age groups.

Across all age groups, income from continued employment contributes a larger share to household income in the United Kingdom and in Switzerland than in Sweden and West Germany. Up to the age of 64 years, earnings from employment prevail as the main source of families' income, except in Germany. Here, the transition into retirement begins earlier, and the reliance on social transfers as the chief income source of the elderly is more pronounced throughout than in the other countries. In the critical age group of 60 - 64 years, the ratio of social transfer to employment income is 61:33 for Germany, but 44:54 for Sweden, 34:53 for the United Kingdom, and 21:59 for Switzerland.

High labour force participation in Switzerland, due to a rigid retirement age of 65 years, probably accounts for the extremely high level of well-being in the age groups up to 64 years. On the other hand, the very low standard of living in the same age group in Germany may be explained by the exceptionally low activity rates of this age group due to a deliberate policy to push older employees out of the labour market by means of flexible and early retirement schemes, thereby lowering the actual age of retirement.

Second, and perhaps most important, it is striking that those countries where public social transfers contribute most to total household income are exactly those where the inequalities in living standards are smaller among the elderly than in the society at large (Germany, Sweden). This is also true vice

versa: in the United Kingdom and in Switzerland where the shares of earnings and of property income and occupational pensions are highest, inequality among the elderly is even more pronounced than in the society at large.

Across all age groups, elderly households in Switzerland receive continuously more income from property and private provisions than elsewhere. Above the age of 65 years, its contribution to total household resources rises to more than 25%, compared to about 10% in the United Kingdom and in Sweden and a meagre 3% in Germany. It can be assumed that the emphasis laid on private provisions for old age in Switzerland contributes significantly to the outstanding income position of the elderly on the average, but at the same time gives rise to the highest degrees of intragenerational inequality among them, due to the disproportionate capabilities for private saving.

This leads us to conclude that a high proportion of public transfers at least opens the opportunity to achieve a more egalitarian distribution of living standards whereas high shares of earnings and other market-related income tend not only to reproduce but to widen inequalities among the elderly. Or to put it plainly: "markets and politics presumably distribute incomes differently" (HEDSTRÖM/RINGEN 1985: 12).

Finally, there are remarkable differences in the tax burden placed upon the older generation. In Sweden, for instance, almost 30% of households' gross income is taxed off via direct taxes, while in Germany the share is less than 10%. The average individual tax rates of the masses of elderly households are somewhat lower, as a consequence of progressive tax systems. But the ranking of countries remains the same: 22% in Sweden, 12% in Switzerland, 8% in the United Kingdom, and only 4% in West Germany.

Of course, the relative burden of taxation decreases with age, due to lower total income, to shifts in the income structure and a generally more favorable treatment of social transfer income. But across all age groups, the tax rate on gross income is in Sweden consistently about double the rate in the

United Kingdom and Switzerland. Because progressive income taxation always has the effect of levelling off income differences, it seems plausible that these redistributive effect will be most pronounced where the average tax rate on pensioners' income is highest: in Sweden. So via taxation, the well-to-do pensioners contribute to raising the resources needed to finance income support for those worse off and at the bottom of the income hierarchy. In Germany, on the other hand, this potentially powerful policy instrument for reducing inequalities remains underutilized because of the almost complete tax exemption of pensioners' income.

This is also evidence that in Sweden the elderly households are integrated into the process of publicly organized income redistribution not only as beneficiaries, but also as taxpayers (and contributors) to a far higher degree than in the other countries. But even in those countries, the reduction of gross income by means of taxation sometimes exceeds the contribution which property income or occupational pensions adds to household income. This finding points to the necessity of paying more attention to the tax treatment of retirement income in future analyses than has been done so far.

4.2. Type of public pension scheme

This is, however, only part of the story. For also "politics" alone can be assumed to distribute incomes differently, according to the competing distributional goals and preferences mentioned above. These are, above all, institutionalized in the benefit levels and structures of public pension schemes. "Level refers to the value of the pension benefit relative to previous earnings or to the standard of living in the larger society. Structure refers to the degree of gradation in the distribution of benefits" (MYLES 1984: 53). MYLES has proposed the following linkages between benefit levels and structure on one hand and the inter- and intragenerational inequality structure on the other hand (see Table 5):

Table
Replacement Ratios and the Structure of Inequality

Properties of the distribution of replacement ratios		Structure of inequality	
Benefit level	Benefit structure	Intergenerational inequality	Intragenerational inequality
High	Flat	Low	Low
Low	Flat	High	Low
High	Graduated	Low	High
Low	Graduated	High	High

Source: MYLES (1984: 54)

At a closer look, two different hypotheses are implied in this matrix: It is suggested that benefit levels are associated with intergenerational inequality whereas benefit structure is assumed to determine the degree intragenerational inequality.

How do our four countries fit into this ideal-type matrix? And how do these hypotheses relate to those about the impact of household income structure referred to above?

It can be inferred from the differences in aggregate public pension expenditure that the average benefit level (per beneficiary), too, in the United Kingdom and Switzerland is considerably lower than in Germany and in Sweden. This is also suggested by the smaller contributions public transfers make to the elderly's household income in the countries first mentioned. But while the British system around the time of the income survey (1979) comes closest to a flat-rate benefit structure¹⁹, the Swiss system provides for graduated benefits, albeit limited within the range of a minimum and a maximum pension (the latter just being double the amount of the former).

According to MYLES' hypotheses, intergenerational inequality should be high in both cases, while intragenerational inequality should be lower in Britain than in Switzerland. The second hypothesis is clearly confirmed for the elderly population as a whole as well as for all age groups. But if intergenerational inequality is meant to characterize the relative income position of the aged compared to the standard of living in the larger society, the first hypothesis must as clearly be rejected. The reason for this lies probably in the failure to account for the exceptionally high contribution of capital income to the resources of the elderly in Switzerland which raises the average level of income considerably (above the national average!), but at the same time increases inequalities among the elderly. As has been shown, the average living standard of pensioners is most comfortable in Switzerland and most depressed in the United Kingdom.

Unfortunately, both countries with high average benefit levels (West Germany, Sweden) are also characterized by a graduated benefit structure.²⁰ But unlike the German general pension scheme, the Swedish system builds the earnings-related component (ATP) on top of a universal flat-rate component (AFP) (the level of which is raised again by a pension supplement for those without ATP entitlements) and has incorporated stronger redistributive elements.²¹ Therefore, it can still be justifiably considered somewhat closer to the "flat-rate model". According to the hypotheses, we would then expect low degrees of intergenerational inequality in both cases, but lower intragenerational inequality in Sweden than in Germany.

Concerning intergenerational inequality, the relative income position of the elderly households seems to be markedly less advantageous in Germany than in Sweden (except for the very old) - despite the high average levels of public transfers in both countries. The main reason for this lies probably in the earlier retirement in Germany, while in Sweden higher, though perhaps partial labour force participation of the elderly allows for a smoother transition into retirement at a more convenient level of household equivalent income.

Besides, capital income seems to contribute more to total household income in Sweden than in Germany. But contrary to what should be expected according to the hypothesis on intergenerational inequality, the relative income position of pensioners in both countries is less comfortable than in Switzerland.

The hypothesis on intra-generational inequality is again strikingly confirmed, for the elderly population as a whole as well as for all age groups. Though, it must be added that an important factor is systematically missing in MYLES' argument: the degree of income inequality in the larger society. Compared to this, inequality is reduced for the elderly even in Germany. Or seen from another perspective: given the exceptionally low level of inequality in Swedish society, even a perfect reproduction of the inequality structure (i.e. the same Gini coefficient) would have left Sweden with the most egalitarian distribution of living standards among the elderly.

Interestingly, intragenerational inequality in Sweden is even markedly lower in the higher age brackets. This is held to be an effect mainly of the gradual phasing-in of the ATP scheme which has not yet made itself felt in the higher age brackets. Inequality among pensioners is therefore supposed to increase with a more complete coverage of pensioners by the ATP scheme, as is already indicated in the younger age brackets.²²

Comparing Germany and Switzerland with regard to intragenerational inequality, both countries score comparatively high, as expected. But there is no further suggestion in the hypothesis which could explain why inequality among the elderly cohorts is consistently lower in Germany than in Switzerland, and - compared to inequality in the larger society - why it is reduced in Germany, but widened in Switzerland.

Comparing Sweden and the United Kingdom, the difference in distributional results despite a similar institutional structure of public pension schemes is remarkable. As far as intergenerational inequality is concerned, the

better performance of Sweden can, of course, be explained by the much higher average benefit levels in Sweden - a factor adequately accounted for. But that inequality among the elderly, compared to the larger society, is reduced in Sweden, but increased in Britain, demands an additional explanation. Once again, it points to the necessity of taking account of the whole income package of households. If a flat-rate public scheme operates at a low average level of benefits (like the British one), it will almost inevitably be supplemented by greater reliance on private and occupational pension arrangements which will, in turn, work to counteract the predicted low intragenerational inequality.

So it turns out to be a fundamental weakness of MYLES' perspective that he exclusively focusses on public pensions. This is not to say, however, that his hypotheses should be dismissed but only that they must be complemented by taking adequate account of the possibility, and indeed, the likelihood, of pooling different sources of income.

We finally turn to an explanation of the variations in poverty rates, both cross-nationally and across age groups. According to the perspective developed above, these seem to be determined by the interaction of intra- and intergenerational inequality. The poverty rate of any specific age group is a function of both its level of income (compared to the national average) and the distribution of incomes within this age group. Consequently, the poverty rates among the aged tend to be higher than the national poverty rate because their average disposable income is generally lower.²³ And since the average level of economic well-being is declining with age, we also expect a growing incidence of poverty among the older age groups. This is indeed the pattern we find in all countries, with the notable exception of Sweden. The Swedish case can then be explained by the very low levels of intra-age group inequality which outweigh the decline in average living standards of the very old.

Taking these two aspects together, the conditions for effectively coping with the problem of poverty in old age seem to be given when the average level of retirement income (public, occupational, and private) and hence the relative income position of pensioners in society is fairly high, and when at the same time the degree of inequality among pensioners is low (Sweden: 1,1%). The problem becomes extreme, on the other hand, when the average level of benefits is low and, in addition, intragenerational inequality is more expressed. What is likely to happen then? Large numbers of pensioners will then cluster at the lower end of the income distribution of the larger society (United Kingdom: 15,6%). But similar (or even higher) degrees of inequality among the elderly can be partially compensated for by fairly generous average living standards of the elderly. In these cases, the resulting poverty rates will be in the medium range (Switzerland: 7,8%; Germany: 8,4%).²⁴ Compared to Sweden, however, protection against poverty in old age remains full of gaps in Switzerland and Germany.

Annotations

- 1 OECD expenditure figures (in % of GDP) for 1983 are: 12,3% for Germany, 11,7% for Sweden, 7,9% for Switzerland, and 7,3% for the United Kingdom. This means that expenditure levels, relative to national economic resources, in the former two countries are about one and a half times those in the latter two countries (!). See OECD (1985), Social Expenditure Data File.
- 2 For a presentation of the project, a fuller description of the data sets, and a discussion of problems of comparability, see SMEEDING/SCHMAUS/ALLEGREZZA 1985).
- 3 Previous analyses (see SMEEDING/HAUSER et al. 1985, O'HIGGINS/SCHMAUS/STEPHENSON 1985, HEDSTRÖM/RINGEN 1985) have mostly been concerned with problems of income distribution and poverty in the society at large. ACHDUT/TAMIR (1985) have focussed on the elderly, but their analysis suffers from certain methodological flaws (see below). For the sake of comparability with these studies, we have adopted the same or similar definitions and statistical procedures, wherever possible.
- 4 For definitional and empirical differences between "households" and "families" in the LIS data sets, see SMEEDING/HAUSER et al. 1985: 6 ff.
- 5 This has to be kept in mind when, in the following, we speak of "elderly people" or "pensioners" and when we classify them by means of the age of the head of household.
- 6 For a comparison of different equivalence scales, see SMEEDING/HAUSER et al. 1985: 51 (Table A-1).
- 7 See SMEEDING/HAUSER et al. 1985: 11 f., and HEDSTRÖM/RINGEN 1985: 18 f.; for a fuller discussion of alternatives see SMEEDING/SCHMAUS/ALLEGREZZA (1985). - The ratios remain the same, however (and so do the statistics characterizing the distribution), when the one-person household is taken as the unit and each additional member is assigned a weight of 0.50.
- 8 Note, however, that even a drop in the average household's (unadjusted) disposable income need not adversely affect the relative welfare position of its members since the average size of households is declining in the older age groups.
- 9 For the purpose of standardization, the national mean has been taken as the measuring rod so that fluctuations are expressed as relative means, as percentage deviations from the national average. Figures for Germany differ somewhat from those given by HEDSTRÖM/RINGEN because we have been able to use a revised data set for Germany. In addition, Switzerland had not been included in their sample.

- 10 Unfortunately, in the analysis of ACHDUT/TAMIR (1985: 32, Table 8), equivalent net income is weighted by families instead of persons and, hence, the income differentials between age groups are exaggerated.
- 11 According to the logic of computing equivalent income, persons are ranked according to the equivalent income assigned to them so that people are defined as poor when their equivalent income falls below a certain percentage of the median, weighted by persons.
- 12 Poverty lines based on certain percentages of mean income would, therefore, yield higher poverty rates, the extent being dependent on the degree of inequality of the overall distribution.
- 13 See SMEEDING/HAUSER et al. 1985: 12 ff., HEDSTRÖM/RINGEN 1985: 22 ff., ACHDUT/TAMIR 1985: 39 ff.. ACHDUT/TAMIR (1985: 40, Table 11) again seem to refer to families instead of persons which leads to an overestimation of the extent of poverty regarding the individual persons concerned.
- 14 As an additional sensitivity test, we used the 50% mean equivalent income (the results of which are not given here) which yielded, by and large, similar poverty rates as the 60% of median poverty line.
- 15 Remaining differences are due to rounding errors or to other miscellaneous income.
- 16 Previous analyses of LIS data (see footnote 3) have followed only the first variant and seem not to have been aware of the second.
- 17 For instance: while in Germany the average individual household's share of earnings is only 16%, these earnings amount to 30% of all resources available to the elderly. Or: while in Switzerland, the average tax rate per household is no more than 12% of gross income, total tax yields amount to 20% of all resources available.
- 18 For Sweden, occupational pensions could not be statistically separated from social insurance transfers. But knowing the structure of the Swedish old age security system, it can be taken as sure that the share of occupational pensions is somewhat smaller in Sweden than elsewhere.
- 19 The earnings-related SERPS scheme came in effect only in 1978, and only pensioner cohorts entering retirement after this point in time are affected.
- 20 The Netherlands with a high-level flat-rate scheme would have been a better case in point for comparison.
- 21 Moreover, at the time of the income survey (1981), the earnings-related ATP scheme introduced in 1960 had not yet reached full maturity, in particular for the older cohorts of pensioners.

- 22 A similar effect will be observed in Britain when the SERPS scheme is phased in and approaches maturity.
- 23 Note, however, that this is not true for the 40% poverty line at which Germany is the only country where severe poverty is more frequent among the aged than among the total population. This fact draws attention to the crucial importance of minimum pension regulations in public pension schemes.
- 24 It is noteworthy, however, that at the lower poverty line (40% of median income), the flat-rate structure of British pensions seems to provide more effective protection against poverty than the earnings-related schemes in Switzerland and Germany - despite the lower average income levels of the elderly in Britain.

Country: FED. REP. OF GERMANY

Table A-1: Income Composition of Elderly Households (55+)

a) aggregate shares per age group in % of household gross income

Income component	All 55 +	55 - 59	60 - 64	65 - 69	70 - 74	75 +
Earnings	43	83	52	22	11	8
+ Property Income	2	2	1	3	2	4
+ Occupational Pensions	8	2	5	14	10	12
+ Social Insurance Transfers	46	13	42	61	75	75
+ Means-tested Transfers	1	1	1	1	1	1
= Gross Income	100	100	100	100	100	100
- Direct Taxes & Contributions	12	22	15	6	3	3
= Net Income	88	78	85	94	97	97

Country: FED. REP. OF GERMANY

Table A-1: Income Composition of Elderly Households (55+)

b) average individual shares in % of household gross income

Income component	All 55 +	55 - 59	60 - 64	65 - 69	70 - 74	75 +
Earnings	22	69	33	12	5	3
+ Property Income	2	1	1	3	2	3
+ Occupational Pensions	7	2	5	9	6	8
+ Social Insurance Transfers	67	26	58	74	84	84
+ Means-tested Transfers	2	2	3	2	2	2
= Gross Income	100	100	100	100	100	100
- Direct Taxes & Contributions	6	19	9	3	1	1
= Net Income	94	81	91	97	99	99

Country: UNITED KINGDOM

Table A-2: Income Composition of Elderly Households (55+)

a) aggregate shares per age group in % of household gross income

Income component	All 55 +	55 - 59	60 - 64	65 - 69	70 - 74	75 +
Earnings	54	83	68	30	22	17
+ Property Income	6	3	5	9	9	11
+ Occupational Pensions	8	2	6	16	14	12
+ Social Insurance Transfers	28	11	18	42	51	54
+ Means-tested Transfers	3	1	2	2	4	7
= Gross Income	100	100	100	100	100	100
- Direct Taxes & Contributions	15	19	17	11	10	8
= Net Income	85	81	83	89	90	92

Country: UNITED KINGDOM

Table A-2: Income Composition of Elderly Households (55+)

b) average individual shares in % of household gross income

Income component	All 55 +	55 - 59	60 - 64	65 - 69	70 - 74	75 +
Earnings	32	76	53	16	9	6
+ Property Income	6	3	5	7	7	7
+ Occupational Pensions	8	2	7	13	12	9
+ Social Insurance Transfers	48	15	30	59	65	69
+ Means-tested Transfers	6	3	4	4	7	10
= Gross Income	100	100	100	100	100	100
- Direct Taxes & Contributions	9	17	13	6	5	4
= Net Income	91	83	87	94	95	96

Country: SWEDEN

Table A-3: Income Composition of Elderly Households (55+)

a) aggregate shares per age group in % of household gross income

Income component	All 55 +	55 - 59	60 - 64	65 - 69	70 - 74	75 +
Earnings	38	79	59	16	7	2
+ Property Income	7	3	5	8	9	13
+ Occupational Pensions						
+ Social Insurance Transfers	52	17	35	73	79	78
+ Means-tested Transfers	3	1	1	2	4	7
= Gross Income	100	100	100	100	100	100
- Direct Taxes & Contributions	30	36	35	30	25	17
= Net Income	70	64	65	70	75	83

Country: SWEDEN

Table A-3: Income Composition of Elderly Households (55+)

b) average individual shares in % of household gross income

Income component	All 55 +	55 - 59	60 - 64	65 - 69	70 - 74	75 +
Earnings	25	71	50	11	5	1
+ Property Income	8	4	5	8	9	11
+ Occupational Pensions						
+ Social Insurance Transfers	62	23	41	76	80	79
+ Means-tested Transfers	5	2	3	5	6	9
= Gross Income	100	100	100	100	100	100
- Direct Taxes & Contributions	23	34	30	25	20	12
= Net Income	77	66	70	75	80	88

Country: SWITZERLAND

Table A-4: Income Composition of Elderly Households (55+)

a) aggregate shares per age group in % of household gross income

Income component	All 55 +	55 - 59	60 - 64	65 - 69	70 - 74	75 +
Earnings	46	83	66	28	16	8
+ Property Income	21	9	18	28	26	29
+ Occupational Pensions	7	0	1	12	14	15
+ Social Insurance Transfers	23	4	10	31	43	45
+ Means-tested Transfers	1	0	0	0	1	2
= Gross Income	100	100	100	100	100	100
- Direct Taxes & Contributions	19	22	22	23	15	13
= Net Income	81	78	78	77	85	87

Country: SWITZERLAND

Table A-4: Income Composition of Elderly Households (55+)

b) average individual shares in % of household gross income

Income component	All 55 +	55 - 59	60 - 64	65 - 69	70 - 74	75 +
Earnings	30	76	59	18	7	2
+ Property Income	15	10	11	16	18	19
+ Occupational Pensions	8	0	2	13	12	12
+ Social Insurance Transfers	43	9	21	52	60	64
+ Means-tested Transfers	1	0	0	1	2	3
= Gross Income	100	100	100	100	100	100
- Direct Taxes & Contributions	12	18	15	14	8	6
= Net Income	88	82	85	86	92	94

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