



THE NATIONAL INSURANCE INSTITUTE
Bureau of Research and Planning

Retirement and Well-Being among the Elderly

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Lea Achdut and Yossi Tamir

Discussion Paper 34

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INTRODUCTION

During the past two decades a massive growth has taken place in Social Security expenditure in industrialized countries. From 1960 to the beginning of the 1980's expenditure on social security increased almost twice as much as gross national product. The rise was particularly marked in transfer payments to the elderly population which became the main component in total social security expenditure in most developed nations. The real increase in expenditure on old-age pensions in OECD countries continued also after the economic crisis which hit the western nations in the mid 1970's. In the early 1980's expenditure on old-age pensions, for example, amounted to approximately 9% of GNP in West Germany; 5% in Sweden and the United Kingdom; and 3% in the United States (OECD, 1983).

Against the background of the uniform trends that appeared in social security expenditure on the elderly population, it is interesting to study the economic well-being of the elderly at the beginning of the present decade in an international perspective.

The well-being of the elderly population and its various groups in each of the countries depends on many factors, such as the usual retirement age, the degree of flexibility and liberality with regard to the pension age, the generosity of the social security retirement programs, the role of occupational pension arrangements in the general system of income maintenance for the elderly, and the patterns of living arrangements for old persons (e.g. living alone versus living

with their children). The purpose of this study, however, is not to present a detailed description of these institutional characteristics but rather to provide a comparative empirical analysis of the economic well-being of the elderly population in the LIS countries.

The vast literature on theoretical and empirical measures of inequality and poverty - e.g. Atkinson (1983), Danziger and Taussing (1977, 1979), and Danziger, Van der Gaay, Smolensky and Taussing (1982) - has examined the issues involved in defining the alternative measures of well-being in depth. It concentrates on the different treatments of the "income" concepts (for example, consumption versus income measures and income before direct taxes versus net income) and of the recipient unit concepts (household versus adjustment for unit size).

At this stage of the LIS project, we have focussed on cash income components. Non-cash income, wealth, consumption, savings and other indicators of well-being have not been studied yet. We chose to analyse the family cash income and to employ the concept of equivalent income in measuring inequality and poverty whereby cash income is adjusted by the number of equivalent adults in a family.

An important question arising in a comparative study of the old aged is how to define a "retired family". Because of the inter-country variations in the pensionable age and in the work patterns of the elderly population, the usual demographic definition of retirement (65+ years) contains some arbitrariness and is problematic within the context of a family income study. Therefore, we make use of

alternative definitions of retirement, which are based not only on the family's head age but on a family's income composition as well. The common denominator of these definitions is the age of 55 years and over for the family head (the minimum retirement age in the LIS countries) whilst the difference among them stems from different possible combinations of the family income, in particular different ratios of earnings to retirement income.

The structure of the study is as follows: part I describes the demographic characteristics of the elderly population whereas part II discusses the problem of defining a "retired family" and compares the size of the retired population according to alternative definitions. Part III analyzes the relative contribution of each of the income sources to the standard of living of the elderly families in general and of retired families according to one of the alternative definitions. Part IV examines the income distribution of the elderly from two aspects: the inequality of income distribution among the various age groups and within each age group. Part V relates to the incidence of poverty and to the composition of the poor population.

The last part of the study concludes with a discussion of the interrelationships among several issues examined earlier. It focuses on the size of the retired population and its income composition as affected by institutional and demographic characteristics and on the possible connection between income composition and the nature of income distribution.

I. Demographic Characteristics of the Elderly Families

In this paper we use a detailed breakdown of the elderly families into four groups of family head's age: 55-59, 60-64, 65-74 and 75 and over. As can be seen in Table 1, the distribution of families by the age of family head varies considerably among the countries surveyed. The percentage of elderly families whose head is aged 55+ in the total population is significantly high in Norway, West Germany and the United Kingdom. In Canada and the United States, the corresponding percentage is the lowest, whilst Sweden and Israel are in the middle of the scale even though they are nearer to the former group.

Table 1:

PERCENTAGE DISTRIBUTION OF FAMILIES BY AGE OF HEAD

Country	Age of Head						Total pop.
	-54	55+	55-59	60-64	65-74	75+	
Norway	55.5	44.5	9.0	8.3	15.2	12.1	100.0
W. Germany	56.6	43.4	8.3	5.9	17.5	11.7	100.0
U. Kingdom	57.8	42.2	9.2	6.9	16.8	9.2	100.0
Sweden	59.7	40.3	6.6	7.9	14.1	11.6	100.0
Israel	60.8	39.2	8.2	8.2	15.6	7.2	100.0
U.S.A.	65.7	34.3	7.9	6.9	12.0	7.5	100.0
Canada	68.5	31.5	7.6	6.7	10.6	6.6	100.0

If we examine the percentage of elderly families according to the usual definition, i.e., families whose head is 65 and over, the ranking of the countries remains essentially unchanged. The variance among these countries is most outstanding in the oldest age group, 75 and over. In Norway, the percentage of families in this age group is almost double than that in Canada.

Another demographic variable which will serve us in the international comparison of economic well-being among the elderly is the family composition. As may be expected, couples without children and single females are the two main groups among elderly families. In the 55-59, 60-64 and 65-74 age groups, couples without children constitute the largest group even though the proportion of single females increases significantly with age, mainly at the expense of families with children. In the 75+ age group the situation is reversed. In all the countries, except Israel, the percentage of single females is higher than that of couples without children. In Sweden, Norway and West Germany, single females are slightly over 50% of all families in the 75+ age group; in the United States, Canada and the United Kingdom, 45%-46%. In Israel only 23% of all families in the 75+ age group are single females whereas the percentage of couples without children is double: 47%. This difference between Israel and the other countries apparently stems from the former's relatively low rate of divorces and separations. The lowest percentage of single males in the 75+ age group is to be found in Israel and West Germany (approximately 11%) and the highest in Sweden and Norway (17%-18%).

**TABLE 2:
FAMILY TYPE BY AGE OF FAMILY HEAD**

Family Type	Norway			Germany			U.K			Sweden			Israel			U.S.A			Canada			
	55+	74	65-	55+	74	65-	55+	74	65-	55+	74	65-	55+	74	65-	55+	74	65-	55+	74	65-	
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Single male	14	14	18	7	11	11	11	13	17	18	17	6	7	11	9	12	11	11	11	11	14	14
Single female	33	35	52	41	44	51	29	31	47	38	57	21	26	23	28	44	26	29	26	29	45	45
Couple without children	34	41	25	35	36	33	38	43	25	42	26	41	46	47	38	42	30	34	34	40	28	28
Couple+children	13	6	1	3	1	--	2	1	--	3	1	4	2	3	3	2	1	3	1	3	2	--
One-parent family	4	3	3	--	--	--	--	--	--	--	--	1	1	--	2	1	1	1	1	--	--	--
Other+children*	2	2	1	2	1	--	3	1	--	--	--	7	4	2	3	2	--	5	5	2	1	1
Other**	--	--	--	12	11	5	17	13	15	--	--	20	14	14	17	13	12	20	20	16	12	12
Average family size	2.3	2.0	1.5	2.1	1.9	1.6	2.4	2.1	1.9	1.7	1.4	3.2	3.0	2.2	2.6	2.3	1.9	2.7	2.7	2.3	1.9	1.9

* This type of family includes families with children and with additional adult persons.
 ** All families without children which are not included in the first three types.

Another difference among the countries relates to the family type termed "other". This consists of households of old persons without children who live with other adults who are related to the family head or his spouse. In Israel and Canada approximately 20% of elderly families in the 55+ age group belong to this category, in the United States and the United Kingdom - approximately 17% and in West Germany - approximately 11%. The proportion of this family type is larger in the younger groups - 55-64 - than in the older ones - 65+.²

In Israel elderly families are larger than in other countries (3.2 persons on the average, per family). On the other hand, Sweden is characterized by the smallest family size - 1.7 persons on the average, per family. The order of the countries by family size is the same in all age groups.

II. Who are the Retired Elderly?

The various definitions of a "retired family" which will be used in this chapter are based on two elements: the age of the family head and the income composition of the family. From an economic point of view, there are two basic criteria for defining state of retirement. The first one is the extent of participation in the labour market of families in the "retirement age", and the second one is the existence of retirement income, from social security and from an occupational pension scheme. One can define a retired family on the basis of either one of those criteria or of the combination of both.

Five alternative definitions of a retired family are given here. All the definitions refer to families whose head is 55 years old and over but they differ from each other with regard to the family's income sources and composition:

1. Complete retirement from the labour market, i.e. family with zero earnings.
2. A family with retirement income.
3. Combination of (1) + (2), i.e. family with zero earnings but with retirement income.
4. A family whose income from retirement exceeds its earnings (includes definition (3))
5. A family with retirement income whose earning do not exceed a quarter of its net income,

Definition (3) is the narrowest definition, whereas (2) is the broadest. More suitable for our purposes is a definition which includes both earning and retirement income (such as 4. and 5.) for the following reasons: part of the old-aged continue working partially even after they are entitled to retirement income. Since we study the family income as distinguished from individual's income, it is possible that although one family member has completely retired from the labour market, other members still have some earnings.

Definition (5) is our primary definition since according to it earnings is only a small component of the total income, thus taking into account not only the ratio of earning to retirement income but also additional income, mainly from property.

Hereinafter, a family according to this primary definition will be referred to as "retired".

Table 3 shows the proportion of retired families in the various age groups according to the aforementioned definitions. The findings referring to the group below the "normal" retirement age of 65 are of special interest. They reveal that Sweden has, on the one hand, the highest percentage of families with retirement income (55%) in the 55-64 age group, but, on the other hand, the lowest percentage of families without any earnings at all (15%). Israel resembles Sweden in having a high percentage of families with retirement income (35%) along with a low percentage of families with zero earnings (16%). Germany is also characterized by a relatively high percentage of

Table 3:
THE PROPORTION OF RETIRED FAMILIES WITHIN AGE GROUP
ACCORDING TO THE VARIOUS DEFINITIONS

Percentage of Families	Norway*		W. Germany		U.K.		Sweden		Israel		U.S.A.		Canada								
	55-64	65-74	55-64	65-74	55-64	65-74	55-64	65-74	55-64	65-74	55-64	65-74	55-64	65-74							
1. Primary definition	--	--	27	79	89	15	77	90	21	83	98	16	63	86	8	66	84	10	73	90	
2. With zero earnings	14	47	86	35	83	95	19	72	89	14	66	90	16	58	80	18	61	83	17	64	85
3. With some retirement income	--	--	--	44	91	92	26	98	99	55	100	100	35	94	100	17	91	95	25	98	99
4. With both no earnings and some retirement income	--	--	--	26	75	87	14	71	88	14	66	90	14	58	80	6	57	79	8	64	85
5. With retirement income greater than earnings	--	--	--	31	82	89	19	84	91	29	94	99	17	68	88	8	74	87	11	78	91

* The data on the retirement income in Norway contain only private pensions; therefore this variable is not reliable, and we cannot compare Norway to the other countries.

families with retirement income (44%), but contrary to Sweden and to all other LIS countries, it has a high percentage of families with zero earnings (35%). Comparing between the proportions of families with retirement income and families with retirement income but with zero earnings reveals that Sweden and Israel have relatively more working families with retirement whereas in Germany most of the families receiving retirement income do not work at all.

The United States, Canada and the United Kingdom have, more or less, the same percentage of families with zero earnings, but they differ in the percentage of families with retirement income. In the United States we find the lowest percentage of families with retirement income (17%) - among LIS countries - whereas Canada and the U.K. are in the middle of the scale.

According to the other definitions, which combine earnings with retirement income, Germany has the highest percentage of retired families followed by Sweden, whilst the U.S.A. and Canada are at the bottom of the scale.

In all the LIS countries, almost everyone in the two oldest age groups has retirement income, and the difference among the countries is due to different proportion of families with earnings. Israel, the United States and Canada have relatively high percentage of elderly families with earnings, as compared with Germany and the United Kingdom. In Israel 42% of the families in the 65-74 age group and 20% of those in the 75+ age group have some earnings, most of which exceed a quarter of their net income. The corresponding percentages in

TABLE 4:
THE PROPORTION OF RETIRED FAMILIES WITHIN THE ELDERLY (55+)
ACCORDING TO THE VARIOUS DEFINITIONS AND BY FAMILY TYPE

Percentage of	Norway*			Germany			U.K			Sweden			Israel			U.S.A			Canada		
	T	SF	C	T	SF	C	T	SF	C	T	SF	C	T	SF	C	T	SF	C	T	SF	C
1. Head aged 65 & over	61	78	61	67	78	66	62	77	60	64	77	55	58	69	66	57	74	56	55	74	56
2. Primary definition	--	--	--	65	83	62	56	85	54	65	84	49	74	87	46	43	66	46	48	76	50
3. With zero earnings	45	74	31	71	89	69	55	85	51	54	77	53	45	84	43	47	75	43	47	79	46
4. With some re-tirement income	--	--	--	76	88	71	74	93	69	84	95	77	70	97	66	60	73	62	65	82	66
5. With both no earnings & some retirement income	--	--	--	62	81	60	53	82	49	54	77	35	43	84	41	40	62	39	43	72	43
6. With retirement income greater than earnings	--	--	--	67	85	65	60	88	58	72	88	59	50	89	49	49	68	50	50	77	53

* See note to Table 3.

** T = Total 55+, SF = Singles female, C = Couple without children

Germany are 17% and 5%. Sweden also has a relatively high percentage of families with earnings but, in contrast to Israel and the United States, the earnings of these families do not exceed a quarter of their net income.

Table 4 shows the proportion of retired families in the total elderly population (55+) and in the two most frequent family types among the elderly families: single females and couples without children. As expected, in all countries the percentage of retired single females according to all definitions is relatively high compared to the elderly population in general, whereas the percentage of retired among couples without children is relatively low.

All definitions, except that based on families with no earnings, show that the percentage of retired single females is highest in Israel and lowest in the United States. In Israel, the United Kingdom, Sweden and West Germany, approximately 84%-87% of single females aged 55+ are "retired" according to the primary definition, whereas in the United States only 66% of them are "retired". Canada is in the middle of the scale with 76%.

Regarding the couples without children, the percentage of "retired" resembles that in the United States, Israel and Canada (approximately 50%) and differs from that in West Germany (62%) and the United Kingdom (54%).

III. The Relative Importance of the Various Income Sources

One of the important dimensions according to which it is customary to compare the economic status of the elderly population in various countries is the composition of its gross income and the contribution of each of the income sources to its standard of living.³ We shall distinguish between income arising from the family's economic activity and from transfer payments. Income arising from economic activity (market income) includes earnings, property income and occupational pension schemes whilst transfer income includes social insurance transfers, means-tested transfers and private transfers.

A. All Elderly Families - Table 5 presents the distribution of gross income by its components of the elderly population and of the elderly in the 65-74 and 75+ age groups.⁴

In all countries, except Sweden, market income (before taxes and transfer payments) is the main component in the income of families in the 55+ age group, particularly in countries with relatively young populations: Israel, the United States and Canada. Market income constitutes 85% of gross income in Israel and 79% in Canada and the United States. On the other hand, in Sweden and Germany, whose populations are relatively old, the relative share of market income is very low: 46% and 53% respectively. In Norway and the United Kingdom, market income contributes 69% of total income.

An examination of the types of income that constitute market income reveals that the relative share of earnings and occupational

TABLE 5:
COMPOSITION OF GROSS INCOME BY INCOME TYPES (All elderly units)

Income Type	Norway		W.Germany		U.K.		Sweden		Israel		U.S.A.		Canada								
	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+							
1. Income before tax & transfer	69	54	24	53	31	24	69	51	39	46	21	15	85	75	68	79	63	53	79	62	51
a. Earnings	61	41	6	43	17	8	54	26	17	39	12	2	64	42	21	58	32	17	56	28	13
b. Property income	5	6	8	2	2	4	7	10	10	7	9	13	10	13	22	13	18	24	17	22	30
c. Occupational pension	3	3	7	10	8	12	12	8	15	12	--	--	--	11	20	25	8	13	12	6	12
2. Transfer income	31	46	76	47	68	76	31	49	61	54	79	85	15	25	32	21	37	47	20	37	47
a. Public transfers	30	45	76	47	68	76	31	49	61	54	79	85	14	23	30	21	37	47	20	37	47
I. Social Insurance transfers	30	45	75	46	67	75	28	46	54	51	77	78	14	23	29	20	35	45	18	35	45
II. Means-tested transfers	--	--	1	1	1	1	3	3	7	3	3	7	--	--	1	1	2	2	2	2	2
b. Private transfers	1	1	--	--	--	--	--	--	--	--	--	--	1	2	2	--	--	--	--	--	--
3. Other income	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	2
4. Direct taxes	23	19	8	13	5	4	15	11	8	30	28	17	22	14	9	18	11	8	12	9	7
5. Net income	77	81	92	87	95	96	85	89	92	70	72	83	78	86	91	82	89	92	88	91	93

pensions is the highest in Israel. In the United States and Canada income from property (13% and 17% of gross income respectively) is particularly prominent whilst the relative importance of earnings is not very different from that in the United Kingdom and Norway. The relative share of market income in Sweden is low not only because of the low share of earnings, but also due to the absence of separate data on income from occupational pensions.⁵

The average rate of taxation imposed on the elderly families' income is highest in Sweden (30%) and lowest in Canada⁶ and West Germany (12% and 13% respectively). In Israel and Norway also elderly persons pay relatively high taxes, approximately 23% of gross income. In view of the fact that in Sweden the average tax rate is 30% of gross income, over half of which derives from transfer payments, it may be concluded that taxation on transfer income in Sweden is relatively high. In other countries the elderly receive favorable tax treatment, or else old-age pensions are not taxable as in Israel and the United States.

It is important to note that in some of the countries with relatively high average tax rates, government participation in the financing of social insurance pensions and other transfer payments to elderly families is also relatively high. Thus, for example, in Sweden, the government bears approximately 30% of the expenditure on the basic pension of the national scheme from its general revenue. In Israel, approximately 15% of the old-age benefits are financed from general taxation as are all assistance payments to old persons who

have no income except the basic national insurance benefit. Moreover, the occupational pension of civil servants and employees of public institutions is financed entirely from general revenue.

The data on the income composition of families in the 65-74 and 75+ age groups show the fall in the relative contribution of market income to elderly families' standard of living as the family head's age rises, particularly in Sweden, Norway and West Germany. In Sweden, market income constitutes only 15% of the total income of families in the 75+ age group and 24% in West Germany and Norway. In contrast, the findings relating to Israel, the United States and Canada are somewhat surprising since market income in these countries is still the main component in the income of families in the highest age group. In Israel about two thirds of their gross income are market income and only one-third is transfer income. In the United States and Canada the gross income is almost equally divided between market and transfer income. An examination of the various components of market income reveals that about one-third of the gross income of families in the 75+ age group in Canada and nearly one quarter of the income of these families in the United States and Israel are from property. The rise in the relative proportion of income from property may have a number of explanations: first of all, studies on old persons' saving behaviour have indicated that old persons continue to save after retirement, so that their accumulated property grows as they get older. Secondly, there may have been a greater tendency to save in the past since the pension systems, especially the occupational ones, were

TABLE 6:
COMPOSITION OF GROSS INCOME BY INCOME TYPES (only "retired" units)

Income Type	Norway		Germany		U.K.		Sweden		Israel		U.S.A		Canada								
	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+	65- 74	75+ 55+							
1. Income before tax & transfer	38	39	37	16	17	16	32	34	28	11	11	13	58	62	49	47	43	49	47	45	
a. Earnings	2	3	1	1	1	--	1	1	--	1	2	1	22	1	1	2	1	1	1	1	
b. Property income	9	8	9	2	2	3	11	11	13	10	9	12	25	26	30	26	25	28	31	29	34
c. Occupational pension	27	28	27	13	14	13	20	22	5	--	--	--	31	31	31	22	20	14	16	16	10
2. Transfer income	62	61	63	84	83	84	68	66	72	89	89	87	42	42	38	50	52	56	49	51	53
a. Public transf.	62	61	63	84	83	84	68	66	72	89	89	87	38	39	36	50	52	56	49	51	53
I. Social Ins. transfers	62	61	63	83	82	83	62	61	64	83	85	80	37	38	35	48	50	54	47	49	51
II. Means-tested transfers	--	--	--	1	1	1	6	5	8	6	4	7	1	1	1	2	2	2	2	2	2
b. Private transf.	--	--	--	--	--	--	--	--	--	--	--	--	4	3	2	--	--	--	--	--	--
3. Other income	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	1	2	2	2
4. Direct taxes	11	12	10	1	1	1	7	7	6	21	25	17	2	2	2	6	5	4	6	6	6
5. Net income	89	88	90	99	99	99	93	93	94	79	75	83	98	98	98	94	95	96	94	94	95

less developed. Thirdly, it is possible that in absolute terms, income from property does not rise and the entire increase is due to reduction in income of old persons as they advance in years.

B. Retired Families - Table 6 presents the income composition of "retired" families according to the primary definition used in this research. The data reveal small differences among the various age groups in each country from which one may conclude that in all the countries this population is quite homogeneous. As can be seen, in all countries "retired" families in all age groups have almost no earnings, 0%-2% of gross income, although according to the definition it could be much higher. On the other hand, the relative share of income from property and occupational pension is higher among "retired" families than among all elderly families. The difference in the relative share of income from property between these two groups is very marked in Canada, the United States and Israel, whilst the difference in the relative share of occupational pensions between these two groups is significant in all the countries. In Sweden and West Germany transfer income constitutes the largest part of "retired" families' income: 89% and 84% respectively, while in Israel it still constitutes less than half of the gross income: 42%.

In all countries, except Sweden, the "retired" families pay a very low average rate of tax which ranges from 1% in West Germany to 11% in Norway. In Sweden, the rate remains very high even for the retired families: 21%.

IV. Distributional Characteristics of Elderly Families' Income

The characteristics of the income distribution of elderly families in each of the countries and an international comparison of it will be analyzed from two viewpoints: the first is the income distribution among the various age groups within the elderly population. The simplest method of assessing the economic status of each age group is to compare their average income to the average of the total elderly population. In addition, the economic status of "retired" elderly families will be compared to that of all the elderly families. The second viewpoint relates to income distribution within each age group in terms of the relative income shares of the different quintiles and Gini coefficients. Two alternative income measures of the economic status will be presented: one based on net income per family and the other on equivalent net income, i.e., net income adjusted for family size.

A. Relative Mean Incomes Among the Various Age Groups

Table 7 shows the relative mean net incomes for the different age of head groups in the various countries.⁷ The data are presented separately for all the elderly families and for "retired" families only. Looking at the figures for all the elderly families we see that the pattern is similar in all countries. In each country relative mean net income declines as age increases. In Norway the steepest decline in the relative mean is from the 65-74 to the 75+ age group, whilst in Germany it is from the 55-59 to the 60-64 age group. This finding is

Table 7:

RELATIVE MEAN NET INCOME AND RELATIVE MEAN EQUIVALENT* NET INCOME BY AGE OF HEAD
All Elderly Families and only Retired Families**

Age of Head	Norway	Germany	U.K.	Sweden	Israel	U.S.A.	Canada
Mean net income:							
	all ⁺	ret ⁺	all	ret	all	ret	all
Total 55+	100	77	100	79	100	58	100
55-59	144	--	156	81	158	60	136
60-64	123	--	105	79	124	58	119
65-74	91	83	89	82	79	61	96
75+	62	72	75	75	63	53	72
Dispersion							
Ratio ^{***}	2.3	--	2.1	1.1	2.5	1.1	1.9
Mean equivalent net income:							
Total 55+	100	91	100	90	100	70	100
55-59	121	--	134	83	140	70	126
60-64	116	--	101	92	121	74	114
65-74	98	96	93	91	84	72	97
75+	76	86	86	89	73	67	80
Dispersion							
Ratio ^{***}	1.6	--	1.6	0.9	1.9	1.0	1.6

* The equivalent net income is measured by families.

** The mean net incomes of the "retired" families relative to the mean net income of all the elderly families (55+).

*** Dispersion ratio - the ratio of relative mean net income for the 75+ to 55 - 59 age group.

+ all - all elderly families

ret - only "retired" families

consistent with the fact that West Germany has a relatively high proportion of families that have retired completely in the 60-64 age group, whereas in Norway the retirement age is higher (67 or 70). In the other countries, the relative mean falls most sharply from the 60-64 to the 65-74 age group.

Relative mean net income of the 55-59 age group in the United Kingdom is the highest in the seven countries surveyed (158). This is followed by West Germany and Norway with 156 and 144 respectively. The relative mean net income in the 75+ age group is lowest in Norway and the United Kingdom (53) and highest in Israel (78). If the ratio of high to low relative mean net income within a country is taken as a crude measure of income dispersion or inequality among age groups within that country, then the United Kingdom and Norway have the widest dispersion and Israel and Sweden have the narrowest.

A comparison of the "retired" families with all the elderly families reveals that the economic situation of the "retired" families in all age groups is worse. This gap is less significant in the two older age groups, due to the fact that the decisive majority of the families in these two age groups are "retired".

In each of the countries the income dispersion among the four age groups within the "retired" families is significantly smaller than that which was found in the general elderly population. This finding is particularly outstanding in West Germany, the United Kingdom, Sweden and Canada. In these countries small differences were observed in the relative means of the first three age groups and the decline in the

relative mean of the highest age group - 75+ - is relatively moderate. The ratio of the highest to the lowest relative mean is about 1.1 in West Germany and the United Kingdom and 1.2 in Sweden and Canada.

In the United States, on the other hand, a systematic decline in the relative means appears also in the "retired" population and a relatively substantial inequality was found in the distribution of income among the age groups. The relative mean of the 75+ age group is only two-third of that of the 55-59 age group. In Israel the pattern of relationship among the relative means of the age groups in the "retired" population is the opposite of that which characterizes the other countries. The relative mean income rises with age and the relative situation of the older age groups is better than that of the younger age groups. The difference between Israel and the other countries stems from the fact that in Israel income from property is distributed most unequally among the various age groups in the "retired" population. The relative mean property income of the 75+ age group is ten times as high as that of the youngest age group and double that of the 60-64 age group.

Table 7 also present the equivalent relative mean net incomes from which we may draw conclusions regarding the impact of the adjustment of income for family size.

The adjustment did not change the ranking of the countries by relative means and income dispersion among the age groups. However, in all the countries, this adjustment decreases the income gaps among the age groups compared with that obtained before adjustment for family

size. Moreover, according to equivalent net income, the relative situation of the retired families is better than according to per family income.

B. Income Distribution Within Age Groups

Another important aspect of the distribution of income among the elderly families is the relative distribution within each age-of-head group. Table 8 presents the relative shares of the top and bottom quintiles in total net income in each of the four age groups and the Gini coefficients, the income distribution being constructed on the basis of per family net income.⁸ The data show that the patterns of change in the relative shares of the quintiles and the Gini coefficients among the various age groups are not uniform in all the countries.

The distribution of income in each of the age groups is more equal in Sweden than in the other countries. Norway occupies the second place and the United Kingdom is generally ranked third. This finding is expressed in the Gini coefficient and relative shares of quintiles; in Sweden the Gini coefficient is the lowest in all age groups, the relative share of the bottom quintile is the highest, whilst the share of the top quintile is the lowest. In Germany, the distribution of income in the 55-59 age group is the least equal of all the countries as is the case in the United States in the 60-64 and 65-74 age groups. Inequality of income distribution in the oldest group is highest in Israel.

Table 8:

BOTTOM AND TOP QUINTILE INCOME SHARES AND GINI COEFFICIENT

WITHIN EACH AGE GROUP OF FAMILY'S HEAD

(Based on Net Income per Family)

Age of Head		Norway	W.Germany	U.K.	Sweden	Israel	U.S.A.	Canada
55-59	Bottom Quintile	8.0	5.3	7.2	9.8	7.2	4.5	5.4
	Top Quintile	34.3	46.8	38.5	32.1	38.9	39.5	38.8
	Gini Coeff.	0.2672	0.4210	0.3166	0.2331	0.3227	0.3527	0.3369
60-64	Bottom Quintile	7.2	5.2	6.1	10.1	6.3	3.0	4.5
	Top Quintile	35.7	41.7	42.4	33.7	41.3	43.6	41.7
	Gini Coeff.	0.2894	0.3573	0.3648	0.2475	0.3618	0.4118	0.3797
65-74	Bottom Quintile	8.4	6.2	8.5	11.9	6.6	5.3	6.9
	Top Quintile	38.9	42.0	43.2	32.3	45.4	44.6	43.9
	Gini Coeff.	0.3069	0.3525	0.3418	0.2126	0.3881	0.3943	0.3686
75+	Bottom Quintile	9.9	4.8	10.0	13.2	5.5	6.0	8.3
	Top Quintile	37.7	41.0	43.2	30.5	52.6	47.0	44.2
	Gini Coeff.	0.3069	0.3635	0.3183	0.1803	0.4671	0.4067	0.3564

The differences between Sweden and the other countries, especially the United States and Israel, increase as one goes from the 55-59 age group to the oldest age group. In Sweden, the income of the top quintile in the 55-59 age group is 3.3 times as high as the income in the bottom quintile and the ratio falls to 2.3 in the 75+ age group. Moreover, the Gini coefficient in the 75+ age group is 30% lower than in the 55-59 age group. On the other hand, in Israel, for example, the ratio of income in the top quintile to income in the bottom quintile rises from 5.4 in the 55-59 age group to 9.6 in the 75+ age group and the Gini coefficient increases by about 45%. The Gini coefficients in the 75+ age group in Israel and the United States are 2.5 and 2.3 times as high, respectively, than in Sweden.

The characteristics of income distribution based on equivalent net income are presented in Table 9. A comparison of the income distribution data based on equivalent net income with the data based on net income per family shows that Gini coefficients calculated on the basis of equivalent net income are lower; moreover, the share of the lowest quintile is higher whereas the share of the highest quintile is lower. This finding is true for all age groups in all countries.¹⁰ However, the patterns of change of the relative distribution as age rises resemble, more or less, those obtained from the per family income distribution.

Table 9:

BOTTOM AND TOP QUINTILE INCOME SHARES AND GINI COEFFICIENT

WITHIN EACH AGE GROUP OF FAMILY'S HEAD

(Based on Equivalent Net Income)

Age of Head		Norway	W.Germany	U.K.	Sweden	Israel	U.S.A.	Canada
55-59	Bottom Quintile	9.9	7.4	9.7	10.7	7.5	5.9	7.8
	Top Quintile	32.9	42.8	32.8	29.7	40.0	37.1	35.5
	Gini Coeff.	0.2313	0.3539	0.2324	0.1942	0.3264	0.3143	0.2820
60-64	Bottom Quintile	10.4	6.9	8.4	11.0	6.9	4.6	6.7
	Top Quintile	32.6	36.1	35.5	30.0	43.0	39.6	37.7
	Gini Coeff.	0.2259	0.2963	0.2803	0.1931	0.3573	0.3534	0.3136
65-74	Bottom Quintile	10.5	7.1	10.9	14.1	7.7	6.6	8.7
	Top Quintile	35.3	36.7	37.6	28.5	43.7	40.8	39.7
	Gini Coeff.	0.2495	0.2981	0.2656	0.1426	0.3599	0.3416	0.3092
75+	Bottom Quintile	11.4	5.6	12.0	15.1	7.4	7.0	10.0
	Top Quintile	34.6	39.7	36.8	27.3	50.4	42.9	39.6
	Gini Coeff.	0.2293	0.3395	0.2403	0.1258	0.4288	0.3554	0.2807

V. Poverty in the Elderly Population

In this section we compare the extent of poverty and the composition of the poor population in the various countries. We shall present two alternative definitions of poverty: according to the first, a family belonging to the bottom quintile of the equivalent net income of all families (elderly and non-elderly) is considered to be poor;¹¹ according to the second, a poor family is one whose equivalent net income is lower than 50% of the median equivalent net income.

A. Poverty Rates

As shown in Table 10, according to the first definition, the incidence of poverty among all elderly families in the United Kingdom is significantly higher than in the other countries; 40% of the elderly families are in the bottom quintile. In other countries, small differences were observed in the incidence of poverty; the percentages of poor elderly families in Sweden and Israel are the lowest: 21% and 22% respectively, whilst in the United States, West Germany, Canada and Norway they range from 24% to 27%.

In all the countries there is an upward trend with age in the percentage of families belonging to the bottom quintiles, but the rates are not uniform. In the United Kingdom poverty rate in the oldest age group is six times higher than in the 55-59 age group (67%

Table 10:
POVERTY RATES BY AGE OF HEAD (55+)
ACCORDING TO THE TWO DEFINITIONS OF POVERTY

Age of Head	Norway	W.Germany	U.K.	Sweden	Israel	U.S.A.	Canada
<u>Families in Bottom Quintile of Equivalent Net Income:</u>							
55-59	12.2	12.0	10.6	9.7	9.6	14.8	15.9
60-64	13.2	22.7	22.1	9.9	17.8	22.0	23.3
65-74	25.7	24.9	49.3	15.1	25.9	24.6	29.2
75+	49.5	35.8	67.0	43.0	34.4	34.7	40.6
Total 55+	27.0	25.0	40.3	21.3	21.9	24.1	27.1
<u>Families with Equivalent Net Income Less than 50% of the Median Equivalent Net Income:</u>							
55-59	3.4	6.1	6.1	3.4	4.1	13.1	11.3
60-64	3.7	9.8	9.9	3.5	14.9	19.2	15.6
65-74	2.8	12.6	19.6	0.2	20.1	19.7	11.5
75+	8.1	15.8	25.1	--	31.3	28.0	14.3
Total 55+	4.5	11.8	16.3	1.3	17.6	19.9	12.9

in contrast to 11%). In Sweden and Norway, the poverty rates of the first two age groups are almost equal whereas the rate of poverty in the 75+ age group is about four times as high as that in the two younger age groups. In contrast, in Canada, the United States, West Germany and Israel the rates of increase in percentage of families in the bottom quintile from the 55-59 to the 75+ age group is less marked.

These findings are more or less consistent with the patterns of change in the relative mean equivalent net incomes with age. For example, in the United Kingdom the relative mean net income in the 75+ age group is the lowest compared with that in the other countries, whilst in the 55-59 age group it is the highest. Moreover, the gap between the relative means of these two age groups in the United Kingdom is the widest. On the other hand, in Canada, the United States and Israel, the gap is the narrowest.

In all the countries, the number of poor families according to the second definition is lower than that according to the first definition. This phenomenon stems from the skewness of the income distribution curve. In Sweden and Norway, the percentage of elderly families with incomes less than half the median income is markedly lower than the corresponding percentage in the other countries. Only about 1% of all elderly families in Sweden and 4.5% of them in Norway have an income lower than half the median income. Moreover, in these two countries, the difference in the number of poor families according to the two definitions is the greatest among the countries surveyed.

Almost all the elderly families in the lowest quintile in Sweden and Norway have an income which exceeds half the median income. On the other hand, the United States and Israel have the highest percentages of families with incomes below half the median income: 19.9% and 17.6% respectively, and most of the elderly families in the lowest quintile have an income below half the median income. In the United Kingdom, which was ranked first among the countries by the percentage of elderly families in the bottom quintile, the percentage of elderly families with incomes below half the median income is less than that in the United States and Israel, i.e. 16.3%. In the United Kingdom too, the income of over half the elderly families in the bottom quintile is higher than half the median income. In Canada and West Germany the number of poor families according to the second definition is approximately half that according to the first definition.

An examination of the percentage of families whose income is lower than half the median income in the various age groups reveals that in the 55-59 and 60-64 age groups there are more poor families in the United States and Canada than in the other countries, whilst in the two older age groups, the percentage of poor is highest in Israel, followed by the United States, and the United Kingdom. 31% of the elderly families aged 75+ in Israel and 28% in the United States are poor. Compared with the other countries, the relative mean income of the 75+ age group in Israel is the highest but, on the other hand, the inequality of the income distribution in this age group is the highest and, therefore, so is the poverty rate. In Sweden all the families in

Table 11:
POVERTY RATES BY FAMILY TYPE (55+)
ACCORDING TO THE TWO DEFINITIONS OF POVERTY

Family Type	Norway	W.Germany	U.K.	Sweden	Israel	U.S.A.	Canada
<u>Families in Bottom Quintile of Equivalent Net Income:</u>							
Single Male	38.2	23.0	46.1	29.0	19.0	32.7	39.0
Single Female	43.7	31.5	67.1	27.7	36.5	40.4	48.0
Copule without Children	12.8	22.0	34.0	11.8	15.9	14.2	15.7
Other	14.9	16.6	12.5	26.5	20.5	17.5	17.5
<u>Families with Equivalent Net Income Less than 50%</u> <u>of the Median Equivalent Net Income:</u>							
Single Male	8.8	11.6	21.4	2.0	19.0	27.0	17.3
Single Female	6.1	13.3	29.2	0.4	32.4	33.9	21.8
Couple without Children	1.6	11.3	12.3	1.4	11.0	11.3	6.7
Other	3.7	9.7	3.6	8.2	16.1	14.7	10.7

the two oldest age groups have an income in excess of half the median income.

Table 11 present poverty rates by type of family and according to the two definitions of poverty. In general, in all the countries poverty is more frequent among single females than among single males or single couples. Poverty rates among single females is over three times as high in Canada, Norway and the United States and 2-2.5 times as high in Israel, Sweden and the United Kingdom than among single couples. In West Germany the differences in the poverty rates of these family types are smaller. The ranking of the countries by the extent of poverty in each of the family types is similar to the ranking by poverty among the elderly families in general.

B. Composition of the Poor Population

Table 12 presents the composition of the poor population by age and family type, according to the two definitions of poverty. As expected the majority of the elderly poor consists of families in the two oldest age groups, whilst the proportion of the 55-59 and 60-64 age groups in the poor population is relatively small. This finding does not stem only from the fact that the families in the 65-74 and 75+ age groups constitute between 55% to 67% of all the families aged 55+, but also from the fact that the poverty rates in these groups are much higher than those characterizing the younger age groups. In all countries, except for the United States and Canada, 80%-85% of the elderly families in the bottom quintile are families that belong to

Table :12

COMPOSITION OF POOR POPULATION (55+)
BY DEMOGRAPHIC CHARACTERISTICS (in percentages)

	Norway	W.Germany	U.K.	Sweden	Israel	U.S.A.	Canada
<u>Families in Bottom Quintile of Equivalent Net Income</u>							
<u>Age Group of Family Head</u>							
55-59	8.6	9.2	5.7	7.2	7.8	14.2	14.4
60-64	9.1	12.3	9.0	9.4	15.6	18.4	18.1
65-74	33.0	40.1	48.8	24.9	46.7	35.9	36.1
75+	49.2	38.4	36.5	58.5	29.9	31.5	31.4
<u>Family Type</u>							
Single Male	19.8	6.1	12.1	23.8	5.2	12.7	15.1
Single Female	54.3	51.3	48.6	49.2	36.4	46.8	46.5
Couple	16.8	31.3	32.4	23.5	29.9	22.2	19.8
Other	9.1	11.2	6.8	3.5	28.6	18.2	18.7

Families with Equivalent Net Income Less than 50%
of the Median Equivalent Net Income

<u>Age Group of Family Head</u>							
55-59	15.6	9.9	8.3	43.5	6.3	15.2	21.4
60-64	15.6	11.2	9.9	52.2	17.2	19.3	25.6
65-74	18.8	42.9	48.0	4.3	45.3	34.7	29.7
75+	50.0	35.9	33.8	--	31.2	30.8	23.3
<u>Family Type</u>							
Single Male	31.3	6.5	14.0	27.3	6.3	12.7	14.2
Single Female	43.7	45.6	52.2	13.6	39.1	47.4	44.4
Couple	12.5	33.9	29.0	40.9	23.4	21.5	18.1
Other	12.5	13.8	4.8	18.2	31.2	18.4	23.3

the 65+ age group. In the United States and Canada, whose populations are less older, the corresponding proportion is 67%. In Sweden and Norway, the proportion of poor families in the 75+ age group among poor families in general is particularly high - approximately 60% and 50% respectively, in contrast to Canada, the United States and Israel, where it is approximately 30%. In the United Kingdom and West Germany, approximately 38% of the poor elderly families are aged 75+.

According to the second definition too, the families in the 65+ age group constitute the decisive majority of the poor elderly families, even though in most of the countries the proportion of families in the 55-59 and 60-64 age groups has risen slightly.

If we examine the composition of poor families by family type we see, again as expected, that the single females are the largest group. In all the countries, except Israel, about half of the poor population consists of single females. In Israel - only 36%, since their share in the general elderly family population is low compared with the other countries. Similar findings are obtained from the second definition of poverty as well.

VI. CONCLUSIONS

In this paper we have examined the size of the retired population according to alternative definitions and studied a number of aspects of the economic well-being of the elderly families across LIS countries.

According to most of the retirement definitions, the percentage of retired families among the elderly is higher in Sweden, West Germany and the United Kingdom than in Israel, Canada and the United States. Aside from this general finding it was revealed that: (a) in West Germany, characterized like Sweden by a high percentage of families with retirement income, most families with retirement income do not continue to work, whereas Sweden has less families with zero earnings and more families with retirement income who continue to work. This difference between West Germany and Sweden was most salient in the 55-64 age group. (b) In the 55-64 age group Israel has the same percentage of families with zero earnings as Canada and the United States, but a higher percentage of families with retirement income.

These differences between the countries result from several factors, the analysis of which was beyond the scope of this paper. Therefore, we shall limit ourselves to the following points: first, as expected, higher rate of retirement within all the elderly families (55+) corresponds to a higher percentage of the oldest group in the population (which is about 12% in Sweden, West Germany and Norway and 9.2% in the U.K.) Secondly, in all LIS countries single females are

more likely to be early retirees, than other family types, such as couples. On the other hand, countries with a higher percentage of the "other" family type (i.e. elderly living with other adults) have more families with earnings and therefore a lower percentage of retired families. Among these countries we can find Israel, Canada and the United States. Thirdly, the social security system of most of the LIS countries allows late retirement, beyond the age of 65 years. Sweden has an arrangement for a partial pension (the option of continuing to work part or full time and at the same time to receive pension) whereas the system in Israel, the United Kingdom, the United States and Norway have a retirement test for old persons of a certain age who continue to work after receiving pension. These arrangements can partially explain why in all LIS countries almost all families in the 65-74 age group have retirement income, but, except for Germany, only 60-70% have zero earnings. In Germany we find a more complete retirement.

In the other parts of the paper we have analyzed the income composition of the elderly families and examined some income distribution characteristics. We have shown that among LIS countries public transfers, or alternatively market income, comprise different proportions of family gross income. The lowest relative share of transfer income is in Israel, the United States and Canada, and the highest is in Sweden and West Germany. Norway and the United Kingdom are in the middle of the scale. The study of the "retired" population reveals that relative share of earnings in total income is negligible

(0-2%) in all countries. Therefore, it emphasizes the differences among the countries with regard to the role of the government in guaranteeing income as distinguished from private saving after retirement. In Israel, the United States and Canada market income still constitutes at least 50% of the "retired" families' gross income. It is possible that the saving patterns which characterized these countries, in the form of financial savings or occupational pension funds, arise from the awareness that the social insurance system guarantees a relatively low rate of earnings replacement. In Israel, for example, social insurance guarantees flat rate old-age pension, which does not enable the elderly to preserve the standard of living which he had enjoyed prior to his retirement. Accordingly, there is a tendency to exploit the alternative options.

Market income - earnings, property income and occupational pensions - generally tend to be distributed less equally than public transfers. Therefore, one can expect to find a relatively high level of income distribution in countries, in which market income constitutes a relatively important component in total income. The data on the elderly income composition in LIS countries on the one hand and on the Gini coefficients on other hand support, to a large extent, this hypothesis. Except for Germany, we found that the higher the relative share of market income, the more unequally is the income distribution within the elderly families.

The connection between the poverty incidence (according to the 50% of the median equivalent net income) and income composition is

less strong. The poverty rates in Germany, and to some extent in the United Kingdom are higher than expected on the basis of the relative share of transfer income, whereas the poverty rates in Norway and Canada are lower than the expected.

It should be emphasized that the differences among the countries with regard to the inequality in the income distribution and poverty rates are explained by many factors, with the average family income composition being only one of them. For example, a possible explanation to the unexpected high inequality in West Germany is that its social insurance system, as the United States', pays only earnings related pensions, which preserve to some extent the inequality of the earnings distribution. In contrast, the Israeli system provides only flat-rate pension whilst the pension in the remaining countries consists of the two tiers. The data on the poor families show that in West Germany the poor population contains less families with retirement income than the general elderly families, 50% compared with 76% respectively. 50% of the German poor families have neither retirement income nor earnings. In the other LIS countries, almost all of the poor families have retirement income. Sweden, as well as Germany, have high proportion of public transfers in the average family income package, but its pension system provides all the elderly an income in excess of the poverty line (50% of the median income). Thus, the cross-national variations in income inequality characteristics depend also on the distribution of the income transfers themselves among the families.

This paper presents some measures of economic well-being of the elderly population in LIS countries. Much work needs to be done to provide explanations to the cross-national variations especially a more detailed investigation of the institutional characteristics of the various countries. Moreover, wherever possible, data on the role played by non-cash income should be incorporated into the study of the elderly's economic well-being.

A P P E N D I X

TABLE 1:
COMPOSITION OF GROSS INCOME BY INCOME TYPES (All elderly units)

Income Type	Norway		Germany		U.K		Sweden		Israel		U.S.A		Canada	
	55-59	60-64	55-59	60-64	55-59	60-64	55-59	60-64	55-59	60-64	55-59	60-64	55-59	60-64
1. Income before tax & transfer	91	85	86	57	88	79	82	64	95	90	94	91	93	90
a. Earnings	88	81	83	51	83	68	79	59	88	78	83	74	82	72
b. Property income	3	4	1	--	3	5	3	5	4	7	7	10	9	13
c. Occupational pension	--	--	2	6	2	6	--	--	3	5	4	7	2	5
2. Transfer income	9	15	14	43	12	21	18	36	5	10	6	8	6	9
3. Public transfers	8	13	14	43	12	20	18	36	5	9	5	8	6	9
a. Social Insurance transfers	8	13	13	42	11	18	17	35	4	8	4	7	4	7
b. Means-tested transfers	--	--	1	1	1	2	1	1	--	1	1	1	2	2
4. Private transfers	1	2	--	--	--	1	--	--	1	1	--	--	--	--
5. Other income	--	--	--	--	--	--	--	--	--	--	--	1	1	1
6. Direct taxes	29	28	24	15	19	17	36	35	32	26	24	23	15	14
7. Net income	71	72	76	85	81	83	64	65	68	74	76	77	85	86

TABLE 2:
COMPOSITION OF GROSS INCOME BY INCOME TYPES* (only "retired" units)

Income Type	Germany	U.K.	Sweden	Israel	U.S.A	Canada						
	55-59	60-64	55-59	60-64	55-59	60-64	55-59	60-64				
1. Income before tax & transfer	15	15	31	38	6	9	51	47	74	81	66	70
a. Earnings	1	1	1	1	3	2	2	3	5	4	4	2
b. Property Income	1	6	12	3	3	7	4	14	14	22	30	33
c. Occupational pension	13	13	24	25	--	--	45	30	65	55	32	35
2. Transfer income	85	85	69	62	94	91	49	53	16	19	31	27
3. Public transfers	85	85	69	61	94	91	40	43	16	18	31	27
a. Social Ins. transfers	84	84	58	54	85	85	37	42	15	17	24	24
b. Means-tested transfers	2	1	11	7	9	6	2	1	1	1	6	3
4. Private transfers	--	--	--	1	--	--	10	9	--	--	--	--
5. Other income	--	--	--	--	--	--	--	--	1	1	3	3
6. Direct taxes	4	1	3	7	20	24	3	2	13	12	8	8
7. Net income	96	99	97	93	80	76	97	98	87	88	92	92

* There are no retired units in these age groups in Norway.

FOOTNOTES

1. In all the tables in this section, the countries appear in a descending order corresponding to their place according to the percentage of families in the 55+ age group among all families. Thus each table acquires an additional dimension alongside the specific variables presented in it.

2. No household of this type appear in Norway and Sweden since the data or their surveys consider a person over 18 living with other adults as a family per se.

3. The best way to evaluate the relative contribution of the various income source to the elderly's living standard is to study the distribution of net income. But the available data include only total net income and total tax payments.

4. Data on the income composition of elderly families in the 55-59 and 60-64 age groups are presented in Tables 1 and 2 in the Appendix.

5. The national pension scheme in Sweden includes a basic pension (AFP) and a supplementary pension (ATP) which provides for earnings-related payments. The occupational pension programs are closely integrated with the national scheme. Within the Swedish survey, occupational pensions are included in the transfer payments section.

6. Direct taxes include income tax and the payroll taxes paid by employees. The figure for Canada is affected by the absence of payroll taxes in the Canadian data.

7. When using income survey data, one should bear in mind that sometimes negative or zero incomes result. Among the countries surveyed, it is most prevalent in Germany where 2.7% of all families have zero incomes. The large majority of these German families are elderly. The result presented in this paper do not take this factor into consideration. Relating to the problem of zero incomes in Germany by omitting these records or by imputing an "assigned income" will increase the share of the bottom quintile, decrease the poverty rates, and it may also change the relative mean incomes of the various elderly groups.

8. The families are ranked by family net income and each quintile includes 20% of the families.

9. The families are ranked by equivalent net income and each quintile includes 20% of the persons.

10. These results stem from the fact that the percentage of the small families (singles and couples without children), in the lowest quintile of income distribution per family is higher than their percentage in the highest quintile.

11. The families are ranked according to their equivalent net income and the quintiles are tabulated according to an equal number of persons. By this poverty measure, the bottom 20% of persons (but not families) are termed poor in each country.

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