THE EFFECT ON POVERTY STATUS IN ISRAEL OF CONSIDERING WEALTH AND VARIABILITY OF INCOME

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This paper assesses the effects of including wealth and the variability of income on the incidence of poverty and the degree of income inequality in Israel. A special survey, which includes data on the wealth and income of a national sample of Israeli families in 1963–64 and 1964–65, allows us to go beyond measures based on current income alone.

The first section reviews earlier studies of poverty in Israel. The next section looks at poverty and inequality in terms of current income, current wealth, and a combined measure of income and wealth. The combined measure is the Hansen–Weisbrod measure (HW), which equals income plus the annuity value of wealth, assuming all wealth is just consumed at the time of death. It is interesting that, in spite of the much higher wealth inequality than income inequality, the HW measure was slightly more equally distributed than income. This result occurred because the annuity component made up a low share of the total HW measure and the correlation between income and wealth was well under 1. Although overall inequality and poverty were similar for income and HW measures, the incidence of poverty by subgroup depended on the measure used.

The final section presents a dynamic view of poverty and inequality. Year-to-year changes in poverty were substantial. Because of the use of a relative poverty concept and the rise in real incomes, the real income poverty line rose by 15 percent between 1963 and 1964. Still, of those in income poverty in 1963, 37 percent managed to escape poverty in 1964. The paper shows how the degree to which poverty was stable or transitory varied substantially by age and country of origin.

I. Introduction and Background

The poor are those with little command over resources. How do we interpret "command over resources"? Current income, on which most studies of poverty have relied, is clearly a deficient measure. In addition to the flow of purchasing power we should take into account its stock—wealth or net worth. This is the concern of Section II. Furthermore, how do both the stock and flow change over time? Are they stable in the short run or are there large year to year fluctuations in poverty status? This is the concern of Section III. Section IV is a summary of our findings. The remainder of this section provides some background on research into poverty in Israel.

Israel differs from some other countries in that a consensus has developed that poverty should be defined in relative terms. That is, poverty standards must be defined in relation to prevailing standards of living. This approach has characterized the various studies of poverty and has been institutionalized in the arrangements made for linking income transfers to changes in the average wage. The adoption of a relative approach has important implications for the way in which the size and composition of the poverty population can be expected to change over time and for the types of social policies that are required to deal with

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the problem. Unless inequality in the earnings structure declines, the extent of pre-transfer income poverty will persist. Unless transfers are increased as a percentage of average wages, their effectiveness in reducing income poverty will not improve.

Like many countries, Israel experienced a surge of interest and concern with poverty and related social problems in the late 1960s. The first systematic attempts to define and measure poverty occurred in this period. Two approaches emerged. One measured poverty purely in economic terms, as a function of family income and the needs of the family as related to family size; the other measured poverty in terms of a number of dimensions in addition to income—the educational achievement of the family head, the number of children in the family, and housing density.[1]

Early studies in the tradition defining poverty in terms of current income revealed two important facts. The first was that poverty was far more widespread than had been believed. Roter and Shamai found that 11.1 percent of all families were poor in 1969 on the basis of a poverty line equivalent to 40 percent of the median disposable income. Using a near-poverty line of 50 percent, the proportion of poor rose to 21.5 percent.[2]

Later studies distinguished between the pre-transfer and post transfer poor and found that the former included 17.9 percent of all families. These results refuted the then prevalent belief that poverty was a marginal phenomenon confined to the few families receiving regular support from the Ministry of Welfare.[3] The second finding was that the poor include two major groups: families whose heads are aged (about half of the poor, their poverty a result of low labor force participation and the rarity of private work-related pensions) and families with an employed non-aged male head (generally referred to as the working poor). The poverty in the latter group, not recognized previously, was disturbing to many. It seemed particularly unfair that a man willing to work should be unable to support his family adequately.[4]

Another troubling finding was that the working poor included a high proportion of large families of Middle East origin (e.g. Yemen, Iraq, and North Africa). Thirty-nine percent of working poor families have four or more children. Of all poor children 75 percent are in families with four or more children, and 80 percent are in two-parent families whose heads are employed.[5]

Most of the population of Israel are immigrants. Many came during the period of mass immigration—1948–1952—when the population of Israel

[1]The first approach developed at the National Insurance Institute (in the Bureau of Research and Planning) and the second emerged in the School of Social Work at the Hebrew University and had its roots in the literature on multi-problem families. (See Bibliography for references to poverty studies.)

[2]See Roter and Shamai, 1971.

[3]The number of welfare recipients as a percentage of all families varied from 3 percent to 5 percent between 1966 and 1974.

[4]One-parent families, a sizable group among the poor in some countries, are of little quantitative significance in Israel (see Habib, 1975A).

[5]The studies using a multi-dimensional approach found that the multiple incidence of disadvantages was particularly severe among large families. Fifty-one per cent of children from large families had two or three disadvantages (i.e. low income, low education or high housing density), as compared to 10% of children from families with 1–3 children. See *Report of Prime Minister's Commission on Children and Youth in Poverty*, and Habib, 1974.

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doubled and the immigration rate reached a peak of 266 per thousand inhabitants. The origin of 53 percent was Europe or the Americas, and of 47 percent Asia, Africa or the Middle East. The absorption and integration of the diverse groups is one of Israel's major goals and involves overcoming very large differences in cultural, educational and occupational backgrounds. For instance in 1957, 53 percent of all females and 25 percent of all males over the age of 14 from Asia or Africa could not read or write as compared to 6.2 percent of females and 2.2 percent of males from Europe or the Americas. Similar percentages in the two groups had no formal schooling. At the other end of the scale, 4.8 percent of males from Europe or America had post-secondary education versus only 0.7 percent of males from Asia or Africa. Families from Asia-Africa more often had four or more children, 22.4 percent as compared with only 1.5 percent of families from Europe–America. The studies on poverty revealed that income differences between immigrant groups were very great. Differences in labor force skills combined with differences in family size to create a strong association between country of origin and poverty.

The relative poverty approach implies that the working poor should remain a major group among the income-defined poor, unless the wage structure changes. Although improvements in income transfers since 1969 have reduced the post-transfer poverty rate considerably, the working poor continue to make up a significant percentage of the pre-transfer poor. In contrast, poverty counts in the United States have shown a steady decline in the percentage of working poor as a result of not adjusting the poverty line for wage increases. Likewise, instability in poverty status should also be smaller under a relative definition.

Some recent studies have focused on specific issues such as the relationship between low wages and poverty status and the effect of cost of living adjustments. Accelerated inflation rates have led many to question the adequacy of arrangements linking transfers to wages and prices.[6] Currently, transfers are adjusted three times a year—twice for cost of living increases in January and in July, and a third time in April for increases in average wages. As these adjustments lag behind price increases, they involve a real loss which increases with the inflation rate. These arrangements are now being revised to reduce the lag and to have it decrease with the rate of inflation. The first six months of 1975 produced a special problem. In this period prices were allowed to rise faster than wages, reducing real incomes. Measures were taken to protect the poor against the decline in living standards and it is already clear that at least some low-income groups have increased their relative incomes. The issue of whether the poor should share in the decline in living standards has yet to be resolved.

II. Income and Wealth

A. *Introduction*

A basic problem in measuring the extent of poverty is that of defining an adequate measure of the resources of the poor. Most estimates are based on current income only. This measure is often incomplete, in that it does not include

[6]The rate of inflation was 56 percent in 1974 as compared with 10 percent in the early 1970s.

estimates of income in kind, the imputed value of services from durable goods or of public services. In addition, current income measures obviously make no allowance for the contribution of wealth to the family's command over resources. In this section, we consider the role of wealth in determining poverty and low economic status.

Accurate data on the distribution of wealth and on the joint distribution of wealth and income are difficult to obtain. One should therefore ask how necessary it is for identifying the poverty population or designing income maintenance policy. The answer depends largely on one's approach to poverty and to income maintenance: Does current income poverty have a significance that is not affected by the possession of wealth? Are wealth and income close substitutes so that wealth can supplement deficient income in determining who is above or who below a given poverty line? Should income support programs include an assets test?

An evaluation of the process of wealth accumulation and the distribution of wealth would seem to have particular interest in Israel. First, Israel is a country of immigrants, many of whom came as penniless refugees and had to begin the process of wealth accumulation at an advanced age. The amount of time in the country and the age of immigration are unique factors that could alter the typical income-wealth relationships observed in other countries. Part of the European refugees, survivors of the Holocaust, received compensation from West Germany. Non-European immigrants did not receive any compensation for the property they were forced to abandon. This may have been an important factor in widening differences between Western and Eastern immigrants in the distribution of economic resources.

Second, the housing market and the pattern of home ownership have many unique features. Home ownership is far more common than in other countries and housing assets are unusually important. The government, moreover, has played a major role in the housing market. The majority of families have obtained their home with government assistance and much of government redistribution has been in the form of wealth redistribution. Over the last decade, housing prices have risen much more rapidly than the overall price level or even real incomes. This has increased the importance of housing assets.

One way to analyze these issues is to compare the results for income-defined poverty with those for wealth-defined poverty. A second way is to construct an index of command over resources combining income and wealth. Obviously, there is no truly satisfactory way of doing this. We have chosen to use the method suggested by Hansen and Weisbrod (1968), the essence of which is the conversion of wealth into an annuity which is added to current income.[7] We shall refer to the combined measure as the HW measure or just as HW. We assume an interest rate of 8 percent.[8] Since our interest is in poverty estimates and since these are almost always adjusted for family size, we thought it necessary to adjust the standard HW formula for family size. To do this we adopted the equivalence scale used in Israel to estimate income-based poverty measures.[9]

Our analysis is based on the 1963–64 and 1964–65 Savings Surveys, which make up a two-year longitudinal survey of income and wealth among urban families. The 1964–65 Survey (64 in the following) was conducted on a sub-

sample of families interviewed in 1963–64 (63 in the following). The data on wealth in the Survey is incomplete and includes only private financial assets, such as savings deposits, time deposits, stocks and bonds, the imputed value of owner-occupied dwellings and durable goods, and all sources of debts. All forms of commercial assets, such as real estate or owner-operated enterprises, the value of private pension rights or life insurance policies, and the value of social insurance rights are excluded.[10]

To obtain some perspective on the wealth data presented in the Survey, we compare it with wealth data in the U.S., as reported in the 1962 Survey of Financial Characteristics of Consumers.[11] The ratio of wealth to income is similar; 2.56 in Israel and 2.61 in the U.S. or 3.17 including commercial assets. In Israel the ratio of wealth to income rises with age from 1.66 to 4.42, again similar to the U.S. pattern, but there are differences in the composition of wealth. Housing comprised 79 percent of total assets in Israel but only 40 percent in the U.S. Eighty percent of Israeli families owned their homes, as compared to 57 percent of U.S. families. In Israel 79 percent of all liabilities were related to housing; the comparable figure in the U.S. was 66 percent. After deducting liabilities, housing assets were 79 percent of net worth in Israel and 35 percent in the U.S. Inequality in the distribution of wealth as measured by the Gini coefficient was 0.48 as compared with 0.76 in the U.S. Unfortunately, there was no way to separate commercial assets in the U.S. figure. We therefore cannot determine whether the lower inequality in Israel is due to the less comprehensive wealth data. In any case, it is necessary to keep in mind that our subsequent analysis refers to a measure of wealth that is usually more equally distributed than total wealth, as usually

[7]The annuity is the equal sum that could be spent annually so that all wealth is consumed by time of death. The combined measure of increase and wealth (HW) is

$$HW = Y + A_n W$$

where Y is current employment income including cash transfers, W is net worth, and A_n is the annuity value of one dollar of net worth.

A_n is calculated on the assumption that net wealth becomes zero upon the death of both husband and wife. In addition, it is assumed that a surviving wife consumes at a rate that is 2/3 the rate of her husband. Hence for a single individual

$$A_n = \frac{r}{1-(1+r)^{-n}},$$

for a couple

$$A_n = \frac{r}{1-(1/3)(1+r)^{-n}-(2/3)(1+r)^{-m}},$$

where r is the real rate of interest, n is the life expectancy of the husband and $m+n$ is the life expectancy of the wife.

[8]The results for two other interest rates (4 and 12 percent) were not significantly different.

[9]The scale assumes that increases in family size allow economies in consumption. It is generally appropriate to apply such economies to the annuity component in the HW measure if savings serve only to redistribute a given unit's consumption. But, where saving is for other purposes, such as providing children with an inheritance, and where unit size will vary, the income-based equivalent scales are not necessarily applicable.

[10]Feldstein (1974) has recently shown that in the U.S. social insurance rights represent a very significant portion of total wealth particularly for low income groups.

[11]This comparison is based on Landsberger 1967.

measured. But, it could be less equal than a fully comprehensive wealth measure that included pension rights—both private and public.

B. *Economic Status on the Basis of Income and Wealth in 1963–64*

Including wealth in the measure of family resources increases the average level of family resources. The effect of this increase on poverty depends in part on the way the poverty line is adjusted to the change in the level of resources. If no adjustment is made, poverty must decrease. But if we adhere to a relative concept of poverty, some adjustment must be made and we therefore employ a separate poverty line for each measure of resources set at 40 percent of the median and a near-poverty line set at 50 percent of the median. Of course, there is no need to fix the poverty level at the same percentage point for both wealth and income. An implication of this is that the extent of poverty will be closely related to the inequality in the distribution of resources.

How should the inequality of the distribution of the HW measure be related to the inequality of the distributions of income and wealth? The easiest measure of inequality to use in examining this question is the coefficient of variation. It can be shown that the coefficient of variation of HW, C_{HW}, is given by

$$C_{HW} = [(\alpha C_{AW} + (1-\alpha)C_Y)^2 - 2\alpha(1-\alpha)C_{AW}C_Y(1-\rho)]^{1/2}$$

where C_{AW} and C_Y are the coefficients of variation of the annuity value of wealth and of income respectively, α is the weight of the annuity value of wealth in average HW (i.e. $\overline{AW}/(\overline{AW} + \overline{Y})$) and ρ the correlation between income and the annuity.

Figure 1 shows how C_{HW} varies with α and ρ, assuming C_{AW} exceeds C_Y. Note first that if $\rho = 1$, C_{HW} is simply a weighted sum of C_{AW} and C_Y. But, if ρ is less than 1, C_{HW} can easily be less than both C_Y and C_{AW}. At low or moderate levels of ρ, C_{HW} at first declines with the level of α, then increases rapidly until of course it reaches C_{AW} when $\alpha = 1$. It is interesting that over some ranges of α increasing the weight of the more unequal variable (AW) can actually lower the inequality of HW. Consider now the inequality relations in the range of values likely to characterize actual distributions. For interest rates between 4 and 12 percent, A varies from 0.05 to 0.14. With W about 2.6 times Y, α is between 0.12 and 0.27. The level of α rises only a small amount with substantial increases in the ratio of W to Y. Wealth would have to rise to 10 times income just to raise α to 0.5. At reasonable ranges of α and moderate values of ρ, we would expect that C_{HW} should be no higher than C_Y, in spite of the higher inequality of AW than of Y. Given the values in our sample, where ρ is 0.55, α is 0.21, C_Y is 0.74, and C_{AW} is 0.90, C_{HW} turns out to be 0.71, or a little less than C_Y.[12]

Table 1 shows these relationships for the Gini and Atkinson measures of inequality. Whether resources are measured per family or adjusted for family size differences and whether the calculations are based on 1963 or 1963–64 data, we find the pattern similar to that noted above. Wealth is considerably more

[12]One possible complication is that the value of HW rises with age. However, the results in Table 1 confirm the fact that the changes in A do little to alter α, and so leave our earlier conclusions unchanged.
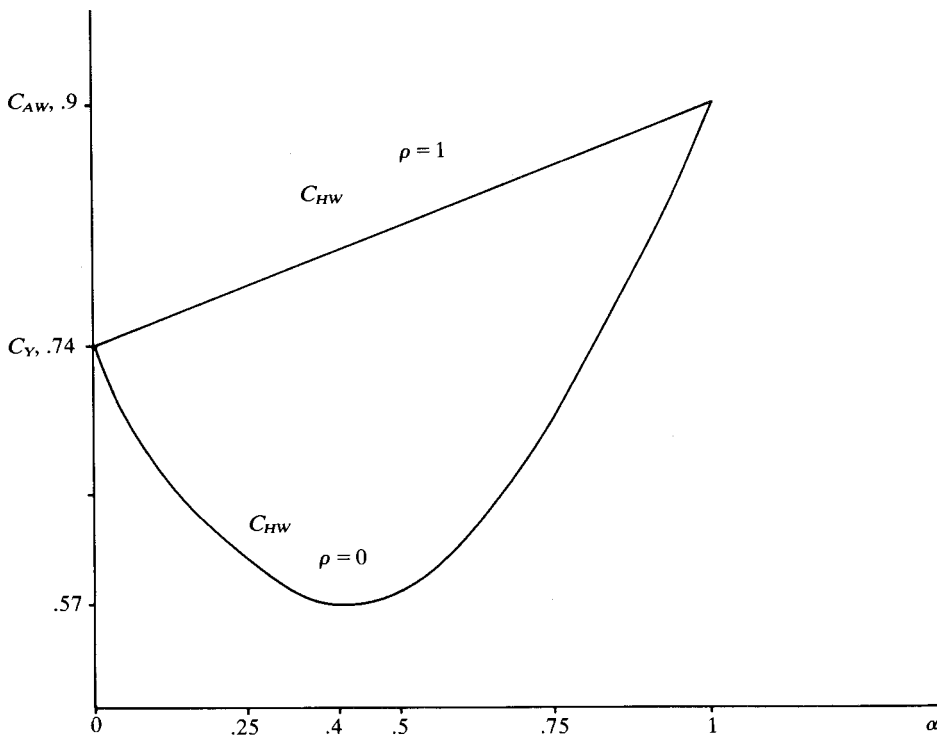
Figure 1. The Relationship Between Inequality in Income, Wealth, and HW

unequally distributed than income. Nevertheless, combining wealth and income into the HW measure results in lower inequality than the inequality of income alone.[13]

While the results for poverty need not be identical with those for inequality, they do exhibit a similar pattern. Poverty is much higher on the basis of wealth than on the basis of income, yet the income-wealth poverty rate is close to that of income. But in spite of the similar poverty rates for income and HW, the composition of the two poor populations may well differ. Table 3 shows that income poverty, wealth poverty, and HW poverty do indeed have different patterns.

To isolate the various independent factors affecting poverty, we performed a series of regressions relating poverty status to age, year of immigration, country of origin, and education. The results for a linear probability model appear in Table 4 and those for a logit probability model appear in Table 5. The overall pattern is similar to that shown by the cross-tabulations.

Wealth poverty is higher for the young and lower for the old than income poverty. Although all groups over 60 show less wealth than income poverty, it is noteworthy that wealth poverty rises beyond age 70. Apparently by this age much of accumulated savings has been used up in financing current consumption or has

[13]Studies in the U.S. have reached conflicting conclusions. Hansen and Weisbrod in their original article found that inequality in HW is considerably greater than inequality in income, while Taussig using a different data source gets a result that is similar to ours.

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TABLE 1

INEQUALITY IN 1963 AND FOR AVERAGE OF 1963–64 ON THE BASIS OF INCOME, WEALTH
AND HW PER FAMILY AND PER STANDARD ADULT

	Per Family			Per Standard Adult		
	Income	Wealth	HW	Income	Wealth	HW
1963						
Gini						
Total	0.339	0.435	0.330	0.369	0.471	0.366
Within age groups	0.071	0.094	0.069	0.077	0.099	0.076
Between age groups	0.269	0.341	0.261	0.292	0.373	0.290
Atkinson						
$e = 1.2$	0.247	0.617	0.221	0.273	0.610	0.264
$e = 2.5$	0.912	0.999	0.898	0.773	0.998	0.747
Average 1963–1964						
Gini						
Total	0.321	0.437	0.318	0.350	0.460	0.350
Within age groups	0.065	0.094	0.066	0.073	0.095	0.073
Between age groups	0.256	0.343	0.252	0.277	0.365	0.277
Atkinson						
$e = 1.2$	0.203	0.473	0.191	0.227	0.515	0.229
$e = 2.5$	0.531	0.998	0.381	0.437	0.997	0.412

TABLE 2

PERCENT POOR AND NEAR-POOR BY INCOME, WEALTH AND HW IN 1963, 1964 AND FOR THE
AVERAGE 1963–64

	Poor			Near-poor		
	Income	Wealth	HW	Income	Wealth	HW
1963						
Total sample	11	18	10	19	27	19
Mobility sample*	9	16	9	19	23	21
1964	10	21	11	19	29	21
Average 1963–1964	10	18	11	18	28	19

   *Families interviewed in 1963 (2,950) and reinterviewed in 1964 (1,136).

been transferred to children. Although the pattern of age effects is similar for HW
and for income poverty, the oldest groups bear less poverty according to the HW
measure. The latter result shows up most clearly in the logit formulation.

    The period of immigration or length of residence in Israel would be expected
to have a greater effect on wealth status than on income status. After an initial
period of adjustment, the effects of length of residence on income decline for
many groups.[14] There is no reason to expect a declining differential for wealth
as more years in the country provide more time to save and to replace the wealth
lost in the process of immigration. However, the year of immigration (which is
collinear with years in the country) also reflects the conditions existing in that
period. Opportunities for economic and social integration and government assist-

   [14]See Shmuel Amir, 1975, Chapter 4.

TABLE 3
PERCENT POOR OR NEAR-POOR BY SELECTED CHARACTERISTICS (AVERAGE 1963–64)

	Income	Wealth	HW	Income-Wealth		Income-HW	
				Both	Both as % of either*	Both	Both as % of either*
Age							
21–39	11	39	14	8	19	11	74
40–49	16	23	17	12	45	14	81
50–64	16	23	17	6	17	13	62
65+	41	23	36	18	40	36	88
Period of Immigration							
Born in Israel	—	26	—	—	—	—	—
Immigrated before 1931	16	13	15	8	36	14	83
1932–1938	9	5	3	3	25	3	35
1939–1947	18	16	16	6	22	16	89
1948–1955	19	34	20	11	27	17	80
After 1955	31	49	41	21	35	30	73
Country of Origin							
Iran–Iraq	26	42	31	18	36	26	82
Aden and Yemen	60	35	60	22	31	60	90
Morocco–Tunisia–Algeria	40	68	43	31	41	40	93
Rest of Asia–Africa	20	56	32	13	20	20	62
Eastern Europe	8	9	4	2	13	4	42
Balkans	23	25	23	10	27	20	73
Western Europe and America	6	4	5	3	49	5	89

*Poor by both measures as a percent of those poor on the basis of at least one of the measures.

ance varied considerably from period to period and the amount of wealth at time of immigration may also be correlated with the period of immigration. For example, in the 1931 to 1938 period, immigrants arrived from Germany with considerable wealth, whereas in earlier periods, the average immigrant was considerably less well-off. The net effect of period of immigration on poverty is generally in the expected direction for all measures. Table 4 shows a net 13 point gap between the income poverty rate for families that immigrated after 1955 and those that immigrated before 1931. There is also a large gap between those who came after 1955 and those who came in the 1938–1955 period. The effects of period of residence are much greater in terms of both W and HW than in terms of income. The gap rises to 21 points in terms of wealth and 23 in terms of HW.

The effects of country of origin on poverty are larger and highly significant by all measures. The poverty rates of those from Asia–Africa are considerably higher than those from Europe or the Americas. Those from the Balkans are in an intermediate position. After controlling for education, year of immigration and age, the gap between those from Asia–Africa and Europe–America is reduced but remains large. For example, the gap in income poverty or HW poverty rates is reduced by between 10 to 35 percent depending on the country, while the wealth poverty rates are reduced by between 28 to 56 percent.

TABLE 4

THE EFFECT OF SELECTED CHARACTERISTICS ON THE POVERTY RATE BY INCOME, WEALTH
AND HW, AVERAGE 1963–64 (LINEAR REGRESSION)

	Income†		Wealth†		HW†	
	b	t	b	t	b	t
Constant*	5	1.44	15	3.93	2	0.75
Age						
21–24	−8	−1.07	54	6.24	−14	−1.91
25–30	−16	−4.01	12	2.50	−17	−4.32
31–35	2	0.64	11	2.62	9	2.48
46–55	3	0.84	1	0.39	3	0.89
56–60	−3	−0.77	−4	−0.88	2	0.51
61–65	8	2.06	3	0.62	0	0.03
66–70	25	5.8	1	0.22	20	4.87
71+	37	8.6	12	2.31	32	7.36
Period of Immigration						
Born in Israel	−4	−0.16	−20	−0.69	−7	−0.29
Immigrated before 1931	−4	−0.91	−11	−2.34	−3	−0.71
Between 1932–1938	0	−0.12	−9	−2.31	−5	−1.54
1939–1947	2	0.75	−7	−1.88	0	−0.06
After 1955	9	3.02	10	2.79	20	6.50
Years of Education						
0–4	16	5.18	15	4.17	17	5.86
9–12	−4	−1.70	−9	−2.95	−7	−2.55
13+	−12	−3.91	−6	−1.56	−13	−4.17
Country of Origin						
Iran, Iraq	16	4.09	22	4.79	23	6.06
Aden, Yemen	41	7.04	13	2.02	46	7.98
Morocco, Tunisia, Algeria	26	6.18	39	7.90	25	5.88
Rest of Asia–Africa	8	2.13	34	8.06	22	6.05
Balkans	10	3.08	7	1.75	12	3.64
Western Europe and Americas	−3	−0.94	−4	−1.08	2	0.43

*The base is: age 36–45, period of immigration 1948–54, 5–8 years of education from Eastern
Europe.
†Income $R^2 = 0.29$ Wealth $R^2 = 0.30$ HW $R^2 = 0.34$.

The gap in wealth poverty rates between families from Asia or Africa and
families from Eastern Europe is in general greater than the gap in income poverty.
The one exception are families from Yemen–Aden. They have the highest rate of
income poverty, yet they have one of the lowest wealth poverty rates. Their
income poverty rate is 41 points above that of Eastern Europeans, while their
wealth poverty rate is only 13 points greater. This is particularly surprising in that
this group arrived in Israel with very few possessions at a particularly difficult
period. They were evacuated on short notice from Yemen and Aden in 1949 in the
midst of the peak immigration period and at a time of difficult economic
conditions in Israel. Our results seem to support the reputation they have
established as a particularly industrious and thrifty group. Differences among the
immigrant groups in HW poverty fall between poverty differences based on
income and those based on wealth. The gap in poverty rates between Asia–Africa

TABLE 5

THE EFFECT OF SELECTED CHARACTERISTICS ON THE POVERTY RATE, BY INCOME AND HW, 1964 (LOGIT)

	Income			HW		
		b			b	
	b	standard error	bp(1−p)†	b	standard error	bp(1−p)†
Constant*	−2.49	−14.28		−2.60	7.54	
Age						
21–24	−0.72	−1.38	−9.08	−1.61	−0.94	−18.92
25–35	−0.42	−2.11	−5.30	−0.18	1.42	−2.12
46–55	−0.25	−1.30	−3.15	−0.28	0.64	−3.29
56–65	0.39	2.07	4.92	0.13	4.35	1.53
66+	1.87	9.48	23.58	0.93	−0.58	10.93
Period of Immigration						
Born in Israel	−0.01	−0.01	−0.13	−0.74	−4.55	−8.70
Immigrated before 1947	−0.68	−3.91	−8.57	−0.92	5.74	−10.81
Immigrated after 1955	0.61	4.03	7.69	0.88	11.33	10.34
Years of Education						
0–4	1.25	8.54	15.76	1.13	−3.65	13.28
9–12	−0.57	−3.27	−7.19	−0.69	−3.50	−8.11
13+	−1.14	−4.47	−14.37	−0.93	−2.48	−10.93
Continent of Origin						
Asia–Africa	1.23	8.62	15.51	1.63	0.73	19.15
Israel	0.27	0.27	3.40	0.93	−14.38	10.93

*The base: age 36–45, period of immigration 1948–54, 5–8 years of education from Eastern Europe.

†The derivative of the probability with respect to the independent variable. It is analogous to the coefficient in the linear probability model.

TABLE 6

THE EXTENT OF OVERLAP IN THE POVERTY POPULATION BETWEEN INCOME, WEALTH AND HW

	Poverty Line		Near-poverty Line	
	Existing Overlap	With Maximum Overlap	Existing Overlap	With Maximum Overlap
1963				
Between Income and HW				
On basis of one at least	13	11	22	19
Only on basis of income	3	2	4	1
Only on basis of HW	2	—	3	—
On basis of both	8	10	16	19
Between Wealth and Income				
On basis of one at least	25	18	36	27
Only on basis of income	7	—	9	—
Only on basis of wealth	14	7	17	8
On basis of both	4	11	10	19

and Eastern European immigrants is 2 to 14 points higher for HW than of income. On the whole there is no doubt that current income estimates of poverty underestimate the gaps in overall resources among the immigrant groups.

We showed above how poverty rates and the composition of the poor differ between measures based on income and on wealth. These differences must involve changes in the poverty status of individual families as well. For example, the poverty rate is 10 percent on the basis of income and 18 percent on the basis of wealth so that it is clear that at least 8 percent of families who are below the wealth poverty line are not included among the income poor. Despite the higher wealth poverty rate there may still be families that are among the income poor, but not among the wealth poor. This would imply shifts in the ranking of families between the two distributions. The greater these shifts, the greater will be the difference in poverty status between the two measures.

In the previous section we found that there were very large differences in the overall poverty rate and in the composition of the poor for income and wealth poverty. Consistent with these findings, the degree of overlap of families poor on the basis of both measures is quite low. Note in Table 6 that only 10 percent of families are below the near-poverty line on the basis of both income and wealth. This represents 28 percent of the maximum possible percentage. Despite the small overlap between income and wealth, there is a striking correspondence between those poor on the basis of income and on the basis of HW. Sixteen percent of families are poor on the basis of both, representing 70 percent of families that are poor on the basis of either, and 84 percent of the maximum possible percentage. The degree of variability in the ranking of families by income and wealth does not vary significantly with age, period of immigration or country of origin. The overlap between income and HW is much greater than between income and wealth in all groups.

Changes in Income and Wealth Over the Decade 1965–1975

These results provide a limited benchmark. Before proceeding to Section III, we briefly describe some of the developments that have taken place since 1963. Economic developments in Israel over the decade 1965–1975 have brought about extraordinarily rapid changes in income, wealth and the relationship between them.

Housing[15]—The price of housing has risen far faster than the overall price index or than real incomes. For instance, during the period of most rapid increase (1970–74) the price of an average three-room flat in Tel Aviv rose from about five to about ten times the median annual family income. In the absence of any detailed recent data one can only guess at the distributional implications.

Consider four types of family: (1) owners of a "luxury" flat; (2) owners of an average flat; (3) those renting at a subsidized rent; (4) those renting at economic rent. Families of the fourth type have clearly suffered relatively and absolutely. Rents on the free market have risen considerably and these families' prospects of being able to purchase a home have diminished. The third type of family has suffered less since subsidized rents have risen relatively little over the period; they

[15]For a detailed analysis of changes in housing prices see Borochov and Pines 1975.

have however lost potential mobility since their chance of being able to purchase a home other than the one they occupy has diminished. The second type of family has been largely left in the same position by the rise in housing prices; their mobility at the same standard of housing has remained much the same but their ability to "move up" has fallen. Families of Type 1 have clearly gained and more than suggested by the overall rise in housing prices since "luxury" flats have risen at an even faster rate. To Type 1 we can add those owning a second flat and those owning potential building land. There is considerable pressure of Type 2 families trying to get onto the bandwagon by purchasing a larger flat. This has created an enlarged demand for housing that one is tempted to call speculative as it is largely motivated by portfolio considerations.

Demographically Type 1 probably includes the high-earning and middle aged, and those that immigrated prior to the mass immigration of the early fifties. Type 2 probably includes the majority of the population in the medium earnings range and some of the income poor. Type 3 includes about 40 percent of the low-income families (about 50 percent of low-income families own their own homes and the rest rent). Type 4 includes some of the poor, young families and recent immigrants. The difficult position of Type 4 families is mitigated to some extent by the existence of government housing programs for these groups.

Transfer Payments—Income transfers have increased in importance relative to earnings. These increases have substantially reduced post-transfer income poverty, both among the working poor and among the elderly.

Durables—Ownership of consumer durables has increased dramatically and here again prices have risen relative to the consumer price index. Between 1965 and 1973 the share of Jewish families owning washing machines rose from 31 to 59 percent; the share owning automobiles rose from 8 to 24 percent.

Financial Assets—The last decade has seen an enormous increase in the holding of index-linked government bonds. In 1974 the service of debt (largely linked) amounted to almost one third of tax revenue. The government has used most of the proceeds from the sale of linked bonds to finance its development budget—much of it as unlinked credit to industry and agriculture. Part has been used to finance unlinked mortgages to house purchasers, in particular young couples and immigrants. The distributive implications of all this are not clear but probably substantial.

Immigration—The late Sixties and early Seventies saw a considerable increase in immigration, mostly from the Soviet Union, but also from Europe and the Americas. This wave of immigration differed from that of the early fifties in several ways. Many of the immigrants were skilled and well-educated and, at least those from the West, brought some wealth with them. The level of government help to immigrants has risen greatly since the early Fifties. If these factors eased the position of the new immigrants as compared with that of their predecessors they also aroused considerable resentment on the part of the Israeli poor who, in many cases, had arrived to and remained in much worse conditions.

In summary, there have been major shifts in economic status in the decade since our data were collected and our results should be extrapolated to the present with the greatest caution. The increase in transfer payments has had a major impact on the poor. The various factors mentioned above have all contributed to a

great increase in the weight of wealth versus income in overall economic status. The dramatic increase in saving—15.8 percent of gross disposable personal income from all sources was saved in the period 1959–64 while 38.2 percent was saved in the period 1971–72—undoubtedly contributed to this. While absolute poverty has certainly been reduced, as has the percentage in relative income poverty, it would not be surprising if inequality in overall economic status had increased. Furthermore, the increased importance of wealth has almost certainly made the distribution more rigid and harder to change in the short run.

III. A Dynamic View of Poverty

How serious a problem is poverty? To what extent is government action required and what form should it take? Are some of the poor in more need of help, or in need of different kinds of help, than others? In order to answer these questions a snapshot of the poverty situation at one moment in time is not sufficient: we need to know something about the stability of the poverty population.

Findings from the United States demonstrate that there is considerable turnover in poverty populations. Kelly (1970) showed that the gross flows out of poverty in the U.S. between 1965 and 1966 was 15 times the net flow out of poverty. The recent availability in the U.S. of five-year longitudinal data has allowed much more extensive investigations into the broad issue of income instability of the entire population. One finding of relevance here is that instability is high among low income units, is low or moderate among middle income units, and is high for very high income units (Morgan, 1974).

Movement into and out of poverty means that many units are not permanently locked into a state of long term deprivation and that government efforts to eliminate poverty can play an accommodating rather than a total role. Mirer (1974) and others point out that instability lowers welfare of risk averse people by forcing them to raise their long term savings rate and thus reduce their consumption. He maintains that because of welfare losses associated with the high income variability among low income units, the distribution of welfare is more inequitable than is the distribution of permanent income. However, one cannot conclude from this that the reduction of instability will necessarily improve welfare since the distribution of permanent income may well be affected by the very same factors that generate instability.

We use a two-year longitudinal survey to examine the short-run dynamics of poverty in Israel. We look both at turnover, the movement into and out of poverty, and at variability in the command over resources. The next two sections report the results for turnover and variability for the population as a whole; subsequent sections report the effects of various family characteristics on turnover and variability.

A. *The Degree of Turnover*

Our approach is similar to that used by Kelly and others. Each family is either poor or non-poor in each year. The population is composed of the following: (1)

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TABLE 7

INSTABILITY IN POVERTY STATUS 1963 TO 1964 ON THE BASIS OF INCOME, WEALTH, AND HW

	Income	Wealth	HW
(1) Percent poor (Near-poor)* 1963	9 (18)	16 (24)	9 (21)
(2) Percent poor 1964	10 (20)	21 (29)	11 (21)
(3) Stayers in poverty: percent of 1963 poor, also poor in 1964	63 (82)	60 (70)	68 (74)
(4) Exits from poverty: percent of 1963 poor, not poor in 1964	37 (18)	40 (31)	32 (26)
(5) Entrants into poverty: percent of 1963 non-poor, poor in 1964	5 (6)	14 (17)	6 (7)
(6) Percent of family years of poverty borne by stayers	60 (76)	50 (61)	60 (74)
(7) Percent of family years of poverty borne by stayers as percent of maximum possible†	65 (82)	61 (69)	69 (75)

*Numbers in brackets refer to percent below near-poverty line.
†Wherever the aggregate percentage poor in one year differs from the percentage in the second year, the highest possible concentration depends on the smaller year's aggregate percent poor.

the stable non-poor—those non-poor in both years; (2) the stable poor—those poor in both years; (3) entrants into poverty—those non-poor the first year and poor the second; (4) escapees from poverty—those poor the first year and non-poor the second.

Table 7 presents some summary measures of turnover in the poverty population, for a sample of Israeli families interviewed in 1963/64 and again in 1964/65. The measures are given both for the poor and for the near-poor and for poverty according to the criteria of current income, wealth and the HW measure.[16]

Turnover in the poverty population appears relatively high. Of those in income poverty in 1963, 37 percent escaped poverty in 1964. Note that the percentage of near-poor escaping to higher income status was a much lower 18 percent. Another way of looking at the same information is to examine the extent to which total family years of poverty were concentrated or shared. The amount of concentration is the extent to which the 1963 and 1964 poverty populations overlap. The results again show less movement in the near-poverty population. Where 60 percent of poverty years were concentrated among the stayers, 76 percent of near-poverty years were borne by those below the near-poverty line in both years. The stable nature of the near-poverty group is illustrated further by row (7), which shows how much near-poverty is concentrated as a percent of the maximum possible amount of concentration.

Our turnover rate of 37 percent is similar to Kelly's reported 34 percent rate. Note though that his estimate is based on the same absolute poverty line in the two years while we maintain the poverty line as a percent of the median in each year. Since the real income poverty line rose almost 15 percent in Israel, the exit rate of 37 percent represents much higher income gains than the comparable exit rate in the U.S.

[16]The reader is reminded that the poverty line is set at 40 percent of the median and the near-poverty line at 50 percent.

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Poverty turnover is also high on the basis of wealth and on the basis of the HW measure of income and wealth. Although the HW figures resemble the figures for income poverty, movement in the wealth distribution looks even more extensive. Among those near-poor on a wealth basis in 1963, 31 percent escaped this status in 1964. The comparable figure for income was only 18 percent. Of the total years of wealth poverty, 50 percent were borne by stayers, as compared to 60 percent in the case of income poverty. Part of the reason for the apparently higher turnover is that the proportion in wealth poverty rose more between the two years than the proportion in income poverty. In row (7) we take into account the smaller maximum overlap in wealth poverty and we find that the differences in turnover narrow considerably.

All three measures of economic status show lower turnover in the near-poverty group than in the poverty group. This result apparently is due to real differences in instability between the lowest income group and the next lowest groups.

B. *The Degree of Variability of Economic Status*

Observed changes in economic status may be the result of both a long-run trend for the family and of deviations from this trend; it is the latter that we define as variability. We choose two methods to divide the changes into trends and deviations from trends. One assumes that all families have the same year-to-year trend. Since the average rose by about 20 percent over the two years, those families whose income rose by more than 20 percent or less than 20 percent are said to have experienced instability relative to the average trend. The second method assumes that each family's trend is the same as the average trend for all families whose family head is in the same education-age subgroup. Here a family's income variability depends on the extent to which its two-year pattern differs from the pattern for similar families.

The two measures of variability are based on a model used by Mirer. For instance, the income of family i in years 1 and 2, Y_{i1} and Y_{i2}, depends on a systematic component X_i, a trend g and random components U_{i1} and U_{i2} in the following way:

$$Y_{i1} = X_i e^{U_{i1}}$$
$$Y_{i2} = X_i (1+g) e^{U_{i2}}.$$

As g we take the average growth rate for the whole sample for the first measure and the average growth rate for the education-income group for the second. The value of X_i is calculated as the geometric mean $(Y_{i1} Y_{i2}/1+g)^{1/2}$ and the values of the residuals U_{i1} and U_{i2} are found. These are used to give an estimate of the standard deviation of the random component which serves as our measure of variability.

Table 8 shows the relative degree of income variability by income class. Note that variability was two to three times higher among those in the lowest decile than among those in the second lowest decile. The bottom decile makes up most of the poverty population while the bottom two deciles are essentially the near-poor. The numbers in Table 8 may be interpreted as the average standard deviation in

TABLE 8

VARIABILITY IN INCOME AND HW PER FAMILY 1963 TO 1964, BY INCOME CLASS

Income Class	Variation Relative to Average Income Growth	Variation Relative to Average Income Growth by Age and Education	Variation in HW Relative to Average HW Growth by Age and Education
Bottom 10%	0.63	0.60	0.31
11–20%	0.27	0.21	0.24
21–30%	0.19	0.20	0.16
31–40%	0.20	0.23	0.18
41–60%	0.22	0.23	0.17
61–80%	0.19	0.24	0.17
81–100%	0.18	0.24	0.17

income for each income class. For example, among families in the bottom decile, the average standard deviation was 60 percent of average income. Our results differ from those of Mirer for the U.S. in two ways:[17] variability in general is higher in Israel (Mirer's use of an individual rather than a group trend might account for some of the differences); the difference in variability between the bottom class and other classes is much greater in Israel.

It seems reasonable that wealth should be more stable over time than income so that the variability of the combined HW measure should be less than that of income. This is indeed the case—0.18 for the former and 0.26 for the latter.

C. *Effects of Family Characteristics on Income Variability and Poverty Turnover*

In considering differences in variability between population groups it is important to distinguish between differences in group trends and variability about the group trend. Variability by age is a good example: if we measure a family's income variability by the extent to which the individual years' incomes differ from their average, taking into account the general two year trend, we find high variability among the lowest and the highest age groups and low variability for middle age groups. However, interpreting this as true variability is mistaken. We know that low age groups have a higher than average income trend and high age groups a lower than average income trend and if we measure variability after deflating a family's second year income by the growth rate of its age-education group, we find that variability for low and high age groups is actually lower than that for middle age groups. The aged should show less variability because their income sources are fixed on the basis of savings and income transfers. These sources may vary together for the whole age group, but they are unlikely to vary differently within the age group.

The results for poverty turnover are similar to those for income variability. Table 9 shows how poverty turnover is highest in the two middle age groups and lowest in the two extreme age groups. Poverty is particularly concentrated in the case of the aged, with over 80 percent of poverty years borne by those staying in

[17]See Mirer (1974), Table 1, p. 205.

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TABLE 9
CHANGES IN POVERTY STATUS AND VARIABILITY IN POVERTY STATUS* BY AGE

	Age					
	21–39	40–49	50–64	65+		
Exits: Percent of 1963 poor, not poor in 1964	28	100	53	22		
Entrants: Percent of 1963 non-poor, poor in 1964	3	4	7	7		
Entrants as percent of 1964 poor	44	100	62	17		
Percent of poverty borne by stayers as percent of maximum possible	72	0	47	83		
	21–24	25–35	36–45	46–55	56–65	66+
Variability, uncontrolled	0.16	0.20	0.30	0.17	0.37	0.24
Variability, controlled for education, year of immigration, income class, wealth class, and country of origin	0.22	0.28	0.37	0.18	0.34	0.10

*Based on near-poverty line

poverty in both 1963 and 1964. In regressions differentiating stayers in poverty from those in poverty one of the two years, we found that being in the highest age groups increased the probability of staying in poverty by from 0.24 to 0.38. For the younger age groups, the effects were either negative or not statistically significant.

Trend factors are also likely to predominate in the case of education. Variation is expected to be largest in the lowest educational categories since those with low educational attainment are most often in unstable jobs. In fact education did not show consistent effects on variability. Higher levels of education were associated with lower poverty rates, but educational attainment was not statistically significant in explaining whether a family in poverty will spend both years or only one year below the poverty line. While poverty turnover did not seem to depend on the family head's educational attainment, income variability did. Controlling for age, year and country of immigration, and income and wealth class, we found that income variability rose steadily from 0.30 for those with less than five years of schooling to 0.55 for those with 13 or more years of schooling.

Year of immigration should have a direct effect on instability. More recent immigrants are less likely to have settled into a particular occupation, are less likely to have job tenure, and therefore, are more subject to year-to-year fluctuations in income. The results do not support this hypothesis. Immigrants who arrived before 1948 experienced significantly more instability than did immigrants arriving between 1948 and 1954 or immigrants arriving 1955 or later. Looking at the poverty and near-poverty group, one finds that the incidence of poverty was highest for the most recent immigrants. We would expect that among these experiencing poverty in any year, recent arrival status would reduce the

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probability of staying in poverty both years. In fact, it had no effect at all. This should be contrasted with the strong effect of this variable on the *level* of economic status (see Section II).

TABLE 10
TURNOVER IN POVERTY STATUS* BY COUNTRY OF ORIGIN

	Iran–Iraq	Yemen–Aden	Morocco–Tunisia–Algeria	Rest of Asia, Africa	Balkans	Eastern Europe
Percent poor 1963†	24	60	38	19	23	8
Exits from poverty: percent of 1963 poor, not poor in 1964	4	0	24	0	22	50
Percent poor 1964	26	76	36	30	25	7
Entrants into poverty as percent of poor 1964	12	22	20	37	28	43
Percent of poverty borne by stayers as percent of maximum possible	96	100	81	100	78	57
Independent effect on presence in both years in bottom quintile by income per standard adult	0.18	0.46	0.25	0.10	0.09	
Independent effect on presence in both years in bottom quintile by income per family	0.07	0.42	0.04	0.18	0.06	

*Based on near-poverty line
†Mobility sample

Country of origin may play a role in explaining differences in instability, but the nature of its role is not obvious. Those from countries whose culture is least Western may have the most trouble adjusting to Israeli society and therefore their low economic status may be stable.

Country of origin does, in fact, play a significant and interesting role in explaining variability in economic status. In regressions of probability of poverty and of presence in the lowest quintiles, we examined turnover by detailed country of origin. Table 10 shows the low rates of poverty turnover for families from the Middle East, Yemen, North Africa, the rest of Asia and Africa, and the Balkans. For example, of the families from Aden and Yemen who were poor in 1963, none left poverty while the exit rate for poor families from Eastern Europe was 50 percent. Further, entrants into poverty were a much smaller proportion of the 1964 poor in the case of Asian and African countries than in the case of Eastern European countries. The effects of country of origin on the probability of staying in poverty, given that the family experienced poverty in at least one year, remained strong even after controlling for age, education, and year of immigration.

The stability of the poverty population from Asia–Africa is apparently due in part to large family size. The poverty gap per family[18] in 1963 was about IL80 for families with 1–2 children, IL133 for families with 3–4 children, and IL157 for families with 5+ children. Poor families with more children require larger increases in family income to leave poverty. Since average family size for families

[18]The poverty gap is the sum of all differences between the income of each poor family and the poverty line.

from Asia–Africa was 4.7 as compared to the 3.0 average for families from Europe–America, leaving poverty was more difficult for the former.

Evidence from regressions of the probability of staying in the lowest quintile demonstrates that family size is important primarily for Middle Eastern and North African Families. Note that in Table 10 the independent effects of country of origin on the probability of spending both years in the bottom quintile is much larger on an income per standard adult basis than on an income per family basis. However, for families from Yemen and Aden, the use of the per family measure does little to change the very large effect on the probability of having low income status in both years. It is interesting that the low income variability observed for many poor families from Asia–Africa does not seem to extend to Asia–Africa families in all income groups. Continent of origin had no significant effect on income variability for higher income groups when controlling for age, education, and year of immigration.

Instability may also be related to wealth differences. If income variability creates a special burden, then the burden would be especially difficult to bear for those with the lowest wealth. Did low-wealth families in fact face higher than average variability? Table 11 shows that the answer is no. Income variability is highest among those in the middle wealth classes and lowest for low wealth and for high wealth classes.

SUMMARY

The paper analyzes the impact of wealth and income variability on poverty and inequality in Israel in the 1963–64 period. A special data source that included information for the same sample on wealth and income in 1963 amd 1964 permitted comparisons between usual poverty estimates based on a single year's income and estimates based on a combined measure of income and wealth and other estimates based on economic status over a two-year period.

Measuring economic status with the Hansen–Weisbrod (HW) combined measure of wealth and income yielded a surprising result. In spite of much higher inequality in wealth than in income, overall economic status was distributed even more equally than income. We show that this result follows from the low weight of the annuity value of wealth relative to income in total resources and from the fact that the correlation between income and wealth is considerably less than one. The extent of poverty was about the same using the HW measure or income alone. The HW measure did produce some changes in the rankings of individual families formerly ranked according to income alone. In particular, the aged appeared better off while the gaps between earlier and later immigrants and among immigrant groups from different countries of origin widened.

Substantial turnover and income variability took place among the poverty population. Of those poor in 1963, 37 percent were nonpoor in 1964. This represented a high turnover figure, especially since the use of a relative poverty line and the rise in real income required that a family in poverty raise its income by at least 15 percent in order to escape poverty. The groups among whom poverty was the most stable or least shared were the aged, the young, and the immigrants

TABLE 11

INCOME VARIABILITY BY WEALTH STATUS
OF FAMILY 1963 TO 1964

	Variation relative to Average Income Growth by Age and Education*
Bottom 10%	0.23
11–20%	0.22
21–30%	0.29
31–40%	0.27
41–60%	0.37
61–80%	0.22
81–100%	0.21

*Calculated for family with average income in the third quintile, age 36–45, from Europe–America, immigrated 1948–1954.

from Asia–Africa. Large family size contributed significantly to the difficulties the latter group faced in escaping poverty.

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