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Inequality of Household Incomes

The Income Package of Low-Income German Households*

by Hans-Juergen Andress
and Wolfgang Strengmann-Kuhn

Low income families face numerous constraints that make daily living and the organization of their household economy difficult. Not only is their income scarce, but irregular and diverse. They may have to acquire it from several different income sources. It is obvious that such diversity of income sources may complicate those posed by its size alone. Different dates of payment for market income (if any), housing allowance, unemployment benefits, social assistance, etc., on the revenue side have to be coordinated with payment patterns for rent, electricity, telephone, etc., on the expenditure side. Yet little is known about what comprises the "income package" of the low income population.

This paper uses data from the German Socio-Economic Panel and the Bielefeld Data Bank to test three hypotheses:

1. The lower the income position of the household, the more the household depends on state insurance or welfare transfers.
2. The lower the income position of the household, the more sources of income are contained in the income package.
3. Economic strains increase with diversity of income sources at a given income level.

We are interested in the structure of the household's income package because we believe it affects economic well-being and behaviour. Therefore, the concept of an income package is central to our analysis. It recognizes that household income comes from a variety of sources, each with its own corresponding activity.

We distinguish among three main categories of income sources: market income, state transfers and private transfers. Market income consists of all income that household members receive from market activities: wages and salaries, self-employed income, capital income (rents, dividends, interest) and income from secondary activities. Private transfers are payments from other private house-

holds, persons, or institutions. The GSOEP household questionnaire collects household income data on state transfers: housing allowance, children allowance and social assistance¹. The GSOEP respondent's questionnaire collects individual income from state transfers: pensions, maternity benefit, education allowances, assistance for students, and unemployment benefits.

In this paper we disaggregate household income level state transfers but do not disaggregate personal level state transfers. GSOEP income data differ with respect to time (annual and monthly income, current or previous year) and personal relation (household or personal income). For our purposes we chose annual household income, so we annualized the data and sum the individual income of each household member. The result is a household income package for each year.

Because we are interested in low income households, we look only at households that fell below a given relative income limit at least once a year during the first five waves of the data. We define a household to be a low-income household if its equivalence adjusted income is below 60 % of the average equivalence adjusted income of the entire population. (We use the equivalent weighting scheme which underlies social assistance payments in our analysis). Our results are based on a pooled data set of the first five waves of GSOEP data with one household per year as the unit of analysis. All available observations for one household are included, although the household may not be poor in every year.

Separate analyses were conducted for German and foreign households. We present our results for the German households below. Our results on foreign households are available from the authors on request.

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¹ In Germany social assistance consists of assistance for continuous subsistence "HLU — Hilfe zum laufenden Unterhalt") and of assistance in special situations "HBL — Hilfe in besonderen Lebenslagen").

Results

Income Packages and Relative Income Position

Table 1 shows that market income is a lower share and state transfer a higher share of the total income of households, the lower the relative income of the household. While this was the expected result, it is still remarkable that low income households have a sizeable component of market income. Nearly one-half of the income package of the lowest income group comes from market sources. Private transfers, on average, do not play a prominent role in any income group.

Table 1 further disaggregates market income into different market activities. The largest income source is wage and salary income, which is 33% of the income package of the lowest income group. This increases to 69 % for households in the highest income group. Capital income and secondary income is low for all groups. Self employment also plays a minor role.

In results not shown we look at the most important source of income for households. The results parallel Table 1. Market income is on average the main source of income for households at all income levels. The higher the income level, the more likely that market income is the main source

of income. The reverse is true for state transfers. For example, 50 % of all households in the lowest income group receive their main income from market activities, while 46 % depend mainly on state transfers (the average proportions are 47 % for market income and 50 % for state transfers). This result suggests that state transfers often have only a supplementary function. Indeed, only in 25 % of households in the lowest income group do state transfers make up more than 90 % of total income. But more than one third of households in this group have less than a 10 % share of state transfers. Another third have state transfers of less than 60 %. So, for most low income households state transfers supplement other income.

Poverty Duration and Income Packages

It has been argued that the importance of market income decreases and the importance of transfers increases for the long-term poor. Table 2 suggests otherwise. We find only small differences in the sources of income of households with short- and long-term poverty durations. Even after five periods of poverty, the share of market income remains around 56 %. It was 57 % for those with one period of poverty. The share of state transfers increases rather smoothly from 39% to 40% for households which have been poor for 4 years. Only for the longest duration group (5 years) there is a small shift to 43%. However, there

Table 1

Income Source in Percent of Total Income Package and Relative to Income Position

Income source	40 %	50 %	60 %	not poor
Market incomes	46.47	59.74	59.41	69.47
salaries and wages	33.28	49.10	49.91	57.43
self-employment	7.25	5.15	4.06	6.39
capital income	4.29	3.91	3.67	3.89
secondary activity	1.66	1.57	1.77	1.75
State transfers	49.67	36.20	37.84	28.73
personal transfers	28.68	24.05	28.58	23.76
household transfers	20.99	12.15	9.26	4.97
HLU	8.33	3.22	1.93	0.83
HBL	0.45	0.34	0.08	0.16
child allowance	8.68	6.57	5.20	4.74
housing allowance	3.53	2.03	2.05	0.78
Private transfers	3.86	4.06	2.75	1.80
Heterogeneity				
largest income source in %	76.01	81.28	84.97	86.49
entropy	0.58	0.49	0.41	0.36
mean number of sources	1.77	1.67	1.49	1.41
N	995	1365	1861	4105

Table 2

Income Source in Percent of Total Income Package and Duration of Poverty (in years)

Income source	0	1	2	3	4	5
Market incomes	69.47	57.56	55.80	55.75	56.12	56.32
salaries and wages	57.43	46.65	44.63	45.68	45.79	47.74
self-employment	6.39	5.17	5.66	5.00	4.36	3.57
capital income	3.90	3.77	4.08	3.59	4.66	3.28
secondary activity	1.75	1.96	1.44	1.48	1.32	1.74
State transfers	28.76	38.97	40.49	40.83	40.21	42.83
personal transfers	23.76	28.07	27.61	26.28	24.96	24.42
household transfers	4.97	10.90	12.89	14.55	15.25	18.41
HLU	0.83	2.98	3.73	4.66	5.16	5.26
HBL	0.16	0.23	0.23	0.13	0.28	0.71
child allowance	3.21	5.78	6.59	6.99	6.48	8.91
housing allowance	0.78	1.92	2.35	2.77	3.33	3.53
Private transfers	1.80	3.46	3.71	3.42	3.67	0.85
N	2829	1182	645	400	251	134

are changes in the sources of state transfers: for example, there is an increase in household state transfers (from 10 % to 18 %), while the proportion of personal state transfers decreases (from 28 % to 25 %).

The Role of State Transfers

Public policy makers want to know how state transfers impact on households. Tables 1 and 2 also show that the most important household transfer is the child allowance. It gains importance as the household's relative income position falls and the longer the household stays in poverty.

Social assistance is a bit less important than the child allowance. But like the child allowance it is more important for lower income households and those with longer poverty duration.

Heterogeneity of Income Packages

Our analysis of income diversity uses three measures of heterogeneity. The first measure equals the proportion of the largest source of income in the average household's income package. An income package is more heterogeneous the lower this proportion. The second measure is a mathematical measure of heterogeneity. Entropy is zero if there is only one source of income. It reaches its largest value when all proportions are equally distributed. The third measure counts the number of sources of income that make up at least a 10 % share of household income. In Table 1 we report that all three measures show the heterogeneity increases with decreasing income position.

Figure 1 illustrates this result even more clearly. It shows the proportions of households in each income class having a certain number of income sources. More than 60 % of all observations that don't fall under our income limit have only one source of income. This proportion decreases with decreasing income position. In the lowest income group only 37 % have one source of income. On the other hand, the proportion of households that get their income from two or more sources increases. In sum, the lower the income position of a household the more heterogeneous its income package.

Heterogeneity is higher for recipients of social assistance. The average value of the largest income source for such households is about 60 %, the entropy of their income packages is more than 0.9 and the number of income sources is more than two. So the problem of income diversity is especially relevant for recipients of social assistance.

Empirical Results from the Bielefeld Data Bank

Most of the empirical analysis reported assumes that low income households are sufficiently represented in the GSOEP. It is not easy to check this assumption, because equivalent external data on income distribution are not available. The empirical literature or nonresponse by the person's income level is also limited².

² See our empirical analysis in Lipsmeier (1993) and Frick et al. (1993).

Figure 1

Number of Income Sources



The Bielefeld Data Bank AKD/KDN data contain information on social assistance payments and all other household income sources (Andreß 1992). These data are very reliable, since the main purpose of the AKD/KDN is to check entitlement to social assistance. Because social assistance benefits are paid only after other income sources are exhausted, income and all other assets are examined very thoroughly by the local authorities. The AKD/KDN coding scheme is more differentiated than the GSOEP income questions, but we have tried to reproduce the GSOEP classification of income sources with the Bielefeld data³. These income data were then combined with social assistance payments within the data bank. The following analysis excludes all households with missing income information, either because the data are missing or because the household has no other income except social assistance. This exclusion understates social assistance dependency. On the other hand, we have not restricted this sample with respect to age so that pensioner households are included that by definition have very low market incomes. Therefore the following results should be considered as approximations.

Table 3 compares the Bielefeld results to our GSOEP results for social assistance households. To achieve a suffi-

cient number of cases, foreign households are included in this GSOEP analysis (N=444). Nearly 90 % of the income package in Bielefeld consists of state transfers. The distribution of market incomes and state transfers is fairly homogenous and therefore the average percentage for all households gives an adequate picture of the individual household. The average household income is 1,425 DM in 1988 and increases to 1,549 DM in 1990. Compared to our GSOEP data the households from Bielefeld are much more dependent on the state and their proportion of market income is less than half the corresponding figure of the panel households. A further differentiation of state transfers shows that this is due to a higher proportion of social assistance payments, as might be expected, and a higher proportion of personal state transfers. The latter result might be a consequence of our inclusion of pensioner households, whose old age pensions contribute to personal state transfers.

In sum, income diversity is not the primary problem of social assistance households based on the Bielefeld data. This can also be shown from our three heterogeneity measures. The share of the main income source is larger

³ The coding scheme is available from the authors on request.

Table 3

Income Source in Percent of Total Income Package for Social Assistance Households

Income source	Bielefeld 1988	Bielefeld 1989	Bielefeld 1990	GSOEP ¹⁾ Wave 1-5
Market incomes	6.7	7.3	7.3	18.7
State transfers	88.5	88.1	88.1	76.0
personal transfers	26.1	27.2	27.6	22.3
household transfers	62.4	61.0	60.5	53.6
HLU + HBL + housing allowance	56.0	54.6	53.0	46.7
child allowance	6.4	6.4	7.5	6.9
Private transfers	4.8	4.4	4.4	5.3
Heterogeneity				
largest income source in %	70.4	70.5	70.5	59.2
entropy	0.62	0.62	0.62	0.93
mean number of sources	1.78	1.78	1.79	1.99
Mean household income (DM)	1425	1478	1549	
N	4570	4336	4235	444

¹⁾ Including foreign households.

and entropy as well as number of income sources are significantly lower than are our GSOEP data bank values. In Table 4, where we differentiate our Bielefeld data with respect to social assistance payment duration, we see that social assistance dependency increases with time. While the share of market income remains fairly stable over time at a very low level of less than 7 %, the proportion of social assistance payments increases steadily over time. The longer a household receives social assistance payments the more the household depends on them. This makes

social assistance households especially vulnerable to changes in government policies.

Income Diversity and Economic Strains

The association between income and subjective well-being has been analyzed in numerous articles, usually showing a medium-sized positive correlation. It is obvious that low income households are not content with their economic situation. Here we see whether the diversity of the income package induces additional economic strains.

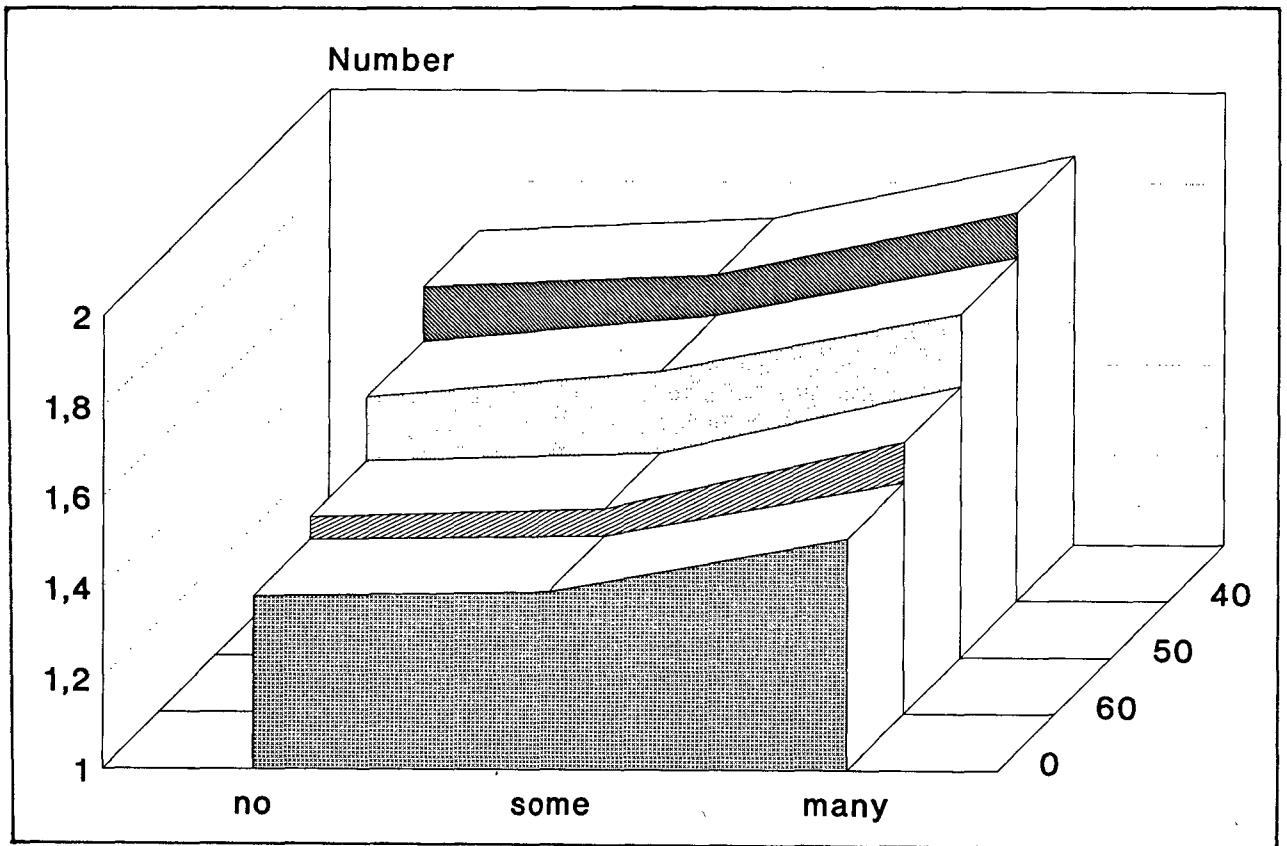
Table 4

Income Source in Percent of Total Income Package and Social Assistance Duration (in years)

Income source	1	2	3	4	5	6+
Market incomes	6.3	6.4	6.2	6.6	6.7	4.0
State transfers	87.4	87.3	87.8	89.0	90.0	93.3
personal transfers	23.4	20.4	19.6	15.6	18.2	24.7
household transfers	64.0	66.9	68.2	73.4	71.8	68.6
HLU + HBL + housing allowance	55.6	58.1	58.8	62.8	62.7	63.4
child allowance	8.4	8.8	9.4	10.6	9.1	5.2
Private transfers	6.2	6.2	5.2	4.4	3.3	2.5
Mean household income (DM)	1452	1440	1487	1647	1661	1481
N	843	457	351	231	237	830

Figure 2

Number of Income Sources
Income classes and Economic Worries



To test this hypothesis data on perceived economic strains and subjective well-being are necessary. By definition this information is absent in our process-produced data, but the GSOEP includes some subjective measures. For instance, respondents are asked whether they worry about their present economic situation. We have classified household heads whether they respond no, sometimes, or

often to this question. From Figure 2 one can see that concern over one's economic situation increases as the number of income sources rises, irrespective of the household's income position. Therefore, Figure 2 supports the view that the diversity of the income package influences economic strains and subjective well-being.

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