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The Importance of Government Policy on Income Levels and Inequality in United Germany: 1990 to 1992

by Bruce Headey, Peter Krause, and Roland Habich

This paper examines changes in incomes, income inequality and satisfaction with living standards in East Germany from 1990 to 1992. Initial evidence comes from May-June 1990 when the command economy and the communist income distribution remained in place. The second and third measurement points were March-April 1991 and March-April 1992, after one and two years of transition towards West Germany's (or united Germany's) social market economy (Soziale Marktwirtschaft).

Transition from a communist system and command economy to Western-style democracy and a market economy has never occurred before, so there is no social science literature from which we can directly draw hypotheses about what is likely to happen. There are, however, well established differences between the two systems which may offer some guidance.

Hypotheses

The hypotheses tested in this paper rest on three assumptions about the likely operation of the market in East Germany. First, there seems little doubt that communist command economies were economically less efficient, with lower levels of productivity than Western systems. It followed that, in order to compete in international markets, enterprises in Eastern Europe would initially need to cut costs, including wages, or else go out of business. Either way, standards of living would be expected to fall in the transition to a market economy.

A second assumption is that Communist countries had more egalitarian gross and net income distributions than Western countries. Hauser et al. (1991) have shown that this was true for East Germany in comparison with West Germany. Whereas Communist governments retained some degree of commitment to income equality, Western economic systems rely on substantial income differentials as incentives to individual productivity and ambition. Government taxes and transfers may reduce net income inequality, but there is no suggestion that they cancel out market driven income differentials. It seems reasonable to predict that net income inequality would increase in the transition to democracy and a market economy.

A third assumption underlying the hypotheses listed below is that if people's real incomes increase, they become more satisfied and optimistic about their own economic situation. Whereas if incomes decline, they are dissatisfied and pessimistic (Andrews and Withey 1976).

The five hypotheses to be tested are:

1. During the first stage of transition most East Germans suffered a decline in living standards.
2. The income distribution became more unequal.
3. East Germans became increasingly dissatisfied with their incomes and standard of living.
4. Those whose standard of living actually improved became more satisfied, while those whose standard of living declined were dissatisfied.
5. From 1990 to 1992 East Germans became more pessimistic about the future.

Measures

Our aim is to measure changes in real incomes and standard of living. An individual's standard of living depends on household income, adjusted for household size. Different equivalence weights are used by researchers in different countries to adjust for household size, but for international comparisons the following weights, sometimes referred to as the OECD equivalence scale, are widely used (Ringen 1991). The first adult in a household receives a weight of 1.0, other adults a weight of 0.7, and children under 18 a weight of 0.5.

In this paper we use the OECD weights rather that the more complicated weights implied by the German Social Assistance program. The use of alternative weights affects estimates of the relative real incomes of different types of household, but does not in practice significantly affect overall estimates of poverty and inequality within particular societies or affect comparisons between them (Buhmann et al. 1988).

The income data of GSOEP used here relate to the months of May 1990, March 1991 and March 1992 (see Burkhauser and Wagner 1993). Respondents were asked to estimate their net (after tax) household income from all sources, including labour income, public and private transfers and (at least in principle) black market income and fringe benefits[1].

A potential weakness of monthly data is that they may be more volatile than data for a longer period (e.g., a year). This implies that we might have somewhat overstated the degree of change in the position of households in the income distribution. However, Berntsen and Rendtel (1991) indicate that the problem is minimal when dealing with aggregates (e.g., the poverty population or income quintiles)[2].

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[1] Plainly, however, there would still be some tendency to understate black market incomes and fringe benefits. In many cases, especially for members of the nomenklatura, these components would form a considerable share of income.

[2] Monthly figures have the advantage that there is no necessity to adjust for changes in household size during the accounting period. If annual figures are used, it is in principle necessary to adjust equivalent incomes for any changes in household composition during the year. In any event annual figures are not yet available for East Germany, since they take a considerable time to calculate and check.

In measuring change in equivalent incomes from 1990 to 1992, it is necessary to adjust for the cost of living increase. The official Statistisches Bundesamt figures for East Germany have been used[3]. The Statistisches Bundesamt employs a conventional "market basket" — approach, purchasing typical bundles of goods and services for families in East Germany. Given that this consumer research was done accurately, increases in the cost of living due to the withdrawal or partial withdrawal of components of the "social wage" (e.g., free child care and cheap rents) would be recorded. The Statistisches Bundesamt faced a difficult task in estimating cost of living increases in an economy in transition, but its data are the best available.

Changes in income inequality are measured by examining quintile shares of disposable equivalent income in 1990, 1991 and 1992. The Gini coefficient is also used as a summary measure of income distribution. Despite its widespread use, however, it is not sensitive to changes at the top and bottom of the distribution, which are generally of most interest to sociologists (Kakwani 1986). Quintile shares provide a clearer picture in this regard.

This paper also estimates the redistributive impact of government on income inequality. To do this we need to know the difference between gross factor incomes and net incomes after government taxes and benefits. Our measure of net income is disposable equivalent income (described above). To estimate the impact of government, it is therefore necessary to construct a measure of gross equivalent income (Ringen 1991). This was done by calculating each household's total labour income and dividing by its equivalence score. While labour income is only one component of pre-government incomes, investment incomes were not substantial in East Germany from 1990 to 1992. In summarizing this impact, we assess the gain or loss to each gross equivalent income quintile resulting from taxes and benefits. The Gini coefficients of gross and disposable equivalent incomes are also directly compared, using methods developed by Kakwani (1986) and Ringen (1991).

Satisfaction with household income, with material standard of living and life-as-a-whole are measured on a 0-10 scale where 0 means completely dissatisfied and 10 means completely satisfied. Optimism-pessimism is measured on the same scale with a question asking respondents how satisfying they expects their lives to be in five years time.

Results

Most households are better-off. The hypothesis that most people in East Germany became worse off following the revolution appears unambiguously false. The household equivalent incomes of 65.3 percent of the sample increased between May 1990 and March 1992, even after allowing for a 29.6 percent increase in the cost of living. On average, equivalent incomes increased at an annual rate of 8.4 percent, a high growth rate by normal international standards. Even excluding East German households in which one or more members commuted to the West to work (about 5 percent), the growth rate was 7.1 percent.

Table 1

Changes in Real Household Equivalent Income from 1990 to 1992[1])

	All households	Excluding commuters
1990 to 91	9.1 %	6.1 %
1991 to 92	7.0 %	7.6 %
1990 to 92	16.7 %	14.2 %
Annual rate	8.4 %	7.1 %

[1]) Inflation was 12.6 % from May 1990 to March 1991, 15.1% March 1991 to March 1992, and 29.6% for the entire period.

Despite these high average rates of growth in real household incomes from 1990 to 1992, a significant proportion of families experienced a drop in income in one of the two years.

The volatility of household incomes can be gauged from the fact that only 33.4 percent showed real gains in income in both years and over one-quarter saw their incomes fall in one of the two years. Each year about 60 percent of families had a real income gain but only 65.3 percent were better off over both years. These fluctuations in income largely depended on whether one, both, or neither partner in the household managed to keep his or her job (Krause et al. 1992). So while most people are better off, incomes and living standards are very insecure and heavily dependent on a volatile job market.

[3] The central inflation rate from May 1990 to March 1992 was 29.6 percent. Figures were also estimated for three different types of households, all being within 2 percent of the central figure (Statistisches Bundesamt, August 1992).

Table 2

Household Income Fluctuations 1990-92

Income Change	% of Households
Better off both years	33.4
Better off 90 to 91, worse off 91 to 92	25.7
Worse off 90 to 91, better off 91 to 92	28.1
Worse off both years	12.8
	100.0

Table 3

Quintile Shares and Gini Measure of Equivalent Income from 1990 to 1992

Quintiles[1])	1990	1991	1992
Lowest	11.8	11.6	11.4
Next lowest	16.1	16.2	16.4
Middle	19.3	19.0	19.2
Next highest	22.9	22.3	22.6
Highest	29.8	30.4	30.5
	100.0	100.0	100.0
Gini	0.182	0.190	0.191

[1]) Percentages.

Income inequality became more unequal. The second hypothesis, that income inequality would increase in the transition to a market economy, appears nore false nore correct. Our measure of income inequality increased only slightly. Table 3 shows quintile shares of equivalent incomes in 1990, 1991 and 1992.

These results indicate a small increase in inequality. The bottom quintile's (note that these are not the same people each year) share of total net household income fell by 0.4 percent from 11.8 percent to 11.4 percent. The top quintile gained 0.7 percent. The Gini coefficient increased from 0.182 to 0.191.

These results were contrary to expectation. One possibility is that market forces in the first two years of transition have not increased inequality in gross incomes. An alternative possibility is that the Federal Government's taxes and benefits counteracted increased inequality of gross incomes to the point where disposable incomes were no more unequal than in the final years of communism.

In trying to assess the relative impact of market and of governmental forces, we first examined quintile shares of labour market earnings, excluding individuals with no earnings.

Table 4 indicates a moderate increase in inequality of individual earnings. The bottom quintile's share declined by 0.1 percent and the top quintile was 1.8 percent better off. The Gini coefficient rose from 0.217 to 0.236. This suggests that the market has not yet greatly increased inequality for individuals who remained employed. However many people lost their jobs, went into early retirement, or were in short-time work (Kurzarbeit). In 1990, 85 percent of respondents aged 16 to 64 were in full or part-time work; in 1991 the figure was 73 percent and in 1992 it was 66 percent.

We now consider the gross equivalent incomes (labour incomes) of households whose heads were under age 65, including households whose labour income was zero. The purpose of this measure is to indicate what incomes would have been if (in a sense) the State did not exist, if there were no redistribution through taxes and benefits.

Inequality of gross equivalent incomes increased quite sharply between 1990 and 1992. The bottom quintile's share declined by about 6 percent and the top quintile's share increased about 7 percent. The reason for the difference between Table 4 and Table 5 is that, although the market has not yet made individual earnings more unequal, it has had a substantial effect in reducing employment. The households in the bottom quintile of gross earnings (pre-government income) are differentially those in which one or

Table 4

Individual Gross Earnings Quintile Shares and Gini Measure

Quintiles[1])	1990	1991	1992
Lowest	9.5	9.3	9.4
Next lowest	16.2	15.7	15.7
Middle	19.6	18.9	18.7
Next highest	23.1	22.3	22.7
Highest	31.6	33.8	33.4
	100.0	100.0	100.0
Gini	0.217	0.239	0.236

[1]) Percentages.

Table 5

Pre-Government Incomes: Household Gross Labour Incomes[1]): Quintile Shares

Quintiles[2])	1990	1991	1992
Lowest	7.7	4.7	1.8
Next Lowest	15.3	13.7	12.3
Middle	19.7	19.4	19.5
Next Highest	24.2	24.9	26.3
Highest	33.1	37.3	40.1
	100.0	100.0	100.0
Gini	0.254	0.325	0.382

[1]) Excluding households whose head was over 65. — [2]) Percentages.

more people lost their job, whereas households in the higher quintiles are mainly those in which everyone kept his or her job (Krause et al. 1992).

Given that disposable (net) equivalent incomes became slightly more unequal, and gross equivalent incomes became markedly more unequal, it follows that government taxes and benefits must have exerted a more progressive, redistributive impact in 1992 than in 1990. In other words the West German Federal Government in 1992 acted more "progressively" than the former GDR Communist government whose taxes and social benefits still operated in May 1990.

Table 6 provides a rough estimate of the redistributive impact of governments in 1990, 1991 and 1992. As noted above, it is not a precise estimate because some minor sources of pre-government income are not included (investment income and private transfers). Also, only the effects of income tax and payroll taxes are shown on net (post-government) equivalent incomes. The effects of consumption (sales) taxes are not included. This last omission is unfortunate but is normal in international comparisons (see, for example, Buhmann et al. 1988).

Table 6 divides households into quintiles on the basis of gross equivalent incomes and then shows the share of disposable equivalent incomes that each of these quintiles received. The disposable shares are different from those shown in Table 3, because the purpose of Table 3 was simply to compare quintile shares in 1990 to 1992, not to estimate the redistributive impact of government on households which had different starting (i.e., gross income) positions. Again, analysis is confined to households with heads under age 65[4].

Under the former GDR's tax-benefit system in 1990 the share of household size adjusted net income received by the bottom two quintiles was 8.2 percent more than their share of gross size adjust income. Under the Federal Republic in 1991 the bottom two quintiles received a 12.1 percent larger share of net than gross income, and by 1992 the figure was 16.2 percent.

It would be incorrect to imply that by 1991 and 1992 these redistributions in favour of lower income quintiles represented only or even mainly transfers from the top three quintiles of East Germans. Western taxes and Federal Government debt clearly made substantial contributions to household net incomes in East Germany. The point here is that these contributions appear to have been directed mainly at lower income groups, with dramatic effects in maintaining a low level of net income inequality.

An alternative method of assessing the redistributive impact of government is directly to compare Gini coefficients of gross and net income and calculate the percentage reduction in inequality produced by government action (Kakwani 1986, Ringen 1991). The left hand side of Table 7 gives results for all households, the right hand side for households where the head was under 65 and thus of normal working age.

These calculations confirm that the redistributive impact of the Federal Government's taxes and benefits in 1991, and even more so in 1992, was substantially greater than GDR taxes and benefits in 1990. Including all households in the analysis, the effect of GDR taxes and benefits was to reduce the Gini coefficient by 47.9 percent. A year later the Federal Government was reducing the Gini coefficient by 54.1 percent and in 1992 the reduction was 58.8 percent. Part of the major redistribution implied by the 1991 and 1992 figures was due to old age pension increases (see

[4] Gini coefficients are not given in Table 6 because they would be misleading. The net income shares do not reflect the net income distribution (see Table 3) but only the impact of government on households in different gross incomes quintiles.

Table 6

Redistributive Impact of "Communist Government" (1990) and "Capitalist" Government (1991, 1992)[1]) (Percentages)

Quintiles	1990			1991			1992		
	Gross Share	Net Share	Government Impact[2])	Gross Share	Net Share	Government Impact[2])	Gross Share	Net Share	Government Impact[2])
Lowest	7.7	14.5	+6.8	4.7	14.2	9.5	1.8	14.7	+12.9
Next Lowest	15.3	16.9	+1.4	13.7	16.3	2.6	12.3	15.6	+3.3
Middle	19.7	19.1	−0.6	19.4	18.4	−1.0	19.5	18.6	− 0.9
Next Highest	24.2	21.8	−2.4	24.9	21.7	−3.2	26.3	21.8	− 4.5
Highest	33.1	27.8	−5.3	37.3	29.2	−8.1	40.0	29.2	−10.8
	100.0	100.0		100.0	100.0		100.0	100.0	

[1]) Excludes households whose head was over 65. — [2]) Government impact equals gross share minus net share.

Table 7

The Redistributive Impact of East German and 'West' German Governments: Gini Coefficients.

	All			Head of household under 65		
	1990	1991	1992	1990	1991	1992
Gross equivalent incomes	0.349	0.414	0.464	0.254	0.325	0.382
Net equivalent incomes	0.182	0.190	0.191	0.172	0.195	0.199
Redistributive impact[1]) (percentages)	47.9	54.1	58.8	32.3	40.0	47.9

[1]) Redistributive impact = (gross incomes — net incomes)/gross incomes. See Ringen (1991).

below). If we exclude households whose head was over 65 and thus of normal pensionable age, the effect of Federal taxes and benefits was a reduction in the Gini coefficient of 47.9 percent in 1992, compared with 32.3 percent in 1990.

The results in Table 6 and 7 surprised us and may surprise some readers. In retrospect, however, they can be understood. The GDR Government maintained a low degree of income inequality primarily be enforcing a fairly egalitarian gross income distribution. Its tax-benefit system was progressive but not exceptionally so. Income tax was levied on most incomes at around 8 percent, close to a flat rate tax (Bundesministerium für innerdeutsche Beziehungen 1987). By contrast the German Federal Government, in principle, leaves gross factor incomes to be determined by the market and then intervenes in favour of lower income groups.

In trying to understand the workings of the market in comparison with the welfare state, we have sometimes excluded pensioner households (head aged 65 and over) from the analysis. The Federal Government has been even more "generous" to these households than to lower income quintiles in general. In January 1991 pensions were increased on average by 45 percent, a policy action which at a stroke greatly improved the standard of living of nearly 20 percent of the population.

In summary, it is clear that so far in East Germany, government transfer policy has been more important than the market in affecting income distributions. The Federal Government has been eager to improve the living standards of East Germans and so have trade unions. Welfare state benefits have flowed since the reunification of the two economies on July 1, 1990. The impact of the market on income inequality has so far been patchy. Labour incomes have not yet become more unequal, but the effect of market forces has been to increase unemployment and so increase inequality of household earnings.

East Germans are dissatisfied with their incomes and standard of living. Despite the fact that most real household incomes increased between May 1990 and March 1992, most SOEP respondents became less satisfied with their incomes and standard of living. Satisfaction with household income declined from an average of 5.6 (on the 0-10 scale) to 4.7 in 1991, and then recovered slightly to 4.9 in 1992. Satisfaction with standard of living dropped from 6.3 1991 to 5.9 in 1991, and then to 5.8 in 1992. The 1990 to 1991 decline in income satisfaction must be one of the largest ever observed in any country in a single year (Headey and Wearing 1992).

The satisfaction levels of previously better off people declined more than the satisfaction of previously worse off people, which makes sense in view of relative changes in real income. The average income satisfaction of people in the top two quintiles in 1990 declined by 0.9 points on the 10 point scale, while satisfaction in the bottom two quintiles declined by only 0.2.

Presumably a major reason for these results is that the standard of comparison used by East Germans in arriving at their satisfaction-dissatisfaction judgements changed. More directly than before, they compared themselves with their counterparts in the West. People in most occupations could see that their peers in the West were better paid, and everyone was aware that living standards were much higher in the West. The revolution of 1989 raised expectations, so that even some people whose real incomes rose had disappointed expectations and felt dissatisfied. Dissatisfaction probably also resulted from heightened anxiety due to much greater job insecurity than in communist times and hence insecurity of incomes and living standards. A final reason for dissatisfaction could be that people believed what they read in the newspaper, and media stories were full of gloom about East Germany. Some people who were moderately better off may have been induced by media stories to feel worse off.

Those whose standard of living rose became more satisfied, while those whose standard of living declined were dissatisfied. People in East Germany only reported increased satisfaction with their family incomes if their disposable equivalent incomes increased by more than 45 percent from 1990 to 1992 (the average increase was 16.7 percent). Respondents whose incomes increased by less than 45 percent, or who suffered a decline in income, mostly reported declining satisfaction. In short, only a very large increase in real income was sufficient to meet rising post revolutionary expectations and the new standards of com-

parison used in assessing one's living standards. In practice, 32 percent of the sample obtained a real income increase sufficient to make them feel more satisfied. The remainder recorded a decline or no change in satisfaction.

East Germans are more pessimistic about the future. Our final hypothesis relates to optimism about the future. Almost everything one reads about East Germany in the media suggests that people feel pessimistic. In fact, the second wave of panel data indicated that optimism remained high (mean=7.3 on the 0-10 scale) and was only slightly down from the post-revolution high of 7.5 in 1990. However, optimism then fell to an average of 7.0 on the 0-10 scale in 1992. Even so, this level is less than half a point below that in West Germany (Zapf and Glatzer 1987).

Incomes have risen significantly in real terms while satisfaction with income and living standards has fallen. But optimism about the future remains fairly high. Survey data often present a complicated picture of the links between objective change and subjective change; complicated but not incomprehensible. Comparisons with the West are probably the key. East Germans are dissatisfied because their material standards are still well below those of West Germans, but they expect to attain those standards eventually and so feel fairly optimistic about the future.

Conclusion

We have tested five hypotheses about income changes and their subjective consequences in East Germany from 1990 to 1992. The hypotheses seemed almost too obvious, too commonsensical to be worth testing. Yet three of the five proved false, and one that was "right" was "right" for the "wrong" reason, in that East Germans became increasingly dissatisfied with their incomes, not because incomes declined but because expectations rose (the last hypothesis relating to optimism, yielded an ambivalent result).

Post hoc, the main error in the assumptions underlying our hypotheses lay in making the seemingly "natural" assumption that economic imperatives would drive economic outcomes in the first stage of transition to a market economy and Western style democracy. In fact, it appears that the Federal Government's taxes and benefits have had substantial effects in raising the incomes of some households and maintaining an egalitarian income distribution. It seems most unlikely that Federal policymakers explicitly intended that taxes and benefits would cancel out the increased inequality and incentives produced by market forces. But, as noted above, market forces are only slowly taking effect, whereas the Federal tax-benefit system was imposed almost instantaneously in July 1990.

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