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**Article**

## The Shrinking German Middle Class: Signs of Long-Term Polarization in Disposable Income?

Weekly Report

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# Weekly Report

## The Shrinking German Middle Class —Signs of Long-Term Polarization in Disposable Income?

*The proportion of middle income earners in Germany has shrunk significantly in recent years: from 62 percent of the total population in the year 2000 to only 54 percent in 2006. Correspondingly, the proportion of the population at the margins of the income distribution has increased as well, while the downward mobility among the middle class was more marked than the upward mobility in higher income strata. In line with the changes in the objective income situation, significant changes have also been seen in subjective perceptions: across all income strata, we find that people's concerns about their personal economic situation have increased.*

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### **Income development in Germany: Increasing inequality**

The income situation in Germany is analyzed here on the basis of data from the Socio-Economic Panel (SOEP) study, which is carried out by DIW Berlin in cooperation with TNS Infratest.<sup>1</sup> Since the beginning of the 1990s, the equivalent disposable annual incomes of the previous year<sup>2</sup> of individuals in private households have increased in real terms by well over 1,700 euros or 10%, measured against the mean (Fig. 1). This increase was driven above all by robust economic growth and changes in unemployment.<sup>3</sup> In the period of weak economic growth up to 1998, the mean equivalent annual income remained stable at around 17,000 euros. The upswing that followed brought about considerable growth of over 19,000 euros (in the survey year 2003). Since then, there has been a loss in real income across the entire population.

**1** The SOEP is a representative panel survey of private households that has been carried out annually since 1984 in West Germany and since 1990 in East Germany; see Gert G. Wagner, Joachim R. Frick, and Jürgen Schupp (2007): The German Socio-Economic Panel Study (SOEP) - Scope, Evolution and Enhancement. In: Schmollers Jahrbuch, Journal of Applied Social Studies, Vol. 127(1), 139-169.

**2** For better comparability of the income situation of individuals in households of differing sizes and compositions, so-called equivalent incomes are calculated. In the present report, the modified OECD equivalence scale is used. Here, the household head is given a weight of 1; all further adult household members are given a weight of 0.5 and all children up to the age of 14 a weight of 0.3. Incomes are shown in prices from the year 2000. In line with the international literature and the recommendations of the EU Commission, fictitious income advantages from owner-occupied housing ("imputed rent") are added into cash income. In this report, we give the incomes for the year before the respective survey year. Thus, for example, the data for the households surveyed in 2006 reflect the income received in the calendar year 2005.

**3** See Frick, Joachim R. and Grabka, Markus M. (2005): Zur Entwicklung der Einkommen privater Haushalte in Deutschland: Zunehmender Einfluss von Arbeitslosigkeit auf Armut und Ungleichheit, In: DIW-Wochenbericht 72, 28/2005, p. 429-436.

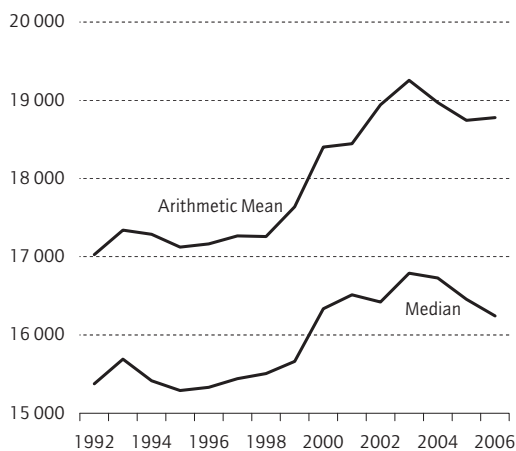
**JEL Classification:**  
D31, I32

**Keywords:**  
Income Inequality,  
Middle Class, Poverty

Figure 1

**Development of Real Equivalent Income in Germany 1992-2006**

In Euro



Source: SOEP, persons in private households, retrospectively surveyed equivalent net household income of the previous year in 2000 prices **DIW Berlin 2008**

Measured against the median—the income threshold dividing the upper from the lower half of the income distribution—the increase was much lower in the period 1992 to 2006: less than 900 euros. The difference over the course of the period between the arithmetic mean and the median income suggests that the different segments of the population did not benefit equally from the intermittent increases in welfare. The incomes of the upper half of the income earners increased faster than that of the lower half, which means that income inequality increased in the period in question.<sup>4</sup>

The relationship between the arithmetic mean and the median was 90% at the beginning of the 1990s in Germany, and fell to 86% by 2006. This development was considerably more pronounced in the states of the former West Germany than in those of the former East, where there was a decline in this measure of only two percent points (Fig. 2). The income inequality (after redistribution) is significantly lower in the former East than in West Germany (Fig. 3).

**Changed Stratification of Income**

The differing development of the median income and the arithmetic mean income points to a change in the stratification of income in Germany. Figure 4 shows the population in private households by

<sup>4</sup> See also the advisory report by the German Council of Economic Experts (2007/08), nos. 71-4ff.

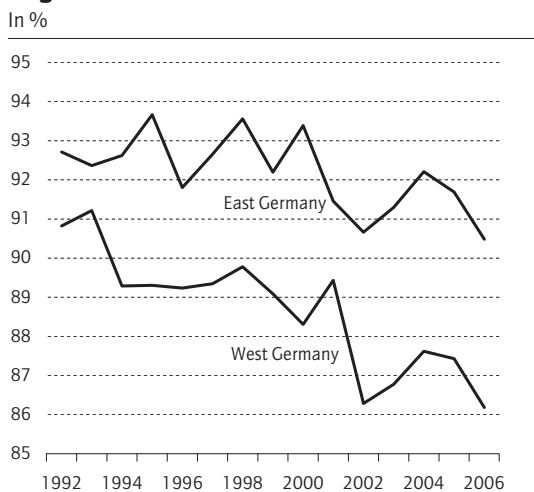
income position. The grouping was carried out on the basis of the median of the equivalent income and normalized (median=100). Reported are population shares in income strata around the median (90 to 110% of the median), as well as in three below-average and four above-average income strata. The extreme positions result for persons who have an income of less than 50% or more than 200% of the median. The middle class is defined as the population group with a relative income position of 70 to 150% of the median.

In this classification, the middle class consistently made up around 64% of the total population of West Germany in the 1980s—that is, the significant majority of all adults and their children. The middle class was approximately the same size for Germany as a whole—its share was almost 62%, or more than 49 million persons—and remained stable overall up to 2000. Since then, however, the middle income stratum has been shrinking and now makes up only approximately 54% (around 44 million persons) of the entire population. Within the middle class, those with an income between 90 and 110% of the median—that is, the “average earners”—suffered the most severe losses, with a decrease of around five percentage points.

Correspondingly, the margins of the income distribution have become more prominent. The lowest income stratum grew substantially: persons with an income of less than 70% of the median made up over

Figure 2

**Relation between the Median and the Arithmetic Mean of Equivalent Income by Region 1992 to 2006**

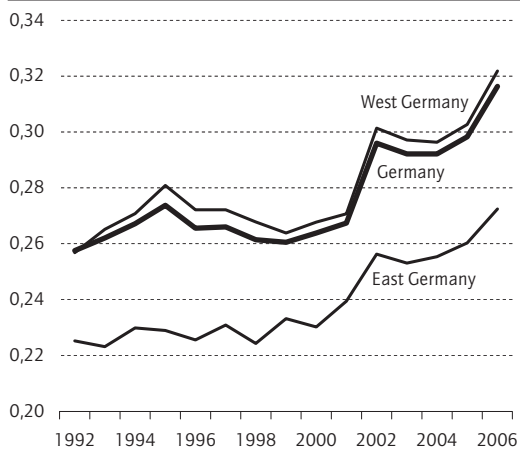


Source: SOEP, persons in private households, retrospectively surveyed equivalent net household income of the previous year. **DIW Berlin 2008**

Figure 3

**Income Inequality in Germany  
1992 to 2006**

Gini-Koeffizient



Source: SOEP, persons in private households, retrospectively surveyed equivalent net household income of the previous year. **DIW Berlin 2008**

one-fourth of the total population in 2006, and since 2000, their share has risen—above all due to the significant increases in the number of unemployed persons and welfare recipients—by almost seven percentage points. To what extent this has changed with the most recent economic upswing cannot be stated at the moment since the relevant income data are not yet available.

In 2006, the population share with an equivalent income of more than 150% of the median was over one-fifth, thus about two percentage points higher than in 2000. However, this increase took place only among the highest income-earners (more than 200% of the median), who made up around 9% of the total population in 2006.

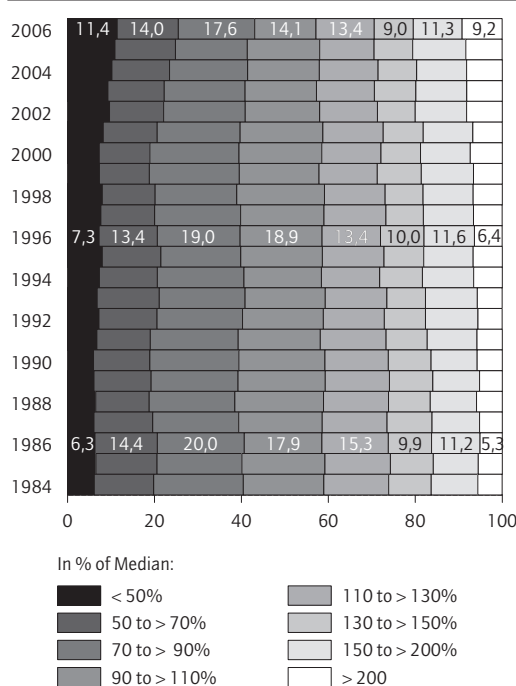
**Income mobility: more pronounced downward movement**

Alongside this purely descriptive analysis of the change in income stratification, it is interesting for economic and socio-political reasons to understand how the chances of rising in the income distribution and the risks of falling have changed. We seek to answer this question here using transition matrices, compiling the individual income strata into three groups: (1) persons at risk of poverty with an income of less than 70% of the median, (2) the middle income stratum (70 to 150% of the median) and (3) high-income earners with an equivalent income of at least 150% of the median.

Figure 4

**Income Stratification in Germany<sup>1</sup>  
1984-2006**

In %, Income position based on the year-specific median=100



<sup>1</sup> From 1992 on, Germany as a whole.

Source: SOEP, persons in private households, retrospectively surveyed equivalent household net income of the previous year. **DIW Berlin 2008**

To better understand the macro-economic influences, we analyze income mobility for two five-year periods marked by either economic growth (1996-2000) or stagnation (2002-2006) (Table 1).<sup>5</sup>

Comparing the two periods of observation, there is clear indication for increasing rigidity of the income strata. While only 54% of all persons at risk of poverty between 1996 and 2000 still found themselves in this income stratum five years later, the percentage of those remaining was more than 66% for the period 2002 and 2006.<sup>6</sup> Persistency increased markedly on the upper margin of the income hierarchy as well—by five percentage points—to around 69%. The high-income earners were thus able to maintain and to some extent further incre-

<sup>5</sup> In comparing the temporal development of economic indicators and the annual income of private households, two "time lags" must be taken into account: first, income fundamentally shows a delayed reaction to changes in the overall economic situation—for example, through wage agreements and frequency of overtime work. Second, the income given here relates to the year before the particular survey year.

<sup>6</sup> Here we only analyze the particular income situation at the beginning and end point of the five-year period and thus do not take into account possible income mobility in the intervening years. The stability figures given are thus to be understood as the upper limit of those individuals who are permanently "at risk of poverty."

Table 1

**Income Mobility<sup>1</sup> in Germany 1996-2000 and 2002-2006**

		At risk of poverty (<70% of median income)	Middle class (70 to less than 150% of median income)	High earners (150% or more of median income)	Total
2000					
1996	At risk of poverty (<70% of median income)	53,6	44,2	2,2	100,0
	Middle class (70 to less than 150% of median income)	11,0	79,4	9,6	100,0
	High earners (150% or more of median income)	3,9	32,6	63,5	100,0
	<i>Total (1996-2000)</i>	<i>17,8</i>	<i>64,0</i>	<i>18,2</i>	<i>100,0</i>
2006					
2002	At risk of poverty (<70% of median income)	66,2	31,6	2,2	100,0
	Middle class (70 to less than 150% of median income)	14,4	74,6	11,1	100,0
	High earners (150% or more of median income)	3,9	27,6	68,5	100,0
	<i>Total (2002-2006)</i>	<i>23,4</i>	<i>56,2</i>	<i>20,4</i>	<i>100,0</i>

Note: The top cell in the first column shows that 53.6% of the people who were in an income position of less than 70% in 1996 were still in this position in 2000.

<sup>1</sup> Percentage of persons whose income position improved, worsened, or remained the same.

Source: SOEP, Persons in private households, retrospectively surveyed equivalent household net income of the previous year.

DIW Berlin 2008

ase their income position to a higher degree in the second period.

The situation of the middle income stratum was similar: the stability index decreased here by around five percentage points (from 79% to around 75%). And although the income mobility of the middle class increased in both directions, downward mobility was clearly predominant. Approximately 14% of the middle income stratum from the year 2002 was at risk of poverty by 2006. This is more than three percentage points higher than for the period 1996-2000. The stronger downward mobility can be explained, *inter alia*, by the significantly higher risk of unemployment during the economic downturn of 2002-2006, while periods of unemployment lasted longer and the amount of wage compensation provided through the introduction of the new unemployment scheme (Arbeitslosengeld II) was much lower than through the previously paid unemployment assistance (Arbeitslosenhilfe). In the long term, changes in the structure of the employed population played a much more important role in the shrinking middle class. While almost 64% were in dependent full-time employment in the year 2000 according to SOEP data, the percentage had fallen to 55% by 2006. The percentage in part-time jobs or marginal employment, in contrast, increased significantly. While below-average income is typical for these kinds of employment relationships, they should still be evaluated more positively than unemployment—not only from a distributional point of view.

On the other hand, more than 11% of the middle class was able to move up into the upper income stratum in the years 2002 to 2006. This share increased by 1.5 percentage points as well over the first period of observation. It can be assumed that the increasing importance of income from capital and self-employment contributed to this upward mobility.<sup>7</sup>

In summary, it can be said that the shrinkage of the middle income stratum—at least during the weak economic cycle in the first few years of the new century—was connected with a more pronounced differentiation in the income hierarchy. Overall, downward mobility prevailed during this period.

### **Changing family structures: Strong decrease in "classic family" households in the middle income class**

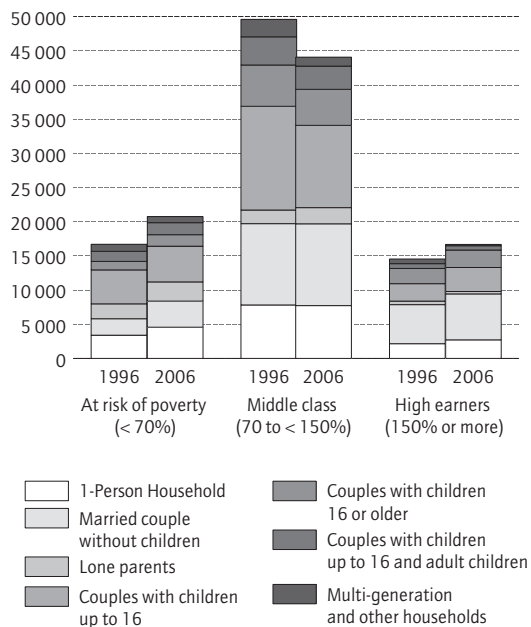
Along with the factors particularly relevant to the labor market described above, the structure of private households plays a central role in the analysis of household income. Figure 5 describes how the three consolidated income strata have changed regarding household and family structure between the years 1996 and 2006.

<sup>7</sup> Company profits and capital assets increased around three times as strongly as employee wages in the time period 2002 to 2006, see Federal Statistical Office (2007): Volkswirtschaftliche Gesamtrechnungen 18, 1.1.

Figure 5

**Household structure by Income Stratum 1996 und 2006**

(persons in 1.000; income position based on year-specific median income)



Source: SOEP, Persons in private households, retrospectively surveyed equivalent household net income of the previous year. **DIW Berlin 2008**

The only group within the middle income stratum that has increased in size in both relative and absolute terms was that of lone parents, which increased by almost 400,000 persons. Due to the difficulties of coordinating child-rearing with full-time work, lone parents make up an above-average share of those at risk of poverty, and are almost completely absent among the high-income earners. In contrast to the overall social trend toward smaller households, the number of persons living alone and couple households without children (mainly “empty nest” families) in the middle income stratum remained nearly constant. In the year 2006, representatives of both household types were found much more frequently at the extreme positions of the income distribution than in 1996; persons living alone were more frequently at risk of poverty, and couples without children were frequently among the high-income earners.

What is noteworthy within the middle income stratum is the dramatically declining number of persons in family households (with the exception of lone parents). The decline was particularly noteworthy for families in which couples had underage children up to the age of 16: more than three million of these

individuals had left the middle income stratum by 2006. Furthermore, the number of individuals in multi-generational households decreased by more than one million. In total, the shrinkage of the middle income stratum was accompanied by a decrease in the number of “classic family” households.

**Declining satisfaction with household income since 2000**

The temporal development of objective indicators such as (real) income does not say anything about how people actually perceive these changes. Information on individual satisfaction with household income offers indications. This information is collected in SOEP using a scale ranging from 0 “completely dissatisfied” to 10 “completely satisfied.” In Figure 6 the average satisfaction is displayed separately for the three income strata. The mean satisfaction scores for the entire population are broadly consistent with the data on the middle income stratum.

As can be expected, the high-income earners show the highest satisfaction. The changes in this group were also relatively minor over the entire period. For all three groups, the highest value for satisfaction with household income found in SOEP was in the year 1991 (former West German states only). This is consistent with the extraordinary economic situation of that time, which was profiting large segments of the population, particularly in the former West.

Subsequent developments were shaped fundamentally by the particular macro-economic situation of the time, whereby all three groups evidently went through parallel developments. Especially since 2001, the subjective evaluation of income has declined significantly – in line with the decline in real income. This was even true for persons in the upper income stratum.

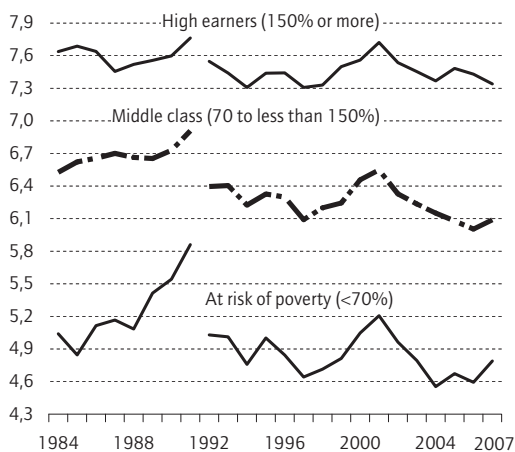
For the most recent survey year, the middle income stratum and the lower income stratum both show signs of a trend reversal. One can assume that with the economic recovery that commenced in approximately mid-2006, income—or the expectation of increasing income in reaction to increased earning potential—increased as well, and that the persons in this group also profited from the improved economic situation.<sup>8</sup>

<sup>8</sup> Annual disposable household income from the survey year 2007 is not yet provided.

Figure 6

**Satisfaction with Household Income by Income Stratum 1984 to 2007**

Income position based on year-specific median=100



From 1992 on Germany as a whole; 2007: preliminary data.

Source: SOEP, persons in private households. DIW Berlin 2008

**Continuing major concerns about the individual economic situation**

An alternative subjective indicator for describing the economic situation of the different income strata can be derived from the answers to the SOEP question on concerns about “your own economic situation” (Figure 7).<sup>9</sup> Corresponding to the above analysis of income satisfaction, it can be expected that the percentage of respondents who express economic concerns will increase during phases when the economy is weak (and decrease when it is strong). Since 1984 (West Germany), there has been a general trend toward greater perceived economic insecurity: the percentage of people who are “not concerned at all” was still over 40% in the 1980s, fell to around 30% in reunified Germany in the 1990s, and recently—that is, also in the high-growth years 2006 and 2007—was as low as 23%.

Among the low-income earners, the percentage of persons who were concerned about their overall economic situation increased particularly strongly in the period 2001 to 2004 (Figure 8). Here, the percentage of those who reported being “very concerned” increased by more than 16 percentage points to around 45%. In the middle income stratum, the percentage of those with “severe concerns” up to

<sup>9</sup> There are questions dealing with concerns in a range of life areas. The answer categories are “not concerned,” “somewhat concerned,” and “very concerned.”

2005 reached a “historic” peak for the SOEP data with more than 26%. The current economic recovery is only causing a slight decline in the size of the group with severe concerns.

**Conclusions**

Disposable real income has increased in Germany only slightly overall since reunification, and even declined from 2003 to 2006. Simultaneously, the income spread widened. The middle income stratum shrunk from 2000 to 2006 from 62 percent to 54 percent of the population—that is, by around five million persons.<sup>10</sup> “Classic family” households have been affected particularly severely by this decline in relative income position.

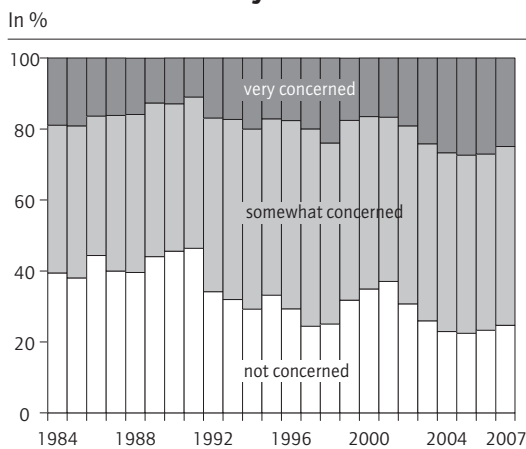
The share of persons at risk of poverty (with an income of up to 70 percent of the median) has increased significantly. While income stability on the margins of the distribution increased in the sub-period 2002 to 2006, larger changes appeared within the middle income stratum. Here downward mobility was predominant, which can be explained among other things by the increasing risks and longer phases of unemployment, as well as lower wage compensation under the unemployment benefit scheme introduced in January 2005. Another factor was the flexibilization of the labor market, which was manifested in a declining role of “classic” employment relationships (in the sense of full-time jobs with permanent contracts).

As a result of these developments, people’s subjective evaluations of their own economic situation have worsened dramatically, both in the middle income stratum and in the population as a whole, and thus also among higher-income earners. The middle stratum of the population has become increasingly concerned about their social position, although current subjective indicators suggest a slight improvement in this area. At present, however, this trend reversal is still only comparatively weak in the middle income stratum. Apparently the large majority of the population still does not have the impression that they are profiting from the economic recovery.

<sup>10</sup> The shrinking middle class was a subject of discussion in the USA and UK in the 1980s as well. There, real income growth was also seen in the middle income stratum, while in Germany the middle class has experienced real income losses since 2003. See Richard V. Burkhauser, Amy D. Crews, Mary C. Daly, and Stephen P. Jenkins (1996): “Where in the World is the Middle Class? A Cross-National Comparison of the Shrinking Middle Class Using Kernel Density Estimates. Cross-National Studies in Aging Program Project Paper No. 26, All-University Gerontology Center, The Maxwell School, Syracuse, NY: Syracuse University; und Richard V. Burkhauser und Ludmila Rovba (2005): Income Inequality in the 1990s: Comparing the United States, Great Britain and Germany. The Japanese Journal of Social Security Policy, Vol.4 (1), 1-16.

Figure 7

**Subjective evaluation of own economic situation in Germany 1984-2007**

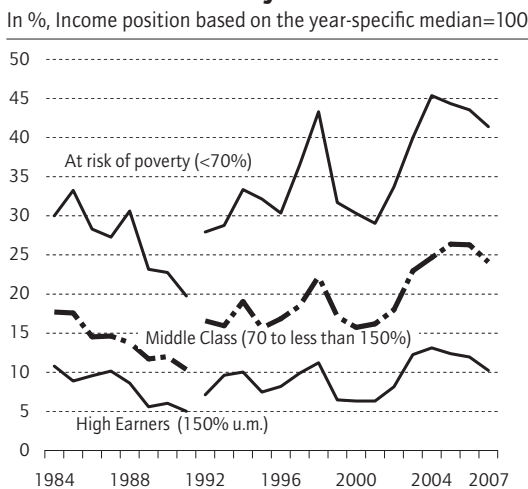


From 1992 on Germany as a whole; 2007: preliminary data. The original question is „What is your attitude towards the following areas - are you concerned about them? About your own economic situation? Very concerned, somewhat concerned, not concerned at all.“

Source: SOEP, persons in private households. **DIW Berlin 2008**

Figure 8

**Percentage of persons who were „very concerned“ about their personal economic situation by income stratum**



From 1992 on, Germany as a whole; 2007: preliminary data.

Source: SOEP, persons in private households. **DIW Berlin 2008**

The negative developments and subjectively perceived risks should not, however, disguise the fact that upward mobility does exist in Germany. Well over 11% of the middle income stratum from the year 2002 moved up into higher income strata over the course of five years.

Current demands for significant wage increases appear understandable against the background of recent objective losses in real income, the subjective dissatisfaction with income, and the increasing insecurity, particularly of the middle income stratum. The fact that people in Germany had previously been accustomed to a higher degree of economic stability—in their personal economic situation as well—has played a significant role in this as well.

From a purely static point of view, improvements in the welfare of a broader segment of the working population may raise hopes of reversing the decline in the middle class described here. At the same time, the risks of increasing unemployment due to relatively high wage settlements have to be taken into account: this could have the effect of condemning the lower-income strata to continued poverty, particularly in the case of the long-term unemployed. Furthermore, the current trend toward destandardization of employment relationships in dependent full-time employment—favoring other forms such as part-time work, marginal employment, and dis-

guised employment—may even weaken the middle class further due to the lower income associated with these employment forms.



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