# Income Inequality and Household Savings in Germany, 1995-2011

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*PRELIMINARY VERSION – PLEASE DO NOT QUOTE*

## Abstract

Using household data from the German Socio-economic Panel, we examine the effects of changing income inequality upon aggregate household saving rates. We confirm recent U.S. evidence that higher incomes are associated with a higher saving rate. Besides this, we show the causal nature of this positive income saving rate relationship by providing evidence that increases (decreases) in absolute income induce increases (decreases) in the saving rate over time. Moreover and most important, we illustrate that adjustments of household saving rates do not only depend on the development of own absolute income, but are also driven by the development of reference incomes indicating upward looking consumption behavior. Hence, changing income inequality does substantially affect income class-specific saving rates and therefore also the aggregate household saving rate. This does not only help explaining the observed decline of aggregate household savings in Germany, but also gives rise to a number of relevant implications for economic policy and theory.

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# 1. Motivation and Stylized Facts

Interactions between income inequality and the saving behavior of households are a very topical issue. This is mainly because changes in the distribution of income are likely to be a major cause for the building up of credit imbalances in the run-up to the financial crisis in the U.S. (Blundell 2011, Heathcote et al. 2010, Krueger and Perri 2006, Kumhof and Ranciere 2010). Thereby, one crucial aspect has been that increasing income inequality has been associated with a decline of the aggregate household saving rate.

In Germany we observe a similar development. From 1995 to 2011 average real net household income in Germany has stagnated. In the same time-span inequality of net household income has increased. While, for the lower half of the income distribution mean income has fallen by 5.4 percent and its share of total income has decreased by 6.2 percent, for the highest decile group mean income has risen by 6.6 percent and its share of total income has increased by 5.8 percent (see table A1 in the appendix). At the same time the saving rate of households has fallen substantially.[2] Depending on the concept of saving rate this fall is between 5.9 and 26.5 percent (see figure 1, upper panel). Hence, there seems to be a negative association between income concentration and the saving rate of households. This pattern is illustrated in the scatter plots in the lower panel of figure 1.

At first glance, one could expect a fall of the saving rate of this magnitude to be accompanied by a comparable decrease of average income. However, although median real income of the lower half of the population has slightly decreased over this period, this can by no means explain the substantial fall of the aggregate saving rate. Moreover, one might also argue that a relative shift of total income towards higher income groups raises aggregate saving in the upper part of the income distribution. This would compensate the negative effect on the saving rate of the lower income groups, leaving the overall saving rate rather constant. This, however, is not the case.

Figure 2 illustrates another odd development: income group-specific saving rates are by no means clearly tied to the development of average own income. Even more striking is the fact that we observe a comparably strong positive correlation of saving rates and income shares of the respective income group. This suggests that relative income changes play a role with regard to changes of household saving rates.

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[2] From 1995 to 2011 the aggregate saving rate has fallen from 11.2% 10.5%, the mean saving rate has fallen from 10.4% to 8.6% and the median saving rate has fallen from 6.8% to 5.0%. The aggregate saving rate is the weighted sum of monthly household saving divided by the weighted sum of net monthly household income. Mean saving rate is defined as the mean saving rate and median saving rate is defined as the median saving rate.

*Figure 1: Income Inequality and Saving Rate of Households in Germany, 1995-2011.*

Note: The upper panel of this figure illustrates the development of inequality in net household income (measured by the Gini-coefficient) and household saving rates in Germany from 1995 to 2011. All series are indexed to 1995 = 100. The lower panel illustrates the negative relationship between income inequality and household saving rates for the aggregate saving rate (left) the mean saving rate (centered) and the median saving rate (right).
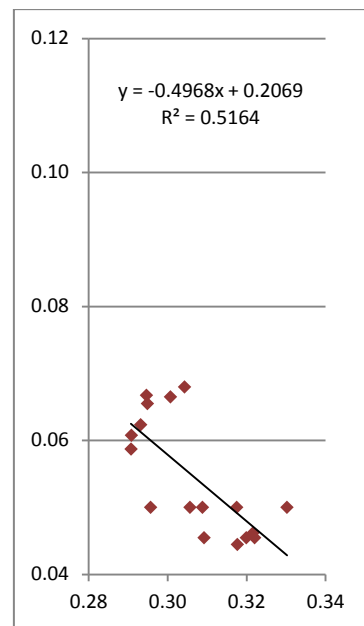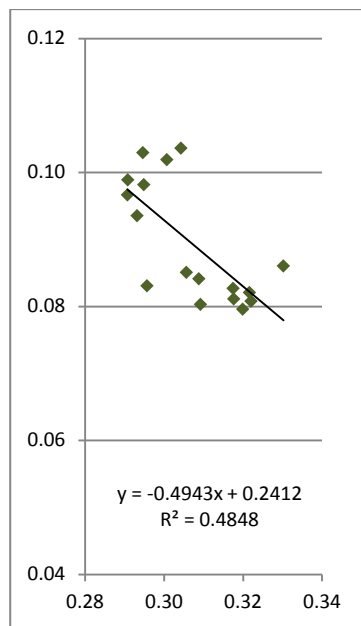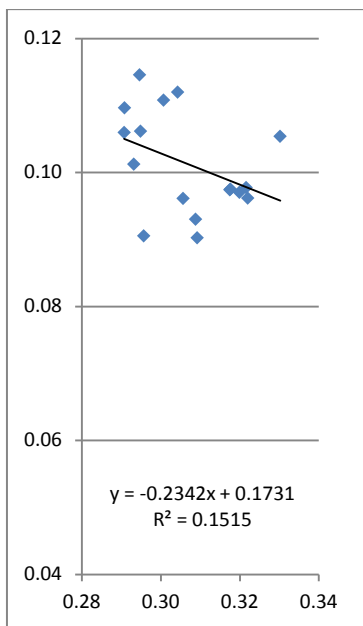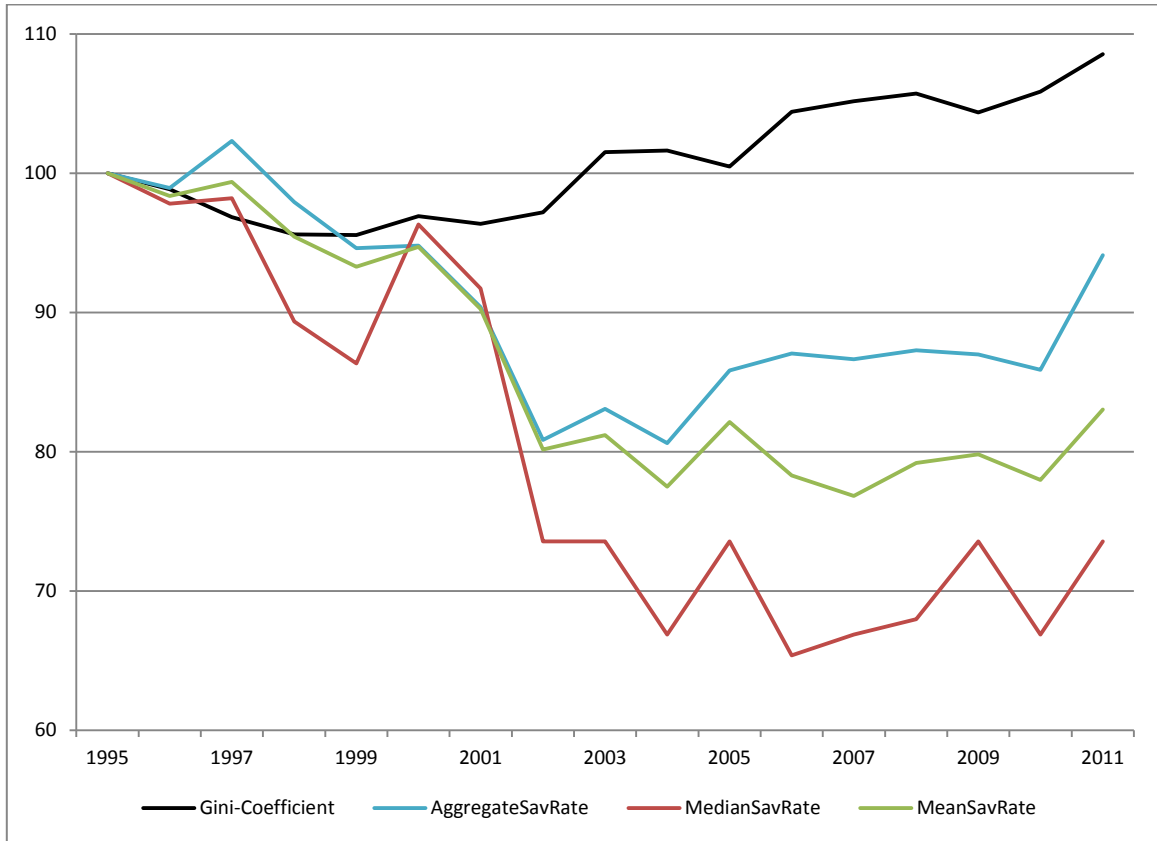


*Source: SOEP (v28), own calculations.*

*Figure 2: Income Class-specific Development of Income Shares in Germany, 1995-2011.*

Note: This figure illustrates median net household income, aggregate household saving rates and income class-specific reference incomes (the derivation of the latter is described in more detail in section 4) by decile groups. These series refer to the left scale and are indexed to 1995 = 100. Decile group-specific total income shares are reported on the right scale in %.

**Decile Group 7**

**Decile Group 8**

**Decile Group 9**

**Decile Group 10**
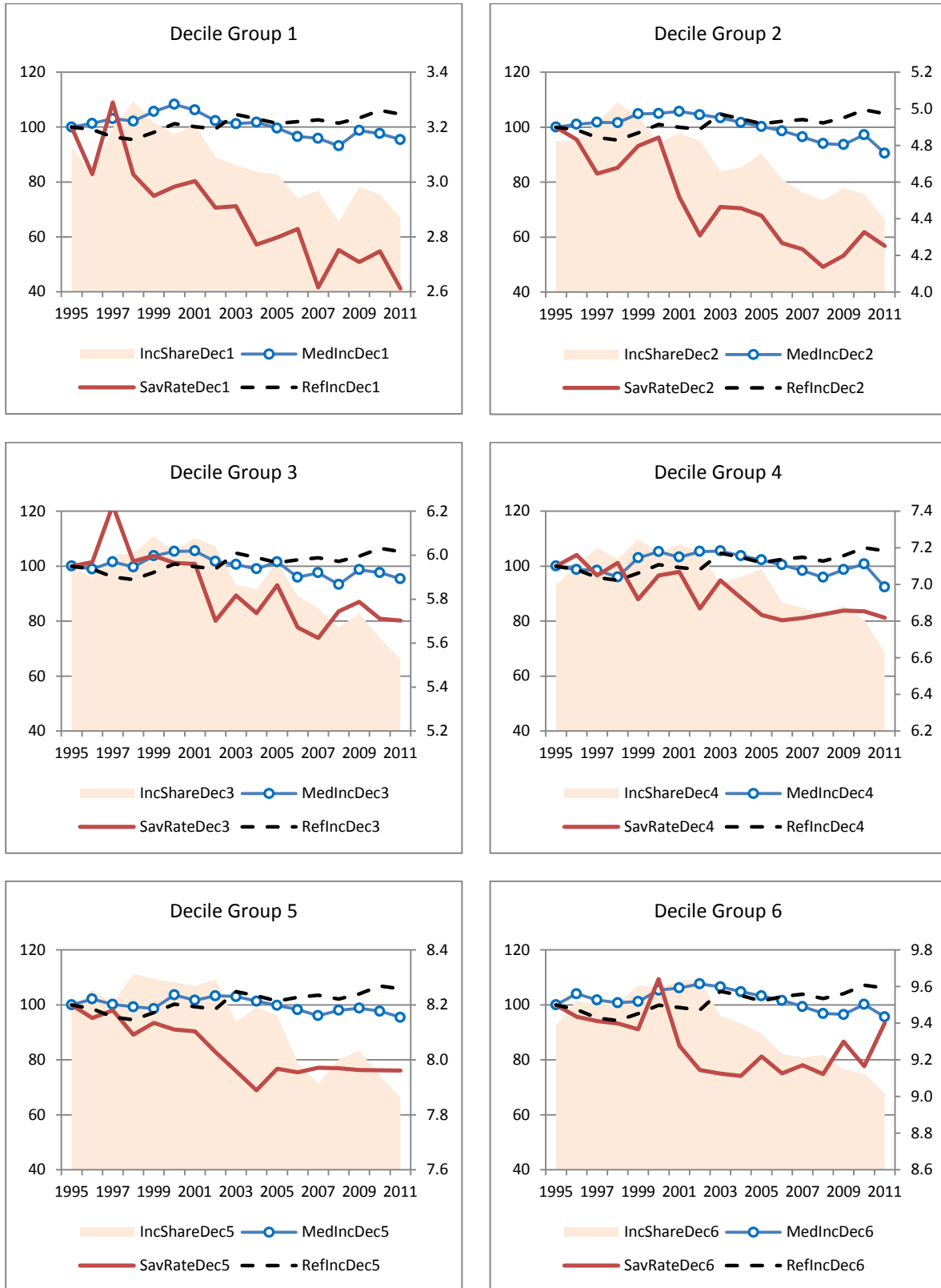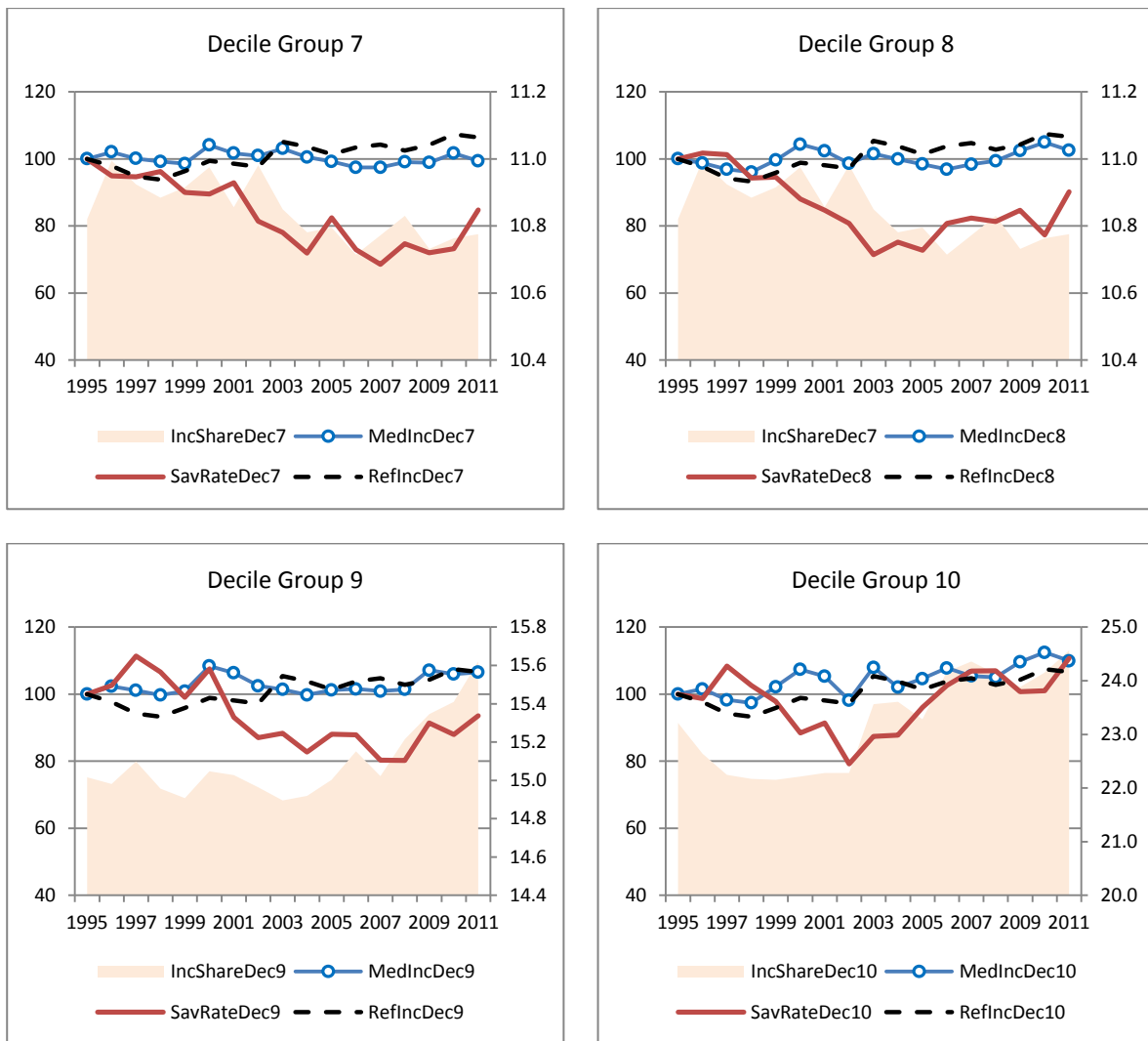
*Source: SOEP (v28), own calculations.*

Against this background, a number of research questions arise: (i) How do households adjust their saving rates to changes in own absolute current and permanent income? Do these effects differ between different income classes? (ii) What is the role of relative income changes, i.e. upward looking comparisons for household saving behavior? (iii) Does household adjustment behavior help to answer the question: Why is aggregate saving negatively associated with income inequality?

The remainder of this paper is structured as follows: Section 2 summarizes related research and highlights our contribution to this literature. Section 3 describes the data used in the analysis. Section 4 introduces our empirical methodology, presents our estimation results for the saving behavior of households and connects these findings to the development of aggregate household savings. Section 5 summarizes and concludes.

## 2. Related Literature and Contribution

There is not much comparable empirical evidence on the impact of income inequality on aggregate household saving. This is because there are only few studies that focus on the interaction of income inequality and aggregate saving. Moreover, within these studies, the subject has been addressed in various ways. On the one hand, there are papers connecting shifts in the functional distribution of income to changes in aggregate saving based on national accounts data (see, e.g., Schmidt-Hebbel and Servén 2000 and the references cited therein). On the other hand, there are studies based on household surveys exploiting micro data information to connect household saving rates to changes in the personal distribution of income.

As described above, our focus is on the second type of investigation. Although typically finding that on average high income households save more than low income households, the evidence with regard to the impact of changing income inequality upon aggregate household saving is scarce. Using data for 1949-1970 from the U.S. Bureau of the Census Blinder (1975) provides weak evidence for a negative relationship between income inequality and aggregate household saving. Menchik and David (1983) use micro data for the U.S. and find a positive connection between saving rates and net income indicating that higher income inequality is associated with higher lifetime aggregate saving. Bunting (1991) uses U.S. Consumer Expenditure Survey data and shows that households' marginal propensities to save increase as their relative income position rises. Dynan et al. (2004) use U.S. data from the Panel Study of Income Dynamics, the Survey of Consumer Finances, and the Consumer Expenditure Survey covering the 1970s and 1980s. The authors show that saving rates increase with household income across the entire income distribution and that the marginal propensity to save is higher for high-income households than for low-income households. Although the authors do not directly address income inequality within their econometric framework, they conclude that asymmetric shocks to the income distribution affect aggregate household savings.

Most closely related to our paper is the study by Alvarez-Cuadrado and El-Attar Vilalta (2012). The authors use U.S. household panel data from the PSID covering 8 years from 1984-2007 and examine the interaction between income inequality and aggregate saving based on household saving rates. In the empirical part of their study the authors find evidence that: (i) Increasing income inequality induces an increase in inequality of saving rates. (ii) Moreover, changes of households' saving behavior are connected to changes in income inequality in the way that household saving depends on the development of a reference income suggesting upward-looking comparisons. (iii) Rising income inequality is associated with a fall in aggregate saving.

We contribute to this branch of research by providing evidence for the relationship of income inequality and household savings in Germany based on data from the German Socio-economic Panel from 1995-2011. We follow Alvarez-Cuadrado and El-Attar Vilalta (2012)'s approach, replicate parts of their U.S. analysis for Germany and extend their framework by showing that changes in absolute income over time induce an adjustment of saving rates over time. This is an important result as it impressively documents the adjustment of consumption behavior to income changes in current and permanent income suggesting a causal income saving relationship. Moreover, we illustrate that relative income shocks, i.e. the development of reference incomes, do play a role for households' saving behavior. This mechanism helps explaining the negative association of income inequality and aggregate household saving rates in Germany.

## 3. Data and Sample Preparation

Our analysis is based on household survey data from the German Socio-economic Panel. The sample covers the years from 1995 to 2011 as the information on household saving is available only since 1995 and the latest available information of net household income and saving is 2011. For a detailed description of the panel see Wagner et al. (2007).

In the sample preparation for the analysis we try to apply a minimum of restrictions: (i) First, we drop households with net income below or equal to zero. (ii) In the questionnaire, the cardinal question for the amount of monthly saving is preceded by a filter question that captures whether or not the household saves at all. This setup allows for a contradiction: Households may first indicate that their saving is positive but then not answer the follow-up question regarding the amount of their monthly saving. Those observations are not included in our analysis. In addition to that, we drop households for which monthly saving exceeds net monthly income.

We end up with a sample consisting of 176,477 observations and at least 6,692 households in any given year.

## 4. Savings Behavior of Households

### a. Methodology

We use a measure of active saving rather than defining saving as the difference in wealth in order to avoid biases resulting from differences in asset prices. The information on households' active saving is based on a one-shot question asking for the monthly amount that the household saves. As we focus on households' saving decisions this measure of saving seems to be the best approximation of the share of income that is not used for consumption. The household saving rate is calculated by dividing this measure of monthly active saving by current monthly net income.

Our main explanatory variable is the log of monthly net household income or the change thereof. In addition, we consider a 5-year moving average of this variable to get a less transitory income measure. For both variables we also consider a squared version within some of our regressions.

Following Dynan et al. (2004) and Alvarez-Cuadrado and El-Attar Vilalta (2012) we apply median regression techniques with bootstrapped standard errors with 400 replications for the levels (subsection b). In addition, we apply fixed-effects estimation for the assessment of changes in household saving rates over time (subsections c and d).

All regressions of the level of the saving rate (specifications 1-4) include a constant and controls for age, year, a dummy for male household heads, the number of children in care, household size and employment status of the household head (full-time employment as base level). In subsections 4c and 4d where we regress the change in household saving rates, the regressions include dummy variables for possible changes in the employment status of the household head, e.g. going from full-time employment to unemployment or to retirement and vice versa, the change in household size and the number of children, year, age and a dummy for male household heads as control variables. In all of our specifications, we only report a small selection of those controls even though most of them are highly significant in all specifications and have the expected sign.

### b. Household Saving Rate and Household Net Income

In this section, we consider the effect of net household income upon the saving rate. We carry out this estimation in order to compare the results to the findings of Dynan et al. (2004) and Alvarez-Cuadrado and El-Attar Vilalta (2012). Our results are presented in table 1.

*Table 1: Household Saving Rate and Household Net Income, 1995-2011.*

| Saving Rate | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| **ln(Income) (1)** | 0.0699*** | -0.1257*** | | |
| **ln(Income)² (2)** | | 0.0132*** | | |
| **ln(Permanent Income) (3)** | | | 0.0799*** | -0.0863*** |
| **ln(Permanent Income)² (4)** | | | | 0.0110*** |
| Observations | 168,927 | 168,927 | 95,904 | 95,904 |
| Pseudo-R² | 0.1028 | 0.1056 | 0.1054 | 0.1069 |

Note: The column heading indicates the specification. Income is defined as current monthly net household income. Permanent income is defined as the 5-year moving average of the variable income. All regressions also include a constant and controls for age, year, a dummy for male household heads, the number of children in care, household size and employment status of the household head. Weights were used. *** significant at 1%; ** significant at 5%; * significant at 10%

We find that household saving rates are positively influenced by household net income. Squared income indicates a convex relationship between income and saving rates. These results are perfectly in line with Dynan et al. (2004) as well as Alvarez-Cuadrado and El-Attar Vilalta (2012).

Qualitatively our results do not change when considering our measure of permanent income instead of current income. This is also the case in the results of Dynan et al. (2004) and Alvarez-Cuadrado and El-Attar Vilalta (2012). For a discussion of the relevance of permanent income proxies instead of current income see Dynan et al. (2004)[3], who find strong evidence that the distinction between current income and permanent income does not yield different results.

## c. Changes in Household Saving Rates and Household Net Income

The positive effect of household income on saving rates that we find in table 1 can be the result of two different relationships: On the one hand, households increase their saving rate after having experienced an increase in real log income over time, leading to a positive gradient. On the other hand, the positive gradient might also in part result from the fact that households in the upper part of the income distribution have a relatively higher saving rate in the cross section. The latter might be due to time invariant omitted variables, whereas the former would be a better measure of a positive causal effect of income on saving rates. The following analysis in first differences aims at isolating this potentially causal effect by exploiting the panel dimension of our data set in order to single out the effect of income on saving rates over time.

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[3] Especially Figure 2 is very informative and summarizes their finding that there is no difference between the effect of current or permanent income.

First, we regress the change in a household's saving rate over time on the change in the log of its monthly net income. Once again, we use both the log of current income as well as the log of our measure of permanent income. In a second step, we analyze whether the relationship varies over income classes by interacting log net household income with dummy variables for different income decile groups. Finally, we examine potential differences in the adjustment of saving rates with regard to the direction of the income shock. For that purpose, we construct a dummy variable indicating whether the difference in real household income is positive, which we then interact with the explanatory variable itself. Estimation results are summarized in table 2.

As mentioned above, most of the controls are significant with the expected sign. Most noticeably we see that changes in household size are slightly negatively associated with adjustments of household saving rates. The same holds for changes in the employment status from full-time to unemployed. In contrast, leaving unemployment for a full-time job increases household saving rates.

Columns 1 and 2, i.e. specifications 5 and 6, indicate that a change in household income leads, on average, to an increase in the household's saving rate of about 2 percentage points. This holds true for an increase in both current and permanent income: The higher the difference in income, the stronger the adjustment of the saving rate.

As there is no substantial difference between the effects of current income and permanent income, we continue our analysis solely with current income. Specifications 7 through 9 provide more detailed information on the effect of a change in household income upon saving rates.

Specification 7 suggests that households adjust their saving rate substantially regardless of whether these households have experienced an increase or decrease in income over time.

Specification 8 sheds light on possible differences across income classes. The reaction of households' saving behavior to income changes is significantly stronger in the middle of the income distribution. However, although the extent of the adjustment differs substantially between households of different income groups, the qualitative effect is not limited to certain parts of the income distribution.

When implementing an additional interaction with the dummy for rising income, one observes an interesting switch from decile group 5 to decile group 6: We see that, in the lower half of the income distribution, increases in absolute income lead to a significantly stronger change (i.e. a rise) of the saving rate than decreases in absolute income do. The effect reverts within decile classes 6-9. Here, income losses are associated with a more pronounced adjustment of the saving rate than are income gains.

*Table 2: Changes in Household Saving Rates and Household Net Income, 1995-2011.*

| Δ Saving Rate | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|
| **Δ ln(Income) (5)** | 0.0192*** | | | | |
| **Δ ln(Permanent Income) (6)** | | 0.0269*** | | | |
| **Δ ln(Income) x PlusMinus (7)** | | | | | |
| Faller | | | 0.0166*** | | |
| Riser | | | 0.0217*** | | |
| **Δ ln(Income) x IncomeClass (8) x PlusMinus (9)** | | | | | |
| **Income Class 1** | | | | 0.0101*** | |
| Faller | | | | | 0.0072* |
| Riser | | | | | 0.0246* |
| **Income Class 2** | | | | 0.0210*** | |
| Faller | | | | | 0.0171*** |
| Riser | | | | | 0.0323*** |
| **Income Class 3** | | | | 0.0122** | |
| Faller | | | | | 0.0075 |
| Riser | | | | | 0.0216*** |
| **Income Class 4** | | | | 0.0234*** | |
| Faller | | | | | 0.0204*** |
| Riser | | | | | 0.0294*** |
| **Income Class 5** | | | | 0.0334*** | |
| Faller | | | | | 0.0303*** |
| Riser | | | | | 0.0381*** |
| **Income Class 6** | | | | 0.0232*** | |
| Faller | | | | | 0.0385*** |
| Riser | | | | | 0.0139** |
| **Income Class 7** | | | | 0.0319*** | |
| Faller | | | | | 0.0439*** |
| Riser | | | | | 0.0258*** |
| **Income Class 8** | | | | 0.0216*** | |
| Faller | | | | | 0.0230*** |
| Riser | | | | | 0.0211*** |
| **Income Class 9** | | | | 0.0244*** | |
| Faller | | | | | 0.0240* |
| Riser | | | | | 0.0242*** |
| **Income Class 10** | | | | 0.0130*** | |
| Faller | | | | | 0.0188 |
| Riser | | | | | 0.0113** |
| Δ Household size | -0.0046*** | 0.0001 | -0.0045*** | -0.0050*** | -0.0048*** |
| Full-time job to unemployed | -0.0238*** | -0.0270*** | -0.0242*** | -0.0243*** | -0.0247*** |
| Unemployed to full-time job | 0.0171*** | 0.0191*** | 0.0167*** | 0.0165*** | 0.0159*** |
| Observations | 138,944 | 79,833 | 138,944 | 135,895 | 135,895 |
| $R^2$ | 0.0079 | 0.0051 | 0.0079 | 0.0084 | 0.0087 |
| Number of households | 18,555 | 12,662 | 18,555 | 17,417 | 17,417 |

Note: The column heading indicates the specification and corresponds to the subtitles in the first column. Income is defined as current monthly net household income. Permanent income is defined as the 5-year moving average of the variable income. PlusMinus is a dummy variable indicating whether the household's income increased (Riser) or not (Faller). Total effects are reported for both relative faller and riser. All regressions also include a constant and controls for age, year, the change in the number of children in care, a dummy for male and changes in employment status of the household head other than those reported in the table. Weights were used. *** significant at 1%; ** significant at 5%; * significant at 10%

Specification 9 completes the picture and underlines the basic findings of tables 1 and 2: (i) The effect of income changes on the adjustment of saving rates is not solely due to possible omitted factors leading to the positive relationship in the cross section. (ii) The positive income saving rate relationship is not restricted to the direction of the income shock or certain parts of the income distribution. Our findings in table 2 are further evidence for the causal nature of the income saving relationship and strongly support the conclusion of Dynan et al. (2004) that "the rich do, indeed, save more".

### d. Saving Behavior and Upward Looking Comparisons

However, the fact that rising absolute income increases households' saving rates is not sufficient to explain the remarkable drop of the aggregate saving rate. For example, the aggregate saving rate of income class 5 decreased by more than 20% from 1995 to 2011 (see table A1 in the appendix). Every income group but the top decile class has experienced a fall in aggregate saving, while mean (median) income has remained roughly constant or has decreased by not more than 8% (9.5%).

So far, we have only considered measures of own income neglecting the effects of interpersonal comparisons. Now we consider upward looking consumption behavior by the inclusion of a reference income as an explanatory variable. This is motivated by the relative income hypothesis which dates back to Duesenberry (1949). The relative income hypothesis suggests that consumption decisions are influenced not only by the household's own level of income but also by the household's relative position within the income distribution. Recent work on relative consumption includes a paper by Levine, Frank and Dijk (2010), who consider upward looking comparisons in order to explain expenditure cascades. Among others, Dynan and Ravina (2007) find evidence that the way people compare to others affects their level of happiness, even after controlling for own income. For a more detailed discussion, see Alvarez-Cuadrado and El-Attar Vilalta (2012).

In order to test whether upward looking comparisons matter for the saving decisions of German households, we follow Alvarez-Cuadrado and El-Attar Vilalta (2012) and regress the change in household saving on the changes in both own and reference income. Reference income is defined as the average income of all income classes above the household's own income class.[4] All regressions include the same control variables as in subsection 4c and yield similar results with regard to these control variables. We employ fixed effects regression technique for both specifications.

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[4] Alternatively, one could specify reference income as average income of all households that rank higher in the income distribution. Although this approach seems more stringent, it suffers from major multicollinearity concerns as the change in own income has a strong effect on the change in reference income.

Results are presented in table 3. First, we find once again that changes in own income are positively associated with changes in household saving (see specification 10). More importantly, the regression of the change in saving on both own and reference income suggests that the effect of an increase in reference income on the amount of household saving is significantly negative, even when controlling for changes in own income. This is in line with the findings of Alvarez-Cuadrado and El-Attar Vilalta (2012) who report an average effect of a change in reference income on household saving of -0.062 for U.S households. The results also suggest that, ceteris paribus, an increase in reference income not only lowers the household's amount of saving but also its saving rate.

*Table 3: Changes in Household Saving, Net Income and Reference Income, 1995-2011.*

| Δ Saving | (10) | (11) |
|---|---|---|
| **Δ Reference Income, Δ Income (1)** | | |
| Δ Income | 0.1835*** | |
| Δ Reference Income | -0.0648** | |
| **Δ Reference Income x Income Class (2)** | | |
| Δ Income | | 0.1871*** |
| **Income Class 1** | | |
| Δ Reference Income | | -0.1702*** |
| **Income Class 2** | | |
| Δ Reference Income | | -0.1272*** |
| **Income Class 3** | | |
| Δ Reference Income | | -0.1183*** |
| **Income Class 4** | | |
| Δ Reference Income | | -0.0933** |
| **Income Class 5** | | |
| Δ Reference Income | | -0.0655* |
| **Income Class 6** | | |
| Δ Reference Income | | -0.0634* |
| **Income Class 7** | | |
| Δ Reference Income | | -0.0459 |
| **Income Class 8** | | |
| Δ Reference Income | | -0.0528* |
| **Income Class 9** | | |
| Δ Reference Income | | -0.0355 |
| **Income Class 10** | | |
| Δ Reference Income | | -0.1078* |
| | | |
| Δ Household size | -30.2841*** | -26.0924*** |
| Full-time job to unemployed | -33.4646*** | -42.3286*** |
| Observations | 129,214 | 129,214 |
| R² | 0.1358 | 0.1375 |
| Number of households | 16,733 | 16,733 |

Note: The column heading indicates the specification and corresponds to the subtitles in the first column. Saving is defined as monthly household active saving. Income is defined as current real monthly net household income. Reference income is defined as the average income of the income classes above the household's own income class for a given year. Total effects are reported for all income classes in (2). All regressions also include a constant and controls for age, year, the change in the number of children in care, a dummy for male and changes in employment status other than those reported. *** significant at 1%; ** significant at 5%; * significant at 10%

Specification 11 illustrates how this negative effect of the income of the reference group varies between different income classes. We find that upward looking comparison has a thorough effect on the lower half of the income distribution whereas the effect on the upper half is less pronounced: Only decile groups 6, 8 and 10 show significant effects at the 10% level of significance. However, the p-values for income classes 7 and 9 do not exceed the value of 0.160. The direction of the effect of an increase in reference income does not differ throughout the entire income distribution.

For the median household, real reference income increased by 239 € from 1995 to 2011. Thus, our findings predict a decrease in monthly saving by about 15.5 €. While the total drop in real saving for the median household over this period is 50 €, the effect of upward looking comparisons can account for about 30% of the sharp decline in savings of the median household.

This helps explaining the fact that within different income classes the adjustment of saving rates is not only driven by households' absolute income but substantially depends on the development of reference income. Thus relative income losses for the lower part of the income distribution, i.e. rising income inequality, led to a decrease of household saving rates within the respective income classes (decile groups 1-6). Thus, the observed decrease of household savings can hardly be explained by the decline of own absolute income but is also driven by relative income losses.


## 5. Conclusion

Using household data from the German Socio-economic Panel (SOEP), we examine the effects of changing income inequality upon the aggregate household saving rate. Our analysis offers a number of insights: (i) First, we show that higher income households save a higher proportion of their income. This confirms the findings of Dynan et al. (2004) and Alvarez-Cuadrado and El-Attar Vilalta (2012) for the US. (ii) Second, we show that changes in absolute income over time induce an adjustment of saving rates over time. This is an important result as it impressively documents the adjustment of consumption behavior to income changes in current and permanent income suggesting a causal income saving relationship. (iii) Third, changes of saving rates are also associated with the development of reference income indicating upward looking consumption behavior. Rising reference incomes - due to relative income losses for the vast majority of German households - lower household saving rates. (iv) Fourth, these findings help explaining the fact that the adjustment of saving rates follows not only the development of absolute income but also the development of reference income. Thus, while the upper part of the income distribution has kept its saving rate rather constant or even slightly increased its saving rate, the decline in the aggregate household

saving rate in Germany is in part caused by the relative income losses of the "lower" part of the income distribution (decile groups 1-6).

Our next steps will focus on using alternative and more precise measures of permanent income and employing an instrumental variable approach. This should be done in a way that follows Dynan et al. (2004) in order to allow for a more detailed comparison of German household saving behavior with that of U.S. households. Moreover, further research regarding the definition of the reference group and reference income will help to better understand the effects of relative income shocks on household saving.

Nevertheless, our basic results are perfectly in line with recent findings on household saving behavior in the U.S. and offer important insights with regard to the effects income inequality through the presence of upward looking comparisons on aggregate saving rates.

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# Appendix

*Table A1: Descriptives, 1995-2011.*

| | Unit | 1995 | 1997 | 1999 | 2001 | 2003 | 2005 | 2007 | 2009 | 2011 | %-changes 1995-2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Real Mean Income** | | | | | | | | | | | |
| Total Population | Euro (2005 = 100) | 2076 | 2043 | 2088 | 2123 | 2157 | 2100 | 2075 | 2104 | 2093 | 0.79 |
| - - Decile Class 1 | - | 649 | 650 | 672 | 679 | 660 | 635 | 615 | 627 | 599 | -7.64 |
| - - Decile Class 2 | - | 1001 | 1006 | 1035 | 1035 | 1005 | 1000 | 945 | 958 | 921 | -8.01 |
| - - Decile Class 3 | - | 1229 | 1231 | 1271 | 1291 | 1264 | 1253 | 1195 | 1210 | 1158 | -5.84 |
| - - Decile Class 4 | - | 1459 | 1461 | 1515 | 1533 | 1512 | 1489 | 1426 | 1451 | 1387 | -4.96 |
| - - Decile Class 5 | - | 1699 | 1688 | 1732 | 1756 | 1755 | 1714 | 1643 | 1690 | 1645 | -3.21 |
| - - Decile Class 6 | - | 1947 | 1943 | 2006 | 2043 | 2036 | 1962 | 1911 | 1924 | 1889 | -3.01 |
| - - Decile Class 7 | - | 2249 | 2231 | 2280 | 2305 | 2342 | 2266 | 2234 | 2261 | 2251 | 0.12 |
| - - Decile Class 8 | - | 2594 | 2591 | 2635 | 2667 | 2701 | 2640 | 2609 | 2666 | 2665 | 2.72 |
| - - Decile Class 9 | - | 3114 | 3083 | 3113 | 3185 | 3211 | 3151 | 3121 | 3228 | 3274 | 5.16 |
| - - Decile Class 10 | - | 4827 | 4551 | 4630 | 4738 | 5087 | 4893 | 5058 | 5033 | 5145 | 6.59 |
| **Real Median Income** | | | | | | | | | | | |
| Total Population | Euro (2005 = 100) | 1761 | 1802 | 1887 | 1894 | 1858 | 1800 | 1781 | 1869 | 1807 | 2.58 |
| - - Decile Class 1 | - | 662 | 683 | 700 | 704 | 671 | 660 | 635 | 654 | 632 | -4.55 |
| - - Decile Class 2 | - | 998 | 1016 | 1046 | 1055 | 1032 | 1000 | 962 | 935 | 903 | -9.46 |
| - - Decile Class 3 | - | 1231 | 1250 | 1277 | 1298 | 1238 | 1250 | 1201 | 1215 | 1174 | -4.58 |
| - - Decile Class 4 | - | 1467 | 1445 | 1512 | 1515 | 1548 | 1500 | 1444 | 1449 | 1355 | -7.65 |
| - - Decile Class 5 | - | 1703 | 1706 | 1680 | 1731 | 1754 | 1700 | 1636 | 1682 | 1626 | -4.50 |
| - - Decile Class 6 | - | 1937 | 1971 | 1961 | 2056 | 2064 | 2000 | 1925 | 1869 | 1852 | -4.39 |
| - - Decile Class 7 | - | 2272 | 2275 | 2240 | 2310 | 2343 | 2254 | 2214 | 2247 | 2258 | -0.60 |
| - - Decile Class 8 | - | 2642 | 2560 | 2632 | 2705 | 2683 | 2600 | 2599 | 2706 | 2710 | 2.58 |
| - - Decile Class 9 | - | 3053 | 3088 | 3080 | 3247 | 3096 | 3090 | 3080 | 3271 | 3252 | 6.53 |
| - - Decile Class 10 | - | 4109 | 4038 | 4200 | 4328 | 4438 | 4300 | 4331 | 4505 | 4517 | 9.92 |
| **Income Concentration** | | | | | | | | | | | |
| Gini-Coefficient | | 0.304 | 0.295 | 0.291 | 0.293 | 0.309 | 0.306 | 0.320 | 0.317 | 0.330 | 8.55 |
| Mean Log Deviation | | 0.158 | 0.148 | 0.145 | 0.147 | 0.164 | 0.161 | 0.175 | 0.172 | 0.187 | 18.00 |
| Theil-Index | | 0.163 | 0.145 | 0.141 | 0.144 | 0.169 | 0.161 | 0.182 | 0.172 | 0.187 | 14.96 |
| **Income Shares** | | | | | | | | | | | |
| Decile Class 1 | % | 3.1 | 3.2 | 3.2 | 3.2 | 3.1 | 3.0 | 3.0 | 3.0 | 2.9 | -8.21 |
| Decile Class 2 | - | 4.8 | 4.9 | 5.0 | 4.9 | 4.7 | 4.8 | 4.5 | 4.6 | 4.4 | -8.90 |
| Decile Class 3 | - | 5.9 | 6.0 | 6.1 | 6.1 | 5.9 | 6.0 | 5.8 | 5.7 | 5.5 | -7.02 |
| Decile Class 4 | - | 7.0 | 7.2 | 7.2 | 7.2 | 7.0 | 7.1 | 6.9 | 6.9 | 6.6 | -5.31 |
| Decile Class 5 | - | 8.2 | 8.2 | 8.3 | 8.3 | 8.1 | 8.2 | 7.9 | 8.0 | 7.9 | -3.85 |
| Decile Class 6 | - | 9.4 | 9.5 | 9.6 | 9.6 | 9.4 | 9.3 | 9.2 | 9.1 | 9.0 | -3.95 |
| Decile Class 7 | - | 10.8 | 10.9 | 10.9 | 10.9 | 10.8 | 10.8 | 10.8 | 10.7 | 10.8 | -0.41 |
| Decile Class 8 | - | 12.5 | 12.7 | 12.6 | 12.6 | 12.5 | 12.6 | 12.6 | 12.7 | 12.7 | 2.00 |
| Decile Class 9 | - | 15.0 | 15.1 | 14.9 | 15.0 | 14.9 | 15.0 | 15.0 | 15.3 | 15.6 | 4.03 |
| Decile Class 10 | - | 23.2 | 22.2 | 22.2 | 22.3 | 23.6 | 23.3 | 24.4 | 23.9 | 24.6 | 5.82 |
| **Saving Rates** | | | | | | | | | | | |
| Median Saving Rate | % | 6.8 | 6.7 | 5.9 | 6.2 | 5.0 | 5.0 | 4.5 | 5.0 | 5.0 | -26.45 |
| Mean Saving Rate | - | 10.4 | 10.3 | 9.7 | 9.4 | 8.4 | 8.5 | 8.0 | 8.3 | 8.6 | -16.98 |
| Aggregate Saving Rate | - | 11.2 | 11.5 | 10.6 | 10.1 | 9.3 | 9.6 | 9.7 | 9.7 | 10.5 | -5.89 |
| - - Decile Class 1 | - | 4.7 | 5.1 | 3.5 | 3.8 | 3.4 | 2.8 | 2.0 | 2.4 | 1.9 | -58.78 |
| - - Decile Class 2 | - | 8.1 | 6.7 | 7.5 | 6.0 | 5.7 | 5.5 | 4.5 | 4.3 | 4.6 | -43.22 |
| - - Decile Class 3 | - | 8.0 | 9.8 | 8.3 | 8.1 | 7.1 | 7.4 | 5.9 | 7.0 | 6.4 | -19.75 |
| - - Decile Class 4 | - | 9.2 | 8.9 | 8.1 | 9.0 | 8.7 | 7.6 | 7.5 | 7.7 | 7.5 | -18.80 |
| - - Decile Class 5 | - | 10.5 | 10.3 | 9.8 | 9.5 | 8.0 | 8.1 | 8.1 | 8.0 | 8.0 | -23.87 |
| - - Decile Class 6 | - | 10.2 | 9.6 | 9.3 | 8.7 | 7.7 | 8.3 | 8.0 | 8.9 | 9.6 | -6.51 |
| - - Decile Class 7 | - | 11.1 | 10.5 | 10.0 | 10.3 | 8.7 | 9.2 | 7.6 | 8.0 | 9.4 | -15.16 |
| - - Decile Class 8 | - | 11.4 | 11.6 | 10.8 | 9.7 | 8.2 | 8.3 | 9.4 | 9.7 | 10.3 | -9.84 |
| - - Decile Class 9 | - | 11.9 | 13.3 | 11.8 | 11.1 | 10.5 | 10.5 | 9.6 | 10.9 | 11.1 | -6.42 |
| - - Decile Class 10 | - | 14.7 | 15.9 | 14.4 | 13.4 | 12.9 | 14.1 | 15.7 | 14.8 | 16.3 | 10.67 |

*Source: SOEP (v28), own calculations.*