Miriam Rehm[1], Kai Daniel Schmid[2], Dieter Wang[3]

Why has Inequality in Germany not Risen Further After 2005?

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In this paper we explore the reasons for the trend reversal in the development of household market income inequality in Germany in the second half of the 2000s. We analyse to what extent the increasing relevance of capital income as well as the rising share of atypically employed persons have affected the development of income inequality over the last two decades. We use household data from the German Socio-Economic Panel from 1991-2011 and decompose market income into three income sources: (1) household labour income from full-time work, (2) household labour income from atypical work, and (3) household capital income. We apply the factor decomposition method suggested by Shorrocks (1982) to analyse the contribution of these income forms to overall inequality. Our results suggest that changes in the distribution of capital income were a key factor both in the strong increase of inequality in the first half of the 2000s and in the subsequent trend reversal. This finding contrasts with the reasoning that labour market developments were the main cause behind changes in inequality.

Keywords: Market Income Inequality, Inequality Decomposition, SOEP

JEL classification: D31, D33

1 Introduction

One of the important stylised facts for inequality research in Germany is the general upward trend in income inequality from German reunification until the second half of the 2000s, and its subsequent stagnation. Figure 1 illustrates this development on the basis of the Gini coefficients of total household market income, equivalised net income and equivalised market income. The basic pattern does not change across varying income concepts. Most notably, inequality changes in the last decade, which is characterised by a distinct surge in inequality from 2000 to 2005 and a comparably stable Gini coefficient afterwards, have attracted particular interest among economists and policy advisers (OECD 2008, Biewen and Juhasz 2012, IAW 2011, Schmid and Stein 2013, Grabka and Goebel 2014).

The upward trend in inequality since the early 1990s has been ascribed to rising wage dispersion (Fitzenberger 2012), an increasing incidence of atypical employment (Schmid and Stein 2013), or a combination of the two (Biewen and Juhasz 2012). The causes for the change in the second half of the 2000s have been similarly sought in German labour market developments, in particular the strong employment gains from 2006 onwards (OECD 2008, IAW 2011, Grabka et al. 2012, Schmid and Stein 2013, Adam 2014). According to this reasoning, in the course of the economic upswing the

Figure 1: Gini Coefficients of Household Market Income, Equivalised Net Income and Equivalised Market Income
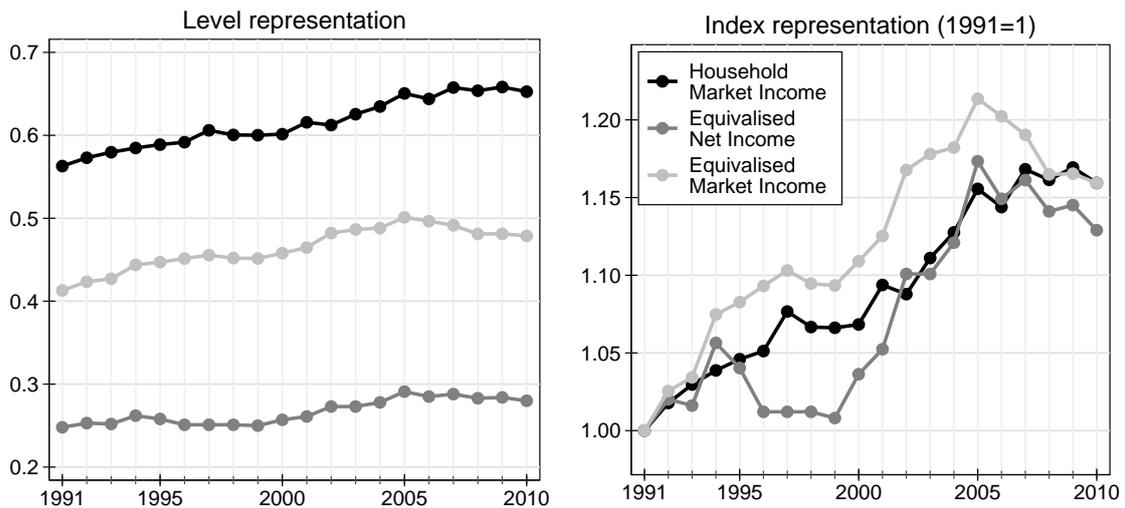
Note: Household market income comprises the individual labour incomes of all household members and the household's capital income. Data source: SOEP v28l. Calculated using sample weights. Data for equivalised net income from SOEP Group (2013). Data for equivalised market income from Schmid and Stein (2013).

lower part of the income distribution was stabilised through falling unemployment and considerable employment growth. Hence, the observed plateau of the Gini coefficient from 2006 onwards stemmed from decreasing inequality of labour income components. More precisely, either labour income from full-time employment or income from atypical jobs (or both) witnessed lower inequality, in turn dampening overall inequality.

In contrast to the mechanisms that focus on changes in labour income, capital income has not featured prominently in the explanation of the flatlining in German inequality. Adler and Schmid (2013a) connect the development of factor income shares and the personal distribution of income in Germany between 2002 and 2008 and show a plausible link between profit income shocks on a macroeconomic level and inequality of market income among households. Similarly, Schmid and Stein (2013) and Adler and Schmid (2013b) illustrate that the share of capital income in total market income has increased since German reunification and that it dipped with the onset of the financial and economic crises.

However, these analyses neither assess the contribution of capital income to overall inequality nor do they address the changes in the mid 2000s. More specific evidence is provided by Becker (2000), Fräßdorf et al. (2011), OECD (2011), and García-Peñalosa and Orgiazzi (2013) who support the view that capital income played an important role in the rising inequality before 2005. OECD (2011) identifies a shift from earnings to capital income for higher-income persons and conclude that capital income's contribution to market income inequality is small but growing. Becker (2000) applies factor decomposition to microdata from the Sample Survey of Income and Expenditure (EVS), and in a comparison of the years 1988 and 1993 finds that, despite the rather small percentage of capital income, its contribution to total inequality is disproportionally large. Fräßdorf et al. (2011) demonstrate in a careful decomposition analysis that capital income, despite its small share in total household incomes, contributed strongly to overall inequality in West Germany from 1984 to 2004. García-Peñalosa and Orgiazzi (2013) use disposable income data from the Luxembourg Income Study Database (LIS) for the years 1984 to 2004. The authors show that in this period earnings inequality increased remarkably, which coincided with a falling share of earnings in total household income. As a consequence, the contribution of earned income to overall inequality increased only a little, while at the same time the contribution of capital income increased substantially.

In this paper, we thus investigate empirically the contribution to overall inequality from the three components of household income, full-time labour income, and atypical labour income, and capital income in Germany between 1991 and 2010. We hope to thereby shed some light on the relevance of labour market developments and capital

income for the recent evolution of income inequality in Germany. Our research questions address firstly, how much of the evolution of market income inequality can be explained by the income from full-time or atypical employment, and secondly, how strong the influence of capital income on the trend change in income inequality is.

We use data from the German Socio-economic Panel (SOEP), the mainstay of inequality research in Germany. We apply the decomposition technique for inequality measures proposed by Shorrocks (1982) to evaluate the contribution of changes in the distribution of the three income sources. This methodology aims to identify the contributions of single income components to overall inequality, which will allow us to evaluate the relative importance of changes in the distributions of different income types for changes in income inequality.

The paper consists of a methodological section (Section 2), a description of the data (Section 3), our empirical results (Section 4), robustness analyses (Section 5) and a conclusion (Section 6).

2 Factor decomposition of Gini coefficient

This section gives an overview of the factor decomposition technique proposed by Shorrocks (1982) and further discussed by Lerman and Yitzhaki (1985). Similar descriptions and applications of this method can be found in, for example, Aaberge et al. (2000) or Fräßdorf et al. (2011).

According to Shorrocks (1982) the Gini coefficient G can be defined as

$$G = \frac{2}{n^2 \overline{y}} \sum_i \left(i - \frac{n+1}{2} \right) y_i \tag{1}$$

where y_i is the market income of household i and $i = 1, ..., n$ is an index for the households, ranked in ascending order by their market incomes $y_1 \leq y_2 \leq ... \leq y_n$. $\overline{y}$ is the average income level across all households in the sample. Since $\sum_i i = n(n+1)/2$ the Gini coefficient can also be stated as

$$G = \frac{2}{n^2 \overline{y}} \sum_i i(y_i - \overline{y}). \tag{2}$$

To disentangle the relevance of changes in labour market outcomes and variations in the distribution of capital income for the evolution of inequality of household market income, we decompose the latter into the three components: Full-time labour income, atypical labour income and capital income (see Section 3 for definitions). For this purpose, we express y_i as the sum of all household income factors, i.e. $y_i = \sum_k y_i^k$,

where k is an indicator for the respective income source. It is now possible to rewrite (2) into

$$G = \frac{2}{n^2 \overline{y}} \sum_i \left(i - \frac{n+1}{2} \right) \sum_k y_i^k \qquad (3)$$

$$= \sum_k \frac{\overline{y}^k}{\overline{y}} \left[\frac{2}{n^2 \overline{y}^k} \sum_i \left(i - \frac{n+1}{2} \right) y_i^k \right] \qquad (4)$$

$$G = \sum_k \frac{\overline{y}^k}{\overline{y}} \, \overline{G}^k. \qquad (5)$$

In the above equations y_i^k represents the income that household i obtains from income source k and $\overline{y}^k$ is the average of income source k across all households. The $\overline{G}^k$ in (5) is the so-called *pseudo-Gini* coefficient[1] and is not to be confused with the conventional Gini coefficient G as defined in (1) or (2). For any income source k, the pseudo-Gini $\overline{G}^k$ differs from the conventional Gini $G(y^k)$ of income source k only with regard to the ranks used in its calculation: While $G(y^k)$ assigns the smallest rank to the household with the lowest income of factor k, $\overline{G}^k$ attributes the smallest rank to the household with the lowest market income. Hence, the Gini coefficient in (5) can be interpreted as a weighted average of pseudo-Ginis, whose weights are simply the fraction of market income that can be ascribed to the respective income source k. A positive (negative) pseudo-Gini of a single income factor therefore raises (lowers) the overall market income inequality level. Similarly, a pseudo-Gini of a single income factor larger (smaller) than the overall market income Gini therefore raises (lowers) this overall Gini.

The contribution of each income component k to market income inequality depends on three distinct characteristics: First, the relative importance of component k in the market income, which is reflected by the share $\overline{y}^k / \overline{y}$. Second, the inequality within each each factor, $G(y^k)$, which is closely linked to the third characteristic, the conditional distribution of component k across households given the market income distribution. The last notion is captured by the pseudo-Gini $\overline{G}^k$.

3   Data and key variables

We base our analysis on household data from the Socio-Economic Panel (SOEP) in its long panel version (v28l). The SOEP is a long-standing interview-based representative data set on German households conducted by the German Institute for Economic

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[1] Aaberge et al. (2000) call this the concentration coefficient.

Research (DIW). It is the mainstay of inequality research in Germany.[2] The SOEP is well suited for our purpose of dissecting income inequality since it contains detailed information on various sources of household income over time, as well as information on the employment status of individuals. We use this information to derive changes in the income structure within households. It should be noted that our data for labour income includes both self-employed and employed persons, since our research question revolves more around the state of the labour market, not the legal form of contracts. That is, if a buoyant labour market accounted for some of the decrease in inequality, it is not relevant for our research here if jobs were created as dependent employment or, for instance, as "new self-employed". We thus use the term "labour income" to denote the combined income from wages and salaries, and self-employment.

For the factor decomposition we subdivide household market income into household labour income from full-time work, household labour income from atypical work, and household capital income. To set up this categorisation we exploit two main aspects of the SOEP data, information on income and employment classifications. First, we use information on the level of annual household market income and its two components, labour income and capital income. Labour income is available for each individual and refers to annual income including job-related extra payments such as year-end bonus and profit-sharing income. Capital income is available at the household level and refers to yearly income comprising interest payments and dividends as well as rental and leasing income. Second, we use the employment status of individuals. The SOEP contains three major categories of the individual's volume of employment: "Full-time employment", "regular part-time employment" and "marginal, irregular part-time employment". We combine "regular part-time employment" and "marginal, irregular part-time employment" to our category "atypical" employment[3], while we adopt the category of full-time employed persons as provided by the SOEP. From this information we construct three different sources of market income on the household level: We aggregate individual labour incomes for both full-time and atypical employment on the household level, and we take household capital income as collected by the SOEP.

In preparing the sample for our analysis we apply a minimum of restrictions. We use the years since German reunification, i.e. from 1991 until 2010, and drop households with negative disposable income. The original sample within these years contains 202,787 household-years. Our prepared sample consists of 188,606 household-years, with at least 6,481 observations per year. All income reported in this paper is in real terms,

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[2]For a detailed description of the SOEP data set see Wagner et al. (2007).

[3]We add income earned by students, the unemployed or retirees to atypical household labour income. This income source is small compared to the other three major income sources.

deflated using the CPI with 2005 as base year. Our calculations use sample weights. Finally, we match retrospectively collected income information with the year to which the survey question refers to.

Table 1 gives an overview of summary statistics for the variables used in our analysis. Note that the mean income of the three income sources full-time labour income, atypical labour income and capital income adds up to total household market income. Noticeable is the comparably high dispersion of atypical labour income on the household level. A more detailed illustration of the single income sources' distributions is provided in Figure 6 in the Appendix.

Table 1: Summary Statistics of Main Variables.

Income Type	Mean	Std.Dev.	Min.	Max.
Market	26,569	39,436	0	6,552,268
Full-time Labour	21,311	30,125	0	1,251,663
Atypical Labour	3,510	8,914	0	938,878
Capital	1,749	20,740	0	6,428,506

Note: Income in prices of 2005. Calculated using sample weights.

4 Results

This section first investigates the determinants of inequality separately to provide a background against which we then set the factor decomposition analysis of the Gini coefficient. A number of elements can cause changes in the Gini index of total household market income; they include relative size of different income sources, the concentration within each income source, and the conditional distribution of a single income source given the distribution of overall income. We analyse each of these in turn.

First, we show descriptive evidence of the relative evolution of different income sources over time, i.e. $\frac{\overline{y}^k}{\overline{y}}$ for each of the three income components k. As described in Sections 2 and 3, we distinguish between labour income from full-time employment, labour income from atypical employment, and capital income. Figure 2 shows the shares of these three income sources in total household income from 1991 to 2010. Labour income from full-time employment dominates the two other income forms quantitatively, albeit to a lessening extent: Its share in total household market income decreased from about 85 percent in 1991 to slightly below 80 percent in 2010. In contrast, labour income

from atypical employment increased from slightly above 10 percent in 1991 to about 17 percent in 2010. Household capital income does not exhibit a uniform trend; in the 2000s its share rose until 2005, slightly dipped in 2006, peaked in 2007 and declined afterwards.

**Figure 2:** Shares of Single Income Sources of Total Household Market Income
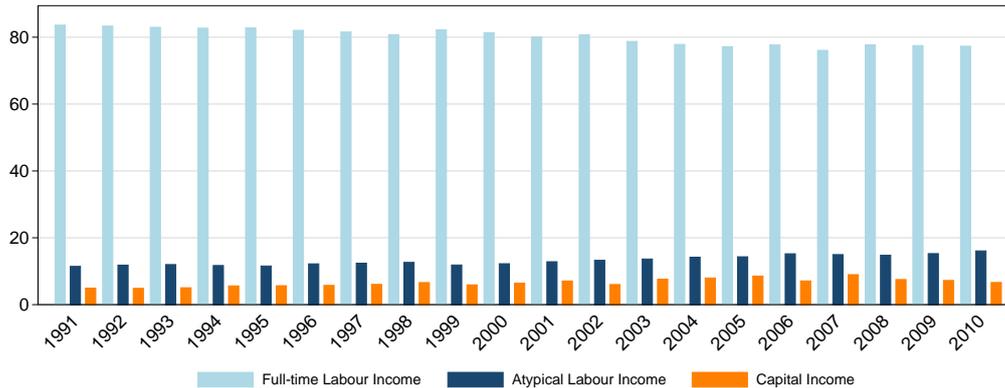
Note: This figure illustrates the development of shares of household income from full-time employment, from atypical employment and household capital income. Data source: SOEP v28l. Calculated using sample weights.

Next, we look into the evolution of inequality within these income components over time, that is we examine $G(y^k)$. Figure 3 illustrates the Gini coefficients for the three income sources. The left panel shows the absolute levels of the Gini coefficients. It demonstrates that capital income and income from atypical employment are fairly concentrated on the household level with Gini coefficients between 0.8 and 0.9, while labour income from full-time employment exhibits a lower degree of concentration between about 0.6 and slightly above 0.7. The key aspect for this paper, however, lies in the changes in Gini coefficients. The left panel gives some indication that the Gini coefficient of full-time labour income rose more or less steadily between 1991 and 2010, apparently without a structural break.[4]

At first glance, these developments are at odds with the idea that it was a decrease in labour income inequality brought about by new full-time jobs created which led to the fall in overall inequality since the mid-2000s. The Gini coefficient of atypical labour income, on the other hand, appears to have somewhat decreased throughout the second decade. This data fits the labour market story slightly better, but again we do not

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[4]This development is in line with the evidence on increasing wage dispersion as noted by Antonczyk et al. (2010), Dustmann et al. (2009) or Fitzenberger (2012).

Figure 3: Gini Coefficient for Three Components of Household Market Income
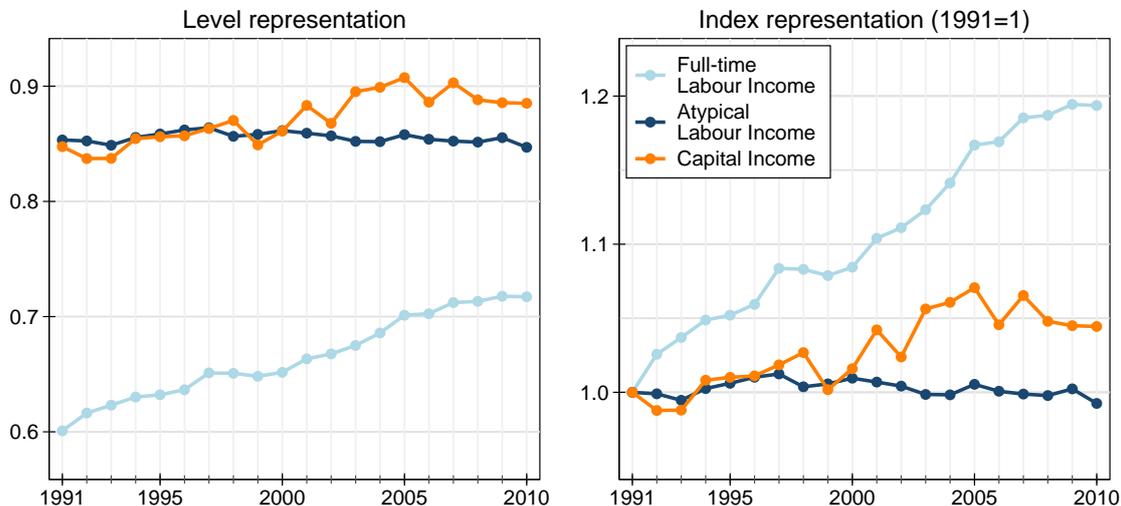
Note: The left panel shows Gini coefficients for household labour income from full-time employment, atypical employment and household capital income. The right panel presents the same information indexed to 1991 = 1. Data source: SOEP v28l. Calculated using sample weights.

observe the watershed change for atypical employment in the mid-2000s predicted by this reasoning. The only income component whose within-inequality reverses course in the mid-2000s is household capital income. Its Gini coefficient increased strongly in the first half of the 2000s, and then fell again in the second half. In order to facilitate assessing this development in more detail, the right panel of Figure 3 indexes the Gini coefficients of the three income forms to 1 in 1991, and traces their development until 2010. It confirms the information gleaned from the absolute levels in the left panel.

Since the inequality measure of Gini coefficients is based on a ranking of total household market income, analysing inequality changes within the single income sources might be missing the mark because they rank the households earning this particular income according to that income. However, the contribution of a single income component to the change in overall inequality also depends on how this specific component is distributed with regard to the distribution of total household market income. To address this issue we examine the evolution of pseudo-Gini coefficients $\overline{G}^k$ as described in Section 2 for each of the three income sources. These measures capture the conditional distribution in the income component k given the households' ranking order in market income (Aaberge et al., 2000, Lerman and Yitzhaki, 1985).

Figure 4 summarises our results. It shows that the levels of, as well as the changes in, the pseudo-Gini coefficient of full-time labour income are hardly different from the

results for the conventional Gini coefficient illustrated in Figure 3. However, things are different for atypical labour income and capital income. While inequality within atypical labour income slightly decreased, its pseudo-Gini steadily increased during the 2000s. Moreover, in comparison to Figure 3, the movements for the pseudo-Gini of capital income become more pronounced. The reason for this is the distribution of capital income conditional on total household incomes. Capital income is not only highly unequally distributed but it is also heavily concentrated at the upper bound of the income distribution (see Figures 6 and 7 in the Appendix). The comparably strong impact of capital income as well as its downward movement suggest that the reduction in the Gini coefficient of household income since the mid-2000s is not likely to be driven by changes in the distribution of labour income, but rather by changes in the distribution of capital income.

Figure 4: Absolute and Indexed Pseudo-Gini Coefficients for Three Components of Household Market Income
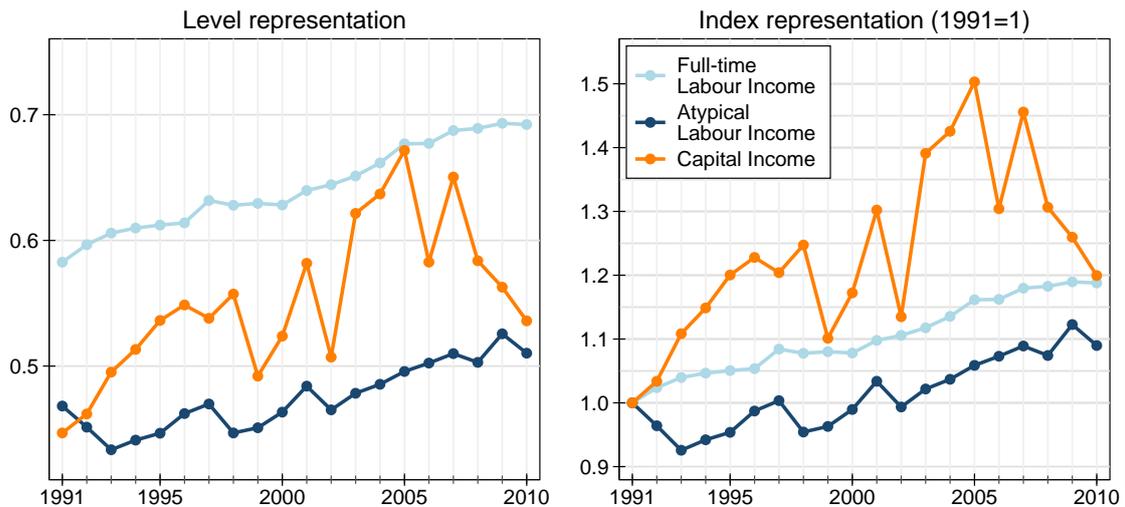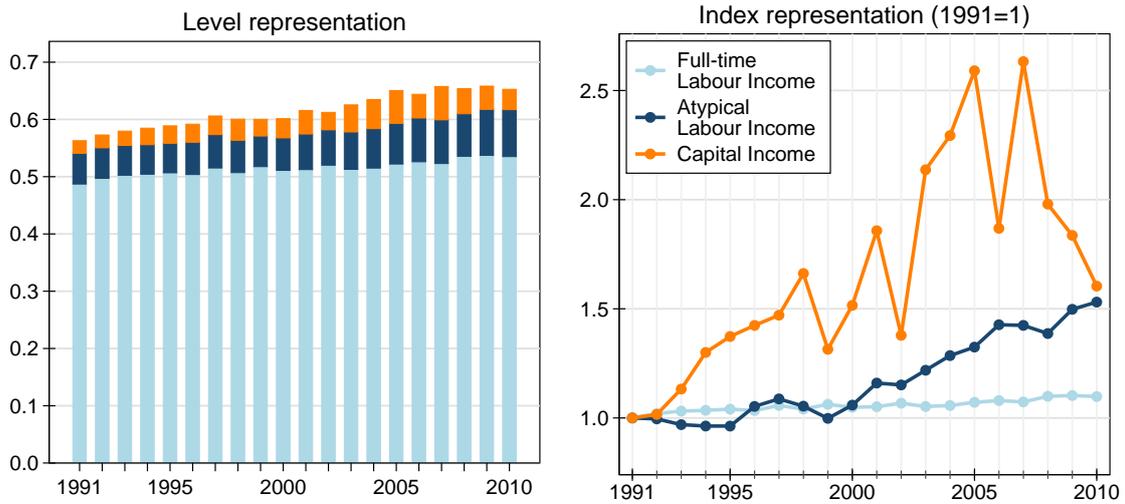

The left panel of this figure contrasts Gini coefficients for household labour income from full-time employment, from atypical employment and household capital income. The right panel adds an index representation (1991 = 1). Data source: SOEP v28l. Calculated using sample weights.

To bolster our argument beyond the indicative evidence presented so far, we decompose the Gini coefficient of household income into its elements, i.e. full-time labour income, atypical labour income, and capital income. As discussed in Section 2, we follow Aaberge et al. (2000) and Fräßdorf et al. (2011) in using the methodology proposed by Shorrocks (1982). Figure 5 illustrates the results of this decomposition. The left panel stacks the absolute values of the single income components' contributions to overall inequality. These correspond to the weighted pseudo-Gini coefficient of each

income component, $\frac{\overline{y}^k}{\overline{y}} \, \overline{G}^k$.[5] The total height of the bars is thus identical to the level of the Gini coefficient of total household market income presented in Figure 1. The right panel again adds an index representation of these contributions to facilitate a comparison of changes in the absolute level of the contributions. The left panel confirms that

Figure 5: Absolute and Indexed Contributions of Single Income Components to Market Income Inequality (Gini)

Note: This figure illustrates the results of a decomposition of the Gini coefficient of total household market income according to Shorrocks (1982). The left panel shows absolute contributions. The right panel adds an index representation (1991 = 1). Data source: SOEP v28l. Calculated using sample weights.

the largest contribution to the Gini coefficient of household market income stems from full-time labour income. This is due to its large share in total household income (Figure 2), while the increasing concentration of this income source among households earning this income (Figure 3) and among all households (Figure 4) appears to have made up for its declining share: Over time, the change in the contribution of full-time labour income to the Gini coefficient is virtually flat, as the right panel of Figure 5 shows.

Even though the Gini coefficient of atypical labour income fell slightly over the whole period (Figure 3), the contribution of this income source to overall inequality was stable throughout the 1990s but steadily increased throughout the second decade (Figure 5). This is due to its rising share in total household market income (Figure 2) and the increase of its pseudo-Gini coefficient (Figure 4).

It is thus unlikely that the observed changes in the distribution of labour income from either full-time or atypical work can explain the break in the Gini trend in Germany since

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[5]The underlying values of income shares, pseudo-Ginis and contributions are summarised in Table 2 in the Appendix.

the mid-2000s. In contrast, the contribution of capital income to the Gini coefficient shows the expected picture. It increases until 2005, dips in 2006, peaks again in 2007, and then drops off significantly. This development is due to the combination of its rising and falling share in income (Figure 2) and its increasing and decreasing concentration (Figures 3 and 4).

We thus find that the empirical evidence points to capital income as the most likely explanation for the surge and subsequent tapering off of the Gini coefficient of market household income in Germany. That is, we do not find support for the reasoning that changes in labour market developments are the major explanation for the development of income inequality in Germany in the 2000s.

Our results are in line with a variety of papers, such as Atkinson (2000), Atkinson (2009) and Adler and Schmid (2013a) who point to the relevance of factor shares and capital income for understanding changes in the development of the personal distribution of income in general. Our findings not only complement earlier research on factor decomposition of German household data (Becker 2000, Fräßdorf et al. 2011, García-Peñalosa and Orgiazzi 2013), but further confirm cross-country studies highlighting the relevance of changing factor shares on the basis of macro panel estimations (Checchi and García-Peñalosa 2008, Daudey and Garcia-Penalosa 2007) or on the basis of household data (Schlenker and Schmid 2014).

5   Decomposition using the Theil index

The choice of inequality measure is not trivial (Atkinson, 1970), since different measures react with varying intensity to changes at different areas of the distribution. Whereas the Gini coefficient is sensitive to changes in the middle of the distribution (Atkinson, 1970), the Theil index is affected more strongly by changes at the tails of the distribution. Furthermore, Shorrocks (1982) points out that there is an infinite number of possible decompositions of the Gini index and that results may be sensitive to the specific method adopted.

Nonetheless, we use the Gini-coefficient as the main indicator for this paper since it is the most commonly used inequality measure. However, this section presents results for the subgroup-decomposable Theil index as a robustness check. The Theil index is calculated as

$$T = \frac{1}{n} \sum_i \frac{y_i}{\overline{y}} \log\left(\frac{y_i}{\overline{y}}\right) = \sum_k \overline{T}^k \tag{6}$$

where, as above, i indexes the observation, n is the number of observations, y_i is the market income of household i, $\overline{y}$ is the average income level, k denotes the income factors, and $\overline{T}^k = \frac{1}{n\overline{y}} \sum_i \log\left(\frac{y_i}{\overline{y}}\right) y_i^k$ the pseudo-Theil coefficient for income k.

The results in Figures 8 to 8 in the Appendix show that the findings for the Gini index are bolstered by the use of the Theil index. The Theil coefficient decomposition indicates that capital income is much more strongly concentrated than labour income sources (Figure 9). It also suggests that its concentration has fallen by far the strongest since the mid-2000s (Figure 9). The contribution of capital income to inequality as measured by the Theil index increased substantially in the first half of the 2000s, and then fell almost to the same extent, while the contribution of both atypical and full-time labour income grew marginally (Figure 10).

This result is not surprising considering the Theil index's sensitivity to concentration in the tails. Since capital income is more unequally distributed than our two labour income forms, we would expect it to have a stronger impact on inequality as measured by the Theil index. This suggests that our findings for the Gini coefficient are conservative.

6   Conclusion

This paper is motivated by the hypothesis that the levelling-off in German inequality in the second half of the 2000s was mainly due to labour market developments. It investigated empirically the contributions to the movement in the Gini coefficient of three components of household income analysed, full-time and atypical labour income, and capital income, in Germany from 1991 to 2010.

The data for this paper comes from the Socio-economic Panel (SOEP), which is the prime source for inequality research in Germany. It contains detailed information on income from different sources. We use the decomposition technique for inequality measures proposed by Shorrocks (1982) and applied to Germany by Fräßdorf et al. (2011). This methodology allows us to identify the contributions to overall inequality of single income components, while taking into account the three elements in play: Inequality within each income source, the share of income source in total income, and the conditional distribution in the income component given the households' ranking order in market income.

We confirm the standard finding that capital income and atypical labour income are distributed highly unequally, but only make up a small (albeit growing) share of total household income. Full-time labour income, on the other hand, makes up the bulk of household market income, with a comparatively low (albeit increasing) level of inequality within this income type.

Throughout the observation period, labour income from both full-time and from atypical employment exhibit stable trends of inequality: Conditional on the distribution of the respective income sources, income from full-time labour is increasingly unequally distributed while atypical labour income shows a stable distribution. However, conditional on total household market income, both sources of labour income feature a stable, slowly rising trend of increasing inequality. For atypical labour income this particularly holds for the second decade which is associated with a steady increase of its contribution to the overall inequality level.

Capital income, on the other hand, shows an increase in inequality with two peaks in 2005 and 2007. Its concentration declines after the financial crisis hits. This pattern is present for both Gini and pseudo-Gini coefficients of capital income. The observed changes in its contribution to the overall inequality level exceed the development of atypical labour income by far.

Our preliminary investigations thus suggest that capital income played a central role in trend reversal of the German Gini coefficient in the second half of the 2000s. This finding is confirmed by the Gini decomposition. While full-time labour income contributes the bulk of total market income inequality due to its large share, its unbroken trend towards higher inequality fails to explain the flatlining of the Gini coefficient in the second half of the 2000s. Capital income inequality, in contrast, exhibits patterns that match the development of overall inequality very well. This is particularly apparent in the fluctuations during the mid-2000s and the stagnation thereafter. These findings are bolstered further by a decomposition of income inequality using the subgroup-decomposable Theil index. It suggests that our results are conservative.

The evidence presented in this paper does not support the reasoning that German inequality levelled off because of the strong development of the labour market. In that case, we would have expected to see either full-time and/or atypical labour income exhibiting lower inequality, or alternatively for labour income components which exhibit lower inequality to have grown in significance vis-à-vis total household income. However, neither of these two possibilities appear to be present in the data.

Furthermore, these findings allow us to make projections from the development of individual income types for the development of household market income inequality. For instance, Grabka and Goebel (2014) document that the share of capital income and its concentration increased again in 2012 due to the economic recovery and the stabilisation of the stock market. The macroeconomic development in 2013 and its current projections for 2014 do not appear to indicate an imminent change in this trend. Hence, given continued stability in the trends disentangled by our factor decomposition, we would assume that overall inequality will start to rise again in 2013 and 2014. If

these conditions are indeed born out by future developments, it would mean that the period of stagnation of inequality which marked the second half of the 2000s is drawing to an end.

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Appendix I - Selected Descriptives

Figure 6: Mean Income of Different Types across Vingtiles of Household Market Income (left column) and across Vingtiles of Respective Income Forms, 1991-2010

Full-time Labor Income

Atypical Labor Income
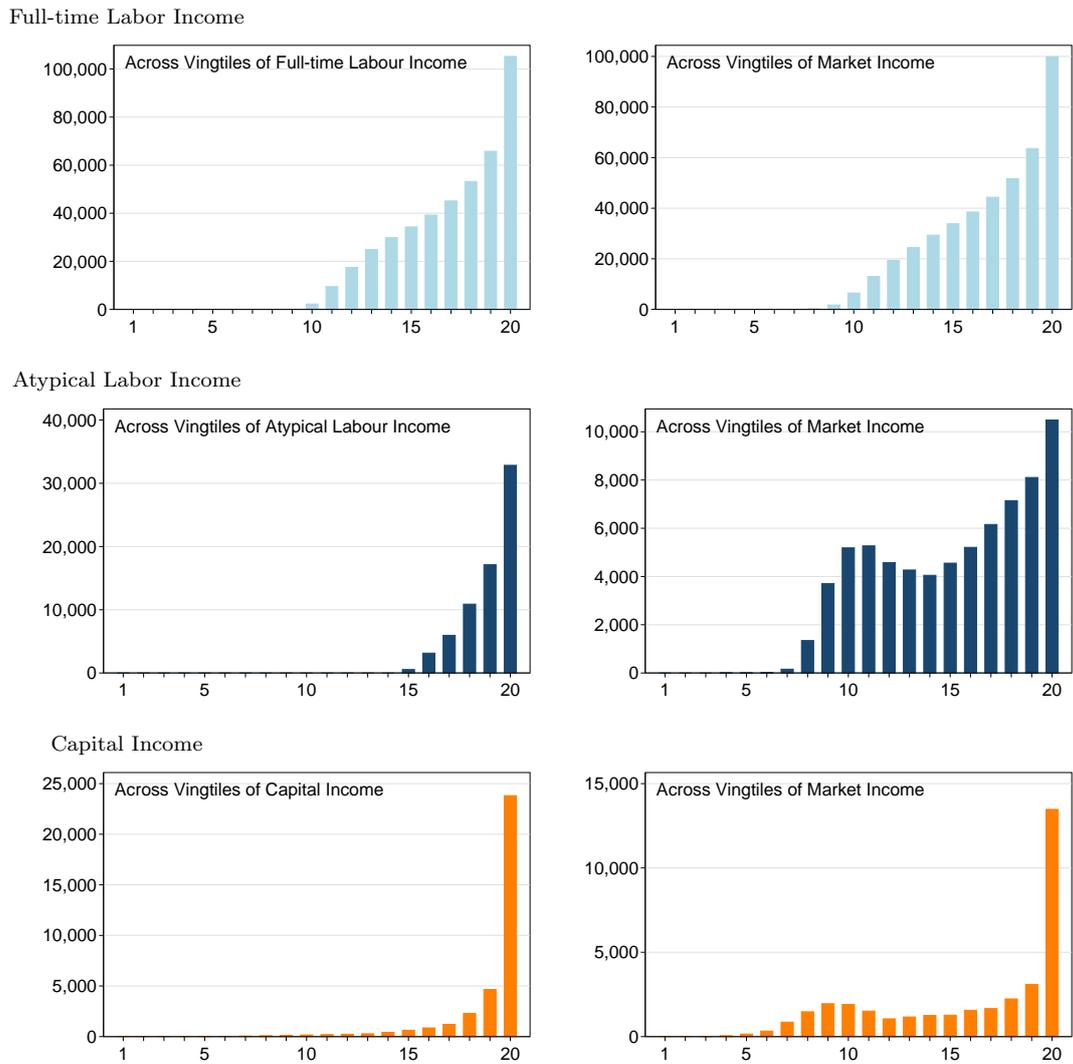
Capital Income

Note: Data source: SOEP v28l. Calculated using sample weights.

Figure 7: Mean Household Capital Income across Vingtiles of Household Market Income (upper panel) and across Vingtiles of Capital Income, 1991-2000 vs. 2001-2005 vs. 2006-2010
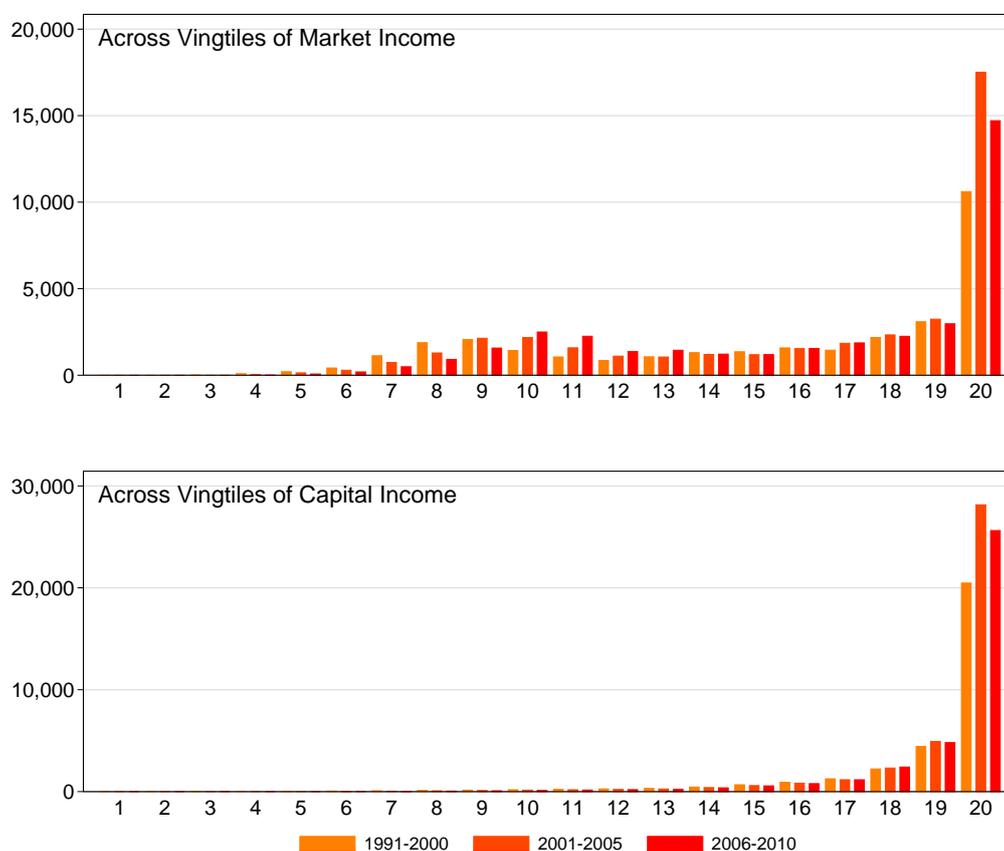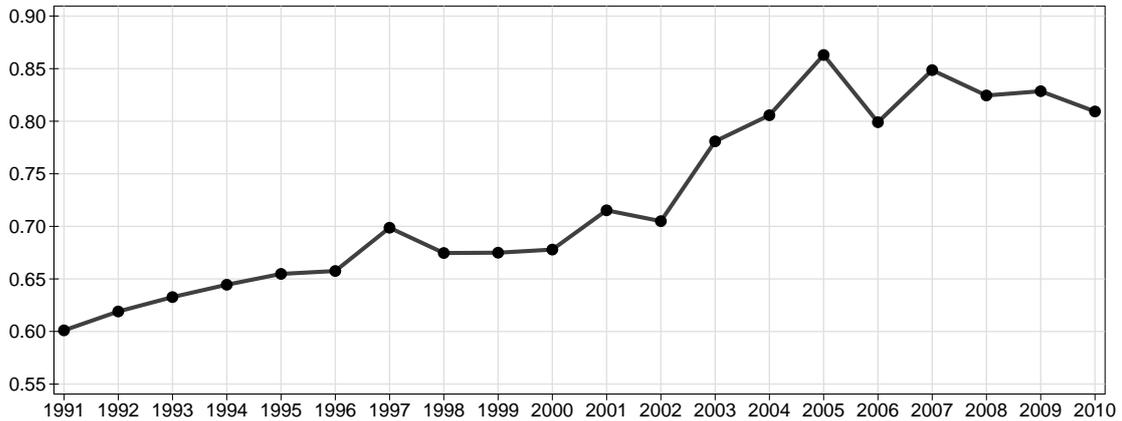

Note: Data source: SOEP v28l. Calculated using sample weights.

Table 2: Income Component Contributions to the Gini Coefficient of Household Market Income, 1991-2010. Income Shares and Pseudo-Ginis in Parentheses

| Year	Gini	Full-time Labour Income	Atypical Labour Income	Capital Income
1991	0.563	(0.836×0.583=) 0.487	(0.114×0.468=) 0.054	(0.050×0.447=) 0.022
1992	0.573	(0.833×0.597=) 0.497	(0.118×0.451=) 0.053	(0.049×0.462=) 0.023
1993	0.580	(0.829×0.606=) 0.503	(0.120×0.433=) 0.052	(0.051×0.495=) 0.025
1994	0.585	(0.827×0.610=) 0.504	(0.117×0.441=) 0.052	(0.056×0.513=) 0.029
1995	0.589	(0.828×0.612=) 0.507	(0.116×0.447=) 0.052	(0.057×0.536=) 0.030
1996	0.592	(0.820×0.614=) 0.504	(0.122×0.462=) 0.056	(0.057×0.549=) 0.032
1997	0.606	(0.815×0.632=) 0.515	(0.124×0.470=) 0.058	(0.061×0.538=) 0.033
1998	0.600	(0.808×0.628=) 0.507	(0.126×0.447=) 0.056	(0.066×0.557=) 0.037
1999	0.600	(0.822×0.629=) 0.518	(0.119×0.451=) 0.053	(0.059×0.492=) 0.029
2000	0.601	(0.813×0.628=) 0.511	(0.122×0.463=) 0.057	(0.064×0.524=) 0.034
2001	0.616	(0.801×0.640=) 0.512	(0.128×0.484=) 0.062	(0.071×0.582=) 0.041
2002	0.612	(0.807×0.644=) 0.520	(0.133×0.465=) 0.062	(0.060×0.507=) 0.031
2003	0.625	(0.787×0.651=) 0.513	(0.137×0.478=) 0.065	(0.076×0.621=) 0.047
2004	0.635	(0.778×0.662=) 0.515	(0.142×0.485=) 0.069	(0.080×0.637=) 0.051
2005	0.650	(0.771×0.677=) 0.522	(0.143×0.496=) 0.071	(0.085×0.672=) 0.057
2006	0.644	(0.777×0.677=) 0.526	(0.152×0.502=) 0.076	(0.071×0.583=) 0.041
2007	0.658	(0.761×0.687=) 0.523	(0.150×0.510=) 0.076	(0.090×0.650=) 0.058
2008	0.654	(0.777×0.689=) 0.536	(0.148×0.503=) 0.074	(0.075×0.584=) 0.044
2009	0.658	(0.775×0.693=) 0.537	(0.153×0.526=) 0.080	(0.072×0.563=) 0.041
2010	0.653	(0.773×0.692=) 0.535	(0.161×0.510=) 0.082	(0.066×0.536=) 0.036

Appendix II - Inequality Decomposition for the Theil Coefficient

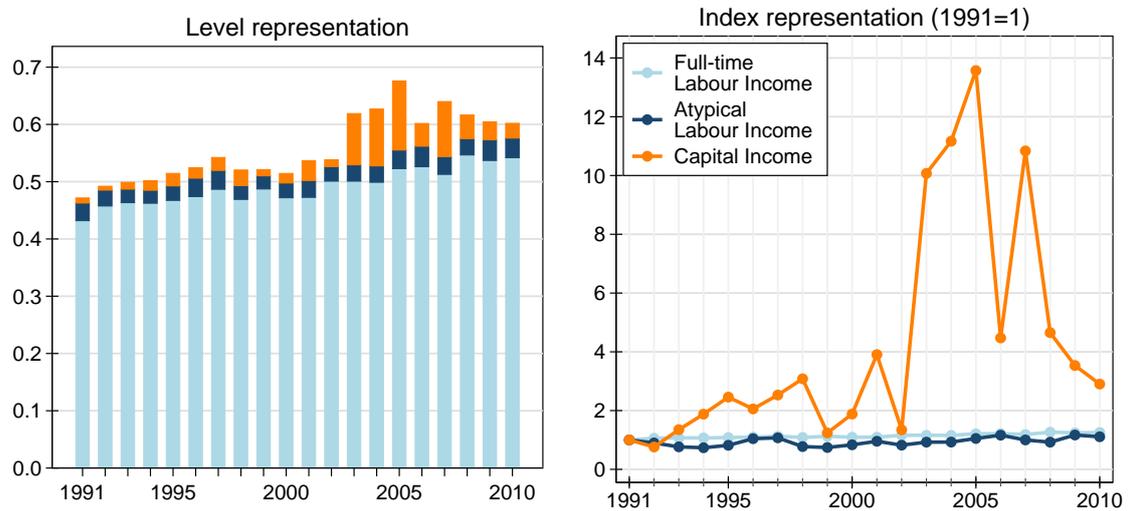**Figure 8:** Theil Coefficient of Household Market Income

Note: Data source: SOEP v28l. Calculated using sample weights.

Figure 9: Theil Coefficient for Three Components of Household Market Income
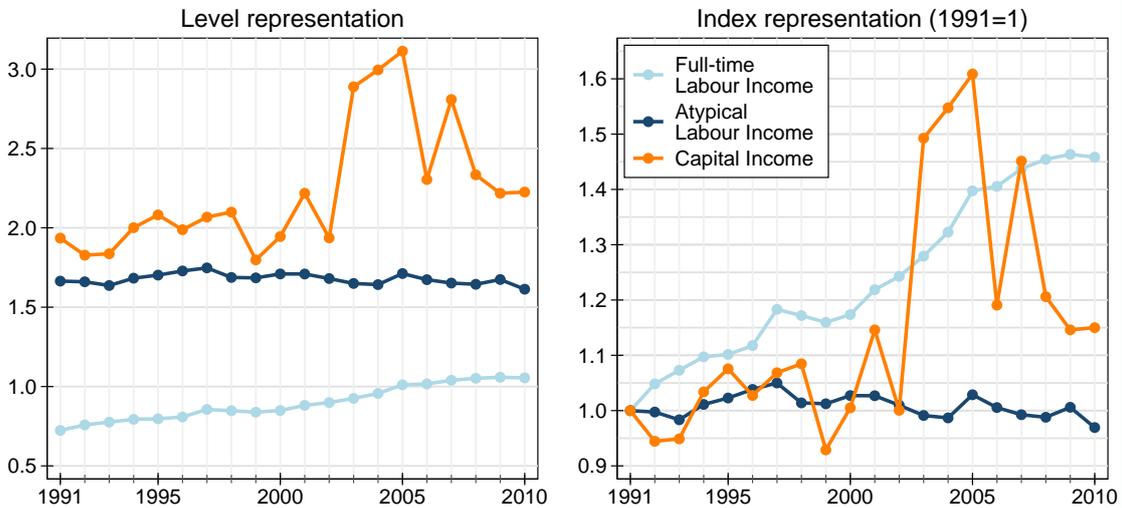
Note: The left panel of this figure contrasts Theil coefficients for household labour income from full-time employment, from atypical employment and household capital income. The right panel adds an index representation (1991 = 1). Data source: SOEP v28l. Calculated using sample weights.

Figure 10: Absolute and Indexed Contributions of Single Income Components to Market Income Inequality (Theil)

Note: This figure illustrates the results of a decomposition of the Theil coefficient of total household market income according to Shorrocks (1982). The left panel shows absolute contributions. The right panel adds an index representation (1991 = 1). Data source: SOEP v28l. Calculated using sample weights.

21

Hans **Böckler**
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