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The evolution of income inequality in Germany and Switzerland since the turn of the millennium

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The evolution of income inequality in Germany and Switzerland since the turn of the millennium*

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Abstracts

This paper presents and compares trends in income inequality in Switzerland and Germany from 2000 to 2009 using harmonized data from the Socio-Economic Panel (SOEP) and the Swiss Household Panel (SHP). Whereas in Germany inequality has increased substantially during this period, in Switzerland inequality in market incomes has increased only marginally and inequality in disposable incomes has decreased slightly. Economic and demographic indicators suggest that labor market participation—but not economic growth, globalization, or sectoral change—are potential explanations. The decomposition of inequality reveals the effects of Germany's slightly older population and smaller household sizes, as well as the impact of educational expansion and government redistribution.

Keywords: income inequality, subgroup decomposition, income stratification, income mobility, SOEP, SHP

JEL: I31, D31

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Introduction

Income inequalities and disparities in the distribution of economic growth are major concerns throughout Western societies. Policy discussions in both Germany and Switzerland have frequently invoked the dangers of a shrinking middle class and a widening gap between rich and poor (e.g., *Der Spiegel* 2010). Such concerns intensified during the economic crisis with the widespread public debate over bank bailouts and bonuses. The alleged trend of increasing inequality worldwide has been confirmed by the widely cited OECD report “Growing Unequal” (2008) and by numerous other studies (e.g., Cornia and Kiiski 2001, Brandolini and Smeeding 2009, OECD 2011a).

Income inequality is not only a key dimension of social inequality; it is also closely related to various indicators of life quality of the individuals comprising a society—from life satisfaction and the quality of social relationships to the prevalence of psychological illness, crime, obesity, and drug use (Wilkinson & Pickett 2009). Inequality is also directly connected to social mobility, which is generally higher in countries with low income inequality and vice versa (OECD 2008).

Given the importance of the income distribution, a reliable source of empirical data for measuring inequality is needed that has been harmonized for international comparison. In this paper, we would like to address two problems in the existing literature on this topic. First, there is a dearth of studies addressing the current distribution and evolution of household income in Switzerland. Second, it is difficult to compare the data between countries due to the different databases and in some cases varying definitions used (Atkinson and Brandolini 2006). As a result, there are very few detailed international comparative studies available.

The Swiss Household Panel (SHP) and the German Socio-Economic Panel (SOEP)—both of which are part of the Cross-National Equivalent File (CNEF), an internationally harmonized dataset for income analysis (Frick et al. 2007)—provide comparable and harmonized data that allow comparison of the income situation in Switzerland and Germany. Not only are the two countries neighbors; they also share many similar economic, social, and cultural characteristics. Nevertheless, they exhibit strikingly different income distributions, which we will explore here in detail. Following a brief summary of the literature on the evolution of the income distribution in Germany and Switzerland and a theoretical discussion of the determinants of inequality, we will describe and compare income inequality and mobility in Germany and Switzerland based on current data from the years 2000 to 2009. This period covers both the phase of rapid economic growth up to 2007 and the start of the economic crisis, a period that has not been analyzed in previous studies on this subject. We will conclude by discussing possible explanations for the divergent developments in Germany and Switzerland.

Theoretical explanations of income inequality

Although sociologists have shown considerable research interest in the subject of income inequality, it was economists that dominated the public discussion of rising income inequality for many years. Recently, however, sociologists and political scientists have begun contributing to the discussion as well (e.g., Myles 2003 and Kenworthy 2007 on the role of sociology).

The theories used to explain income inequality do not differ significantly from one discipline to the next (synopses can be found, e.g., in Albrecht and Albrecht 2007, OECD 2008). The various theories and factors that determine levels of inequality can be grouped into

three areas: economic factors, policy measures, and demographic factors, which are not, however, mutually independent.

Among the economic factors determining inequality are globalization, technical progress, sectoral change, economic growth, and the growing importance of capital gains. We will not address these aspects here. First of all, these factors have been studied in depth elsewhere (e.g., Katz and Murphy 1992, Koeninger et al. 2007, Visser and Cecchi 2009, Nollmann 2006, Frässdorf et al. 2011). Second, Germany and Switzerland are affected similarly by these—primarily external—factors, which means that they are essentially all excluded as possible explanations for the differences in income inequality. As export countries, both Germany and Switzerland are strongly affected by globalization and technological change, and both exhibit parallel economic growth trends. Third, these factors primarily deal with labor income inequalities, which is not the focus here. Although income inequality is a direct reflection of labor income as households' most important income source, the distribution of this income as well as labor market participation also play a significant role (see, e.g., Kenworthy 2007). In this paper, we focus instead on household income, where policy measures and demographic factors are likely to play a stronger role. The state uses the tax and transfer system to redistribute market income (SVR Wirtschaft 1996, Bradley et al. 2003) but also influences the distribution of market income through labor market regulation (e.g., by setting a minimum wage or involving labor unions), the educational system, and other measures.

Although Switzerland was long seen as having a weak welfare state compared to Germany, this changed with the expansion of the Swiss social security system in the 1990s. Measured by the percentage of social expenditure in GDP, the Swiss welfare state is now approximately equal in size to the German welfare state. But the structure of the tax system and individual social programs also play an important role in the differences between the two countries.

Research has recently begun to focus on changes in the population and household structure as possible sources of rising income inequality. The increase in single and lone parent households has been shown to lead to increased inequality (e.g., Daly and Valletta 2006 for the USA, Peichl et al. 2011 for Germany), since these households are unable to engage in the redistribution that usually takes place within couple households (Esping-Andersen 2007). Population aging and migration processes have also been shown to impact the income distribution (von Weizsäcker 1996).¹ The search for causes and effects of increasing homogamy has more recently been studied in the context of changing population and household structures (e.g., Burgess and Wallin 1943, Kalmijn 1991). Along this line, it has been shown—in line with the similarity hypothesis formulated in partner choice research—that people prefer partners who exhibit social characteristics (class, education, lifestyle, etc.) that correspond closely to their own. As a result, homogamy leads to increasing dissimilarity in household incomes between couples of different social classes (Worner 2006).

The theoretical discussion provides no clear basis for hypotheses about the evolution of inequality in Germany and Switzerland. The macroeconomic context is very similar in the two countries—but with the important exception of the labor market. In Switzerland, the labor market is much less regulated than in Germany, which would lead us to expect greater inequality in Switzerland (as in the Anglo-American countries), but labor market participation is much higher, which reduces the inequality of market income.

¹ Biewen and Juhasz (2010) report that at least in Germany, migration plays a minor role in the increase in income inequality.

The redistributive effect of the welfare and tax system as well as of social structures will be examined empirically below, since these have no known *a priori* direct effects on inequality.

Current state of the research on income inequality

Income distribution in Switzerland

In the mid-2000s, Switzerland had a Gini coefficient for disposable household income that, at 0.276, was below the average of the other OECD countries (OECD 2011b). The longest-term perspective on changes in income inequality in the literature can be found in Dell et al. (2007), where the concentration of the highest incomes and wealth in Switzerland is observed over the course of the twentieth century (up to 1996) based on tax data. In contrast to almost all of the other countries examined, Switzerland showed almost no changes over the period in the share of income and wealth held by the richest 1% and 0.1%. The authors explain this stability in income and wealth by two factors: first, the Second World War did relatively little to change the income structure in Switzerland; second, income and wealth taxes are generally not progressive, and inheritance taxes play a relatively insignificant role. The concentration of income and assets was very high in Switzerland by international comparison in the 1960s and has decreased slightly since the 1970s. Ernst (1983) and Buchmann and Sacchi (1995) also reported a decrease in the concentration of income and assets in the 1970s. In the 1980s, inequality increased again (Buchmann and Sacchi 1995, Leu et al. 1997).

Whereas the aforementioned articles were based on tax data (and thus used tax units as the units of analysis), Leu et al. (1997) studied the distribution of household income in the early 1990s. Here, Switzerland showed above-average inequality compared to the other OECD countries.²

There are few academic studies on the current distribution of household income in Switzerland, but there are a series of government reports. The study by Müller et al. (2004) found, based on data from the income and consumption survey, a minor increase in disposable income between 1990 and 1998 resulting primarily from changes in market income. The same authors' analysis of tax data (between 1987/88 and 1995/96), on the other hand, showed a reduction in inequality (see also Stamm et al. 2003). Peters (2010) found, based on tax data, a minor increase in the Gini coefficient between 2003 and 2006, which he traced back to a disproportionate increase in income in the upper quintile. Finally, the Statistical Social Report (2011) published by the Swiss Federal Statistical Office (BFS 2011) reported changes in the Gini coefficient of disposable household income showing an overall stability of inequality based on 1998 to 2008 data from the income and consumption survey.

In summary, we can state that the few existing articles on income inequality in Switzerland are based on different data sources and income concepts, and come to contradictory conclusions as a result. Although the findings suggest that income inequality in Switzerland has remained stable since 1990, the differing results point to increasing incomes at the upper end of the income distribution. Here, the hypothesis can be made that the inadequate representation of upper incomes in the various data sources is at least partly responsible for the differing results.

² Selected studies on the development of inequality in labor income can be found in Küng, Gugler, and Blank (2000) and in Balzani and Abul Naga (2002).

The income distribution in Germany

Like Switzerland, Germany currently shows below-average income inequality in international comparison (OECD 2011b). Throughout the 1980s, the income inequality in Germany was relatively stable and much lower than it is today. This is true of both labor income (Antonczyk et al. 2010) and for disposable household income (Hauser and Becker 2001). Although German reunification in 1990 posed a challenge both for the labor market and for the entire economy and welfare state, the inequality of disposable household income in West Germany initially did not increase. In East Germany, however, the inequality of labor income increased sharply in the wake of post-reunification transformation (Franz and Steiner 2000), affecting low-skilled workers and new entrants to the labor market most severely (Gernandt and Pfeifer 2007). Because of the large-scale redistribution from West to East Germany, the inequality of disposable household income has been lower in the East than the West since reunification (SVR Wirtschaft 2006).

Since 2000, the inequality of disposable household income in Germany has been increasing substantially (Frick and Grabka 2010a, OECD 2011a). Relative income poverty increased from 10% to 15% between 2000 and 2005 relative to the poverty risk threshold (60% of median income). The change in income inequality in Germany is thus more than twice the OECD average by international comparison (OECD 2011a). The increase in income at the upper end of the income distribution plays an important role in Germany as in many other countries (Piketty and Saez 2006, Bach et al. 2009).

Income concept and data

Income definition

The choice of income concept has direct effects on the level of inequality measured. Taking into account nonmonetary income advantages from public goods and services, education, or health, for example, reduces the inequality of household income. Conversely, measured inequality increases when indirect taxes, benefits, or fees are taken into account (OECD 2008). In this article, we use the definition of income used in the CNEF, which is based on recommendations from the Expert Group on Household Income Statistics (Canberra Group 2001).³

We study income inequality based on market income and disposable household income. Market income consists of labor income, capital income, private transfers, and—according to the recommendations of the international literature and the EU Commission—fictive income advantages from owner-occupied housing (imputed rent). Disposable income also contains benefits from social security, social transfers, direct taxes, social security contributions, and obligatory health insurance. For improved comparability of the income situation of individuals in households of different sizes and compositions, we analyze equivalent incomes using the modified OECD scale.⁴

Data

Alongside the definition of income used, the method of data collection and the representativeness of the data also affect the measured income inequality. In this report, we

³ This income definition is also used by the OECD and the Luxemburg Income Study (LIS), among others.

⁴ The head of household is assigned a weight of 1, children up to the age of 14 a weight of 0.3 and all other household members a weight of 0.5.

use survey years 2000 to 2009 from the SOEP (see Wagner et al. 2008) and the SHP (see Voorpostel et al. 2010) to describe current trends in income inequality in the two countries. These surveys have different features that make them extremely well suited for drawing conclusions about income inequality.

First of all, both samples are representative of the respective country's resident population.⁵ Second, both studies survey all (adult) household members. Third, both have been carried out for many years on an annual basis (since 1984 in the SOEP and since 1999 in the SHP), allowing for precise description of income developments over time. Fourth, both surveys measure the various income components separately. Fifth, biases created by missing answers as well as unit non-response are corrected through appropriate weighting and imputation procedures, with almost identical methods being used in both surveys to guarantee the comparability of results. Sixth and finally, essentially the same procedures are used in both studies to harmonize the income information.⁶

Whereas the SOEP constitutes what may be considered the most important source of data on Germany for international comparison (e.g., for analyses of the OECD and the LIS), the SHP has been used relatively little to date in the analysis of inequality. This is mainly because the data have only recently been provided in the harmonized form described above. However, with both the SOEP and the SHP—as with all other datasets of this kind—there are a few features that should be kept in mind in interpreting the results. First, SHP and SOEP questionnaires are given only to individuals with a permanent residence. Second, the panel design, which consists in surveying the same households every year, only partially captures recent immigration.⁷ Refresher samples reduce this problem. In the SHP, the last increase in sample size took place in 2004, meaning that the high immigration that has occurred since then is not taken into account in the data. The SOEP currently includes nine different subsamples that have been added at irregular intervals. Third, there are several differences between the SHP and the SOEP that cause higher fluctuations in income and larger measurement errors in the SHP. Questions on income are less detailed in the SHP, due to its general focus, than in the SOEP.⁸ Also, the SHP questionnaire is administered by telephone, while the SOEP uses primarily PAPI and CAPI interviewing methods. Furthermore, the

⁵ In contrast to cross-sectional surveys, panel surveys may be distorted not just by non-participation in the first wave but also by non-response in later waves (panel attrition). In general, the methodological research has shown panel attrition to be a smaller problem than refusal to participate in the first wave: panel attrition is much lower, the distortion is lower, and it can be corrected better through weighting or imputation since the characteristics of non-respondents are known from previous waves (on the SOEP see Kroh 2010). The level of panel attrition and the structures of non-response are very similar in the two surveys. In order to test the effect of panel attrition on measured inequality, attriters were excluded from the analyses. The resulting inequality measures differ insignificantly, and the direction of the deviation was not systematic. However, the results also showed the familiar tendency to underestimate inequality (see Frick and Grabka 2010b). With regard to the quality of data from panel surveys, it can also be argued that repeated participation in panel surveys means that respondents are familiar with the survey instrument, with the constructs surveyed, and with the interview situation, which leads to lower measurement errors (Frick and Grabka 2010b).

⁶ This applies, for example, to the generation of imputed rents (see Frick and Grabka 2003, Kuhn 2010) and to the simulation of tax burdens (for the SOEP see Schwarze 1995, for the SHP, see Kuhn and Schmid 2009).

⁷ Migrants are generally underrepresented in such samples due to language difficulties, increased difficulties contacting such respondents, and higher rates of non-participation.

⁸ An important difference exists in the point at which income is measured. In the SOEP, the income data are based on the previous year (e.g., the 2009 data contain information on respondent income in 2008), whereas in the SHP, the income data are based on the income situation at the point of the survey (e.g., the 2009 data contain information on respondent income from September 2009 to February 2010). On this basis, it is already possible to describe the effects of the financial market crisis on income in Switzerland.

longer history of the SOEP may have led to a stabilization of responses (panel conditioning effects, attrition of unstable households) over time. Finally, the SHP questionnaire was changed in 2002 and 2004 to collect more detailed information on various income components. Thus, not all of the changes in inequality measures are necessarily the result of changes in income structures. These uncertainties should be taken into account in interpreting the data. Despite these drawbacks, the SHP data are extremely well suited for depicting the situation of disposable income in Switzerland since 2000.

The development of income and inequality

Income development

Market income in 2009 was comprised primarily of labor income (93% Switzerland, 89% Germany) and capital income (4% and 5%, respectively), whereas imputed rent (2% and 5%, respectively) and private transfers (both 1%) made up just a small part thereof. The share comprised by capital income increased steadily from 2000 up to the start of the economic crisis.

In Switzerland, real average market income rose slightly from 2000 to 2009 (4% for the median) (Figure 1). In Germany, it fell by more than 8%. The decline in market income in Germany was concentrated primarily in the period from 2000 to 2002, and has been largely stagnating since then. The differing developments are surprising since per capita GDP in both countries increased by more than 5% over the period of observation. The decline in market income in Germany was also due to a shift in national incomes from compensation of employees to income from assets and entrepreneurial activities.

Figure 1 approx. here

For equivalised disposable household income, as well, different developments can be observed between the two countries. In Switzerland, this income measure increased from 2000 to 2009 by around 13% for the median (Figure 1). The higher increase in household than in market income is primarily explained by retirement. First, the aging of society means that more people are collecting retirement benefits. Second, more retirees are receiving income from occupational pension plans (the second pillar of Swiss pension policy),⁹ which has been obligatory for most workers since 1985. In Germany, on the other hand, a slight decline in disposable household income—as with market income—can be observed for the median at nearly -3%.¹⁰ Social security benefits also have a dampening effect in Germany, with the result that the decline is lower for disposable household income than for market income.

The development of income inequality

In the next step, we look at the income distribution based on common inequality measures (entropy measures like the MLD ($\epsilon=0$) and the Theil index ($\epsilon=1$), the Gini coefficient, decile ratio 90:10) for household income. These measures differ primarily in their

⁹ In the SHP, the share of pension fund recipients in the total population increased from 9.5% in 2002 to 11.8% in 2009 and from 43.6% to 48.4% among those above the age of 65. Since it is possible to receive the entire sum of savings paid out upon reaching retirement, the importance of the pension fund is probably slightly underestimated.

¹⁰ Income levels are significantly lower in general in East Germany than in West Germany, but incomes have declined in both parts of the country.

sensitivity to different parts of the income distribution. The Gini and Theil coefficients react mainly to changes in the middle of the income distribution, while the MLD coefficient is sensitive mainly to changes at the lower end of the distribution.¹¹

With market income, inequality is generally higher in Germany than in Switzerland (see Table 1). Particularly the MLD coefficient, which is more sensitive at the lower end of the income distribution, is nearly three times greater there than in Switzerland. Since 2000, this divide has increased, since the inequality of market income in Germany increased continuously up to the year 2006, while inequality increased only moderately in Switzerland. Since 2006—for the first time since reunification—Germany has seen a slight decrease in the inequality of market income. This is primarily the result of the improved labor market situation in Germany, which has resulted in a decrease in unemployment from around 12% to 7.6% up to the beginning of 2009, when the financial and economic crisis started.¹² For Switzerland, the 2009 data already show a relevant effect of the economic crisis, since inequality decreased substantially against the preceding year. This is probably the result of changes in the incomes of individuals at the upper end of the income distribution, for whom capital income as well as income from entrepreneurial activities are particularly important.

Table 1 approx. here

In the case of disposable household income, not only are the differences between Germany and Switzerland larger; the development was also reversed. In the year 2000, inequality was higher in Switzerland than in Germany according to the indicators used here. Since then, however, the data show a slight overall decrease in the income concentration in Switzerland. In Germany, on the other hand, there has been a significant increase in income inequality. Using the Gini coefficients, the data show that Germany already had higher inequality than Switzerland in 2003.¹³ Since 2006, measured inequality in Germany has leveled off in line with the trend in market income. In a broader international comparison, Germany and Switzerland form counterpoints to each other, since Germany has undergone an above-average increase in inequality in recent years, while Switzerland has been one of the few countries, together with Greece, Spain, and Ireland, in which inequality has decreased over the same period (OECD 2011b).

Patterns of income stratification

In the following, we examine the increasing inequality in Germany and the downward trending inequality in Switzerland in detail to better understand whether specific income strata were affected more severely by the developments described above. To this end, we grouped households together according to their income position relative to the median disposable income. Population shares are shown in income strata around the median (90 to 110% of the median), as well as in three below-median and four above-median income brackets. The extremes result for individuals with an income of less than 50% or more than 200% of the median. The middle income class is defined, in line with Grabka and Frick

¹¹ The 90:10 decile ratio represents the relation of the income of the richest person in the first decile to that of the poorest person in the ninth decile.

¹² See note 8.

¹³ With the SHP it should be kept in mind that the questionnaire was changed between 2001 and 2002 to examine certain income components in more detail (see Kuhn 2008). As a result, the decline in inequality for these two years is probably overestimated. This does not, however, change the overall finding of downward trending inequality of disposable income in Switzerland.

(2008), as the segment of the population with a relative income of 70% to 150% of the median.¹⁴

According to this categorization, in 2000, the middle income class in Germany included roughly 64% of the total population—the substantial majority of adults and their children (Figure 3).¹⁵ Since then, the group has been shrinking and in 2009 comprised only around 59% of the population, an absolute decline of more than 4.5 million individuals. Correspondingly, the ends of the income distribution increased in importance. The group of individuals with an income of less than 70% of the median grew: their population share increased by more than four percentage points from 2000 to 2009, reaching 22% in the context of rising unemployment and increased welfare dependency. At the upper end of the income distribution, the only growth was seen in the highest-income group (individuals with 200% of the median), who made up around 8% of the total population in 2009.¹⁶

Figure 3 approx. here

In Switzerland, a very different pattern emerged. The middle income bracket (70% to 150% of the median) increased by 4.3 percentage points between 2000 and 2007, reaching 63% of the total population. During the recent economic crisis, this share declined again slightly, affecting primarily the lower end of the distribution (<70% of the median). The opposing trends in the two countries can also be seen at the upper end of the income distribution (>200 % of the median), a group that grew in Germany but shrank in Switzerland over the period of observation.¹⁷

Income mobility

In addition to this purely descriptive analysis of recent changes in income stratification, sociological analysis and social policy require an analysis of how the chances of moving up or down in the income distribution have changed. This will be addressed below based on transition matrices, whereby the individual income brackets are classified into three groups based on the relative income positions used above: (1) persons with low income below 70% of the median, (2) the middle income bracket (70 to 150% of the median) and (3) high-income individuals with disposable income of at least 150% of the median. The analysis of income mobility will be carried out below for two five-year periods.

Comparing the two observation periods in Switzerland (Table 2), the income stability in the population as a whole is contrasted by considerable mobility at the individual level. Approximately 14% of individuals in the middle income bracket had moved into the group with low income five years later, and 11% had moved into the high-income group. This mobility changed little between the two observation periods. At the ends of the income distribution, however, a process of persistency can be observed. The risk of downward mobility decreased for the high-income group, with 61% of these individuals remaining in this income segment throughout the second period (from 2005 to 2009), while only 55% had

¹⁴ For a discussion of alternative approaches to define the “middle class” see Brandolini (2010).

¹⁵ The middle income bracket in Germany had remained largely stable in Germany since 1984; only reunification led to a brief decline in this group from 65% to 62%.

¹⁶ This dynamic can also be seen in the income deciles. Disposable income has increased since 2000 almost exclusively for the upper 5%, while it stagnated or even sank for the other income groups.

¹⁷ This does not, however, contradict the finding of a trend toward an increasing share of total income in this group.

remained throughout the first (from 2000 to 2004). Parallel to this, there was a consolidation at the lower end of the distribution, where the share of the population with low income increased by four percentage points to 56%.¹⁸

Table 2 approx. here

For Germany, income mobility was substantially lower than in Switzerland. Over the two periods of observation, almost 70% remained in the high-income group, while more than 60% remained in the lowest income group. In Germany—as in Switzerland—downward mobility was somewhat more pronounced than upward mobility in the middle income group.

In summary, it can be stated that income mobility in Switzerland was higher than in Germany over the period of observation. A possible explanation for this is offered by Wilkinson and Pickett (2009), who show that countries with lower income inequality generally have higher income mobility. Studies on Germany have also found that specific population groups show below-average rates of income mobility: these include migrants, individuals without a completed education, economically inactive or unemployed persons, and residents of East Germany (Schäfer and Schmidt 2009). However, it could not rule out that the higher mobility in Switzerland could also be the result of larger measurement errors.

Explanations of inequality

Government redistribution

The level of government redistribution may be determined, for example, by studying the relation between market income and disposable income.¹⁹ To this end, we calculate the percentage reduction in the Gini coefficient of market income if social security, public transfers, direct taxes, and mandatory health insurance contributions²⁰ are added or subtracted (Figure 3). While Government redistribution declines in Germany, it increased slightly in Switzerland. In Switzerland, this is due primarily to the increased redistribution through retirement and changes in the tax system, but methodological effects caused by changes in the SHP questionnaire also cannot be ruled out.²¹ In Germany, there has been a marked decline in the redistributive effect of direct taxes but only a slight decline in that of retirement income.

Figure 3 approx. here

In the case of direct taxes and mandatory contributions, the largest effect has resulted from the various tax reforms implemented since 1998, the most significant of which was a reduction of the top tax rate from 53% to 42% accompanied by an expansion of the assessment base. The importance of public transfers has increased slightly overall, which may be the result of the increase in the child benefit (*Kindergeld*). Still, government redistribution

¹⁸ Only the particular income situation at the start and end of the five-year period is analyzed here. Possible income mobility in the intervening years is not taken into account.

¹⁹ Public policies influence market income, however, and market income inequality in turn affects policies. These complex interactions cannot be explored in detail in this article. See, for example, Glaeser (2005).

²⁰ Mandatory health insurance contributions in Switzerland were simulated based on average values by Canton. Premium reductions based on income were taken into account.

²¹ Up to 2001, respondents were asked to report retirement income from social security and pension funds as a lump sum, while two separate questions were asked starting in 2002. This may have increased the level of income from social security. From 2004 on, child allowances were reported separately, which led to an increase in the size of the effect of social transfers. This does not affect the higher redistributive effect of direct taxes and social security from 2004 to 2009, however.

in Switzerland is low relative to other OECD countries and lower than in Germany (OECD 2011a, Brandolini and Smeeding 2009), whereby the reduction in inequality does not say anything about the effectiveness of redistribution measures since the reduction of inequality in Germany is low by international comparison (OECD 2008).

Demographic reasons for inequality

To judge the influence of socio-demographic factors, we decompose the MLD index based on Shorrocks (1984). Here the inequality measure is decomposed into within-group inequality and between-group inequality. Within-group inequality is the weighted sum of inequality within each group, with the weights corresponding to the particular population share. Changes in the population structure mainly affect within-group inequality, which comprises the large majority of all inequality.

Inequality by age groups

Society is aging in Switzerland and Germany. The percentage of the population under 40 has sunk dramatically in both countries, while the percentage over 65 has increased. Comparing the two countries, Germany has a nearly four percentage point higher share in the oldest population group—over 21% of the population.

Looking at income inequality in the various age groups (Table 3), inequality in Germany is highest among 50 to 64-year-olds and lowest among 25 to 39-year-olds. The high inequality among 50 to 64-year olds in Germany can be explained by the high rates of unemployment and early retirement in this group, but also by the fact that these individuals have the highest lifetime earnings. In Switzerland, on the other hand, inequality increases with age and peaks in the over-65 age group.²² The high level of inequality in this group is primarily due to the equivalence principle in the retirement system. There is a slight decrease in income inequality over time (not shown separately in the table), observable across all population groups in Switzerland, but an increase in income inequality in Germany. The inequality between the age groups increased only slightly in the two countries.

Table 3 approx. here

If the Swiss population continues to age, this should lead *ceteris paribus* to an increase in income inequality, since inequality is substantially above the population average for those over the age of 65, at least currently. In Germany, on the other hand, the oldest population group shows slightly below-average inequality, which could have a cushioning effect on further population aging.

Inequality by household structure

Inequality is highest in single households in both Switzerland and Germany (Table 3). In Germany, they make up around 20% of the population and thus substantially more than in Switzerland, where their population share is just 12%. Couple households with two or more children show the lowest inequality²³: at 39%, their population share in Switzerland is ten percentage points higher than in Germany. Both results provide some explanation of the higher overall inequality in Germany.

²² The fact that over-65-year-olds in Switzerland have the highest level of inequality is fairly unusual in international comparison (OECD 2008).

²³ In couple households with three or more children, the two countries differ considerably. In Germany, they make up just 5% of the population, while in Switzerland they comprise roughly three times that share at 14%.

The demographic changes over the last 10 years have led as well to smaller households and an increase in single households, childless couples, and lone parents. Since these are the groups that already tend to show relatively high inequality, and since households with a more homogeneous income structure (couples with two or more children) are becoming rarer, this demographic development is also leading to increased inequality (for Germany, see also Peichl et al. 2011).

Inequality by educational level

Finally, we turn to income inequality between different educational groups (Table 3). In both Switzerland and Germany, the share of the population with low education has decreased and the share of individuals with high education has increased. In relation to the educational level, the share of the population with tertiary education is higher in Switzerland, at 34%, than in Germany, at 29%, which is the result of a major expansion in tertiary education as well as increased immigration of highly skilled workers. The two countries have similar percentages of the population with low education. Both share an important commonality in the dual system of education, where practical on-the-job training (vocational apprenticeship) plays an important role.

In Switzerland, inequality is highest for individuals with low education, a group in which inequality has also increased since 2000 contrary to the general trend. Individuals with a medium level of education in both countries show the lowest level of inequality. Their percentage of the population in both countries is well over 60%. In Germany, inequality is highest among individuals with a high level of education and has increased particularly strongly in this group since 2000. This finding is partly the result of significantly increasing returns to tertiary education in Germany. The returns for comparable individuals in Switzerland have remained almost unchanged overall (OECD 2009). A further explanation for the rather moderate inequality among individuals with tertiary education in Switzerland may lie in the large-scale immigration of highly skilled workers, which has led to wage pressure in this population group.²⁴ Educational expansion in both countries is leading in different ways to a change in income inequality.

Concluding remarks

In this article, we studied the income distribution in Germany and Switzerland from 2000 to 2009 and identified the most significant differences between the two countries. Whereas the inequality of market income has increased markedly in Germany, it has increased only slightly in Switzerland. The differences between the two countries in disposable income are even more pronounced. While the income distribution has become significantly more unequal in Germany, equality has increased slightly in Switzerland. In both countries, inequality increased up to the economic crisis of 2008 and has fallen since then—or in the case of Germany, has remained stable at a high level. According to recent figures from the year 2009, income inequality in disposable household income is lower in Switzerland than in Germany.

Various factors are responsible for these differences. First and foremost, market incomes are much more unequally distributed in Germany than in Switzerland, which leads, inter alia, to continued higher unemployment in Germany. Second, government redistribution in Germany is more extensive than in Switzerland, but its effect has declined since 2000

²⁴ In Germany, migrants have low to medium education on average.

following a series of tax reforms that have resulted in direct taxes having less of a cushioning effect on the high inequality in market incomes. In Switzerland, on the other hand, government redistribution has increased slightly overall, due primarily to the growing importance of pension funds.²⁵ Third, in Germany, demographic factors play a prominent role: the higher level of inequality there is due in part to the larger population share of elderly persons, single households, and childless couples,²⁶ population groups that exhibit higher relative inequality.²⁷ The trend towards population aging in Germany has increased inequality further. The declining share of the population with low education has an equalizing effect, while the expansion of the educational system and increasing returns to education, at least in Germany, are leading to increased inequality. The low inequality among individuals with tertiary education in Switzerland may be related to the current high immigration of skilled workers, although further evaluations based on other data sources would be needed to test this assumption. A further possible explanation for the differences between Germany and Switzerland may be the different class structures of the two societies, but this would also require more in-depth analysis. The empirical evaluation of the Swiss data refute the frequently expressed view that the gap between rich and poor in Switzerland is growing and that the middle class in particular is suffering. In Switzerland, in contrast to Germany, the size of the middle income bracket has scarcely changed. These findings do not contradict observations that labor and market incomes have increased, particularly in the highest income groups, while the other income groups have profited little from the economic growth. In addition, increased incomes of many households are unable to compensate for increasing rents, fees, and indirect taxes. Finally, Switzerland is among the countries with the highest inequality in the distribution of wealth. These qualifications do nothing to alter the finding that the income distribution and the situation of the middle income bracket have remained relatively stable in Switzerland since 2000, particularly compared to Germany.

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²⁵ Here it should be kept in mind that company pensions in the true sense cannot be counted among government redistribution activities since they can be interpreted as a deferred income component.

²⁶ In this context, one should again note the tendency towards increasing homogamy, which makes an independent contribution to the increase in income inequality.

²⁷ Particularly in single households, but also among lone parents, there is no process of redistribution within the household to achieve economies of scale through joint economic activity, as is the case in classic family households.

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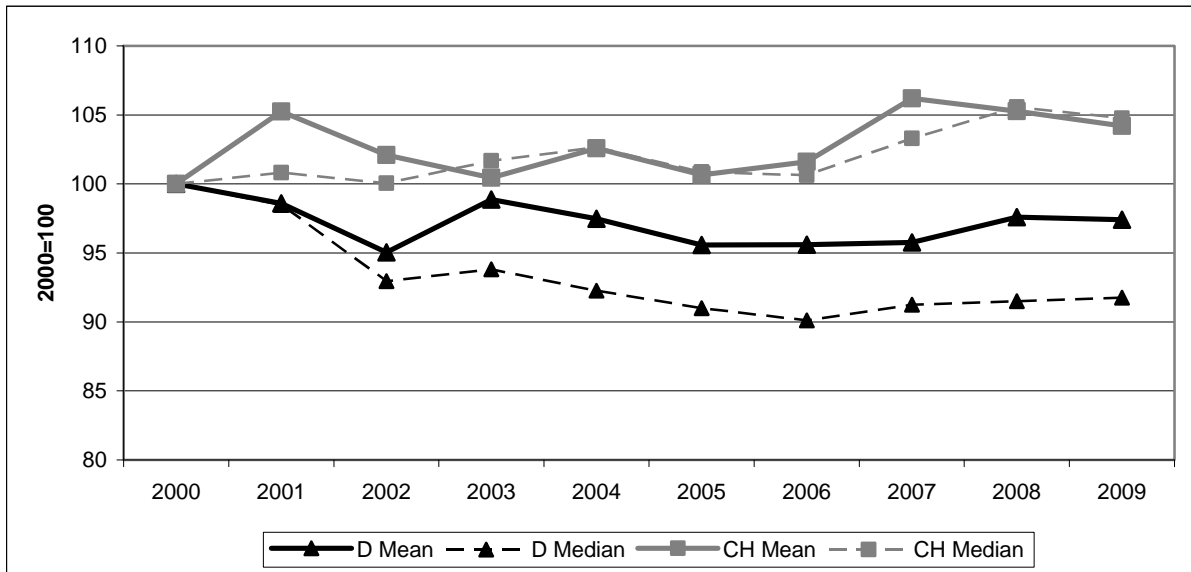
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Tables and figures

Market income



Disposable income

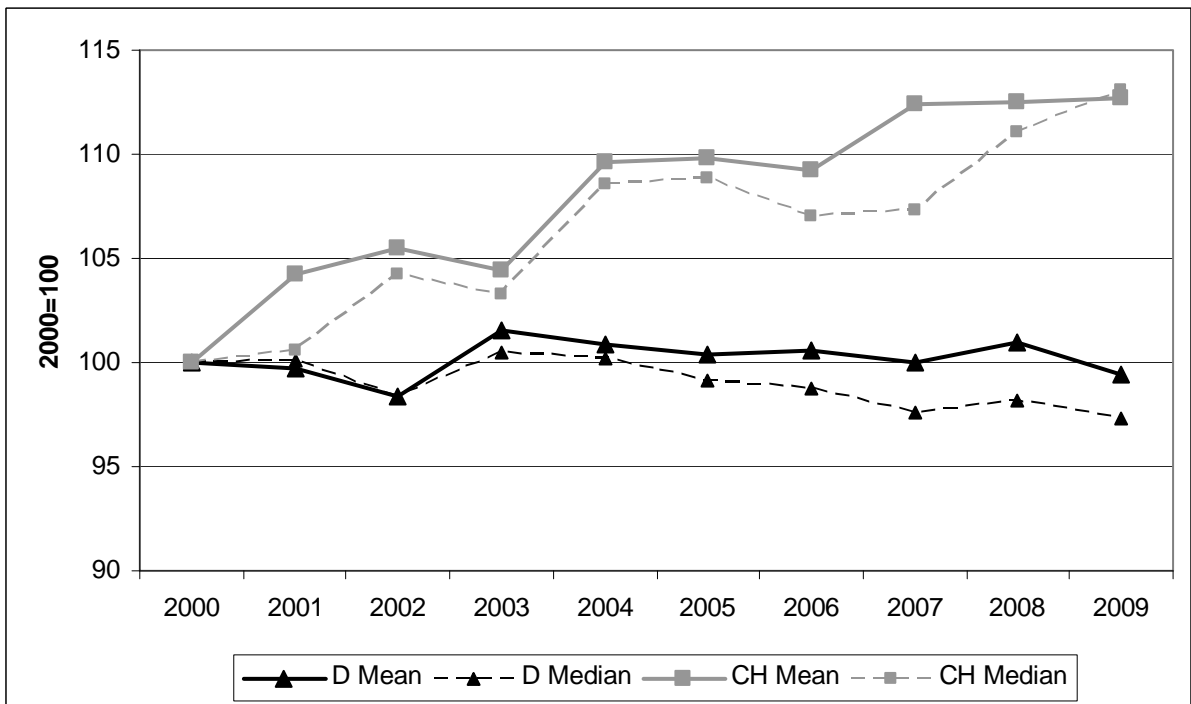
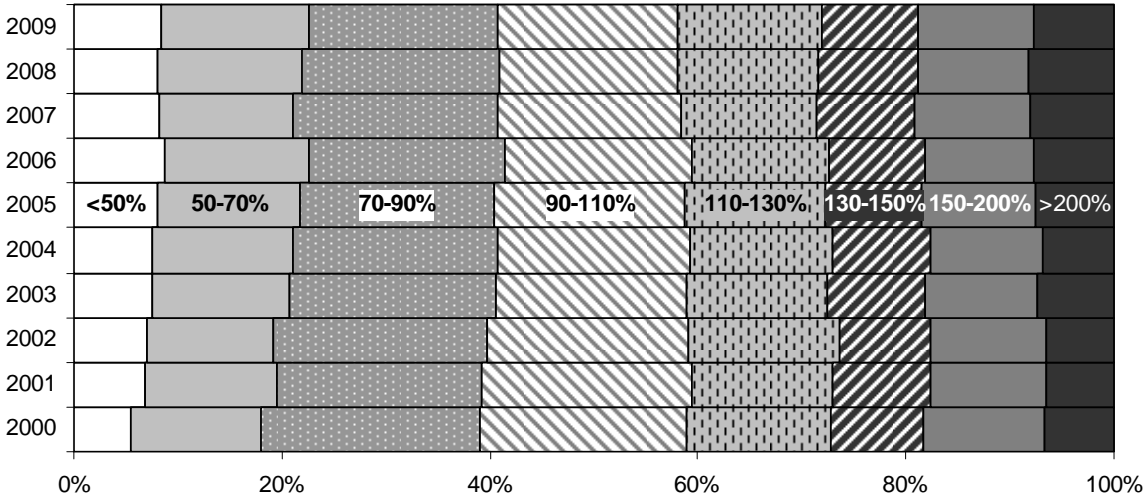


Figure 1: Real market and disposable household income in Germany and Switzerland, 2000-2009 (in 2005 prices). Source: SHP and SOEP v26.

| | Market income | | | | | | | |
|--------------------------|-----------------|-------|-------------------|-------|------------------|-------|------------------|------|
| | MLD coefficient | | Theil coefficient | | Gini coefficient | | | |
| | DE | CH | D | CH | D | CH | | |
| 2000 | 0.744 | 0.260 | 0.353 | 0.201 | 0.446 | 0.390 | | |
| 2001 | 0.790 | 0.296 | 0.371 | 0.245 | 0.453 | 0.410 | | |
| 2002 | 0.807 | 0.266 | 0.380 | 0.209 | 0.460 | 0.390 | | |
| 2003 | 0.862 | 0.281 | 0.410 | 0.205 | 0.476 | 0.391 | | |
| 2004 | 0.863 | 0.314 | 0.438 | 0.226 | 0.481 | 0.414 | | |
| 2005 | 0.890 | 0.292 | 0.437 | 0.222 | 0.482 | 0.404 | | |
| 2006 | 0.960 | 0.326 | 0.465 | 0.264 | 0.493 | 0.419 | | |
| 2007 | 0.957 | 0.307 | 0.441 | 0.263 | 0.490 | 0.413 | | |
| 2008 | 0.939 | 0.328 | 0.443 | 0.261 | 0.488 | 0.413 | | |
| 2009 | 0.909 | 0.296 | 0.441 | 0.227 | 0.483 | 0.406 | | |
| d00/09 in % | 22.1 | 13.9 | 25.1 | 12.8 | 8.4 | 4.1 | | |
| Disposable income | | | | | | | | |
| | MLD coefficient | | Theil coefficient | | Gini coefficient | | d9010-Verhältnis | |
| | DE | CH | DE | CH | DE | CH | DE | CH |
| 2000 | 0.108 | 0.145 | 0.112 | 0.139 | 0.253 | 0.288 | 3.01 | 3.44 |
| 2001 | 0.117 | 0.168 | 0.121 | 0.176 | 0.260 | 0.302 | 3.12 | 3.43 |
| 2002 | 0.122 | 0.134 | 0.131 | 0.132 | 0.266 | 0.273 | 3.20 | 3.10 |
| 2003 | 0.131 | 0.128 | 0.144 | 0.123 | 0.277 | 0.267 | 3.35 | 3.16 |
| 2004 | 0.137 | 0.137 | 0.166 | 0.134 | 0.279 | 0.273 | 3.28 | 3.27 |
| 2005 | 0.138 | 0.124 | 0.169 | 0.124 | 0.282 | 0.263 | 3.43 | 3.16 |
| 2006 | 0.151 | 0.138 | 0.188 | 0.149 | 0.295 | 0.277 | 3.57 | 3.21 |
| 2007 | 0.142 | 0.133 | 0.16 | 0.172 | 0.288 | 0.273 | 3.51 | 2.99 |
| 2008 | 0.148 | 0.133 | 0.172 | 0.146 | 0.293 | 0.272 | 3.54 | 3.15 |
| 2009 | 0.147 | 0.121 | 0.169 | 0.126 | 0.292 | 0.262 | 3.44 | 3.07 |
| d00/09 in % | 36.0 | -16.8 | 50.3 | -9.1 | 15.2 | -8.9 | 14.6 | 10.8 |

Table 1: Inequality of market and disposable household income in Germany and Switzerland, 2000–2009. Source: SHP and SOEP v26.

Germany



Switzerland

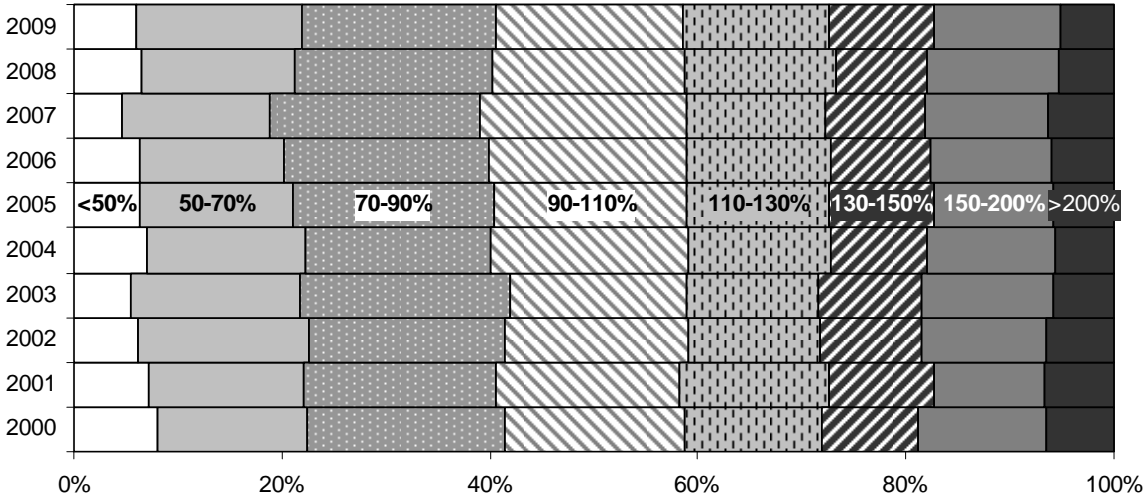


Figure 3: Income stratification of the population in Germany and Switzerland based on the median of disposable household income, 2000–2009. Source: SHP and SOEP v26.

Germany

| | Low Income (<70%) | Middle income (70-150%) | High income (>150%) | Total | |
|-------------|---------------------------------|------------------------------------|-----------------------------------|--------------|-------|
| | 2004 | | | | |
| 2000 | Low Income (<70%) | 60.5 | 37.4 | 2.1 | 100.0 |
| | Middle income (70-150%) | 11.5 | 77.7 | 10.8 | 100.0 |
| | High income (>150%) | 2.4 | 27.3 | 70.3 | 100.0 |
| | 2009 | | | | |
| 2005 | Low Income (<70%) | 61.7 | 36.4 | 1.9 | 100.0 |
| | Middle income (70-150%) | 12.4 | 78.4 | 9.2 | 100.0 |
| | High income (>150%) | 2.6 | 29.6 | 67.8 | 100.0 |

Switzerland

| | Low Income (<70%) | Middle income (70-150%) | High income (>150%) | Total | |
|-------------|---------------------------------|------------------------------------|-----------------------------------|--------------|-------|
| | 2004 | | | | |
| 2000 | Low Income (<70%) | 51.7 | 43.0 | 5.3 | 100.0 |
| | Middle income (70-150%) | 14.4 | 74.5 | 11.1 | 100.0 |
| | High income (>150%) | 4.5 | 40.5 | 55.0 | 100.0 |
| | 2009 | | | | |
| 2005 | Low Income (<70%) | 56.2 | 40.8 | 3.1 | 100.0 |
| | Middle income (70-150%) | 13.5 | 75.8 | 10.8 | 100.0 |
| | High income (>150%) | 4.4 | 34.4 | 61.1 | 100.0 |

Table 2: Income mobility in Germany and Switzerland, 2000–2004 and 2005–2009. Income positions based on the median of disposable household income. Source: SHP and SOEP v26.

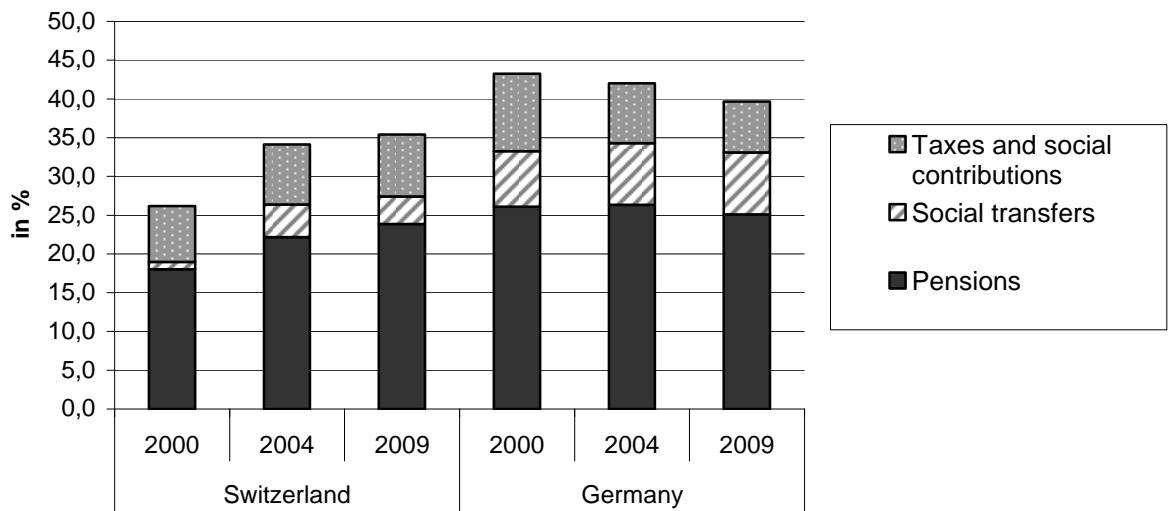


Figure 3: Government redistribution in Germany and Switzerland: Reduction of inequality in market income in percentage, measured with the Gini coefficient. Source: SHP and SOEP v26.

| | | Age group | | | | | | | |
|--------------------|--|----------------|-------------|-------------|-------------|------------------|--------------|---------------|--|
| | | Under 25 years | 25-39 years | 40-49 years | 50-64 years | 65 years or more | Within-group | Between-group | |
| Germany | | 0.130 | 0.120 | 0.142 | 0.184 | 0.131 | 0.141 | 0.006 | |
| Switzerland | | 0.101 | 0.095 | 0.105 | 0.134 | 0.155 | 0.116 | 0.005 | |

| | | Household type | | | | | | | | |
|--------------------|--|----------------|--------|-------------|-----------------|--------------------|---------------------|----------|--------------|---------------|
| | | Single | Couple | Lone parent | Couple, 1 child | Couple, 2 children | Couple, 3+ children | Other HH | Within-group | Between-group |
| Germany | | 0.174 | 0.161 | 0.124 | 0.111 | 0.102 | 0.104 | 0.137 | 0.137 | 0.010 |
| Switzerland | | 0.138 | 0.110 | 0.126 | 0.136 | 0.077 | 0.077 | 0.125 | 0.107 | 0.014 |

| | | Educational level | | | | | |
|--------------------|--|-------------------|--------|-------|--------------|---------------|--|
| | | low | medium | high | Within-group | Between-group | |
| Germany | | 0.110 | 0.104 | 0.159 | 0.121 | 0.026 | |
| Switzerland | | 0.165 | 0.106 | 0.128 | 0.118 | 0.015 | |

Table 3: Decomposition of inequality based on the MLD coefficients for age groups, household types and educational levels in Germany and Switzerland, 2009, Source: SHP and SOEP v26.