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**Consumption of the poor in Germany:
projecting the development until 2030**

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Zusammenfassung

Die derzeit gute Wirtschaftsentwicklung und positive Arbeitsmarktsituation in Deutschland bietet Teilhabe- und Einkommensmöglichkeiten für private Haushalte. Nicht alle Haushalte können jedoch gleichermaßen von dieser Entwicklung profitieren und die Ungleichheit bleibt weiterhin hoch. Insbesondere die Haushalte im unteren Bereich der Einkommensverteilung sind negativ von steigenden Energiepreisen, hohen innerstädtischen Wohnungsmieten oder Preissteigerungen für Basisgüter wie Lebensmittel betroffen. In diesem Artikel konzentrieren wir uns auf die Ungleichheitsfragen in Bezug auf privaten Konsum in Deutschland, insbesondere die Konsummuster und Möglichkeiten einkommensschwacher Haushalte. Außer dem Fokus auf Ungleichheit besteht unsere Motivation darin, Einsichten aus der Teilhabeperspektive zu präsentieren. Wir analysieren die aktuellen Konsummuster der Armen in Deutschland mithilfe sowohl qualitativer als auch quantitativer Daten. Die quantitativen Daten beziehen sich auf Haushaltsgruppen differenziert nach Größe (eins bis fünf und mehr Mitglieder). Haushalte jeder Gruppe sind nach dem durchschnittlichen Nettohaushaltseinkommen sortiert und in fünf gleich große Gruppen, d.h. Einkommensquintile, aufgeteilt. Mithilfe der sozioökonomischen Modellierung projizieren wir ferner die disaggregierten Haushaltseinkommen und Konsumausgaben bis 2030 und untersuchen die wahrscheinlichen Effekte auf die Ungleichheit und die Strukturverschiebungen der Gesamtausgaben der betrachteten Haushalte. Die quantitativen Ergebnisse werden durch eine qualitative Analyse der individuellen Konsumententscheidungen und Bewältigungsstrategien der Armen ergänzt. Die Ergebnisse zeigen, dass die armen Haushalte signifikant in ihren Konsummöglichkeiten eingeschränkt sind, insbesondere was ihre soziokulturelle Teilhabe angeht (Freizeit und Kultur, Ausgehen mit Freunden, Gesundheitsausgaben etc.). Sie sind zudem zum Entsparen gezwungen, um ihre Grundbedürfnisse zu decken. Modellprojektionen zeigen, dass sich ihre künftige Situation trotz Wirtschaftswachstum nicht signifikant verbessern wird.

Abstract

The currently strong economic development and the positive labor market situation in Germany offers participation and income opportunities for private households. However, not all households can equally take advantage of this development and income inequality remains high. Especially households in the bottom tail of the income distribution are negatively affected by rising energy prices, high inner-city apartment rents or price increases for essential goods such as food. In this paper we concentrate on inequality issues related to private consumption, highlighting the consumption patterns and possibilities of low-income households in Germany. Besides the focus on inequality, our motivation is to provide insights from a participation per-

spective. We analyze the current patterns of the consumption of the poor in Germany by using both qualitative and quantitative data. The quantitative data refer to household groups distinguished by size (one to five and more household members). Each household group is ranked by the average monthly net household income and split into five equal parts, i.e. income quintiles. Using socioeconomic modeling, we also project the disaggregated household incomes and consumption expenditures until 2030, studying the likely effects on inequality as well as structural shifts within the total expenditures of the considered households. The quantitative results are supplemented by qualitative analysis of individual consumption decisions as well as coping strategies of the poor. The results show that poor households are significantly constrained in their consumption possibilities, are forced to dissave in order to meet basic needs and are limited in sociocultural participation (recreation and culture, going out with friends, health expenditures etc.) Model projections indicate that their future situation will not significantly improve despite economic growth.

1. Introduction

Income inequality and poverty are virulent issues in all industrialized countries, despite ongoing economic growth. This is especially true in Germany, where income inequality remains high (Goebel, Grabka & Schröder 2015, OECD 2008), after a period of rapid increase in the years 2000-2005. Recent empirical evidence provided by the OECD (Cingano 2014) suggests that besides ethical considerations related to equity it might be negative for subsequent growth. Poverty is also an unpleasant reality in Germany that is still treated as a secondary problem, despite a dramatic increase in the years 2000-2009 and a relatively stable poverty risk rate of around 14 percent since then (Goebel, Grabka & Schröder 2015).

In this paper we concentrate on inequality issues related to private consumption, highlighting the consumption patterns and possibilities of low-income households in Germany. Besides the focus on inequality, our motivation is to provide insights from a participation perspective. In the research process leading to the completion of the Third Socioeconomic Report for Germany (soeb3), the immense importance of participation as the main valuation criterion of socioeconomic development has been agreed upon. Following this notion and thus perceiving consumption as an outcome particularly related to participation we are going to discuss the relevant implications for low-income households. As Becker (2015) noticed, direct statements pertaining to social and cultural participation and need satisfaction of lower welfare strata can rather be derived from analyses of income use than from the income situation per se. Moreover, we are attempting to narrow the gap between quantitative, economic and macro-centered view and qualitative, sociologist and micro-centered perspective. To this end, we will narrative-ly connect these spheres and propose possible simulation possibilities, in which micro-level reasoning could be used for microfoundation of subsequent changes in the results. Finally, we see this task as an opportunity for using more recent data in the modelling context and confronting them with qualitative insights.

Our research is connected to recent findings concerning the material situation and welfare of low-income households in Germany, especially to those analyzing the effects of social reforms in Germany summarized under the tag “Agenda 2010” and the impact of financial and economic crisis culminating in the deep temporary recession of 2009. Agenda 2010 was a set of reforms implemented between 2003 and 2005 concerning the labor market, social security and tax policies. A part of these reforms called “Hartz IV” entailed a considerable change of unemployment benefits. While the reforms may have contributed to increased employment and diminished unemployment in the following years, the situation of low-income households appears to have worsened, as shown by Becker (2015). She analyzed the consequences for the social participation of three types of households (singles, single parents with one child and pairs with one child) receiving social welfare before and after Hartz IV. Becker’s study corroborates similar conclusions presented also in Becker & Schüssler (2014) and Christoph, Pauser

& Wiemes (2014), while at the same time it contends the results contained in Goecke & Niehues (2014) indicating that the situation of the poorest households has improved. Purely quantitative literature analyzing the consequences of crisis for Germany's poor households is currently scarce, mainly due to yet insufficient availability of survey data. However, qualitative studies indicate severe social strains for poor households such as increased food poverty and insecurity (Pfeiffer, Ritter & Oestreicher 2015).

This paper is structured as follows. Section 2 is devoted to the methods and data used. Section 3 discusses the main findings with respect to current income situation and spending of poor households in Germany. The subsequent section 4 shows the results of model-based projections until 2030. Section 5 presents conclusions and offers some ideas for future simulations.

2. Research design

We analyze the current patterns of the consumption of the poor in Germany by using both qualitative and quantitative data. The quantitative data refer to household groups distinguished by size (one to five and more household members). Each household group is ranked by the average monthly net household income and split into five equal parts, i.e. income quintiles. We assume that for each household size the quintile with the lowest-ranked households in terms of income, i.e. the bottom quintile, can be described as poor. Doing this we are clearly aware that the analyzed quintiles cannot be directly compared with each other, as they are possibly located in different parts of the income distribution. Such comparisons would require appropriate weighing. Since we do not discuss income and consumption components based on equivalence scales, which are subject to controversy anyway (cf. Becker 2014), we do not attempt to make statements regarding the welfare positions of the bottom quintile households. Instead, we describe the differences between the structures and the relations to the average for each household size.

Using socioeconomic modeling, we also project the disaggregated household incomes and consumption expenditures until 2030, studying the likely effects on inequality as well as structural shifts within the total expenditures of the considered households. Concentrating on the most important expenditure categories (basic goods), we also calculate the future quantitative effects of rising prices.

In the following subsections, we first discuss the qualitative data as well as survey data used. Second, we briefly describe the modeling and, finally, discuss the scenario assumptions we use.

2.1 Qualitative data

In order to understand individual intentions of consumption decisions as well as coping strategies of the poor, we conduct qualitative secondary analyses. The underlying qualitative longitudinal study, a socioeconomically well-balanced sample of initially 106 welfare recipients as defined by Social Code II (Sozialgesetzbuch II) were repeatedly interviewed over a period of five years, using biographical in-depth interviews. The transcribed material consists of 453 qualitative interviews, of which 81 cases were interviewed over all four waves (*Table 1*). The initial study aimed to explore the patterns of poverty dynamics and their connections to institutional processes of poverty prevention, alleviation and reduction (for methodological details see Pfeiffer et al. 2011). The research started in January 2006 and concluded in January 2012. In order to analyze the transcribed material of the qualitative interviews, focusing on poverty consumption patterns and alimentary participation, we use Qualitative Content Analysis (Mayring 2000). Thereby we provide complementary analyses in order to substantiate quantitative findings.

The initial sample almost exclusively consists of households that receive public transfer income and therefore can be subsumed in the bottom quintile, referring to income distribution and expenditure components as described in section 2.2. The other waves also include employed interviewees (up to 30%) some of which do not receive public transfer income.

Table 1: Sample structure qualitative panel study poverty dynamics and labor market

		Wave 1		Wave 2		Wave 3		Wave 4	
		106	%	94	%	130	%	123	%
Age	under the age of 25	14	13,2	11	11,7	6	4,6	4	3,3
	25 to 49	54	50,9	55	58,5	66	50,8	73	59,3
	50 years or older	38	35,8	28	29,8	58	44,6	46	37,4
Gender	male	58	54,7	52	55,3	77	59,2	70	56,9
	female	48	45,3	42	44,7	53	40,8	53	43,1
School education	none	4	3,8	3	3,2	3	2,3	3	2,4
	low degree	31	29,2	28	29,8	38	29,2	35	28,5
	medium degree	43	40,6	36	38,3	52	40,0	50	40,7
	high degree	28	26,4	27	28,7	37	28,5	35	28,5
academic/professional degree	none	20	18,9	17	18,1	24	18,5	23	18,7
	medium degree	64	60,4	57	60,6	75	57,7	72	58,5
	high degree	22	20,8	20	21,3	31	23,8	28	22,8
Labor status	unemployed	42	39,6	38	40,4	40	30,8	39	31,7
	unemployed + earning extra money	11	10,4	8	8,5	12	9,2	5	4,1
	'One Euro' job	34	32,1	11	11,7	12	9,2	9	7,3
	job creation measure	6	5,7	5	5,3	2	1,5	1	0,8
	state aided occupation § 16e social code II	0	0,0	1	1,1	21	16,2	18	14,6
	employed	6	5,7	24	25,5	34	26,2	37	30,1
	self-employed	0	0,0	1	1,1	1	0,8	3	2,4
	mini-job	5	4,7	2	2,1	5	3,8	6	4,9
	in education	1	0,9	3	3,2	0	0,0	2	1,6
retired	1	0,9	1	1,1	3	2,3	3	2,4	
unemployment benefits	social code I	5	4,7	0	0,0	3	2,3	2	1,6
	social code II	85	80,2	59	62,8	59	45,4	49	39,8
	social code II add on	6	5,7	7	7,4	15	11,5	13	10,6
	social code XII	0	0,0	0	0,0	2	1,5	4	3,3
	none	10	9,4	28	29,8	51	39,2	55	44,7
personal life situation	single	38	35,8	29	30,9	38	29,2	44	35,8
	divorced/separated	19	17,9	17	18,1	26	20,0	18	14,6
	in partner relationship	19	17,9	20	21,3	34	26,2	36	29,3
	married	30	28,3	28	29,8	29	22,3	25	20,3
children	yes	65	61,3	57	60,6	83	63,8	68	55,3
	no	41	38,7	37	39,4	47	36,2	55	44,7
housing situation	alone	41	38,7	34	36,2	62	47,7	58	47,2
	single parent with child/children	19	17,9	15	16,0	20	15,4	18	14,6
	living with parents	3	2,8	3	3,2	5	3,8	6	4,9
	living with children	1	0,9	1	1,1	1	0,8	0	0,0
	living with partner and child/children	23	21,7	21	22,3	21	16,2	21	17,1
	living with partner	12	11,3	12	12,8	17	13,1	20	16,3
	homeless	2	1,9	1	1,1	0	0,0	0	0,0
	shared accommodation with others	5	4,7	7	7,4	4	3,1	0	0,0

Source: Qualitative panel study poverty dynamics and labor market 2006-2012.

2.2 Socioeconomic data: EVS

This paper is based on data from the German Household Survey (EVS 2008). Some tables were freely available and provided by the German Statistical Office. Others with additional and more detailed information were given by Irene Becker (within the soeb 3 project), who was granted access to an 80-percent sample of the survey and calculated the quintile values for all relevant income and consumption categories (for main features, caveats, results and conclusions, also applying here, see Becker 2014). For the purpose of this paper, we have slightly adjusted the quintile data to fit the officially published household averages, which does not change any qualitative properties of the results. More precisely, we used the percentage deviations for the (bottom) quintile of each household size from the average applying to income and expenditure components and calculated the relevant aggregates, for example calculating the gross household income, later used to determine disposable income, as a sum of labor income, self-employed income, transfer income and income from subletting. The same procedure was applied to the expenditures, which at the quintile level are only available to us for 11 categories given by the following table.

Table 2: Aggregate consumption categories from the EVS 2008

1.	Food, beverages and tobacco
2.	Clothing and footwear
3.	Housing (Rentals for housing, maintenance and repair of the dwelling, energy)
4.	Furnishings, household equipment and routine household maintenance
5.	Health
6.	Transport (purchase of vehicles, operation of personal transport equipment and transport services)
7.	Communication
8.	Recreation and culture
9.	Education
10.	Restaurant and hotels
11.	Miscellaneous goods and services

Source: EVS 2008

Above the quintile level, the survey data used in the modelling procedure is much more detailed containing various subcategories of expenditures for households disaggregated according to size (and the occupational status of the main income earner). Since these data cannot be classified as neither macro nor micro data, we considered them to be meso data, even though from the micro perspective the meso level might be primarily attributed to single households or firms.

2.3 Socioeconomic modeling: combining macro and meso data

Socioeconomic modeling combining the macroeconomic input-output model INFORGE with the household module DEMOS has already been described in Drosdowski et al. (2014), so

this subsection only offers a short description focusing on the additional (quintile) data used in this paper. INFORGE relies primarily on data constituting the German System of National Accounts (VGR). These data are fully integrated and serve as definitional frame of the model which is complemented by empirically estimated equations. With respect to consumption, the model contains expenditure data on 41 consumption purposes, which rely on but are not entirely compatible to survey data. The projected development of consumption purposes from INFORGE drives the consumption expenditures on EVS basis contained in DEMOS. The survey data consist of 58 expenditure categories for each combination of social group and household size defining a specific household type. These consumption expenditures change proportionally to the expenditures from the macro model but due to detailed structural information the change in the newly calculated aggregate structure differs from the INFORGE model and subsequently changes the aggregate structure in the macro model via an iterative feedback mechanism. Focusing on the quintiles, the results in the DEMOS module are obtained by aggregating incomes and consumption expenditures over the social groups, leading to results for five household groups differentiated by size. Then, the empirically determined deviations from the base year 2008 are used to obtain the results by quintiles for each household size.

The socioeconomic modelling offers a considerable variety of possibilities to calculate alternative projections of socioeconomic development to a baseline scenario. Typically, these alternative simulations contain exogenous changes in some of the model parameters such as interest rates, import prices or exchange rates. Sometimes, a more complex set of parameters of variables is being changed reflecting an alternative development storyline. Within scenario analysis, the results of alternative model runs are compared to the baseline, showing the effects of implemented changes that can reflect specific assumptions.

3. Consumption of the poor in Germany

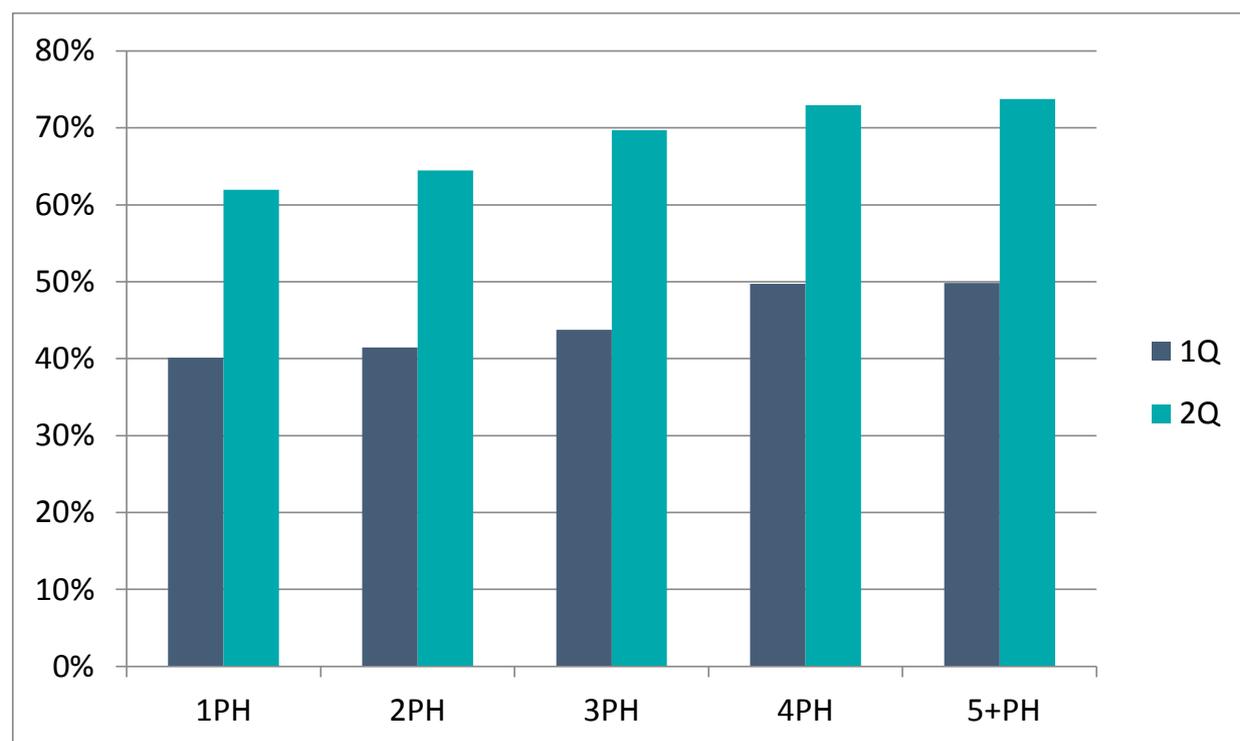
3.1 Macro/meso-level findings

In this section we describe the consumption of poor households in Germany based on recent data. In order to display the consumption possibilities and also to give some rationale concerning the characterization of households as poor ones, we start the analysis by discussing household incomes.

In 2008, the bottom quintile of the income distribution among households, measured by the net household income, had between 40 and 50 percent of the average disposable income at their disposal, depending on household size. This is shown by figure 1, which for comparison also displays the much higher shares pertaining to the second quintile of the income distribution in relation to group average. Hence, the material endowments and, ultimately, con-

sumption possibilities differ considerably between the social strata as given by income quintiles. The significantly low (average) incomes of the bottom quintiles in relation to the average incomes for all households belonging to each of five size categories allow us to characterize them as poor households¹, in full awareness of the fact that poverty is a multi-dimensional issue not only reflecting material resources.

Figure 1: Bottom-quintiles' shares of the average disposable income by household size (2008)



Source: EVS 2008, own calculations.

Although we ignore the absolute income differences between households of different size, *Figure 1* also shows that the relative positions of the bottom quintile(s) are clearly increasing with household size, i.e. increasing household size appears to have an equalizing effect on the incomes. The reasons are probably related to other sociodemographic characteristics of these households such as age structure, occupational status or existence of children.

In order to better understand these households we also take a look at the structural components of household incomes and the discrepancies between the absolute levels of these income parts. We start with the latter exercise, discussing the findings contained in *Table 3*. For each (relevant) income component we see the percentage deviation of the poor households from their reference group (all households of the same size) average.

¹ These relative differences are also significant if the highest incomes from the bottom quintiles are compared to the average incomes. According to data contained in Becker (2014) these incomes amount to 50 to 60 percent of the average incomes for a given household size.

Table 3: Percentage deviation in the income components of the poor households from the average for a given household size (2008)

income components	1PH	2PH	3PH	4PH	5+PH
labour income	11,8%	24,2%	29,2%	40,6%	35,5%
self-employed income	17,3%	22,4%	18,1%	36,5%	31,6%
property income	0,0%	10,3%	10,9%	20,3%	23,8%
public transfer income	86,9%	72,9%	114,6%	111,8%	120,3%
pensions	48,9%	48,7%	44,2%	52,2%	57,3%
"Hartz IV"	369,1%	446,5%	462,9%	467,0%	470,7%
child benefits	190,0%	224,8%	129,7%	108,5%	104,7%
non-public transfer income	39,6%	48,4%	63,8%	62,4%	38,4%

Source: EVS 2008, own calculations.

The data show that these households, especially single households, have significantly lower market incomes, which is the main reason for the overall inequalities in disposable incomes. The public transfers received by poor households are not sufficient to close this gap, although especially bigger households receive 12 to 20% more transfers than the respective group average. Among these transfers, pensions of the poor households are significantly lower (between 44 and 57%) than the average pensions, which is especially important for smaller households, with the highest shares of pensioners. Among other public transfers, the average level of the so-called "Arbeitslosengeld II" or "Hartz IV", which is essentially equal to social assistance accruing to poor households, is about four to five times as high as this kind of income received by households on the average. Moreover, child benefits levels are also higher in two- and three-person households, especially concerning single mothers with a child.²

Knowing the differences in the levels of single income components, it is interesting to learn, how important these components actually are for each analyzed type of household. *Table 4* displays the shares of gross household income for each type of bottom quintile household.³

² The level of these payments is also very high for single households, although it is not entirely clear, how to interpret this number that was expected to be zero. A clarification may be provided by the next table showing the relevance of these incomes for these households, which allows an interpretation as an anomaly.

³ We discuss the shares of gross income, since it does not contain negative components such as taxes and social security contributions and therefore they add up to 100 percent. In addition, low-income households are on the receiving end of redistribution and the differences between gross, net and disposable income are not significant.

Table 4: Gross income shares of income components of bottom-quintile households (2008)

income component	1PH	2PH	3PH	4PH	5+PH
labour income	17,0%	30,4%	49,4%	58,2%	44,1%
self-employed income	2,6%	3,3%	3,0%	6,7%	7,3%
property income	0,0%	3,1%	2,7%	4,6%	6,0%
public transfer income	73,2%	55,8%	38,7%	26,3%	40,4%
pensions	31,6%	30,1%	5,2%	1,3%	1,9%
"Hartz IV"	30,4%	13,8%	14,6%	7,6%	12,1%
child benefits	1,2%	3,8%	9,5%	11,3%	17,5%
non-public transfer income	7,0%	7,4%	6,2%	4,2%	2,3%

Source: EVS 2008, own calculations.

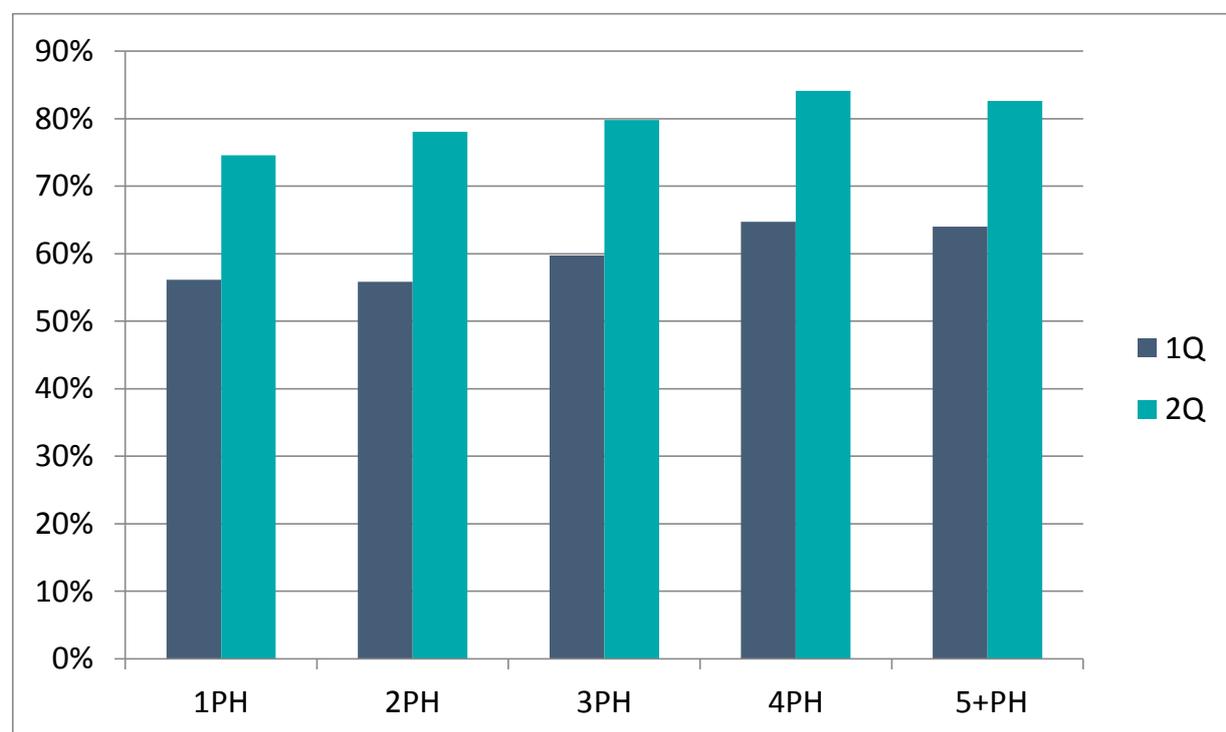
According to the table, nearly three quarters of the gross income of poor single households consist of public social transfers, divided mainly in pension income and Hartz IV. As wages and salaries are underrepresented with a share of only 17%, most of the poor single households are likely to be poor pensioners, unemployed persons and to a much lesser extent working persons. An additional source of income for these households are non-public transfer incomes consisting almost completely of support payments (donations, alimony payments, lottery payouts etc.) They are also important for the bottom-quintile two-person households that mainly rely on public transfers (56% of gross income). These transfers are mostly pensions, showing that these households are mostly constituted by elderly people.

The much lower share of Hartz IV transfers and simultaneously higher share of wage incomes indicate that the share of unemployed households is declining with household size and instead there are more working-poor households complementing their low wages with public transfers (so-called "Aufstocker"). The same seems to be true for three-person households, which, however, mainly include working households whose wages constitute almost exactly half of their income. Consequently, the relevance of pension incomes decreases (to 5%) and the predominant type of household is likely to be a family with one child, an assumption that can be supported by the relatively high share of child benefits.

Wages and salaries dominate even more markedly in families of four, with the lowest shares of transfers containing mostly child benefits. The importance of market incomes for these households is also seen in higher income shares attributed to self-employed and property income. Both income components have the highest shares overall in the income structure of households with five or more persons that rely to a lesser extent on wages and salaries and to a larger extent on transfers (especially child benefits) than three- and four-person households. The reason may be the highest share of self-employed persons in the household group with the most members per household, who, in the bottom quintile, may often be low-income agricultural self-employed.

With respect to private consumption, the shares of bottom-quintile expenditures in the group average expenditures are also generally increasing in household size (*Figure 2*), although the share of households with five or more members is slightly below the share of four-member households. The shares are between 56 and 65 percent, meaning that the inequality observed in the income context is slightly lower with respect to consumption. Still, the consumption possibilities of the poor households are much lower than for higher-income households.

Figure 2: Bottom-quintiles' shares of the average consumption expenditure by household size (2008)



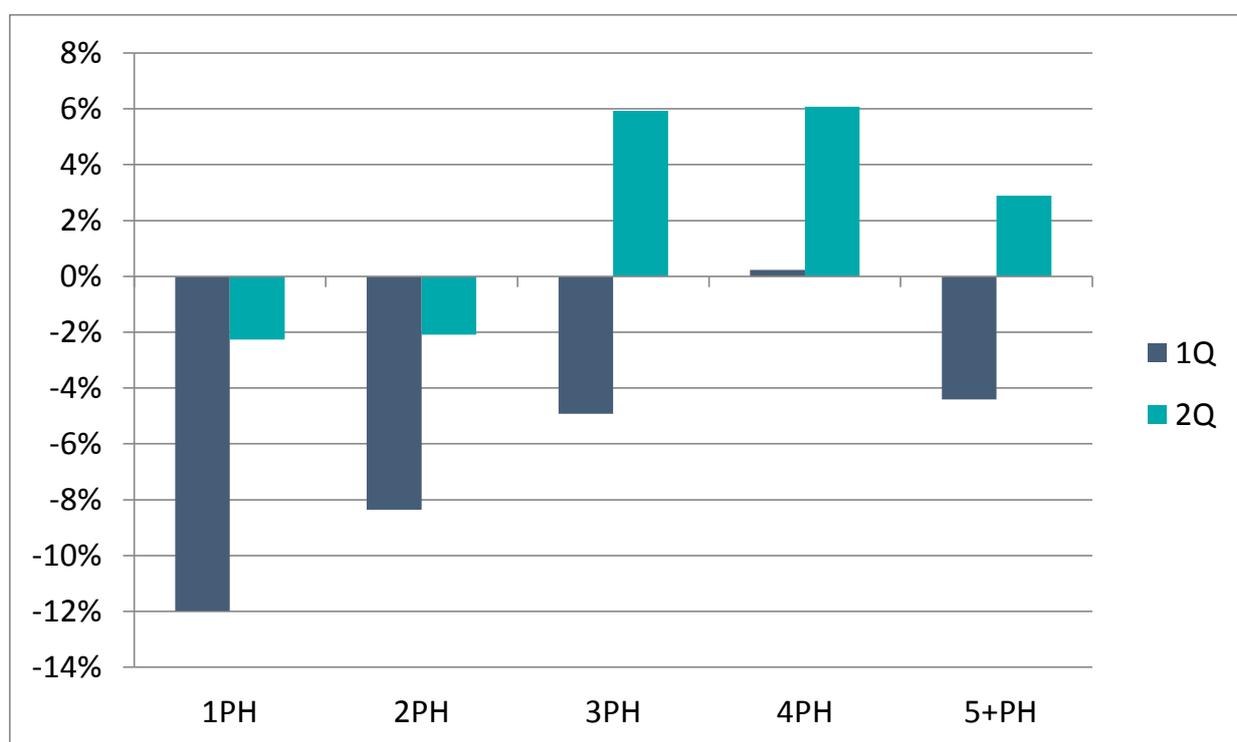
Source: EVS 2008, own calculations.

The relative equalization of consumption compared to disposable income (for a given household size) comes at a price which is dissaving. Poor households appear to be not only constrained in their saving behavior, but also forced to liquidate their accumulated wealth and get into debt.⁴ The latter is the case for most of the bottom-quintile households differentiated by size, as *Figure 3* shows. The negative savings rate, reflecting the gap between disposable income and expenditures (including “other” expenditures such as insurance payments or redemption and interest payments in addition to private consumption expenditures), many of

⁴ The liquidated wealth may be already, at least in small part, accounted for, since the difference between net income and disposable income is mainly constituted by revenues from household sales of such durables as used cars, furniture, clothes or self-produced items. However, this category does not include jewelry.

which may reflect basic needs, is particularly large for single households in the lowest income fifth of the distribution with some 12 percent of their disposable income. With increasing household size, the negative savings rates become smaller. Contrary to this pattern, four-person households display slightly positive savings rates (0.2%), due to a lower share of total private consumption in their disposable income, especially concerning expenditures for food and housing. The expenditure shares are lower, because four-person households represent the highest share of employee households (83%) and the lowest share of unemployed households (4%) among household groups differentiated by size.

Figure 3: Bottom-quintile saving rates by household size (2008)



Source: EVS 2008, own calculations.

To assess to what extent the negative savings rates are driven by necessity, it is instructive to compare the expenditure structure of the bottom-quintile households to the average. As a first step, we compare the deviations of the absolute expenditures by bottom-quintile households from the average for each household size (*Table 5*).

Table 5: Deviations of the absolute expenditures by bottom-quintile households from the average for each household size

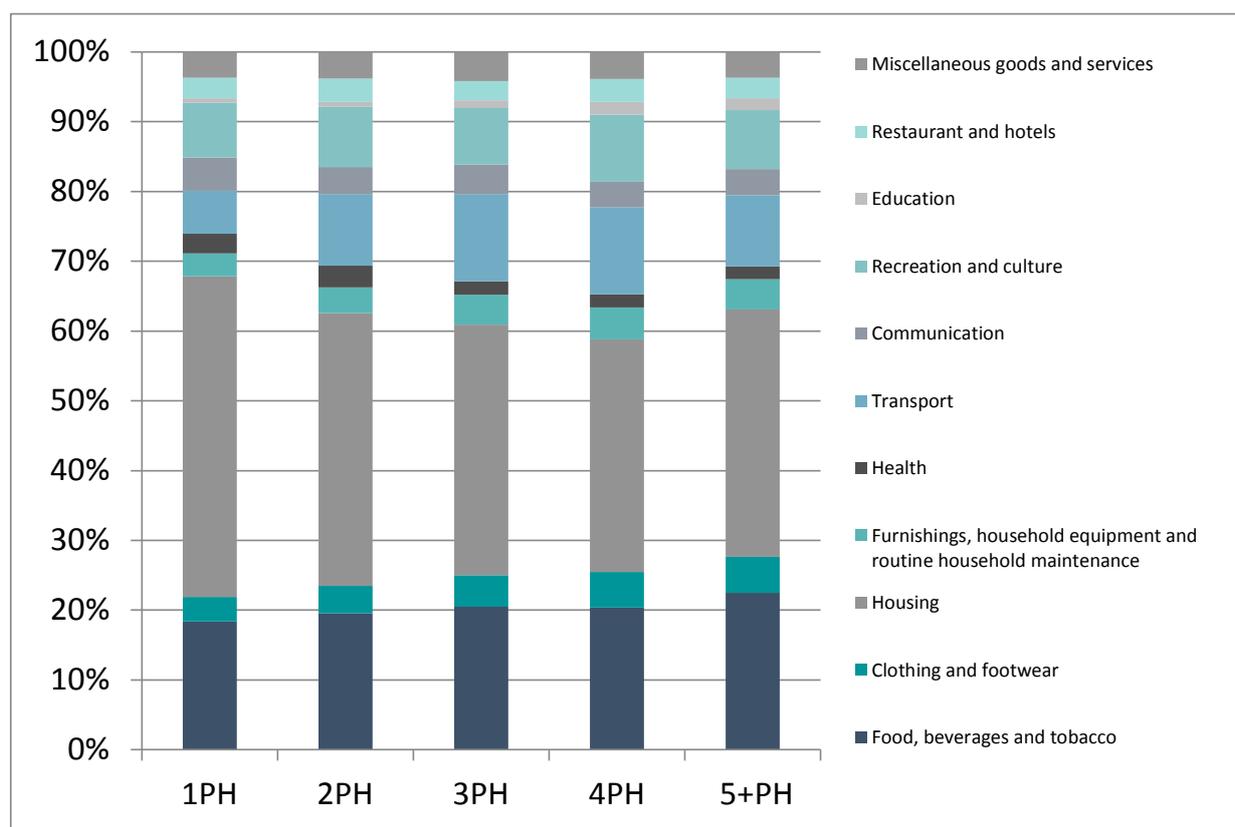
Expenditure category	1PH	2PH	3PH	4PH	5+PH
Food, beverages and tobacco	80,5%	78,1%	79,5%	84,3%	87,6%
Clothing and footwear	48,3%	49,1%	52,5%	59,2%	59,9%
Housing	68,7%	68,9%	71,0%	71,8%	74,2%
Furnishings, household equipment etc.	42,2%	39,4%	48,7%	56,9%	53,6%
Health	37,3%	34,2%	33,3%	39,4%	40,9%
Transport	28,4%	38,8%	45,1%	50,6%	42,0%
Communication	75,3%	81,9%	85,1%	89,2%	92,7%
Recreation and culture	39,0%	40,8%	45,8%	55,2%	48,1%
Education	86,6%	76,4%	52,9%	64,7%	54,1%
Restaurant and hotels	33,4%	33,6%	35,4%	45,3%	46,1%
Miscellaneous goods and services	45,9%	48,8%	55,6%	61,9%	63,6%
Basic consumption	65,9%	64,1%	67,5%	70,9%	73,2%
Socio-cultural participation	39,7%	43,1%	48,5%	55,6%	50,2%
Total private consumption expenditure	56,2%	55,8%	59,8%	64,7%	64,2%

Source: EVS 2008, own calculations.

Although in all categories expenditures of the poor are lower than the expenditures of the given average, the values contained in the table reveal considerable differences across the spending categories. Poor households' absolute food consumption spending is relatively close to the average, although the gap still amounts to 22 percent in two-person households. This prioritizing of food consumption reflects its basic importance for bottom-quintile households. Nevertheless, the necessary food consumption is likely to be limited in quantity and quality. The difference in spending on housing is also higher than the difference in total consumption, as shown in *Figure 2*. In addition, the spending gap is rather narrow with respect to communication. This is also the case for education, at least in case of small households, which contain the highest shares of student households. Conversely, there are significantly large deviations in expenditures for health, transport, recreation and culture as well as restaurant and hotels, which shows that socio-cultural participation of the poor is much lower than the participation of richer households. Following Becker (2015) and dividing the expenditures into basic consumption (food etc., clothing/footwear, housing, furnishings etc., health) and expenditure for socio-cultural participation (the rest), we can state that poor households are severely constrained especially with respect to the latter.

Additionally, the shares of the 11 categories of consumption expenditure, differentiated by household size, are given by *Figure 4*.

Figure 4: Consumption structure of the bottom quintile by household size (2008)



Source: EVS 2008, own calculations.

The expenditures for basic consumption goods, which include items from categories “food, beverages and tobacco”, “clothes” and “housing”, as well as “furnishings” and “health” amount to 74 percent for a poor single household. The largest part of these expenditures is devoted to “housing” (46%) and “food” (18%). Although the share of food expenditures is increasing with household size, the share of housing is decreasing, as the scale effects of joint dwelling and energy use by multiple household members come into effect.⁵ However, for households with five or more members the increase of these effects is no longer visible in the expenditure structure. The main reason may be the composition of the biggest households, with a lower share of employee households than in four-person households and the highest share of self-employed households, especially those employed in agriculture. Agricultural self-employed households belong to low-income households, so their consumption structure displays a higher share of basic goods.

The observed consumption structure of the poor households with 65 or more percent of total expenditure devoted to necessities clearly shows that these households are constrained in their social participation, as the remaining resources are evidently scarce. Among these remaining expenditures, transport expenditures are significant, taking 5 percent of the single

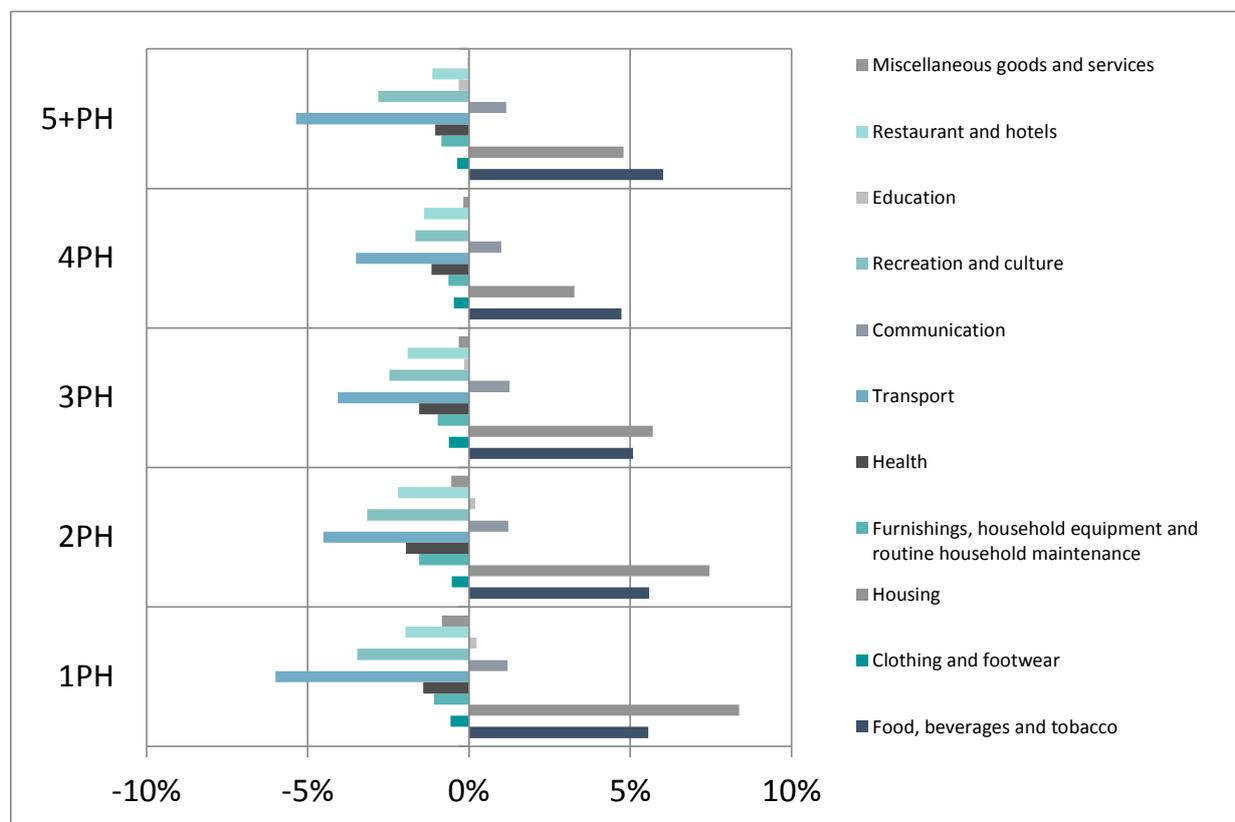
⁵ Discussing these effects does not take into account the differences between social practices in different types of households.

households' expenditures, increasing with household size up to 13 percent for three-person households and remaining at 10 percent for even larger households. This increase primarily reflects the changing needs of working-population members (plus their children) of larger households. The shares of expenditures for recreation are between 8 and 10 percent of total private consumption and the shares for communication are between 4 and 5 percent.

In comparison, the consumption structure of the average household (for a given size) is very different.

Figure 5 shows the percentage-point deviations of the bottom quintile from the average for a given household size. These deviations are particularly large considering the single households, as the lowest-income households devote 8 percent more of their total consumption to housing and 6 percent more to food. These differences decrease with household size (up to four-person households at least). The only other consumption category, in which the bottom-quintile households' share in total consumption positively differs from the average, consists of communication expenditures, although the difference is rather negligible, amounting to about 1 percent of total consumption for all cases. The above-average expenditures in this category may be due to fixed costs of telecommunication services including bundles of TV, internet and phone services. While low-income households spend more than other households on necessities, they are constrained in their consumption of non-basic material goods and services. Among those, transport expenditures, including car purchases, their maintenance and fuel for their operation, are 6 percentage points lower than the average in single households (declining with household size to a 4 percentage-point difference for four-person households). These differences in expenditure shares reflect at least the fact that a high percentage of poor households does not work, is less mobile and cannot afford maintaining cars or is forced to sell them. Other categories with significantly lower expenditures are recreation and culture (especially low shares are found in smaller households) as well as hotels and restaurants. The deficits in these categories show again clearly lower social participation levels.

Figure 5: Differences in consumption structure between the bottom quintile of income distribution and the average by household size (2008)



Source: EVS 2008, own calculations.

Concentrating on the income shares of the two largest spending categories for the bottom-quintile households – housing and food – the comparison with the average household for each household size shows that these shares are much higher than their total consumption shares, due to the fact that the savings rates are negative for most of the bottom-quintile households. In case of housing expenditures of the single households the bottom-quintile share of its disposable income amounts to 52 percent, which is 21 percentage points lower than the share of an average single household. Due to scale effects as well as decreasing negative savings both the share of this expenditure category and the difference with respect to the average household declines with increasing household size, reaching, respectively, 31 percent and 9 percentage points for the four-person households. Bottom-quintile households with five or more persons spend slightly more on items belonging to this category than the four-person households (33 percent of their disposable income), which is 11 percentage points lower than in case of the average household with as many members.

Conversely, the share of food in disposable income hardly varies across households of different size from the bottom quintile of income distribution, constituting around 20 percent of disposable income and being about 9 percentage points lower than the household average for each household size. The relatively stable difference in the shares reflects the fact that with

increasing household size the increasing consumption share of food is roughly compensated by less dissaving. Thus, with increasing household size, the poor households can afford relatively more consumption out of their own disposable income, whose food expenditure share is increasing.

3.2 Micro-level/qualitative findings

In order to found the analyses on consumption of poor households we follow up on findings presented in section 3.1 by relating them to qualitative results based on data analyses of the longitudinal study described in section 2.1. As described above, private households represented in the qualitative sample can for the most part be subsumed to the bottom quintile, referring to income distribution and expenditure components. To ensure comparability we furthermore decided to focus our analyses on cases, which can be definitely subsumed to the bottom quintile. Thereby we cannot systematically distinguish household size, nevertheless we can contribute implications of housing situations for consumption strategies.

Significantly low income rates (as shown in *Figure 1*) concerning especially people depending on public transfer income (as shown in *Table 4*) come along with certain restrictions on consumption. Our qualitative analyses show different coping strategies in order to deal with that problem. Whereas we later want to focus on expenditure strategies as well as saving rates and debts we first discuss the impact of poverty on expenditure deprivation that cannot be displayed by looking at consumption structures. Our empirical results show that private households within the bottom quintile of the average disposable income have to abandon consumption in different fields:

“Well I guess we saved money on clothes ... we had no more holidays, no more trips.”
B0031-C-TS4-F-450

“No holidays, no cinema, not anything new, you have to buy clothes sometimes, [...] So these are just things, we don't go to the cinema, we can't participate in any events, I can't just easily say that I, like back in the days, “I just drive to the city and take a break from everyday life, walk through the city and go to a café and maybe enjoy a cup of cappuccino”. That's not possible [...] or to go swimming, or sometimes to go to an amusement park or anything else, it is all canceled, if I only could afford one of these things once, then I wouldn't have anything to eat for a whole week.” A0016-E-TS2-F 98

“For example I don't own any winter shoes. I am not sure if this is considered poor, it is uncomfortable, it's bad, you slip with flat shoes, so I have to do something about this, but I don't consider myself poor. It is just outrageous that I don't have these things. And I don't know what I can do.” B0108-WG-TS2-F-263

These statements show that these people are very often forced to give up recreational and cultural activities such as vacation trips and visits to a cinema, in order to deal with restricted financial resources. Furthermore, there seems to be a reduced capacity to buy clothes

and footwear. Since these goods wear off over time, this can become a serious problem during long periods of unemployment – especially when households are depending on transfer income by “Arbeitslosengeld II” regulated by Social Code II. In order to deal with the situation, people often fall back on buying their clothes and furniture on flea markets, low-budget shops or in social warehouses. As the following statements show, there are ambivalent effects:

“My furniture, everything is old, everything is from the flea market, most of the time I buy my clothes, besides underwear of course, on the secondhand market, too.” C016-OG-TS-F-154

„But you also need clothes. And when these things come together, within a month, it’s getting really tight. And of course there are cheap jeans, but you notice that they are worn out on certain parts in about a year and back in the days a quality jeans held up to five years. And the products from China and mainly certain jeans-stuff from Turkey aren’t good any more. But there are Stores from the Caritas, sometimes there are quite neat things.” A-001-E-TS2-F-114

On the one hand, households within the bottom quintile are more likely to buy cheap furniture and cheap clothes, on the other hand this focus on prices often comes along with abandonment of quality. Over time, this can intensify a problematic financial situation, as product lifecycles of cheap goods often are short and therefore new expenditures have to be made more frequently. Besides quality, more expensive branded products often are very popular with children and peers. Not being able to afford brands therefore can cause problems within families, as shown in the next citation:

“With her it is extreme, at school the kids can’t afford branded clothing, it is just – people are making a problem out of it – It’s just the people, because if you can’t afford a t-shirt by Esprit, no T-shirt oh “Your son doesn’t wear Nike shoes? Oh my God” I went through this phase with my son, this phase of branded clothing he wants.” A011-ZM-TS-F-297

Within a society that is largely determined by consumption, status symbols like branded clothes represent social affiliation and therefore not being able to afford them can support social exclusion. Our empirical material provides further information about a very serious issue concerning the capability to pay for necessary household equipment:

“I only can do that, if I have work for so and so long or if I know, I can afford it and at the moment I can’t plan anything. You aren’t a complete human being at all, you cannot do that, if you, imagine if my wife’s washing machine broke down, I even couldn’t go to Saturn and buy a new one, you show your Hartz IV [registration form] and then they say: “Good-bye.”” B0045-WM-TS3-101

When people and households are dependent on welfare benefits, they often cannot afford the purchase of necessary durables such as a washing machine. In addition, paying by installments becomes more and more difficult for those households, as they often are not declared credit-worthy. At that point, our empirical findings not only support the quantitative results on the consumption structure (*Figure 5*) – regarding low shares of clothing and footwear, furnishing/household equipment as well as recreation and culture – but also describe reduced capacities for consumption as a severe restriction in social participation experienced on personal and household level. In general, our qualitative findings show the importance of consumption in order to fulfill basic needs as well as social participation. As shown in *Figure 4*, besides housing, the highest share (in relation to total consumption of the bottom quintile) is spent on food. Therefore we take a closer look at the function of food and nutrition not only as an essential need, associated with health issues, but also as a deeply social act. Our qualitative analyses provide evidence that people dependent on social welfare can experience food poverty and nutritional scarcity – at least on special occasions – and that expenditures on food have to be negotiated:

“Nevertheless, she [daughter] gets enough, I would rather suffer from hunger before leaving the kid with insufficient supply.” B0069-WG-TS-37

“...somehow, you have to nibble and scrimp, in order that food supply you need during the month is sufficient. It’s just, nothing is left. [...] For a family with kids it has become extremely bad [...] because you can’t afford anything at all. You can’t provide anything at all, besides food and drinks and clothing ... and a room where they can sleep and a bed, that’s all, anything else isn’t possible.” B0030-NK-TS-F-21

People very often claim the importance of caring for their children. In households with children, parents often try to improve or maintain social participation and physical well-being of their children by relinquishing their own consumption. Therefore – especially at the end of the month – food and nutrition poverty can become a real issue. By analyzing and contextualizing our in-depth interviews, we were able to identify several coping typologies describing how people deal with a restricted nutritional situation: ‘Against the odds’, ‘Children first’, ‘Abandonment of quality’, ‘Abandonment of quantity’, ‘Surfing the ‘ups and downs’, ‘Embracing nutrition for sense and structure’, ‘Enforcing networks’, ‘Risky food financing’ (Pfeiffer et al. 2014). While these coping typologies are dependent on entwined conditional factors such as the overall attitude towards food and eating, health awareness, eating patterns and others (Pfeiffer et al. 2014) and each of them can be described and determined in detail, we would like to focus on their commonalities. In order to contribute to the analyses of a disproportional consumption share on food within the bottom quintile, the existence of a variety of strategies to deal with a restricted nutritional situation itself is very important, since it provides circumstantial

evidence: Even though there is a consumption strategy that relies on high shares for nutrition, there still seems to be a problematic situation that can only be solved by developing additional strategies. With this point of reference we can reassign central elements of the coping strategies by pointing out their relevance for consumption patterns: we distinguish between saving strategies, adjustment strategies/abandonment strategies and skill-based strategies.

Saving strategies: In order to deal with nutritional poverty more and more people try to save money by using food banks. Our data show that using food banks for some people is still stigmatized but nevertheless becomes more and more important in order to maintain sufficient food supply. Whereas obtaining food in food banks is significantly cheaper than buying it in regular stores, there is no guarantee of choice or good quality. Furthermore, people cannot systematically count on food banks as they depend on donations.

Adjustment strategies/abandonment strategies: Adjustment strategies focus on the relation between prices on food, quality of food and disposable income. Our empirical results show that people dependent on 'Arbeitslosengeld II' experience a mismatch in this relation and therefore cannot provide adequate food supply. Depending on different attitudes towards nutrition and eating habits, people either purchase cheap food and abandon quality or they focus on quality and have to reduce the amount of food they can afford. While these strategies require strict planning during the month, they can also be combined when people try to simulate normality at least at the beginning of the month by choosing high quality food and reduce their consumption dramatically at the end of the month. Simulation of normality as a consumption pattern in this case refers to social participation, which can be maintained at least for some time. Concerning households with children, there is another strategy: As parents try to provide sufficient food with good quality for their children, they sometimes have to restrict their own eating habits and fall back on low quality food or have to consume less.

Skill-based strategies/social strategies: Our empirical data show that nutrition and consumption patterns are entwined with personal skills and abilities. Cooking skills can improve the capability to deal with reduced capacities to spend on food. Knowing about the quality of ingredients provides an advantage to purchase adequate products on the one hand, whereas on the other hand, it takes a lot more time to find these products at good prices e.g. by checking temporary offers. Cooking as well can take a lot of time, but particularly households with more than one person can benefit from cooking skills in order to provide adequate food at good prices since large quantities of food can be prepared at lower cost rates. Furthermore, social networks can be activated in order to eat with friends and family and, by that means, expenditure on food can be reduced as well.

These coping strategies and consumption patterns to deal with food scarcity imply a social component as eating in our culture is a deeply social act. Hence, the social function of eating has to be taken into consideration, particularly with respect to social integration. There-

fore it is important to take a closer look on the meaning of eating out. As *Figure 5* states, households within the bottom quintile of income, in relation to the average household, spend less money for restaurant visits. Our qualitative results on the other hand show that alimentary participation, which refers to the possibility of experiencing the social function of food, by eating out and/or together with others, is something from which poor people are significantly excluded. Whenever resources are available, there is a strong tendency to spend extra money for restaurant visits.

Finally, our qualitative findings confirm analyses of negative saving rates (see *Figure 3*) with emphasis on the importance of negative saving rates and debts in order to understand the range of consumption (patterns) of the poor. Negative saving rates – often leading to debts – can be described as a (risky) coping mechanism amongst others that helps people within the bottom quintile of income distribution to deal with essential needs (such as consumption of food/eating) as well as in maintaining social participation in other fields of consumption. People living under conditions of welfare as defined by Social Code II (Sozialgesetzbuch II) had to give up most of their personal savings in order to receive social benefit payments. Making debts then, for some people, often is the only way to maintain relevant consumption expenditures:

“We are totally deep in debt. [...] But they tell us that we have to get by with 300€. But from what we have to pay for electricity, insurance, [...] “Household-, Liability insurance” “Yeah, you have to add them.” What should I omit then? If I don’t pay the rent, I am sitting on the streets, if I don’t pay for electricity and gas, I don’t have anything left. What should I omit?”
A006-D-TS3-F-135

According to our qualitative analyses, the main motivation of poor people for making debts can be traced back to four reasons: expenditures for costs of living (e.g. food, clothing); specific household investments (e.g. new washing machine, new computer, repair costs); debts for investments (e.g. seed capital for self-employment) and debts in order to help others (e.g. children, other relatives). Besides making debts, poor people sometimes even become dependent on financial support by relatives, as the following statement shows:

“Well I will see, if I can grant myself something next month, but I made too much debts. I mean, my father paid for the washing machine that broke down and my father bought a new one, but if you think about it, if something breaks down or is ruined, the [employment] agency doesn’t pay. Therefore there is this “increased demand”, therefore they increased it, therefore there is the increased demand that you can put something aside each month, but from what should I put something aside?” B0022-WM-TS4-F-595

Saving opportunities do not really exist for people dependent on welfare benefits – at least not to a great extent – and therefore unexpected investment e.g. for household equip-

ment cannot be paid out-of-pocket, as our empirical results show. Debts then can be very helpful at the moment, but paying them back can become a difficult issue. The following statement shows the ambivalence of making debts:

"Well, it may be a little exaggerated to call it debts, a little bit came together, through different car bills, so the line of credit was exhausted, and then, at the end it was partially above the maximum limit, and as long as the bank accepted it, it was okay, but you want to get out voluntarily. In the end you pay the interest rate. It is good if you have someone for those emergency reserves. At the moment the car is broken, you need it every day, or the kid is sick, it needs to go to the hospital, cost factor gas, or you are sick yourself, medicine isn't that cheap, but where should I get the money from? It is not bad to be able to make some debts, but in general it is unpleasant to make use of it. But it isn't that bad to have something like that as a reserve. And first off you have to reduce it by the time, it doesn't work all at once." A024-OG-16e-TS-F-170

While being able to fall back on making debts in emergency situations can be a reassurance, they can become an additional burden when additional interests have to be paid and there is no saving capacity to amortize them. Households depending on public transfer income such as "Hartz IV" are affected worst by this situation. The following quote gives a retrospective perspective on this situation:

"Some debts came together, not very much but some – from the time when I received social benefits [by social code II], because under these circumstances everything does not really work. Something is wrong with the car or something else. That has been balanced out now, everything has become a little easier. That's for sure. One can participate in more activities or adapts a different lifestyle. I am not a demanding person on that matter. But everything that has to work just works. If some insurance premium becomes due then it can be paid for and when one needed two new tires it isn't a catastrophe. So, the things that go with a normal life have become significantly easier." B0012-WM-TS2-F-47

Debts that increased during unemployment could only be settled with labor income. Besides that, this person describes payments that go along with a normal life to be very difficult under financial circumstances of the public transfer income "Hartz IV". Therefore social participation at least seems to be restricted. This is a common perception, as we can see in the following statement:

"And like I said, I would like to improve the situation I am in for now, because of that 'Hartz IV', the debts ran up, too, you have to pay off those things, over years you haven't participated in certain things. Once again I would like to live a little bit, and I would like to get into it again. I cannot imagine to spend the rest of my live on such a minimum basis. Therefore I fight and do my very best to overcome this situation." B0105-WG-TS2-F-61

Our qualitative findings furthermore show the importance of debts that are not officially measured and therefore do not appear in many statistics. Very often people within the lowest income segment try to use small credits/micro credits of very low amount (up to 200–300 Euros). While these debts are not statistically represented, they are nevertheless very important – especially for poor people. On the one hand, they can be very helpful in order to deal with day-to-day problems, on the other hand even these small debts can become a big burden, if there are no saving capacities to pay them back. This becomes even more virulent taking into consideration that micro credits are often received in social networks by relatives and friends.

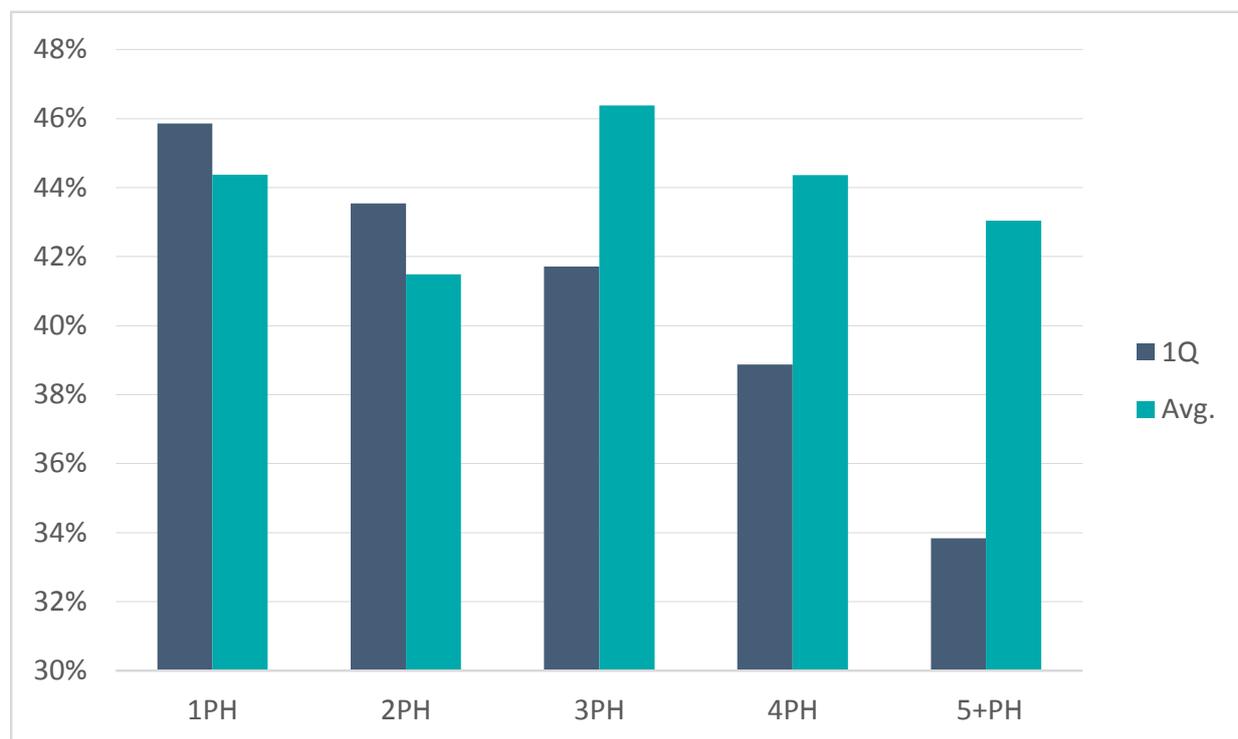
4. Projection until 2030

As explained in the methods section, the percentage deviations for the income and consumption components of all income distribution quintiles from their household-size average remain constant in the projected results (see e.g. the differences in consumption contained in *Table 2*), so that the projection results are entirely driven by the changes across household groups, and all discrepancies result from initial structural differences and from aggregation of single category/components. These deviations could be exogenously changed in additional simulations, though, reflecting potentially changing inequalities or serving as sensitivity analyses.

Because of the lack of (larger) structural shifts in the income and consumption patterns, the focus of this section is directed at percentage changes of the relevant components for the bottom quintile of the income distribution, which occur between the base year 2008 and the last year of the projection, i.e. 2030. As with the analysis of the current patterns, we start the discussion of the results with disposable income per household. *Figure 6* shows its growth between 2008 and 2030 for the bottom quintiles as well as the average households for each size.

The results indicate that disposable incomes grow unequally in the future, benefitting especially single households in the bottom quintile, as well as poor two-person households. In both cases, disposable income increases stronger than the average. However, with increasing household size, the relative gains decrease, and the distance to the average becomes larger. The main reasons for the differences in income gains can be attributed to the expected demographic as well as economic changes in Germany until 2030. The relatively large gains for the poor single households are a consequence of increased employment, which in turn significantly reduces the number of unemployed single households (from 11% in 2008 to 6% in 2030). Simultaneously, the number of retired households increases by 7 percent (from 37% to 44%) due to aging processes.

Figure 6: Disposable income change for the bottom quintile of income distribution and the average by household size (2008-2030, in %)

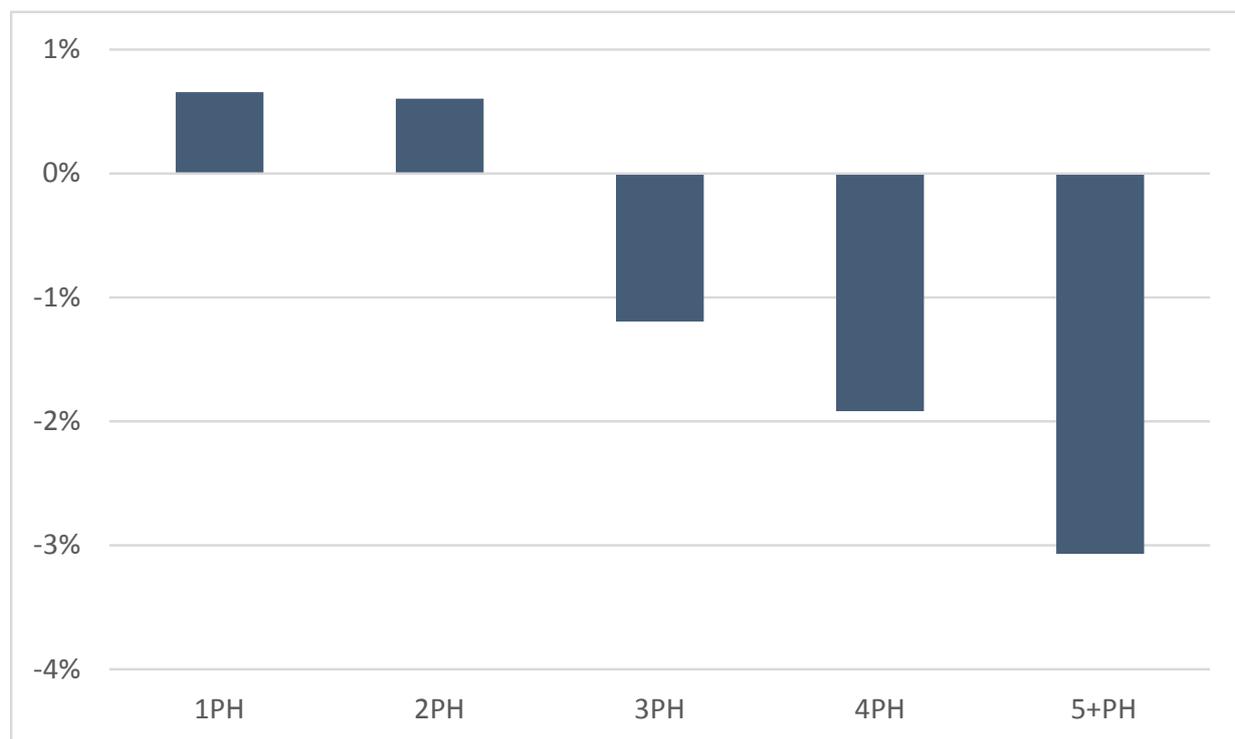


Source: EVS 2008, own calculations.

Since the unemployed are most likely to be in the bottom quintile and their number (and share) decreases, more pensioner households (with higher transfer incomes) are now included in the bottom quintile and the disposable income of the poor increases more than proportionally with respect to the average. A similar development can be observed for two-person households, dominated by pensioner households, whose share increases by 6 percent (from 42% to 48%), while the unemployed households become less prevalent (from 6% to 3%) and the share of employee households decreases as well (from 45% to 42%). These developments lead to more equality in disposable incomes across the quintiles pertaining to two-person households.

Considering the income gains in bigger households reveals their increased inequality. They consist mainly of employee households, whose share slightly increases in all households with three or more members due to rising employment and declining unemployment. With the increasing share of employee households, however, the inequality of remunerations across industries comes to light and so does the spread of disposable incomes between working poor in the bottom quintiles and well-paid employees in successful industries. *Figure 7* shows the change in the disposable income distribution as a percentage-point change in the deviations of the bottom-quintile incomes from the average (for each size).

Figure 7: Change in disposable income deviation of the bottom quintile of income distribution from the average by household size (2008-2030, in %-points)

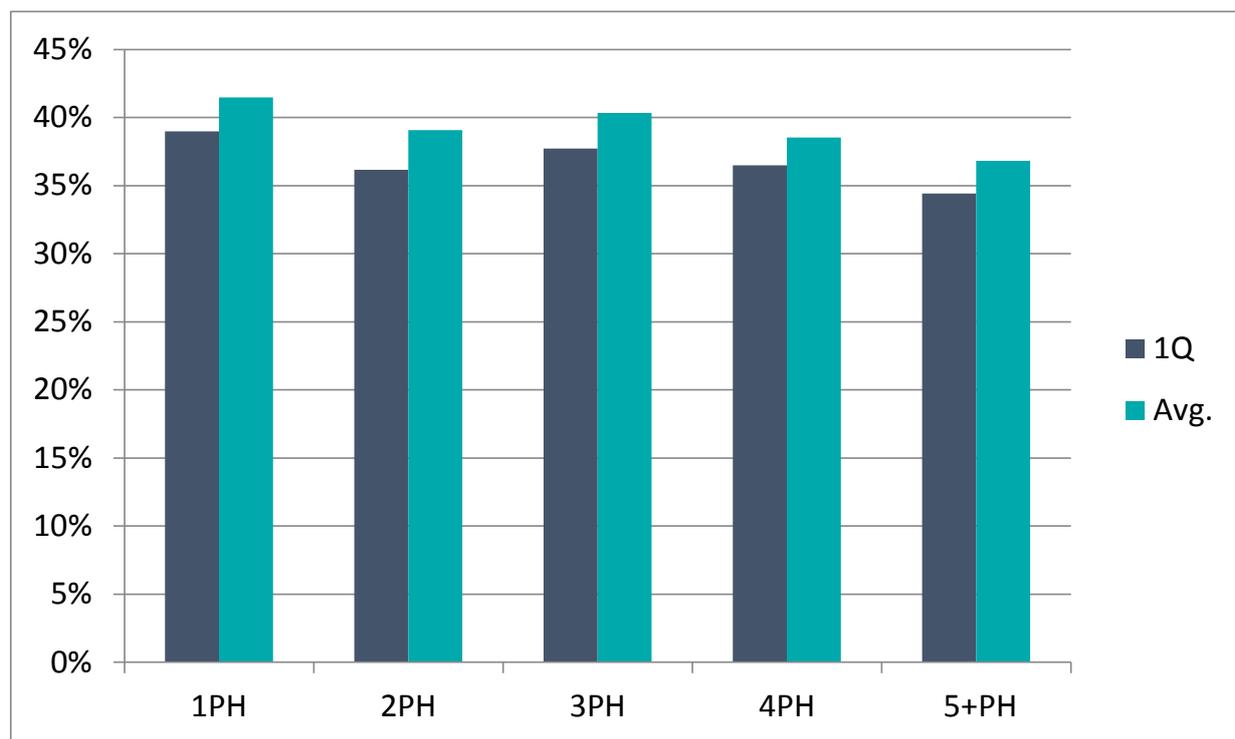


Source: EVS 2008, own calculations.

Contrary to the income growth, total private consumption expenditures of the bottom-quintile households grow slower than the average for all household sizes, as *Figure 8* indicates.

The patterns of total consumption changes of the average household in bigger households resemble the patterns of disposable income changes, and their growth rates of income surpass the growth rates of consumption. The latter also holds true for smaller households, while the gap between income and consumption increase is smaller with a significant increase of old-age persons, as these households do not save as much as younger households. For the bottom-quintile households there are some differences in behavior, as smaller households spend their additional incomes less in line with their income growth, while bigger households spending increases are closer to income increases. Hence, smaller poor households experiencing slightly above-average income growth appear to be able to constrain their spending, while bigger (working-poor) households get into debt even further. Accordingly, their (initially mostly negative) saving rates are declining even further, which is not the case for smaller households, although “other” expenditures (mainly insurance contributions bound by long-term contracts) significantly increase and together with private consumption expenditures still exceed disposable income.

Figure 8: Private consumption change for the bottom quintile of income distribution and the average by household size (2008-2030, in %)



Source: EVS 2008, own calculations

As *Table 6* indicates, there is a considerable variation of consumption growth across consumption categories, which, by modelling assumptions, is the same for all households of the same size. It is clear that the biggest increases pertain to health and education, both mainly with respect to single households which contain relatively large shares of pensioners and students. The smallest increases occur with respect to food, clothing and communication.

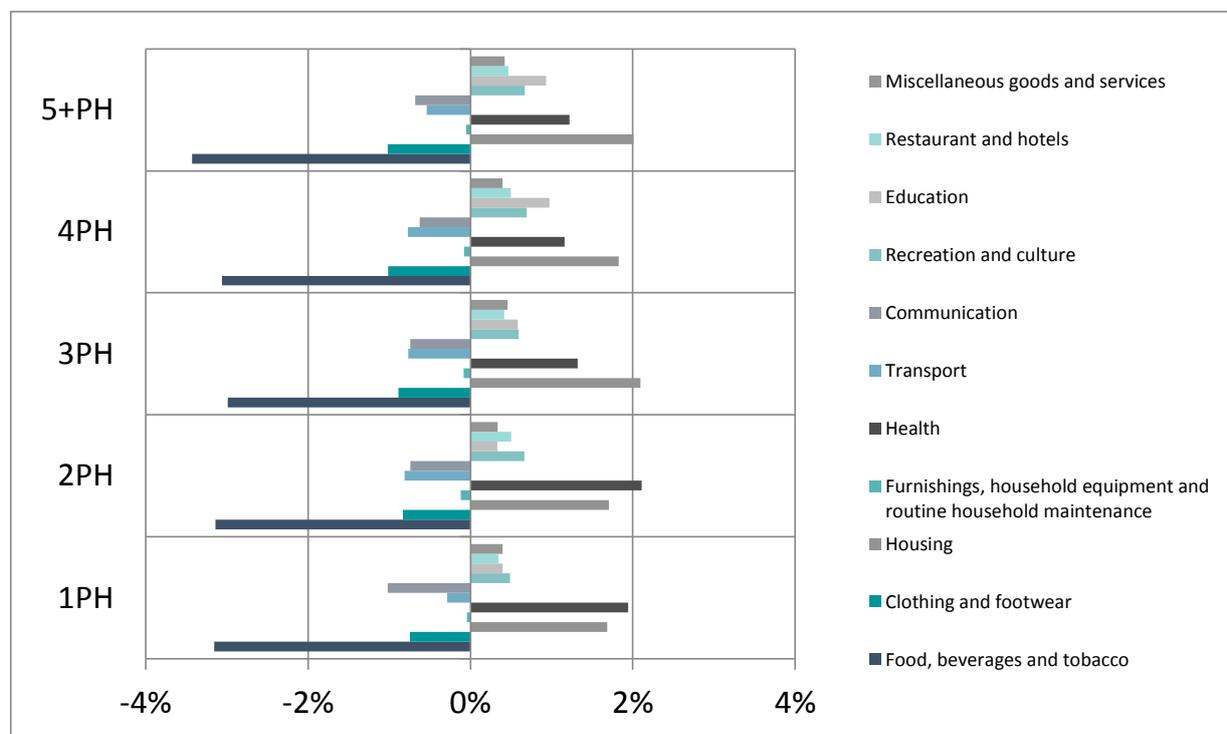
Although the changes of single consumption categories are the same for the bottom quintile and the remaining quintiles of households for a given household size, there are differences in the aggregates caused by differences in consumption structures. In *Table 6* these aggregates are displayed only for the bottom-quintile households. It is clear that their spending increases are bigger for the total of socio-cultural categories than for their total basic consumption. To fully grasp the structural changes in the consumption of the poor, the relative weights of the single categories have been taken into account, resulting in shifts displayed in *Figure 9*.

Table 6: Change of private consumption components by household size (2008-2030, in %)

Expenditure category	1PH	2PH	3PH	4PH	5+PH
Food, beverages and tobacco	15,2%	14,3%	17,6%	16,0%	13,9%
Clothing and footwear	9,6%	7,2%	10,7%	9,4%	8,0%
Housing	44,1%	42,1%	45,7%	44,0%	42,0%
Furnishings, household equipment etc.	37,0%	31,8%	35,1%	34,2%	32,8%
Health	135,0%	129,0%	131,3%	123,4%	123,7%
Transport	32,5%	25,4%	29,2%	28,1%	27,3%
Communication	9,0%	9,8%	13,7%	13,3%	9,9%
Recreation and culture	47,6%	46,7%	47,8%	46,4%	45,1%
Education	122,9%	99,4%	109,7%	109,8%	106,6%
Restaurant and hotels	55,5%	56,7%	58,3%	57,2%	56,1%
Miscellaneous goods and services	53,7%	48,0%	52,8%	50,3%	49,5%
Basic consumption	38,4%	35,6%	36,6%	34,0%	31,9%
Socio-cultural participation	40,7%	37,4%	40,0%	41,1%	40,0%
Total private consumption expenditure	39,0%	36,2%	37,7%	36,5%	34,4%

Source: EVS 2008, own calculations.

Figure 9: Change in the consumption structure of the bottom quintile by household size (2008-2030, in %-points)



Source: EVS 2008, own calculations.

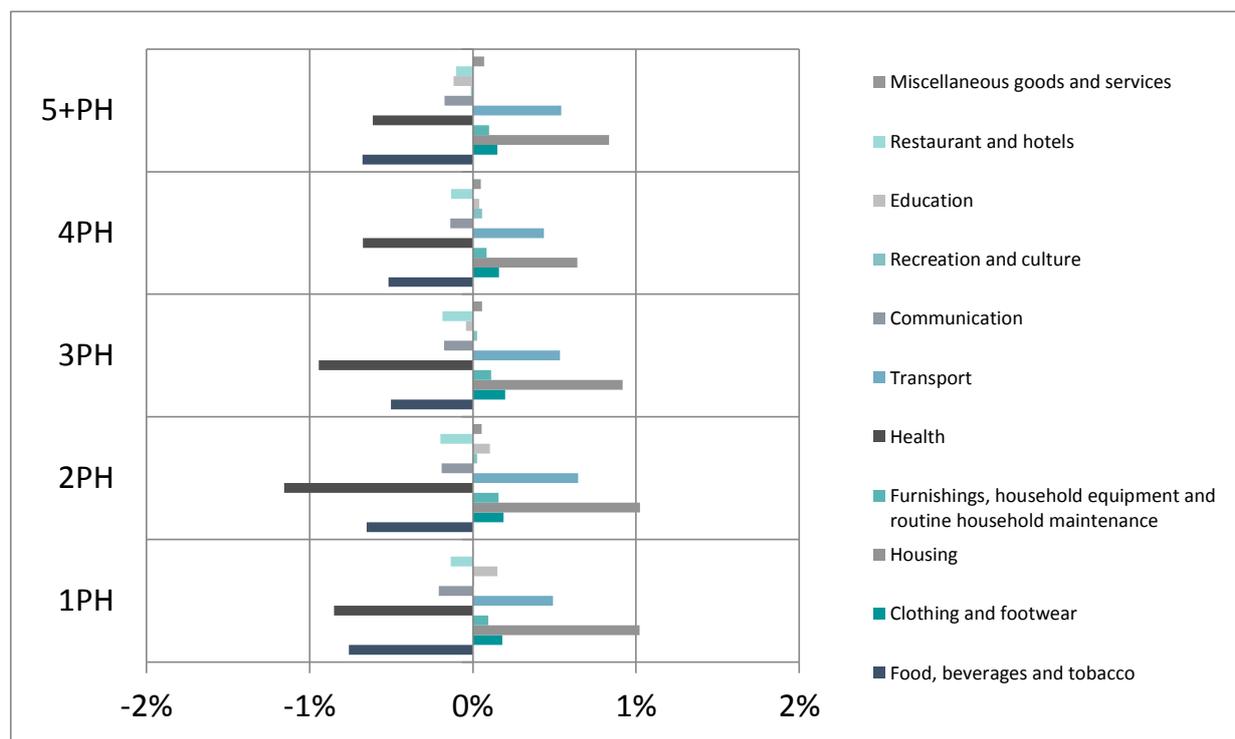
According to *Figure 9* the main changes in the consumption structure of bottom-quintile households pertain to three expenditure categories, i.e. “food, beverages and tobacco”, “health” and “housing”. The relatively high expenditure share increases in smaller households result from an increasing number of elderly people in these households that complement public health services with their own spending. Conversely, bigger households mainly increase their share of expenditures devoted to housing which mainly include energy consumption. These increasing shares are counterweighed by decreasing shares devoted to food. An optimistic interpretation of these shifts could imply that due to Engel’s Law poor households become richer (as seen by income increases) and shift their consumption away from necessities such as food towards more valuable consumption items.

However, there is a reason that allows us to doubt this interpretation, which is the micro findings and qualitative information discussed in section 3.2 that show that food poverty is a real issue, even in an affluent industrialized country such as Germany. Thus, it would rather be expected that increases of food expenditures of the poor are not as modest as to diminish their share in their consumption basket. Hence, these heavily indebted households may be constrained not only by lack of resources but also by necessary expenditures for energy and health, which prevent them from alimentary participation. A more radical conclusion could be that energy poverty leads to food poverty, since many poor households can hardly afford sufficient heating and lighting, even though much of these expenses is borne by the government.

Our interpretation might be corroborated by the comparison of the shifts in poor households’ expenditures with the structural changes within the average household’s consumption (*Figure 10*) that are conditional on the expenditure deviations contained in *Table 4*.

It is clear that the structural shift occurring in poor households’ consumption with regard to housing is larger than the average shift for a given household size, while food expenditures decline in their share even more. However, the biggest difference pertains to health expenditures whose share declines compared to the average household, although, as *Figure 9* shows, health expenditures gain importance in the consumption structure of the poor.

Figure 10: Change of the differences in consumption structure between the bottom quintile of income distribution and the average by household size (2008-2030, in %-points)



Source: EVS 2008, own calculations.

5. Conclusions and simulation possibilities

Currently, poor households in Germany are significantly constrained in their consumption possibilities. In order to meet even basic needs, they are forced to dissave by liquidating wealth and getting into debt. As necessities dominate their expenditure structure (food, clothing, housing, health), they underlie severe limits as to socio-cultural participation (recreation and culture, going out with friends, health expenditures etc.). In the future we do not expect significant improvements despite economic growth, even though, according to projections, smaller households will slightly reduce the income gap to the average, while income inequality in larger households will slightly increase. In addition, total consumption of bottom-quintile households will become slightly more unequal, reflecting the initial expenditure compositions of expenditures. The saving rates of the bottom quintile households will further decrease in bigger households and become slightly less negative in smaller households due to divergent income and consumption developments as well as rising “other” expenditures. Regarding the poor households, their total expenditure shares devoted to housing and health will increase, while the share for food will decrease.

These results, however, should be interpreted carefully, especially concerning the accuracy of the numbers, for at least two reasons. First, they are strongly dependent on the initial distribution of income and consumption categories, which does not change in the projection.

The main driver of future results is the development of household averages with respect to size, which results from a more complex modelling involving more differentiated household types. Hence, the obtained results for the bottom quintile do not display as large a variation as the changes reported by Becker (2015) for poor households between 2003 and 2008. It is still possible, however, that new data from EVS 2013 could help update the results and allow making better assumptions for future projections. The second reason is our focus on nominal outcomes, which, given appropriate price indices, could change the results considerably.

As the basic projections mainly reflect past distributions, additional insights can be obtained by using the simulation properties of socioeconomic modelling. Applying scenario analysis, exogenously changing one or more model parameters/variables in an alternative simulation and comparing projected baseline developments with alternative developments, can be an instrument bridging the gap between micro and macro observations. Possible simulations involve for example changing prices for expenditure items (food, beverages and tobacco or energy), shifts in distribution of expenditures across income quintiles or changes in income flows accruing to private households.

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