

## An integrated view on trends in basic consumption and income inequality in Europe

It is well-known that income of individuals and households varies over their lifespan and that governmental and private transfers cushion periods of lower income to allow for consumption smoothing. Thus, solely looking at income inequality can lead astray in investigating social inequality and in inferring welfare consequences. A central question is if consumption inequality has followed patterns of income inequality over the last decades. Reflecting the availability of suitable data most studies pertain to the USA. In Europe, similar studies are only available for countries with long household panels, such as the UK, Germany or Spain. Furthermore, existing work is concentrated on the period before the financial crisis of 2007/2008.

Thus, we will explore the following research questions: To what extent do patterns of basic consumption inequality resemble patterns of income inequality in Europe 1995-2016? How much heterogeneity can be found between countries? Over time, is there a convergence or a divergence for basic consumption inequality across countries and how does this differ from income inequality trends? How does basic consumption inequality evolve over the life cycle?

We use data from the European Survey of Income and Living Conditions (SILC, 2004 to date) and its forerunner the European Community Household Panel (ECHP, 1994-2001). More specifically, we will use a question on subjective basic household needs (self-reported very lowest net monthly income that a household would have to have to make ends meet - in relation to the present circumstances of the household) to approximate basic household consumption. Although this question was intended to capture the economic deprivation of European household we show that it can readily be used to study various components of household consumption. The interview instructions of this question make this more visible as they explicitly refer to expenses: "Thinking of the household's basic needs, according to its size (including housing related debts but excluding business and farm work costs) what is the very minimum amount of money the household needs every month to pay its usual expenses?"

For our analysis, we stack all cross-sections from both datasets. As the number of countries for which data is available varies over time, we define two different estimation samples. The long sample comprises 10 European countries (AT, BE, DK, ES, FR, GR, IE, IT, NL, PT) and provides us with a continuous time series from 94/95 to 2014/15. The short sample also includes Eastern European countries and covers the period between 2004 to 2015 (AT, BE, FR, IE, LU, NL, DK, FI, IS, NO, SE, CY, ES, GR, IT, PT, CZ, EE, HU, LT, LV, PL, SI, SK, UK). Households are the unit of observation. Finally, we exclude all observations where the person responsible for accommodation is younger than 25 years.

To assess data quality, we follow a similar approach as Jappelli and Pistaferri (2010) and compare our survey data to national accounts on aggregate consumer expenditures. COICOP components which reflect usual household expenses very closely track the development of the respective SILC question. In addition to Jappelli and Pistaferri (2010) we also investigate first differences of both time series to rule out a spurious correlation over time which again reveals a close co-movement. We therefore argue that this variable is a suitable proxy to study the development of a large share of household consumption.

To describe trends in inequality, we calculate percentile ratios similar as in Aguiar (2015). Households in the bottom and top 5% are excluded from our analysis. Our two income variables are the household sum of employee cash or near cash net earnings and the household's total disposable income after tax including social transfers and old-age pensions. Income, earnings and basic consumption are adjusted for household size (using the modified OECD scale).

To analyze inequality over the life cycle we mainly follow the procedures in Heathcote (2010) and Fuchs (2010) and simply report age-inequality effects under two different assumptions. One Model controls for calendar effects whereas the second model controls for cohort effects.

For the long sample (1994-2014), we observe that total income inequality and consumption inequality remained relatively stable in most European countries. In terms of the magnitude of basic consumption inequality, countries are more similar as compared to income inequality. For the Southern European countries (PT, ES, GR), basic consumption inequality slightly decreases over time converging to the inequality levels of the other countries in the long sample. This convergence is not visible for total household income inequality.

For the short (but larger) sample comprising 25 countries from 2005-2014, results vary between five groups of welfare states. In the UK (liberal welfare regime), we observe a parallel decrease in consumption and income inequality. Countries in the Mediterranean and Eastern European welfare regime display stable low levels of basic consumption inequality but at the same time also stable high levels of total income inequality. In Scandinavian welfare states, we find stable low levels of both income and basic consumption inequality whereas conservative welfare states exhibit stable yet slightly more unequal income and basic consumption distributions. We supplement the analysis of our metric consumption inequality indicator by comparing affordability of five durables usually used for measuring material deprivation in Europe between the top and bottom household income quintiles. This descriptive analysis reveals that on the one hand there has been a substantial catch-up of low incomes for all items since 2005. On the other hand, we also see this process has slowed down for some items (PC, car) since the financial crisis of 2007/2008. Among the five different welfare state regimes in Europe, the affordability gap is highest in Eastern Europe.