

Wealth as an Increasing Source of Inequality and Distortion in Income Groups

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Introduction

Among the means of distinguishing between social classes, wealth is gaining an increasing importance (Skopek et al. 2011, Pfeffer & Hällsten 2012, Kuypers & Marx 2016). While other socioeconomic factors such as occupations and income are less pronounced in the middle the class (notably the intermediate MC, those near the median, and the upper MC, near to the top decile), the gap between wealth haves and wealth have nots (Bell 1973) is on the rise. The aim of this paper is to describe and develop tools to understand better how socioeconomic inequality is affected by the transformation of wealth distributions respective to income; we show how private ownership objectively changes inequality within homogeneous socioeconomic groups and must be considered by social policies in order to improve public pension regimes and social protection.

Background

The middle class

Despite its theoretical importance, class is an ambiguous concept. Several competing sociological definitions (see Goldthorpe 2013, Grusky & Galescu 2005, Lockwood, 1995, Mau, 2015, Platt 2016, Wright 1997) exist: On the one hand, categorical class schemes tend to focus on fractures and divisions more than on gradual proximities. The Erikson-Goldthorpe-Portocarero (EGP) class scheme for instance divides lower and upper middle class, separates

lower middle class employees from the self-employed middle class but aggregates upper middle class with CEOs. On the other hand, quantitative approaches to middle classes are depending on arbitrary divides and thresholds (Piketty 2014, 252). No approach is wrong but none is sufficient as such. Only mapping helps to understand the different facets of this complex reality, as middle classes are embedded in a field of proximities, differentiations, distinctions and relations of power (Bourdieu 1979, Savage & Butler 1995, Savage et al. 2015).

Following Pressman (2007), Chauvel (2013) suggested examining the middle class based on income. According to this assessment, it is important to distinguish between the middle class around the median income and the upper middle class at the level of twice the median. In a low inequality society, these two categories are relatively close in terms of real economic resources, leading to a wide middle class. Stretching of the income distribution increases the gap between the groups and disintegrate the entire middle class.

In the context of the post-war Golden Age (U.S. / U.K.), Miracolo economico (Italy), Rekordåren (Sweden), Wirtschaftswunder (Germany) or Trente glorieuses (France), etc. the middle class became the center of centripetal forces where even the elites and the working class could cope with the interests of the middle class, notably because their children were to have their social destiny there. However, changes in both income and wealth inequality helped for the declining of the middle class (Chauvel 2006, but see Maurin and Goux 2013). As a result, the middle class are under threat in many countries.

In this paper, we aim to widen the scope of understanding middle class as income based category and by introducing wealth inequality as key component to middle class disintegration. Since wealth inequality has grown much rapidly during the last decades (Saez & Zucman 2016, Jones

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2015, Diaz-Gimenez, Quadrini, & Ríos-Rull 1997), we expect that its contribution to the shift between homogeneous middle class and a fractured society would be substantial.

Wealth and income inequality

Wealth and income distributions exemplify the deep trend of inequality in contemporary capitalism (Atkinson & Bourguignon 1995, Piketty 2014, Wolff 2016). Even if income is better known empirically than wealth, deep evidence of transformations can be acknowledged in the latter (Piketty 2014, Saez & Zucman 2016). These two parallel trends pertaining to the two resources (income and wealth) are not perfectly described (Jenkins 2009), whilst this could improve the diagnosis of the economic trends of our times in terms of shrinking middle class (Cowell & Kerm 2015, Semyonov & Lewin-Epstein 2013, Skopek 2015).

A general problem in the study of income and wealth distribution is the lack of inequality measure able to assess where the most important changes on the resource scale happened. Previous studies suggested analyzing detailed percentiles of income or wealth (Díaz-Giménez, Quadrini, & Ríos-Rull 1997, Wolff 1998) but the pertaining standard errors are either unknown or difficult to systematically asses. Hence, we propose here a new method that is suitable to measure the contribution of each part of the scale to the overall inequality. We implement it to income, wealth, and their relation. Hence, we propose here a new method that is suitable to measure the contribution of each part of the scale to the overall inequality. We implement it to income, wealth, and their relation.

Method

Due to the power tail characteristics of income and wealth distributions, a small fraction of the populations can control a considerable share of the resources. This extremely skewed structure of distribution has been first statistically descried by Pareto (Pareto 1897, p. 305-24, Pareto 1896, p.

99) density curves where, if p is the proportion of individuals below income i (or wealth w), we have [with modern notations] $\ln(i) = -\alpha \ln(1-p) + \text{cst}$ where α is a constant between 0 and 1. When p converges to 1, i increases following a power tail: the power of income i is a linear function of the logarithm of the small proportion q=p-1 of individuals with income above i. If the richer population q' above i is ten times smaller than q, they are above income $i' = (10^{\alpha}) i$. The accuracy of this formulation has been confirmed for the analysis of the general shape of the upper power tail in the size of cities, companies, financial markets, income, wealth, amongst other variables (Gabaix 1999, 2009; Chauvel 2016), but the Pareto laws often fail to represent the rest of the distribution. A more general problem in empirical cases is that even in the tail α is generally close but often significantly different to a constant, and the residual could contain important information, neglected by conventional tools. Thus, the shape of the distribution can change substantially over the income (or wealth) distribution. In earlier papers (Chauvel 2016, Chauvel & Bar-Haim 2016) we presented The Isograph (Chauvel & Bar-Haim, 2017) which is a useful tool to study patterns of distribution. The Isograph¹ describes inequalities in different income or wealth levels, thus providing the overall pattern of inequality together with levelspecific inequalities, serving as Meta-Gini [in the sense that if ISO is a constant, Gini = ISO]. The formal definition of Isograph is as follows:

$$ISO_{i} = \frac{\ln\left(\frac{income_{i}}{median(income)}\right)}{logit(p_{i})}$$

Where logit(p) = ln(p/(1-p)) and $p_i \in]0,1[$ is the fractional rank order of income or wealth quantiles. For individual i of *income_i*, the fractional rank is p_i . The value $X_i = logit(p_i)$, the "logit rank", varies from minus to plus infinite, with a value of 0 for the median. In a nutshell,

¹ Isograph is available as an ado module of Stata (ssc install isograph).

logit rank is particularly useful to standardize variables in comparative inequality contexts, and it is a strong tool for the exploration of income tails (see Table 1). This X = logit(p) allows the comparative analysis of country variation (e.g. comparing the bottom 5 % of country A to the bottom 5 % of country B).²



Table 1: Conversion between logit(rank) and percentiles

The log-medianized income of individual i is $Y_i = \ln\left(\frac{income_i}{median(income)}\right)$. Former analyses (Chauvel 2016) show that Y is a monotonous, generally close to a linear function of X with constant equal to zero: $Y \approx \alpha X$. When Y is a perfectly straight line, income is a Champernowne-Fisk distribution with Gini = α .

We define ISO = Y/X at each income level. We show (Chauvel 2016) that ISO provides the level of inequality for this quantile level X. The isograph depicts the ISO_i for all the ranks of the social order, in our case income quantiles. In the isograph, X is the horizontal axis and ISO=Y/X the vertical one: the isograph is higher at a given income percentile X when inequality increases at this level. The values of ISO are homogeneous to the Gini index of the distribution. When ISO is a constant, the value of ISO is the Gini index of the distribution (Dagum 1977, 2006).

² Logit rank procedure is implemented in Stata as a subroutine of the "abg" Stata module abg.ado (ssc install abg / help logitrank). Download available at https://ideas.repec.org/c/boc/bocode/s457936a.html

Data

In order to compare between European countries and the U.S. in terms of middle class composition, we employ two datasets. The first is the Household Finance and Consumption Survey (HFCS). The datasets collects information regarding wealth and income of households in 20 European countries. The data gathered between 2013 and 2014 and is based on interviews of about 84,000.

The second source of data is based on the "Survey of Consumer Finances" (SCF) of 2013. The data contain, among others, information regarding income and wealth of about 4500-6500 respondents. Due to its scheme of massive stratification, data contain a disproportionate sub-sample of wealthy households.

The sample was restricted to respondents of age between 25 to 75: the aim here is to limit the number of students and elderly people who can face strong variations in household composition.

Variables

Income – we regard income as the disposable income (after tax and transfers) per standard adult – square root of the size of the household. Compared to other sources such as LIS, Gini indices of income inequality are higher here not only because of better coverage of top incomes, but since social redistributions are underestimated in the SCF – but public and private pension incomes are well covered. Since we will focus in this paper on the population above the median, this potential problem of social redistribution is not really able to impact our results.

Wealth - The wealth variable is the current value of total marketable wealth and assets, net of debt (Kennickell 2000). We follow the same definitions than the recent Wolff (2016) paper, even if we do not disentangle here the different sources of wealth (housing, financial assets, etc.).

Results

We begin our analysis with a simple correlation of logit rank income and wealth (for households above the median income and wealth). Figure 1 presents the results as simple scatterplot for each country. It is clear that there is appositive and substantial correlation in each of the countries with the exception of Poland (R=0.06) and Slovenia (R=0.06). However, especially strong correlation was found in the U.S. (R=0.66) and in France (R=0.54). In these countries particular, but also in the other 16 countries, the tendency for households above the median, wealth generally increases rapidly with income. Therefore, association between high wealth and high incomes is highest among the upper middle class.

We now turn to the analysis of the Isographs, or the local inequalities above the median for income and wealth. Figure 2 presents the results for each country separately, where the X-axis represent two socio-economic scales that is measured by the logit rank of the medianized income and wealth respectively. The Y-axis represent the ISO or the log medianized income (dot) and wealth (flat line) over X. There is a very high similarity between the Isographs of income and wealth where only the Netherlands, Poland and Luxembourg present a substantial deviation between income and wealth. However, even where there are some deviations, the pattern of wealth and income inequality is almost identical: high inequality for the upper middle class, with much lower inequality for the very rich. This confirms that the association presented in Figure 1 is not a trivial consequence of inequality expansion, but means a stronger coherence of the diagonal at the top of income and wealth.



respectively)



Figure 2: ISOGRAPHs of income and wealth (above the median)

Discussion

In the context of "repatrimonialization" defined as a trend of increasing importance of wealth, detectable with the increasing wealth to income ratio. The aim of this paper is to describe and develop tools to understand better, how socioeconomic inequality is affected by the transformation of wealth distributions respective to income.

We show how private ownership objectively changes inequality within homogeneous socioeconomic groups and must be considered by social policies in order to improve public pension regimes and social protection. Wealth is closely related to income inequality, and they are both affecting the middle and upper middle class, making it more fragmented and less viable.

For public policies, the divide between the wealthy and the others in the intermediate and the upper middle classes could be a new problem. Our analysis, in addition to the documented increase in the national wealth to income ratio (Piketty 2014) means a huge, increasing distortion in the middle class with strong potential impact for public polices in terms of retirement, health and care for seniors. Between the haves and the have nots, the divide is not simply in the size of wealth as shock absorbers but as a substantial additional source of income and wellbeing (or its lack) in later life. For social policies, this reality is both significant and complicate since the redistributions between wealthier households and those with no wealth in the middle class will face strong opposition.

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