Multidimensional Affluence in Income and Wealth:
Theory and Applications to Germany and the US

Nico Pestel
IZA and University of Cologne

Andreas Peichl
IZA, University of Cologne, ISER and CESifo

The top of the income distribution has recently received increased attention in the literature on economic inequality. So far, this literature has only been concerned with a single dimension (either income or wealth) and has mainly focused on the shares of top fractiles. We argue that this approach should be extended for three reasons. First, neither a headcount ratio nor top shares are satisfying measures for (inequality of) economic well-being at the top because they do not account for changes in the composition or in the distribution among the top. Second, wellbeing is usually not perceived as a one-dimensional phenomenon and therefore the analysis should be extended to more dimensions, e.g. income and wealth. Third, analyzing top income and wealth shares separately does not reveal insights about their joint distribution.

We therefore propose a class of multidimensional affluence measures. Our approach is related to the work of Alkire and Foster (2011a), who extend the FGT poverty measures (Foster et al., 1984) to a multidimensional setting. We adopt an analogous approach and extend the one-dimensional affluence measures developed by Peichl et al. (2010). Central to this is a dual cutoff method that identifies those individuals considered to be multidimensionally affluent. Our measures do not only take into account the number of individuals' affluent dimensions, but are also sensitive to changes in achievements within each dimension. This allows to investigate inequality among "the rich" and to explicitly analyze the intensity of affluence.

We illustrate our approach using comparable micro data in order to analyze multidimensional affluence across countries (Germany and the US in 2007) and over time (the US from 1989 to 2007). Comparing these two countries is of special interest since they represent two distinct welfare state regimes and exhibit different trends in income inequality (Fuchs-Schündeln et al., 2010; Heathcote et al., 2010). Unfortunately, administrative data comprising information on both income and wealth is not available. Hence, we must rely on survey data for our empirical illustration. We extensively discuss issues arising from this and compare our results to findings from German tax return data.

Besides income, we consider wealth as an additional dimension in order to capture the breadth of affluence. This is important, since the rich are not a homogenous group, especially in terms of income and wealth composition (Atkinson, 2008; Waldenström, 2009). For instance, a differentiation can be made between the high-skilled "working rich" earning high salaries and the "coupon clippers" with large wealth holdings and capital income (Kopczuk and Saez, 2004). Wealth is typically more unequally distributed than income (Jenkins and Jäntti, 2005; Davies et al., 2009) and – although positively – not perfectly correlated with it (Kennickell, 2009). Therefore, analyzing the joint distribution reveals additional insights about the composition of the top of the distribution and allows us to quantify the contribution each dimension to multidimensional affluence. Our empirical analysis yields the following results. We find that the (rank) correlation between income and wealth is far from perfect in both countries and particularly weak in Germany. The ranking of the two countries in terms of affluence depends on the choice of multidimensional measure. When emphasizing large levels of income and/or wealth of a small group of individuals and hence inequality among the rich population, the US clearly is richer than Germany as income and wealth are much more concentrated at the very top. This type of affluence increased in the US between 1989 and 2007. In contrast, when putting more emphasis on the homogeneity of the rich population, it turns out that affluence is slightly larger in Germany. This level has remained almost constant in the US throughout a period of nearly two decades. Our findings confirm previous results highlighting the tremendous increases at the very top (Atkinson et al., 2011). Furthermore, we find that in Germany wealth predominantly contributes to intense affluence while income is more important in the US.