F. Farina (University of Siena) and C. Ricci (University of Rome-Sapienza)

Growth, polarization and the middle class in the European countries. An econometric investigation on the Lis database

Extended abstract

In the political economy literature, the main variable linking the growth rate to the income distribution consists in the functioning of the Welfare State, aiming to mitigate income disparities by pure transfers to the poor and the unemployed, and by providing insurance against the risk of microeconomic bad events (e.g., bad personal health). There are a number of econometric estimates on the growth rate in advanced countries after income redistribution stemming from these Welfare institutions.

In the literature (Alesina et, at., 2006, 2010, 2012), the income redistribution operated by the Welfare State is supposed to negatively impinge on the growth rate, but in turn the growth rate could influence the evolution of income dispersion across households. Furthermore, this problem is tightly linked to another problem plaguing the correlation between growth and income inequality. As suggested in the literature (Voichinsky, 2005), it is likely that each of the different sections of the income distribution – the top incomes, the middle incomes, the low incomes – entertain a specific correlation with the growth rate. Namely, there could be a positive relationship between the top incomes and the growth rate depending on the incentive effects of an increase in earnings on the propensity to invest and to risk, while at the bottom of income distribution there could be a negative relationship, depending on the negative impact on demand of the low-income and deprived people. This could impinge on the aggregate regression and jeopardize results of the econometric estimates. This invites pursuing the objective of more deeply investigating the growth-redistribution correlation, by focussing attention on the correlation between the income of the middle class and the growth rate. In fact, the political economy explanation of redistribution relies on the Median Voter Theorem (MVT), which takes the poorness of the median income voter relative to the mean income as responsible of the turn-out of the majority voting on the size of income redistribution (Croci Angelini and Farina, 2006; Mahler and Jesuit, 2008). Since the median voter's income is lower than the mean income, rational choice dictates the middle class voting in favour of redistribution. Hence, we may conduct panel model estimates in order to consider the influence of the middle incomes on the growth rate as directly conveyed by the functioning of the tax-and-transfers mechanism, which is supposed to reduce the Gini coefficient from the market income measure to the disposable income measure.

Of course, by pointing to the pivotal role of the middle class in the growth-redistribution correlation, the endogeneity question is bound to become even worse. Provided that there exist a positive correlation between the top-incomes and the growth rate of the economy, any rise in top-incomes means that the middle class gets

a smaller share of the income gains produced by economic growth, but this effect could be cancelled out by different variations across the countries in the pace of economic growth (Kenworthy, 2008). As firstly highlighted by Forbes (2000), in analysing this correlation in different countries and time periods, we may try to overcome this cross-country endogeneity problem by relying on a "difference in difference" regression model, so to investigate the short term impact of the functioning of the Welfare State *within* each country. The "difference in difference" approach is expected to mitigate the endogeneity problem prompted by the automatic stabilizers' reaction to the variation in the GDP growth as an effect of the redistributive Welfare State.

However, this paper attempts to more effectively get rid of the endogeneity problem, by proceeding in two steps. First, we use the Handcock-Morris methodology to separate out the "location effect", that is the change GDP in the period due to the increase or decrease in per capita income, from the overall measure of income inequality. Once the location effect is canceled out, the remaining value could reflect polarization, due to the down tail (the poor) and/or the up tail (the rich). This way, the correlation between redistribution (through the operation of the tax-and-transfer mechanism) as the dependent variable (market income Gini minus disposable income Gini: Gini FI – Gini DPI) and the variation in income inequality as measured by the median income / mean income ratio (as stated by the MVT) is emended from any possible feed back from growth rate to income inequality. This procedure allows us to investigate the recently put forward view whereby the middle class has shrunk in most advanced countries as part of the huge increase in the Gini coefficient of income inequality. The positive or negative value of the polarisation effect, that is the variation in each of the two tails of the kernel of income distribution (up-POL and down-POL), conveys the answer. To analyse whether the middle incomes has been deprived by the improvement of top incomes, which should be a predictor of a negative impact on future growth of the contribution to aggregate demand by the middle-incomes group, we estimate three regression models on the LIS database: (i) a regression of the indicator of income inequality according to the MVT (Ymedian/Ymean) on the measure of redistribution (Gini FI – Gini DPI); (ii) a regression considering as dependent variable the five-years subsequent growth rate and, as independent variables, the GDP at t-1and the indicator of redistribution (GiniFI-GiniDPI); (iii) a regression considering as dependent variable the five-years subsequent growth rate and, as independent variables, the GDP at t-1and the up-POL and the down-POL variables – where the growth of the period has been cancelled out by definition – controlling for endogeneity.

Provided that the first regression confirms the expected negative coefficient linking the MVT indicator for income inequality and the redistribution measure, the other two regressions will allow to understand whether, and to what extent, the growth rate is affected by the variation in overall income inequality or, alternatively, polarization indicates that the shift in the income level of the middle class explains most of the change in the growth rate of the economy.

The econometric estimates are conducted on household incomes for two groups of advanced countries as in the LIS waives for the last decades, depending on the LIS database conveying information on GDP net of taxes only for a subset of countries.