PSL Quarterly Review, vol. 69 n. 277 (June 2016), 173-197

The mobility of Italy's middle income group

CHIARA ASSUNTA RICCI*

For many years, distributional studies have focused mainly on the poor and/or on the rich, leaving out those who fall between the two extreme categories (Atkinson, Brandolini, 2013). Research on polarisation of incomes reverses this perspective, considering the middle-income group as a crucial element. Measures of polarisation capture not only the degree to which the income distribution spreads out from its centre (Foster, Wolfson, 1992), but also the formation of some earnings groups (poles) around local means (Esteban, Ray, 1994). The phenomenon of polarisation is often considered dangerous as it signals a reduction of social cohesion, which can lead to social conflict. Furthermore, it appears as very unpleasant because it is likely to trigger broader processes of segregation, which in turn implicate consequences that are not acceptable in terms of social justice (Franzini, 2010).

However, economic concerns about the 'malaise' of the middle-income group not only depend on the absolute level of its incomes and on the distance from other social groups. Vulnerability, defined as uncertainty and income volatility, can also play a crucial role. The link between the concepts of economic stability and security has been widely discussed by sociologists in the so-called social class analysis (Goldthorpe, McKnight, 2004) and has recently been considered by economists as well (López-Calva, Ortiz-Juarez, 2014; Krugman, 2014).

In Italy, the exploration of the income dynamics of the middle-income group is particularly relevant since the analysis of this dimension has helped to explain the gap between empirical evidence of stability in distributional indices and the worsening of confidence and expectations among Italian households in the 2000s, i.e. already before the financial crisis (Bagnasco, 2004; Boeri, Brandolini, 2004;

* Sapienza University of Rome; email: chiaraa.ricci@uniroma1.it.

Pisano, Tedeschi, 2007). The evaluation of income volatility appears even more interesting in the context of the economic crisis, which has led to a general impoverishment and an increasing polarisation in the distribution of income, given the fact that literature examining the consequences of the increasing distance between social groups on individual income dynamics is still lacking.

The aim of this paper is to extend the analysis of the middle-income group towards an inter-temporal framework by observing the mobility across different time periods of those belonging to the middle-income group. By using longitudinal data, we provide a picture of income dynamics for this group in Italy between 2002 and 2012. This will be done by exploring downward and upward mobility of the middle-income group and the relationship between changes in relative position and their determinants over time.

1. Theoretical framework

1.1. How to measure the middle-income group?

The bulk of economic literature considers middle-income groups strictly on the basis of relative definitions, through a specific stratum of the income distribution, without basing this identification on sound theoretical assumptions or agreed upon criteria on how to define these groups. According to Foster and Wolfson (Foster, Wolfson, 1992), most attempts at "measuring the middle" follow four distinct steps: (1) choosing the "space", (2) defining the middle, (3) fixing the range, and (4) aggregating the data. In general, the space chosen is the income space, where income can have different declinations (monthly salary, yearly expenditure, etc.), or the people space, i.e. considering income distribution centiles. Within this income-based framework, one approach establishes an interval defined by percentages of median household income. In this case, the identification of groups allows comparing the size and the income share of each group over time. However, the setting of the thresholds depends on arbitrary choices,

difficult to justify from a theoretical point of view. Similarly, the approach that identifies the middle-income group with members of some centiles range of the income distribution, such as, for example, the three middle quintiles, suffers from the strong limitation of considering the proportion of the population belonging to the middle groups as constant. Other economic definitions of the middle-income strata are based on absolute thresholds, but they seem more suitable for developing countries. The choice between these approaches depends on the purpose at hand, but the central question is how the analysis of the middle-income group depends on the way that group is defined. However, much of the evidence presented in these studies depends on the particular cut-offs selected.

Polarisation of incomes is a related phenomenon, which has been theoretically defined, conceptualised, and explored by a significant number of authors. It concerns the disappearance of the middle-income groups (e.g. Foster, Wolfson, 1992; Esteban, Ray, 1994; Duclos et al., 2004; Handcock, Morris, 1998, Handcock, Morris, 1999) and attempts to overcome the abovementioned problems by capturing the information contained in the distribution of incomes to unambiguously evaluate if the middle-income groups increase or decrease over time.

The systematic classification by Esteban, Ray, 2012, distinguishes between two different approaches to conceptualising and measuring polarisation. The first approach assumes that there may be an arbitrary number of groupings (or poles) in a distribution. It was proposed and fully axiomatised by Esteban, Ray, 1994, in the case of discrete distributions, and by Duclos et al., 2004, in the case of continuous distributions. The second approach considers polarisation as the process by which a distribution becomes 'bi-polar'. It measures the division of society into two groups, with the median value as a cut-off.

According to Esteban, Ray, 2012, these different views are based on similar patterns, whereby polarisation:

- depends on groups, so that it is not observable when there is one group only;
- increases when "within-group" inequality is reduced;
- increases when "across-group" inequality increases.

These claims highlight that the assumption of discontinuity between social categories is a crucial element. It assumes that there exists a number of clearly distinguishable social categories, whose members differ from the members of other categories (external heterogeneity) and are relatively similar to other members of the same category (internal homogeneity) over a number of socioeconomic indicators.

In particular, the theoretical analysis of Esteban, Ray, 1994, defines polarisation as the interaction between the identification and alienation that each individual feels with respect to the rest. The identity-alienation framework developed by these two authors points out that many individual attributes are relevant for creating differences and similarities between persons, coherently with sociological studies on social classes. Indeed, the existence of a high level of homogeneity within each group and a high level of heterogeneity between groups can generate social tensions, revolution and revolt, and social unrest in general. These studies aim to obtain a synthetic measure of polarisation and can be applied to identifying the relative position of middle groups and observing its changes over time. Indeed, as reported by Borraz et al., 2011, the main advantage of such an exercise is that the values of income boundaries are determined endogenously by the shape of the income distribution and the resulting groups are derived from theoretically defined concepts such as identification, alienation, and effective antagonisms. The chosen income thresholds are those that best distinguish the groups, to minimise internal differences within them while maximising differences between the various groups.

1.2. Mobility, vulnerability, and middle-income group dynamics

As discussed by Pisano, Tedeschi, 2007, the attempts to consider mobility from a normative point of view can be classified into two groups. Some studies see mobility as a measure of the degree of fluidity of a society. According to this view, mobility represents a value to be pursued per se. Others regard mobility as a fundamental

requirement for economic efficiency, since a mobile society rewards individuals' skills (rather than family origins) and guarantees equality of opportunities. Furthermore, it has to be noted that mobility affects the level of social wellbeing in a long-term perspective by reducing both inequality in the life cycle of individuals and the persistence of poverty (Friedman, 1962). However, a negative connotation of mobility is observed in cases when the instability of incomes translates into greater vulnerability and insecurity of income prospects, which undermine people's wellbeing and aspirations to the extent that individuals are risk averse. Hence, a final assessment of social mobility has to be determined by the aggregation of individual judgments. These judgements depend on, among other factors, the societal position of the individual, his or her ability to handle risk, especially in the case of imperfect markets, as well as on the presence and the degree of social protection offered by the welfare state (Pisano, Tedeschi, 2007).

The concept of vulnerability has been mainly explored in the context of research on poverty, shifting the focus of analysis from current income deprivation to insecurity and exposure to risk and shocks. Estimation methods consider 'poverty traps' and poverty dynamics, identifying groups who are vulnerable to economic exclusion in the sense of being distinctive in their risk of falling below a critical resources level, being exposed to life-style deprivation, and experiencing subjective economic stress.

Reversing the perspective that connects poverty to vulnerability, it is possible to state that a defining feature of middle-income groups status is a certain degree of economic stability and resilience to shocks (Ferreira et al., 2012). This point has been emphasised by Krugman, 2014, who considers economic security, defined as the ability to maintain an appropriate consumption profile and to face income fluctuations, to be a fundamental attribute of the "middle class", as identified through a specific stratum of the income distribution. Along the same lines, López-Calva and Ortiz-Juarez (2014) develop a definition of the middle class for some Latin American countries by fixing the lower income threshold where the associated probability of

falling into poverty over a five-year interval is equal to 10%. According to the authors, this value can be considered as the maximum level of insecurity for a household to be identified as middle class. This approach has been followed by a team of the Word Bank (Ferreira et al., 2012) in the World Bank flagship report "Economic Mobility and the Rise of the Latin American Middle Class", where they adopt a definition of middle class based on the notion of economic security validated by self-perceptions. This report focuses on the social transformations going on in Latin American middle class and is a fundamental reference to explore the relationship between mobility and class dynamics from an economic perspective.

On the basis on the same theoretical approach, Torche, López-Calva, 2013, examine the determinants of middle-class intra-generational mobility in Mexico and Chile during the 2000s. According to their study, economic and political development is closely dependent on the stability of the middle class. Yet, as pointed out by the authors, middle-class stability is not an uncontested advantage since it raises a normative question about which type of society is more desirable:

> "one in which there is substantial fluidity so that the opportunity to fall or climb in the socioeconomic ladder is evenly distributed and households 'take turns' in advantage and disadvantage (Hout, 2004) or one in which there is constancy over time?" (Torche, López-Calva, 2013, p. 410).

The answer is unambiguous when the question concerns poverty. It is less clear, however, when we consider middle-income groups, since it partly depends on the specific sources of stability and fluidity. However, in order to deal with this normative concern properly, questions on how to measure the middle-income group and the level and determinants of its stability and mobility should be first addressed.

1.3. Who are in the middle in Italy? From social class analysis to the analysis of income strata

The main contribution to the analysis of this topic in Italy comes from Sylos Labini, 1974; Sylos Labini, 1986, who defines the complex universe of the "middle classes" on the basis of the relation to the process of value formation and in terms of the origin of personal incomes. In his classification of classes, the middle class is identified with the petty bourgeoisie, who can be further classified into three categories: the relatively independent petty bourgeoisie (farmers and sharecroppers, artisans, shopkeepers and small business people and professionals), the salaried petty bourgeoisie (white collar workers and teachers, technicians etc.), and special categories (members of the clergy and the military).

Considering historical data over a wide time span, from 1881 to 1971, Sylos Labini's analysis shows an enormous expansion of the middle class (Sylos Labini, 1974), in particular in its components not directly involved in the production process. The author considers this change to be caused by three main phenomena: the bureaucratisation of many private enterprises that were absorbed by the public administration; the creation and expansion of several offices responsible for the distribution of public funds; the inclusion in the public sector bureaucracy of a large number of graduates.

Other authors (Trigilia, 1976; Paci, 1979) followed Sylos Labini in the difficult task of representing the Italian class structure paying attention to the evolution of the middle class. However, as reported by Sassoon, 1997, with the collapse of the two major Italian political parties (the Italian Communist Party, PCI, and the Christian Democracy, DC) between 1989 and 1993, class analysis lost its importance in the public and scientific debates. In the following years, empirical economic studies began analysing the distribution of personal or family income and/or consumption, mainly focusing on poverty (e.g. Brandolini, 2000; Addabbo, 2000).

The issue of defining and examining the middle class regained a prominent position in political and academic debates around 2004,

when it was said to be experiencing increasing malaise. As reported by Bagnasco, 2005, in this period, the main focus of public discussion was whether or not the middle class was becoming poorer. The question was given prominence by a series of reports published in the Italian newspaper *Corriere della Sera* (Di Vico, Fittipaldi, 2004; Boeri, Brandolini, 2004). According to Bagnasco, 2004, Bagnasco, 2008, this moment coincided with the end of the old social contracts. As was reported in the introduction to a special issue of *Il Mulino*,

> "[t]he social contract of post-war democracies, aimed at improving the standards of living and consumption prospects in search of a more equitable distribution of the fruits of economic development, is falling apart. The brunt of the cost has been borne above all by citizens who are neither too poor nor too rich, but are increasingly vulnerable – that part of the population which has experienced in the second half of the last century a growth in its consumption and a possibility to accumulate wealth" (cited by Boeri, Brandolini, 2004, p. 277).

In this perspective, therefore, it would be possible to explain the revival of academic interest towards the analysis of the whole distribution of income and the middle class, which has given rise to a new stream of literature that examines inequality and considers interventions in favour of redistribution. Thus, several recent empirical studies on the Italian economy do not investigate social classes on the basis of individuals' relation to the production process but instead consider income classes. In line with the most common approaches in economics, middle class is defined, though with some exceptions (Massari et al., 2009), as the middle income stratum defined by middle income deciles or a proportion of the median income (see, for example, Boeri, Brandolini, 2004; Atella, Rossi, 2004; Pisano, Tedeschi, 2007).

Nevertheless, different definitions lead to different results, and the supposed worsening in the position of the middle class needs further investigation. Furthermore, the effects of the economic recession of recent years on the middle stratum and the increasing social distance in Italian society (Carbone, Ceravolo, 2012) still require exploration.

The widespread occurrence of insecurity and impoverishment reinforces the necessity to apply a defining approach based on income distribution since occupational categories can reveal only some of the characteristics that might define a status group. Even though it is reasonable to wonder whether pure income characterisation of social classes is analytically satisfactory, it is worth noting that our applied approach allows the inclusion of multiple dimensions in the analysis, combining income-based aspects with the roles played by other individual attributes.

2. Data and methodology

We study the middle-income group and its mobility in Italy during the period 2002-2012 by using the cross section and the longitudinal components of the Survey on Households' Income and Wealth (SHIW) by the Bank of Italy.[1] We consider the sum of all cash incomes earned by the household, including compensation of employees, pensions and other social transfers, income from self-employment and entrepreneurial income and property income (income from financial assets, net of income taxes, social security contributions and imputed rents). Given the impossibility of knowing how income is divided between household members, family income rather than an individual measure is used. However, in line with the literature on income distribution, the unit of observation is the individual, and assuming an egalitarian intra-household distribution, the equivalent household income is attributed to each household member.[2]

All incomes are valued in 2012 euros using the price deflator of the final consumption expenditure of households. Furthermore, following

[1] Data are drawn from the historical archive of the survey (version 8.0, released in January 2014), which enhances comparisons over time.

[2] The equivalent household income is computed by applying the equivalence scale officially adopted in Italy. Such scale assigns weights equal to 1 to a 2-members household, and respectively 0.599, 1.335, 1.632, 1.905, 2.15 and 2.401 to households composed of 1, 3, 4, 5, 6 and 7 or more members.

the approach of Atkinson, Brandolini, 2013, to minimize the impact of outliers, all records with zero income are dropped, the bottom cut-off is 1% of the mean of equivalent disposable income while top cut-off is 10 times the median of unadjusted disposable income.

Our approach to investigate middle-groups mobility and the changes they experience over time is composed of two stages. The first stage identifies the low, middle, and high-income groups in every wave by applying the procedure suggested by Esteban et al., 2007, and describes the main characteristics of the middle-income group using the cross sectional sample. Then, in order to analyse income dynamics in an intra-generational context, we select observations for which data are available for at least two waves between 2002 and 2012, and we apply multinomial logit models on two different periods before and after the beginning of the economic crises. The data considered for the first period (2002-2006) consist of a pooling of the 2002-2004 and 2004-2006 data and, similarly, the data for the second period (2008-2012) are a pooling of 2008-2010 and 2010-2012 data.

The models are estimated to identify observable characteristics associated with movements in or out of the middle-income group. The procedures applied to do so are described in the following sections.

2.1 The Esteban et al., 2007, index to identify the middle-income group

According to the theoretical study by Esteban, Ray, 1994, a population of individuals may be grouped into "clusters" according to some vectors of characteristics, such that each cluster is very homogeneous in terms of the attributes of its members, but many dissimilarities are observable between different clusters. The feelings of identification and alienation are expressed through two different functions. The identification function indicates the attitude that any individual in a given group i has towards an individual in the same income group. It can be formally described as: $I: \mathbb{R}_+ \to \mathbb{R}_+$, with $I(\pi_i) > 0$ for every $\pi_i > 0$. I is a continuous and increasing function of the share of individuals π_i in the group i.

The alienation function is defined as $\mathbb{R}_+ \rightarrow \mathbb{R}_+$, continuous and non decreasing function with $a(0) = 0$. The sense of alienation that an individual y_i feels towards another individual, y_j, is defined as: $a[\delta(y_i, y_j)]$, where $\delta(y_i, y_j)$, indicates the absolute distance between the individuals with incomes y_i and y_j.

The polarisation measure aims to capture the "effective antagonism" that an individual with income y_i feels towards individual with income y_j. According to Esteban, Ray, 1994, the effective antagonism is the combined result of the alienation and the identification function.

Effective antagonism is expressed by $T(I, a)$, a strictly increasing function with $(I, a) > 0$ and it is assumed that $T(I, 0) = 0$, which indicates that the effect of an isolated individual is not to be considered relevant. So, the total polarisation is the sum of all the effective antagonisms amongst the individuals belonging to different groups:

$$P(\pi, y) = \sum_{i=1}^{n} \sum_{1}^{n} \pi_i \pi_j \, T\{I(\pi_i) a[\delta(y_i, y_i)]\} \qquad [1]$$

From the general form, Esteban, Ray, 1994, derive the index P^{ER}, which satisfies specific axioms and combines the sense of group identification (π_i^{α}) with the "between groups" alienation, expressed as the distance between the average income of each group ($|\mu_{i\_} - \mu_j|$). The product between the two indicates the effective antagonism felt by each individual of group i towards the individuals of group j. The extent to which identification affects the effective antagonism is expressed by the parameter α, which varies between 0 and 1.6. α indicates how much weight is assigned to the effect of within-group identification. When $\alpha = 0$, P^{ER} is equal to the Gini index.

But the index P^{ER} is based on a discrete, finite set of income groupings located in a continuous space of different income values. For this reason, Esteban et al., 2007, propose an extension of the original measure, which tries to overcome this problem by setting the "optimal" partition for a given number n of groups. Based on the assumption that an income distribution can be represented by a

density function f in a bounded interval, the function f can be represented with an "n-spike" distribution denoted ρ.

The difference between f and ρ is the error term $\varepsilon(f,\rho)$, the "measure of error" caused by the n-group representation. It can be defined as $G(f) - G(p^*)$ where $G(f)$ is the Gini index obtained from the actual density function and $G(p^*)$ is that deriving from optimally separating the population in defined n number of groups. Minimising the within-group dispersion using an iterative procedure, the new polarisation measure is obtainable in the following way:

$$P_\alpha^{EGR} = (f;\alpha,\beta) = P^{ER}(\alpha,\rho) - \beta\varepsilon(f,\rho) \quad [2]$$

$$P_\alpha^{EGR} = (f;\alpha,\beta) = \sum_{i=1}^{n}\sum_{j=1}^{n}\pi_i^{1+\alpha}\,\pi_j|\mu_{i\_} - \mu_j| - \beta\varepsilon(f,\rho) \quad [3]$$

$$P_\alpha^{EGR} = (f;\alpha,\beta) = \sum_{i=1}^{n}\sum_{j=1}^{n}\pi_i^{1+\alpha}\,\pi_j|\mu_{i\_} - \mu_j| - \beta G(f) - G(p^*) \quad [4]$$

As suggested by Borraz et al., 2011, this process has been applied to identify lower, middle, and upper income groups, fixing n = 3 and α = 1 to calculate the optimal income boundaries that separate each group from the others. The assumption of a fixed number of groups is not entirely satisfactory, as discussed by Esteban, Gradín, and Ray, 2007. However, three groups have been chosen to maximize the extended polarisation, considering more than two groups to identify who are the in the middle of the income distribution. Since the goal of our analysis is to capture the degree of polarisation, with α = 1 the number of groups greater than 2 that provide the sharpest view of polarisation is 3 (see table A1 in the Appendix).

2.2 Multinomial logit models

The discrete partition obtained with the procedure of Esteban et al., 2007, permits the application of different multinomial logit models to investigate the determinants of downward and upward mobility for individual members of the middle income groups at time *t*.

We run different models obtaining results for each type of transition, including socio-demographic characteristics (age cohort, sex, residential area, marital status, occupation, city size), variables

related to the main source of income, variables related to the composition of the household, and variables related to some main events experienced by individuals and households.

According to suggestions by many authors and drawing on the literature on poverty dynamics (Jenkins, 2000; Berthoud, Böheim, 1998; Jenkins, Schluter, 2003; Polin, Raitano, 2014), we identify some situations faced by households and we relate them to changes in their location across the income distribution. We draw on the idea that transitions out from the middle-income groups are associated with "trigger events" (Polin, Raitano, 2014) – e.g. changes in household members, changes in occupational status of the head of the household or changes in household composition – and these events have different impacts on the probability to move downwards or upwards from the middle-income groups.

3. Empirical results

3.1 Polarisation and the middle-income group

The first step to assessing the evolution of the middle-income group in the years from 2002 to 2012 is to calculate the Esteban, Gradín, and Ray (EGR) indices,[3] considering three groups. The resulting indices are reported in table 1, where different values of α imply different levels of identification. As explained in the previous section, greater values of α imply more emphasis on identification.

The indicators display the same trend during the whole period. Between 2002 and 2006, polarisation indices show a gradual decrease. Then, the period from 2006 to 2012 is characterised by a tendency towards an increasing polarisation, which implies a shirking of the middle-income group.

[3] Computed using the STATA module DASP (Distribution Analysis Stata Package). For clarity of exposition, we do not report standard errors, lower and upper bounds. Further results are available from the author upon request.

Table 1 – *EGR polarisation indices*

	2002	2004	2006	2008	2010	2012
$\alpha = 1$	0.0863	0.0883	0.0846	0.0869	0.0889	0.0895
$\alpha = 1.3$	0.0627	0.0645	0.0614	0.0633	0.0648	0.0653
$\alpha = 1.6$	0.0458	0.0474	0.0449	0.0464	0.0475	0.0475

Notes: calculation on weighted household income data from SHIW.

To identify lower, middle, and upper income groups and to observe changes between the income distributions, we apply the process implemented by Esteban et al., 2007, separately for the different waves. Setting the polarisation sensitivity parameter at 1, which maximises polarisation, table 2 reports the estimated income thresholds that separate the upper from the middle income group ("high threshold") and the middle from the lower income group ("low threshold") for the period 2002-2012.

The main evidence concerning the estimated thresholds of the income distributions is a general impoverishment of the middle-income group in the last wave of the survey. Consequently, it is particularly interesting to compare the middle-income groups before and after the beginning of the recession in 2008.

Looking at the characteristics of the whole sample between the two thresholds, i.e. the middle-income group[4] for the years 2006 and 2012, table 3 shows a substantial stability of the composition of the middle-income groups. The main changes between the two periods are related to educational attainments (the share of people with a high level education decreases, despite an increase in the whole sample) and to the increase in the average age of the individuals in the middle-income group (who are also more frequently retired in 2012 than in 2006).

[4] Figure A1 in the Appendix reports the distributions for the two years and polarisation-based thresholds of the middle-income group for 2006 and 2012.

Table2 – *Summary statistics of household equivalent disposable incomes*

	2002	2004	2006	2008	2010	2012
N. of individuals	14,001	13,896	13,407	13,677	13,700	13,601
Mean	€ 30,842	€ 32,115	€ 32,771	€ 32,618	€ 32,410	€ 29,556
Median	€ 26,959	€ 27,867	€ 28,745	€ 28,638	€ 28,561	€ 25,823
EGR low threshold	€ 23,556	€ 24,600	€ 25,129	€ 24,980	€ 24,688	€ 22,563
EGR high threshold	€ 40,380	€ 42,454	€ 42,793	€ 42,849	€ 43,042	€ 39,281
Low-income group	39.45 %	40.36 %	39.52 %	39.65 %	40.3 %	40.19 %
Middle-income group	40.1 %	40.61 %	39.47 %	40.26 %	39.5 %	39.91 %
High-income group	20.45 %	19.04 %	21.01 %	20.09 %	20.2 %	19.89 %

Notes: calculation on weighted household income data from SHIW, values at 2012 prices.

3.2. Determinants of upward and downward mobility

In order to investigate the determinants of entering or leaving the middle-income group, we run a model that estimates an individual's probabilities of moving towards respectively the lower and higher income group, controlling for individual and household characteristics in the base year and changes in some characteristics between the two waves. The events considered in this paper are the following:

- *demographic events*: changes in the number of household members, change in individuals' marital status.
- *economic events*: changes in the number of household earners, changes in the individuals' occupational status.
- *change in the head of household*: since in our case the head of household is defined as the main income earner, this event is a hybrid case. It can be connected to a demographic event (death or divorce) or an economic event (intra-house earning variations which can be positive or negative). For these reasons, we created a single dummy variable to be included in the model.

Table 3 – *Composition of the middle-income group compared to the whole sample, percentage values*

	2006		2012	
	Middle-income group	*Whole sample*	*Middle-income group*	*Whole sample*
Woman	48.2	46.22	50.04	47.76
Educational attainment				
No or primary education	24.67	26.64	23.53	22.6
Lower secondary education	29.73	28.82	35.91	36.48
Upper secondary education or higher	45.6	44.55	40.56	40.92
Age				
Age < 41	30.19	29.56	23.23	24.14
Age 41-55	27.99	28.27	28.81	30.6
Age > 55	41.82	42.17	47.96	45.27
Area				
North	58.33	49.08	55.43	48.99
Centre	21.61	20.1	23.57	19.77
South and Islands	20.05	30.82	21	31.24
Occupational status				
Blue collar, production worker	24.22	22.69	21.47	23.33
Clerical worker	22.72	19.67	22.62	17.57
Managerial worker	3.02	4.05	3.14	3.63
Self employed	9.08	11.45	8.39	10.37
Pensioner, not employed	40.24	42.14	44.38	45.1
Observations	5,223	13,233	5,310	13,305

Notes: calculation on weighted household income data from SHIW.

These events occur when the associate variables changes between waves *t* and *t*+1. To simplify the interpretation of the results, we aggregate the 'negative' events (e.g. increase in the number of individuals, decrease in the number income earners), and the 'positive' ones, distinguishing between demographic and economic events.

Table 4 – *Determinants of downward mobility for the middle-income group in Italy. Multinomial logit models: estimated odds ratios*

	High income group		Low income group	
	2002-2006	*2008-2012*	*2002- 2006*	*2008-2012*
Woman	1.093 (0.0919)	1.043 (0.0842)	0.96 (0.0797)	0.965 (0.0858)
Tenant	0.63*** (0.0881)	0.428*** (0.075)	2.093*** (0.24)	2.354*** (0.3157)
Age 41-55	1.229* (0.1481)	1.778*** (0.2349)	0.489*** (0.0606)	0.6*** (0.0775)
Age > 55	1.603*** (0.2741)	2.216*** (0.3779)	0.673** (0.115)	0.562*** (0.0982)
Lower secondary education	1.349** (0.1916)	1.397*** (0.1711)	0.491*** (0.0587)	0.537*** (0.0677)
Upper secondary education or higher	3.483*** (0.4728)	2.85*** (0.3648)	0.271*** (0.0348)	0.262*** (0.0382)
Centre	1.303*** (0.1295)	1.133 (0.1097)	1.166 (0.1198)	1.364*** (0.1557)
South and islands	0.759** (0.0886)	0.583*** (0.0637)	1.97*** (0.1897)	2.511*** (0.2527)
Single	0.859 (0.1088)	1.361** (0.1736)	0.726** (0.0954)	0.926 (0.1295)
No longer married	0.885 (0.1212)	1.236* (0.1514)	0.706*** (0.0867)	1.046 (0.1392)
Self employed	1.413** (0.2248)	1.38** (0.2252)	1.289 (0.2174)	1.651*** (0.2727)
Pensioner, not employed	0.957 (0.1514)	0.967 (0.1483)	1.072 (0.1675)	1.052 (0.1687)
Income from self employment	1.778*** (0.2838)	2.038*** (0.3205)	1.027 (0.1727)	2.783*** (0.4276)
Income from pensions or social transfers	0.775* (0.1036)	1.112 (0.1461)	0.969 (0.1243)	1.07 (0.156)
Income from capital	1.586** (0.3433)	2.141*** (0.4892)	0.812 (0.1881)	1.892*** (0.4512)
City: 20,000-40,000 inhabitants	1.45*** (0.1773)	0.868 (0.1088)	0.928 (0.1129)	0.804* (0.1028)
City: 40,000-500,000 inhabitants	1.337*** (0.1301)	1.237** (0.1142)	0.753*** (0.0727)	0.772** (0.0805)
City: 500,000 or more inhabitants	1.119 (0.1684)	2.637*** (0.3726)	1.038 (0.1443)	1.572*** (0.2634)
Household size	0.635*** (0.0395)	0.773*** (0.0489)	1.479*** (0.0825)	1.571*** (0.0964)

(continues)

(continued)

Number of income earners	1.544*** (0.1197)	1.6*** (0.1249)	0.433*** (0.0329)	0.406*** (0.0346)
Change in household head	1.433*** (0.1444)	1.055 (0.1153)	1.211* (0.1244)	2.095*** (0.2227)
Positive demographic event	2.276*** (0.3353)	2.935*** (0.436)	0.93 (0.1245)	0.45*** (0.0725)
Positive economic event	2.18*** (0.2447)	2.406*** (0.2846)	0.438*** (0.0671)	0.521*** (0.0865)
Negative demographic event	0.402*** (0.0877)	0.789 (0.1811)	3.917*** (0.6066)	6.999*** (1.1936)
Negative economic event	0.535*** (0.0821)	0.48*** (0.0796)	3.41*** (0.409)	5.688*** (0.7684)
Constant	0.098*** (0.0237)	0.03*** (0.0074)	1.074 (0.2364)	0.344*** (0.085)
LR: $\chi^2(50)$	995.99***	1237.42***	995.99***	1.237.42***
Pseudo R^2	0.107	0.129	0.107	0.129
Observations	5,228	6,248	5,228	6,248

Notes: significance levels: * 90%; ** 95%; *** 99%. Reference categories for the dummy variables: owner, for tenure status; age lower than 41 years old, for age group; primary education, for educational attainment; North, for area of residence; married, for marital status; income from employment, for main income source; less than 20,000 inhabitants, for city size; no change in the head of the household; and no change for negative/positive demographic and economic events. See main text for a definition of the various events considered.
Source: calculation on weighted household income data from SHIW, longitudinal component.

It is reasonable to assume that downward mobility is associated with negative events and upward mobility with positive events.

Table 4 shows the estimated odds ratios and their statistical significance for the multinomial logit model where the reference case is remaining in the middle-income group throughout the period considered.[5]

The estimated coefficients present values above or below 1 in line with the main descriptive evidence: the probability to move toward the lower group is significantly higher in both periods for individuals who do own a home, who live in the South or the Islands of Italy, and/or belong to large families. Conversely, the probability to become

[5] Hence, the estimated values reflect the effect of each covariate on the likelihood of being upwardly (or downwardly) mobile, relative to remaining in the middle-income group (see also Albornoz, Menéndez, 2007).

members of the higher-income group is greater for individuals with higher educational attainments, for the self-employed, those who live in medium-sized municipalities (with a population between 40,000 and 500,000 inhabitants) and who belong to a household with a higher number of income earners. As expected, the occurrence of demographic and/or economic negative events increases the risk of moving to the lower-income group and decreases the probability to climb the income ladder, while the opposite is observable in case of positive economic and/or demographic events (even though there is not coefficient consistency over time for the occurrence of demographic events). In all models, being a woman, a pensioner, or not employed do not exert an impact statistically different from zero.

Looking at differences in the results between the two periods, some interesting patterns emerge.

Being self-employed and/or being in a household where self-employment is the main source of income are positively related with both being upward and downward mobile in the second period (i.e. the self-employed are both more upwardly and more downwardly mobile than employees). This piece of evidence seems to confirm the rise of polarisation for this group, already observed by recent literature (Massari et al., 2009). Similarly, after 2008, a rise in polarisation is detected for individuals living in large cities (with more than 500,000 inhabitants) and belonging to households in which the highest share of income is constituted by capital incomes. Concerning education, in general we observe that having tertiary education is significantly and positively correlated with being upwardly mobile, but this probability of moving up to the higher-income group is much lower in the second period. On the contrary, being older than 55 years old shows an increasingly positive effect on the probability of being upwardly mobile and an increasingly negative effect on the probability to move to the lower-income group. In the period 2008-2012, the occurrence of a change in the head of the household has a highly positive effect on the risk to move downwardly, whereas it does not have a significant effect on the probability to become a member of the higher group. Furthermore, the probability to move downwards in

case of negative events[6] has significantly increased after 2008, while the probability to move upwards in case of positive events exhibits only a slight increase.

Overall, these findings reveal a growing vulnerability for some groups of individuals in the second period, despite an increasing stability for others. In particular, negative events play a greater role in determining transitions downwards from the middle-income groups, while the occurrence of positive events does not seem to increase the chances to move to the higher-income group. This may mean that the recession has further exacerbated the condition of the middle-income group compared to the early 2000s, given the increasing fragmentation of the social landscape observable across different advanced countries (Franzini, Pianta, 2016).

5. Concluding remarks

Due, in part, to data limitations, most economic analyses study the middle-income group in a given year, without looking at the mobility of its members. However, income mobility could significantly affect people's behaviour, choices and wellbeing. Indeed, economic security, defined as the ability to maintain an appropriate consumption profile and to face income fluctuations, is considered a fundamental attribute of the middle-income groups: exploring the relationship between mobility and income dynamics can be crucial for a more complete understanding of middle-income groups' wellbeing (Torche, López-Calva, 2013). The consideration of income dynamics is particularly relevant in the analysis of the middle-income group since, as pointed out by the literature, a defining feature of these groups is a certain degree of economic stability and resilience to shocks (Ferreira et al., 2012). Furthermore, in the Italian case (as arguably elsewhere), the increasing discontent observed in the 2000s within this group has

[6] The percentage of people who experience this kind of events does not show significant variations: see table A2 in Appendix.

been deemed to be dependent on the increase of uncertainty and income volatility for its members.

While we must be cautious when interpreting the results of our analysis since we only measure short-term income mobility (incomes fluctuations in the short run and measurement errors are more likely to bias the results), we can put forward the emergence of some general key facts. First, a situation of general impoverishment accompanied by an increased immobility across groups is outlined here, which reveals the role of the crisis in exacerbating the living standards of the middle-income group. Second, a higher vulnerability can be observed for some individuals within this group, who see their probability to move downwardly significantly increasing. In particular, comparing the periods 2002-2006 and 2008-2012, different probabilities to move characterise various groups of individuals, and the association between the occurrence of positive and negative trigger events and individual mobility strengthens in 2008-2012. This could be due to a growing inadequacy of the Italian welfare state as well as the increasing inability of families to cope with financial and economic difficulties.

REFERENCES

Addabbo T. (2000), "Poverty Dynamics: Analysis of Household Incomes in Italy", *Labour*, vol. 14, n. 1, pp. 119–144.

Albornoz F., Menéndez M. (2007), "Income Dynamics in Argentina During the 1990's: "Mobiles" do Change with Type of Macroeconomic Shock", *Económica*, vol. 53, n. 2, pp. 21-52.

Atella V., Rossi N. (2004), "Le mani vuote. Una società con più costi e meno sussidi", *Il Mulino*, vol. 53, n. 412, pp. 299–308.

Atkinson A., Brandolini A. (2013), "On the Identification of the Middle Class", in J. Gornick, M. Jäntti (eds.), *Income Inequality Economic Disparities and the Middle Class in Affluent Countries*, Stanford (CA): Stanford University Press.

Bagnasco A. (2004), *Quasi poveri e vulnerabili*, Bologna: Il Mulino.

Bagnasco A. (2005), "The Question of the Middle Class", in C. Guarnieri, J. Newell (eds.), *Italian Politics. Quo Vadis?*, New York-Oxford: Berghahn Books.

Bagnasco A. (2008), *Ceto medio, perché e come occuparsene*, Bologna: Il Mulino.

Berthoud R., Böheim R. (1998), "Predicting Problem Debt", in *Report to Barclay's Bank Ltd*, University of Essex, Colchester.

Boeri T., Brandolini A. (2004), "The Age of Discontent: Italian Households at the Beginning of the Decade", *Giornale degli Economisti Annali di Economia*, vol. 63, pp. 155–193.

Borraz F., González Pampillòn N., Rossi M. (2011), "Polarization and the Middle Class in Uruguay", *Latin American Journal of Economics*, vol. 50, n. 2, pp. 289–326.

Brandolini A. (2000), "Appunti per una storia della distribuzione del reddito in Italia nel secondo dopoguerra", *Rivista di storia economica*, vol. 2, pp. 213–232.

Carbone D., Ceravolo F. (2012), "Crisi economica e diseguaglianze sociali. La situazione italiana nello scenario europeo", presented at the *Convegno nazionale AIS-ELO, Cause e impatto della crisi: individui, territori, istituzioni*, Cosenza, 27-28 September.

Di Vico D., Fittipaldi E. (2004), *Profondo Italia*, Milano: Biblioteca Universitaria Rizzoli.

Duclos J., Esteban J.M., Ray D. (2004), "Polarization: Concepts, Measurement, Estimation", *Econometrica*, vol. 72, n. 6, pp. 1737–1772.

Esteban J.M., Gradín C., Ray D. (2007), "An Extension of a Measure of Polarization, with an Application to the Income Distribution of Five OECD Countries", *The Journal of Economic Inequality*, vol. 5, n. 1, pp. 1–19.

Esteban J.M., Ray D. (1994), "On the Measurement of Polarization", *Econometrica*, vol. 62, n. 4, pp. 819–851.

Esteban J.M., Ray D. (2012), "Comparing Polarization Measures", in M. Garfinkel, S. Skaperdas (eds.), *The Oxford Handbook of the Economics of Peace and Conflict*, Oxford: Oxford University Press.

Ferreira F.H., Messina J., Rigolini J., López-Calva L., Lugo M.A., Vakis R. (2012), *Economic Mobility and the Middle Class: Concepts and Measurement in Economic Mobility and the Rise of the Latin American Middle Class*, Washington (DC): Word Bank.

Foster J.E., Wolfson M.C. (1992), "Polarization and the Decline of the Middle Class: Canada and the U.S.", *The Journal of Economic Inequality*, vol. 8, n. 2, pp. 247–273.

Franzini M. (2010), *Ricchi e poveri. L'Italia e le disuguaglianze (in)accettabili*, Milano: Università Bocconi.

Franzini M., Pianta M. (2016), *Explaining Inequality*, London: Routledge.

Goldthorpe J.H., McKnight A. (2004), "The Economic Basis of Social Class", *CASEpaper*, n. 80, Centre for Analysis of Social Exclusion, London School of Economics, London.

Handcock M., Morris M. (1998), *Relative Distribution Methods in the Social Science*, New York: Springer.

Handcock M., Morris M. (1999), "Relative Distribution Methods", *Sociological Methodology*, vol. 28, pp. 53–97.

Hout M. (2004), "How Inequality May Affect Intergenerational Mobility", in K. Neckerman (ed.), *Social Inequality*, New York: Russell Sage.

Jenkins S. (2000), "Modelling Household Income Dynamics", *Journal of Population Economics*, vol. 13, n. 4, pp. 529–567.

Jenkins S., Schluter C. (2003), "Why Are Child Poverty Rates Higher in Britain than in Germany? A Longitudinal Perspective", *Journal of Human Resources*, vol. 38, n. 2, pp. 441-465.

Krugman P. (2014), "Redefining the Middle Class", *Truthout*, 14 February. Retrieved from http://www.truth-out.org/opinion/item/21841-paul-krugman-redefining-the

-middle-class.
López-Calva L., Ortiz-Juarez E. (2014), "A Vulnerability Approach to the Definition of the Middle Class", *Journal of Economic Inequality*, vol. 12, n. 1, pp. 23–47.
Massari M., Pittau M., Zelli R. (2009), "A Dwindling Middle Class? Italian Evidence in the 2000s", *Journal of Economic Inequality*, vol. 7, n. 4, pp. 333–350.
Paci M. (1979), "Class Structure in Italian Society", *European Journal of Sociology*, vol. 20, pp. 40–55.
Pisano E., Tedeschi S. (2007), "Tendenze della distribuzione dei redditi in Italia e impoverimento della classe media: percezione o realtà?", *Meridiana*, n. 59/60, pp. 131–155.
Polin V., Raitano M. (2014), "Poverty Transition and Trigger Events across EU Groups of Countries: Evidences from EU-SILC", *Journal of Social Policy*, vol. 43, n. 2, pp. 745–772.
Sassoon D. (1997), *Contemporary Italy: Politics, Economy and Society Since 1945*, London: Routledge.
Sylos Labini P. (1974), *Saggio sulle classi sociali*, Roma-Bari: Laterza.
Sylos Labini P. (1986), *Le classi sociali negli anni '80*, Roma-Bari: Laterza.
Torche F., López-Calva L. (2013), "Stability and Vulnerability of the Latin American Middle Class", *Oxford Development Studies*, vol. 41, n. 4, pp. 409–435.
Trigilia C. (1976), "Sviluppo, sottosviluppo e classi sociali in Italia", *Rassegna italiana di sociologia*, vol. 2, pp. 249–295.

Appendix

Table A1 – *EGR polarisation indices for different groups and values of* α

		2002	2004	2006	2008	2010	2012
α = 1	2 groups	0.106	0.109	0.105	0.107	0.109	0.110
	3 groups	0.086	0.088	0.085	0.087	0.089	0.090
	4 groups	0.069	0.071	0.068	0.070	0.071	0.071
	5 groups	0.056	0.059	0.056	0.057	0.058	0.059
α = 1.3	2 groups	0.087	0.089	0.086	0.087	0.089	0.090
	3 groups	0.063	0.065	0.061	0.063	0.065	0.065
	4 groups	0.046	0.047	0.045	0.047	0.047	0.047
	5 groups	0.035	0.037	0.035	0.036	0.037	0.037
α = 1.6	2 groups	0.072	0.073	0.070	0.072	0.073	0.074
	3 groups	0.046	0.047	0.045	0.046	0.048	0.048
	4 groups	0.031	0.032	0.030	0.032	0.032	0.032
	5 groups	0.022	0.024	0.022	0.022	0.023	0.023

Notes: calculation on weighted household income data from SHIW.

Figure A1 – *Polarisation-based thresholds of the middle-income groups for 2006 and 2012*

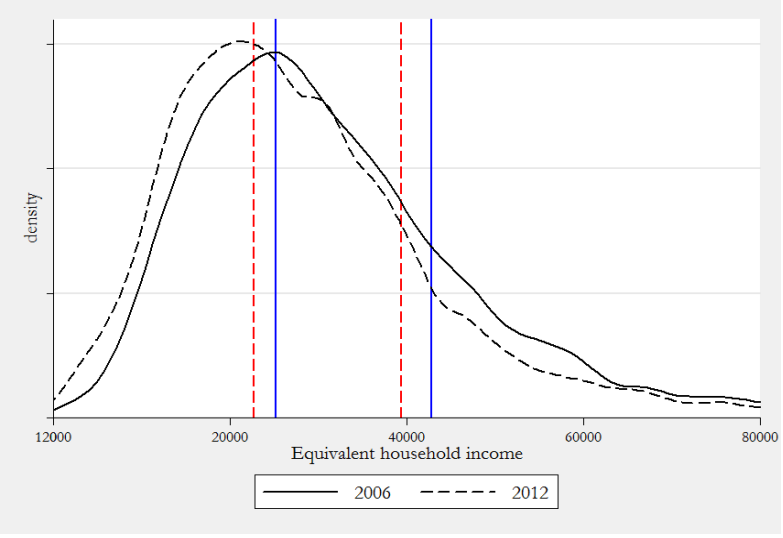

Table A2 – *Percentage of individuals experiencing a significant event between two waves*

	Change in household head	Positive demographic event	Negative demographic event	Positive economic event	Negative economic event
2002-2006	17.96	12.76	6.04	12.97	16.31
2008-2012	15.13	10.97	4.49	10.05	13.32

Notes: calculation on weighted household income data from SHIW. See main text for a definition of the various events considered.