Career mobility in Italy: a growth curves analysis of occupational attainment over the 20th century

C. Barone (Trento university), M. Lucchini (Bicocca university), A. Schizzerotto (Trento university)

1. Career mobility and intergenerational reproduction: a neglected issue

Research on the intergenerational transmission of inequality has always occupied a prominent position in social mobility research, whereas less attention has been paid to intragenerational dynamics of inequality. This state of affairs appears unfortunate, not the least because by analyzing intergenerational mobility and the role played by education in this regard, we have learnt to appreciate the importance of career mobility. Two well-established findings may be mentioned here, namely that educational opportunities remain still unevenly distributed among social classes, and that education is a strong predictor of occupational attainment at the entry into the labour market (Breen, Jonsson 2005; Müller, Gangl 2004). This implies that the mechanisms governing the allocation of individuals to their first job are markedly biased by the interference of ascriptive inequalities. So the question rises whether career mobility can correct, at least to some extent, this initial unfair allocation, or whether to the contrary it works as a dynamic of cumulative inequality where those starting from advantageous positions further widen the gap that divides them from less advantaged workers and, in particular, from those with low family background.

However, the study of career mobility is interesting also for its own sake, and not only for its implications for intergenerational inequality: even if the allocation to the first occupation was perfectly meritocratic, it would still be important to know whether individuals are given a chance to correct this initial allocation in the course of their careers. These concerns are particularly relevant in Italy, where career progression has been severely constrained by formal requirements and bureaucratic procedures (Schizzerotto, Pisati 1999). Not surprisingly, the growing pleas to bring "more meritocracy" into the functioning of the labour market have gained considerable public support in recent times. Furthermore, career mobility involves efficiency considerations as well, given that it cannot be easily assumed that the selection criteria prevalent in the school system are tightly aligned with those prevailing in the labour market (Goldthorpe 1996; Bowles, Gintis 2002). After all, even common sense suggests that the best students are not always the best workers, as school performance and cognitive ability can be weakly correlated to several skills involved in daily job tasks (e.g. orientation towards cooperative work, ability to negotiate effectively, etc.). It is also

well-known that on-the-job learning plays a key role in the process of human capital formation. For all these reasons, a labor market that selects incumbents of different occupations only on the basis of school qualifications runs the serious risk of being inefficient. This concern is again particularly compelling in the case of Italy, where the educational system has always paid limited attention to the demands of the economy (Schizzerotto, Barone 2006; Reyneri 2007).

This work analyzes the evolution of career mobility in Italy over the 20th century. First, we want to quantify the amount of career mobility and to identify the main flows between occupational classes across different birth cohorts. It is well-known that career mobility is generally low in Italy (Schizzerotto, Pisati 1999; Schizzerotto 2002), but here we want to assess whether it is at least increasing over time. Our second research issue concerns the relationship between intra- and intergenerational mobility. We will assess whether the influence of family background and of educational qualifications on occupational attainment is confined to labor market entry or extends to work-life mobility. As mentioned above, it is well-documented that social origins display a marked influence on entry class and that this influence is largely, though not exclusively, mediated by educational attainment, but what happens to this initial allocation? Does it become more or less unequal over the life course with regard to the conditioning of social origins, and what is the role of education in this respect? In other words, our concern is whether individuals originating from the upper classes benefit from any additional advantage in the occupational attainment process other than that ensured by their parents at the beginning of their careers. Our third research question connects the previous two. In other words, the relationship between origins, education and career progression will be studied across different birth cohorts, in order to assess whether changing dynamics of career mobility contribute to a greater or lower social openness of the Italian society.

2. Career mobility in Italy: structural and institutional constraints

In order to formulate our theoretical expectations concerning the above research questions, it is necessary to discuss briefly some features of the economy and of the institutional arrangements prevalent in Italy that are likely to affect career mobility. First of all, the Italian economy is characterized by a large number of small firms operating in manpower intensive sectors with mature technology. This means that in this country the large majority of employees work in organizations with an almost flat internal hierarchy and a low propensity to create new skilled jobs (Schizzerotto, Pisati 1999; Barbieri, Bison 2004). In the Italian familistic model of entrepreneurship, it is far from uncommon that the owners of small firms coincide with the management and that family workers

are in charge of the bureaucratic tasks, so that only few external manual workers are hired. In this context, opportunities for upward mobility are severely constrained.

The public sector and the relatively few big firms display a more articulated career ladder, but collective contracts and bureaucratic regulations strictly connect career advancement to seniority and hinder almost completely the demotion of employees. As a result, downward flows are extremely limited, but of course these restrictions further constrain also opportunities for upward mobility over the life course. This state of affairs may have somewhat changed recently, due to the growing flexibilization of the Italian labor market promoted by the so-called Treu reform (1997). Both hiring and dismissal procedures have been partially relaxed in the last decade, but so far this "selective flexibilitation" has affected almost exclusively young workers (Barbieri, Scherer 2009).[1]

A third important point concerns the protection traditionally accorded to self-employment in Italy (Reyneri 2007; Barbieri, Bison 2004). Since the post-war decades, agricultural reforms and generous subsidies have been explicitly aimed at preserving a large number of independent farmers. Therefore, many of them have managed to keep their occupation over their entire career, despite the rapid industrialization of the Italian economy. Similarly, craftsmen and owners of small shops have been carefully protected from competition through a strict regulation of licences, but also through several legal constraints and informal initiatives undertaken to contrast the growth of the large distribution. These protections began to weaken only by the end of the '90s. Not surprisingly, self-employment has traditionally comprised a particularly high share of the labor force in Italy, though its incidence has recently decreased (Bison et al. 2009). Finally, the liberal professions have remained one of the most regulated segments of the Italian labor market, with high credential barriers to entry and little internal competition. In many respects, it is no exaggeration to depict Italy as the land of (traditional) self-employment.

Hence, the petty bourgeoisie and the liberal professions have benefited from a noticeable degree of occupational stability, thus further increasing the rigidity of the Italian labor market. It should be recognized, however, that also in this regard the situation has slowly changed in recent decades, not just because employment in the agricultural sector is nowadays of negligible size, but also because tradesmen, craftsmen and small entrepreneurs have faced a growing competition from the large distribution as well as from small industrial firms of developing countries. At the same time, a more dynamic sector of export-oriented small firms, open to innovations in both their organizational structures and products, has developed in the central and in the north-eastern regions of the country since the '70s (Bagnasco 1998). It is well-documented that this phenomenon has

[1] Hence, this reform may have affected the careers of individuals who entered the labor market since the late '90s However, these individuals will not be considered in this work, due to data constraints (see section 4).

opened significant opportunities for upward mobility via self-employment for experienced skilled, manual workers (Schizzerotto, Pisati 1999; Schizzerotto 2002; Barbieri, Bison 2004).

The above arguments lead to the following hypotheses. First, we expect to detect an overall low amount of career mobility in contemporary Italy, in line with findings of previous research based on partially different data and statistical methods. Second, we anticipate that little change over time in the overall volume of career mobility has occurred, as the above-described factors that constrain it have to a large extent persisted over the second half of the 20th century. Therefore, we expect that any observed change in the patterns of career mobility is largely driven by the structural transformations associated with the processes of industrialization and tertiarisation, rather than by any sizeable fluidification of career dynamics.

Our third expectation is that the conditioning of social origins and of education displays little change over the life course. On one side, this hypothesis simply reflects the above claim that career mobility is, and has always been, low in Italy. If this is true, then the *locus* of intergenerational reproduction should be almost exclusively located at the entry into the labor market, with little change afterwards. On the other side, our third hypothesis relates to the importance of bureaucratic procedures governing career advancement in Italy. In this context, seniority ensures to everyone similar chances of (slowly) progressing in the career ladder. To be sure, this bureaucratic egalitarianism coexists with a key role of informal networks and acquaintances for occupational success (Reyneri 2007), which in turn increases the importance of the family of origin, not only for the intergenerational reproduction of the petty bourgeoisie. However, these mechanisms operate predominantly at the beginning of work careers. Then, career progression takes the form of a slow generalized upward shift, rather insensitive to individual attributes, including social origins and educational qualifications. Hence, we expect that in Italy the key dynamics of intergenerational reproduction are located at the labor market entry, where social origins affect occupational attainment both directly and via education, with limited career-adjustment of the unequal outcomes thus generated. In other words, family background and the level of schooling should have no impact on occupational success beyond the first occupation. Finally, we expect that this description applies to the cohorts of individuals who entered the labor market in the ‘30s as well as to those who began their careers four decades later. During this period, Italy shifted from an agricultural to a tertiary economy, and this favoured dramatic changes across cohorts in the distribution of the first occupation, but if the above arguments hold true, these changes did not produce any sustained, long-term trend in the fluidity of careers, so that work-life mobility did not contribute significantly to a growing intergenerational mobility.

3. Models for the study of career mobility

Research on career mobility has traditionally relied on cross-tabulations between the first occupation and the occupation held at a later stage, for instance after ten years, or at the age of 35, or the occupation at the time of the interview. The underlying assumption was that, at some stage of their careers, individuals reach a condition of "occupational maturity" after which intragenerational mobility becomes relatively unlikely (Erikson, Goldthorpe 1992). In other words, at this stage either job mobility occurs rarely, or it involves predominantly movements within the same social class. The status attainment approach analyzes occupational achievement via structural equation modelling and uses continuous measures of occupational position, but it shares a similar assumption with class analysis (Blau and Duncan 1967; Warren et al. 2002). Hence, both approaches usually involve a simple comparison between two points in time for the study of intragenerational inequality.

We believe that this "traditional" approach still holds heuristic value, and we will use it in this work as a descriptive tool to trace a preliminary, summary picture of career mobility in contemporary Italy. However, this approach has been accused of being too static, and event history analysis has been proposed as an alternative strategy to study careers more dynamically (Blossfeld 1986; Carroll, Mayer 1987). In turn, this latter approach has been criticized in recent years because it tends to focus on single transitions (or, at best, on a small number of job trajectories), and techniques of optimal-matching and of sequence analysis have been proposed as more holistic tools that treat careers as a whole (Halpin, Chan 1998). The debate about the pros and cons of these more novel approaches remains open - not the least because the robustness of standard techniques of sequence analysis has been increasingly questioned (Wu 2000). Moreover, the data demands for these more recent approaches are far greater than for the mobility table approach, as the former require a longitudinal survey design.

At any rate, in our view the key consideration of this methodological debate is that career mobility is a process, and that it needs to be analyzed as such. The standard table of intragenerational mobility attempts to capture in a single "snapshot" what is in fact a continuous, and possibly complex, process of career progression (Sorensen 1986). This work employs a relatively new tool to analyze dynamically careers advancement as a whole, namely growth curves models (Singer, Willett 2003). They can be described as the application of a multilevel framework to the analysis of repeated observations for the same individuals. In our case, the repeated observations concern the occupational position held yearly by respondents. These repeated observations and individuals are, respectively, the first- and second-level units, given that the same

individual can be observed several times in the course of her work career. Hence, we exploit information on work histories to build a dataset of yearly replicated observations to be analyzed by means of multilevel models, where the dependent variable is the social standing score Y_{ij} referring to the occupation held by individual *i* in occasion *j* [2] (*see* section 4).

Of course, we do not believe that growth curves models will have the final say in the above-summarized methodological debate. Still, we would like to point at a number of advantages of our analytical strategy. First, we are in a position to study careers dynamically: we do not consider only two points in time, but rather the detailed progression in the occupational hierarchy over the whole work career. At the same time, growth curves models are parametric, which makes them less sensitive to those robustness issues encountered in sequence analysis when the researcher must set the 'costs' of replacements, insertions and deletions in order to quantify differences between sequences. Of course, the choice of a particular parametric specification then becomes critical in growth curves models, but the researcher can assess the fit of competing specifications, thus considering not only a linear progression over the career ladder, but also more complex trajectories, such as quadratic, cubic or sinusoidal curves.

Second, our multilevel framework allows a variance decomposition analysis that estimates the share of variation in the social standing score of occupational observations that can be attributed to differences between individuals, and the share of within-individual variation over the work history - the latter quantity being an appropriate measure of the volume of career mobility or, more precisely, of its importance for the overall occupational attainment process. Then, we can model within a unified analytical framework the determinants of differences between individuals in occupational attainment, as well as factors affecting the chances of career progression for the same individual over the life course. As social origins and education can be included among both kinds of predictors, this provides a straightforward way to integrate the analysis of intra- and intergenerational mobility.

Finally, we can specify covariates capturing cohort, career duration and period effects, as well as the interaction between them. We can thus reduce the risk of conflating these different temporal mechanisms. This risk is indeed one of the major weaknesses of analyses relying only on mobility tables (Blossfeld 1986). In sum, we are persuaded that there are good reasons to undertake an empirical assessment of the heuristic value of this approach for the study of career mobility. In the next section we will provide information on the data and variables used for the analyses, then

[2] These replicated observations will be denoted also as *occasions*. The important point is that they are not to be confused with job *events*. For instance, if an individual remains in the same job for seven years, we have built seven occasions in our longitudinal dataset.

we will move to the results. We report in the appendix a more formalized illustration of growth curves models that may be of interest to readers less familiar with this approach.

4. Data and variables

To analyze career mobility in contemporary Italy we will employ two distinct data sources. The first one comes from the five waves of the Italian Households Longitudinal Survey (IHLS), which was carried out on a representative sample of non-institutionalized individuals residing in Italy at the time of the interview. The sample design was based on a two-stage procedure: 248 municipalities were extracted at the first stage, and 4637 households at the second, then all members of these families aged 18 or older (9770 individuals) were interviewed. The sampling design entailed also a procedure of stratification according to the region of residence and to the municipality type (metropolitan, suburban, other). The first wave in 1997 gathered retrospective information on all significant occupational events that had occurred until the date of the interview. The four subsequent waves, carried out every two years, updated this information[3]. Data collection was based on computer-assisted personal interviews[4]. We select respondents born between 1908 and 1967, given that for more recent cohorts the observation window of work histories would be too restricted.

We will use both social class and social standing measures of occupational position. The former consist of a six-category version of the Erikson-Goldthorpe schema (Erikson, Goldthorpe 1992): a) I-II (large entrepreneurs (10> employees), high and low managers, professionals; b) IIIab (white collars and high-level technicians); c) IVab: self-employed with 0-9 employees not in agriculture; d) IVc: self-employed in agriculture; e) V-VI-VIIa: supervisors, skilled and unskilled manual workers not in agriculture; f) VIIb: manual workers in agriculture[5]. This version of the schema places particular emphasis on distinctions concerning the agricultural classes, given that Italy is a late industrialization country.

As for social standing, we will use the scale developed by de Lillo and Schizzerotto (1985) following the methodology proposed by Goldthorpe and Hope (1974). This scale was derived from the evaluations made by a representative sample of the Italian population on the social desirability of different occupations. It was developed in the mid ‘80s, but a recent replication exercise indicates that the social standing of different occupations has hardly changed over the past two decades

[3] Moreover, respondents who left home and formed new families were followed across the five waves, and their spouses were interviewed as well. Hence, IHLS is based on a dynamic sample, which represents the evolution of the Italian population between 1997 and 2005.

[4] For a more detailed description of the methodology of this survey, *see* Schizzerotto (2002).

[5] A threefold hierarchical division within this class schema may be identified: the service class (I-II) ranks above all other social classes and manual workers (classes V to VIIb) rank below all other classes.

(Sarti, Terraneo 2007). The same scale is used also to measure respondents' family background[6]. Education is specified as a continuous variable that refers to completed years of schooling.

Our second data source is the Multi-purpose survey 2003. Its survey design is very similar to IHLS (two-stage stratified sampling and CAPI interviews), but its sample size is much bigger (49541 individuals): this is a critical advantage when it comes to assessing cross-cohort variations in career mobility patterns. However, this survey contains information only on entry class and class after ten years: it does not record respondents' full work histories, as the IHLS does. Hence, the former represents the ideal data source for our initial analysis based on mobility tables, while the latter will be used for the longitudinal analysis based on growth curves models.

5.1 Trends over time in absolute and relative career mobility

In order to provide a first descriptive picture of career mobility in Italy, we report in table 1 a cross-tabulation of the first class position by the class position held ten years after by respondents of the Multi-purpose survey. The outflow rates indicate that all entry classes display high career immobility rates, ranging from 74.3% for the urban working class to 85.9% for the service class. The only partial exception is represented by agricultural workers: an immobility rate of about 60% is complemented by the large share of horizontal flows to the urban working class (25.1%).

Furthermore, the only non-negligible downward flow from the service class is towards white collars (6.8%) and, in turn, the only significant outflow from this latter class leads to the service class (8.9%), whereas downward mobility from class III is virtually non-existent. Risks of social demotion are small also for urban and agricultural self-employed workers: only one incumbent out of ten of these classes moves to manual work. In turn, individuals who start their careers in the urban working class enjoy limited chances of upward mobility to the middle class (IIIab or Vab), and almost no chance to make it to the upper class. Finally, agricultural workers have high chances of either remaining within the agricultural sector or moving to the urban working class, whereas they are almost completely excluded from other destinations.

In short, these results show that opportunities for career mobility are rather limited in contemporary Italy and that, at any rate, they are restricted to short-range movements. What is perhaps most impressive, however, is that downward flows are definitively negligible in Italy. Hence, these findings lend support to our previous arguments concerning the role of structural features of the Italian economy, of protections to self-employment and of bureaucratic rules of career progression as powerful constraints to vertical career mobility. For instance, it is noticeable,

[6] Growth curves models that include both parental education and parental occupation, together with all their two-way and three-way interactions with cohort and career duration, failed to converge.

but not surprising in the light of our previous arguments on the "conservative philosophy" of agricultural reforms in Italy, that self-employed farmers have experienced very little downward mobility in spite of the huge reduction of agricultural employment[7].

Tab.1: cross-tabulation of first class by class after ten years

---

We have disaggregated the outflow rates reported in table 1 by three birth cohorts (1933-42, 1943-52, 1953-62)[8]. Results indicate that the high propensity to career immobility has hardly changed over time for individuals starting their careers in classes I-II and IIIab, as well as in the two agricultural classes. More precisely, for all these classes we detect a marginal reduction of the immobility rate of about two percentage points and no significant change in the patterns of work-life mobility. However, career immobility has declined by about 10% across these three cohorts for both urban self-employed and manual workers, and these changes have been paralleled by a corresponding increase of movements towards class IIIab. On the whole, this disaggregation by cohort of outflow rates suggests that career mobility is highly stable over time, though perhaps the barrier separating white collars from urban independent and manual workers has somewhat weakened.

These conclusions are further reinforced when we inspect the total mobility and immobility rates across cohorts, reported in appendix 2. The overall amount of career immobility has slightly declined from 79.9% to 75.3%, thus favouring an equally small growth of upward flows from 12.5% to 17.6%. At the same time, the volume of downward and horizontal mobility has always remained negligible in the period under examination.

It must be noted that this picture of almost perfect stability of the total career mobility rates actually results from two counteracting tendencies. On one side, the total share of immobile individuals in the rural classes has considerably declined. We have seen above that the immobility chances of these classes are highly stable across cohorts, so this first tendency must be traced back

[7] One could raise the objection that we detect such a limited volume of career mobility because we consider only two points in time, thereby ignoring all possible, intermediate episodes of career mobility. In other words, we may underestimate career mobility because we do not take career counter-mobility into account. To assess this possibility, we have considered a three-way cross-tabulation of first class by class after 10 years by class after 15 years (IHLS data): the total share of episodes of counter-mobility amounts to 1.3%. More precisely, this is the share of respondents who changed their class position during the first 10 years of work history but were back to their first class after 15 years. We obtain an even smaller estimate of career counter-mobility (1.1%) when we consider the cross-tabulation of first class by class after 5 years by class after 10 years.

[8] The raw cross-tabulation of birth cohort by first class by class after ten years is reported in appendix 2. The comments and estimates presented in the rest of this section rely on this table. Preliminary analyses suggest that information on career mobility is less reliable for the oldest cohorts of the Multi-purpose data; hence we have excluded individuals older than 70, then we have identified three 10-year cohorts. This explains why the cohort design for these data is slightly different from that adopted to analyze the IHLS data.

simply to the declining number of people starting their careers in the primary sector. On the other side, there is a growing contribution to the total volume of immobility coming from individuals who started their careers as entrepreneurs, managers, professionals and white collars (i.e. classes I-II and III). Again, the above outflow analysis suggests that this is simply due to the increasing number of individuals who began their careers in these occupational classes. In other words, these two counteracting tendencies can be traced back to the transformations of the occupational structure associated with industrialization and tertiarisation. These transformations affected primarily the distribution of entry class across cohorts, rather than driving a growth of career mobility. Hence, economic modernization has done little more than "redistributing" immobility chances from the primary to the tertiary sector, thus leaving almost unchanged the overall volume of career mobility. However, this summary picture leaves out urban self-employed and manual workers, whose immobility rates are declining across cohorts. This discontinuity is not easily attributable to structural changes, given that the relative share of these two classes looks rather stable across cohorts for both first class and class after ten years[9].

Finally, we can employ loglinear techniques to disentangle changes in career fluidity from changes driven by transformations of the occupational structure. As can be seen from table 2, a model of constant career fluidity across cohorts exhibits an excellent fit: it misclassifies only 2.2% cases and accounts for 99,2% of the association between first class and destination class.

Tab.2: loglinear models for career mobility tables

However, a *unidiff* model stating that this association has uniformly changed across cohorts marginally improves over the constant association model. The kappa indices, which summarize the overall strength of this association, point to a slight attenuation of career rigidity, as they decrease from 1.59 to 1.36 across the three cohorts. Hence, a non-negligible increase of career fluidity is visible, in line with recent findings reported by Schizzerotto and Marzadro (2010). Furthermore, the inspection of the significant standardized residuals of the constant association model indicates that this weak growth of career fluidity is attributable to the attenuation of the barrier that separates white collars from urban self-employed and manual workers, particularly in the youngest cohort. This result provides the main qualification to our general conclusion that the career mobility regime

[9] It may be objected that a more disaggregated class schema would show more career mobility, if anything because there would be more positions to move in between. In particular, our tables merge low technicians, skilled and unskilled urban manual workers, i.e. classes V-VI and VIIa. However, the IHLS data allow us to trace this distinction: we have found that these two fractions of the working class display almost identical outflow distributions. Hence, their aggregation is not misleading. Moreover, only one individual out of five moves from unskilled to skilled manual work and only one out of ten moves in the opposite direction. Due to sample size constraints, it is more difficult to disentangle class IIIb from IIIa in the IHLS data.

in Italy displays a noticeable degree of temporal stability[10]. The growth curves models presented in the next section will allow us to reassess and complement these results.

5.2 Growth curves models of career mobility

As anticipated in section three, we have built a dataset of replicated observations, where the occupational position held by respondents of the IHLS is observed yearly for up to 20 years since their labor market entry. Of course, not all interviewees have been followed for the whole observation window, as some of them left the labor market before. This unbalanced sample consists of 112'893 repeated observations regarding 6'814 individuals born between 1908 and 1967. On average, these individuals have been observed for 16.6 years.

The first model that we present is the unconditional means model, without predictors at either level. We use it as a benchmark that allows us to decompose the variance between the two levels, namely individuals and occasions. As can be seen in panel A of table 3, the estimated variance that lies between individuals is equal to 306.9, while the within-person variance is equal to 46. The latter can be interpreted as a summary measure of the amount of variation in the social standing scores of occupations that lies *within* individuals over time, whereas the former provides an estimate of the quantity of variation *between* individuals, regardless of time. The intraclass correlation, which can be obtained from these two quantities, is 0.87[11]. This means that an estimated 87% of the total variation in social standing scores is attributable to differences between individuals, and only the small, residual share (13%) is associated with career mobility.

Moving now to unconditional linear and curvilinear growth models (panels B and C), we will assess the relationship between career duration and career advancement. Results for the linear specification indicate that the average social standing at the entry into the labor market equals to 33.7 and that the yearly average improvement of the occupational position amounts to 0.27 points. For instance, the estimated improvement in terms of our social standing scale is 5.4 points over a period of twenty years. If consider the range of values of this scale (from 9.97 to 90.20 points), we are led to conclude, once again, that opportunities for career mobility are far from impressive in Italy, in line with our previous arguments concerning the role of structural features of the Italian economy and of bureaucratic regulations as constraints to career progression.

---

[10] These conclusions remain unchanged if we carry out separate analyses for men and women (*see* also section 5.2).

[11] If we denote with σ_α^2 the variance of the social standing of occupational positions that lies *between* individuals, and with σ_ε^2 the variance *within* individuals, the formula for the intra-class correlation coefficient is given by: $\sigma_\alpha^2/(\sigma_\alpha^2+\sigma_\varepsilon^2)$

Tab.3: unconditional growth curves models

Furthermore, the variance of the first-level component is now reduced to 25.1: it has almost halved (-45.4%). In other words, about half of the within-person variation in social standing is attributable to a dynamic of linear progression over the career. Moreover, the negative covariance between initial social standing and rate of change (-4.94) indicates that individuals who start from higher positions display a slower career progression: the so-called ceiling effect, well-documented in previous social mobility research.

In panel C of table 3 we report the results for an alternative curvilinear specification, which includes not only an additional fixed quadratic effect, but also the required additional variance components, namely the population variance for the curvature, as well as its covariances with linear time (i.e. career duration) and with the social standing score (*see* appendix 1). We thus obtain a further reduction of the first-level variance component from 25.1 to 19.3 and the curvature parameter looks small, but statistically significant. This quadratic specification is thus preferred to the linear one. This means that the (slow) pace of career progression tends to slow down over the career. In other words, the social standing of occupational positions increases at a decreasing rate[12]. This suggests the possibility that a stage of occupational maturity is reached at some time. In figure 1 we plot the predicted values of the social standing score over the career: as can be seen, the line representing career progression becomes almost perfectly flat after 15 years since labor market entry.

FIG.1: predicted values of the social standing score over the career

---

The growth curves model reported in table 4 introduces a set of covariates expressing individual attributes that affect occupational attainment and career progression. In particular, we have regressed the individual growth parameters (2-level equation) on gender, birth cohort, father's occupational score and yearly unemployment rate[13]. These variables are interacted only with linear

[12] Of course, one could wonder whether, at some point of the career, the social standing of occupations begins to decline, as in the case of old workers facing downward mobility. Given that our observation window is limited to twenty years, we cannot formally test this hypothesis, however we would maintain that it can hardly be applied to Italy (Reyneri 2007). We checked also that a cubic term does not improve model fit and that this term is not statistically significant. We also explored career advancement by means of non-parametric graphic analyses to make sure that our parametric specification does not do much "torture" to the observed data: we detected a curvilinear trend. Indeed, we were impressed by the very limited amount of variability around it (output available upon request). In appendix 2 we report some fit indices of the models presented in this section.

[13] We have checked that using the actual number of years spent at school, rather than the number of years equivalent to the highest educational qualification achieved, leads to the same results. A recent paper has showed that, in the case of Italy, using educational qualifications, rather than years of education, ensures minor improvements of the model fit and does not affect the substantive conclusions concerning the role of education for occupational attainment (Schneider *et*

time, because preliminary analyses indicated that the interactions with the quadratic term were never significant. However, the main effect for the quadratic term is included.

Tab.4: conditional growth curves models

This conditional quadratic growth model shows that the average social standing score of the occupation attained at the entry into the labor market by the reference group (i.e. women, born in the first cohort and with the other covariates fixed at their means) is 27.67 points of the de Lillo-Schizzerotto scale. Moreover, we can see that for every year of career progression this reference group improves its position by 0.30 points. The quadratic term is again small, negative and significant. Moving from career duration effects to cohort effects, we find evidence of occupational upgrading, given that younger cohorts enjoy better occupational prospects at the beginning of their career. As for cohort effects associated with the cyclical conditions of the economy at the beginning of work careers, the unemployment rate displays a significant, but definitively negligible, effect (0.10). An increase of five percentage points of the unemployment rate entails a variation of half point of social standing. However, when this variable is interacted with career duration, the estimated parameter is negative, significant and moderately strong (-0.01), thus indicating that adverse cyclical conditions hinder career advancement.

Furthermore, we detect a gender differential of 2.9 points in the occupational score at the entry into the labor market. This differential increases yearly by 0.16 points over the career. Hence, men benefit from a twofold advantage: they access better entry positions and they progress faster than women. However, both differentials display a moderate intensity[14]. It should be noted that white collar occupations enjoy higher social standing than skilled manual jobs: this contributes substantially to depressing gender differentials, which would be greater if we looked at earnings.

With regard to social origins, we can see that for each additional point of father's social standing score, the social standing of the entry occupation increases by 0.43 points, while its rate of change declines by less than -.001 points: the first effect is strong, while the second is small and not significant. Hence, father's job exerts a marked influence on occupational attainment at the beginning of the career, but plays a rather limited role beyond it. If anything, workers originating

---

al. 2009). Furthermore, preliminary analyses indicated that controlling for area of residence did not affect in any significant way our substantive conclusions concerning the role of education and of social origins for occupational attainment. Given the low number of foreign workers in Italy until the '90s, it was also unnecessary to include ethnicity as a control variable.

[14] Moreover, due to the particularly low rates of female labor market participation in Italy, employed women are a (positively) selected sample of the female population. Indeed, it may be argued that the inclusion of women in our analysis is problematic, because of the bias arising from selection into employment. However, we have checked that running the same models only on men aged 30 to 55 does not change our main conclusions.

from lower social strata display a slightly faster career progression, but this differential looks negligible. This corroborates our hypothesis that in Italy the locus of intergenerational reproduction is situated at the entry into the labor market, with little career-adjustment afterwards. The bias of ascriptive inequalities in this initial allocation does not strengthen over the career - nor does it weaken.

In the following model (table 5, panel A), we add three sets of interaction parameters[15]. In the first two sets birth cohort is interacted separately with career duration and with father's occupation, while the third set contains the three-way interaction between cohort, father's occupation and career duration. This leads to three substantive results. First, we detect evidence of a significant increase of career mobility across cohorts: the slope for the effect of career duration becomes steeper, in line with our previous results based on loglinear models. However, this change is concentrated between the first and the third cohort, while nothing happens afterwards. This is quite interesting, as for the second and the third cohort, the critical stage for career advancement, (i.e. the first 10-15 years of career) took place during the economic boom of the '50s and '60s. Second, the effect of father's occupation on the first occupation is roughly stable across cohorts: only trendless, non-significant fluctuations are visible. Hence, the initial influence of social origins displays a noticeable degree of persistence over time. Our third result refers to the three-way interaction between cohort, father's occupation and career duration: a slight and marginally significant reduction is visible, though again it takes the form of a discontinuity between the first and the second cohort, with little change afterwards. Hence, individuals from the lower social strata have enjoyed slightly better chances of career advancement after the first cohort, but this situation has hardly changed subsequently.

In panel B of table 5, we add respondents' years of education among individual-level variables, and we interact it with career duration, with cohort, and with career duration and cohort. Hence, the main effect of years of education refers to labor market entry of the first cohort. It can be seen that, for each year of education the initial social standing score increased by 0.75 points. As expected, the level of schooling displays a marked effect on the first occupational position. Furthermore, this effect becomes stronger in the following cohorts, although this trend has been partially reversed in the last cohort. Overall, the absolute returns to education have increased over time. This is a substantial increase, which reflects the growing share of jobs demanding a high level of education, as well as the rather slow educational expansion in Italy, which limited dynamics of credential inflation. It may be noted that, in line with this interpretation, educational expansion accelerated in

[15] All parameters presented in table 4 have been estimated also in the models presented in table 5, but they are not presented for reasons of space and because they hold little relevance for our research question. Besides, they remain basically unchanged relative to the estimates presented in table 4 (output available upon request).

Italy in the last cohort, while the growth of skilled jobs decelerated (Schizzerotto, Barone 2006). Furthermore, results in panel B indicate that more educated individuals progress slightly faster over the career ladder, although this effect is small (0.01) and not significant, as well as perfectly stable over time, as indicated by the interactions with cohort.

Not surprisingly, respondents' education mediates to a significant extent the influence of social origins, as the corresponding parameter is reduced as compared to panel A. However, it will be noted that the effect of father's occupation remains rather strong also after controlling for education, a finding that confirms the importance of direct effects of social origins in Italy.

Tab. 5 about here

Moreover, the interaction between father's occupation and cohort reported in panel B indicates that the direct effect of origins on the first job has not changed across cohorts. Furthermore, this effect becomes negligible after labor market entry, as the interaction parameter with career duration is small and not significant. However, we can find again some evidence that individuals from the lower social strata have benefited from slightly better chances of career advancement, and again this change has occurred between the first and the second cohort, with little change afterwards.

Overall, our models do not detect any sustained, long-term change in the determinants of career mobility. However, the second birth cohort, whose careers began mainly in the reconstruction period after the second world war and developed during the economic boom, has benefited not only from an overall increase of career opportunities, but also from a more 'meritocratic' distribution of these opportunities, to the extent that the role of origins for career progression has slightly decreased. However, these tendencies did not continue in the following cohorts. The other important trend involves the growing importance of education for the initial allocation of individuals. This could suggest a more meritocratic allocation of individuals to their first job, although interestingly this change did not translate into a diminished role of social origins at labor market entry[16].

6. Conclusions

[16] We ran the same analyses presented in this section on a different dependent variable, namely the social status of occupational positions, rather than their social standing (*see* Chan, Goldthorpe 2007). This alternative specification, which is more sensitive to the "prestige" of different jobs, shows even lower career mobility in Italy. It leads to very similar results concerning the role of origins and education for occupational achievement (results available upon request).

The results reported in this work confirm that opportunities for career advancement are rather limited in Italy, and that risks of downward mobility are negligible. This picture displays a noticeable degree of stability over time, although a moderate increase across cohorts in the overall volume of intragenerational mobility, as well as in career fluidity, can be detected. These results emerge from both career mobility tables and growth curves models. However, the latter allowed us to consider the possibility that there is individual-level heterogeneity in this persistent pattern of slow career progression. In particular, we were interested in assessing whether the role of social origins and of education changes over the career. We have found that both variables display a marked influence on the first occupation, but that their influence beyond labor market entry looks rather small, if not negligible.

Hence, we detect not only a limited overall volume of career mobility, but also a limited career-adjustment of social inequalities that are generated at the beginning of work careers. This state of affairs is even more concerning if we consider that origins not only affect the social standing of the first occupation via education, but also display substantial direct effects. Furthermore, the very limited influence of education and of social origins on career opportunities does not display any systematic trend over time, though we can note that the positive role of origins for career progression has slightly decreased after the first cohort.

The notion of "occupational maturity" in Italy should be understood against this background of compressed chances of career mobility. Not only chances of career advancement are already small in the initial stages of work histories, but this slow growth even slows down with career duration, up to a point where these small chances become completely negligible. This point is reached about 15 years since labor market entry in Italy.

Finally, we believe that our results suggest that growth curves models can serve as a valuable tool for the analysis of career mobility. On one side, it is reassuring that results based on this technique confirm several well-established findings of previous research (e.g. the key role of education for occupational achievement, the importance of direct effects of social origins in Italy, the small volume of career mobility in this country, the existence of ceiling effects, etc.). Most importantly, we have found that this technique leads to a similar conclusion as loglinear models with regard to the moderate increase over time of career chances in Italy. On the other side, this technique improves over analyses based on standard mobility tables by controlling jointly for cohort, period and career duration effects. Furthermore, by interacting social origins and education with career duration, we are able to assess how ascribed and achieved inequalities between individuals evolve over the career since labor market entry. We are thus in a position to assess the contribution of career mobility to dynamics of intergenerational reproduction. Our key conclusion is

that, in the Italian case, this contribution is rather limited: career mobility does not strengthen, nor does it weaken, the initial unfair allocation of individuals to their entry positions.

References

Bagnasco, A., 1998, *La Costruzione Sociale del Mercato*, Bologna, Il Mulino.

Barbieri, P., Scherer, S., 2009, *Labor Market Flexibilization and its Consequences in Italy*, in European Sociological Review, vol. 25, n.6., pp.677-692.

Barbieri, P., Bison, I., 2004, *Self-employment in Italy: Scaling the Class Barriers*, in Müller, W., Arum, R. (eds), *The Reemergence of Self-employment. A Comparative Study of Self-employment Dynamics and Social Inequality*, Princeton, Princeton University Press, 2004, p. 121-173.

Bison, I., Rettore, E., Schizzerotto, A., 2009, *La Riforma Treu e la Mobilità Contrattuale in Italia. Un Confronto tra Coorti d'ingresso nel Primo Impiego*, IRVAPP working paper 2009/2, available at: http://www.aiel.it/bacheca/SASSARI/papers/bison_rettore_schizzerotto.pdf

Blau, P., Duncan, O., 1967, *The American Occupational Structure*, New York, Wiley.

Blossfeld, H.P., 1986, *Career Opportunities in the FRG: a Dynamic Approach to the Study of Life Course, Period and Cohort Effects*, in European Sociological Review, vol. 3, pp.123-155.

Bowles, S., Gintis, H., 2002, *Schooling in Capitalist America Revisited*, in Sociology of Education, vol. 75, pp. 1-18.

Breen, R., Jonsson, J., 2005, *Inequality of Opportunity in Comparative Perspective: Recent Research on Educational Attainment and Social Mobility*, in Annual Review of Sociology, vol. 31, pp. 223-243.

Carroll, G., Mayer, K, 1987, *Jobs and Classes: Structural Constraints on Career Mobility*, in European Sociological Review, vol.3, pp.14-38.

Chan, T., Goldthorpe, J.H., 2007, *Class and Status: The Conceptual Distinction and its Empirical Relevance*, in American Sociological Review, 72, 4, pp. 512-532.

De Lillo, A., Schizzerotto, A., 1985, *La Valutazione Sociale delle Occupazioni*, Bologna, il Mulino.

Erikson, R., Goldthorpe, J.H., 1992, *The Constant Flux*, Oxford, Clarendon Press.

Goldthorpe, J.H., 1996, *The Problems of Meritocracy*, in Erikson, R., Jonsson, J.(eds.), *Can Education be Equalized?*, Boulder, Westview Press.

Goldthorpe, J., Hope, K., 1974, *The Social Grading of Occupations: a New Approach and Scale*, Oxford, Oxford University Press.

Halpin, B., Chan, T., 1998, *Class Careers as Sequences: an Optimal-matching Analysis of Work-life Histories*, in European Sociological Review, vol.14, n.2, pp.114-130.

Müller, W., Gangl, M. (eds), 2004, *Transitions From School to Work in Europe*, Oxford, Oxford University Press.

Reyneri, E., 2007, *Sociologia del Mercato del Lavoro*, Bologna, Il Mulino.

Sarti, S., Terraneo, M., 2007, *Un Aggiornamento della Scala de Lillo Schizzerotto*, paper presented at the meeting of the Italian Sociological Association, Trento, November 2007.

Schizzerotto, A., 2002, *Vite Ineguali*, Bologna, il Mulino.

Schizzerotto, A., Barone, C., 2006, *Sociologia dell'istruzione*, Bologna, Il Mulino.

Schizzerotto, A., Marzadro, S., 2010, *Social Mobility in Italy Since the Beginning of the 20th Century*, in Rivista di Politica Economica, vol.98, n.9-10, pp.5-40.

Schizzerotto, A., Pisati, M., 1999, *Pochi Promossi, Nessun Bocciato*, in Stato e Mercato, vol.2, n1.

Schneider, S., de Heus, M., Luijkx, R., Kieffer, A., Barone, C., Saar, E., Bartušek, A., 2009, *Harmonising Measures of Educational Attainment for Comparative Research*, ESRA conference, Warsaw.

Singer, J., Willet, J., 2003, *Applied Longitudinal Data Analysis*, Oxford, Oxford University Press.

Sorensen, A., 1986, *Theory and Methods in Social Stratification*, in Himmelstrand, U. (ed.), *Sociology: from Crisis to Science*?, New York, Free Press.

Warren, J., Sheridan, J., Hauser, R., 2002, *Occupational Stratification across the Life Course: Evidence from the Wisconsin Longitudinal Study*, in American Sociological Review, vol.67, n.3, pp. 432-455.

Wu, L., 2000, *Some Comments on "Sequence Analysis and Optimal Matching Methods in Sociology: Review and Prospect*", in Sociological Methods and Research, vol.29, pp.41-64.

Appendix 1: A formalized illustration of growth curves models

In section 5 we develop several growth curves models, where the dependent variable is the social standing score Y_{ij} referring to the occupation held by individual *i* in occasion *j*. Hence, yearly occupational spells and individuals are, respectively, first- and second-level units in our multi-level framework, where we model individual-level growth curves with a sequence of specifications of increasing complexity.

Our first model (*unconditional means model*, panel A of tab.3) is aimed at quantifying the total variation in occupational scores which lies between and within individuals. At level 1, the model equation is the following:

(1a) $Y_{ij} = \pi_{0i} + \varepsilon_{ij}$ where $\varepsilon_{ij} \sim N(0, \sigma_{\varepsilon}^2)$

The model equation at level 2 is:

1b) $\pi_{0i} = \gamma_{00} + \zeta_{0i}$, where $\zeta_{0i} \sim N(0, \sigma_0^2)$

The π_{0i} parameter represents the mean occupational score of individual *i* across occasions. The γ_{00} parameter represents the grand mean across individuals and occasions, while ζ_{0i} represents the person-specific means.

Our second step is to specify an *unconditional growth model* (tab.3, panel B) with career duration as the only predictor at level 1 (occasions) and no substantive predictors at level 2 (individuals). In this specification, the occupational scores Y_{ij} are expressed as a *linear* function of career duration. Now the first-level equation describes how the occupational position of individuals changes in the course of their careers, whereas the second-level equation expresses how the growth parameters (i.e. the initial standing and its rate of change) differ across individuals. By inspecting the variance components, we can assess the share of within-person variance explained by the linear temporal predictor. The level-1 equation is:

(2a) $Y_{ij} = \pi_{0i} + \pi_{1i} TIME_{ij} + \varepsilon_{ij}$ where $\varepsilon_{ij} \sim N(0, \sigma_{\varepsilon}^2)$

where TIME represents career duration. The level-2 equation is:

(2b) $\begin{matrix} \pi_{0i} = \gamma_{00} + \zeta_{0i} \\ \pi_{1i} = \gamma_{10} + \zeta_{1i} \end{matrix}$ $where \begin{bmatrix} \zeta_{0i} \\ \zeta_{1i} \end{bmatrix} \sim N\left(\begin{bmatrix} 0 \\ 0 \end{bmatrix}, \begin{bmatrix} \sigma_0^2 & \sigma_{01} \\ \sigma_{10} & \sigma_1^2 \end{bmatrix} \right)$

Our third step is to express occupational attainment as a *quadratic* function of career duration (tab. 3, panel C). This leads to a reformulation of the equations reported in (2):

Level-1 equation:

(3a) $Y_{ij} = \pi_{0i} + \pi_{1i} TIME_{ij} + \pi_{2i} TIME_{ij}^2 + \varepsilon_{ij}$ where $\varepsilon_{ij} \sim N(0, \sigma_\varepsilon^2)$

Level-2 equation:

(3b)
$$\begin{aligned} \pi_{0i} &= \gamma_{00} + \zeta_{0i} \\ \pi_{1i} &= \gamma_{10} + \zeta_{1i} \\ \pi_{2i} &= \gamma_{20} + \zeta_{2i} \end{aligned} \quad where \begin{bmatrix} \zeta_{0i} \\ \zeta_{1i} \\ \zeta_{2i} \end{bmatrix} \sim N\left(\begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}, \begin{bmatrix} \sigma_0^2 & \sigma_{01} & \sigma_{02} \\ \sigma_{10} & \sigma_1^2 & \sigma_{12} \\ \sigma_{20} & \sigma_{21} & \sigma_2^2 \end{bmatrix} \right)$$

Finally, we move to *conditional growth quadratic models* (tab. 4 and 5), where we introduce individual-level covariates and interact them with career duration:

Level-1 equation:

(4a) $Y_{ij} = \pi_{0i} + \pi_{1i} TIME_{ij} + \pi_{2i} TIME_{ij}^2 + \varepsilon_{ij}$ where $\varepsilon_{ij} \sim N(0, \sigma_\varepsilon^2)$

Level-2 equation:

(4b)
$$\begin{aligned} \pi_{0i} &= \gamma_{00} + \sum_{p=1}^{k} \gamma_{0p} X_i + \zeta_{0i} \\ \pi_{1i} &= \gamma_{10} + \sum_{p=1}^{k} \gamma_{1p} X_i + \zeta_{1i} \\ \pi_{2i} &= \gamma_{20} + \sum_{p=1}^{k} \gamma_{2p} X_i + \zeta_{2i} \end{aligned} \quad where \begin{bmatrix} \zeta_{0i} \\ \zeta_{1i} \\ \zeta_{2i} \end{bmatrix} \sim N\left(\begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}, \begin{bmatrix} \sigma_0^2 & \sigma_{01} & \sigma_{02} \\ \sigma_{10} & \sigma_1^2 & \sigma_{12} \\ \sigma_{20} & \sigma_{21} & \sigma_2^2 \end{bmatrix} \right)$$

It will be noted that in the linear specification described by equation (2) the individual growth parameters refer to a model of linear change where π_{0i} represents the occupational score at the entry into the labour market, and π_{1i} reflects the linear rate of change (i.e. the variation in the occupational score corresponding to one additional year of career duration).

The following models described by equations (3) and (4) include the second-order polynomial terms π_{2i} in order to capture the curvature of the growth rate. In these models π_{1i} becomes the instantaneous rate of change. This means that there is no more a constant common slope, as the rate of change varies smoothly over the career (Singer & Willett 2003, p.215). It should be noted that, unlike a level-1 model that includes only the quadratic term, a second-order polynomial change trajectory includes two time predictors and three growth parameters $\pi_{0i}, \pi_{1i}, \pi_{2i}$. The first two parameters have interpretations that are similar, though not identical, to those of the linear change specification, while the third parameter is new. More specifically, in the quadratic change model π_{0i} still represents the intercept of the occupational trajectory, i.e. the value of Yij when both career duration and its square are set to zero. However, π_{1i} does not represent a constant rate of change anymore. Instead, now it reflects the instantaneous rate of change in a specific moment, namely when career duration equals zero.

Appendix 2: Raw data for the analysis of career mobility tables and additional results

Table A1: Cross-tabulation of birth cohort by first class by class after ten years (Italy, 2003, Multi-purpose survey, N=14'282)

1933-42			**Class after ten years**			
First class	I-II	IIIab	IVab	IVc	V-VI-VIIa	VIIb
I-II	131	10	6	0	2	0
IIIab	66	597	21	0	20	0
IVab	16	11	358	9	23	2
IVc	2	4	11	291	34	14
V-VI-VIIa	35	126	180	18	1.581	25
VIIb	2	7	12	44	119	289

1943-52			**Class after ten years**			
First class	I-II	IIIab	IVab	IVc	V-VI-VIIa	VIIb
I-II	199	19	6	3	6	0
IIIab	137	1.153	28	1	37	0
IVab	14	17	346	4	44	0
IVc	5	2	9	138	22	8
V-VI-VIIa	63	283	256	13	1.819	31
VIIb	2	8	10	19	62	139

1953-62			**Class after ten years**			
First class	I-II	IIIab	IVab	IVc	V-VI-VIIa	VIIb
I-II	275	19	17	0	11	0
IIIab	129	1.391	73	3	73	1
IVab	33	44	358	5	36	1
IVc	2	5	8	109	9	4
V-VI-VIIa	84	372	265	14	1.760	23
VIIb	4	12	6	12	45	110

Table A2: Cross-tabulation of first class by class after ten years: total mobility and immobility rates across three birth cohorts (Italy, 2003, Multi-purpose survey, N=14'282)

	1933-42	1943-52	1953-62
Immobility	79,9	77,4	75,3
Upward mobility	12,5	16,5	17,6
Downward mobility	2,7	3,0	3,2
Horizontal mobility	4,9	3,1	3,9
Total	100	100	100

Tab. A3: Deviance statistics of the models reported in the text

Model	Log likelihood	Wald CHI2(0)	d.f.	Deviance	Δ Deviance	Δ d.f.	Prob.
Tab. 3, panel A: unconditional means model	-392201.31	-	0	784402.62			
Tab. 3, panel B: unconditional linear growth model	-368156.53	463.88	1	736313.06	48089.56	1	0,000
Tab. 3, panel C: unconditional quadratic growth model	-360212.75	484.50	2	720425.50	15887.56	1	0,000
Tab. 4: conditional quadratic growth model	-331285.45	2356.60	12	662570.90	57854.60	10	0,000
Tab. 5, panel A: conditional quadratic growth model with cohort interactions	-331273.70	2383.88	24	662547.40	23.50	12	0,024
Tab. 5, panel B: conditional quadratic growth model adding education and its cohort interactions	-326549.78	4622.5	34	653099.56	9447.84	10	0,000

TABLES

Table 1: Cross-tabulation of first class by class after ten years (Italy, 2003, Multi-purpose survey, N=14'282)

	I-II	IIIab	IVab	IVc	V-VI-VIIa	VIIb	Total
I-II	85.9	6.8	4.12	0.4	2.7	0	100
IIIab	8.9	84.2	3.3	0.1	3.5	0.1	100
IVab	4.8	5	80.4	1.4	7.8	0.2	100
IVc	1.3	1.6	4.1	79.5	9.6	3.8	100
V-VI-VIIa	2.6	11.2	10.1	0.7	74.3	1.1	100
VIIb	0.9	3	3	8.3	25.1	59.7	100

Table 2: Goodness-of-fit statistics for selected loglinear models applied to the cross-tabulation of birth cohort by first class by class after ten years (Italy, 2003, Multi-purpose survey, N=14'282)

Model	*d.f.*	*G2*	*rG2*	*BIC*	Λ
Conditional independence	48	17190	-	16731	45.3
Constant association	32	131.9	99.2	-174.2	2.2
Unidiff	30	92.5	99.5	-194.5	1.5

Legend: d.f.: degrees of freedom; G2: Deviance; rG2: reduction of the Deviance relative to the conditional independence model; Λ : dissimilarity index

Table 3 *Growth curves models of career mobility in contemporary Italy: unconditional models*

Panel A *Unconditional mean and variance of the occupational standing scores across individuals and yearly observations*

Social standing scores and random-effect parameters	β	$\sigma(\beta)$	z	$p(z)$	*0.95 confidence interval*	
Constant	35.59	0.21	166.71	0.00	35.17	36.01
Constant variance	306.90	5.32	-	-	296.64	317.51
Residual variance	46.01	0.20	-	-	45.70	46.48

Panel B *Linear variation of the occupational standing scores across individuals and yearly observations*

Social standing scores and random-effect parameters	β	$\sigma(\beta)$	z	$p(z)$	*0.95 confidence interval*	
Average social standing score	33.71	0.22	151.55	0.00	33.27	34.15
Career duration	0.27	0.01	21.54	0.00	0.25	0.30
Social standing score variance	331.28	5.78	-	-	320.15	342.80
Career duration variance	0.93	0.02	-	-	0.90	0.97
Social standing score and career duration covariance	-4.94	0.24	-	-	-5.42	-4.47
Residual variance	25.13	0.11	-	-	24.91	25.35

Panel C *Curvilinear variation of the occupational standing scores across individuals and yearly observations*

Social standing scores and random-effect parameters	β	$\sigma(\beta)$	z	$p(z)$	*0.95 confidence interval*	
Average social standing score	33.43	0.22	150.22	0.00	33.00	33.87
Career duration	0.39	0.03	13.60	0.00	0.34	0.45
Career duration^2	-0.01	0.00	-4.68	0.00	-0.01	-0.00
Social standing score variance	329.7	5.78	-	-	318.23	340.90
Career duration variance	4.61	0.09	-	-	4.43	4.80
Career duration^2 variance	0.02	0.00			0.01	0.02
Social standing score and career duration covariance	-8.25	0.55	-	-	-9.33	-7.19
Social standing score and career duration^2 covariance	0.18	0.03			0.12	0.24
Career duration and career duration^2 covariance	-0.24	0.00			-0.25	-.023
Residual variance	19.33	0.09	-	-	19.15	19.50

Source: Ilfi, waves 1997, 1999, 2001, 2003, and 2005

Table 4 *Growth curves models of career mobility in contemporary Italy: conditional models of occupational standing scores by gender, birth cohort, social origins, career duration and yearly rate of unemployment*

Covariates and random-effects parameters	β	$\sigma(\beta)$	z	$p(z)$	*0.95 confidence interval*	
Gender						
Woman (reference)	-	-	-	-	-	-
Man	2.92	0.41	7.07	0.00	2.11	3.73
Birth cohort						
1908-27 (reference)	-	-	-	-	-	-
1928-37	-0.03	0.74	-0.04	0.97	-1.48	1.42
1938-47	3.57	0.69	5.18	0.00	2.22	4.92
1948-57	6.72	0.67	10.00	0.00	5.40	8.04
1958-67	7.36	0.67	10.98	0.00	6.05	8.68
Father's occupational score (social standing)	0.43	0.01	36.08	0.00	0.41	0.45
Career duration	0.30	0.03	8.72	0.00	0.23	0.36
Career duration^2	-0.01	0.00	-4.13	0.00	-0.01	-0.00
Yearly unemployment rate	0.10	0.03	2.78	0.00	0.03	0.16
Gender by career duration	0.16	0.03	6.15	0.00	0.11	0.22
Father's occupational score by career duration	-0.00	0.00	-1.40	0.16	-0.00	0.00
Yearly unemployment rate by career duration	-0.01	0.00	-2.19	0.03	-0.02	0.00
Constant	27.67	0.59	46.46	0.00	26.50	28.83
Career duration variance	4.67	0.10	-	-	4.48	4.87
Career duration^2 variance	0.02	0.00	-	-	0.02	0.02
Constant variance	263.91	4.88	-	-	254.52	273.65
Constant and career duration covariance	-9.18	0.52	-	-	-10.20	-8.15
Constant and career duration^2 covariance	0.24	0.03	-	-	0.18	0.30
Career duration and career duration^2 covariance	-0.24	0.01	-	-	-0.25	-0.23
Residual variance	19.57	0.09	-	-	19.39	19.76

Table 5: *Growth curves models of career mobility in contemporary Italy: conditional models of occupational standing scores by gender, birth cohort, social origins, education, career duration, yearly rate of unemployment, and cohort interactions*

Covariates and random-effects parameters	β	$\sigma(\beta)$	$p(z)$	β	$\sigma(\beta)$	$p(z)$
		PANEL A			PANEL B	
Birth cohort						
1908-27 (reference)	-	-	-			
1928-37	-0.38	0.79	0.62	-0.81	0.77	0.30
1938-47	2.78	0.74	0.00	0.57	0.70	0.42
1948-57	5.95	0.72	0.00	1.58	0.70	0.02
1958-67	6.54	0.72	0.00	1.28	0.72	0.07
Father's occupational score (social standing)	0.44	0.04	0.00	0.35	0.03	0.00
Career duration	0.18	0.05	0.00	0.17	0.06	0.00
Career duration^2	-0.01	0.00	0.00	-0.01	0.00	0.00
Birth cohort by career duration						
1908-27 (reference)	-	-	-	-	-	-
1928-37 by career duration	0.06	0.05	0.23	0.06	0.06	0.28
1938-47 by career duration	0.14	0.05	0.00	0.09	0.05	0.08
1948-57 by career duration	0.14	0.05	0.00	0.04	0.05	0.47
1958-67 by career duration	0.16	0.05	0.00	0.06	0.06	0.29
Birth cohort by Father's occupational score						
1908-27 (reference)	-	-	-	-	-	-
1928-37 by father's score	0.03	0.05	0.57	0.02	0.04	0.71
1938-47 by father's score	-0.02	0.04	0.60	-0.04	0.04	0.34
1948-57 by father's score	-0.01	0.04	0.90	-0.03	0.04	0.42
1958-67 by father's score	-0.04	0.04	0.37	-0.03	0.04	0.43
Birth cohort by Father's occupational score by career duration						
1908-27 (reference)	-	-	-	-	-	-
1928-37 by father's score by career duration	-0.004	0.003	0.18	-0.006	0.003	0.09
1938-47 by father's score by career duration	-0.004	0.003	0.11	-0.004	0.003	0.23
1948-57 by father's score by career duration	-0.004	0.003	0.12	-0.005	0.003	0.11
1958-67 by father's score by career duration	-0.005	0.002	0.06	-0.004	0.003	0.15
Father's occupational score by career duration	0.00	0.00	0.21	0.00	0.00	0.75
Years of education	-	-	-	0.75	0.09	0.00
Years of education by career duration	-	-	-	0.01	0.01	0.15
Birth cohort by years of education	-	-	-			
1908-27 (reference)	-	-	-	-	-	-
1928-37 by years of education	-	-	-	0.13	0.13	0.31
1938-47 by years of education	-	-	-	0.25	0.11	0.03
1948-57 by years of education	-	-	-	0.43	0.11	0.00
1958-67 by years of education	-	-	-	0.29	0.11	0.00
Birth cohort by year of education by career duration						
1908-27 (reference)	-	-	-	-	-	-
1928-37 by years of education by career duration	-	-	-	0.01	0.01	0.28
1938-47 by years of education by career duration	-	-	-	0.00	0.01	0.95
1948-57 by years of education by career duration	-	-	-	0.01	0.01	0.47
1958-67 by years of education by career duration	-	-	-	0.00	0.01	0.75

FIGURES

Fig.1: Estimated curvilinear variation of the social standing score of the occupation over the first 20 years of working careers