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EARLY CAREER PATHWAYS AND MODELS OF LABOUR MARKET PARTICIPATION IN ITALY: BETWEEN OLD AND NEW INEQUALITIES.

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E sono ormai convinto da molte lune
dell'inutilità irreversibile del tempo
Rino Gaetano, *Tu, forse non essenzialmente tu*

Abstracts

English abstract

Over the past decade, labour market flexibilization has become a major issue within the European Union, but the impact of deregulation and flexibilization processes and structural changes of labour systems on careers are still unclear. Job (dis)continuity and career configuration are crucial for understanding inequalities within the labour market and their evolution over time. The debate focuses, on the one hand, on the role of temporary contracts in trapping workers in precarious situations rather than in being a stepping-stone toward a stable job, and, on the other hand on increasing instability of employment careers and of career heterogeneity across the population. However, in order to detect vulnerable profiles of workers, it would be conducive to consider not just isolated transition between states and their timing but rather the complete pathways of labour market participation, conceived as a series of different labour market states and events succeeding over time. Moreover, it is just by adopting this approach that processes hypothesized as being triggered by globalization – like differentiation and destandardization of the working life – can be tested.

Early careers represent a crucial step through labour market participation, since in this time-span the foundations for the following trajectories are laid and stronger or weaker within or between-groups differences with respect to a multitude of factors can influence different kinds of inequalities. The objects of this dissertation is precisely early careers patterns and their characteristics.

The analyses are carried out using the new AD-Silc panel, that matches information from the National Institute for Social Security registers (INPS) and data from the 2005 wave of the Italian survey IT-Silc (part of the European Union Statistics on Income and Living Conditions – EU-Silc). Analyses concern four Italian cohorts of workers by considering if and to what extent gender and education are associated with different levels of differentiation and destandardization over time. Both synthetic indeces and 'qualitative' representative sequences will be used in order to study in depth individual pathways by highlighting different faces of the same processes in cross-cohort comparison. In fact, the first seven years of labour market participation of four different cohorts of entry (1974-1978, 1982-1986, 1990-1994, and 1998-2001) are defined as sequences and these will be my main object of study being analyzed as a whole in their temporal unfolding. I then analyze the cross-cohort evolution of the most frequent pathways leading to more or less positive/negative outcomes for labour market participation, such as being in full-time jobs and being jobless. Secondly, a focus on the younger cohort of entry (1998-2001) offers a broad description of the models of labour market participation that were at young workers disposal. The aim is to put in evidence to what extent gender and education and their interaction play a role in defining the likelihood of experiencing different models of labour market participation.

The main results from the cross-cohort comparison confirm that an increase in differentiation and destandardization of early careers exists both for women and men, but to different extents, being more pronounced for women. Moreover, education strongly influences the degree to which each of these processes have evolved across cohorts, both for men and women. This also applies to the evolution over time of the representative sequences' characteristics. This analytical step also shows that non-linear and disrupted early careers were already widely diffuse before the deregulation process started. Furthermore, the overall trend followed by the cross-cohort evolution of the most frequent pathways leading to full-time employment and joblessness show a general increase in the length of the pathways and a progressively stronger presence of more differentiated states. Differences according to education exist and they support the idea that the higher the educational level is, the less differentiated and complex the patterns.

Finally, the main results from the focus on the younger cohort concern, firstly, the fact that clusters are mainly defined by the contractual arrangements, even though the internal variability and the variety in terms of states throughout the individual sequences confirm the complexity of the early career for a great number of young workers. Secondly, gender and the interaction between gender and education – net of other relevant variables – define a differentiated probability of accessing certain clusters (or better, certain models of labour market participation). Being women and being low-skilled are negatively related to the probability of being in more steady and secure (in terms of employment protection and stability and social security) clusters.

Italian abstract

Durante gli ultimi due decenni il processo di flessibilizzazione è al centro del dibattito europeo sul mercato del lavoro. Questo dovuto in parte al fatto che la progressiva deregolazione ha prodotto conseguenze che sono ancora oggi incerte. In questo contesto, la (dis)continuità lavorativa e la configurazione delle carriere sono oggetti di studio fondamentali per la comprensione delle disuguaglianze nel mercato del lavoro e la loro evoluzione nel tempo.

Il dibattito attuale si concentra, da una parte, sul ruolo dei contratti temporanei come trappola in posizioni precarie o trampolino verso un lavoro stabile, e, dall'altra, sulla crescente instabilità ed eterogeneità delle carriere di coorti diverse di individui. Per identificare profili di lavoratori vulnerabili è necessario considerare non solo transizioni isolate tra stati e la loro distribuzione nel tempo, ma piuttosto i percorsi di partecipazione al mercato del lavoro nella loro completezza. I percorsi occupazionali vengono dunque intesi come processi durante i quali i diversi stati e/o eventi esperibili nel mercato del lavoro si succedono nel tempo. Adottando questo approccio e osservando i cambiamenti che hanno toccato i percorsi dei lavoratori, la differenziazione e la destandardizzazione della vita lavorativa come conseguenze della progressiva deregolazione del sistema lavoro possono essere efficacemente studiate nel loro sviluppo temporale.

Una periodo cruciale della partecipazione al mercato del lavoro è rappresentata dalle carriere di ingresso. Infatti, durante questa prima fase si gettano le basi per lo sviluppo delle traiettorie lavorative successive. L esistenza di differenze di più o meno accentuate tra gruppi di lavoratori (ma anche la variabilità interna ai gruppi stessi) in corrispondenza dei primi anni di partecipazione al mercato del lavoro può avere un impatto sulle disuguaglianze in diversi ambiti della vita. In questo lavoro mi concentrerò proprio sullo studio delle carriere di ingresso e la loro configurazione. A questo fine

farò ricorso ai dati del panel AD-Silc, che unisce informazioni provenienti dagli archivi dell Istituto Nazionale della Previdenza Sociale (INPS) e i dati campionari della wave 2005 dell indagine IT-Silc (sezione italiana dell indagine European Union Statistics on Income and Living Conditions – EU-Silc).

Una prima serie di analisi riguarda quattro coorti di lavoratori italiani per le quali considero se e in che misura genere e livello di istruzione sono associati a diversi livelli di differenziazione e destandardizzazione (rispettivamente complessità delle singole carriere e differenze tra le carriere). I primi sette anni di partecipazione al mercato del lavoro di quattro coorti di lavoratori (1974-1978, 1982-1986, 1990-1994 e 1998-2001) sono definiti come sequenze (una per ciascun individuo del campione) intese come oggetto di studio nel loro complesso e che vengono analizzate nel loro sviluppo temporale. Per questo ricorro in primo luogo a un indice sintetico che catturi la complessità delle carriere di ingresso per poi analizzare l'evoluzione di ciascuno degli elementi costitutivi dell'indice. Inoltre, identifico sequenze rappresentative di ogni sottocampione definito in funzione di genere, titolo di studio e della coorte di ingresso nel mercato del lavoro per dare conto dei cambiamenti quantitativi e qualitativi avvenuti nelle carriere individuali. L'analisi si concentra poi sull'evoluzione dei percorsi che con più frequenza portano a posizioni favorevoli o meno sul mercato del lavoro (contratto full-time piuttosto che disoccupazione/inattività) al termine dei sette anni considerati.

La seconda serie di analisi si concentra sulla coorte più recente per l ingresso nel mercato del lavoro (1998-2001) e offre una dettagliata descrizione dei modelli di partecipazione esperiti da questi giovani lavoratori nei primi anni di carriera. L'obiettivo è quello di mettere in evidenza se e in che misura genere e titolo di studio – e la loro interazione – giochino un ruolo nel definire la probabilità di accedere carriere di ingresso caratterizzare da diversi gradi di stabilit e protezione.

I risultati principali della comparazione tra coorti mostrano l'esistenza di una crescita del grado di differenziazione e destandarizzazione delle carriere di ingresso sia per le donne che per gli uomini, ma in misura diversa per i due gruppi. Le donne risultano infatti più esposte degli uomini a entrambi i processi analizzati. Il titolo di studio si configura come variabile cruciale nel definire l'evoluzione delle carriere nel passaggio da una coorte all altra per lavoratrici e lavoratori. Infatti, in generale, il grado di differenziazione e destandarizzazione è inversamente proporzionale al titolo di studio ottenuto prima dell'ingresso nel mercato del lavoro. La stessa relazione si può riscontrare osservando l'evoluzione nel tempo delle caratteristiche delle sequenze rappresentative per ogni sottocampione considerato.

Questo passaggio analitico mostra con ulteriore chiarezza come carriere di ingresso non lineari e con numerose interruzioni fossero diffuse anche nel periodo precedente a quello della deregolazione degli anni '80/'90. Inoltre, la tendenza generale dell'evoluzione tra coorti dei percorsi che con più frequenza portano a un impiego full-time nel settore privato o a disoccupazione/inattività mostra una crescita nella lunghezza dei percorsi (espressa dal numero di eventi lungo le sequenze) e una più ampia varietà degli stati che compongono i percorsi stessi. Le differenze in funzione del titolo di studio mostrano che al crescere del livello di istruzione diminuisce la differenziazione e la complessità dei percorsi.

I principali risultati dell'analisi focalizzata sulla coorte più recente di lavoratori riguardano in primo luogo il fatto che la definizione dei clusters – ovvero dei modelli di partecipazione – passi prevalentemente attraverso alcuni tipi di contratto (ad esempio full-time o part-time nel settore privato) o in generale alcune occupazioni (lavoro

autonomo o da professionista). Tuttavia, la variabilità interna ai cluster e la varietà di stati effettivamente presenti lungo una consistente quota di sequenze individuali conferma che per molti lavoratori entrati tra il 1998 e il 2001 la carriera di ingresso è un percorso accidentato fatto di molte interruzioni e transizioni tra stati diversi. Infine, il genere e l'interazione tra genere e titolo di studio – al netto di altre variabili confondenti – definiscono una diversa probabilità di accesso in particolare ad alcuni modelli di partecipazione. Infatti, l'essere donna e poco istruita è connesso a una probabilità minore di sperimentare carriere di ingresso più stabili e sicure, sia in termini di protezione e stabilità del lavoro che di accesso a prestazioni di welfare connesse al lavoro.

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Chapter 1

Introduction

Job (dis)continuity and careers configuration are crucial for understanding new and old inequalities within the labour market. The structural features of jobs (salaries, benefits and work conditions) and occurrences in the individuals life-course intersect in a specific historical time. On the one hand, the result is that different forms of between cohorts inequalities emerge and, on the other hand, the labour opportunity structure, which can be conceived as the set of time dependent opportunities and obligations workers have to face during their careers (Abbott, 2005), is modified by this interaction. The impact of deregulation and flexibilization structural changes of labour systems on careers is still unclear. In sociology and economics the debate focuses on the role of temporary contracts in trapping workers in precarious situations rather than in being a stepping-stone toward a stable job and, on a more general level, on the timing of transitions into/out of certain states.

However, in order to detect vulnerable profiles of workers, it would be conducive to consider not just isolated transitions but rather the pathways as a series of different labour market states and events. Moreover, for Italy the dual-labour market perspective appears somehow restricted if we consider that, firstly, mobility is observed to a great extent also during the period that preceded the deregulation season (Fabrizi and Raitano, 2012) and, secondly, that obtaining ad open-ended contract does not imply a stability gained once for all.

These considerations are consistent with the need for a more complex (and complete) representation of labour market dynamics on the micro-level. A better understanding of the latter fosters a better analytical and substantive connection between the micro- and macro-level. An increasing amount of dataset goes beyond the observation of states in which people are in single points in time and follows individuals longitudinally by providing information on sequences of episodes and events, more suitable to account for hybrid models of participation in the labour market.

It is just by adopting an approach capable of managing pathways' and patterns' evolution over time that processes hypothesized being triggered by the globalization – such as differentiation and destandardization (Brückner and Mayer, 2005) of the working life – can be tested. Early careers represent a crucial step throughout the labour market

participation conceived as a process, since in this time span the foundations for the following trajectories are laid and stronger or weaker within/between groups differences can influence different kinds of inequalities, both in the short- and the long-term.

The objective of this dissertation is to analyze the early careers of four Italian cohorts of workers by considering if and to what extent gender and educational level are associated with different levels of differentiation and destandardization of individuals careers over time. I will then analyze the cross-cohort evolution of the most frequent pathways leading to positive or negative outcomes for labour market participation, such as being in full-time jobs and being jobless. Secondly, a focus on the younger cohort of workers who entered the labour market between 1998-2001 will highlight to what extent gender and education and their interaction play a role in defining the likelihood of experiencing different models of labour market participation within the new institutional framework.

1.1   Theoretical and methodological framework

Employment characteristics and labour market dynamics are the focus of a number of different disciplines. Sociology, among others, observe not just the active population's individual experience but also those who are, voluntarily or not, excluded from labour market or to a full participation. Sociology of labour market emphasizes indeed the importance of considering, on the one hand, the position occupied by workers within the labour structure and, on the other hand, the role played by labour structures themselves in influencing individual preferences and, above all, access within the labour market in general, access to certain positions, and the sequences of employment and unemployment spells. Indeed, the labour market could not be considered as a market in a proper sense (Solow, 1990), but rather as a social institution and the outcomes associated with different positions at different points in time should be considered as fundamental variables in explaining social inequalities connected to labour market participation and its consequences over time, both in terms of social inclusion and life course chances.

Labour market participation should be seen as a process unfolding over time (Abbott, 2001). Within this framework, inequalities in labour market participation are crucial because they should be seen as part of the process of intergenerational transmission of inequality, and could reinforce pre-existing inequality mechanisms connected to individual and structural variables. Moreover, inequalities could drive individual life course choices, such as marital and parental choices, or economic investment. Most occupational and stratification researchers have looked at career evolution over time as an individual process, rooted in antecedents inequalities driven by family background, individual abilities and macro-structures. These variables represent the factors that explain patterns of occupational and job selection, job mobility and job shifts, earnings and other achievements. The theoretical model behind this approach can be considered as variable-centered by focusing on the impact of one variable on another. In fact, methods that focus on specific events attempt to quantify how a certain factor affects the risk and the timing of their occurrence.

In contrast, some scholars argue that the research on trajectories should go beyond the aggregate description and causal analysis in order to discover underlying social processes (in a broad sense) generating the data. This can be achieved by using heuristic methodological and technical tools within a non-parametrical framework (Ritschard and Oris, 2005; Abbott and Forrest, 1986). By following this approach, the analysis of labour market participation can benefit from being considered within the life-course framework, which emphasizes the fact that career development is embedded in a more general process of continuities and discontinuities involving social relations and institutions. In other words, the employment structure should be conceived as the outcome of individuals employment trajectories – holistically understood (Abbott, 1995, 1990) – that unfold over time according to opportunities and constraints. The sequence analysis' theoretical and methodological framework allows research on this and a multitude of other processes to take on genuinely the objective of analyzing labour market participation patterns and trajectories in their temporal occurrence.

The current debate focuses on increasing instability of employment careers, as well as the increasing career heterogeneity across the population. Some theories claim the emergence of a society characterized by diffuse uncertainty especially connected to labour market participation due to a general shift to a so-called 'age of insecurity' (Doogan, 2005) that involves holistically every field of the working (and social) life leading to a indiscernibly and inseparably subjective-and-objective uncertainty and high volatility of individual agency against the changes affecting the labour market (Sennett, 2011; Bauman, 2002; Beck, 1992). What Doogan (2001) calls the patchwork career thesis suggests that the widespread diffusion of flexibility has resulted in unstable and extremely fragmented careers for most of the population.

However, the theoretical debate on the consequences of flexibilization of the labour market suffers from some conceptual ambiguity about changes and developments along life-courses and careers (Aisenbrey and Fasang, 2010). With this respect, differentiation and destandardization are the two main concepts usually recalled but less often critically discussed. By following Brückner and Mayer (2005), destandardization is conceived as the variation between careers and differentiation as the degree of variation within a single career over time. The evolution over time – meaning across cohorts – of these two processes is particularly interesting in the case of the early careers of young workers. The importance of looking at the early career is well supported by evidence on the short and long terms risk of cumulative disadvantages triggered by disrupted and unprotected entry pathways (Blossfeld et al., 2005b).

Even though the rhetoric tends to highlight the increasing freedom of choice derived from a flexible normative framework, at least in Italy, where family, welfare state and labour market still define jointly a scenario in which workers cannot choose between any alternative careers. Indeed, they would be on the contrary forced toward some default options given their personal resources and characteristics. Hypotheses on new forms of inequality connected to different participation patterns have been proposed, and cross-cohort comparison can shed new light on the supposed increase in differentiation and

destandardization of labour market careers.

Italy has followed what has been called a 'Mediterranean' labour market adjustment strategy (Barbieri, 2009). The deregulation process has been brought about partially and selectively (Esping-Andersen and Regini, 2000), because it has involved only some subpopulations of workers and the marginal reforms have exposed workers to different risks of social exclusion. The latter has been found to depend more on age/cohort rather than skill differential. In Italy, flexibilization is indeed said to be grounded on a strong age/cohort inequality with respect to access to the protected/unprotected labour market segments. In other words, the discrimination between protected/unprotected and younger/older workers overlaps the traditional distinction between outsiders and insiders (Barbieri and Scherer, 2005; Biagioli et al., 2004) with substantive consequences in terms of access to a full social citizenship for those who can not enter the full-time open-ended arrangement.

In fact, deregulation and flexibilization of labour market have indeed forced (above all for some workers) transitions between occupations and contracts triggering processes that lead to ambiguous consequences on career structures. In this respect, focusing on a micro level and considering how mobility is distributed among individuals represents a crucial analytical step to evaluate if - and to what extent - basic elements building the common aggregate indicators of mobility are associated with mobility between different job arrangements during the working life. Indeed, mobility might often include difficult transitions between states with interruptions and unemployment traps resulting in work histories being far from linear (Hofmeister et al., 2006; Mills et al., 2006).

The theoretical and empirical attention devoted to early labour market participation mainly relies on a reductive representation of this process based on the achievement of a stable arrangement/permanent contract instead of a stepwise succession of different (in quality and in quantity) states. Moreover, strong emphasis is given to the school-to-work transition by modeling in cross country comparison the integration pathways. Consequently, we know little about the evolution of patterns followed by young workers belonging to different cohorts. This leaves some room for the analysis of the consequences of the ongoing globalization and deregulation processes in terms of labour opportunity structure within which workers had, and still have, to build their own career. My purpose is to contribute to the empirical evidence on this topic by focusing on the Italian case and by adopting a mainly descriptive and exploratory approach for studying the evolution over time of some characteristics of labour market participation patterns.

1.2 Research questions and conceptual framework

As already mentioned, labor market participation patterns are affected by both changes in the institutional and socio-economic context and at the individual level. The latter pertains to changes in people's values, norms and preferences concerning work as well as the family, but also to structural changes in individual characteristics, such as gender and education, which are crucial stratification variables in order to understand

how processes triggered by the changing institutional context apply for different subpopulations of workers. In fact, on the one hand, changes in norms, values and preferences concerning labour market participation but also structural constraints have conditioned women and youth pathways by following the insiders *versus* outsiders logic (Blossfeld et al., 2005b; Lindbeck and Snower, 2001; Esping-Andersen and Regini, 2000); on the other hand, globalization and the restructuring of occupational sectors – partly due to the technological change – have informed a new skill-biased scenario in which flexibility, job-discontinuity and unemployment affect selectively low-skilled workers (Barbieri, 2009; DiPrete et al., 2006). For Italy the dual-labour market perspective appears somehow restricted since high rate between contracts/states mobility is observed also for the older cohorts of workers (Fabrizi and Raitano, 2012) and for obtaining an open-ended contract does not imply a stability gained once and for all.

Specifically, the focus will be on the Italian case and the main research questions read as follows:

Q1. Did the differentiation of individual early careers change across cohorts? How and to what extent according to gender and education?

Q2. Did the destandardization between individuals' early careers change across cohorts? How and to what extent according to gender and education?

Q3. Did the pathways leading to more or less favourable outcomes (full-time contract in private sector and unemployment) quantitatively/qualitatively changed across cohorts?

Q4. What taxonomy could apply to early career participation pathways for workers who entered the labour market after the deregulation reforms were introduced?

Q5. To what extent are variables linked to the reproduction of inequality – like gender and education – associated with the probability of experiencing different models of labour market participation in early career?

To address these questions, a new approach to trajectories is needed to go beyond the transitions-table approach (Brzinsky-Fay, 2010): tools provided by the sequence analysis allows me to face the challenging task of considering entry careers as a whole, that is by assuming an holistic point of view in order to identify distinct patterns of permanence within the labour market. As I will consider in Chapter 3, sequence analysis is a particularly suitable analytical instrument to address this kind of question. Sequence analysis' tools have recently developed both quantitatively and qualitatively thanks to a number of methodological contributions that aimed to overcome the critiques raised against the first development of the technique.

By means of this categorical and holistic approach for the study of processes unfold-
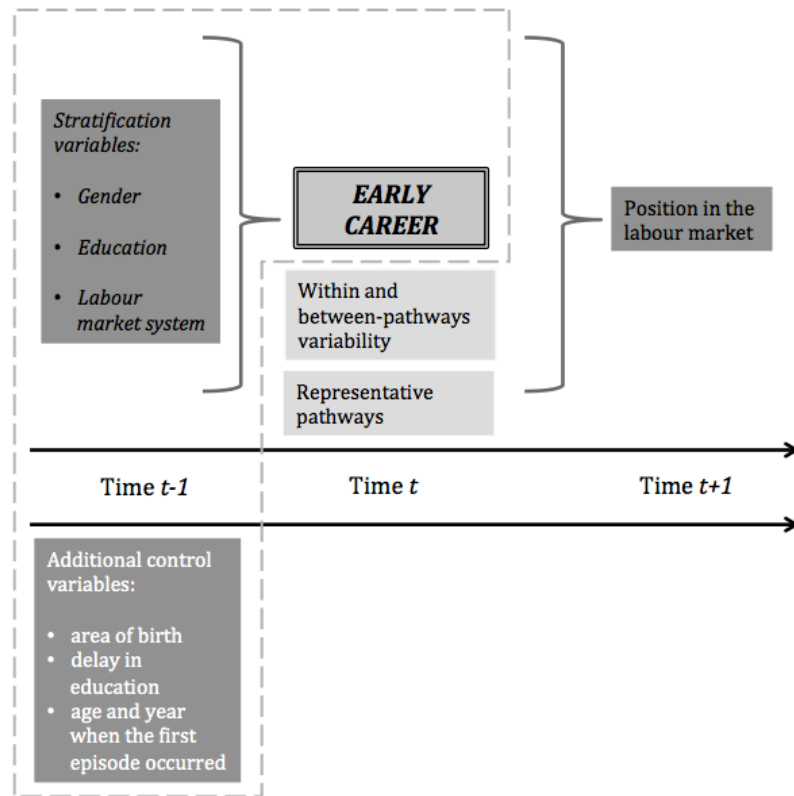
Figure 1.1: Conceptual framework

ing over time, I will first identify the main early career paths from 1970s onward in Italy. Figure 1.1 shows the conceptual framework for the analyses and points out the contribution of this dissertation to the understanding of the early career patterns evolution across cohorts and to the definition of a set of models of labor market participation, both according to a wide range of labour market status. Research on early career patterns have mainly focused, on the one hand, on the school-work transition and, on the other hand, on the timing for transition into a stable job. Furthermore, the empirical evidence provided by research that refers to the sequence analysis framework usually uses a poor definition of the space of the states, rarely reporting information on an as exhaustive as possible list of labor market arrangements.

I consider the early careers within the labour market starting from the very first significant work episode. In other words, the observation period will start once the school-to-work transition can be considered settled. The comparison between the early careers of four different cohort of entry in the labour market is conducted for subsamples stratified according to individual characteristics (such as gender and education) and labour market system (Time *t-1*) as explanatory factors for the within and between careers' variability (Time *t*). In addition, by considering being in unemployment or in a full-time job in the private sector as relevant outcomes, I assume the pathways as auxiliary explanatory variables in order to assess the changes over time in the pathways followed for ending up in a more of less favourable position in the labour market when

the observation window brakes off (Time *t+1*).

By focusing on the area delineated by the dashes line in Figure 1.1, I then consider more in depth a single cohort entered the labour market after the labour market reforms' season started in 1997. Besides the individual characteristics already mentioned, I estimate the probability of experience a certain career rather than other (Time *t*) by controlling for area of birth, for delay in education and age when the first episode occurred, and for the year when the first episode occurred (Time *t-1*).

From the methodological point of view, assuming an holistic approach (Abbott, 1995) to early career allows me to consider the permanence into and/or the exit from the labour market as a process, which unfolds over time as a whole, rather than as a series of transitions over time (Abbott, 1990). Moreover, the use of a range of states as wide as possible to define the characteristics of labour market arrangements/participation at each point in time implies non trivial differences in determining real stability along the early participation or rather recurrent and cyclic patterns leading to less steady positions within the labour market.

1.3 Outline

This Introduction is followed by Chapter 2, which outlines the characteristics of the Italian labour market. I will focus on the evolution of labour market institutions from the 1970s to the early 2000s by considering the trend of salient indicators, such as the unemployment rate and characteristics of the active population. I will then present an overview of labour market reforms in Italy and collocate the Italian case within the broader European context. Some key concepts such as flexibilization, precariousness and insecurity will be discussed in the light of the available empirical evidence by focusing especially on some labor market arrangements that characterize the theoretical and empirical debate on the consequences of deregulation.

Chapter 3 deals with the connection between early careers, the life course approach and the framework of the sequence analysis approach (Abbott, 1995). I will justify, both theoretically and methodologically, the plausibility of adopting the sequence analysis' point of view for studying the cross-cohort changes in early labor market participation that have occurred since the 1970s onward. The aim is to consider if and to what extent core concepts of the debate on deregulation and individualization of the career pathways, such as destandardization and differentiation (Brückner and Mayer, 2005), apply to the Italian case. I will also comment on the convenience of analyzing within and between differences for subpopulatioindecesns of workers defined according to gender and education. The empirical evidence offered by previous studies that used sequence analysis to study labour market dynamics will be presented. Finally the research questions and the related hypothesis are presented. The research questions concern two analytical steps: firstly, an analysis of early career evolution across cohorts will be brought about in order to examine the destandardization and differentiation process. Secondly, a more detailed

analysis of the cohort of workers who started their career after the deregulation reforms will focus on differentiated models of labour market participation.

Chapter 4 introduces the dataset used, the AD-Silc panel, which matches information on individuals episodes of labour market participation from INPS (National Social Security Institute) registers from 1940 to 2009 and data from the IT-Silc survey (the Italian module of the European Union Statistics on Income and Living Conditions, Eu-Silc). I will pay special attention to data selection and individual sequences construction. Since I discuss the general approach in Chapter 3, I will mainly focus on the methodological issues by describing the logic behind the synthetic indeces and data mining methods I use to address the research questions concerning the cross-cohort comparison. The next section will be devoted to the description of the cluster analysis of sequence objects I run for the focus on the younger cohort of workers and the specification of the multinomial logit regression models for estimation of the relative probability of clusters membership according to some crucial individual variables.

In Chapter 5 descriptive results on the cross-cohort comparison are presented. The focus will be always on the overall cross-cohort trends for men and women first, and then on the contingent differences according to education. The Chapter is divided into four main parts, concerning: the differentiation process analyzed by using the complexity measure and additional descriptive results; the destandardization process analyzed by using the discrepancy measure; the representative sequences that constitute the typical patterns of labour market participation; and, finally, the pathways leading to full-time jobs in the private sector and to joblessness.

Chapter 6 focuses on the results from the second set of analyses on the younger cohort of workers, who entered the labour market when the new institutional configuration informed by the deregulation principles was already set up. In the first part of the Chapter, the clusters that represent models of labour market participation are described. The probability of following different models of labour is the focus of the second part of the Chapter: also in this case, gender and the gender-education interaction are the main variables of interest.

Finally, Chapter 7 summarizes the main findings in light of the initial hypotheses. Moreover, on the one hand, I shed light on the substantive implications of this dissertation, and, on the other hand, I point out the methodological contribution that sequence analysis can bring about for the study of the labour market processes. Finally, I outline some limitations of the present research and, according to that, I sketch out some previews on future research perspectives.

Chapter 2

Labour market in Italy: the deregulation process and its consequences

Over the past decade, labour market flexibilization has become a major issue within the European Union. Some macro factors are crucial for defining the environment from which flexibility and employment security emerge as core concepts of the debate concerning the evolution of the labour market since the 1980s. Firstly, the oil shocks of the mid and late 1970s set up a framework in which industrialized economies need to compensate the oil price by improving efficiency of management of materials and labour supply. Secondly, the emergence of multinational companies and the internationalization of production increased competition. Finally, the economic downturn of the early 1980s determined the growth of unemployment. European political bodies have repeatedly recognized that changing labour markets require more adaptive workforces, which implies adapting institutional structures in order to facilitate the combination of low job security with effective employment. Income protection is crucial and should be pursued with increasing investment in active labour market policies and unemployment benefits.

The combination of labour market flexibility and social security (Wilthagen and Tros, 2004) – called flexicurity – is considered one of the best practices to follow according to the objectives of the Lisbon strategy (European Commission, 2007a). In fact, this ideal configuration can be actually found in the so-called *golden triangle* of the Danish model of flexicurity (European Commission, 2007a; Madsen, 2004; OECD, 2004; Madsen, 2002). However, all around Europe a wide range of differentiated implementations have defined a pluralized scene and a jeopardized diffusion of advantages and disadvantages of the new macro economic/labour market structure (Buchholz et al., 2009; Blossfeld et al., 2005b; Blossfeld, 2003), this is despite the fact that the OECD strongly encourages all countries to implement reforms that aim to facilitate job searching, reduction of the wage gap between typical and atypical workers, and the introduction of the minimum wage for all categories of workers. One major division in Europe results from the variety of country-specific institutional structures that protect workers from the risk of losing their jobs and/or from its negative consequences (DiPrete, 2002; DiPrete et al., 1997).

In Italy, the deregulation process started relatively late compared to other Southern European countries (Golsch, 2003; Dolado et al., 2002; Güell and Petrongolo, 2000; Malo and Toharia, 1997; Bentolila et al., 1994) and assumed a very specific configuration (Barbieri, 2009). This is the scenario against which early careers and model of labour market participation of younger workers in general can be interpret in their evolution across cohorts.

This Chapter deals with the issues connected to labour market participation in Italy since the 1970s by looking at the evolution over time of institutions and at direct and indirect consequences in terms of participation/exclusion and emerging inequality and the precariousness of increasing flexibility. The description of the characteristics of the labour market in Italy will be followed by an overview of reforms aimed to progressively deregulate the system. The next Section will build a bridge between the main theoretical concepts connected to flexibility and its consequences and the available empirical evidence. I conclude by carving out from this broad picture the profile of the object of interest of the empirical analyses, which will be specified in more in detail in Chapter 3.

2.1 Characteristics of the Italian labour market

Italy is one of the countries comprising the 'Mediterranean economic model' (Bettio and Villa, 1998; De Jong Gierveld and Liefbroer, 1995). This model is characterized by a high rate of youth unemployment, a low rate of female participation in the labour market – connected to the adult male breadwinner model (Reyneri, 2011) – , a fall in the birth rate and a family-oriented welfare state (Ferragina et al., 2013; Naldini and Saraceno, 2008; Billari and Kohler, 2004; Naldini, 2003; González et al., 2000; Reher, 1998; Castles and Ferrera, 1996). To summarize the macro-characteristics that mark the difference between the Italian case from other models defined according to different labour-welfare strategies, Woodward and Kohli (2001) recall the lose education-occupation link, high employment protection, low within/between firms mobility, collective protection provided by the welfare state, scarce employment policies, low quality – and quantity – of family service and the targeted (mean-tested) welfare provisions. The intersection between these dimensions generate several grey-zones characterized by different degrees of fragility and vulnerability with respect to labour market participation. Some subpopulations of workers are particularly overrepresented in one or more of these grey-zones and they are consequently at risk of social exclusion because of exclusion from the labour market and/or the welfare system.

In order to describe the Italian labour market I mainly focus on three indicators (the employment rate, the unemployment rate[1] and the activity rate) by looking at their

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[1] The unemployment status can be analytically distinguished according to four dimensions (Ciravegna, 1990): being in a certain economic condition (namely, not being employed); looking for a job actively/trying to start to work as self-employed; availability to accept a job offer; and being in need of an income source. Moreover, being unemployed can also be identified with being registered at job centers and able to access some kind of social assistance and unemployment benefit. This complexity and how to measure each dimension are crucial for the policy making process. Within theoretical debate, the

evolution over time starting from the 1970s, according to workers characteristics such as gender, age and education, which are three crucial stratification variables when talking about inequalities within the labour market. Also geographical inequality is crucial when analyzing the Italian case, although in contrast with the positive or negative change for the other variables they did not change direction, and persist in affecting workers who reside in the Southern regions (with youth even more intensively affected). Even though the focus in the next Chapters will not be on the North/South divide, here I will refer to it for highlighting substantive gender and education variance given the different geographical location[2].

From the 1970s to the 2000s, the Italian employment cycle passed through two phases of considerable expansion (1983-1990 and 1994-early 2000s) interrupted by a recession between 1991 and 1993. If we consider the increase in employment compared to the second positive period, the first positive period featured an increase in DGP which was – relatively speaking – greater than the increase in employment rate, determining a jobless growth phase. However, on the one hand, employment and employment productivity decreased again starting from 2000, and, on the other hand, the growth of self-employment stopped during the early 1990s.
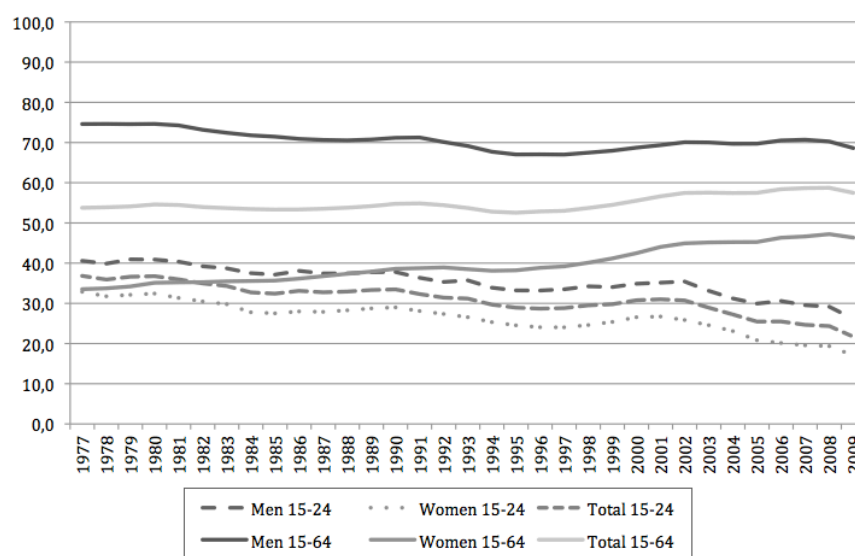
Figure 2.1: Employment rate, time series 1977-2009 by gender - Italy. Source: Labour Force Survey, ISTAT.

The determinant of this substantive increase is female participation, which increased

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distinction between unemployment and inactivity has been questioned, being strongly dependent on the institutional definitions and the unemployment policies framework (Atkinson and Micklewright, 1991). However, given the aim of this Chapter, for the sake of simplicity I will not assume such complexity in describing the general characteristics of the Italian system.

[2]The long-lasting differences in the economic and labour market systems between the Northern and Southern areas of the country are diffusely analyzed from many points of view (female labour market participation, activity and employment rate, industrial development etc.) and by different disciplines. I will not stress this differentiation in this work, but it is worth recalling that Italy has been defined as a two-speed country exactly for this reason and that the long-term consequences in terms of early career opportunities are dramatic.

up to about 43% between 1979 and 2003. This involved mainly dependent employment in the private sector by way of part-time jobs and other atypical contractual arrangements (Contini and Trivellato, 2005). Moreover, during the last 40 years, the young labour supply has suffered from high rates of unemployment[3] due to two main factors: demographic changes (Sartor, 2010) and education dynamics (Schizzerotto and Barone, 2006; Pisati, 2002; Checchi, 1997). Newcomers to the labor market, especially young people and women, experience strong barriers to getting core jobs. This is the reason why unemployment in Italy is said to be at the entry . In Mediterranean countries, individuals who look for their first job (youth and women of various ages) are overrepresented among the unemployed population compared to other countries, where the risk of being unemployed affects mainly workers of the big industries (UK), adult women (France, Belgium and Holland) or is rather homogeneously distributed among the active labour force (Germany, Denmark, Sweden and Austria), see Pugliese 1993)[4].

2.1.1   Women at work

Womens labor force participation rates have risen over the past three decades across the industrialized world. This is not due to a generational/cohort effect, since the growth affected all age groups – even though to different extent. In fact, the increasing trend of labour market participation for women has coexisted with much higher unemployment rates among women themselves. Even though women have become more educated than men since the 1980s – and it is exactly the highly skilled female population that have played a crucial role in the increase of the female labour supply – they suffered (and still do) from a double form of segregation in lower hierarchical levels and in certain sectors and professions. The growth of the service sector during the 1990s – which in 2003 was still undersized compared to the average European estimates (Trivellato et al., 2005) – partially contributed to the intensification of this second mechanism, joined with the possibility of eluding the rigidity of male labour supply thanks to the increasing disposal of female supply.

Female activity rate constantly increases when we move from the generation born in the 1950s to younger generations (Oneto, 1991), and the temporary exit from the labour market because of marriage and/or maternity slowly decreases. Moreover, due to the increase in educational level, women belonging to more recent generations enter

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[3]Youth workers are overrepresented within the segment that suffers more from an increase in the unemployment rate during negative economic cycles (Kawaguchi and Murao, 2012; Bertola et al., 2007; Gomme et al., 2005).

[4]In general, computation of unemployment rate suffers from some issues connected to the definitions the ISTAT (Italian National Institute of Statistics) uses, and this lead to an underestimation of this index. In fact, once an individual is defined as inactive (because he/she did not actively looked for a job in the four weeks preceding the interview and was available to start a new job in the next two weeks), it is not counted within the unemployed population. This implies that discouraged workers are included within the inactive population. For example, in Spain the unemployment rate is double that of Italy, but the two countries have the same employment rate. Discouragement is surely part of the reason why the inactive population has a considerable size, but this is somehow confounding because willingness to work, which ISTAT has recently included in its questionnaires, would better define unemployment status rather than inactivity (Reyneri and Pintaldi, 2013).
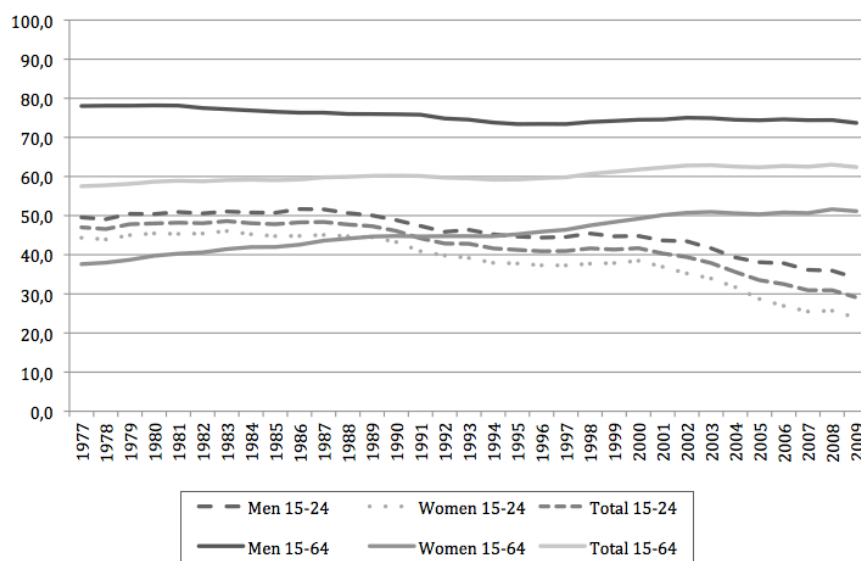
Figure 2.2: Active population rate, time series 1977-2009 by gender - Italy. Source: Labour Force Survey, ISTAT.

the labour market later compared to the those belonging to the older generations. The relatively high average age at entry during the 1990s is also due to the fact that during the positive cycle a sizable number of women aged 35/45 entered for the first time or re-entered the labour market (CNEL, 2003; ISTAT, 2002). The shape of the female activity rate typical of the Southern European countries before the 1970s – higher peak for women aged 20-30 that decreases rapidly as age increases (Accornero et al., 1987) – becomes more and more similar to the male model, in which a higher rate of activity persists for those aged 25 to 45-50. In fact, during the 1980s, women showed a strong attachment despite the high unemployment rate, but this applied especially to highly skilled women (Reyneri, 2011). From 1993 onwards the active female population stopped increasing also for women in the Northern regions and, more alarmingly, for younger women in general, probably due to a discouragement effect.

As I will discuss more in depth in the next Chapter, given the progressive attenu-ation of the differences in education, the transition from school to work has increasingly became the step where gender inequalities are informed by differentiated opportunities and constraints. One of the most significant examples is the overrepresentation of wo-men in atypical employment, such as in temporary contracts and part-time jobs. In fact, part-time work represents one of the labour market arrangements that provide women with increasing opportunity to enter and stay within the employed labour forces. In the great majority of European countries, the correlation between the amount of part-time work and female unemployment is negative (European Commission, 2000) and in gen-eral part-time work was crucial during the 1990s crisis, since it was the only type that constantly increased. Differently from other European countries in which part-time em-ployment in the public sector was (and still is) one of the main devices to keep high female labour market participation, in Italy the part-time increase did not include the public

sector (CNEL, 2003) and affected more the participation of lowly educated women. This phenomenon results in and simultaneously results from the demand (low-qualified jobs) and supply (higher need for work-family conciliation especially for less-skilled women) characteristics (Reyneri, 2011).

However, it is worth highlighting that part-time is not homogeneous on different levels (for example number of hours, wage and employment protection) in different countries (Reyneri, 2011), and more in general this depends on the position within the national occupational structures. The precariousness associated with part-time employment emerges where part-time is less diffused. In Italy, part-time share decreased from 31% in 1993 to 26% in 2003, but it is more protected in terms of social security compared to other European countries (Reyneri, 2011). The quality of part-time jobs can be assessed by looking at the aim that guides its introduction/implementation (Wickham, 1997; Tilly, 1992): if part-time is a device to keep within the labour market workers with low attachment, it is more likely to be well-protected and relatively well-paid; if, in contrast, part-time jobs are exploited to reduce the labour cost, then wages and qualifications for part-timers decrease [5].

Even though Italy could be reasonably included in the first model, some geographical differences exists (Samek Lodovici and Semenza, 2001): in the Southern regions the labour demand imposes worse conditions, while in the Northern regions a better quality prevails[6].

It is clear-cut how this interacts with the concrete opportunities available for a wide range of women for participate to the labour market in a context in which family services coverage is residual and expensive and women – especially those who are less educated (Reyneri, 2011) – have to manage their *double-presence* being covered by very low level of social protection and public support (Naldini and Saraceno, 2008; Saraceno, 2003; Esping-Andersen, 1995). I will not go into further detail regarding this crucial topic, but it is worth recalling that this institutional configuration has a strong impact on female labour market participation and attachment and interplays with fertility, household disposal income and the following risk of vulnerability and social exclusion for all household members.

2.1.2 Youth at work

In Italy, the youth unemployment rate was informed by two main process, namely the decrease in the birth rate following the 1960 s baby boom and the education expansion during the 1990s, which deeply affected the characteristics of the labour forces

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[5]Wickham (1997) observes that Italy, Holland, Denmark and Belgium have systems that are more consistent with the first option, while Spain, Germany and the UK with the second.

[6]An important topic that I will not consider but that is widely analyzed within the part-time literature is the difference between voluntary and involuntary part-time work. Just to give a hint of the size of this issue, Burchell (2012) reports that in Europe 15 in 2002 only the 13% of women worked part-time because they did not find a full-time job (compare to the 19% for men). In contrast, in Italy involuntary part-time job is about 28%.

and the unemployment internal structure. Firstly, long-term unemployment[7] became prevalent and covered more than the 50% of unemployment stock. Secondly, the unemployment rate decreased only when – in the late-1990s – female participation became sizable. Thirdly, the generational turnover defined by an employment rate s odds over 45 vs. under 25 was 0.99 in 1993 and became 1.17 in 2003. Finally, a relatively high early retirement rate during the late 1980s/early 1990s because of new norms for the public sector and the firing process enacted by industries in crisis resulted in a more complex picture, where the young-in-old-out rule passed the baton to women and migrants (Brandolini et al., 2007).

Unemployment in Italy is strongly determined by young workers searching for their first occupation. The related share increases during the 1970s and decreases during the 1990s, bur only in the Center/Northern regions (Reyneri, 2011). In Southern regions, the young female labour supply remains lower than in the North and this implies that young men suffer more than women from unemployment in the South. I will discuss more in detail the youth conditions and their evolution across-cohorts later in this Chapter and in the next one, but in order to better describe the characteristics of unemployment in Italy it is worth pointing out that what has been called intellectual unemployment referring to youth unemployment starting from the 1990s is almost completely explained by the fact that it is, indeed, youth unemployment and that younger workers are more educated compared to old workers (Reyneri, 2011).
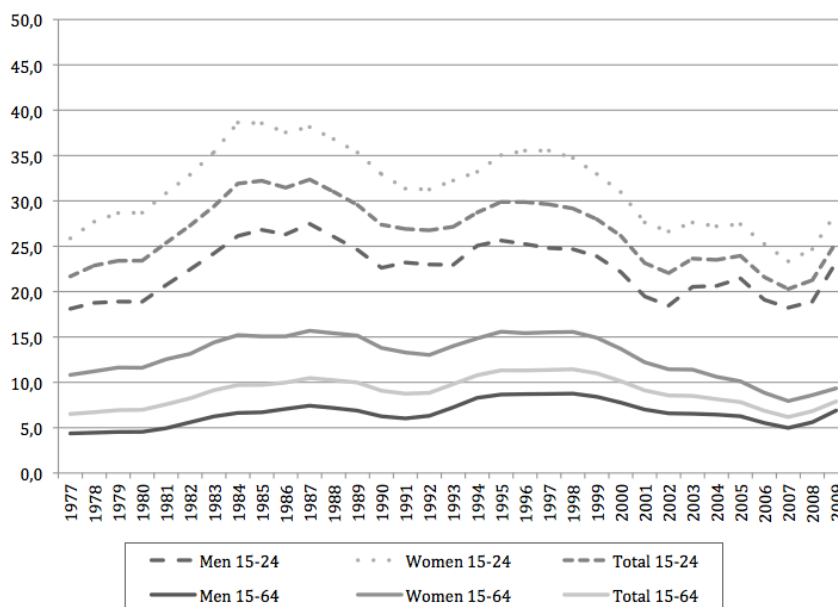
Figure 2.3: Unemployment rate, time series 1977-2009 by gender - Italy. Source: Labour Force Survey, ISTAT.

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[7]The probability of being in the condition of looking for a job in a certain point in time results from two risks: on the one hand, the risk of entering, and on the other hand the risk of remaining in that condition for a long time. It follows that unemployment rate can be divided into two dimensions: flux of entry and duration. According to the common statistical definition, this latter becomes formally problematic when it lasts longer than 12 months (OECD, 2013) and the related condition is then defined as long-term unemployment.

Unemployment can be defined as intellectual in a narrow sense if less-skilled young workers have lower probability to be unemployed compared to higher-skilled workers, but this is not the case for Italy, where the disadvantage for highly-skilled workers is temporary and delimited within the school-to-work transition (Schizzerotto, 2002). However, the relative advantage for those with a tertiary degree is smaller than in other European countries, where having a higher degree protects more from being unemployed (Bernardi et al., 2000). This does not seem to derive from a labour supply rigidity, because in countries where highly skilled individuals benefit to a smaller extent from their education are those countries – namely Italy and Spain – where there are fewer out of the total population. It follows that this paradox could be better explained by the occupational structure, which in Italy looks more oriented toward an overall less qualified structuring than other European countries (Reyneri, 2011; Barbieri, 2009). Consistently with that, Italy deals with an over-education issue (Checchi, 2003), for higher-skilled young workers could and can not find jobs fulfilling their aspirations given the educational attainment (Schizzerotto, 2002).

Finally, even though family background never stops influencing educational opportunities (Schizzerotto, 2002), it also plays a paradoxically negative role in reducing the length of searching for the first job. In fact, a more advantageous family background allows young people to wait longer for better (and more consistent with their educational level) job opportunities (Barone and Schizzerotto, 2011; Berloffa et al., 2011; Bukodi and Goldthorpe, 2011; Gallie and Paugam, 2000).

2.1.3   Italian peculiarities concerning public sector and self-employment

Italian dependent employment in the public sector and independent employment characteristics partially differ from other European countries, both in terms of size and of internal differentiation.

Self-employment[8] in Italy is a two-headed system, since high and low professional qualifications are gathered together: professionals and managers, skilled and unskilled positions. In fact, starting from the end of the 1970s, the internal structure of independent professions has changed and the growth in the high professional and service-class self-employment went with the increase of independent positions with poor or no qualifications at all (Reyneri, 2011). This applies both to men and women, even though for the latter the qualified component decreased considerably over time.

Considering the overall trend, it has been attributed, on the one hand, to the persistence of a traditional economic system, which was characterized by a considerable share of independent work (agricultural and not) and, on the other hand, to the post-fordism restructuring, which implied delocalization, outsourcing, reorganizing, and downsizing

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[8]The definition of self-employment comes from the position of the occupation according to four main dimensions: presence/absence of subordinate employees, degree of autonomy in organizing job, work and earning condition and, finally, degree of stability (Reyneri, 2011). These features are crucial also to determine the grey-zones around other categories of employment relations that emerged during the 1990s onwards (see next Sections in this Chapter).

(Barbieri, 2001, 1999). As pointed out by Barbieri (1999), within the sociological tradition two main interpretations of self-employment exist. In fact the growth of self-employment has been thought to ease the marginalization risks within the secondary segment of the labour market, but by exposing certain workers to long-lasting precariousness (Arum, 1997; Esping-Andersen, 1993) or, in contrast, to generate alternative and positive economic (exactly because marginal) cleavages according to the post-fordist model (Bologna and Fumagalli, 1997).

Evidence for Italy shows that the growth of unskilled positions prevails compared to the increase in polarization leaded by the incremental improvement of highly-qualified positions (Barbieri and Bison, 2004). Nevertheless, self-employment itself seems to represent a rather stable position in terms of labour market attachment and likelihood of being unemployed: in fact, transitions between unemployment and self-employment were fairly rare for the older cohorts of workers but they are still infrequent also for more recent cohorts of workers (Barbieri, 2001). As mentioned before, the size of self-employment in Italy is far greater than in other European countries (Reyneri, 2011). This is partly due to the fact that in Italy the official statistics on the European level (for example Eurostat) merge together the 'real' self-employment and the economically dependent self-employment (or parasubordinate), mainly because not all the countries have separate funds for the two categories of workers. Reyneri and Pintaldi (2013) show that – even though Italy remains above the European average – the self-employment quota reduces when considering separately the two types of self-employment[9].

In many OECD countries public sector employment accounts for a significant share of total employment and public sector expenditures (OECD, 2002), but the size of the public sector in Italy is smaller compared to the European average, which in 2000 was about 20%. In 2008, the Italian public sector concentrated the 14.4% of the employed labour force, by following a negative trend, which started in 1990. A general feature that distinguishes the Italian public sector from other countries systems is the high (and increasing) part-timers' presence, which has constantly increased within the public sector from 1994 to 2000. This is consistent with the fact that atypical work is massively growing within the public sector according to the services externalization process and the attempt to bypass the stop imposed on the turnover.

The share of flexible employment relations (mainly temporary contracts) for the public sector is higher (19.5%) than the overall level, and it is mainly due to sectors such as education, health and central administration (Forum Pubblica Amministrazione, 2013; Dipartimento della Funzione Pubblica, 2004). Dependent employment in the public sector represents for women one of the preferential ports of entry within the labour market. In fact women represent the 55% of the employees in the public sector in Italy, are overrepresented in education and health services, and are mainly highly educated (Forum Pubblica Amministrazione, 2013; DiPrete et al., 2006). Conversely, employees

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[9]I will give more details on the differentiation between the two categories of self-employment later on in this Chapter, but it worth anticipating that for the analyses I will follow exactly this path by splitting 'real' self-employment and economically dependent self-employment, since they really represent two different labour market arrangements in terms of rights and obligations.

in the public sector are generally old, lowly-qualified (only 34% have a tertiary degree), badly distributed throughout the country (more so in the Central and Southern regions) and are affected by a considerable wage gap between managers and other employees (Forum Pubblica Amministrazione, 2013; Dipartimento della Funzione Pubblica, 2004).

2.1.4 Italy and Europe toward deregulation

The Europe-sclerosis theory attributes the excessive employment protection of permanent jobs compared to the United States, where a less regulated labour market fostered good results in terms of employment rate during the 1990s (Grubb and Wells, 1993; Nickell, 1997; Saint-Paul, 1996; Siebert, 1997). Deregulation in Europe was moved forward under the pressure of such an interpretative framework. However, some critics offer a different interpretation of the contemporary overall picture. Firstly, by comparing the US and Europe during the 1960s and the 1970s we find that Europe reached better results both in terms of employment rate and job creation (Reyneri, 2000). Moreover, in Italy, the turnover rate is similar to the rest of the Europe and the US, but occupational performances are still different. As pointed out by many empirical contributions, mobility was considerable also during the 1980s (Fabrizi and Raitano, 2012; Leombruni and Quaranta, 2005; Trivellato et al., 2005), even before the introduction of specific norms in favour of a more flexible labour market.

The growth of the turnover slowed down during the 1990s because of the changes in the labour forces (more women more mobility, but older labour forces less mobility), and the differences between men and women in terms of mobility pattern decreased even though female participation was below the European average. In other words, the labour market reforms of the late 1990s (cf. next Section for a detailed overview) superimposed on a pre-existent positive mobility trend. In fact, flexible contracts were already there, and those reforms did not undermine the dominant, more guaranteed tail of labour forces already employed. Paradoxically, as shown by Trivellato et al. (2005), in 2001 mobility rate decreases for all categories of workers. As suggested by the authors, a number of factors interplay to determine this asset: the general decline of employment, a static labour market, but also the saturation of firms' flexibility demand. In fact, "the *optimum* in the degree of flexibility does not correspond to the maximum" (Sylos Labini, 2004, pp. 46-47), because flexibility demand is not unlimited and firms rather need a core quota of stable workers who identify themselves with the firm and invest in skills suitable for the improvement of the firm itself.

In keeping with the previous point, the cross-country differences within Europe in terms of employment rate and job creation were considerable. This suggests that considering the US as the principal comparison term rather than an exception could lead to not completely consistent conclusions about the European labour markets' development trend. Finally, during that same period the economic inequality growth in the US (and Britain) was considerable compared to other European countries (Gallie and Paugam, 2000; Smeeding, 2002). This becomes clear if we consider the trade-off between employment and equality (Esping-Andersen, 1999; Esping-Andersen and Regini, 2000),

which evokes a more general trade-off between different economic and social models (Reyneri, 2011). In fact, while Europe showed a weak increase in the employment rate but with better outcomes in terms of productivity (growth of high-productivity workers with higher wages), in the US the increase in the employment rate went along with an increase in the number of working poor (low productivity and low wages)(Brady et al., 2013, 2010) [10].

In Italy, turnover involved (and still does) to a greater extent younger workers compared to older and those who are employed in smaller sized firms than those in larger sized firms. Moreover, the geographical dimension plays a role in determining a supplementary differentiation: North and West are the least mobile and individuals in the South are the most mobile, but this is the result of a composition effect, due to the interaction between firm size and the rate of female participation rate. Nevertheless, a fairly important characteristic of this process is the increase in the number of marginal workers and the overrepresentation of female, low-skilled, and low-paid individuals within this group (Contini and Trivellato, 2005). In the next Sections I will consider in more detail the legislative process that has led to the current configuration of the labour market in Italy and the consequences of the flexibilization process by focusing on specific subpopulations of workers particularly exposed to these changes.

2.2 Labour market reforms in Italy: why has deregulation been applied and how is it regulated?

Even though labour market reforms involve a wide range of aspects such as labour organization, wages, job center restructuring and the public employment system, lifelong learning and interventions dealing with employability and employment agencies' efficiency, I will mainly focus on reforms directly devoted to the implementation of the deregulation process of the Italian labour market. Deregulation of the labour market is implemented on different levels and by following different pathways: the *OECD Jobs Study* in 1994 (OECD, 1994) brought about the flexibilization issue in the first place. From a cross-countries perspective, a major differentiation emerges when we consider that deregulation can be driven by explicit (that is through the repeal of protective laws) or implicit interventions (that is through the growth of flexible employment by reducing job and employment security and by outsourcing/subcontracting) (Standing, 1993).

During the first thirty years after the Second World War, in Italy – as in the majority of industrialized European countries – employment relationships were shaped by an ideal of protection of labour and stability through the massive use of full-time dependent employment. Although in 1962 fixed-term contracts were disciplined for a small range of sectors and professional services (L.230/1962), the promotion of stability remained the

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[10]The phenomenon is becoming more and more visible also in Europe, where institutional/welfare state configurations interact with individual characteristics in shaping national specific models of working poverty (Andreß and Lohmann, 2008).

main core of the labour relationships. In 1970 the *Statuto dei Lavoratori* (L.300/1970) sanctions unjustified dismissals (namely the principle of causality) by defining a regime of real protection for workers employed in medium and large companies. Nevertheless, the highly-protective labour market regulation gave room for a hidden form of flexibility, for the violation of the norms and the diffusion of irregular work: as a result, a great proportion of workers suffered from the lack of any kind of protection (Vesan, 2009).

Starting from the mid-1970s, some new norms redefine the norms on labour market protection. The *contratti di formazione* (job-training) for workers aged 15 to 22 was introduced to promote 12-month experiences that combine work and training (L.285/1977), but it soon failed and became an easy way to get stabilized in the public sector (Reyneri, 1987). A number of consecutive laws redefine the fixed-term contracts pertinence (L.876/1977, L.79/1983, L.863/1984 and L.56/1987). According to the latter, the *contratto formazione e lavoro* (Cfl, 24-months contracts for workers aged 15 to 29) and part-time contracts were introduced to facilitate the labour market entry throughout training experience along with job experience for young people and, possibly, women. However, given the macro-context characterized by an increasing unemployment rate, the industrial restructuring, the technological advancement and the increase in women participation, the less protection-oriented norms trigger the transition to a overall less regulated labor market.

In fact, during the 1990s, the economic recession paved the way for labour market flexibilization by being promoted as a suitable strategy to increase labour market participation (employment rate) and not only as a way to cope with the increasing technological changes. Between 1993 and 1996 a number of norms were introduced to promote, for example, part-time employment, to increase the maximum age for the Cfl, to ease the job training and to facilitate the re-integration of long-term unemployed workers (L.452/1994). In 1995 the pension fund called *Gestione separata* has been constituted within the National Social Security Agency (INPS) system for economically dependent self-employed (parasubordinates - *collaborazione coordinata e continuativa* - Co.co.co and *collaborazione coordinata e continuativa a progetto* - Co.co.co.pro) and professionals without a specific pension fund managed by their professional orders. The tax-rate due to the *Gestione separata* was much lower than for other employees. In 1997 the *Pacchetto Treu* (L.186/1997) sanctioned the previous norms and interventions but also introduced a new regulation for temporary work. This consisted of the institutionalization of agency work[11], implying the presence of a tertiary subject between the worker and the employer that makes brokerage and should equalize (at least theoretically) temporary workers to others in terms of rights and earnings.

The pressure towards a higher flexibilization came, as recalled above, from the assessment of the European employment strategy pursued since the 1990s (Goetschy, 1999), which stressed the necessity for employers and employees to adapt to macroeconomic changes by fostering deregulation of work relationships. Part-time employment is es-

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[11]For example, in the UK and Holland agency workers represent the majority of temporary workers (OECD, 2013).

pecially taken into consideration by the legislative decree n.61/2000 for which more options were introduced both in terms of working hours distribution and of possibility to change previous arrangements. In fact, one of the reasons why part-time employment was so unpopular was its rigidity and the impossibility to change the daily/weekly hours distribution over time once the contract had been signed.

The legislative decree n.386/2001 opens the possibility for fixed-term contracts to a wider range of sectors and professional services being no longer the exception, but rather an equally valid alternative to permanent contracts (Roccella, 2005). More importantly, the norms regarding extensions and repeated temporary contracts were relaxed. Finally, the *Legge Biagi* in 2003 (L.30/2003) and the legislative decree n.276/2003 defined the extension of flexibilization in entry for a greater number of work relationships in the private sector explicitly to foster the participation of vulnerable workers, such as women, over-50 workers and young people, and immigrants (for a detailed overview of the main changes see Vesan 2009).

Finally, in 2007 some of the norms concerning atypical work introduced in 2003 were abolished (such as staff leasing); the possibility to reiterate the fixed-term contracts was reduced by imposing the conversion to a open-ended contract after 36 months; improvement of employment agencies was set up; part-time work and apprenticeships were reinforced in their inclusive action (L.247/2007). These initiatives followed the agreement between the government and social partners, the *Protocollo sul welfare*: correctives to the previous normative aimed to reduce the abuses against workers, but accept and legitimate *de facto* the process of clarification of the atypical contracts' positioning within the broader legislation.

Nevertheless, much more is needed to guarantee protection for workers who do not participate in the labour market with full-time open-ended contracts. If fact, if we briefly consider an Italian specificity concerning the coverage of a special integrative benefit for preventing unemployment, the *cassa integrazione guadagni* (Cig), the job-protection tendency of the entire system becomes clear. In fact, the Cig was introduce in 1947 as a new institute in addition to the traditional unemployment benefits (traditionally not generous). It has originally a double function: being an ordinary intervention to cope with work force adjustment against the economic cycle variations and being extraordinary intervention design to cope with major structural adjustment. The Cig provides workers who are employed in big industries with an economic compensation available from 13 to 52 weeks when the work activity has been suspended or working hours have been reduced due to a temporary decrease in companies' work flow. From 1968, a supplementary form of Cig called *cassa integrazione guadagni straordinaria* (Cigs) have been provided to workers in case of firm reorganization or crises for a period from 12 to 24 months for industry employees when companies have more than 15 employees. Starting from the 1970s, the Cigs have been used improperly becoming a major bargaining chip between the government and social partners.

The main point is, however, that these employees are not formally considered unemployed and maintain their working status even though they progressively receive –

in the long-run – less and less monetary compensation[12]. Whenever the Cigs coverage fails because of a collective lay-off, another institution called *indennità di mobilità* replaces them to different extents and for more or less longer periods depending on age and geographical area.

The workers who can benefit from this integration are the same as previously described, and can be prolonged until they reach the retirement requirements. This arrangement leads to a two-fold system, characterized by, on the one hand, relatively good protection for employees in medium and large firms through cash benefits and, on the other hand, by the ordinary unemployment benefits that cover with small amounts of money and for short periods a small number of workers because of the strict access requirements. In this regard, a number of adjustments have been introduced since the 1980s onward (Vesan, 2009; Anastasia et al., 2009), but the main point remains that the generosity of the Italian unemployment benefit system is scarce compared to other European countries (Ferragina et al., 2013; Immervol and Scarpetta, 2012; Barbieri, 2009). This is especially so for those workers who experience more short and long-term unemployment after and before having atypical contracts in sectors that are not covered by the traditional protective measures.

Besides the specificity of the labels used to define different kinds of employment relations and workers within the new setting, in the literature the general definition of what is called nonstandard employment refers to those employment relations that depart from some characteristics of standard work arrangements: full-time schedule, indefinite continuity, performed at the employer s place of business under some kind of vertical direction (Kalleberg, 2000). By following this general definition, part-time work and temporary employment are the two more diffuse non-standard employment relations. In fact, in the most industrialized countries they both increase, along with the expansion of the service sector and an increasing percentage of women in the work force (Kalleberg, 2000; Schömann et al., 1998).

While job stability and organizational tenure decreased only slightly during the last decades (Auer and Cazes, 2003) the increase in unemployment due to a higher casualization of employment relations is not inconsistent with an increase in stability of part-time jobs (Doogan, 2005, 2001). As pointed out by many researchers (Schmid, 2010; Schulze-Buschoff and Protsch, 2008; Doogan, 2005, 2001), precariousness in labour markets has often been uncritically associated with any kind of non-standard/atypical employment, by lumping together diverse labour market groups into some core (primary) or periphery (secondary) labour market (Atkinson, 1987, 1984). This hides a large part of the complexity that comes in reality, since non-standard arrangements can generate a highly differentiated range of combinations of opportunity and constrains for workers. In fact, as I will discuss more in depth in the next Section, atypical employment relations could alternatively represent a stepping-stone for entering the labour market, a good solution

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[12]It is worth briefly highlighting that, on the one hand, it is controversial how many people should be considered as unemployed, since they are employed but they do not work, and, on the other hand, workers in Cig can not benefit from job-training provided through the job-centers available for unemployed people, since they are not formally unemployed.

to conciliate work and other activities or degenerate into a trap, keeping workers in precarious positions and repeated episodes of unemployment.

Going back and looking at the Italian context, Berton et al. (2009) proposed an effective categorization of contract types and employment arrangements, considered atypical/non-standard progressively available over time. Within the atypical domain, the main distinction is between open-ended (dependent part-time employment, outsourced work) and fixed-term contracts. The latter includes two other main categories: dependent employment (temporary contracts, seasonal work, Cfl, apprenticeship and fixed-term outsourced work[13]) and dependent self-employment (*Co.co.co, Co.co.co.pro*). However, there is no consensus on how to define dependent self-employment: sociological or economic research on this topic is rather scarce so far, with the debate having mostly discussed amongst legal scholars.

Dependent self-employed are those workers who provide work on the basis of a civil or commercial contract, but who are integrated into the firm for which they work even though they are providing formally outsourced work. In other words, those workers are both economically dependent on the firm and hierarchically subordinated to it (EIRO - European Industrial Relations Observatory, 2002), but their rights under labour the law are different from other dependent workers and they receive less favourable benefits from social security protection (in the Italian case these are very small) and are very often beyond trade union representation and/or collective bargaining. More in detail, dependent self-employed occupy one of those grey-zones emerging from the new institutional setting: they share some of the characteristics of those who are both in independent self-employment and in dependent employment.

This implies that dependent self-employed have to cope with two types of dependence (Boheim and Muehlberger, 2006): firstly, an economic dependence being exposed to the short-term risk of demand fluctuations (because they carry part or all of the entrepreneurial risk, since they have only one contractor and the whole of their income comes from this relationship); secondly, a time, place, and content-dependence of work. In Italy, this subpopulation of workers is internally differentiated or even – to some extent – polarized (Berton et al., 2005). In fact, on the one hand, whether a dependent self-employed worker is more similar to dependent or to independent self-employed workers depends on the degree of the two forms of dependency (economic and time, place and content-dependency). On the other hand, two different groups of individuals are found to fulfill this criteria: highly skilled individuals (some managers and professionals who have a good position in terms of income) and the ones who can be considered dependent self-employed *stricto sensu*. The latter are young, have lower wages compared to workers in other positions, are mainly women (who suffer from an additional gender based wage gap) and/or low-skilled and do not have any other income (Berton et al., 2005). Empirical evidence based on various European countries supports the fact that whoever was previously working in a dependent self-employed position in the past is more likely to be in the same position in the future (Boheim and Muehlberger, 2006; Berton et al.,

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[13]For an in-depth analysis on outsourced work see Mo Costabella and Favro Paris (2005).

2005; Cowling and Taylor, 2001).

Finally, it worth describing briefly the characteristics of apprenticeship for it being another atypical employment relation that has progressively became the one of the key points of the labour market reforms[14]. In Italy – as in other European countries, such as Germany – firms are entitled to benefit from a reduction in the labour taxes for those workers hired as apprentices and they have to provide them with some kind of training. Even though the collective bargaining on the territorial level defines the characteristics of this type of contract, some common features exist in terms of minimum (6 months) and maximum (3 years) length. No definitive agreement exists in the literature on the effectiveness of apprenticeship as a port of entry towards permanent jobs. In fact, some researchers have found that apprenticeship is less likely than other temporary jobs to lead to a permanent contract (Berton et al., 2011; Bosio, 2011). Other research instead shows that the probability of obtaining a permanent job is higher for apprentices than for those who had different contractual arrangements (Cappellari et al., 2012; Lilla and Staffolani, 2012) and Picchio and Staffolani (2013) contribute by adding evidence on the higher probability of getting a permanent position within the same firm for apprentices against a higher likelihood for those who had other types of temporary contracts of having a permanent position in a different firm.

The characteristics of the new forms of employment raise some issues about the different opportunities and constraints workers have to cope with during their participation in the labour market. This is strictly connected to flexibility and the theoretical and substantive interpretation of its consequences. The next Section deals with this complexity trying to unravel the knot of definitions.

2.3 Instability, insecurity, and precariousness: where does flexibility come from and what does it imply?

Even though I briefly outlined this topic throughout the previous Sections, the dimensions and consequences of the deregulation process will be the main subject of this Section. As stated before, there is not clear agreement in literature on what can be defined as an atypical, non-standard or precarious work/job relation because of the intrinsic opacity of the normative definitions – especially if we consider the phenomenon

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[14]The last step toward a strong investment on apprenticeship as fundamental stepping-stone for entering the primary labour market was sanctioned by the *Riforma Fornero* (L.92/2012). The law imposes some constrictions upon the employers' opportunistic exploitation of the institution – being the labour cost savings derived by apprenticeship contracts lower compared to temporary contracts (Gualmini, 1998; Musso, 2002) – by introducing a minimum duration of 6 months (with the exception of seasonal workers) and the obligation to hire at least 50% of the apprentices before stipulating other apprenticeship contracts (for firms with more than ten employees). Moreover, compared to the previous norms (L.25/1955, L.196/1997, L.276/2003 and Testo Unico/2011) the number of apprenticeship contracts that can be stipulated by each firm increases substantively. Young workers aged 15-29 can access three different types of apprenticeship according to educational level and the final goal of this work experience. For a detailed description of the new regulation see Ministero del lavoro e delle politiche sociali and ISFOL and INPS (2013), and for some preliminary comments and analysis on the rational of the institute see Anastasia (2013) and Leonardi and Pallini (2013).

from a comparative perspective. However, a theoretical systematization was pursued from different parts.

On a very general and macro level, two different analytical perspectives make use of the theoretical concept of flexibility (Antonelli and Paganetto, 1999). On the one hand, according to liberalism, employment issues should be framed within the broader issue of a labour market's disfunction: this leads to a defensive interpretation, which implies that safeguarding actions in favour of those segments of labour forces competing against countries in which protection and salaries are lower. On the other hand, following what can be defined as a Keynesian perspective, flexibility should aim to innovate and foster strategies that reinforce competitive advantage by increasing quality and efficiency for the production structure and for human capital. By following the first approach, labour market policies accept different forms of precariousness for the sake of an increasing flexibility, while in contrast the second approach leads to policies that lever on professionalization and high-level training to increase productivity. In both cases, workers are exposed to what can be considered insecurity and increasing unemployment and wage inequality. But what working conditions objectively insecure is not clear-cut when we scrutinize the literature.

As briefly mentioned above, a number of theoretical suggestions agree about a general shift to a so-called 'age of insecurity' (Doogan, 2005) that involves holistically every field of working (and social) life leading to a indiscernibly and inseparably subjective and objective uncertainty and high volatility of individual agency against the changes affecting the labour market (Sennett, 2011; Bauman, 2002; Beck, 1992). However, the big picture is hardly supported by empirical evidence and results less convincing when we consider the body of both theoretical and empirical works that distinguish between the two dimensions (subjective and objective) of the phenomenon.

First of all, even when considering this issue on a macro-level, the relationship between objective security and flexibility is rather complex. Seifert and Tangian (2006) distinguish between: i) external flexibility: easier hiring/firing of workers with atypical contracts; ii) internal flexibility: easier within-firm time variation (vertical and horizontal part-time, overtime, parental leave and long-term sick leave) including internal-numeric, wage and functional flexibility; iii) functional flexibility: changes in within-firm job contents and job tasks; iv) wage flexibility: increase or decrease in salary according to economic contingencies; v) external-numerical flexibility: outsourcing. On the labour supply side, these different types of flexibility of labour market (see also Berton et al. 2009), which occur often in some kind of combination, can foster the loosening of one or more dimensions of the general concept of security concerning labour market participation.

By combining different contributions (Reyneri, 2011; Keller and Seifert, 2005; Standing, 1993), these dimensions can be made explicit as: i) labour market security: commitment to full employment on a high macro-level; ii) employment security: preserved or strengthened by regulations designed to protect workers from arbitrary dismissal and to impose costs on employers wishing to terminate employment without notice; iii) income

security: sufficient salary (2/3 medium salary for a full-time employee) and integration in the social security system (protection of vulnerable workers through minimum wage mechanisms, collective bargaining (labor process security) and progressive fiscal welfare, unemployment benefits, health facilities); vi) employability/labour reproductivity security: capacity of remaining within the labour forces and active, eased by a strong social commitment to underwrite the costs of education and skills development through subsidized schooling, training, and life-long learning; and v) work security: regulated protection of occupational health and safety.

The asymmetric relationships that emerge in a context where flexibilization is implemented are driven by a progressive shift of risks of a different nature from employers to employees – or better, contingent workers – (Breen, 1997). In fact, given these definitions of flexibility dimensions on the macro-level, if we look at the micro-level, the individual experience can be conveniently summarized by referring to what is called job security (that is the maintenance of a certain job, see Doeringer and Piore 1971) and employment security (employment continuity over time, see Wilthagen and Tros 2004)[15]. In turn, these definitions contribute to define two types of objective insecurity: insecurity as instability regarding contractual arrangements and insecurity as precariousness of individual labour market participation. This is clearly distinguishable from perceived insecurity that could surround the individual experience within the labour market (Reyneri, 2011)[16] In order to complete the picture, it is worth adding a specification provided by Berton et al. (2009), who state that precariousness emerges only when individuals can not provide for themselves through labour market participation or through having access to adequate social protection. In this sense, precariousness can be understood as a characteristic of the workers' career related to the salary they receive and the benefits they can access to over time (rather then in a certain point in time).

Within the institutional and academic theoretical debate on flexicurity is the idea of a growing flexibility of the labour market structures and institutions with the protection of employability (Wilthagen and Tros, 2004). This concept should replace the traditional job protection providing compensation against decreased security in terms of job continuity with better outplacement opportunities and more generous social security provisions during unemployment spells (European Commission, 2007a). Indeed, along with the increase of the use of temporary contracts, a (theoretically) higher level of job stability in case of high probability of finding a new job for everyone would be ensured. The increase of less protected occupations would also act as a good alternative to long-term unemployment (Lucidi and Raitano, 2008; Korpi and Levin, 2001), and mobility *per se* should not undermine employment security.

European guidelines stress that flexicurity should not be reductively interpreted as a simple compensatory social protection for contingent workers, but labour market and

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[15]This is a classification adopted by the European Commission (2007a).

[16]I will focus only on the objective dimensions of insecurity. For an in-depth analysis of this specific topic see, for example, Chung and Van Oorschot (2010); Erlinghagen (2008); Green (2009); Anderson and Pontusson (2007). For an interesting exploratory comparison between the three dimensions of insecurity see Abbiati (2012).

social protection schemes (during working time and in correspondence of transitions between jobs) should be jointly designed and then coordinated to ensure the absence of a segmentation within the same labour market (European Commission, 2007b; Commissione Europea, 2006; European Commission, 2000). In fact, this is a necessary condition for the implementation of a virtuous flexibility model (Lucidi and Raitano, 2008). This is the case of Denmark (and a few other North-European countries, with differences and some internal drawbacks) Barbieri (2009); Madsen (2004, 2002), where high mobility coexists with massive active labour market policies and high monetary compensation. However, even though pressures toward increasing labour market deregulation was filtered by country-specific institutions (Blossfeld et al., 2005b), in quite a large number of European countries flexibilization has often led to an increasing precariousness (Barbieri and Scherer, 2009; Mertens et al., 2007; Booth et al., 2002; Bentolila et al., 1994).

Flexicurity can be seen as a preferential road-map within the framework of the *transitional labour market* (Brzinsky-Fay, 2010; Schmid, 2008, 2006). According to this approach, the increasing deregulation of the system should lead to a *continuum* of protection progressively increasing over time, which should foster contextually for everyone transitions from less protected positions (such as irregular or seasonal work) to more stable and protected ones. In fact, a consistent set of welfare-sustaining policies and employment-sustaining policies should mitigate the negative consequences of job loss (DiPrete et al., 2002, 1997). On the one hand, unemployment benefits particularly secure labour market transitions (Schmid, 2006) and thereby compensate recipients for events occurring in their life course (Breen, 1997). On the other hand, active labour market policies should be designed to ensure and to improve workers' employability in order to ease continuous transitions.

Within this framework, it can be argued that transitions are not simply status changes, but rather processes (Kruppe et al., 2002) that could foster more or less favourable outcomes and that can be consequently interpreted as risks or as opportunities (Schmid and Schömann, 2004). The risks include not only job loss and deterioration of the terms of employment and future income such as pension, but also fewer career opportunities and exclusion from the workplace or other spheres of life.

Italy is far from this road-map. The comparison between the European and the Italian cases sheds lights on crucial differences that suggests to define the latter as an example of flex-insecurity (Berton et al., 2009), rewording and reinterpreting the flexicurity model. Specifically, in contrast with the European institutions guidelines, in Italy flexibilization came along with a strong segmentation of labour forces not just according to the classical insiders/outsiders and North/South cleavages, but imposing implicitly an additional segmentation between strongly and weakly protected workers. The latter, in a nutshell, can only benefit from the lower level of protection being overrepresented among those in temporary positions which in turn comprise an overrepresentation of women, young and low-skilled individuals.

In other words, flexibilization has been implemented at the margins and only a partial

deregulation is actually in place, meaning that those who have suffered more from the consequences of deregulation are those who were on the fringes of the labour market (that is the secondary external segment). I will discuss more in detail these assertions by presenting a brief review of empirical evidence, but on a general level it can be said that this configuration is detrimental for social citizenship and social inclusion that passes through the labour market participation and access to welfare provisions (Negri and Saraceno, 2000; Castel, 1997). Indeed, since the increase in segmentation of the labour market is not balanced by an increase in social protection, flexibility easily degenerates into what I have defined, along with Reyneri (2011) and Berton et al. (2009), as instability and precariousness. In this case, the dual labour market hypothesis – that maintains that a penalization exists for those workers who experience temporary contracts (Doeringer and Piore, 1971), seems to better apply rather than supposing that a virtuous trade-off between wage and job flexibility exist and that this is at work as compensation for the increased unemployment risk with higher wages (Schömann et al., 1998).

Moreover, the emerging two-tailed configuration of the labour market is very likely to generate negative results in terms of social equity (Muffels and Luijkx, 2008) by bringing about the trade-off (between flexibility and work security) model rather than the flexicurity model (Muffels and Luijkx, 2005). This seems to be the case for Italy, where the welfare system was – and still is – unable to address the crucial issue of the protection of social cohesion raised by the complex synergy between the scarce amount of altruism and flexibility a certain social system is provided with (Solow and Gutmann, 1998). Social inequality affects individuals along the age/cohort dimension and comes with labour market adjustment mainly (but not only) based on high employment protection differentials (Barbieri, 2009). In contrast, other schemes of labour market adjustment would penalize more according to acquired characteristics such as education.

2.4 What consequences for whom? More than a dual-labour market

By considering the role and consequences of the deregulated institutions, the temporary contract is one of the atypical employment relations more widely analyzed in sociological and economic literature compared to others. I have already considered some evidence concerning other types of atypical contracts – such as apprenticeship – in the previous Sections. I will now focus on some core topics within this field: i) the comparison between the role played by the temporary contract and unemployment in trapping workers in precarious positions within the labour market rather than in being a stepping-stone toward a stable job; ii) the short-term consequences of being a contingent worker (wage penalty, disruption and instability of working careers); and, finally, iii) the long-term consequences of experiencing more or less long periods in atypical employment relations. I will briefly go through the empirical evidence for Italy concerning these three fields of analysis, analytically distinct from each other but clearly related by path

dependence processes in reality.

2.4.1 What if temporary stays temporary?

Two main theoretical contributions from labour economics referring to the role and the consequences of the implementation of flexible labour market institutes and job relations are the signal theory (Spence, 1973) and the screening theory (Stiglitz, 1975). Both consider fixed duration of contracts a suitable solution to information asymmetry that actors have to cope with in a job-matching process (Mertens et al., 2007; Booth et al., 2002; Güell and Petrongolo, 2000). According to these theories, employers can use temporary contracts to test the quality of the supply side in terms of productivity before hiring workers with a standard contract. The crucial question, from the point of view of the supply side, is whether temporary jobs help workers back into the labour market, or if they rather have the opposite effect, being used as a buffer tool against demand fluctuation.

Although a growing number of analyses are performed, it is still unclear if these flexible jobs are associated with good performances in the subsequent working career both in terms of wages and of working opportunities. In other words, temporary contracts can be a trap keeping workers in precarious situations or can rather be (compared to unemployment) a port of entry to more stable positions within the labour market. Getting a full-time open-ended job is usually considered as a proxy of being included in the labour market's primary internal segment, even though access occurs through a secondary gateway represented by a temporary contract.

Empirical evidence for a number of European countries is not unanimous. In fact, the stepping-stone (and in some case a reduction of unemployment) function has been confirmed for the UK (Booth et al., 2002), for Germany (Gebel, 2013, 2009; Boockmann and Hagen, 2008; Hagen, 2003) – even though Kvasnicka (2009) partially brings it into question – , for France (Blanchard and Landier, 2002; Abowd et al., 1999), for Belgium (Cockx and Picchio, 2012) and Switzerland (Gebel, 2013). In contrast, evidence for the trap hypothesis supports the plausibility of a uncertainty zone. This is true in the case for the US (Autor and Houseman, 2010; Segal and Sullivan, 1997) but also for Spain (Polavieja, 2003; Dolado et al., 2002; Amuedo-Dorantes, 2000; Güell and Petrongolo, 2000) and the Netherlands (de Graaf-Zijl et al., 2011). If in the first case the screening theory is somehow confirmed, this is not the case for the second set of countries, in which temporary employment could easily be identified as the main flexibility buffer medium rather than as a screening/signalling device for employers.

Evidence for Italy is two-tailed. In fact, some research confirmed that a trapping-effect exists (Berton et al., 2011; Barbieri and Scherer, 2009; Barbieri and Sestito, 2008; Corsini and Guerrazzi, 2007; Sciulli, 2006; Barbieri and Scherer, 2005), while other research showed that it is easier to find a permanent job for those who (re)enter the labour market with a temporary contract rather than for those who stay longer in unemployment (Faccini, 2008; Cockx and Picchio, 2012; Lilla and Staffolani, 2012; Berton et al., 2011; Bison et al., 2010; Ichino et al., 2005): in other words, even short spells of tem-

porary contracts would be positive in the entry and stabilization process in the labour market. On the one hand, temporary contracts are found to represent a stepping stone especially for highly educated workers, while the same contracts could be a trap in the so called bad jobs for the less educated, in Italy (Barbieri and Scherer, 2005) but also in other European countries (Gebel and Giesecke, 2011; Ortiz, 2010; Giesecke and Groß, 2003).

Going into greater depth regarding the Italian case, further evidence suggests that it would not be the predetermined duration of the employment relation *per se* to decrease the chance of reaching a stable work position afterwards. In fact, the high intermittence between different episodes (unemployment, inactivity and different contracts) and their duration (Gagliarducci, 2005) turns out to be the most critical factor to determine a decreasing likelihood of entering a stable position over time. In other words, once a first temporary position has been acquired, the stepping stone effect decreases with the increase in the number of job experiences and job interruptions individuals experience. This suggests that especially for younger workers the conversion to a long-lasting job depends not only on the speed at which one acquires the first work experience, but also on the number and timing of successive transitions (Cockx and Picchio, 2012; García-Pérez and Muñoz-Bullón, 2011).

2.4.2 Short and long-term consequences of being a contingent worker with a temporary contract

Focusing on economic disadvantages linked to contract arrangements, it is also relevant to put in evidence how flexibilization could influence entrapment in low paid jobs. The latter are likely to be connected with previous poverty or periods of unemployment, which is crucial when studying the path dependence mechanisms interfering with the reproduction of inequalities over time. With regard to Italy, all temporary contracts are overrepresented in the lower deciles of the wage distribution – and this applies not only to Italy (Comi and Grasseni, 2012).

The compensating differentials theory (Rosen, 1986) implies that temporary workers receive a wage compensation in order to balance higher flexibility and higher risks[17]. Traditional inequalities concerning the definition of wage gap persist – such as gender, age and qualification (Lucifora et al., 2005; Lucifora, 1997), firms size and region of residence (Cappellari, 2000) – but they now interplay with other factors connected to contractual arrangements. In fact, the long-lasting permanence within an atypical framework increases the earning volatility and its instability throughout the individual life-course (Cappellari and Leonardi, 2006) by influencing not-transient wage determinants especially when mobility is not voluntary and pushed by wage compensations (Lucidi and Raitano, 2009).

In addition to this, looking at consequences of long period spent in unstable posi-

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[17]Also the evidence for other countries is coherent with these findings, both on the individual level (Addison and Surfield, 2005; Hagen, 2003; Booth et al., 2002; Sanchez and Toharia, 2000; Segal and Sullivan, 1995) and on the firms level (Kleinknecht et al., 2006; Bentolila et al., 1994).

tions on wages in the short/medium term, some researchers have confirmed the existence of a strong wage penalty for those in temporary contracts net of educational level and occupation (Raitano and Struffolino, 2013; Raitano, 2012; Barbieri and Cutuli, 2010; Bellani, 2009; Bosio, 2009; Cutuli, 2008; Lucidi and Raitano, 2009; Picchio, 2008)[18]. A discrimination against workers with a temporary contract exists also when considering annual wage growth, but to different extents for movers (between jobs via job mobility) and for stayers (within the same workplace) (Ghinetti, 2013). Growth among stayers does not differ for workers with a temporary rather than an open-ended contract, but does differ for movers to the detriment of contingent workers. Moreover, wage growth is lower among younger workers. Finally, some recent studies highlighted for Italy (far from what happens in Northern and Central Europe) suggest family background still influences the socioeconomic outcomes (occupational perspectives, higher wages and lower unemployment risk) net of educational level (Raitano and Struffolino, 2013; Franzini et al., 2013; Franzini and Raitano, 2011; Raitano, 2011b; Franzini and Raitano, 2009).

With clear connection to the wage gap that short-run temporary employees suffer from, some researchers consider the emerging inequality in terms of pension provision for those who have spent a long time in temporary employment. The Italian system (until the most recent changes imposed by the pension reform called *Riforma Fornero*, art. 24 L.d.201/2011) was not based on a basic system of old-age pensions, but rather on a range of sectoral systems of retirement provision (called funds). Contributions are due by each worker (including the self-employed and parasubordinates). The largest fund is devoted to any kind of dependent employees, is insurance-based and is financed largely out of contributions by following a pay-as-you-go system. With length of time worked and earnings as the basis for future pension calculations, contingent workers are indeed at risk of not having enough resources to finance their retirement because of a higher mobility rate, the higher number of and longer-lasting employment interruptions, and the lower payroll taxes compared to workers who have a more stable and longer experience within the primary segment of the labour market (Dipartimento del Tesoro and Fondazione Giacomo Brodolini, 2011; Raitano, 2011a; Ferraresi and Segre, 2009, 2004). Moreover, other evidence shows that, for example, an increase of payroll tax for the parasubordinate workers to the level of the employees in the private sector does not fill the gap and in some cases the future retirement benefit for these workers is estimated to be lower than the social security check (Borella and Segre, 2009).

Even after the last reform, pensions remain strongly dependent on employment/job continuity and span of unemployment (especially if these are not protected by any kind of benefit), which turns out to be highly detrimental for workers who have already experienced different forms of disadvantage along their own active life within the labour market. In other words, the focus on the early career is particularly relevant considering that disadvantages cumulated along the beginning of careers could affect future

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[18]Interestingly, by looking at the changes in Spanish male earning inequality over time, Cervini and Ramos (2008) show that the decline in temporary employment is responsible for the decreasing earnings instability.

opportunity structure (Raitano, 2012).

To conclude, and also to introduce what will be discussed more in depth in the next Chapter, I will now consider a crucial issue that arises from the deregulation framework, that is the difference between job discontinuity and employment discontinuity. In fact, even though contingent workers are more exposed to a higher turnover[19] by definition, this does not directly imply that also employment discontinuity is compromised. In fact, despite the fact that the majority of the literature I have presented above considers having an open-ended contracts as a proxy for being permanently included within the labour market, evidence from the Italian case makes the picture more complex.

Some researchers have indeed shown that individual careers are characterized by a great fluidity, even for those who have already experienced a permanent contract (Fabrizi and Raitano, 2012; Berton et al., 2011; Berton and Pacelli, 2009; Leombruni and Quaranta, 2005), and this applies also for older cohorts of workers and not only for the 'post-reform' ones (Raitano and Struffolino, 2013; Fabrizi and Raitano, 2012). Theoretically, the duration of the employment relation could not correspond to the contract duration, since temporary contracts can be extended or better transformed into oped-ended contracts when they are properly used as a screening device. Moreover, even in the case of job-to-job mobility (discontinuity), if transitions are not spaced out by long periods of unemployment and/or jobs following one another, careers are not affected by employment discontinuity.

By comparing young and older workers, Berton and Pacelli (2009) found[20] that a notable share of open-ended contracts end within a short time, but that temporary contracts are nevertheless even shorter. Moreover, the transition rate toward joblessness does not change between the two contract types, both in the short and medium term. However, the transition to an open-ended contract is more likely for those who have already experienced this same arrangement before. This implies that the employment-continuity-gap between atypical and typical workers is hardly filled. Berton and Pacelli (2009) suggest that employment continuity for temporary workers is strongly determined by the frequency with which they switch to an open-ended contract. Other evidence instead shows a low transition rate to open-ended contracts (with the exception of the Cfl), meaning that temporary workers actually suffer from a higher employment discontinuity (Lilla and Staffolani, 2012).

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[19]Even though I do not consider this aspect, it is worth pointing out that in the literature, mobility is also referred to and related to downward and upward mobility in terms of qualification/occupational position and not just in terms of contractual arrangement (Bison, 2002; Pisati and Schizzerotto, 1999; Cobalti and Schizzerotto, 1994). In Italy, the narrow margin for career improvement (despite the high rate of job and work turnover) are usually ascribed to the the small-size of firms (even this last point has been brought into question by Fabrizi and Raitano (2012)), to the rigidity of the employment protection law and to the credentialism based on education that affects some occupations and segments within the labour market (Contini and Villosio, 2005). This is the reason why the entry position turns out to be crucial in defining the successive pathway (Barbieri and Scherer, 2007).

[20]The interesting results presented by Berton and Pacelli (2009) by using the WHIP data (Work Histories Italian Panel) suffer from some drawbacks which I will discuss in Chapter 4. For the purpose of this paragraph and to properly evaluate the results coming from WHIP, I anticipate that it does not cover all the domains of the labour market positions and this implies an overestimation of the time spent in unemployment.

To complete the picture, Berton et al. (2011) show that even after accounting for gender, education and preferences, the contractual arrangement plays a role in generating and reproducing inequalities among workers within the labour market. These results are confirmed and enriched by evidence that comes from AD-Silc (Dipartimento del Tesoro and Fondazione Giacomo Brodolini, 2011), a dataset that contains more detailed information about labour market statuses and about individual characteristics such as education thanks to the merging between INPS registers and Eu-Silc survey data for Italy (see Chapter 4). Fabrizi and Raitano (2012) show that higher educational levels are associated with a higher probability of having long-lasting open-ended contracts and of changing a temporary contract into an open-ended one (with a greater difference between high/medium-skilled and low-skilled workers). Moreover, tertiary graduated individuals are overrepresented among the dependent self-employed. Vulnerable categories of workers, such as women, low-skilled individuals, workers residing in the South, and apprentices, are more exposed to a downward (in terms of quality of contractual arrangement) mobility, although disadvantageous transitions actually affect a substantial portion of the sample.

2.5 Summary and remarks

Sociological and economic literatures highlight the existence of diverse models of labour market participation according to quantitative dimensions (from under-employment to second job) as well as qualitative dimensions (for example wage differential, hours of work and degree of casualization). However, because of the increasing complexity of the labour market systems, the boundaries between employment, unemployment, inactivity and semi-employment are more ephemeral. A highly differentiated grey-zone emerges from the overlap of these general categories (Carmignani, 2009; Schiattarella, 2009). The traditional duality between mutually exclusive states – such as employment and unemployment – is forced by a number of less-defined and recognizable states when we look at the cross-section data from official statistics. However, the existing literature focuses on single transitions in the labour market and the risk to experience some kinds of disadvantage in single points in time instead of looking at the unfolding of careers over time and characteristics of the processes.

In lights of the empirical evidence, the concept of the segmentation of the labour market itself appears driven by institutions (Leontaridi, 1998) because of the characteristics of labour/employment protection laws and their repercussions on firms' behaviors. This can also be seen as a major contribution to the explanation of the cross-country differences in terms of flexibilization's consequences Cockx and Picchio (2012). If we accept the duality of the labour market according to the temporary/open-ended employment relations, it can not be interpreted in the sense of a sorting/screening mechanism but rather as a implicit concession for internally segmenting the labour force by using contracts implying different degrees of protection and different salaries (Lucidi and Raitano, 2008).

However, as stated above, for Italy the dual-labour market perspective appears somehow restricted if we consider that, firstly, mobility is observed to a great extent also for the period preceding the deregulation season (Fabrizi and Raitano, 2012), and, secondly, that getting an open-ended contract does not imply a stability gained once and for all. This is especially true for the cohorts of workers whose careers started within the new framework. These considerations are consistent with the need for a more complex (and complete) representation of labour market dynamics on a micro-level, and for better connecting the latter with the macro-level. An increasing amount of dataset goes beyond the observation of states in which people are in single points in time and follows individuals longitudinally, providing information on sequences of episodes and events, more suitable to account for hybrid models of participation in the labour market[21]. However, the availability of data is not sufficient in itself: a theoretical framework is needed within which more composite descriptions accounting for complete processes go along with descriptive transition matrices between states.

What is rather clear-cut when considering the available literature is that early career configuration becomes increasingly important when analyzing the short and long-terms outcomes in terms both of employment security and income security (through wage or welfare provisions). If it is true that in an industrial society, occupation and in general labour market participation is the main determinant of life opportunity (Brown, 1982), the way in which young people begin their career is a crucial interdisciplinary issue, joint with the more general question about the evolution over time of the labour opportunity structure (Abbott, 2005).

Building on previous literature and moving from these considerations, my purpose is to analyze early career pathways of labour market participation across cohorts by exploiting advantages coming from the longitudinal approach to trajectories, and more precisely from the holistic approach (Abbott, 1995). I will consider the evolution over time of some critical features of individual trajectories by focusing on two main stratification factors – gender and education – and by scrutinizing differences occurring both within and between groups, bearing in mind that some of these differences could be considered inequalities in a proper sense. I will then focus on one single cohort of workers who have been exposed to high levels of flexibilization since the very beginning of their career in order to assess the association between different types of pathways and individual characteristics.

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[21]An interesting attempt was made by Tronti and Gatto (2012): they measured the longitudinal unemployment/employment rate computed as the percentage of the ratio of those who were employed in at least one of the three interviews in the Labour Force Survey. They found that longitudinal employment is always higher than the average employment rate.

Chapter 3

Early careers and inequalities: theoretical and methodological issues

In this Chapter the main theoretical and methodological concepts and framework are defined and discussed. Some of the key points have already been outlined in the Introduction, when I discussed the short and long-term aftermaths of flexibilization. I now consider in more detail the definition of career as understood by sociology and within the life-course framework, early careers and their connection with the ongoing macro-level processes (globalization and flexibilization), and the micro variables related to emerging inequalities in early labour market participation (gender, education and cohort).

The importance of looking at the early career is well supported by evidence on the short and long-term consequences triggered by cumulative disadvantages and disrupted and unprotected entry pathways (Blossfeld et al., 2005b). I also introduce the methodological issues in studying labour market participation and careers that justify the use of sequence analysis framework when accounting for processes unfolding over time: empirical evidence offered by previous studies that used sequence analysis to study labour market dynamics are then summarized. Finally, the research questions and the main hypotheses are presented: two main parts are set in order to develop first a cross-cohort comparison, and then a more detailed analysis of a cohort of young workers who entered the labour market after the deregulation reforms.

3.1 Early career: theoretical framework

The first point that should be made concerns the definition of the main object of study of my research, which is the working career. Building on a traditional contribution, the concept of career can be referred to a sequence of activities that are functionally related across time (Elder and Rockwell, 1979). In this very general sense career is conceived approximately the same way as - for example - work, marriage or parenthood histories. Career analysis is consequently oriented toward the analysis of processes of situational

change and its implications on many diverse fields of human experience. In the literature, a number of different labels have been used for referring to evolving sequences of work experiences over time.

Within the sociological tradition, the word career has shifted from the field of sociology of professions (see for example Abbott 1988 and 1981) to the symbolic interactionism and phenomenological background (Marshall and Mueller, 2003) and became a crucial concept for the labeling approach (Becker, 1963) and for Goffman's works (Goffman, 1963). The general understanding of career as a number of positions individuals occupy within a certain system of relations has been reinterpreted in terms of moral career, which is a social and relational path individuals follow by progressively changing self-perceptions, motivations, preferences, and life-perspectives (Meo, 2000). In this sense, careers are not conceived as linear progressions toward more desirable social positions, but rather as open processes, which can take a descendent or ascendant direction according to changes occurring within the subjective and objective spheres.

Some authors (for example some contributions in Arthur et al. 1989) argue that 'work histories' would be preferable as a neutral term used to denote sequences of working spells and that the term 'career' would be better reserved for the sense people make of those experiences. This subjective understanding of career – despite being more suitable for an interdisciplinary approach to this subject – is far beyond the aims of this work, and I will therefore not offer a systematic review of the pertinent interdisciplinary literature. However, this suggestion contributes to highlight the strong processual nature of career and its understanding as a disclosing process open to take any direction rather than a linear trajectory, a vertical upward movement or an ordered progression (Wilensky, 1961).

This rigid unidirectional idea of career can be easily associated with the definition of 'trajectory'. In fact, the latter is widely used for referring to different analytic objects both in sociology and, for example, in psychology. Both perspectives conceive trajectories as movements or developments over time during the lifetime or movements in the social space, while, for example, in demography the term is more related to the notion of biography (see Levy and Team 2005). In any case, a trajectory can be formally identified with a sequence of transitions and stages (implying change or stability respectively). However, by following the definition suggested by Elder and Rockwell (1979), I opt here for using 'career' as a label that can be better assigned to general individual processes evolving over time (potentially in different and divergent directions), which are shaped according to the changes within the framework of the globalization and flexibilization processes, keeping fixed the the focal attention on the relationship between work episodes and time.

Labour market entry and the early period as part of the active population are crucial phases for the further development of individuals participation in the labour market. The study of the dynamics of labour market entry and the following few years reveal themselves as highly relevant: these processes indeed determine to what extent young adults will be able to access a certain standard of living (throughout the market and the

welfare state) but also to maintain (or rather improve or worsen) their social status, and to develop a personal identity (Fasang et al., 2012; Gallie and Paugam, 2000; Wilensky, 1961). In many European countries youth unemployment has become a major social issue since the 1970s, exactly because occasional and discontinuous jobs undermine – as I diffusely commented in Chapter 2 – future possibilities and socioeconomic attainments (Shavit et al., 1990) on many different levels, and determine periods of possible social marginalization. Then, if it is true that young workers are progressively more affected by labour market flexibilization, studying this vulnerable group is crucial for the understanding of the evolution of social inequalities mechanisms (Blossfeld et al., 2005b).

Moreover, youth are less protected by welfare state provisions, and this applies especially to Italy, where the fragmented and residual resources are mainly available on a categorial bases or are family based (Schizzerotto et al., 2011). Material vulnerability is likely to emerge as the aftermath of mechanisms of inequalities, which can work differently on different subgroups according to a number of individual and contextual variables: this is the reason why not only cross-cohort differences but also within cohort inequalities need to be explored. Younger generations can in fact resort to family resources to ease material vulnerability (Brandolini and D'Alessio, 2011; Cannari and D'Alessio, 2008), but this strengthens the role played by inherited factors and goes the other direction compared to what is happening within the education and social stratification spheres (Franzini et al., 2013). In other words, occupational paths are nowadays not just a product of the way education, training, work, seniority, advancement, retirement, and pension system are structured by public and private sector polices and practices (Moen, 2003), but they could also be shaped, both directly and indirectly, by background resources availability.

The cumulative inequality mechanisms operate throughout life (Spini et al., 2013): despite the fact that only few researches have demonstrated how linkages between early initial conditions to late life outcomes work (Mayer, 2009), the higher probability of experiencing precarious early careers is found significantly related to the timing of marriage and family planning choices (Blossfeld et al., 2005b; Mills et al., 2005) and more young workers experience a delay in the achievement of economic independency from the family of origin. (Mencarini and Solera, 2011; Bernardi and Nazio, 2005)). Early career (and work in general) should be then considered as a key element (or better process) of the life-course (Kohli, 1986), because it is exactly through the societal allocation of labour that a significant part of the inequality structure is shaped. Once again, experiencing long periods of unemployment or working only in marginal types of employment can have a scarring effect with long-term consequences (Giesecke and Groß, 2003) in terms of job satisfaction, happiness and health, but also future unemployment, lower salaries and depreciation of human capital[1].

In order to go beyond the empirical contributions I presented in Chapter 2 that look at single points in time and single transitions and their timing, I rather frame the early

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[1]For a review on depreciation of human capital during unemployment see Kunze (2002).

career within the life-course perspective. Sociologists, historians, and economists have emphasized the role of social institutions and culture in shaping life-course, by influencing human relationships and producing inter-individual and inter-cohort differences, but also by fostering social change. Analyzing the latter means to develop longitudinal social research.

Early career should then be conceived as a dynamic process unfolding over time and being equipped with appropriate analytical and methodological tools. This approach is particularly conducive because it allows us to explain event and social patterns of life trajectories within a common conceptual and empirical framework and to make explicit the social processes that generate – or at least influence the timing and the configuration of – these events and trajectories (Mayer and Tuma, 1990). In fact, states that can occur throughout the life-course are discrete and transitions or events may occur at any arbitrary point in time being theoretically random, being somehow predictable as systematic social processes on the aggregate level but not for single individuals. The timing of such processes (school-to-work transition, transition to adulthood and employment, parenting and retirement patterns) is strongly regulated by social and societal institutions (Mayer, 1998; Mayer and Tuma, 1990; Mayer and Müller, 1986). Life-course has been theoretically defined since the very beginning as a social institution itself (Kohli, 1986; Riley, 1986; Sørensen, 1986), moving away from the idea that age can be the only basis of social organization. The life-course theoretical tradition (Elder, 1974) – which offers a new way of thinking about lives and human development in society from birth to death – represents a not negligible starting point for the study of work careers (or better, labour marker participation in general), which is considered one of the fundamental elements of the life-course itself (Mayer and Tuma, 1990; Marshall and Mueller, 2003; Weymann, 2003).

Life-course theory suggests that social change is driven by two main dynamics: progress throughout individual life-course and cohorts substitution. Thus, since individuals are social agents who shape social change, social research needs to focus on the micro level for detecting streams of change (Aisenbrey and Fasang, 2010). As I will discuss more in detail, focussing on the micro level implies analyzing not only time and frequency of discrete transitions between states of interest but also – and above all – to assume a holistic perspective on trajectories and patterns, which stand for changes in cohorts' succession.

The main life-course assumptions pertinent to the present work are represented by a series of heuristic statements (Elder and Rockwell, 1979), which argue that i) social structure should be conceived as interrelated elements of different durations, rather than positions or persons with certain properties cross-sectionally juxtaposed; ii) life-course is itself an element of social structure that emerges with certain characteristics given the interaction between individual actions, organizational processes and institutional historical setting; and iii) collective life trajectories of birth cohorts in different points in time are shaped by the competition between members of different birth cohorts but also of the same cohort. If we bring back these assumptions to the early career and we consider

that the labour market is an institution itself, we have to deal with the fact that the latter generates inequality throughout the (early) life-course – for example according to gender by triggering horizontal segmentation in patterns of labour market participation (Krüger, 2003) – to a degree that depends on the weak or strong institutional framing of the life-course in the first place.

A weaker or stronger institutionalization fosters certain behaviors more or less imperatively. In fact, in some cases the existence of a normative order of events is socially postulated. In the case of the early career, only one assumption could be reasonable, that is the ideal bridge function of employment arrangements such as apprenticeship/fixed term contracts or part-time to more stable and guaranteed positions. Moreover, the study of transitions produces results that could hide the heterogeneity of the pathways that can lead to the aforementioned consequences. Analyzing how employment spells are situated along individual experience could not be circumscribed to transformation of occupational structure and to changes in the industrial relation system. In fact, as already pointed out, the labour opportunity structure (Abbott, 2005) has also to be considered by observing what kind of constraints and opportunities people have to cope with in the present and how they have changed over time. Historical context influences and intersects, in turn, job characteristics (wages, benefits, contracts, etc.) leading to cross cohort differences and subsequent changes in the labour opportunity structure, defining new configurations for younger generations, even in a cross-sectional perspective.

To briefly sum up, it has to be said, that the life-course approach makes two strong points. Firstly, it stresses the concept of linked lives (Elder and Rockwell, 1979; Elder, 1974), which implies the analysis of the nexus among individuals, family members, and friends trajectories at the same time, and, more in general, the interdependence of the different trajectories developing in different fields of the human experience (work, life, residential, marital, and parenting). Secondly, the need to consider the whole life span rather than single phases is brought about (Mayer, 2009, 2005; Krüger, 2003). However, this complex picture can easily puzzle and hide some crucial aspects of single processes and it is somehow better to keep them separated when we are interested in a specific story. In other words, especially when we are interested in one process that interplays with others along which events occur at different paces, these multiple temporal horizons are not easy to cope with, neither theoretically nor methodologically (Abbott and DeViney, 1992). Moreover, an even stronger – and more general – point of the life-course approach concerns the limitations of studying transitions rather than processes. This is the case for early career. In fact, as I discussed in Chapter 2, stabilization within the labour market and, more generally, early career development can only be partially understood if we focus on the timing or the achievement of the first open-ended contract as a proxy for a steady inclusion within the labour market.

3.2 Early career pathways, globalization and flexibilization processes

The characteristics of the flexibilization process for Italy (and partly for Europe) have been discussed in Chapter 2, by trying to define the features of the labour opportunity structure, in which workers (and especially younger workers) have found themselves to act against given their resourse. Building on this ground and on the inputs offered by the life-course approach, the aim of this Section is twofold. Firstly, I discuss the hypothesis concerning two crucial aftermaths potentially fostered by the globalization and flexibilization processes, that are increasing differentiation and destandardization of early careers. Secondly, I consider the empirical evidence available up to now on the persistence of old inequalities or the emergence of new cleavages in early labour market participation pathways. The existing empirical evidence suggests that the globalization process has had diverse effects on the different phases of the life-course (Mills and Blossfeld, 2006; Buchholz et al., 2009). For example, for middle-aged men not only qualification and gender but also the institutional changes in the social and employment protection systems is found to be a determinant of increasing the volatility of the working career. In this case, a broader diffusion of erratic careers seems to have occurred in those countries (such as Denmark, the Netherlands, the UK, the US, and some of the ex-socialist European countries) in which previous strong protection systems were massively dismantled over recent decades (Blossfeld, 2003). However, we know little about the longitudinal characteristics of processes that generate from the new institutional and normative design and their aftermath on early careers configuration.

3.2.1 Destandardization and differentiation

Globalization has been used as a label for embracing a number of macro-level economic processes that have had an influence during the last three decades on many fields of the life-course (Blossfeld et al., 2005b). The structural shifts have concerned primarily the internationalization of markets and the simultaneous decline of national borders. This has led to growth deregulation, privatization, and liberalization within nation states in order to better compete in the global markets. The increasing interconnectedness of the latter has been supported by the diffusion of information and communication technologies. However, interconnectedness has exposed markets to shocks occurring everywhere inside of the network and implies an increasing mobility of capital and labour. These interconnected processes are thought to generate increasing structural uncertainty within local contexts throughout the reduction of job security and incentives to increase rates and patterns of movements between different jobs. According to the deregulation perspective, this results (as shown in Chapter 2) in a greater overall flexibility.

But what does this all mean in terms of careers configurations? Two main theoretical perspectives deal with this issue and the debate revolves around the question of how market risks are distributed within society. On the one hand, the individualization of risk theory claims that the new setting leads to new forms of inequalities that overcome

the 'traditional' cleavages and make individual outcomes less predictable according to them. On the other hand, what could be called the persistent inequalities theory argues that certain classic inequality patterns based on class and educational attainment still strongly shape individuals' exposure to labour market risks.

The theories that embrace the first perspective (Sennett, 2011; Bauman, 2002; Rosanvallon, 1995; Beck, 1992) argue that the ongoing globalization process is leading to diffuse uncertainty, especially connected to labour market participation. This would be due to a shift to a what has been called the 'age of insecurity' (Doogan, 2005): every aspect of the working (and social) life would be involved in this process that results in an indiscernibly and inseparably subjective and objective uncertainty, accompanied by high volatility of individual agency against the changes that affect the labour market. Within this framework, unemployment, job-mobility, and poverty risks would not have influence only on certain populations according to social class (Giddens, 1994; Beck, 1992) but would rather affect temporary periods throughout everyones life-course. This goes along with a temporization – and individualization – of inequality (Leisering and Leibfried, 2001). On a more general level, Beck (1992) claims a switch from a class society to a risk society, brought about by the globalization process itself and in which individualization describes a structural transformation of social institutions and the relationship between individual and society. In fact, compared to the past, in which class structure was tied to the nation state, globalization and flexibilization would act in the direction of loose connections between social inequalities and class positions due to the economic processes that operate within the interconnected world. It would follow that global risks equalize individuals, irrespective of their status. As suggested by Mills et al. (2006), a less strong position within the individualization of risk perspective supports instead the idea that a stable and secure employment has been slowly replaced by unstable patchwork careers (Heery and Salmon, 2000; DiPrete and Nonnemaker, 1997).

The competing perspective is that of persistent inequalities. The concept of recommodification of risks (Breen, 1997) can be considered a good starting point for developing the main points of this perspective. In fact, this notion comprises a series of organizational restructuring processes imposed by globalization that private employers have to cope with: the subsequent increasing volatility is managed by transferring market risks to their employees. However, recommodification hits especially those groups that are disadvantaged and social inequality is reshaped according to existing class differences (or better in individual's resources disparity conceived in a broader sense) and education (Goldthorpe, 2002; Breen, 1997). It is exactly along this class-line that employment flexibility and the risk of unemployment spreads across the population. In this case, the key point (Blossfeld et al., 2005a) would be the distinction between jobs based on labour contracts and those regulated by service relationships (Goldthorpe, 2002; Breen, 1997). In fact, within the recommodification of risks framework, the former are more likely then the latter to expose especially young workers to market fluctuations and labour market risks. According to the authors, this would occur because jobs based on labour contracts are less demanding in terms of progressive adjustment in reciprocal employer-employees

obligations and the necessity of estimating wages by performance.

Summing up, these two theoretical perspectives offer different answers to two of the globalization hypotheses (Blossfeld et al., 2005b), one concerning the increasing insecurity and the other the decreasing of the influence of social class. However, what I have discussed so far only partly addresses the other two globalization hypotheses related to career evolution, namely the growing fragmentation of life-course and patterns of labour market participation, and the increase in across cohorts job mobility rate.

In the literature, terms such as 'patchwork' (Beck, 1992) or 'boundaryless' (Arthur and Rousseau, 1996; Arthur et al., 1989) biographies and careers have been used to define emergent models of labour market participation shaped by the diffusion of flexibility. In other words, more 'disorderly' careers (Wilensky, 1961) are said to replace the 'traditional orderly' ones. These definitions emphasize the shift of career responsibility from the organization to individuals, who are supposed to manage having much more control – and to some extent more freedom – over their own career building process but who are simultaneously exposed to increasing risks. In fact, instability, fragmentation, and contingency characterize labour market participation for most of the population (Castells, 1996; Beck, 1992) and the lack of private and/or welfare resources could determine social exclusion to different extents. In contrast, King et al. (2005) argue that the debate should focus rather on the 'bounded' nature of careers, because prior career history, occupational identity and institutional constraints structure labour market opportunities. These authors suggest that both 'boundaryless' and 'traditional' careers are ideal types that can hardly adequately capture the complexity of individual experiences and the interaction between agency and structure.

However, as mentioned in Chapter 2, it can be said that the theoretical debate on the consequences of flexibilization of labour market suffers from some conceptual ambiguity about changes and developments along life-courses and work careers (Aisenbrey and Fasang, 2010), also because of the terminological confusion about notions like destandardization, deinstitutionalization, individualization, pluralization or differentiation, which are often used interchangeably to capture historical changes but barely empirically tested in their substantive meaning due to the difficulty in measuring them properly (Brückner and Mayer, 2005; Doogan, 2001).

I will discuss more in depth the methodological issues later in this Chapter, but it is worth hinting that in this respect the majority of the empirical evidence on early labour market careers evolution focuses on changes occurring to specific aspects such as the duration of first job search, the risk of fixed-term employment in the first job, the risk of unemployment after having entered first employment, and re-entry after unemployment (for Italy, see for example Bernardi and Nazio 2005, Bernardi et al. 2004 and Bernardi et al. 2000), rather than on the whole process holistically considered. In this concern, differentiation and destandardization are the two main concepts usually recalled but less often critically discussed.

Brückner and Mayer (2005) suggest that, on the one hand, destandardization should be conceived as the variation between careers; on the other hand, differentiation would

be understood as the degree of variation within a single career over time. In both cases the increasing variability would derive not only from the increasing number of states and events experienced but also their sequence, timing and duration. Consequently, increasing destandardization implies an increasing number of states and events, and their sequential combination becomes available. These elements characterize a smaller part of the population or occur with different timing and duration.

In contrast, an increasing differentiation can be found when these same elements and their relationships are analyzed within individual careers. The evolution over time – meaning across cohorts – of these two processes is particularly interesting in the case of the early careers of young workers, because for the latter differentiation and destandardization are connected to mechanisms internal to labour market institutions, through which inequalities are generated and/or reproduced. This is crucial in order to analyze the impact of the deregulation process on patterns of labour market participation for subpopulations of workers particularly affected.

The empirical evidence shows that differences between men and women follow a rather precise pattern: they are irrelevant for educational choices, they start in correspondence of school-to-work transition and then in labour market participation, and, finally, they increase for family formation and fertility choices (Casarico and Profeta, 2012). More specifically, gender inequalities with respect to labour market participation emerge in four main spheres (Bison et al., 1996)[2]: entry, permanence, vertical and horizontal occupational segregation. In fact, women participate less than men[3] and, even when they enter the labour market, their permanence is shorter and more exposed to the aftermaths of marriage and life-cycle events. Moreover, when women participate, they are segregated within certain occupations (and often with certain employment arrangements) and are more likely than men to be in subordinated positions within the internal hierarchies. In order to explain female labour market participation patterns, some theories single out the effects of personal options and choices (Crompton, 2006; Hakim, 2000). However, individual options do not fully explain the outcome: Krüger and Levy (2001) argue that some structural 'generative grammar' could connect the outcome and type of occupation others refer to as the intra-familiar decisions between partners.

Against the theories that postulate the decreasing influence of traditional social structure (Giddens, 1994; Beck, 1992) the gendered master status hypothesis (Krüger and Levy, 2001) assumes that the family structure has been much less influenced by the modernization process. Therefore, the interaction of this process with labour market deregulation would lead to less radical consequences in terms of abatement of gender differences in labour market participation patterns. In other words, because of a number of individual but also – and in some cases mainly – institutional and cultural factors

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[2]Bison et al. (1996) highlight – along with the great majority of the research on Italy – the crucial role played by the geographical dimension, namely the North/South issue.

[3]Gender inequality depends to a great extent on individuals and firms attitudes towards female employment, on division of work within couples, and on male and female responsibilities (Pixley, 2008; Huang and Sverke, 2007; Lesnard, 2004; Fortin, 2005; Blossfeld and Drobnic, 2001).

(Crompton, 2006; Hakim, 2000; Crompton, 1999; Blossfeld and Hakim, 1997; Hakim, 1995), a gendered model of labour market participation persists.

By following this perspective, women are expected to take charge of more flexibility (through part-time, temporary, seasonal contracts) than men in younger cohorts in order to cope with the requirements of their master status, that implies a strong commitment to family once they enter motherhood – which generally occurs relatively early in the life-course and employment career – and a reduction of the personal investment in career. In contrast, while less flexibility is consented to men in the employment domain, they can benefit from more flexibility in the family domain. Widmer and Ritschard (2009) argue that this is a structural element of advanced capitalist systems and triggers gender-differentiated trends of evolution over time of life and employment trajectories according to the gendered master status rather than the segregation principle.

Education plays an important role in mediating between labour force supply and demand (Pisati, 2002). In Italy, young women are better educated than men: 60% (25% in 1950) of those with a tertiary degree are women in the present day (Casarico and Profeta, 2012). Following the reforms implemented in the 1960s and 1970s, the Italian school system has become unstratified and consequently highly standardized. Occupational returns to education did not decline over time, despite the growing supply of highly educated people and the lack of a structured vocational training system (Cobalti and Schizzerotto, 1994). In other words, the reinforcement of the initial conditions defined by education have a strong impact on individual outcomes (Giorgi et al., 2011). This is particularly alarming when considering the expansion of education.

For Italy, the existing empirical evidence only offers some hints about the fact that highly-skilled women are more likely to experience careers with a higher number of episodes, and participation is long-lasting when compared to less-skilled women (Bison et al., 1996), according to the fact that changes in labour market structure can alter mobility patterns both in general and for specific groups (Rosenfeld, 1992; Abbott and Smith, 1984).

However, as shown above, the existing literature mainly considers single transitions between states and connected risks, and even when a holistic point of view on careers is assumed, few scholars put forward explicit hypotheses on differences according to educational level. The changes to the demand side of labour should affect employees with different education in different ways. In fact, globalization and the restructuring of occupational sectors – partly due to technological change – have informed a new skill-biased scenario in which flexibility, job-discontinuity and unemployment affect selectively low-skilled workers (Barbieri, 2009; DiPrete et al., 2006).

3.3 Methodological issues in studying labour market participation and careers: sequence analysis

Exploring the persistence and the emergence of inequalities implies, firstly, to deal with cross-cohort comparisons and, secondly, to assume a longitudinal point of view on

phenomena. These tools allow us to disentangle the issues of processes unfolding over time. When comparing generations, what we are looking at is the balance or the imbalance between needs and expectations, and the concrete possibility of each generation satisfying them during their life courses. Within the more general social dynamic, it is not easy to detect the overall direction of processes throughout generations. This is especially demanding from the theoretical point of view since we implicitly accept the hypothesis that social phenomena can be analyzed for the sake of a subtended common metric (Schizzerotto et al., 2011). However, a methodological issue arises because of the need for suitable data and methods to bring about analysis within this framework. Sequence analysis means exactly to cope with these theoretical and methodological issues, by offering new analytical tools for studying processes (such as labour marker participation and, more specifically early careers) unfolding over time and potentially changing characteristics such as cohorts following one another.

Sequence analysis was brought into social sciences from biology by Abbott in the 1980s (Abbott, 1995, 1990; Abbott and Forrest, 1986). In biology, the objects of study were DNA strings, social processes unfolding over time as a sequence of states/events represented the ideal equivalent in social sciences. This approach to time-related phenomena is not grounded on any assumption about the underlying sequences regularities' generative process (Abbott, 1992). In other words, causal modeling only intervenes in a second step of the analysis, because the first aim is describing sequences structures and the relationships among them trying to find out typologies (Pollock et al., 2002). Sequence analysis methods rather make assumptions about the kinds of patterns expected to emerge from data (Abbott and Tsay, 2000).

One of the main advantages of considering sequences as a whole as unit of analysis is that it fosters the description (Abbott, 2004, 2001) of social processes that empirically result in patterns of events (Abbott and Tsay, 2000). Only after the identification of these latter, it is then possible to consider which are the determinants of such patterns and their configurations, but also if and how they can shape other processes (Abbott, 1995). These are the reasons why sequence analysis can be understood as a suitable tool for reducing the existing imbalance between the core concepts of transition and trajectory that are typical of life-course research (Aisenbrey and Fasang, 2010). In other words, as hoped by Abbott, sequence analysis can bring the actual temporal unfolding of trajectories and careers back into the core of the life-course study.

Other longitudinal methods – more popular and strengthened in both social and political sciences – attempt at treating longitudinal objects: regression models, event history analysis, Markov models, and time series analysis (Aisenbrey and Fasang, 2010). These methods are suitable when a stochastic generative process is assumed to generate data. According to that, a causal perspective of analysis is brought about, leaving aside events and the configuration of their succession over time (Abbott, 1998). Sequence analysis and these other methods are said to belong to different statistical traditions or cultures (Breiman, 2001), which are the cultures of data modeling *versus* holistic modeling in addressing life-course phenomena (Billari, 2005).

As Abbot points out, a trajectory as an actual sequence of events becomes almost invisible to these sociological methodologies (Abbott, 1998; Abbott and Hrycak, 1990). Approaches other than sequence analysis can not uncover the nature, the order of states and/or events that compose the sequences. In fact, stratification and occupational researchers have mainly conceived career/trajectory development as an individual process, and have used theoretical models of antecedents to explain mobility and occupational patterns (Moen, 2003). This approach has been said to be variable-centred or event-oriented (Billari, 2005), being focused on the impact of one variable on another (often representing the timing of occurrence of a certain event) by assuming a substantial homogeneity in the processes under inspection. In fact, the study of single transitions produces aggregated results, which are very likely to hide the heterogeneity existing between individual pathways (Robette, 2010).

Sequence analysis within the life-course framework[4] is rather person-centred (Abbott, 1995), being those same individual pathways exposed to processes of changes, and to continuities within historical and institutional contexts. Methods based on sequence analysis promote an understanding of individual sequences (of any kind of process under analysis) by considering each sequence as a whole and, consequently, as conceptual unit of analysis. The general aim is detecting temporal changes in event sequences frequency by using what is called holistic modeling to individuals sequences, or better empirical realization of their pathways in one or more fields of social experience.

When applying sequence analysis, each trajectory or pathway in the life-course is coded and represented as a string of characters, which stand for different states. The main aim would be for example the identification of typical sequences or patterns rather than making predictions about the timing or the likelihood of single transitions' occurrence. However, the two methods are not in direct competition: the choice about the method to use is dictated by the research interests and the kind of data available. With this understanding, the two frameworks and methodological approaches are not full substitutes for each another.

The relationships among sequences is the key point when considering how we can

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[4]As outlined above, sequence analysis is suitable whenever processes and their evolution over time are assumed as objects of study. This has clearly been stated by Abbott 1995 since the very first formulation of his proposal. So far, in literature a number of issues of great interest for social sciences have been reframed as part of life-course processes. What before was usually analyzed by using methods that do not account for an overview of the entire process or that focused on the occurrence of single transitions has started to be described and analyzed in its temporal development: class career/intergenerational mobility (Joseph et al., 2012; Bison, 2009; Halpin and Chan, 1998; Chan, 1995; Rosenfeld, 1992); careers of couples/dual earner couples (Pixley, 2008; Bison, 2006); transition/pathways to adulthood (Bras et al., 2010; Baizán et al., 2004, 2003, 2002; Baizán, 2010); school-to-work transition (McVicar and Anyadike-Danes, 2002; Scherer, 2001; Billari and Wilson, 2001); work-family careers (Baizán et al., 2004, 2003; Aassve et al., 2002; Billari, 2001; Krüger and Levy, 2001); socio-economic background and education for natives and immigrants (Laganà et al., 2013; Kogan, 2007); psychiatric/mental disorder careers (Müller et al., 2012; Dyer, 2011); time-using(Lesnard, 2006); residential trajectories (Stovel and Bolan, 2004); retirement trajectories (Fasang et al., 2011; Fasang, 2010); cultural processes (Stovel, 2001; Bearman and Stovel, 2000); intergenerational patterns od family formation (Fasang and Raab, 2013); timing of policies adoption (Abbott and DeViney, 1992); evolution of family models (Levy et al., 2002); successful in artistic careers (Giuffre, 1999); and changes in the rhetorical structure of sociological articles (Abbott and Barman, 1997).

extract information about the structural features of processes. The optimal matching (Abbott and Forrest, 1986) – and in general non-parametric heuristic data mining-based techniques for analyzing sequences (Ritschard et al., 2013, 2008) – have been considered as strong descriptive tools from the very beginning, being fundamentally data-driven. The method is mainly descriptive. The classical version of sequence analysis based on optimal marching (Abbott, 1990; Abbott and Forrest, 1986) consists of making a typology out of the sample or the population by grouping together individuals with similar patterns, said to be similar according to the distance between the corresponding sequences. As a consequence, the method offers a global perspective on populations and subpopulations at risk of experiencing certain patterns or transitions (Aisenbrey and Fasang, 2010), thanks to the fact that it aims to identify social processes' constituent patterns over time. In fact, this is the precondition for considering their causes (Stovel, 2001).

As just mentioned, the aim of the optimal matching analysis is the definition of the similarity among sequences as a function of the transformation costs to transform one sequence into another. This operation is possible through three types of operation (Abbott 1995). Indeed, the pairwise comparison among sequences consist in considering i) substitution of a state with one of the others, ii) insertion or iii) deletion (*indel* operations) of one state at a certain point of the sequence to align the paired sequences. To each operation specific costs are conferred and their sum – computed resorting to the Levensthein matrix for alignment (see Macindoe and Abbott 2004 and Levenshtein 1966) – represents the pairwise distance measure. The sequences are considered more similar as less operations are needed to align them (that is making transforming one sequence into another by making them identical). The traditional version of optimal matching (Abbott and Hrycak, 1990) can be said to follow a three-step procedure: first, the theoretical specification of state space and transformation costs are set up; second, the algorithm produces pairwise distances between sequences; and, third, reduction techniques such as multidimensional scaling or clustering[5].

Some critics (Levine, 2000; Wu, 2000) have been raised against what has been called the first wave of sequence analysis as Abbott codified it for social sciences (Aisenbrey and Fasang, 2010). Criticisms concerned mainly: the between-sequences similarity measurements and the high level of subjectivity in defining substitution and *indel* costs; issues connected to the management of complex events made out of multiple and parallel sequences; and the fact that the output characteristics are suitable only for a limited number of data reduction techniques.

However, the strongest point is related to the validation issue. Justifying classification methods that are not based on a stochastic generative model of the sequences is indeed not trivial. In fact, a number of assumptions are made when we use clustering methods (Studer et al., 2011) and it is certainly true that this is problematic for the assessment of the internal and external validity of descriptive classification of categorical

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[5]For a detailed review about the first and second wave of sequence analysis see Aisenbrey and Fasang 2010.

data, especially when clusters are then used as dependent or independent variables for additional analyses, that is in an explanatory framework. Thus, intra-cluster variability is ignored since the difference between the ideal-type sequence and individual realizations are actually considered as a random non-informative error term (Studer et al., 2011).

When the assumptions on which cluster analysis is based are too strong, this should be considered as a purely descriptive method. However, this is far from implying a depreciation of the technique. In fact, descriptive and non-causal methods of classification are widely used and are based on arbitrary choices rather than on causal mechanisms (Abbott, 1998). Furthermore, techniques that refer to stochastic processes of data generation make strong assumptions as well (for example about the error distribution) and the same fact that for example careers generate from independent stochastic processes among individuals is itself a hypothesis. Finally, event history analysis techniques themselves – compared to sequence analysis – can hardly be accountable to complex trajectories and careers composed of a great number of events (Ritschard and Oris, 2005) and the relationships and evolution over time of multiple trajectories (Pollock, 2007), being instead focused on competing risk occurrence of single events for single individuals.

Even though the validation issue has to be taken into consideration seriously (and scholars who deal with sequence analysis are doing that), some credit should be given to the first wave of sequence analysis. In fact, it opened the theoretical and methodological debate about the holistic perspective and the importance of context, conceived in a broad sense. Moreover, the earlier contributions have provided researchers with the tools for recognizing analytically the overall structure of complicated longitudinal data (Halpin, 2010) by trying to uncover regularities (Halpin and Chan, 1998; Stovel et al., 1996).

The second wave of sequence analysis (Aisenbrey and Fasang, 2010) tries to cope with the main critiques concerning validation, missing and censored data, and time interdependence. Even Abbott and Tsay (2000) themselves warn about the need for caution in interpreting substantively what results from the optimal matching implementation. This encouraged a number of scholars from different disciplines to fare the challenges brought about by the critics against the first wave of sequence analysis.

These contributions are of two kinds. On the one hand, extensions to the optimal machined were proposed in order to improve the alignment process and the transformation operations. As Lesnard (2010) highlights, in biology *indel* and substitution operations do not have substantive meaning, while costs are usually defined according to biological theories. In social sciences the settings of these parameters are crucial, but theory does not always provide us with strong points for setting the transformation operation. To go beyond subjective choices, new contributions make use of data-based transformation costs assessed by using, for example: the dynamic Hamming distance (Lesnard, 2010); the localized optimal matching (Hollister, 2009); or the weighed optimal matching (Halpin, 2010)[6]. On the other hand, extensions to sequence analysis that take the

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[6]Alternatives to the classical optimal matching that shared its rationale are, for example, the lexicographic index (Bison, 2011) and the transition-oriented (rather than state-succession-oriented) approach (Biemann, 2011).

distance from optimal matching were brought about diffusely. The latter were defined as non-alignment sequence methods: the rationale is using elements order (Dijkstra and Taris, 1995) or the enumeration of sequences substructures throughout the sequences to assess their pairwise similarity (Elzinga, 2003), referring to the variability over time of individual sequences (Elzinga, 2010), or combining different dissimilarity metrics (for example chi-square, optimal matching, and non-alignment techniques) that provide the best clusters in terms of homogeneity (Massoni et al., 2013).

Justification problems concerning cost schemes, metrics and cut-off criteria (when clustering is used) are faced by some scholars who provide methods for comparing different options to assess if and to what extent various techniques lead to consistent and converging results (Robette and Bry, 2012; Gauthier et al., 2009). However, sequence analysis both as formulated by Abbott between the 1980s and the 1990s and as improved by other scholars seems to remain less standardized than methods that refer to the data modeling approach (Aisenbrey and Fasang, 2010).

Nevertheless, a set of new methods for dealing with sequences has been recently developed by pursuing the extension both of sequence analysis in general and optimal matching in particular. It would be perhaps precipitous to state the emergence of a third wave of sequence analysis, but a number of methodological contributions can be easily grouped together according to the strong emphasis on data mining and visual representation of sequences or their characteristics for extracting knowledge from sequences. Some options go beyond the traditional clustering have been proposed, for example: self-organizing maps (Rousset et al., 2012; Massoni et al., 2009; Rousset and Giret, 2007); regression trees or divisive algorithms (Studer et al., 2011; Piccarreta and Billari, 2007); multidimensional scaling (Piccarreta and Lior, 2010), the identification of representative sequences (Bürgin and Ritschard, 2012); the use of latent class analysis (Barban and Billari, 2012); the machine learning approach (Billari et al., 2006); or the use of Markov chain Monte Carlo (Massoni et al., 2011; Abbott and Barman, 1997). Finally, the importance of the visual inspection of sequences' sets have been highlighted by some contributions (Brzinsky-Fay, 2007; Scherer, 2001) but some recent improvements were crucial for rendering and substantively interpreting the connection between sequences (Fasang and Liao, 2013; Bürgin and Ritschard, 2012; Piccarreta, 2012; Studer and Bürgin, 2012; Müller et al., 2008), providing in some cases efficient tools for interpreting and visualizing the relationship between sequences and explanatory variables (or contexts) by using discrepancy analysis based on ANOVA principles (Studer and Bürgin, 2012; Studer et al., 2011).

3.4 Evidence on labour market participation from studies that use sequence analysis

Even before Abbott's influential epistemological and methodological contributions, a seminal work on sequences of work histories was conducted by Form and Miller (1949) on a sample of workers from Ohio, by connecting the characteristics of the individuals'

work histories to their fathers' occupation. Occupational security is the main concept operationalized for three hypothesized phases of labour market participation (initial, trial and stable work) and used to build individual patterns. The question is whether certain patterns or job changes characterize different occupational levels: the authors found that work histories of occupational groups reveal changes in the tenure of work life and changes in vertical occupational mobility, and that the individuals fathers' occupations and education are related to the subsequent work history of the offspring.

As mentioned before, sequence analysis needs certain data to be implemented: whether the units of analysis are individuals or rather institutional processes, longitudinal data as detailed as possible with respect to the topic of interest are indispensable. This Section provides a review of the few studies that have used sequence analysis to describe labour market participation and career evolution over time. If we consider Italy, a number of contributions consider class mobility and its relationship with job mobility or school-to-work transition. However, since my focus is on early patterns of labour market participation, I will now provide an overview of research focused on this circumscribed field of study, both for Italy and for other European countries[7].

For the Italian case, Bison et al. (2010) use a small subsample from the Italian Households Panel Study to compare the contractual arrangement career of two cohorts of workers who entered the labour market before and after the *Pacchetto Treu* in 1998. Looking at the first three years of labour market participation, they find that in an advance phase of the early career those who were exposed to the new institutional setting show higher share of temporary employment and a lower share of unemployment. The authors argue that the reforms did not generate only negative consequences, and that the evidence shows quite a high rate of transitions to permanent positions for those who had temporary contracts. They then apply the sequence analysis by using the lexicographic index (Bison, 2011, 2009) to detect eight profiles of labour market participation. They find that the majority of the workers belongs to clusters in which they are trapped or safe (depending on the 'quality' of the state) in one single state during the first 36 months. However, clusters characterized by the temporary/open-ended transition are more populated by individuals belonging to the post-reform cohort, meaning that the negative effects predicted of the new type of contracts are only partially confirmed. Nevertheless, the sample used is fairly small and even though gender and education were two of the variables used for the optimal matching procedure in order to obtain a counterfactual design, some heterogeneity along these tracks could be presumed to persist.

By using the Italian Households Longitudinal Survey (IHLS) Bozzon (2008) looks at ten years of labour market participation for women born between 1900 and 1977 in order to define a typology of labour market participation to connect to family characteristics. The definition of the states accounts for the difference between temporary and open-

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[7]Some research focuses on very specific segment of labour forces. For example, Blair-Loy (1999) analyzed executive women in finance, Biemann and Datta (2013) and Biemann and Wolf (2009) studied top management team members, and Stewart (2009) scrutinized employment and wage trajectories for mothers entering low-skilled work in Britain.

ended jobs as well as jobs in the black market. The author finds a high share of women who experienced a long-lasting permanence in atypical jobs both in regular and irregular labour markets. However, when compared to the older cohorts younger cohorts are more likely to have careers characterized by atypical positions and by a longer wait for the first job. Moreover, those who entered the labour market in stronger positions are less likely to experience an early exit, while atypical arrangements at the very beginning increase the risk to be trapped in unfavorable jobs. Self-employment-characterized careers lead to better outcome in terms of attachment but they also suffer from a lack of social protection.

With the same data, Scherer (2005) explores the labour market entry for young Italian workers (1983-1997) and finds that, compared to Germany and the UK, they have a longer search for their first job, but once they have been found it they show rather stable patterns of labour mart participation. This is partially coherent with what Brzinsky-Fay (2007) finds for Italy by using ECHP data and by comparing the school to work transition in ten European countries by looking at the five years that follow school leaving. Almost 40% of Italian youths belong to a cluster called 'failure' and characterized by a high rate of unemployment and inactivity, nearly 35% of the sample belongs to an unfavorable cluster with respect to labour market attachment, and only the remaining part experience faster/better transitions within the labour market.

Finally, Raitano and Struffolino (2013) describe the features of early career for different cohorts of workers who entered the labour market between 1974 and 2001 by using the AD-Silc data. They highlight how individual characteristics and parental background are associated with the likelihood to follow different career pathways. The authors inquire whether different types of trajectories are associated with wage penalties and whether a reproduction of wage inequality through the influence of parental background exists. The results of the comparison between entry trajectories give support to the hypothesis concerning the high complexity of Italian workers careers even for the older cohorts. A certain stability of career profiles exists across cohorts, apart from a reduction of the shares of those leaving the (regular) labour force. This is probably connected to cohort effects and to the increasing female participation in the labour market. Moreover, specific careers and trajectories outcomes are strictly associated with individuals socioeconomic characteristics: even after controlling for the educational level, the entry pathway is connected to the family background. In addition, the early career pattern results in a considerable wage differential (through the different accumulated seniority) for those workers who achieve dependent employment after eight years of labour market participation, hence engendering a permanent penalty for those having followed less stable careers. Finally, the analysis confirms that coming from a disadvantaged family background in Italy negatively affects earnings, even when main outcomes (education, delay in education, seniority, occupation, and sector) are controlled for.

If we now consider the wider European context, evidence concerning a number of countries obtained by exploiting sequence analysis can be found and could serve to draw a more general scenario in which the Italian case can be better understood.

By using the Swiss Household Panel and comparing different cohorts for Switzerland, Widmer and Ritschard (2009) find that men have maintained stable and linear occupational trajectories over time. In contrast, a greater diversification of women s occupational trajectories highlight a gender difference persisting. They conclude that women suffer more from the aftermaths of labour market flexibilization in terms of volatility of careers. The increase in the variety of occupational trajectories is found to be due not to unpatterned or random life sequences, but rather to transition back and forth between different states. In other words, destandardization seems to be embedded in gender inequalities since flexibility is an increasing requirement for women who want/need to participate in the labour market.

Massoni et al. (2009) look at one cohort of young people having graduated in 1998 and monitored over 94 months after having left school in France by using the *Generation 98* data. Even though the authors contribution is mainly methodological, they identify nine typologies (out of the 8x8 self-organizing map they obtain) strongly characterized by i) one type of labour market arrangement such as fixed-term or permanent contract; ii) instability due to a more or less long period spent frequently changing status of waiting in less secure positions before stabilizing; and iii) a long period of inactivity or unemployment.

By using the British Cohort Study, Anyadike-Danes and McVicar (2010) consider the early careers of women aged 16 to 29 years who entered the labour market in 1970, and show how careers are strictly related to family background and previous school experiences. The patterns' typology shows differences between those who stay within the labour market in a rather stable position (permanent full-time or part-time contract), women who graduated, those who exit very early and start an unemployment pathway and those who progressively leave the labour market, divided into different groups according to the timing of their detachment. More stable and long-term-attachment careers are associated with a more favourable family background: while this kind of association can not be interpreted as strictly causal, they can be regarded as a fundamental part of a mechanism which transmits an economic advantage from generation to generation. On a general level, their results are consistent with evidence obtained by using other data and other methods, but they add fundamental information regarding patterns configuration and their outcomes.

Based on the British Household Panel Survey (BHPS), another contribution about the UK considers the impact of involuntary job separations on life-courses by comparing different cohorts (Malo and Muñoz-Bullón, 2003). By following individuals born between 1906 and 1959 (at least 34 years-old by 1993) the study covers the wide range of employment statuses and statues other than employment. The main findings concern the fact that mobility in employment status has increased across cohorts, and patterns of mobility have become more similar between men and women. Moreover, younger cohorts were especially affected by involuntary job separations which led to sequences that differ in terms of stability from the typical (median) sequence for each cohort.

By using the German Socio-Economic Panel (SOEP), Simonson et al. (2011) analyze

employment biographies for German men aged 15 to 45 by comparing three birth cohorts (between 1936 and 1965) in order to study if and to what extend destandardization of career pathways differs after the reunification of East and West Germany. They scrutinize whether the East German labour market has converged with that of West Germany in terms of flexibilization and destandardization, since after 1989 almost all East German institutions were adapted to the models of West German institutions. Even though individuals' sequences are built by distinguishing only few statuses (education, part-time/full-time employment, military service, unemployment and apprenticeship), data show a dishomogenization and pluralization in employment biographies in both areas, but the trends are more pronounced in East Germany.

With the same data, Berger et al. (1993) focus on West Germany by using indicators for stability and heterogeneity in order to define a typology of gender-specific pathways of labour market participation. They find a high amount of stability and low heterogeneity for the first older cohorts (1950-1960) and a decreasing stability and increasing variation for the younger cohorts of workers. This change affects especially men's careers during the 1970s, while it characterizes women's trajectories starting from the 1980s. More interestingly, there is also an increasing in stable pathways amongst women belonging to the younger cohorts. The hypothesis is that this is a consequence of the polarization between family and work-orientated life-courses.

Grunow and Mayer (2007) deal with the same question by using the German Life History Study and adding a question about the role played by educational expansion, changes in skill demands, labour market restructuring and the increase in women s labour force attachment in defining the characteristics of the process of destandardization of labour market participation. The authors find that transitions from occupational training to work do not seem to be touched by macro-changes. Direct occupational mobility declined across cohorts, while occupational mobility that follows employment interruption increased. One main point is that lifelong occupation was not a mainstream reality even in the past, and more complex transitions between both labour market arrangements and qualifications were significantly present for a high share of individuals.

Biemann et al. (2011) analyze the relationship between the economic globalization and industry growth and careers, by using German Life History Study as well. Results show a fairly small increase in the complexity of work careers – conceptualized as the absolute number of employer changes, the regularity in the order of job changes, and the variability of the durations spent in different employment states – across cohorts. However, since a shift in the prevalence of different career patterns exists, the authors suppose that social changes such as educational expansion, labour market restructuring, and women's employment could have modified the effects of globalization. Moreover, they do not find evidence supporting the hypothesis that industry-specific economic globalization impacts the complexity of work careers, and they conclude that for Germany the impact of globalization on career stability/instability could possibly be overestimated.

Finally, for Sweden, Huang and Sverke (2007) analyze women's occupational traject-

ories from age 16 to 43. They isolate three main patterns: upward mobility and stable careers as prevalent and downward mobility, fluctuation, and being outside the labour market as residual. Moreover, family of origin plays a role in defining which kind of pathway is experienced by whom, being a more favourable background positively correlated with the likelihood to experience upward mobility or stability.

3.5 Research questions and hypotheses

As shown by the literature review in the previous sections, we still know little about the employment dynamics of labour market careers during recent decades and their variations. Therefore, the main objective of this project is to study the dynamics of flexibilization and labour market risks by investigating the processes of early career unfolding over time (Giorgi et al., 2011). The perception of the worsening of the youth condition would originate not from the fewer occupational opportunities – which are supposed to increase in number thanks to the labour market reforms – but rather from the decline in the economic opportunities and the increase in uncertainty about careers perspectives. labour

As outlined above, the literature on this topic suggests that – at least for the Italian case – the configuration of labour market participation is connected to different sets of opportunity and constraints which influence the exposure to a lower or a higher level of social and economic risks. This is true whether looking from workers' life perspectives both in the present and the future. If we consider labour market participation as a process developing over time, then states, transitions and trajectories should be understood as fundamental elements to identify changes and stability throughout careers conceived holistically.

Within the sequence analysis and life-course frameworks, this leads to a deeper comprehension, on the one hand, of the characteristics of population and subpopulation at risk of experiencing more or less favorable pathways and, on the other hand, of the features and the implications of the differentiation and destandardization processes on labour market participation. Studying events in their temporal continuity (order, recursivity, and duration) and its overall configuration instead of as a set of isolated elements (Sackmann and Wingens 2001) is the main contribution this perspective offers to the analysis of early careers.

When talking about job changes we could refer to changes with the same employer, employer changes with the same occupation, or changes in both employer and occupation (Hollister, 2012). This distinction is not trivial if we think that different kinds of security are endangered depending on the type of changes we consider in order to assess stability of labour market participation. In fact, changes between employers do not necessarily lead to complete lack of career structure and increasing instability. Instead, occupations understood in a broad sense, may represent a backbone of careers (Tolbert, 1996). As explained in great detail in Chapter 4, by following this direction I will not consider changes between employers, but rather between states. The latter are coded

according to labour market arrangements (contracts and working time, self-employment, and professional employment) by distinguishing – when available – between private and public sectors.

The increasingly flexible labour market is supposed to lead to a growth in heterogeneity of experiences. This could imply on the one hand an increase in the number of states experience as well as changes in the timing of transitions) and, on the other hand, an increasing discontinuity in careers (for example by fostering mobility between unemployment/work and between different jobs). The first research question would then read as:

Question 1: did the differentiation of individual early careers change across cohorts? How and to what extent according to gender and education?

I hypothesize that:

Hypothesis 1a: the increasing mobility among different statuses due to changes of labour market structure leads to a higher complexity of individual early careers that increases monotonically across cohorts.

However, this would not affect everyone equally, even at the beginning of the working career. In fact, by following the persistence of inequality thesis hints, we would assume that flexibilization intensifies the likelihood of experiencing more complex pathways (which result from increasing transitions between a higher number of statuses over time) for certain groups of young people. This would lead to the emergence of an inequality structure based on already existing patterns of inequality according to gender and educational level (Goldthorpe, 2002; Breen, 1997). In contrast, the individualization of risk theory claims the increase in uncertainty, inequality, and instability for all young individuals (Sennett, 2011; Beck, 1992).

First of all, concerning early careers in Italy, women are those who have always been more flexible than men in terms of participation, both temporarily and qualitatively. Assessing patterns for women as well as for men is crucial not only for understanding women's labour market experiences, but also because women's trends have implications for the understanding of overall changes in the labour market (Hollister, 2012). Well established by the literature in the field, gender plays a key role regarding inequality in Italy - as in other Southern European countries (Blossfeld et al., 2005a,b) – where occupational career conflicts with family tasks, especially if part-time jobs are rare (Bernardi and Nazio, 2005). On the one hand, as women show an increasing labour force attachment across cohorts, their pathways of labour market participation should have become more similar to men's; but, on the other hand, a low fertility level in Italy (Mills et al., 2005) would generate a paradox because of the coexistence of a family-oriented Mediterranean welfare regime, small families and low female labour market participation. Partially in line with the implication of the gendered master status hypothesis (Krüger and Levy, 2001), my hypothesis is that:

Hypothesis 1b: differentiation has increased more for women than for men.

As mentioned before, between groups differences tell us only a part of the story. In fact, within groups differences are crucial for drawing a more precise picture of the consequences on early careers of the ongoing processes within the labour market. This is the reason why I look at how these processes impact differently on subgroups of workers according to the highest educational level attained. In general, those lacking human capital – that is those who are low-skilled – are proved to be more likely to suffer from a higher risk of experiencing atypical contractual arrangements and unemployment. However, as shown above, the existing literature mainly considers single transitions between states and connected risks, and even when a holistic point of view on careers is assumed, few scholars (Hollister, 2012, 2011) put forward explicit hypotheses on differences according to educational level. The changes on the demand side of labour should affect differently employees with different educational histories. I hypothesize that:

Hypothesis 1c: while job creation and options of mobility between the same (protected) states may have increased for the highly qualified, job destruction and consequent transition into/out of unemployment could be more pronounced for medium and low-skilled workers, who would experience more interrupted pathways and higher occupational mobility.

To go more in depth in the analysis of the within-group differences, but focussing now on the between sequences variability, the second research question would be:

Question 2: did the destandardization between individuals' early careers change across cohorts? How and to what extent according to gender and education?

Empirical evidence suggests that destandardization of work followed distinct pattern for differente social groups. The increase in non-standard work connected to the flexibilization process (part-time work, fixed-term contracts...) has been promoted as a way to ease (also) women's labour market participation. Moreover, women reduce their participation during their transition to parenthood and they are consequently more exposed to a greater variety of experiences along their occupational trajectories that is unknown in the male population. Follows that:

Hypothesis 2a: gender acts as a crucial stratification variable for the destandardization processes: the cross-cohort comparison should show a greater increase in destandardization for women than for men.

Evidence that connects social stratification and labour market issues to the life-course argues that careers do not only depend on labour market institutions, but also on education (Schizzerotto, 2002; Elder and Rockwell, 1979), together with training schemes (Grunow and Mayer, 2007; Fitzenberger and Kunze, 2005) and social policies (Saraceno, 2002). I hypothesize that:

Hypothesis 2b: the overall cross-cohort trends informed by gender hide differences in the degree of destandardization driven by different levels of education. Due to the macro changes, less skilled workers should be more like to experience to more different pathways because opportunities of stabilization in the short run are more volatile than for the highly educated (Hollister, 2012, 2011; Solga, 2002), *and the latter are more easily funneled down similar pathways, characterized by common timing and order of statutes.*

Walking the line of the holistic understanding of early careers and considering their volatility and the increasing mobility between statuses, the changes over time of the pathways leading to outcomes such as full-time employment in the private sector and joblessness – which are the two extremes of an ideal labour market arrangements ranked according to the stability and security criteria – should be considered. The next research question would read as:

Question 3: did the pathways leading to more or less favourable outcomes (full-time contract in the private sector and unemployment) quantitatively/qualitatively change across cohorts?

Despite the fact that unemployment rate has consistantly decreased until the economic crisis of 2008, the joblessness status is potentially experienced more often throughout a medium period of time because of increasing job-mobility. I can only hypothesize that:

Hypothesis 3: the cross-cohort increase in the variety (type of statuses throughout the individual careers) and the number of different pathways leading to the two outcomes considered. Moreover, for the reasons just recalled, this would apply especially to less-skilled individuals.

After conducting the cross-cohort comparison in order to analyze the features of the differentiation and destandardization processes, I will focus on a single cohort of young workers who entered the labour market within the new normative framework defined by the deregulation process. Since empirical evidence concerning the models of early labour market participation in Italy is minimal, the first research question would be descriptive and exploratory, by reading as:

Question 4: what taxonomy could apply to early career participation pathways for workers who entered the labour market after the deregulation reforms were introduced?

If we consider employment stability (that is being stable in one position and not experiencing transitions to different employment arrangements), the main general hypothesis would be that:

Hypothesis 4: some labour market arrangements such as self-employment and professional positions would strongly define a model of participation characterized by steadiness

in a single state, while other models would be more internally differentiated in terms of occupational experiences and the average amount of joblessness episodes.

As discussed considerably above, I hypothesize that differences according to gender and education define a highly differentiated labour opportunity structure. In this case, the fifth research question reads as follows:

Question 5: to what extent are variables linked to the reproduction of inequality – like gender and education – associated with the probability of experiencing different models of labour market participation in early career?

The answer to this question is strictly related to what I will obtain from the analysis concerning the identification of an empirically grounded taxonomy of labour market participation pathways. However, a very general hypothesis would be that:

Hypothesis 5: women and lower-skilled men and women will be more likely to be experience models of labour market participation characterized by higher volatility both in terms of employment and job security.

Chapter 4

Data, variables and methods

This Chapter describes the data and the methods used to carry out the analysis. I concentrate firstly on a detailed description of the characteristics of the new available dataset AD-Silc, which is the main source for the analyses. Then, I discuss the choices made in building the individual sequences and in defining the important variables for both the analytical parts, that is the cross-cohort comparison and the focus on the cohort of workers who entered the labour market from 1998 onwards. Each of those subsections outlines the methods employed to answer the research questions. To start with, the latter concern the change across cohorts in terms of differentiation and destandardization of individual pathways. Then the pathways leading to more or less favourable outcomes (full-time contract in the private sector and unemployment) are considered in their evolution both quantitatively and qualitatively. Finally, an empirically grounded taxonomy of early career patterns for workers who entered the labour market after the deregulation reforms is pursued, followed by an analysis on the probability of experiencing more or less stable early career patterns according to gender and education.

4.1 Data

The analyses are based on the Italian case by using the AD-Silc dataset that matches information concerning the whole working life of the 2005 IT-Silc survey sample (the Italian module of the European Union Statistics on Income and Living Conditions, EU-Silc) with the INPS (National Social Security Institute) registers[1]. INPS registers record detailed information on the work episodes for the overall Italian worker population starting from their very first job. The dataset provides a wide range of information on firms from 1987, as well as details on different kinds of earnings, contributions and benefits connected with each employment/unemployment spell.

AD-Silc combines the IT-Silc 2005 sample with all information available in the INPS

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[1]AD-Silc dataset is the main output of an European Commission Project (DG Employment, Social Affairs and Inclusion) and coordinated by the Ministry of Economics and Finance and the Giacomo Brodolini Fundation. More on the general aims of the project are available on the website `http://www.tdymm.eu.` and especially in the final report (Dipartimento del Tesoro and Fondazione Giacomo Brodolini, 2011).

registers (including data on unemployed and pensioners[2]) concerning individuals interviewed in IT-Silc. AD-Silc results therefore in a retrospective unbalanced panel because workers histories are followed for their actual duration and their records have different lengths depending on entry and exit timing. The complete panel includes almost 1.2 million observations regarding 43,388 individuals, who appeared at least once in one of the archives between 1940 and 2009 and been part of the IT-Silc sample. The original unit of observation is represented by each employment relationship (or inactive period supported by benefits) during each year from the first work experience. Thus, the panel accounts for more than one record per year for each individual according to the number of different work episodes.

On the one hand, the INPS registers provide information on important dimensions of labour market participation such as: type of pension funds to which contributions are due (for example the private sector, the public sector or the *Gestione separata* for parasubordinates[3]); gross earnings for each job relationship (since 1974); contractual arrangements (for example part-time or full-time, employment or self-employment; parasubordinate workers can be identified from 1996 and from 1998 and it is also possible to distinguish between temporary and permanent employment, with the exception of employment in the public sector); weeks of contribution (including paternal leave, sickness and unemployment benefits and contributions, compensation for temporary layoff, that is *cassa integrazione guadagni* - Cig[4]); start and end date for each job relationship; employees' professional status (manager, white collar, blue collar and apprenticeship); geographical location of firms/public employers; firm size (concerning both the local unit and the holding) since 1987.

Furthermore, IT-Silc collects cross-sectional and longitudinal data on individuals and their households accounting for a number of dimensions concerning social exclusion, working conditions, education[5], family composition, consumption, and health. Furthermore, the 2005 wave provides information on individuals' family backgrounds and therefore collects data on parents' educational level and employment status as well as the frequency of financial distress experienced by the household when the interviewees were 14 years old[6].

The use of AD-Silc dataset represents an advance for the analysis of work histories (and, eventually, work/family careers) as it contains a wide range of additional in-

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[2]Those are the *Casellari degli Attivi e dei Pensionati*, the registers for active and retired population.

[3]Since 1996 economically dependent self-employed workers and professionals without a specific pension fund managed by their professional orders had to pay contributions to the *Gestione separata*.

[4]The *cassa integrazione guadagni* (Cig) is an economic compensation lasting from 13 to 52 weeks paid by the INPS to workers for whom the work activity has been suspended or working hours reduced due to a temporary decrease in company work flows. A supplementary form of Cig called *cassa integrazione guadagni straordinaria* (Cigs) is provided in case of firm reorganization or crises for a period of 12 to 24 months.

[5]Education is measured as the highest level of education reached in 2005.

[6]Further information on IT-Silc and EU-Silc and on the ad-hoc module on intergenerational transmission of poverty are available on `http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/eu_silc` and `http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/ad_hoc_modules`.

formation on workers, their families and their family backgrounds. In fact, some other datasets extracted from the INPS registers exist, such as the Work Histories Italian Panel (WHIP)[7]. However, it does not contain information about work episodes in the public sector, in professional employment (only some types of self-employed individuals were included, such as craftsmen and dealers)(Berton et al. 2009). In other words, this dataset would not allow me to consider certain transitions between contractual arrangements and occupational statuses. It is indeed not possible, for example, to distinguish whether those who disappear from the panel experienced a transition from the private sector to the public sector or rather unemployment or inactivity.

Despite the larger size of the sample compared to AD-Silc, WHIP does not report information about individuals' educational levels, being purely administrative data. The only other longitudinal dataset on work histories available for Italy is the Italian Households Longitudinal Survey (IHLS)[8], a prospective panel that gathers some retrospective information on events occurring to the members of the sample in the period between their births and the date of the interview, including work episodes. However, especially for the older members of the sample, information regarding the earliest episodes could be affected by memory bias. On the contrary, with regard to that, AD-Silc reports more reliable information because they are administrative and recorded simultaneously to the occurrence of the transitions among different states[9].

To sum up, AD-Silc has excellent potential to reveal new insights and it satisfies the most important requirements of the sequential methodology I use to answer my research questions[10], also by reporting information about educational attainment.

4.2 Variables and methods part I

For the first set of analyses concerning the evolution of the differentiation and destandardization processes over time, I identified a subsample of four cohort of entry within the labour market (1974-1978, 1982-1986, 1990-1994, and 1998-2001) from the original AD-Silc sample. Figure 4.1 shows the cohort design. The black rectangles indicate the starting point of the temporal window for each individual in the sample. Starting from this point in time, careers are observed until the 84th month (seven years) spent within the labour market. The aim of this cohort design is minimizing the overlap between the periods of observation for the individuals who entered the labour market in the last year of a cohort and of those who enter in the first year of the following. Thus, I impose a

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[7]`http://www.laboratoriorevelli.it/whip/whip_datahouse.php`.

[8]`http://www.soc.unitn.it/ilfi/eng/index.html`.

[9]Some researches has already been conducted by using AD-Silc and by exploiting especially the crucial information about family background and educational level (Raitano and Struffolino, 2013; Raitano, 2012; Fabrizi and Raitano, 2012; Franzini and Raitano, 2011), but also the pension contribution (Raitano, 2011a).

[10]All the analyses were performed by using the software R version 2.15.2 (R Development Core Team, 2008). The sequence analysis has been conducted by using the R packages TraMineR and TraMineR-Extras (Gabadinho and Ritschard, 2013; Gabadinho et al., 2011b, 2010, 2009) and WeightedCluster (Studer, 2012).

more robust distinction between the entry cohorts by providing that at least four years separate each cohort from the next one. Firstly, this has clearly distinguished between individuals who are ideally already in the second phase of the early career (they have spent 4 years or more in the labour market) and the individuals from the following cohort of entry. Secondly, this allows me to maximize my data availability for the design by keeping in my sample as many individuals who enter the labour market after 1997 (that is after the flexibilization reforms) as possible, and following their careers for at least seven years.
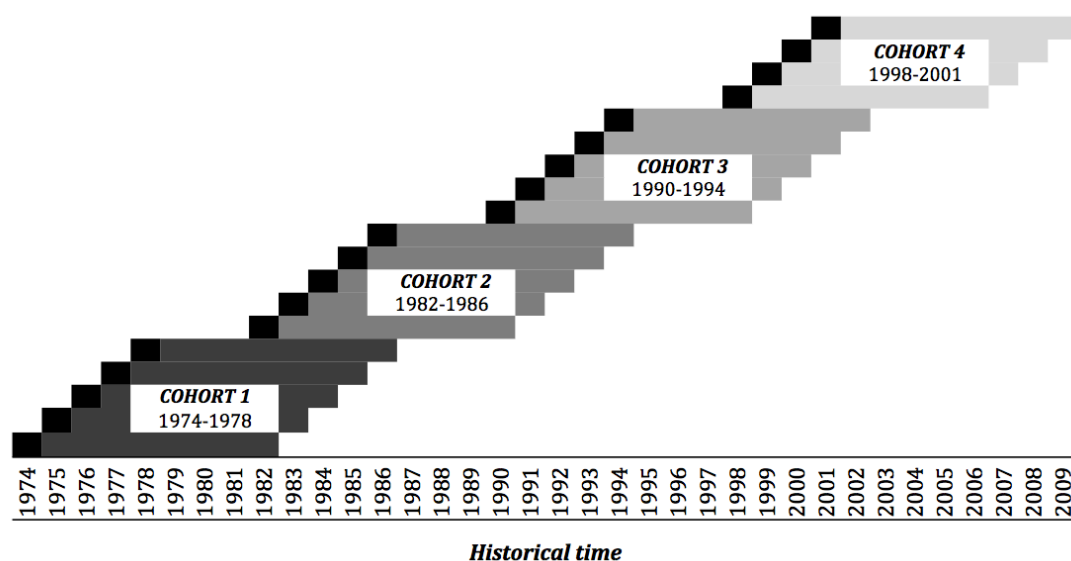
Figure 4.1: Cohorts design

The cohort to which an individual belongs to is identified according to the year corresponding to the first employment spell longer than 12 weeks[11]. This temporal limit is commonly used to define a significant work episode (Naticchioni et al., 2013; Fabrizi and Raitano, 2012; Raitano, 2012, 2011b), because in Italy 13 weeks is the minimum

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[11]Some cases were dropped from the original dataset. More specifically, for the cross cohort comparison I excised:

- episodes coded as 'pension' (for example old age pension) if followed by working episodes;
- episodes regarding individuals who never work but only received some kind of allowance or benefit;
- episodes regarding those whose gender is not reported;
- episodes regarding those whose year of birth is incongruent with the declared age;
- episodes in case of overlapping another by starting the same day of the same month or the same month of the same year;
- all episodes for those who experienced their first episode before 15 and after 34;
- episodes regarding those whose educational level was not reported;
- episodes regarding those with citizenship other than Italian;
- individuals whose first working episode occurred over 35 years of age;

In addition, for the focus on the last cohort, I have also dropped those for whom the information on family background is not reported.

that is needed to access to unemployment benefit in case of successive unemployment (*indennità di disoccupazione a requisiti ridotti*, called *mini-aspi* after the introduction of le L.92/2012). Table 4.1 shows the sample characteristics.

	Cohort			
	1974-1978	1982-1986	1990-1994	1998-2001
Gender				
Women	47.2	44.3	46.8	47.9
Men	52.8	55.7	53.2	52.1
Education				
At most lower secondary	55.1	47.7	35.4	23.9
Upper secondary	38.1	44.1	54.1	58.6
Tertiary	6.8	8.2	10.5	17.5
Age at the entry				
15-19	34.9	31.9	18.9	8.2
20-24	44.1	50.9	57.6	52.9
25-29	14.8	12.0	16.6	26.1
30-34	6.4	5.2	6.9	12.8
Area of birth				
North	42.4	43.1	45.1	39.5
Center	20.0	22.0	21.7	22.5
South-Islands	34.2	31.4	28.0	34.7
Foreign country	3.4	3.5	5.2	3.3
N.	*2,200*	*2,523*	*2,422*	*2,612*
Tot. N. 9,757				

Table 4.1: Sample, cohorts 1974-1978, 1982-1986, 1990-1994, and 1998-2001. Source: AD-Silc data, authors' calculations.

By using the beginning and end date of each job relationship, a state sequence of monthly episodes has been built for each member of the selected sample[12]. As shown in Figure 4.2, the a sequence's elements can be states or events[13]. For this first analytical step I consider state sequence: follows that each individual sequence consists of 84 month (12 month/year by 7 years) coded by using occupational and contractual arrangements and the specific pension fund the individual is enrolled on.

In this case, each sequence starts with the first month in employment[14], meaning that for those who entered the labour market in months other than January of their first year the corresponding sequence has been shifted up to the 84th effective months in order to obtain sequences of equal length. The list of the states defining the *alphabet*

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[12]In case of overlapping between two episodes of different natures, the more beneficial episode in terms of stability and connected benefits has been prioritised: for example, a preferential position has been given to working episodes where there were overlapping episode of employment and unemployment; similarly, dependent employees status has been preferred in case it overlaps a period as parasubordinate employees.

[13]In some cases, what I have defined as event (namely the sequence of the same state over more than one time unit) is called 'episode', while the label 'event' would be used for referring to the transition from one state to another. However, when analyzing the pathways leading to salient outcomes (later in this Chapter) I refer to what Ritschard et al. (2008) call 'event sequence' when analyzing life-course sequences. An 'event sequence' is a sequence of successive events occur at a given (time) position and have no duration, being the main interest on their sequencing. In this understood, an 'event' is obtained by collapsing the identical successive states in a sequence (see Figure 4.5). In order to use definition consistent with the method I will use, I prefer the label 'event' rather than 'episode', as shown in Figure 4.2.

[14]This choice is coherent with the aim of considering working careers rather than school/education to work transition, focusing more on a wider range of working states. Previous research opted for the same solution, for example Biemann et al. (2011).
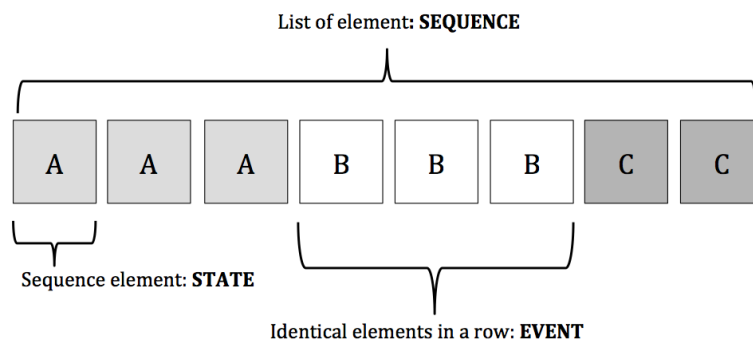
Figure 4.2: Definition of a sequence elements

of the sequences is shown in Table 4.2.

With regard to employment in the private sector, the distinction between fixed-term and open-ended contracts is available only from 1998 onwards and is not available at all for employees in the public sector. For the latter, the distinction between full and part-time jobs is also lacking whereas it is available for employees in the private sector and those working as dependent self-employed.

State	Short label
Apprenticeship	APPR
Full-Time in the private sector	PRIVSEC.FT
Part-Time in the private sector	PRIVSEC.PT
Employment in the public sector	PUB
Professional	PROF
Self-employed	SELF
Joblessness	JOBLESS

Table 4.2: Alphabet of the states, cohorts 1974-1978, 1982-1986, 1990-1994, and 1998-2001.

In light of these data limitations, the states called 'part-time in the private sector' and 'full-time in the private sector' include respectively both part-timers and full-timers in the private sector and in economically dependent self-employment. The 'self-employment' state refers to merchants, craftsmen and self-employed farmers, whereas professionals are identified as those in self-employment belonging to a specific profession (for example lawyers, architects, physicians)[15].

Furthermore, I defined a 'joblessness' status identifying those months during which the worker is not involved in any kind of employment relationship or does nor receive any kind of labour earning or *Cig* compensation[16].

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[15]The alphabet for the cross-cohort comparison as well as for the focus on the cohort of workers who entered the labour market during the post-reform period differ from how previous research set them up (Bison et al., 2010). In fact, for the cross-cohort comparison, I can account for periods spent in apprenticeship, part-time/full-time jobs and professional employment. Furthermore, for the focus on the last cohort, I can also distinguish between temporary/open-ended contract part/full-time and dependent self-employment. Finally, and once again, AD-Silc data do not suffer from memory bias – since they are administrative data – and they report individuals' educational level and more detailed information about working states than other dataset on the same topic.

[16]The data permit me to distinguish only between subsidized unemployment and a condition of non-

Some examples of sequences are shown in Figure 4.3: on the x axis the 84 months are displayed and each delimited portion of the sequences represent one month spent in a certain state defined in the legend. For example, sequence 1 is composed of three events with different durations and two transitions between only two states (self-employment and full-time employment in the private sector). Sequence 2 is composed of nine events and eight transitions between four states, and so on. This way of constructing and representing sequences, which are my unit of analysis, represents a great advantage in order to answer my research questions concerning the evolution over time of individual pathways' characteristics and overall configuration.
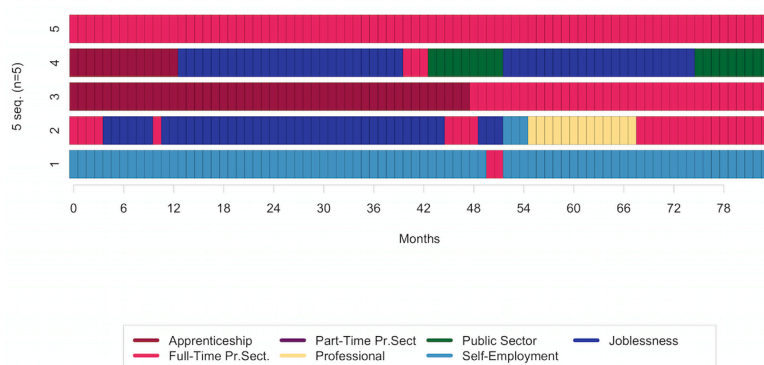
Figure 4.3: Examples of state sequences

As stated in Chapter 2, the literature distinguishes between insecurity as instability regarding contractual arrangements and insecurity as precariousness of individual labour market participation. What I am interested in here is precariousness of labour market participation, rather than the instability connected to contractual duration. This is the reason why I do not consider the transition between different jobs/employers if the individual does not also change labour market arrangement, that is if the state is the same before and after the job/employer change. For example, if we look again at Figure 4.3, sequence 5 refers to an individual who, for the whole 84 months, stayed in the state 'full-time in the private sector', but I do not account for possible job-to-job transitions with the same employer or between different firms when the employment arrangement

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employment. It is therefore impossible to discriminate between inactivity and unemployment according to the Eurostat definition (that is unemployed are those who were without work during the reference week, but presently available for work or who were actively seeking work in the past four weeks or who had already found a job to start within the next three months). Given the data limitation, no generalization is possible in terms of substantive differences between unemployment and inactivity in any case. Moreover, in Italy the rate of subsidized unemployment is very low because of the strictness of eligibility requirements and the benefits are less generous in comparison to the majority of European countries (Immervol and Scarpetta, 2012). In addition to that, some claim that the distinction is vague and strictly dependent on the institutional setting defined by the policies (Atkinson and Micklewright, 1991). In other words, it depends on the level of the benefits available and the eligibility criteria wether individuals are defined as unemployed or out of the labour force (Black et al., 2002; Autor and Duggan, 2003; Rege et al., 2009; Bratsberg et al., 2010). Given this theoretical support, I decide to collapse those three ways of being out of the labour market (unemployed with or without benefit and inactivity) into a single status called 'joblessness'. The same strategy is followed by Massoni et al. (2009).

(in this case as defined in the alphabet in Table 4.2) does not change.

The next two subsections outline the techniques used to deal with the first two research questions about differentiation and destandadization of early careers. Differentation and destandardization can be then considered as properties of my object of interest, that is early careers.

Figure 4.4 helps to clarify the definition of the concepts I will refer to for the presentation of the next analytical steps. Both differentiation and destandardization are operationalized by referring to variability existing in order, timing and duration of the states throughout the early careers (Brückner and Mayer, 2005). However, on the one hand, in the case of differentiation the focus is on variability within individual sequences, which will be computed by using the complexity measure (Elzinga, 2010); on the other hand, in the case of destandardization variability will be measured between sequences by using the discrepancy analysis (Studer et al., 2011, 2010).
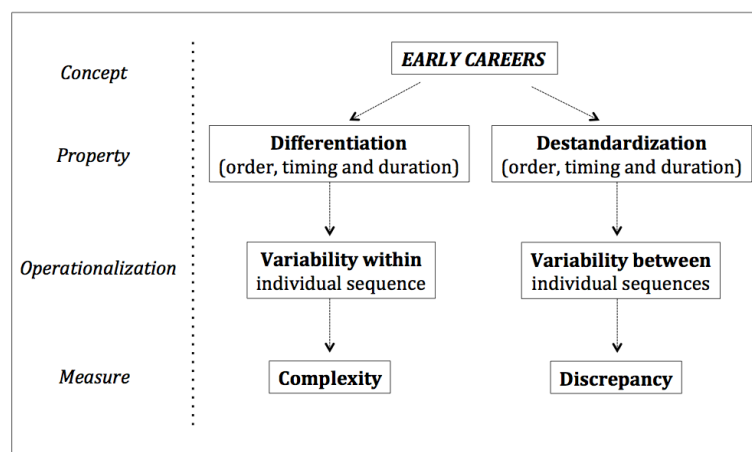
Figure 4.4: From the concept of early career to the measures of its properties. Author's adaptation based on Aisenbrey and Fasang (2010:449).

4.2.1   The complexity measure for state sequences

In order to answer the first research question regarding the evolution of differentiation across cohorts, I refer to the *complexity measure*[17] proposed by Elzinga (2010). As briefly mentioned above, a sequence could be understood as a flow of events or states in time (Elzinga, 2010). In order to ask the first research question concerning differentiation and its changes across cohort, I have computed a state sequence on a monthly basis for each member of my sample. Complexity was computed separately according to gender, educational level and cohort of entry within the labour market.

The understanding of differentiation I adopt implies that many distinct states and many state transitions throughout the same sequence lead to a higher within-sequence complexity while sequences with less distinct states and/or state changes are considered

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[17]Previous studies made use of the complexity measure in order to assess, for example, the change in complexity of pathways of labour market participation after the economic globalization (Biemann et al., 2011) or the complexity of careers after early unemployment episodes (Manzoni and Mooi-Reci, 2011).

less complex. The time spent in different states and the variation in these durations should be taken into account as well. In fact, as argued by Elzinga (2010) a different measure of variability from the count of states and transitions across trajectories. The complexity measure captures the full dynamic of careers by considering the increasing number of distinct subsequences rather than an increase in the number of states/events or in duration. Given a sequence x, a sequence u is said to be a subsequence of x if all the states of u appear in x and in the same order (Elzinga and Liefbroer, 2007). Because subsequences consist of states aligned in a specific order, the measure accounts for the order of states (Elzinga, 2010). Complexity is computed as follows:

$$0 \leq T(x,t) = log_2(\Phi(x)\frac{(s_{t,max}^2 + 1)}{(s_t^2 + 1)}) \tag{4.1}$$

where $\Phi(x)$ is the number of distinct subsequence s_t^2 denotes the variance of the state-durations. $s_{t,max}^2$ is the maximum of that variance given the total duration of the sequence: $s_{t,max}^2 = (n-1)(1-\bar{t})^2$ where $\bar{t}$ is the average of the state-durations of the sequence x. On the other hand, $T(x,t)$ is a property of each sequence that accounts for sequencing and variance in duration of each state and increasing with the decrease of the variance of states duration (Elzinga, 2010; Elzinga and Liefbroer, 2007). I used the bootstrap procedure in order to obtain precise confidence intervals around the estimates[18]. Complexity was then normalized in order to allow it to vary between 0 and 1.

If we consider again Figure 4.3, the complexity for the five sequences are 0.13, 0.34, 0.23, 0.30 and 0.00 respectively. For sequence 5 complexity value is 0.00 because that particular individual spent all 84 months in one single state while sequence 2 and sequence 4 have an higher complexity due to the higher number of transitions between a higher number of states within which individuals spent a variable amount of time. By comparing sequence 1 and sequence 3, we check the advantage of considering states duration. In both sequences only two different states appear, but in the first case one of the states is prevalent implying that the sequence can be considered stable because of the very short duration of one of the states with respect to the other. In contrast, in sequence 3 time is equally spent in the two states and the complexity is higher in this case due to the lower variance in state duration.

4.2.2 Discrepancy analysis of state sequences

In order to answer the second research question concerning the destandardization of early careers, I consider now how to measure the between-sequences variability by using

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[18]The bootstrapping procedure implies that random subsamples are drawn from the original dataset and the complexity is calculated for each random subsample. The subsample specific mean complexity is computed and the 95% confidence intervals around these means are calculated by taking 1000 bootstrap samples for each subsample (defined according to gender, education and cohort).

the discrepancy analysis. By following Studer and colleagues (Studer et al., 2011, 2010), the discrepancy analysis can be considered as a set of methods based on sequences' pairwise dissimilarities. Also in this case, the groups of interest include individuals belonging to the same cohort and stratified by gender and educational level. The discrepancy differs substantially from longitudinal measures such as longitudinal entropy (Widmer and Ritschard, 2009), complexity (Elzinga, 2010), or complexity index (Gabadinho et al., 2011b, 2010). In fact, the latter quantify the intra-individual variation, while the discrepancy estimates the inter-individual variability.

In previous studies, discrepancy has been used to measure the uncertainty of work trajectories and to analyze different forms of job insecurity depending on the type of variables defining the sequences. According to the research questions, my aim is to take advantage of some features of this technique in order to study first of all the evolution over time of inter-individual variation for each cohort and then the differences between cohorts according to gender and education.

Going back to the discrepancy measure, the main aim is to estimate the degree to which the sequences of a certain subsample differ from one another with respect to the states each individual experiences at each point of the sequence. For this reason, I have divided the sample into subsamples according to gender, education and cohort, and then computed a dissimilarity matrix for each subgroup by using a non-alignment metric proposed by (Elzinga, 2003) (see also Elzinga and Liefbroer, 2007). As mentioned in Chapter 3, non-alignment metrics can be considered an extension of the sequence analysis that avoids employing transformation operations (typical of optimal matching) when computing the pairwise dissimilarity between sequences. In this case, I used the metrics called longest common subsequence (LCS) advanced by Elzinga (2010). Robustness checks have been conducted in order to detect the most reliable method to compute the dissimilarity matrix[19].

The LCS distance is based on the length of the longest element of a set of sequences. The algorithm computes distances by accounting for similar state succession: it allows for time shifts (meaning that it does not preserve the ordering of the subsequences) but any *indel* neither substitution costs are necessary. This is crucial from the substantive point of view in light of my research questions, because I am interested in obtaining information exactly about how much individual sequences differ to each other in terms of state succession and their location throughout the period of time considered.

The LCS dissimilarity matrix was calculated for each six months windows with the

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[19]Three different options have been scrutinized and three different dissimilarity matrix have been computed using i) traditional optimal matching (OM) with *indel* cost equal to 1 and substitution cost equal to 2, ii) the dynamic Hamming distance (DHD) and the iii) longest common subsequence (LCS). I calculated the Leven statistic for each pairwise comparison between the subgroups in order to determine the significance of the differences over time across the cohorts. The last step consisted in contrasting the Levene values and the significance obtained using the three methods: the OM and the LCS gave equal results in terms of significance except for one case (men with lower secondary education) on which, instead, the DHD and the LCS agreed. Moreover, the DHD tended to return more cases of significant differences when the other two methods seem to be more conservative with regard to that. Given these results, I concluded to adopt the LCS measure.

aim of obtaining the value of discrepancy looking at how the within-cohort discrepancy evolves over time. The LCS values were then input into the discrepancy algorithm[20]. According to Batagelj (1988 in Studer et al. 2011), a generalization of the sum of the square SS[21] implies that the dissimilarity $d_{x\overline{g}}^V$ can be considered representative of the distance between a sequence x and a gravity centre $\overline{g} of a set of sequences. Since \sum_x w_x d_{x\overline{g}}^V, each$
$d_{x\overline{g}}^V can be interpreted as the contribution of each x to the total sum of the squares. The algorithm identifies the$

In order to asses weather the between cohorts differences over time are significant or not, it is not possible to uptake the classic *p-value* since the normality assumptions are not satisfied. Studer et al. (2011) suggest adopting the Levene test following Brown and Forsythe (1974 in Studer et al. 2011). The generalized Levene statistic is the F statistic of the numeric variable resulting from the dissimilarity between each sequence and the gravity center of the group it belongs to. The statistic tests the homogeneity of discrepancy by measuring the differences in the radius of the overall sequences distribution within each single group. These radii can be calculated by estimating the contribution to the within-group sum of the square and an ANOVA procedure can be used to assess their general equality. The statistical significance of the Levene statistic can be assessed through permutation tests: I run 5000 permutations in order to obtain estimates significant to 1% of the pairwise differences between cohorts for each subgroup considered (Manly 2007 in Studer et al. 2011).

4.2.3 Representative sequences

The two techniques presented above are particularly useful for summarizing some important analytical dimensions suitable for studying the differentiation and destandardization processes. However, these measures seem much too synthetic if we want to know something more about the quality or the substantial content of the two processes. In other words, besides knowing if the complexity increases across the cohorts, I am also concerned with assessing the 'quality' of such changes in terms of pathways that characterize my groups of interest. However, simply identifying the most frequent identical sequences will not be enough if we want to summarize such a complex set of information and a great number of sequences and we will thus require specific tools for this purpose. In fact, having a huge number of different patterns and searching for the most frequent sequences could lead to meaningless results because the rate of perfectly identical sequences is very low. It is possible to deal with this issue by using a method suggested by Gabadinho and collegues (Gabadinho et al., 2011a).

In order to extract the fundamental features of a set of sequences, they propose defining representative sequences as 'a set of non redundant *typical* sequences that largely, though not necessarily exhaustively covers the spectrum of observed sequences' (Gabadinho et al., 2011a, p.4)[22]. In other words, they propose a kind of data reduction that

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[20]For a more detailed description of the procedure and demonstrations see Studer et al. 2011.

[21]See Studer et al. 2010 for proofs.

[22]The concept of a representative set is borrowed from the biological sciences. As the authors explain '[t]he aim in this field is mainly to get a reduced reference base of protein or DNA sequences for optimizing

takes into consideration that modeling complex patterns implies to deal with the fact that successive states throughout the sequences are not independent each other. This allows me to avoid possible misleading conclusions derived from the recourse to most frequent sequences or ideal not observed sequences, and to maximize the substantive information on representative pathways provided by the data-mining.

The procedure consists of three main steps: the choice of the representative sequences, the elimination of redundancy and the measurement of the quality of the selected solution. I tested a number of possible combinations of options to select the candidate representative sequences by matching: i) the algorithms that compute the distance matrix and ii) the criteria that eliminate redundancy by minimizing the trade-off between the size of the set and the representativeness (coverage level). I selected the neighbourhood density criterion (NDC) together with the distance matrix computed by using the longest common subsequence metric (LCS). The distance matrix computed by the LCS metric is input for the procedure to eliminate redundancy and find out the representative sequences following the NDC criterion.

The NDC is based on the number of sequences in the neighbourhood of each contender representative sequence. The neighbourhood is defined by setting a radius that represent a threshold distinguishing those sequences belonging to a specific contender representative neighbourhood. I set up the neighbourhood radius as 25% of the maximum theoretical distance derived from the distance matrix and the coverage threshold as 65% of sequences – for each subgroup – lying in the neighborhood of at least one of the representative sequences[23]. The algorithm detects the representative sequences set and every sequence in the sample is then assigned to its closer representative sequence[24].

Summing up, what I obtain are sets of non-redundant sequences that represents effi-

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the retrieval of a recorded sequence that resembles a provided one. In this setting, the representative set must have 'maximum coverage with minimum redundancy' that is it must cover the entire spectrum of distinct sequences present in the data, including outliers (Gabadinho et al., 2011a, p.95). However, the method they propose is similar regarding the redundancy issue, but it does not automatically refer to a maximum coverage level.

[23]The biggest challenge in describing a huge amount of data is the tuning of the parameters for detecting the representative sequences. This is mainly a question of trials requiring to find the trade-off between the neighbourhood radius (the maximal distance between two sequences) and the coverage (the proportion of sequences lying in the neighbourhood of at least one of the representative sequence) that produces the more interpretable results both substantially and in terms of number of representative sequences. This is strongly case dependent and no rules of thumb are available to facilitate this decisional process (Gabadinho et al., 2011a). A second point has to be made: a change in the dissimilarity measure may produce a change also in the set of representative sequences. After computing a number of robustness checks, the global description of each subgroup given by the representative sequences sets are fairly equivalent. In the interest of coherence, since i) the descriptive analyses derived from the representative sequences are a corollary of the discrepancy analysis and ii) for the latter the distance matrix has been computed by using the LCS metric. The quality measures I adopted in order to select the parameters just mentioned are: i) sequences' mean distance *MD* from the assigned representative sequences; ii) the variance *V* between the sequences assigned to a certain representative; and iii) the overall quality *Q* of the assignment. I checked the three quality measures for each subset of sequences (defined by cohort, gender and education) and the mean values for the selected solution are *MD*=44.1, *V*=54.9 and *Q*=19.5 respectively. These values are only interpretable in comparison with those obtained from other parameters combinations and not in absolute terms.

[24]In case a sequence would be equally distant from more than one representative, the one with the highest representativeness score is automatically selected (Gabadinho et al., 2011a).

ciently at least the 65% of each subgroup in order to assess qualitative changes occurred over time.

4.2.4 Pathways leading to salient outcomes

The third research question concerns the changes over time of the features of pathways leading to some particularly interested outcomes. In order to analyze this aspect of early careers' evolution across cohorts, I have decided to adopt a slightly different sequence type. In fact, *event* sequences (Ritschard et al., 2013) have been defined using the alphabet in Table 4.2 by collapsing the monthly states sequences. This approach to sequences could be seen as a simplification that is especially suitable given the presence of such a huge number of sequences to compare: it is indeed easier to find out identical patterns. However, the main drawback concerns the blindness of event sequences to spell duration, for the reason that any kind of operation that is run on these types of sequences will only take into consideration the nature of the spells and not for how long each spell lasts. In spite of that, it allows me to easily aggregate sequences and draw some crucial conclusions regarding my research questions. Figures 4.5 and 4.6 show two different representations of event sequence examples.

```
Sequence 1 : SELF – 50 – PRIVSEC.PT – 2 – SELF – 32
Sequence 2 : PRIVSEC.FT – 4 – JOBLESS – PROVSEC.FT – 1 – JOBLESS – 34 – PROVSEC.FT – 4 –
            – JOBLESS – 3 – SELF – 3 – PROF – 13 PRIVSEC.FT – 16
Sequence 3 : APPR – 48 – PROVSEC.FT –36
Sequence 4 : APPR – 13 – JOBLESS – 27 – PRIVSEC.FT – 3 – PUB – 9 – JOBLESS – 23 – PUB – 9
Sequence 5 : PRIVSEC.PT – 84
```

Figure 4.5: Examples of event sequences.

In Figure 4.5 the numbers between the states stand for the number of months each event that appears in the preceeding brackets lasts before the transition to the subsequent event takes place. The aim of this last descriptive step is to consider if and how the pathways leading to some salient outcomes – such as unemployment and full-time employment in the private sector – have changed across cohorts according to gender and educational level.

In Figure 4.6 the representation of the same event sequences is provided through a parallel coordinate plot (Bürgin and Ritschard, 2012). Each line represents the trajectory of the individual from the first to the last episode of his career. If no transitions have occurred, the sequence is rendered as a single point with correspondence to the first event experiences, which is the only one for that worker. It is worth recalling once again that individuals' event sequences have different lengths since the latter is due to the number of transition between events and not by their duration, which is what happens when we analyze state sequences.
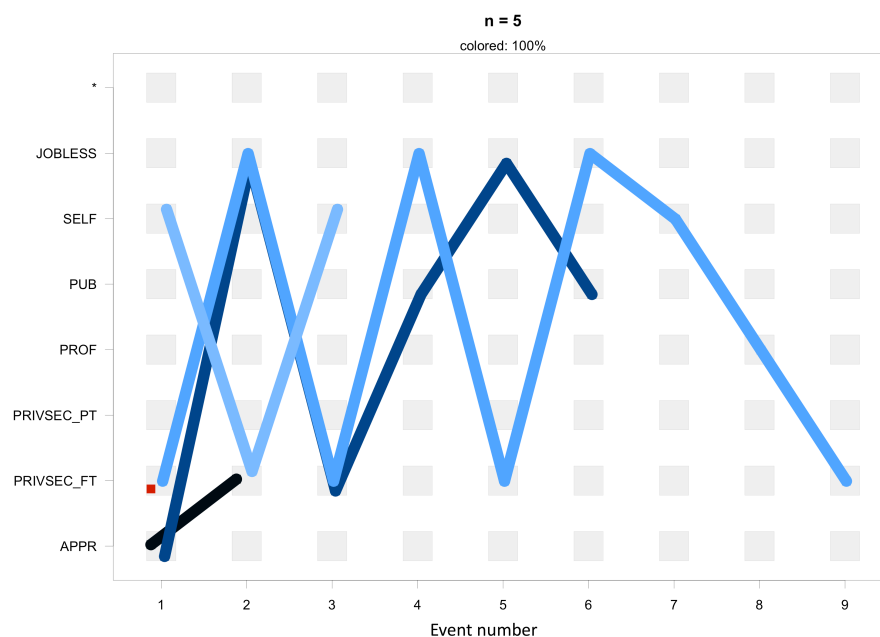
Figure 4.6: Examples of event sequences: parallel coordinate plot.

4.3 Variables and methods part II

In this analytical step I focus on the second set of research questions regarding the cohort of workers 1998-2001, which concerns individuals who entered the labour market after the flexibilization reforms of 1997. According to the fourth research question, the first aim is to obtain a taxonomy of models of early careers pathways for workers who entered the labour market after the deregulation reforms were introduced. The next step, according to the fifth research question, is to consider to what extent gender and education are associated with the probability of experiencing more or less stable early career pathways for the cohort of entry 1998-2001.

In this case I use a different definition of states to create the individual sequences for the cohort I focus on here. In fact, for this subsample more detailed information concerning the type of contractual arrangement is available in the INPS registers. As Table 4.3 shows, I have therefore distinguished between permanent full-time and part-time in the private sector and between temporary full-time and part-time episodes in the private sector. Furthermore I have created a new status called 'dependent self-employment' according to the literature on parasubordinate employment[25]. The distribution of the main variables in the subsample are shown in the last column of Table 4.1.

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[25]Given the high internal heterogeneity or the parasubordinate/dependent self-employed workers registered to the *Gestione separata* (Raitano, 2007; Berton et al., 2005), I coded as spent in dependent self-employment those months not spent as administrative and prestigious professional positions.

State
Open-ended full-time contract in the private sector
Open-ended part-time contract in the private sector
Temporary full-time contract in the private sector
Temporary part-time contract in the private sector
Employment in the public sector
Professionals
Dependent self-employment
Self-employment
Apprenticeship
Joblessness

Table 4.3: Alphabet of the states, cohort 1998-2001.

4.3.1 Clustering procedure.

As mentioned in Chapter 3, the application of the clustering procedure to sequences raises a number of issues regarding the validity of the assumptions we implicitly accept. However, since my aim is mainly descriptive and concerns the identification of common patterns deriving from social and institutional constraints, the cluster analysis can effectively identify trajectories models (Abbott and Hrycak 1990) by highlighting dependencies at different points in time along the trajectories themselves. Therefore, in order to simplify the information derived from the entire set of sequences and to define common patterns of early labour market participation, I run a cluster analysis on the complete sample[26] testing the validity of choices at each analytical step. The input for the clustering procedure is a dissimilarity matrix between sequences in pairs. In order to compute the matrix, I used a variant of the classical OM called dynamic Hamming distance (DHD). The DHD was developed by Lesnard (2006) to improve the original OM by only requiring substitutions and not *indel* operations.

The DHD has the advantage of considering non-linear dependencies over time, given the point in time and the sample specific substitution costs. This leads to substitution costs driven by the data and not by an external/subjective decision. In fact, the DHD algorithm calculates single substitution cost matrices at each point in time considering the frequency of transition between two states at this particular point in time. All the distance matrices are then summarized to an overall distance. Substitution costs for each pair of states are computed by calculating the inverse of the unconditional transition probability at each time point (Lesnard, 2006, p.11):

$$ s_t(a,b) = \begin{cases} 4 - [p(X_t = a | X_{t-1} = b) + (X_t = b | X_{t-1} = a) \\ \quad (X_{t+1} = a | X_t = b) + (X_{t+1} = b | X_t = a)] \text{ if } a \neq b \\ 0 \text{ otherwise} \end{cases} \tag{4.2} $$

stating that the substitution cost of changing *a* into *b* and vice versa will be a declining function of the frequent of such transition at this given point in time as measured in the

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[26]I also run separate cluster analysis by gender, but the optimal cluster solutions for men and women do not differ substantially. I consequently decided to merge women and men also because of the small sample size.

data by the conditional probabilities of an *a* to *b* or *b* to *a* transition between the current and the neighbouring periods[27]. I defined the early career as a process ideally lasting for seven years: in other words, I have set an 'opportunity window' of seven years for individuals' to develop their own 'early' career. For this substantive reason and because the DHD is only suitable when sequences have an equal length since it does not allow for insertion/deletion costs, the application of the DHD to my case represents the best option. In fact, for the early career patterns, the time-point-specific substitution costs imply that it is less costly to move from one state to another if at that certain point in time that transition is very frequent in the sample.

A number of clustering methods are available and the choice between them has to be driven by a series of quality criteria connected to the maximization of the internal homogeneity and the minimization on the external heterogeneity. I choose the partitioning around medoids method (PAM, Kaufman and Rousseeuw 2005). Medoids are representative sequences having the smallest dissimilarity to the other sequences of the cluster they belong to. The corresponding algorithm (Kaufman and Rousseeuw, 2005) pursues a global optimization: in contrast, hierarchical methods usually follow a local optimization that instead could not be optimal on a global level[28].

A second fundamental choice concerns the number of clusters. I used three different indicators to test the validity of the number of clusters: the silhouette, the Point Biserial Correlation and the Hubert Gamma and Somers D[29]. All the criteria indicate the eight-clusters solution is optimal. It is worth considering that other divisive partitioning and hierarchical clustering methods that have been tested (such as average, ward and beta-flexible) jointly with other options for the computation of the dissimilarity matrix (traditional optimal matching with different *indel* and substitution costs - both fixed and using a theoretical costs matrix). The optimal solution in terms of quality of the

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[27]The distance is then normalized by following Abbott (1995): $d_{norm} = d(x,y)/max(|x|,|y|)$.

[28]PAM algorithm consists of two steps. First of all, sequences that minimize the weighted sum of the distances from the medoids selected among all sequences are identified. The second step computes, for each observation, the expected advantage derived in terms of global optimization in substituting one of the initial medoids with that particular sequence. The expected advantage is computed considering the weighted distances from the nearest medoid, eventually replaced if the sequence allows for a higher advantage (Kaufman and Rousseeuw, 2005).

[29]The silhouette (Kaufman and Rousseeuw, 2005) measures the coherence of the assignment of each sequence to a cluster and its value is allowed to vary from -1 to +1. Since it compares the distance to the center of the cluster to the shorter distance to the center of an other group, a high silhouette value indicates a low within group variance and a high distance between groups. In other words, the silhouette tests the ability to reproduce dissimilarities measuring the association between dissimilarity and a variable equal to 1 for pairs of cases (sequences) belonging to a same cluster and equal to 0 otherwise. The silhouette $s(x)$ for each observation is computed as follows:

$$s(x) = \frac{b(x) - a(x)}{max(a(x), b(x))}$$

where $a(x)$ represents the dissimilarity among sequences within the cluster which the sequence x belongs to and $b(x)$ is the minimum average dissimilarity from x and other clusters members. The Point Biserial Correlation (Milligan and Cooper 1985 in Gabadinho et al. 2013) and the Hubert Gamma and Somers D (Hubert and Arabie 1985 in Gabadinho et al. 2013) measure the ability of the cluster assignment to reproduce the distance matrix. Both vary between -1 and +1, where the maximum value optimizes the partition into clusters. Results are displayed in figure A.12 and figure A.13 in the Appendix.

clustering – especially following the silhouette criterion – is the combination of the DHD for the dissimilarity matrix and the PAM for the clustering.

4.3.2 Multinomial logit model on clusters membership

Once the taxonomy of models of labour market participation (represented by the clusters) has been identified, I then consider – as asked by the fifth research question – the association between the clusters membership (that is the outcome of interest) and gender and education is analyzed both linearly (for gender) and by introducing the interaction between the two variables. I other words, two multinomial logit regression models will be estimated in order to study how and to what extent gender and education are associated to the clusters membership after controlling for other individual characteristics.

The main explanatory factors considered in the models are gender and educational level (three categories: 'lower secondary education', 'upper secondary education' and 'tertiary education'). The model controls for[30]: area of birth ('North', 'Centre', 'South and islands' and 'foreign country'); the age when the first working episode occurred (three categories: '15-24', '25-29' and '30-34'); the year when the first working episode occurred (four categories: 1998, 1999, 2000 and 2001); delay in education[31] (three categories: 'no delay', 'one year' and 'two or more years'); interaction between gender and education.

I am firstly interested in the role played by gender – net of other confounding variables – in shaping the likelihood of being assigned to each one of the clusters. The first version of the multinomial logit regression model can be then formalized as follows:

$$y_i \in Y_i \sim Multinom(\pi_i^1, \pi_i^2, \pi_i^3, \pi_i^4, \pi_i^5, \pi_i^6, \pi_i^7, \pi_i^8)$$

$$\pi_i^k = \frac{exp(\eta^{i)}}{1+exp(\eta_1^2)+exp(\eta_1^3)exp(\eta_1^4)exp(\eta_1^5)exp(\eta_1^6)exp(\eta_1^7)exp(\eta_1^8)} \qquad k = 1, ..., 8$$

$$\eta_i^k = ln\left(\frac{\pi_i^k}{\pi_i^1}\right) = \beta_0^k + x_{ig1}\beta_{g1}^k + \sum_{j=2}^{18} x_{ij}\beta_j^k \qquad k = 2, ..., 8$$

$$\eta_i^1 = 0$$

$$(4.3)$$

where g means *gender*. π_i^1 is the probability that the individual i belongs to cluster number 1, π_i^2 is the probability that the individual i belong to cluster number 2 and so on; x_{ig1} represents the value of the regressor X_1 for the individual i. $X_2, X_3, ..., X_{18}$ are regressors representing the control variables[32]. Results will be presented as average marginal effects (AME) (Wooldridge, 2002; Williams, 2012). This implies that the estimates will show if and to what extent difference between men and women in the linear probability of belonging to each cluster is significant (Long, 1997).

As the outcome of interest is the same, namely the cluster membership, I will secondly

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[30]The descriptive statistics of the covariates can be found in the Appendix, Table A.2

[31]This variable – joint with the educational level – is considered as a proxy for individual abilities. Delay in education was constructed by considering if the individual attained the highest educational level by the expected age, that is 15, 19, and 26 respectively for the three level considered.

[32]Cluster 1 membership will be the reference category for both model 4.3 and 4.4.

focus on the interaction between gender and educational level. The second version of the multinomial logit regression model can be then expressed as follows:

$$y_i \in Y_i \sim Multinom(\pi_i^1, \pi_i^2, \pi_i^3, \pi_i^4, \pi_i^5, \pi_i^6, \pi_i^7, \pi_i^8)$$

$$\pi_i^k = \frac{exp(\eta^{i)}}{1+exp(\eta_1^2)+exp(\eta_1^3)exp(\eta_1^4)exp(\eta_1^5)exp(\eta_1^6)exp(\eta_1^7)exp(\eta_1^8)} \qquad k = 1, ..., 8$$

$$\eta_i^k = ln\left(\frac{\pi_i^k}{\pi_i^1}\right) = \beta_0^k + x_{ig1}\beta_{g1}^k + x_{ie2}\beta_{e2}^k + x_{ie3}\beta_{e3}^k + \qquad (4.4)$$
$$+x_{ig1e2}\beta_{g1e2}^k + x_{ig1e3}\beta_{g1e3}^k + x_{ig2e1}\beta_{g2e1}^k +$$
$$+x_{ig2e2}\beta_{g2e2}^k + x_{ig2e3}\beta_{g2e3}^k + \sum_{j=9}^{18} x_{ij}\beta_j^k \qquad k = 2, ..., 8$$

$$\eta_i^1 = 0$$

where *g* and *e* mean *gender* and *education* respectively. π_i^1 is the probability that the individual *i* belongs to cluster number 1, π_i^2 is the probability that the individual *i* belongs to cluster number 2 and so on; x_{ig1} represents the value of the regressor X_1 for the individual *i*; x_{ie2} represents the value of the regressor X_2 for the individual *i*; x_{ie3} represents the value of the regressor X_3 for the individual *i*. x_{ig1e2} represents the value of the regressor X_4 for the individual *i* and so on. X_1 is a regressor that represents the category 'men' for the variable *gender*, X_2 and X_3 indicate the categories 'upper secondary education' and 'tertiary education' respectively for the variable *education*. In this case $X_4, X_5, ..., X_8$ are regressors representing the interaction between gender and education, while $X_9, X_{10}, ..., X_{18}$ are regressors representing the control variables.

Also in this case, results will be presented as average marginal effects (AME). For this model, the estimates will show if and to what extent the interaction between gender and education define a significantly different probability of belonging to each one of the clusters.

Chapter 5

Results part I: Early career pathways in cross-cohort comparison

In order to answer the first set of research questions concerning the evolution of differentiation and destandardization over time (*Questions 1, 2 and 3*), this Chapter presents the results for the comparison between different cohorts of workers who entered the labour market from the late 1970s to the early 2000s. The stratification variables are gender and education. By referring to the differentiation and destandardization definitions, results show changes and stabilities across cohorts concerning these two dimensions of the process of participation within the labour market. I will start by presenting synthetic indeces concerning differentiation and destandardization and then I will integrate the information they provide by using additional descriptive analysis accounting for further complexity. Furthermore, pathways of labour market participation will be analyzed in order to assess whether their features have changed over time defining more or less restrictive and various opportunity structures. Finally, pathways leading to more or less favourable outcomes (precisely having a full-time contract in the private sector and being jobless) will be considered in their longitudinal evolution to detect cross-cohort differences.

5.1 Differentiation: within individual early careers variability

In this Section I present the results from the analyses conducted to answer the first research question, which concerns the differentiation process and its evolution across cohorts. As stated in Chapter 3 and 4, my understanding of differentiation implies that many distinct states and many transitions between states along individual sequences lead to a higher within-sequence variability while sequences that contain fewer distinct states and/or state changes are considered less complex. Time spent in different states and variation in these durations should be taken into account as well. In other words, the complexity measure I use considers the increasing number of distinct subsequences

of states to capture the dynamic of careers (Elzinga, 2010) and to account both for the duration and order of the states (Elzinga and Liefbroer, 2007). To sum up the substantive meaning of the complexity measure, it can be said that the effect of a higher number of distinct subsequences along the same sequence is mitigated if they are short in terms of duration and the overall sequence is stable. In contrast, complexity increases with decreasing of state duration variance, i.e. when periods of almost equal length are spent in different states.

Figure 5.1 shows the estimates for the complexity measure by gender, education and cohorts of entry within the labour market. Firstly we will look at the overall complexity trend (black dots in Figure 5.1). The trend for women shows an increase in complexity across cohorts, particularly significant[1] when we move from the first cohort to the second/third and from the second/third to the fourth cohort. Conversely, overall cross-cohort differences exist also for men, but it is less pronounced and more undefined. If we then consider gender differences, the first female cohort (1974-1978) shows a significantly smaller complexity than the corresponding male cohort. The difference is no longer significant for individuals belonging to the second and third cohorts (1982-1986 and 1990-1994). Finally, the estimates for the fourth cohort (1998-2001) show that women's pathways have on average greater complexity than men's.
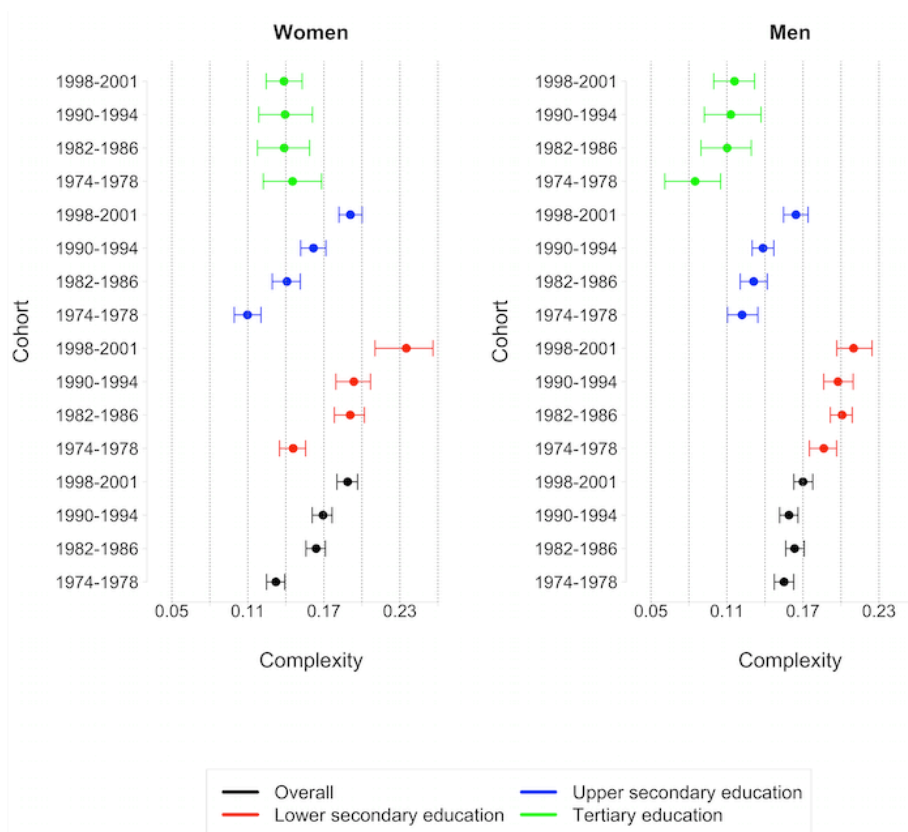
Figure 5.1: Complexity by gender, education and cohort. Source: AD-Silc data, author's calculations.

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[1]The statistical significance has been assessed by using bootstrap methods, see Chapter 4.

Nevertheless, this heterogeneity seems to be better explained by looking at complexity for subgroups defined by educational level. In fact, looking at the estimates according to education (red, blue and green dots in Figure 5.1) a composition effect due to differences in complexity distribution across groups emerges. On the one hand, the increase in complexity for women is mainly driven by the trend of those with lower and upper secondary education (red and blue dots in Figure 5.1). The differences across cohorts for these two subgroups are in fact (almost) always significant, while values for highly-skilled individuals do not change over time. On the other hand, looking at estimates for men, individuals with a lower educational level have significantly more complex careers in comparison to highly educated. In fact, those with an upper secondary qualification show an upward trend in complexity. The complexity values for each cohort are indeed always significantly different from the values for those with a lower secondary qualification and – only in the case of the last cohort – from those with a tertiary degree. The latter show, instead, a constantly lower overall complexity.

Finally, if we look at the intra-cohort differences by education, those with a lower secondary qualification always show a higher complexity than medium-educated. These latter, in turn, have larger values than those with a tertiary degree. Women who belong to the last cohort follow a similar trend. However, for the other cohorts statistically significant differences only exist between those with a lower and upper secondary qualification. In fact, women with a tertiary degree show a similar level of complexity to those with an upper secondary qualification or even to those with a lower secondary qualification, as it is the case of the first cohort.

In other words, these result show that the overall increase in complexity for women and the relative stability for men hide a more complex patterns. Not only are there gender differences; distinctions in educational level play a role in defining a non-standardized pathways within the labour market in terms of states, their duration and their ordering. This evidence gives some hints about the existence of persistent inequalities (Goldthorpe, 2002; Breen, 1997) regarding the way in which flexibilization affected the evolution of differentiation over time.

However, even though the complexity measure is a suitable synthetic index that describes changes in intra-individual differentiation over time, it would be important to look at the qualitative composition of these more or less noticeable variations by considering some additional descriptive statistics.

First of all, I consider the share of time (originally expressed as months) spent on average in a working state rather than in joblessness. The estimates are shown in Table 5.1. Looking at the overall estimates for both women and men (top of Table 5.1), the only significant change occurs when we move to the last cohort (1998-2001): the share of time (out of the 84 months considered) spent in a working state increases by 10 percentage points for women and about 5 to 8 for men. Conversely, a corresponding decrease affects the trend for the share of time spent in joblessness. This results in a substantial equivalence in terms of time spent out of the labour market for women and men belonging to the last cohort, 19% and 17.5% respectively. However, if we consider

the values for the previous cohorts, not surprisingly a gender difference persists over time, since men always spent a higher amount of time in working states and a lower amount of time in joblessness than women.

		WOMEN				MEN			
		Cohort				Cohort			
Education	State	1974/ 1978	1982/ 1986	1990/ 1994	1998/ 2001	1974/ 1978	1982/ 1986	1990/ 1994	1998/ 2001
All	In employment	71.5	71.3	71.5	81.0	76.6	74.7	77.4	82.5
	Joblessness	28.5	28.7	28.5	19.0	23.4	25.3	22.6	17.5
	Tot.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	N.	*1,038*	*1,118*	*1,134*	*1,250*	*1,162*	*1,405*	*1,288*	*1,362*
Lower secondary	In employment	73.7	72.9	68.9	73.0	75.4	72.5	72.9	77.1
	Joblessness	26.3	27.1	31.1	27.0	24.6	27.5	27.1	22.9
	Tot.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	N.	*571*	*519*	*357*	*239*	*641*	*685*	*500*	*385*
Upper secondary	In employment	70.8	71.2	73.9	82.1	79.1	78.1	81.1	83.7
	Joblessness	29.2	28.8	26.1	17.9	20.9	21.9	18.9	16.3
	Tot.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	N.	*393*	*507*	*649*	*758*	*445*	*605*	*661*	*772*
Tertiary	In employment	57.6	62.8	65.9	85.1	72.0	70.7	76.3	88.1
	Joblessness	42.4	37.2	34.1	14.9	28.0	29.3	23.7	11.9
	Tot.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	N.	*74*	*92*	*128*	*253*	*76*	*115*	*127*	*205*

Table 5.1: Time spent in employment and joblessness, column percentages over 84 months. Source: AD-Silc data, author's calculations.

This general overview hides some differences driven by different educational levels. In fact, for women this positive trend of reduction in the time spent in joblessness exists only for those with an upper secondary qualification (plus 10 percentage point when we move from the first to the last cohort) or with a tertiary degree (almost 20 percentage points when we move from the first to the last cohort). In contrast, no significant changes are detected when we compare the different cohorts of women with a lower secondary qualification. More interestingly, highly-skilled women belonging to the older cohorts spent a smaller share of time in working states compared to less-skilled women belonging to the same cohorts. This is inverted when considering the last cohort, since highly-skilled women are those who show the highest share of time spent in working states.

Regarding the estimates for men, when I split the sample according to education, trends are not linear as they are for women. In fact, as foreshadowed by the estimates regarding the overall male sample, if we compare the first (1974-1978) and the last cohorts (1998-2001) for low and medium-skilled men, only a slight increase in the share of time spent in working states exists. However, the values referred to the intermediate cohorts do not follow a proper decreasing or increasing trends. This last feature characterizes the configuration for men with a tertiary degree, but in this case, when we compare the first and the last cohort, the increase in working time is significant, and is likely to be responsible for the increase of the overall estimates. Also in this case, highly-skilled men suffered from a disadvantage in terms of share of time spent in working states compared to less-qualified individuals, but this is inverted for the last cohort, even though to a smaller extend than for women.

These considerations mirror what could be said by commenting on the trends for the share of time spent in joblessness. What is worth commenting on in substantive terms is that for the last cohort 'only' 9 to 12 months out of the 84 considered[2] were spent in joblessness by individuals with a tertiary qualification, who from this point of view experienced an improvement compared to their colleagues belonging to the previous cohorts. Medium-skilled individuals benefited from this same improvement but to a smaller extent, while low-skilled individuals from all the cohorts spent 23 months out of 84 on average in joblessness.

However, what I have considered until now as 'working state' pools together the different states defined in the alphabet (see Table 4.2). Table 5.2 shows the different positions workers access within the labour market according to the states definition. Looking at the overall estimates, the average number of months spent in apprenticeship increases both for women and men when we move from the first (1974-1978) to the second cohort (1982-1986) and then the trend stops for the next cohorts.

	WOMEN				MEN			
	Cohort				Cohort			
State	1974/ 1978	1982/ 1986	1990/ 1994	1998/ 2001	1974/ 1978	1982/ 1986	1990/ 1994	1998/ 2001
Apprenticeship	2.8	7.9	7.2	9.4	2.9	8.7	9.0	10.6
s.d.	7.6	15.9	15.9	18.2	8.0	15.6	17.1	20.0
Full-Time in the private sector	36.0	32.5	31.8	31.8	40.3	35.0	38.7	36.7
s.d.	33.3	31.0	30.5	29.7	32.0	31.1	31.4	31.3
Part-Time in the private sector	0.0	1.9	6.6	8.9	0.9	0.4	1.7	2.9
s.d.	0.7	7.7	15.5	18.3	8.3	4.7	7.7	10.9
Professional	0.4	0.7	1.3	2.4	3.8	3.8	2.6	3.0
s.d.	5.0	6.8	9.4	12.0	16.5	16.4	13.7	13.3
Employment in the public sector	8.7	5.9	4.8	7.9	4.3	4.1	3.0	5.1
s.d.	22.5	17.2	15.7	21.2	16.5	15.4	13.3	17.3
Self-employment	12.1	11.0	8.3	7.7	12.2	10.7	10.0	11.0
s.d.	25.6	23.7	21.4	20.1	25.9	24.4	23.8	24.6
Joblessness	24.0	24.1	24.0	16.0	19.6	21.2	18.9	14.7
s.d.	26.3	25.7	25.7	20.8	22.5	23.1	22.3	19.8

Table 5.2: Average number of months spent in each state by gender and cohort: estimates and standard deviations (s.d.). Source: AD-Silc data, author's calculations.

A small decrease – but not significant – in the number of months spent in full-time jobs in the private sector exists for both men and women. In contrast, it is typical for women only an increase over time in the average number of months spent in part-time jobs in the private sector, as well as a small decrease in time spent in self-employment. However, these estimates barely give a hint of some kind of evolution in early career patterns over time by considering different cohorts of entry within the labour market. In other words, Table 5.2 offers only a very general overview irrespective of a variable, namely education, that turns out to be crucial also in this case. As mentioned in Chapter 2, this is particularly important in Italy, since education and labour market arrangements are only partly coherent.

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[2]I want to emphasize once again that sequences start from the first working episode and, consequently, the months spent in joblessness follow entrance into the labour market, and they are not those that precede the first working episode and whose duration is usually a relevant variable in the analyses on the school-to-work transition.

Table 5.3 shows the average number of months spent in each state by gender, education and cohort. Looking at the estimates for women, some differences that depend on educational level exist across cohorts in the amount of months spent in each state. The most significant changes for low-skilled women are the increase in the number of months spent in part-time jobs in the private sector (from 0 to 9.4) and the decrease in time spent in full-time jobs in the private sector (from about 35 months to 22.7). A slight decrease also affects the employment in the public sector. No significant changes across cohorts exist in the average number of months spent in self-employment, joblessness, and (not surprisingly) in professional employment. Women with an upper secondary qualification follow the same patterns. However, what truly differentiates the two subpopulations (low and medium-skilled) is the average amount of months spent in each state. In fact, the months spent in full-time jobs in private sector and in the public sector by medium-skilled women are always considerably more than those of the less educated. Conversely, the latter group spent more months in self-employment than women with an upper secondary qualification.

It is interesting to point out that the time spent as an apprentice increases progressively across cohorts for medium-educated women, while for less-skilled women a large gap exists only when we move from the first to the second cohort (from 1974-1978 to 1982-1986). This applies also to men if we consider both the trend and the size of the change. This is coherent with the evidence of apprenticeship diffusion across educational levels (see Chapter 2), but actually adds a new element: apprenticeship characterizes mainly the less-skilled pathways since its introduction, but it becomes increasingly important in shaping career pathways for individuals with an upper secondary qualification.

Finally, by looking always at Table 5.3, women with a tertiary degree show a different trend across cohorts. Firstly, apprenticeship is residual and almost the same can be said for self-employment. Secondly, the number of months spent in full-time jobs in private sector increases, especially for the fourth cohort (1998-2001), as well as in part-time jobs in private sector and in professional employment both for the third and the fourth cohort. A reduction affects instead the amount of months spent as employees in the public sector, which is the highest compared to those for less-skilled individuals: this also applied to medium-skilled although to a lesser extent.

The estimates for men shed light on a more complex configuration since the trends across cohorts are indeed not clear-cut as are the trends detected for women. As mentioned, the evolution over time of the amount of time spent in apprenticeship follows the same pattern as that for women. The cases of full-time employment in private sector and self-employment go the other way round: the decrease detected when we move from the first to the second cohort (from 1974-1978 to 1982-1986) stops, then values do not change significantly afterwards.

WOMEN

	Education											
	Lower secondary				Upper secondary				Tertiary			
	Cohort				Cohort				Cohort			
State	1974/1978	1982/1986	1990/1994	1998/2001	1974/1978	1982/1986	1990/1994	1998/2001	1974/1978	1982/1986	1990/1994	1998/2001
Apprenticeship	4.5	13.4	13.5	11.1	1.0	3.6	4.8	11.7	0.0	0.7	0.7	0.8
s.d.	9.1	19.3	20.6	22.9	5.1	10.5	12.9	19.2	0.0	4.4	6.5	12.8
Full-Time in the private sector	35.3	29.9	26.2	22.7	39.9	36.9	36.1	32.9	20.9	23.2	26.2	37.2
s.d.	31.6	27.4	26.6	27.4	36.0	33.6	31.7	31.6	27.1	32.2	31.5	35.6
Part-Time in the private sector	0.0	1.9	6.0	9.4	0.0	2.0	7.1	9.7	0.0	1.1	5.9	5.8
s.d.	0.9	7.0	15.1	8.9	0.3	8.5	15.7	11.5	0.0	7.4	16.3	11.7
Professional	0.2	0.2	0.0	0.2	0.3	0.7	0.7	1.0	1.6	3.5	7.4	8.5
s.d.	3.9	3.7	0.2	3.9	4.9	6.6	6.5	12.2	10.6	15.8	22.8	23.0
Employment in the public sector	4.3	2.0	1.5	1.1	12.7	6.8	5.5	7.2	21.6	22.4	10.0	16.3
s.d.	16.9	10.6	7.9	10.6	25.8	18.1	17.1	17.2	30.8	28.1	21.6	24.6
Self-employment	17.5	13.8	10.6	16.7	5.6	9.7	7.9	6.5	4.4	1.8	4.1	2.8
s.d.	29.7	25.1	23.5	25.9	17.4	23.5	21.2	25.4	16.6	9.5	14.8	17.4
Joblessness	22.1	22.8	26.1	22.7	24.5	24.2	21.9	15.0	35.6	31.3	28.6	12.5
s.d.	25.4	24.7	25.8	21.3	26.9	26.6	24.9	19.0	26.7	25.9	28.5	18.2

MEN

	Education											
	Lower secondary				Upper secondary				Tertiary			
	Cohort				Cohort				Cohort			
State	1974/1978	1982/1986	1990/1994	1998/2001	1974/1978	1982/1986	1990/1994	1998/2001	1974/1978	1982/1986	1990/1994	1998/2001
Apprenticeship	4.8	14.5	16.2	15.8	0.6	3.7	5.0	10.1	0.0	0.7	1.5	2.9
s.d.	10.1	18.6	21.3	22.9	2.9	9.9	12.4	19.2	0.0	4.0	7.6	12.8
Full-Time in the private sector	38.1	32.0	30.8	31.5	43.8	38.6	44.5	37.5	37.6	34.0	40.2	43.1
s.d.	29.1	26.8	26.2	27.4	34.7	34.0	32.8	31.6	37.4	37.3	35.6	35.6
Part-Time in the private sector	1.0	0.3	1.5	2.5	0.8	0.6	1.8	3.2	0.0	0.7	1.4	2.5
s.d.	8.9	2.7	7.4	8.9	8.1	5.7	8.2	11.5	0.0	7.6	6.2	11.7
Professional	1.3	0.8	0.2	0.4	5.8	6.1	3.0	2.7	12.9	9.4	10.4	9.4
s.d.	10.1	7.4	3.2	3.9	20.3	20.9	14.6	12.2	27.7	23.4	25.8	23.0
Employment in the public sector	2.9	2.0	1.6	1.9	6.0	4.9	3.7	5.1	7.3	12.4	4.5	10.9
s.d.	13.9	10.4	10.6	10.6	18.9	17.1	14.5	17.2	20.5	25.1	15.4	24.6
Self-employment	15.2	11.3	10.9	12.7	9.5	11.6	10.1	11.7	2.7	2.0	6.2	5.2
s.d.	28.2	24.8	24.6	25.9	23.3	25.6	23.9	25.4	13.1	10.4	19.5	17.4
Joblessness	20.6	23.1	22.8	19.2	17.5	18.4	15.9	13.7	23.5	24.7	19.9	10.0
s.d.	21.6	21.9	22.9	21.3	22.3	23.3	20.9	19.0	29.5	27.2	25.1	18.2

Table 5.3: Average number of months spent in each state by gender, education and cohort: estimates and standard deviations (s.d.). Source: AD-Silc data, author's calculations.

No significant changes exist for the other states, for example part-time jobs in the private sector are – not surprisingly – residual across cohorts and across educational levels. Moving onto men with an upper secondary qualification, an increase in time spent in apprenticeship and in part-time jobs in the private sector is found. In contrast, a slight reduction affects the months spent on average in professional employment and joblessness and a slight increase can be found for employment in the public sector for the last cohort (1998-2001). No clear trend can be observed for the other cases.

For men with a tertiary degree, when we move from the first to the second cohort, a decrease in months spent in full-time jobs in the private sector and in self-employment is followed by a new increase when moving from the second to the third and fourth cohorts. The estimates for the last three cohorts are higher than for the first one. Furthermore, a decrease in time spent in professional employment exists, but the values are always higher than for less-skilled workers. The months spent as employees in the public sector increase when we move from the first (1974-1978) to the second cohort (1982-1986), and they decrease when we move from the second to the third (1990-1994); finally they increase again for the last cohort (1998-2001). The values for the second and the fourth cohorts are larger, especially in comparison to the values of the corresponding cohort of men with an upper secondary qualification and to all the cohorts of workers with a lower secondary qualification.

Besides the within-gender differences, some between-gender comparisons assist the addition of evidence regarding some other interesting features. To start with, men – regardless of their education – always spent on average more months than women in apprenticeship and full-time jobs in the private sector and less time in part-time jobs in the private sector. Low-skilled men and women spent a similar amount of time in professional employment, while medium-skilled men spent more time than medium-skilled woman in this same state. The same is true for workers with a tertiary degree from the first two cohorts, but women from the third and the fourth cohort almost approach the values for men.

No noticeable difference exists for time spent in self-employment. Moreover, the number of months spent as employees in the public sector does not differ for low-skilled men and women, while the higher values for women with an upper secondary degree decrease progressively and come closer to the values for men. This is also the case if we consider the higher-skilled individuals, but the estimates for woman are always higher that for men. Furthermore, there are no differences for lower-skilled individuals in terms of time spent in joblessness, while men with an upper secondary qualification and a tertiary degree experienced on average less joblessness then women with the corresponding educational level. As mentioned before, this pattern changes for the last cohort of workers I am considering; in fact, even though the values for women are higher, they decrease with respect to the previous cohort and approach the values for men with the same educational level.

As mentioned before – in addition to state duration – the number of transitions and the number of states individuals experience throughout their careers are also fundamental

components of the complexity measure. The analysis of the changes over time of these two characteristics produces interesting additional results. Figure 5.2 shows the box plots reporting the number of transitions experienced by individuals according to gender, education and cohort[3]. The number of transitions is reported on the *y* axis. Each box plot refers to a cohort: the horizontal lines inside of the boxes represent the medians of the distributions; the bottom and top boxes' borders are the first and third quartiles and the lines extending vertically from the boxes indicate the dispersion of the distribution outside the upper and lower quartiles. The outliers are represented as dots outside of the limits of the vertical lines.

Plots *A* and *E* show the evolution over time of the distribution of the number of transitions experienced by individuals belonging to the different cohorts. To start with, the first cohort of women (1974-1978) has a median number of transitions lower then the next cohorts, 1 and 2 respectively (Plot *A* in Figure 5.2). However, even though the upper quartile assumes a higher value for the second and the third cohorts, the dispersion of the distribution between the first and the third quartiles do not change. This does not apply to the last cohort (1998-2001), which shows a greater dispersion of the distribution within the upper quartile and between the second and the third quartiles. This implies that an increasingly higher number of women experience more than two transitions (median value) throughout the first 84 months of labour market participation.

A less clear trend can be found for men (Plot *E* in Figure 5.2. The median number of transitions does not change across cohorts but the dispersion between the first and the third quartile is smaller than for the first and the third cohorts. All the distributions for the second cohort (1982-1986) appear more condensed, while they are more widely distributed for the fourth cohort (1998-2001). This implies, again, that men belonging to the last cohort experience trajectories composed by more transitions than men belonging to the previous cohorts (given the same median). However, this is again only a part of the story, because the overall (more or less pronounced) trend for women and men is driven by different configurations according to educational level.

To start with, for women with a lower secondary qualification Plot *B* in Figure 5.2, the median of the number of transition does not change across the first three cohorts (the median remains 2) and it increases for the fourth cohort along with dispersion, which increases to a great extent when both looking at the distribution between the median and the third quartile and between this last and the fourth. For medium-educated women (Plot *C* in Figure 5.2), the increase takes place when moving from the second to the third cohort as well as the increase in case dispersion between the second and the third quartiles.

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[3]Average number of transitions and standard errors can be found in Table A.1 in the Appendix.
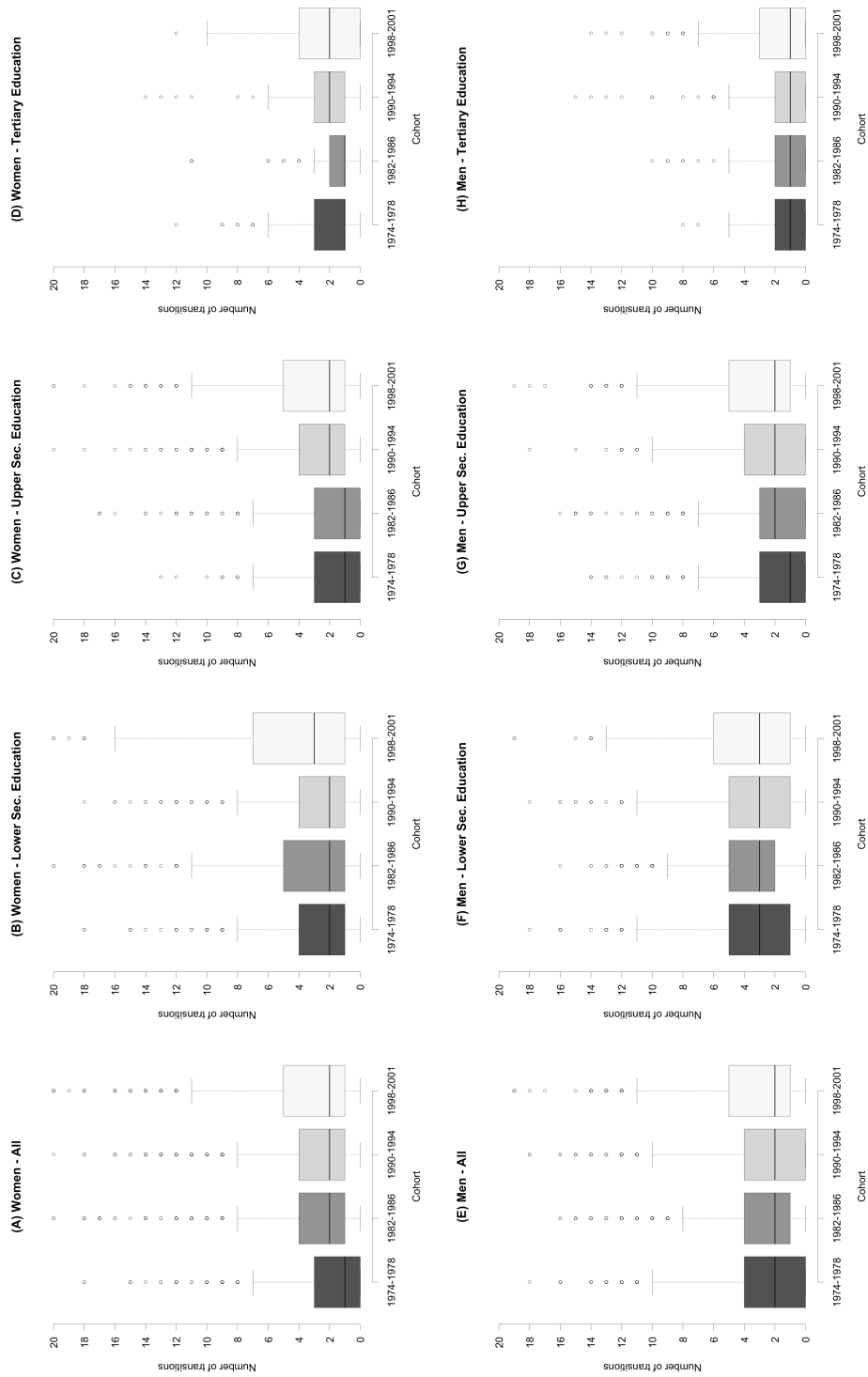
Figure 5.2: Number of transitions between different states by gender, education and cohort. Source: AD-Silc data, author's calculations.

This evidence implies a greater number of transitions experienced by a greater number of individuals across cohorts. In contrast, women with a tertiary degree from the first three cohorts show an overall larger skewness compared to the low-skilled individuals with the exception of the last cohort (Plot *D* in Figure 5.2), which also shows a larger dispersion both between the first quartile and the median and between the median and the third quartile. Even if we cannot forget that the increase in the number of individuals with a tertiary degree partly affect this result, it is still interesting to point out that women belonging to the last cohort look less similar to each other in terms of the number of transitions experienced compared to women belonging to older cohorts.

If we then focus on men, the rather flat trend shown by Plot *E* in Figure 5.2 partially changes when looking at subsamples defined according to education. In fact, distributions for individuals with a lower secondary qualification (Plot *F* in Figure 5.2) report a stable median number of transitions (higher than for higher-educated, see Plots *G* and *H* in Figure 5.2), but an increase in the dispersion between the median and the third quartile exists for the last cohort. Even though the median values are higher than those for women with the same educational level, the last men's cohort is less different from the preceding cohort, while the last women's cohort differs considerably from the previous one. In fact, they show a dispersion between the median and the third quartile larger than for men. For men with an upper secondary qualification (Plot *G* in Figure 5.2), an upward shift of the mean occurs when we move from the first to the second cohort, but less significant gender differences exist – especially for men and women from the last cohort – which is an anomalous case if we consider the other educational levels. In fact, also for those with a tertiary degree (Plot *H* in Figure 5.2), the first three cohorts are more similar to each other both in terms of the median number of transitions and dispersion, with the distribution more condensed on smaller numbers of transitions. In contrast, the last cohort has a larger dispersion than the previous one, both for men and women. For the latter, the trend is not flat like the trend for men is, but the last cohort is still the one that differs the most from the others.

As a corollary of these results, Table 5.4 shows the share of individuals who did not experience any transition, which means that they entered the labour market with a certain arrangement, and they spent in this same position the whole 84 months being focussed on.

	WOMEN				MEN			
		Education				Education		
Cohort	All	Lower sec.	Upper sec.	Tertiary	All	Lower sec.	Upper sec.	Tertiary
1974-1978	26.9	24.3	32.3	17.6	32.4	19.8	48.8	43.4
N.	*1,038*	*571*	*393*	*74*	*1,162*	*641*	*445*	*76*
1982-1986	19.1	12.1	26.2	19.6	23.1	13.1	32.2	34.8
N.	*1,118*	*519*	*507*	*92*	*1,405*	*685*	*605*	*115*
1990-1994	18.2	9.2	22.0	23.4	18.9	13.8	30.4	42.5
N.	*1,134*	*357*	*649*	*128*	*1,288*	*500*	*661*	*127*
1998-2001	17.5	9.6	15.7	30.4	23.3	15.8	23.1	38.0
N.	*1,250*	*239*	*795*	*253*	*1,362*	*385*	*772*	*205*

Table 5.4: Workers who did not experience any transition along the first 84 months of labour market participation: percentages by gender and cohort out of the corresponding subsample. Source: AD-Silc data, author's calculations.

To start with, looking at Table 5.4, the share of women that never changed state decreases by about 8 percentage points when we move from the first to the second cohort (from 26.9% to 19.1%), but then the share remains stable for the successive cohorts. Almost the same applies to men: a decrease of about 8 percentage points when we move from the first to the second cohort (from 32.4% to 23.1%) exists, but then the share increases again for the third cohort and decreases for the last cohort. In general, men show relatively higher overall shares of individual who did not experience any transition between different states compared to women. Once again, it is worth recalling the fact that I am not currently considering transitions between the same state and nor those between different employers or customers. This implies that the number of transitions could be realistically higher than those found in these analyses.

Nevertheless, the overall shares for men and women turn out to be the results of different trends affecting subgroups defined according to different educational levels. The shares of low and medium-skilled women who did not experience transitions between different states behave in the same way as the overall estimates show: the main difference is found when we move from the first to the second cohort, but values for less-skilled women are always greater than for women with an upper secondary qualification. This implies that – when we move from the older to the younger cohorts – an increasing number of workers with these qualifications experience one or more transitions between different states. In contrast, the share of women with a tertiary degree that did not experience any transition constantly increases across cohorts: this implies that this subpopulation becomes more stable in one single state when we move from the older to the younger cohorts.

Finally, by splitting the male subsample into three groups according to education, the evolution of the share of individuals who did not experience transition between different states over time is similar to the overall only for individuals with a lower secondary qualification and with a tertiary degree, although to different extents. In fact, higher-skilled individuals are always more stable in one single state than lower-skilled, irrespective of the cohort. In contrast, a downward trend affects the share of individuals with an upper secondary qualification who did not experience transitions: the first cohort reports the highest value (48.8%), meaning that almost half of the group never changed state during the 84 months considered (this applies also to the first cohort of men with a tertiary degree, but to a slightly smaller extent). But when we look at the value for the last cohort, this is more than halved (23.1%). Consequently, if we consider the last cohort (1998-2001), education and the likelihood of not experiencing transition between different states are positively and linearly correlated for both men and women.

One last analytical step can help to complete this broad overview. Figure 5.3 displays the box plots that refer to the number of states out of the alphabet (that is the states list) that individuals experienced throughout the 84 months considered[4].

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[4]Average numbers of states and transitions can be found in Table A.1 in the Appendix.
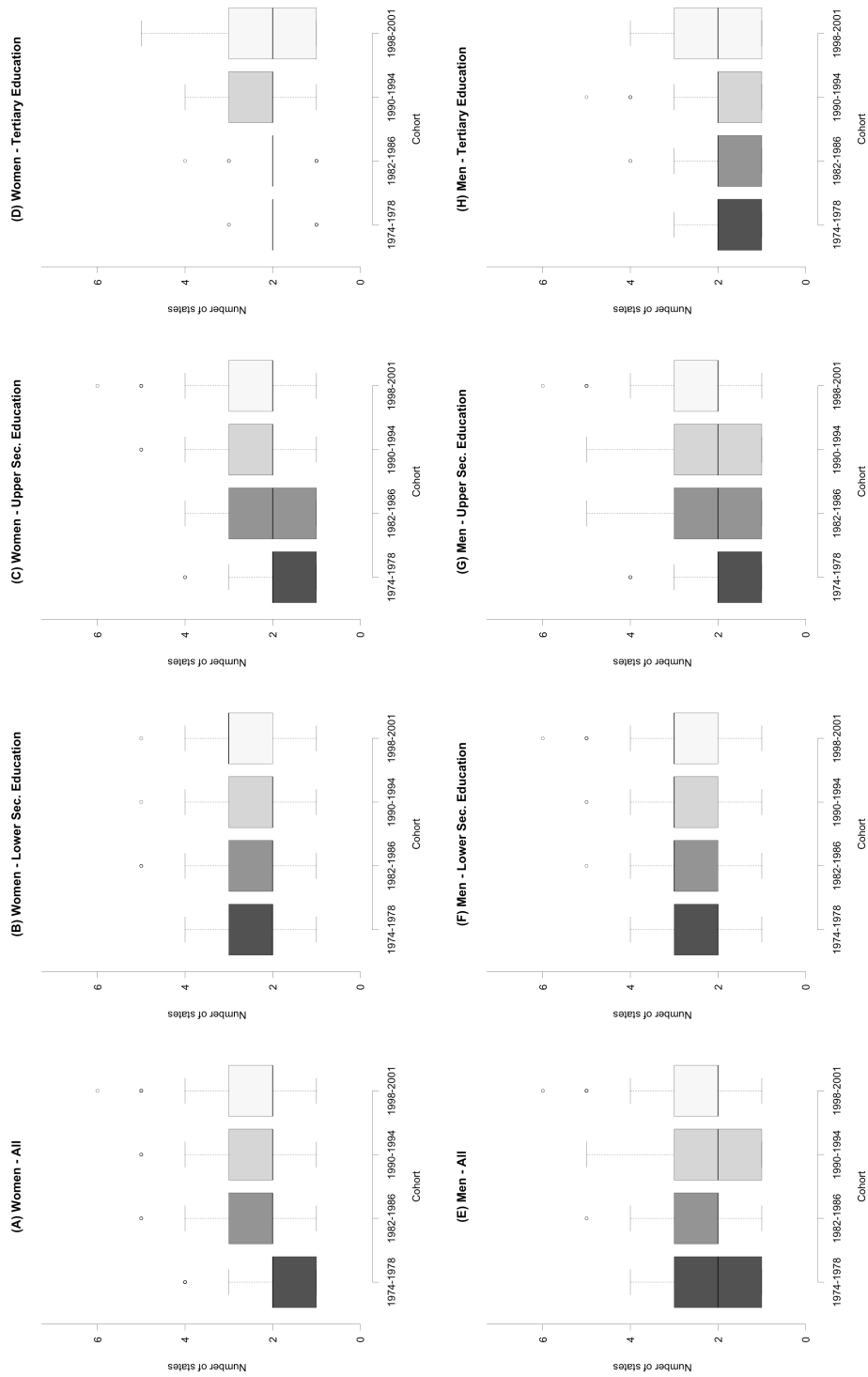
Figure 5.3: Number of states experienced by gender, education and cohort. Source: AD-Silc data, author's calculations.

The plots are complementary to the picture sketched in Figure 5.2. Also in this case, by looking at overall distribution for women (Plot *A* in Figure 5.3) the main point is the increase in the number of different states experienced and in the share of individuals who pass through a higher number of states when we move from the first to the second cohort (1974-1978 and 1982-1986). No further changes occur if we consider the next cohorts. In contrast, (Plot *E* in Figure 5.3 shows a different picture regarding men. In fact, both a higher share of individuals passing through more states and a higher median value characterize the distributions starting from the very first cohort. Seemingly, the median never changes across cohorts, although no clear trend can be found.

However, for low-skilled women (Plot *B* in Figure 5.3) only the median value changes across cohorts: when we move from the third (1982-1986) to the fourth cohort (1998-2001) the median value becomes 3 instead of 2. This same change occurs for men with an equivalent qualification moving from the first to the second cohort (Plot *F* in Figure 5.3). An increasing number of women with an upper secondary qualification experienced progressively more states and the dispersion of their value is higher between the second and the third quartiles (Plot *C* in Figure 5.3). Almost the same applies to men with a corresponding educational level, as Plot *G* in Figure 5.3 shows. In contrast, the two first cohorts of women (Plot *D*) with a tertiary degree have no dispersion around the median value. The dispersion increases when we move to the following cohorts, especially for the last cohort, which becomes more similar to the corresponding men's cohort. In fact, men with a tertiary degree (Plot *H*) belonging to the older cohorts have equal medians and dispersions and these values are always smaller than for women. The lower variability in terms of states experienced that characterizes the pathways for higher-skilled is coherent with the skewness of the distributions of the number of transitions between different states (see Figure 5.2).

Tu sum up, the complexity measure shows that differentiation increases across cohorts (according to *Hypothesis 1a*), but the linear positive trend is much more evident and steeper for women than for men. This evidence also confirms *Hypothesis 1b* by showing that for women the values of complexity of early career overtake men's values when we move throughout the four cohorts considered. However, complexity decreases according to the increase in education for both men and women. This evidence confirms *Hypothesis 1c* by showing that having a tertiary degree rather than a lower educational qualification implies a constant complexity across cohorts and a greater similarity between men and women.

The additional descriptive analyses have offered insights to better specify the substantive meaning of the synthetic complexity measure. In fact, even if complexity is computed by using subsequences as units of observation, considering the type and the number of states experienced as well as the number of transition among them along the 84 months gives us a more comprehensive understanding of how the differentiation process acted on early career evolution over time.

The data show that the increase in complexity for the overall women' subsample is partially explained by the share of individuals who never changed state, which decreases

from the first to the second cohort and increases for those with a tertiary degree, who actually have steady complexity values across cohorts. In contrast, for men the share of individuals who never changed state decreases clearly only for those with an upper-secondary qualification, meaning that the new cohorts of workers who belong to this subsample suffer more due to a complexity of early careers driven by changes between different states within the labour market.

Differences according to education also exist if we look at the number of months spent in each state and the number of transitions. Highly-skilled men and women belonging to the last cohort benefit more from the increase in working time *versus* joblessness, meaning that for them complexity is less influenced by the high number of joblessness episodes or their length. In fact, the number of transitions increases across cohorts but especially for less-skilled individuals. Finally, women are more exposed than man to the increase in the number of different states throughout individual pathways: this plays a role in determining the growth of the complexity values for women compared to men.

5.2 Destandardization: between individual early careers variability

The measures I have presented in the previous Section aimed to describe the features of the intra-individual careers' differentiation across cohorts. However, another process is claimed to be in place when talking about the consequences of labour market flexibilitization, that is the careers' destandardization. The latter is the object of the second research question. By following Brückner and Mayer (2005), destandartization is conceived as the within-groups variability: discrepancy analysis is the technique I used to measure the variability between sequences belonging to groups I am interested in.

In this case, groups are defined according to cohort of entry within the labour market and stratified by gender and education. In other words, I estimate the degree to which the sequences in a certain subsample differ from one another with respect to the states each individual experiences at each point of the sequence. The larger the value of discrepancy in a point in time, the more different are the states experienced at that point in time by individuals belonging to that group. When the value decreases, it means that individuals are more likely to experience similar or identical states at that point in time.

Figures 5.4 and 5.5 show the evolution of discrepancy over time for women and men respectively[5]. To start with, we will look at women first. Plots *A* in Figures 5.4 concerns the estimates for the four cohorts of women. The main point is that discrepancy values increase when moving from the older to younger cohorts of women, meaning that for the latter the within-cohort variability is bigger throughout the 84 months considered. In other words, the pathways followed by women belonging to the younger cohorts differ

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[5]Discrepancy is calculated for each group of six months up to the 78th month over the 84th usually considered. The red line representing the overall discrepancy for each subgroup is not the mean of the values for the four cohort at each point in time but it results from a dissimilarity matrix computed for all the cohorts pulled together. This is the reason why the red line is not located exactly where the mean would be expected to be if it had been calculated starting from the estimated for the single subgroups.

more among each other than those experienced by women from the older cohorts.

(A) Women - All

(B) Women - Lower secondary education

```
Overall Levene=8.4*          Overall Levene=5,4*
t(74-78)/(98-01)=45.1*       t(74-78)/(98-01)=13*
t(82-86)/(98-01)=26.7*       t(82-86)/(98-01)=12,6*
t(90-94)/(98-01)=12.8*       t(90-94)/(98-01)=5*
t(74-78)/(82-86)=3.8         t(74-78)/(82-86)=0,5
t(74-78)/(90-94)=10.7*       t(74-78)/(90-94)=3,3
t(82-96)/(90-94)=2.2         t(82-96)/(90-94)=1,8
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(C) Women - Upper secondary education

(D) Women - Tertiary education

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Overall Levene=10,1*         Overall Levene=3,9*
t(74-78)/(98-01)=28,6*       t(74-78)/(98-01)=5,7*
t(82-86)/(98-01)=12,9*       t(82-86)/(98-01)=3,3
t(90-94)/(98-01)=7,1*        t(90-94)/(98-01)=0,7
t(74-78)/(82-86)=3,4         t(74-78)/(82-86)=0,5
t(74-78)/(90-94)=8*          t(74-78)/(90-94)=9*
t(82-96)/(90-94)=1           t(82-96)/(90-94)=6*
```

1974-1978   1982-1984   1990-1994   1998-2001   Total

Figure 5.4: Discrepancy's evolution over time by education and cohort - Women. *=p<0.01. Source: AD-Silc data, author's calculations.

If we now consider the general trend of discrepancy over time, it increases steeply during the first 12 months irrespective of the cohort of entry, but then it starts to decrease only for the first three cohorts (more in details, to a greater extent for the third and the fourth cohorts, 1974-1978 and 1982-1986). In fact, discrepancy for cohort 1998-

2001 continues to increase until almost the third year of labour market participation and then slowly decreases. This implies that this subgroup of workers has a high between variability throughout the entire period considered, while others progressively land on similar states/subsequences as time goes by. Looking at the Levene statistic[6] below Plot *A* in Figure 5.4, the differences in discrepancy across cohorts are significant when we compare the last one (1998-2001) to all the other three cohorts and the first cohort (1974-1978) to the third (1990-1994).

Almost the same applies to discrepancy trends for low and medium-skilled women. In fact, looking at Plots *B* and *C* in Figure 5.4, both the evolution over time and the pairwise comparison between the cohorts go in the same direction as for the overall women's sample. The only substantive difference is represented by the fact that trends for the women with a lower secondary qualification are more condensed between higher discrepancy values, while for those with an upper secondary qualification the distribution is more relaxed on lower values (especially for the older cohorts).

Nevertheless, splitting the sample according to education turns out to be crucial when looking at Plot *D* in Figure 5.4 and considering the estimates for women with a tertiary degree. The discrepancy tendencies detected for the other subgroups, are more accentuated. In fact, on the one hand, the first two cohorts have lower discrepancy values compared to those for less-skilled individuals, which steeply increase during the last 12 months of labour market participation. This trend quickly reverts and discrepancy decreases – again – steeply reaching the lowest values compared to any other cohort and/or educational level. On the other hand, discrepancy for the last two cohorts reaches the highest values of other cohorts/educational levels.

While for cohort 1990-1994 this occurs after the usual increase after the first 12 months and then a rather flat trend, for cohort 1998-2001 it occurs by following a continuously upward trend[7]. The substantive implication concerns the higher within-group dissimilarity (being in different state/experience highly different subsequences) that characterizes all the four cohorts of women with a tertiary degree between the second and the third year of labor market participation. However, this quickly changes after the third year and the women belonging to younger cohorts continue to be exposed to a greater within-group variability while those belonging to the older cohort rapidly settle into more similar patterns.

If we now focus on men, Figure 5.5 shows a configuration that can be partly considered equivalent to that of women. In fact, what Plot *A* reports does not differ too much from what is shown in Plot *A* in Figure 5.4.

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[6]The significance of the cohorts' pairwise comparisons below each Plot is obtained through permutation tests run on the Levene statistics – as explained in Chapter 4 – and they are the mean calculated over the Levene's values for each group of six subsequent months. The complete Levene's distribution for all the cohorts' pairwise comparison are shown in Figure A.9: the higher the Levene value, the bigger the discrepancy between the two subgroups in that specific point in time.

[7]The significance of these differences is also confirmed by the Levene statistics reported below Plot *D* in Figure 5.4.

(A) Men - All

Overall Levene=8.4*
t(74–78)/(98–01)=19.8*
t(82–86)/(98–01)=5.1
t(90–94)/(98–01)=15.4*
t(74–78)/(82–86)=6.3
t(74–78)/(90–94)=0.6
t(82–96)/(90–94)=3.3

(B) Men - Lower secondary education

Overall Levene=3.9*
t(74–78)/(98–01)=7.8*
t(82–86)/(98–01)=11.6*
t(90–94)/(98–01)=5.1*
t(74–78)/(82–86)=0.1
t(74–78)/(90–94)=0.7
t(82–96)/(90–94)=1.4

(C) Men - Upper secondary education

Overall Levene=7.4*
t(74–78)/(98–01)=9.2*
t(82–86)/(98–01)=0.5
t(90–94)/(98–01)=17.2*
t(74–78)/(82–86)=4.9*
t(74–78)/(90–94)=0.4
t(82–96)/(90–94)=10.2*

(D) Men - Tertiary education

Overall Levene=0.08*
t(74–78)/(98–01)=0.0
t(82–86)/(98–01)=0.2
t(90–94)/(98–01)=0.0
t(74–78)/(82–86)=0.2
t(74–78)/(90–94)=0.0
t(82–96)/(90–94)=0.3

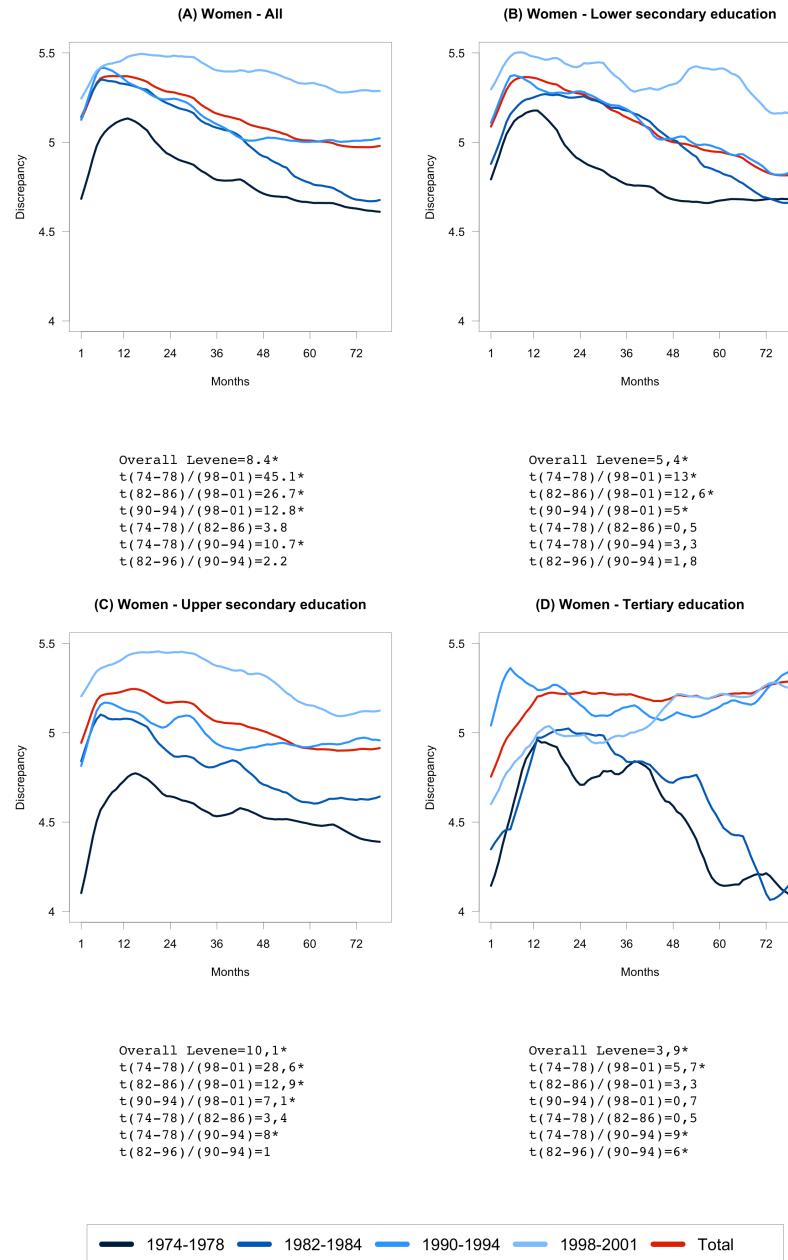| ■ 1974-1978 | ■ 1982-1984 | ■ 1990-1994 | ■ 1998-2001 | ■ Total |

Figure 5.5: Discrepancy's evolution over time by education and cohort - Men. *=p<0.01. Source: AD-Silc data, author's calculations.

Firstly, after a sharp increase in discrepancy during the first 12 months of labour market participation, values decrease again for all the four cohorts, although steeper for men, who start and end with lower discrepancy values compared to women. Secondly, also in this case, the discrepancy distributions for the four cohorts of lower-skilled men are more condensed (or rather more similar to each other in their evolution over time)

than for medium-skilled and also the starting values are rather more similar to each other compared to the medium-skilled. Finally, by considering the Levene statistics, the greater and more significant differences are those between the last (1998-2001) and the other three cohorts, while for these last cohorts there are some overlaps over time.

However, once again, splitting the sample according to education reveals a crucial feature of the evolution of within variability across cohort/over time. In fact, if we consider trends for men with a tertiary degree, they turn out to be more similar both over time (within the same cohort) and across cohorts (between cohorts). In fact, on the one hand, despite the small fluctuations, the discrepancy trends are rather flat after an (expected) increase during the first year. On the other hand, looking at the between-cohorts pairwise comparisons, not all differences are significant[8]. This implies that, differently from any other, for this subpopulation no changes can be detected in terms of an increase/decrease in destandardization across-cohorts.

One last interesting result comes from the gender comparison. In fact, a significant gender difference is precisely connected to workers with a tertiary degree. As mentioned before, the within variability for the first two women's cohorts (1974-1978 and 1982-1986) decreases to very low discrepancy values quickly and steeply after two years of participation to the labour market (Plot *D* in Figure 5.4). In contrast, the corresponding men's cohorts shows a constant level of within-cohort variability along the observed period (Plot *D* in Figure 5.5). This applies also to the last two men's cohorts (1990-1994 and 1998-2001) while discrepancy does not stop increasing for the corresponding women's cohorts: this means that for these last subpopulations the within-cohort variability constantly increases over time and that, in other words, women belonging to this group follow pathways less similar to each other those of men.

The discrepancy measure used as a tool to study the destandardization process reveals a complex scenario that can not be easily summed up by referring to the traditional hypothesis presented in Chapters 2 and refcha:earlycareer on the diffusion of an higher variability affecting individuals entered the labour market after the reforms started in 1997. Indeed, the evidence shown in Figures 5.4 and 5.5 define a differentiated scenario according to gender and educational level. Firstly, an increase in variability already exists when we move from the first to the second and the third cohort, and in some cases (for example looking at men with an upper secondary qualification or with a tertiary degree) the older cohorts show higher or equal discrepancy than the younger cohorts. Secondly, changes over time in women's discrepancy are less sharp than for men (with the exception of highly-skilled women belonging to the first two cohorts), meaning that intra-cohort variability persists relatively higher over time.

However, this evidence tells us little about the 'quality' of the variability operationalized as discrepancy. Nevertheless, looking for example at the states distribution Plots (see Plots *A* to *D* in Figures A.2, A.3, A.4, A.6, A.7 and A.8 in the Appendix) – which

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[8]This is even more evident once we consider the complete Levene's distribution in Figure A.9 in the Appendix: the bottom-left graph refers to men with a tertiary degree and clearly shows that the differences are almost null and anyway not significant.

show the share of individuals that occupy a certain state at a certain point in time – tells us only part of the story. Indeed, the discrepancy has been calculated starting from a distance matrix built by using the LCS method (see Chapter 4), which considers the distance between the longest common subsequences and not merely the states distribution over time. A good complementary descriptive analysis able to add 'qualitative' information on changes in variability across cohorts can be carried out by considering the representative sequences for each subgroup defined by gender and education.

5.3   Typical pathways of labour market participation

Besides knowing whether complexity and discrepancy increase or not across cohorts, I am also concerned with assessing the 'quality' of such changes in terms of pathways that characterize the groups of interest. As mentioned in the methodological Chapter (see Chapter 4), the simple identification of the most frequent identical sequences would not be suitable, since the aim here is to summarize a complex set of information and a great number of sequences. I address this issue by using a method suggested by Gabadinho and colleagues (2011a), who propose defining representative sequences as 'a set of non-redundant *typical* sequences that largely, though not necessarily exhaustively, covers the spectrum of observed sequences' (Gabadinho et al., 2011a, p.4) in order to extract the fundamental features of the latter.

In fact, the most important benefit that comes from the identification of typical – or representative – sequences is the removing of the noise generated by the great variability of the states positioning along the 84 months considered. In other words, sequences are selected as representative because they summarize efficiently and effectively a number of features (types of states, numbers of different states and transitions, duration of the events, etc.) that they have in common with a certain number of other sequences. In this case I have set a coverage value equal to 65% in order to exclude those cases that are eccentric to the general configuration for each subsample (see Chapter 4).

Before a more detailed analysis concerning the longitudinal configuration of the most representative sequences for each subgroup, the overview of the analytics offered in Table 5.5 could help to detect a general trend of the representative sequences' evolution across cohorts. For each subgroup identified according to gender, and then also according to education and cohort of entry within the labour market, Table 5.5 shows (following the order of the columns): how many representative sequences have been selected; the average, the minimum and the maximum number of transitions and which states appear through the representative sequences. As mentioned in Chapter 4, the sets of sequences are representative of the 65% of each subgroup.

To start with, I consider the characteristics of the representative sequences for the overall subsamples of women and men. The number of representative sequences selected increases across cohorts for both genders, but to a greater extend for women. Regarding the number of transitions in the representative sequences, men have higher median values, with the exception of the first cohort, while for women representative sequences

have the highest median and maximum number of transitions. If we then consider the evolution across cohorts in terms of states occurring throughout the representative sequence, it is worth adding evidence regarding the constant absence of professional employment and the new-entry of part-time jobs in the private sector and of employment in the public sector, starting from the third and the second cohort respectively. This suggests an increase in terms of opportunity for labour market participation, especially because it is exactly thanks to these two states (part-time work and employment in the public sector) that female labour market participation increased over time. Almost the same configuration can be found when we consider the states occurring throughout the representative sequences for men. Also in this case professional employment is not part of the states set and part-time work in the private sector and employment in the public sector enter the set only for the last cohort (1998-2001).

Little variability exists if we consider the synthetic indicators for describing the representative sequences that refer to subsamples defined according to education. To start with, the number of representative sequences increases across cohorts for both men and women having a lower or an upper secondary qualification, although to different extents. In contrast, only for women with a tertiary degree – but not for men – a very modest increase in the number of representative sequences exists. A clear-cut linear upward trend affects the average number of transitions along the representative sequences for men, and this reflects the same linear upward trend of the maximum number of transitions. The opposite trend is followed by women with a lower secondary qualification: the average number of transitions reduces significantly as well as the maximum value.

Looking at the right part of Table 5.5, few differences exist if we compare the states that men's and women's representative sequences are made out of. In fact, the most significant contrast concerns the stronger presence of employment in the public sector in women's representative sequences. Indeed, employment in the public sector is one of the states appearing in the representative sequences only for a small amount of men's subgroups, while almost every women's subgroup (with the exception of the lower-educated) have at least one representative sequence containing episode as an employee in the public sector.

Some other information derived from Table 5.5 is not surprising according to the literature: for example part-time jobs in the private sector can be mainly found in the last cohorts' representative sequences (due to the higher diffusion – even though weak – of this type of contract at the end of the 1990s) and more frequently for women than for men; apprenticeship is not typical for those who have a tertiary degree, and furthermore professional positions are not common for those with a lower qualification; finally full-time jobs in private sector and joblessness are the critical states for the very totality of the subgroups.

WOMEN

Cohort	Education	N. of representative sequences	N. of transitions in representative sequences — Mean	Min.	Max.	APPR	PRIVSEC.FT	PRIVSEC.PT	PROF	PUB	SELF	JOBLESS	Tot. N.
1974-1978	All	4	4.8	2	9	x	x					x	1,038
1982-1986		7	2.6	1	7	x	x			x	x	x	1,118
1990-1994		9	2.1	1	5	x	x	x		x	x	x	1,134
1998-2001		12	2.5	1	8	x	x	x		x	x	x	1,250
1974-1978	Lower secondary	3	4.0	1	9	x	x				x	x	571
1982-1986		9	3.3	1	7	x	x			x	x	x	519
1990-1994		8	2.8	1	5	x	x	x			x	x	357
1998-2001		12	1.9	1	5	x	x	x			x	x	239
1974-1978	Upper secondary	3	2.7	1	5		x			x		x	393
1982-1986		4	3.8	1	7		x			x	x	x	507
1990-1994		7	2.1	1	5	x	x			x	x	x	649
1998-2001		12	2.5	1	8	x	x	x		x	x	x	758
1974-1978	Tertiary	3	2.0	1	3		x			x		x	74
1982-1986		4	1.0	1	1		x			x		x	92
1990-1994		6	2.0	0	4		x		x	x	x	x	128
1998-2001		6	2.5	1	4		x	x	x	x	x	x	253

MEN

Cohort	Education	N. of representative sequences	N. of transitions in representative sequences — Mean	Min.	Max.	APPR	PRIVSEC.FT	PRIVSEC.PT	PROF	PUB	SELF	JOBLESS	Tot. N.
1974-1978	All	5	3.8	3	4	x	x				x	x	1,162
1982-1986		6	3.7	2	7	x	x				x	x	1,405
1990-1994		6	4.3	1	7	x	x				x	x	1,288
1998-2001		9	3.2	1	6	x	x	x		x	x	x	1,362
1974-1978	Lower secondary	5	5.4	3	7	x	x					x	641
1982-1986		6	4.0	2	7	x	x				x	x	685
1990-1994		7	3.6	1	7	x	x				x	x	500
1998-2001		10	4.3	1	8	x	x	x			x	x	385
1974-1978	Upper secondary	3	2.0	1	3		x				x	x	445
1982-1986		5	2.2	1	3	x	x				x	x	605
1990-1994		4	2.8	1	4	x	x				x	x	661
1998-2001		8	3.1	1	6	x	x	x		x	x	x	772
1974-1978	Tertiary	3	2.0	0	3		x		x			x	76
1982-1986		4	2.3	1	5		x			x		x	115
1990-1994		4	2.3	0	5		x		x			x	127
1998-2001		4	1.3	1	2		x		x	x	x	x	205

Table 5.5: Representative sequences by gender, education and cohort: summary of analytics. Source: AD-Silc data, author's calculations.

After this synthetic overview on the general characteristics of the representative sequences, a more exhaustive analysis of the temporal evolution and longitudinal characteristics of the sets of sequences selected as representative is needed. Figures from 5.6 to 5.13 show graphically the representative sequences for each subpopulation according to gender and cohort of entry first (Figures 5.6 and 5.7), and then also according to education (Figures 5.8, 5.9, 5.10, 5.11, 5.12 and 5.13).

Each horizontal element of the plots represent one representative sequence and its thickness is proportional to the amount of sequences it is representative of[9].

The representative sequences could assume different substantive meanings: on the one hand, they represent a generalization of the patterns available for workers, but, on the other hand, they can be seen as pathways workers were forced along according to their gender and education. This is particularly meaningful if we consider that the definition of the states is fairly generic especially regarding employment in the private sector. In other words, the patterns – and their evolution – that I will consider in this Section can be seen both as constraints and opportunities in terms of the model of participation in the labour market.

A qualitative evaluation like this depends on different factors that I can only partly account for[10]. The general configuration of the cross-cohort differences for women and men show some interesting preliminary results. Figures 5.6 and 5.7 deal with the rendering of the representative sequences for women and men belonging to the four different cohorts considered.

At least one sequence contains one episode in self-employed that lasts for a relatively large number of consecutive months for both men and women. However, for women these episodes mainly end in joblessness (except the representative sequence for the last cohort), while in sequences for men this is a long episode that comes after a couple of years spent in other states. One interesting feature concerns the most representative sequence for women: looking at Plots *A* to *D* in Figure 5.6, the first sequence from the

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[9]On the horizontal axes, each plot reports two statistics: '(A)' concerns the discrepancy, which is the variability between sequence belonging to a certain subgroup, '(B)' refers to the mean distance of all the sequences assigned to a representative sequence. Both values are derived from the dissimilarity matrix, consequently the maximum value on the axes reflects the maximum theoretical distance between the sequences for each subgroup. A symbol is attributed to each representative sequence, and the same symbol can be found on the horizontal axes above each plot, which indicates the discrepancy and the overall distance to a certain representative sequence.

[10]One last point has to be made: some of the information we can get from the analysis of the representative sequences could have been derived by scrutinizing the state distribution plots and the index plots (Figures A.1, A.5, A.2, A.3 A.4, A.6, A.7 and A.8, Plots *A* to *D* and *E* to *H* respectively), which can be found in the Appendix. In fact, some researchers have put in evidence the importance of considering the index distribution Plots in order to detect the evolution over time of some specific processes (Scherer, 2001, 2005; Brzinsky-Fay, 2007), and this is absolutely convenient if we need a clear-cut general description of how data looks. However, on the one hand, my sample – even when split into smaller subgroups according to gender, education and cohort of entry within the labour market – contains a huge number of cases hardly interpretable by the inspection of the index plots (only pathways without interruptions are fairly clearly detectable in the index plots). On the other hand, state distribution Plots clearly show at which points in time individuals are in certain states, but we lose the individual longitudinal information and it is not possible to look at the evolution of the pathways over time. For the above reasons, I decided to use the representative sequences, which allow me to preserve both a longitudinal point of view and the information about state distribution.
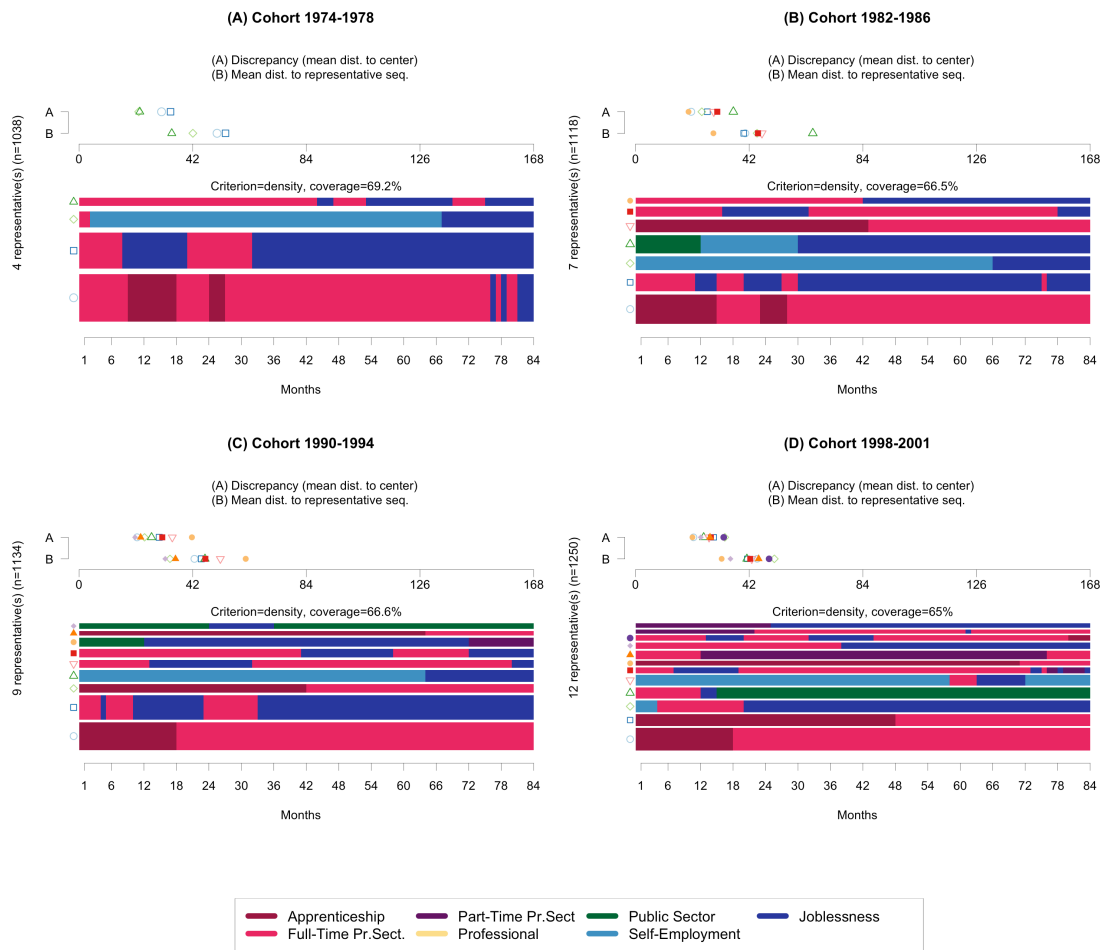
Figure 5.6: Representative sequences by cohort - Women. Source: AD-Silc data, author's calculations.

bottom in each plot (as well as other sequences but representative of a smaller number of cases) is composed by apprenticeship and full-time jobs in private sector episodes. This does not apply to men, for whom the most representative sequences according to cohort contain also long periods and/or repeated episodes of joblessness.

At least one sequence is composed by a long-lasting joblessness episode, and the share of sequences it is representative for does not decrease across cohorts with the exception of the last cohort both for women and men (1998-2001, Plots *D* in Figures 5.6 and 5.7).

Some other gender differences have been put in evidence already by commenting on Table 5.5. However, what Figures 5.6 and 5.7 add to the previous evidence is substantial amount of the transitions along the men representative sequences occurs at the beginning of the early career while they are more spread along the entire 84 months considered when we look at women's representative sequences. What is even more important is the gender difference in the number of representative sequences (and their degree of
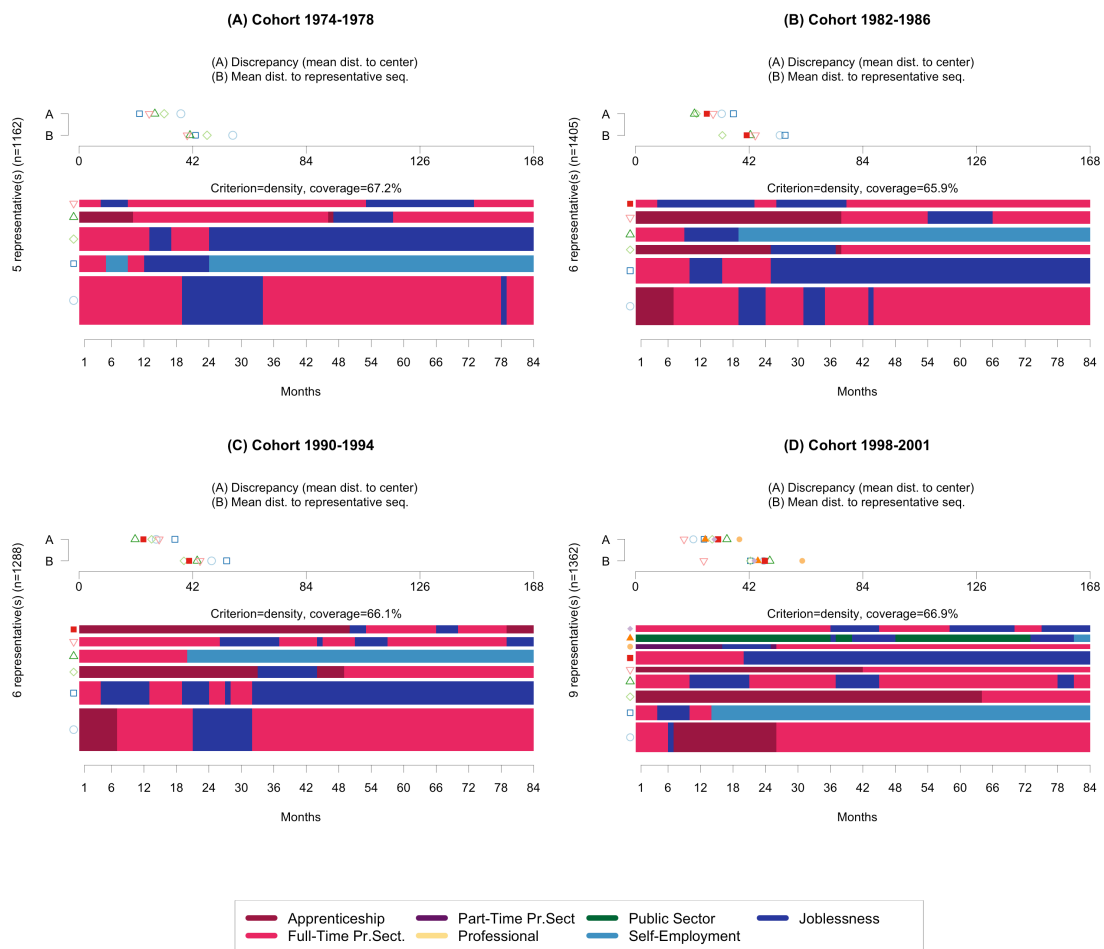
Figure 5.7: Representative sequences by cohort - Men. Source: AD-Silc data, author's calculations.

representativeness) that end up in joblessness after a long period spent in this same state. While for men only one of the representative sequences had these characteristics, and it is representative of a relatively small number of sequences, for women more than one pattern ends with a long episode of joblessness. As mentioned above, these sequences are representative of a decreasing share of individual pattens across cohorts (from Plot *A* to *C*) but the share is always bigger for women than for men. However, as partially pointed out by Table 5.5, the general trends that emerge when looking at the representative sequences for women and men hide great differences driven by different educational levels, both in terms of type of states and evolution across cohorts. Figures 5.8 to 5.13 deal with this complexity.

Figure 5.8 shows the representative sequences for low-skilled women. The selected sequences mirror correctly the evidence accumulated so far on the across-cohorts evolution for patterns for this subpopulation. Looking at Figure 5.8, when we move from

Figure 5.8: Representative sequences by cohort - Women, lower secondary education. Source: AD-Silc data, author's calculations.

the first to the last cohort the increase in the number of representative sequences and the progressively larger number of states throughout them are coherent with the results of the discrepancy analysis: a greater variance between sequence was found in the subsequences compared by the longest common subsequence metric when moving from the older to the younger cohort. More in detail, the most representative sequences for the fist cohort (1974-1978) all end up with a joblessness episode after a more or less long period spent in self-employment or full-time employment in the private sector. The number of representative sequences increases when we move from the first cohort. The representative sequences for the other three cohorts have some common features.

To start with, at least one sequence does not contain any joblessness episodes (mainly starting with apprenticeship and ending in full-time jobs in the private sector). Moreover, many sequences are interrupted by one or more joblessness episodes. Episodes in self-

employment are always present throughout at least one sequence, and they always end in a substantially long period of joblessness. Finally, more than half of the sequences end in joblessness after a year of labour market participation. In contrast, part-time work in the private sector only appears in two cases among the last cohort's (1998-2001) representative sequences, and apprenticeship becomes a frequent starting point for the last three cohorts' paths.

The analysis of this first subgroup highlights a feature of pathways strongly characterized by full-time jobs that are far from being linear and stable. This is especially the case for the last cohort, but also for the preceding cohorts.

Figure 5.9 displays the representative sequences for women with an upper secondary qualification.

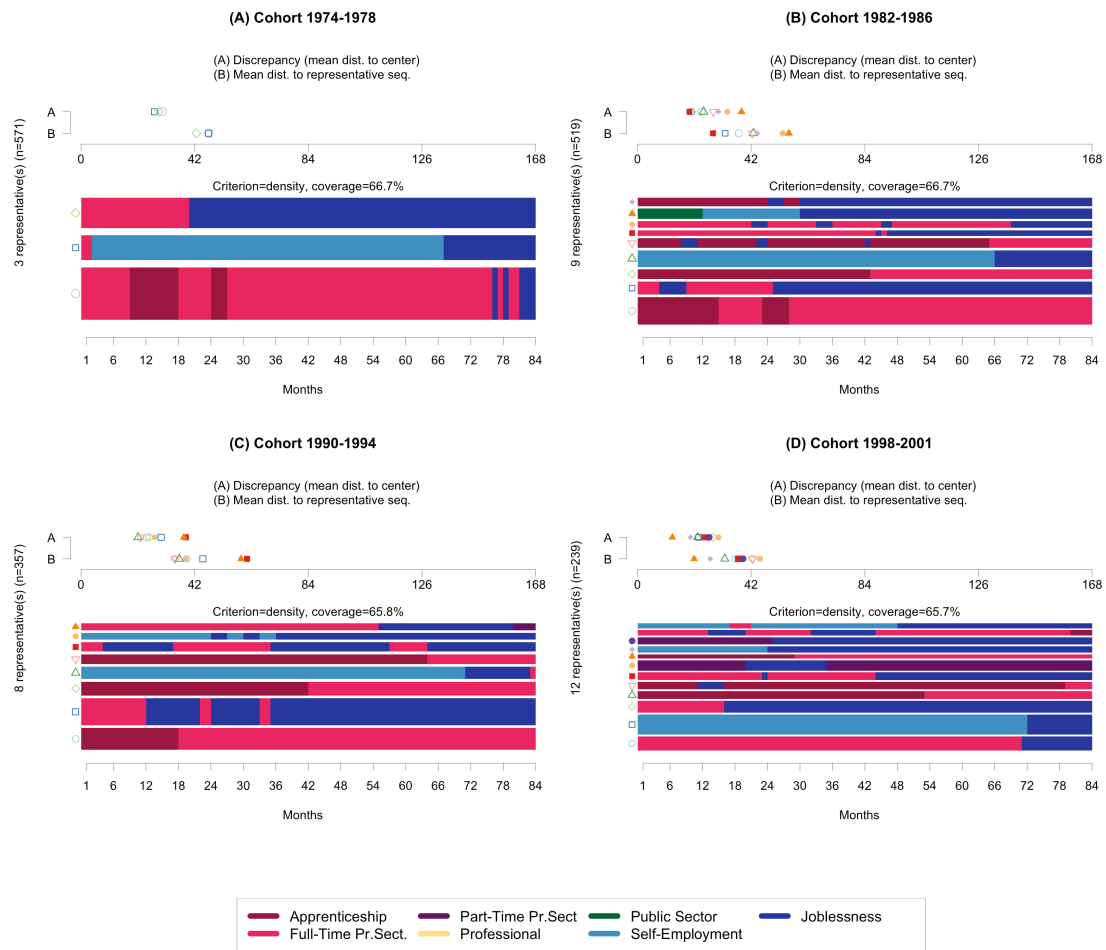Figure 5.9: Representative sequences by cohort - Women, upper secondary education. Source: AD-Silc data, author's calculations.

The plots show a gradual increase in the number of representatives across cohorts. Transitions from/to full-time jobs in the private sector and joblessness are the most frequent for all the cohorts. The most crucial change concerns the fact that the representative sequences for the first two cohorts (1974-1978 and 1982-1986) have full-time jobs in the private sector and joblessness as their main statuses, while the last two cohorts' (1990-1994 and 1998-2001) more frequent representative sequences start with apprenticeship and continue with full-time employment in the private sector.

For all the cohorts, at least one representative sequences is based on (more or less long-lasting) episodes of employment in the public sector and – starting from the second cohort onwards – additional sequence based on self-employment. The changes across cohorts for this subpopulation could be easily interpreted as part of a process of increasing opportunities over time: firstly, in terms of states experienced (self-employment starting from the second cohort, part-time for the fourth cohort and especially apprenticeship starting from the third cohort); secondly, because of a decrease in the overall time spent in joblessness (as also seen in Table 5.3) and in the share of sequences whose representative sequences end up in long periods in joblessness.

If we then consider the representative sequences of women who obtained a tertiary degree (Figure 5.10), the cross-cohort trend is fairly the same compared to the trend for women with an upper secondary degree. In fact, an increase in the number of representative sequences and in their variety can be found, as well as an overall decrease in time spent in joblessness for the third and the fourth cohorts (1990-1994 and 1998-2001). In fact, in the case of the first cohort, two out of three representative sequences and all of the representative sequences for the second cohort end in joblessness.

What should also be included as evidence is the higher complexity of individual trajectories in terms of states throughout the same sequence when we move from the second to the following cohorts. This last point mirrors what has already been suggested by the increase in the number of states (Figure 5.3) and of transitions (Figure 5.2). However, what Figure 5.10 adds is that this is mainly due to: i) the new opportunity connected to the employment as professional (without any interruptions) and part-time (even if scarce), ii) a decrease in trajectories build up with public sector (differently from the second cohort, 1982-1986) and iii) the presence of patterns made out of more than two states (for the last cohort, 1998-2001).

Finally, it is worth highlighting that at least one of the representative sequences for each cohort contains only full-time employment in the private sector, although always interrupted by one or more joblessness episodes.
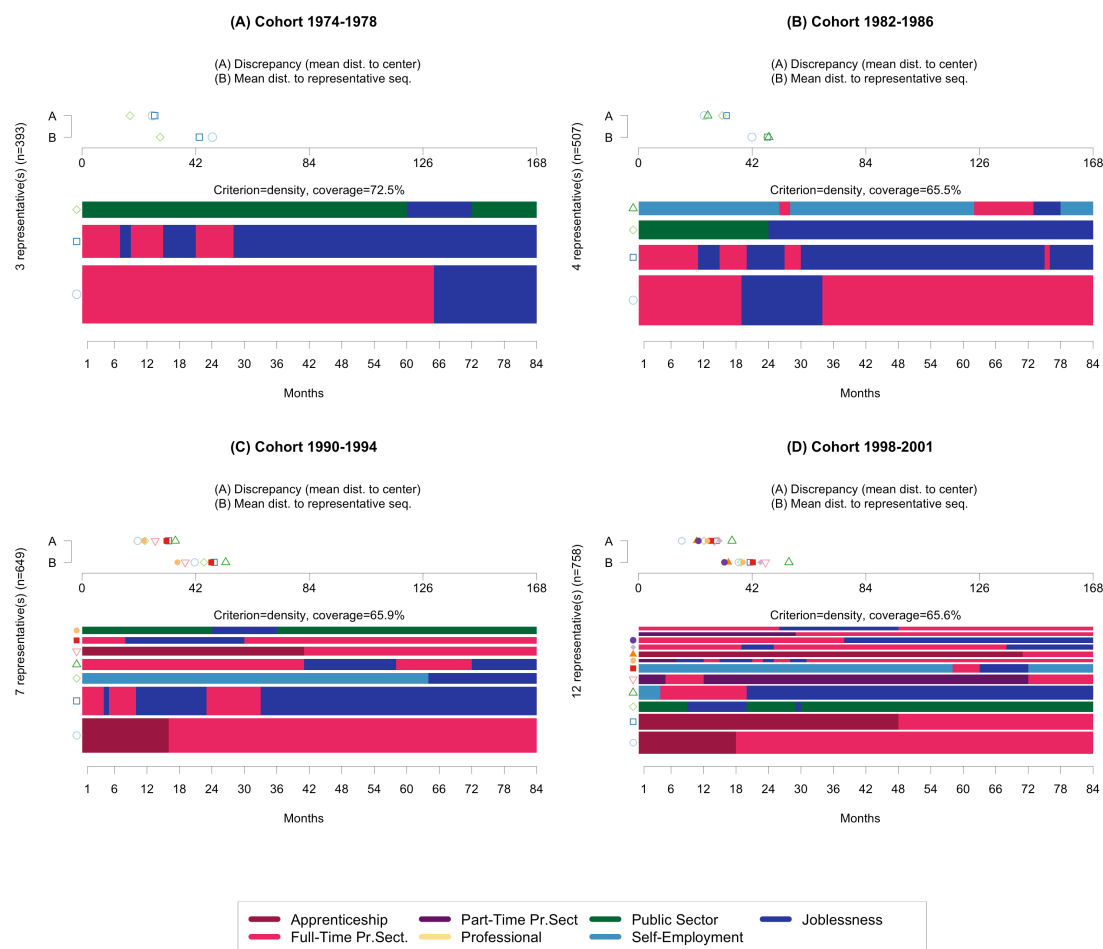
Figure 5.10: Representative sequences by cohort - Women, tertiary education. Source: AD-Silc data, author's calculations.

The representative sequences for men with a lower secondary qualification (Figure 5.11) show a great within-sequence complexity, as expected given the results of the complexity measure and the discrepancy analysis. The number of representative sequences increases across cohorts but fragmentation due to repeated and relatively long joblessness episodes remains as a main characteristic of each set of sequences.

However, joblessness episodes are less pervasive than in the representative sequences for women with the same educational level. Apprenticeship is the starting point for at least one representative sequence, but starting from the second cohort (1982-1986) it becomes one of the prevalent entry states, together with full-time employment in the private sector. The overview in Table 5.3 has already shown already the increase in time spent in apprenticeship, but what representative sequences add is the information about what happens afterwards. In fact, the majority of the representative sequences that start

Figure 5.11: Representative sequences by cohort - Men, lower secondary education. Source: AD-Silc data, author's calculations.

with a period spent in apprenticeship continue in most of the cases with full-time jobs in the private sector alternating with joblessness episodes.

A representative sequence based on self-employment is always present as well in each cohort's set, but once again they are not stable trajectories, since they are interrupted by joblessness episodes. Finally, the number of representative sequences ending in joblessness increases across cohorts, but when we look at the stripes' thickness the share of sequences that they represent does not change.

If we now move to the representative sequences for men who have an upper secondary qualification (Figure 5.12) the overall picture changes. Firstly, the increase in the number of representative sequences across cohorts is sharper, especially when we consider the shift between the first and the second/third cohorts and from the latter to the fourth. Moreover, a clear-cut difference concerns the most representative sequence. In fact, for

Figure 5.12: Representative sequences by cohort - Men, upper secondary education. Source: AD-Silc data, author's calculations.

the first three cohorts (1974-1978, 1982-1986 and 1990-1994) the most representative sequence starts with an episode of full-time employment in the private sector, followed by a relatively long episode of joblessness that after more than one year changes again into full-time employment for the rest of the time span.

A more negative sequence in terms of labour force attachment is present in the first three cohorts representative sequences' sets: it starts with full-time employment and after more or less one year it switches to joblessness until the end of the observational window. The share of individual's sequences that are represented by this sequence decreases across cohort, but for the last cohort (1998-2001) these sequences are also the more fragmented and composed by more states than the representative sequences for the previous cohorts.

In fact, an increase in apprenticeship can be found – since three out of the eight

representative sequences contain it – and episodes of employment in public sector and part-time jobs in the private sector appear setting new pattens. This mirrors what we have already seen by considering the increase in the number transitions between state (see Figure 5.2) and the decrease in the number of individual who did not experience transitions throughout their trajectory (see Table 5.4).

The increase in the number of states when we move from the first cohort (1974-1978) to the fourth (1998-2001) is something that Figure 5.3 has already suggested, but what we could argue now is that the supplementary episodes of apprenticeship and of employment in the public sector represent an increase in the opportunity structure for workers having an upper secondary qualification. This is especially true in the case of employment in the public sector, since it does not appear as a single episode through sequences made out of other work states, but it rather establishes a new available pathway for medium-skilled men belonging to the last cohort, compared to both less-skilled men than to men with the same educational level belonging to the older cohorts. Nevertheless, at least one common feature should be highlighted, since one sequence for each cohort starts with full-time employment in the private sector and soon switches to self-employment for the rest of the time considered.

Finally, for highly-skilled men (Figure 5.13) the most clear change is represented by the decrease in joblessness at the very beginning of individual trajectories. In fact, when we look at the fourth cohort's representative sequences, that occurs only in correspondence of the last of the seven years considered. In contrast, an increase across cohorts in full-time work in the private sector and in employment in general occurs. The last cohort (1998-2001) is the more differentiated in terms of states: a new sequence made out of self-employment appears in this set of representative sequences, as well as another one based on employment in the public sector, which was in the set for the second cohort already, but disappeared in the third cohort's set. Employment in the public sector is nevertheless far from being as much as for women with the same educational level, who have more differentiated and fragmented pathways especially when we compare the last two cohorts (1990-1994 and 1998-2001).
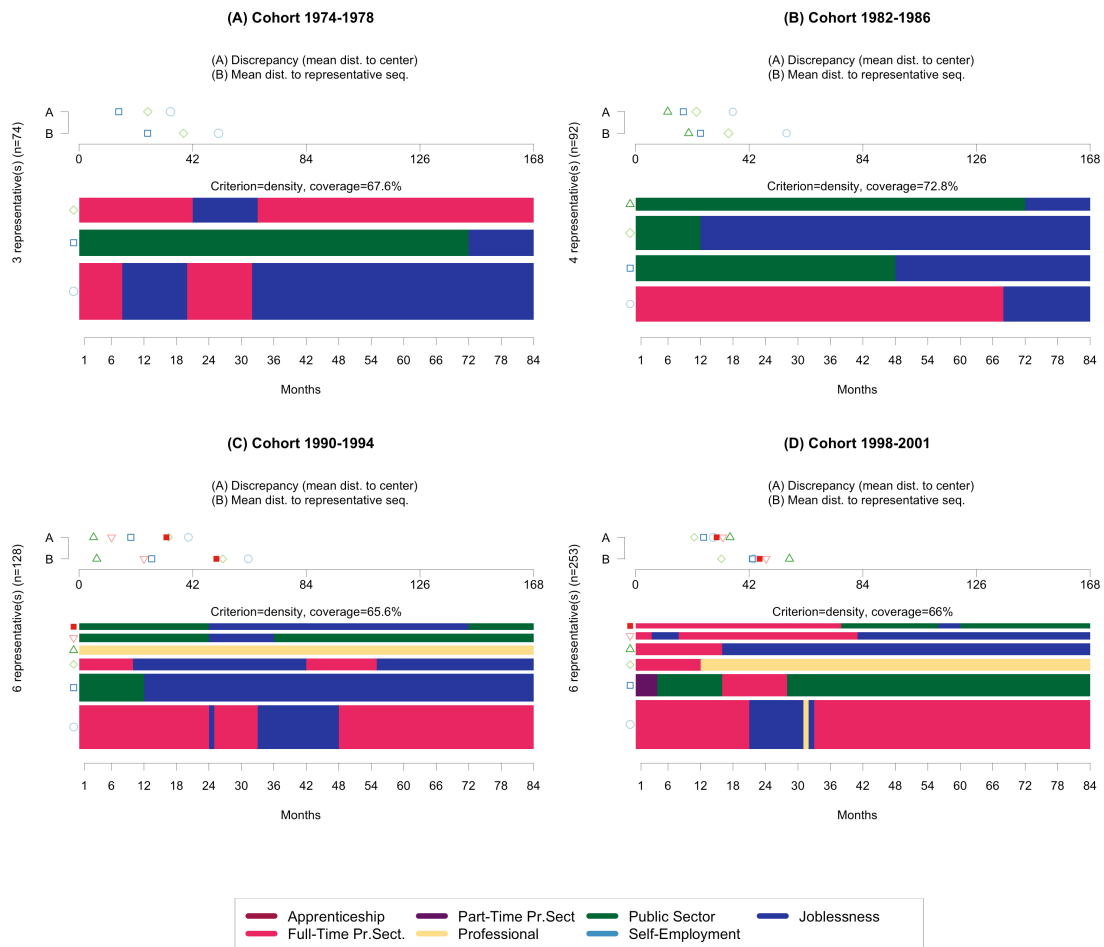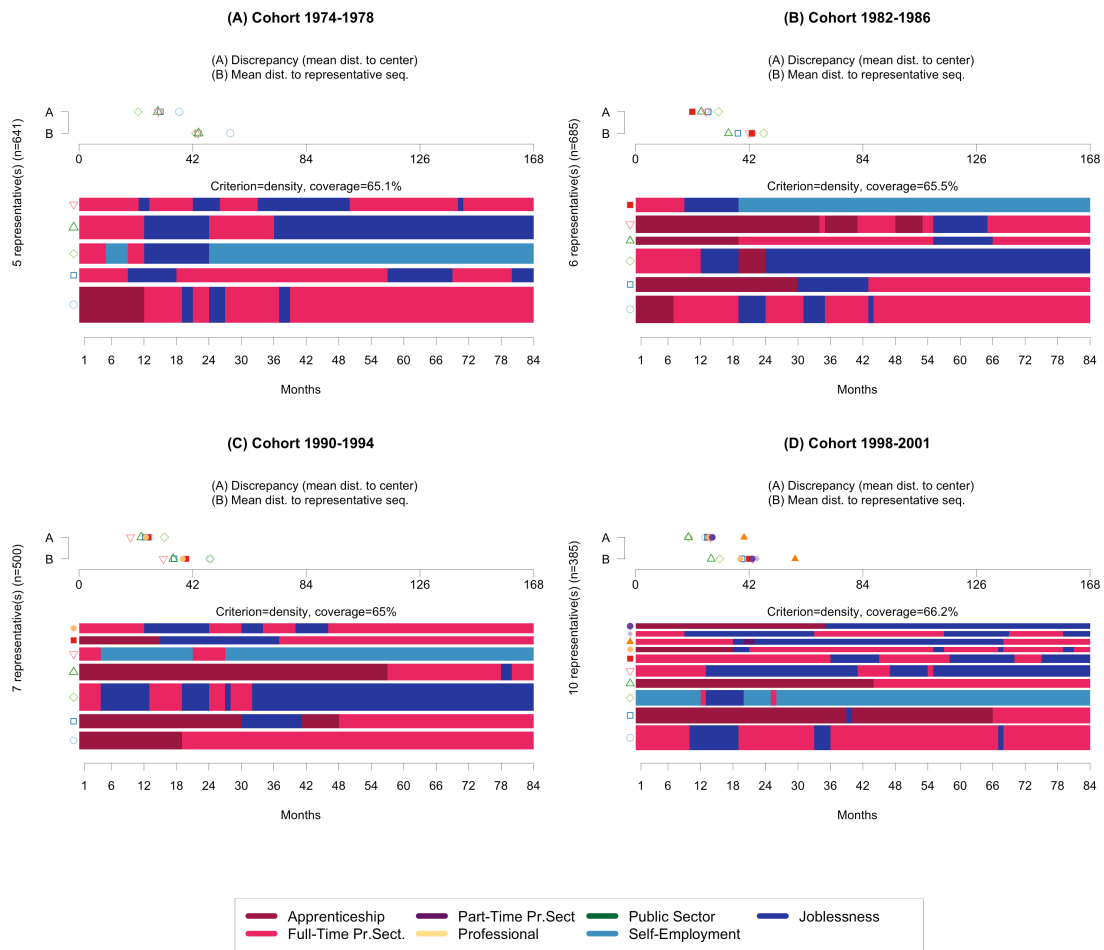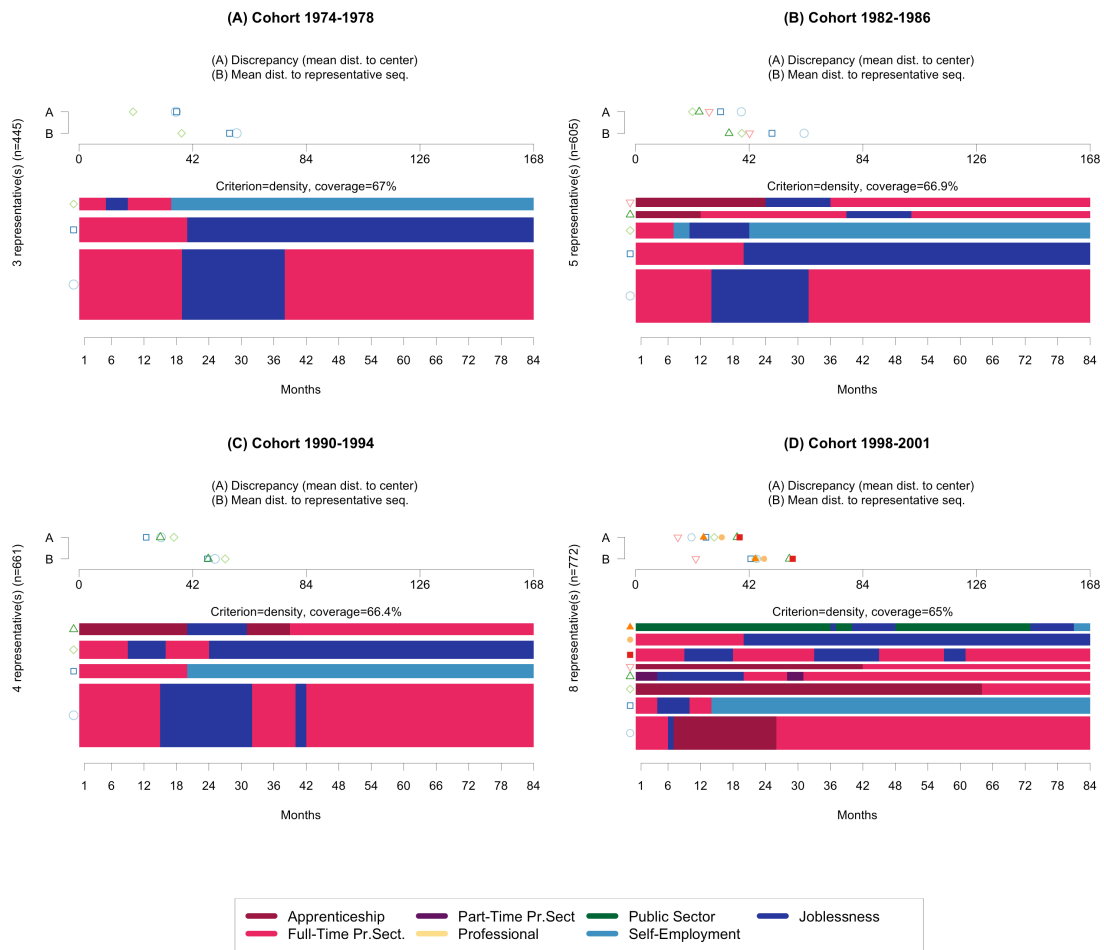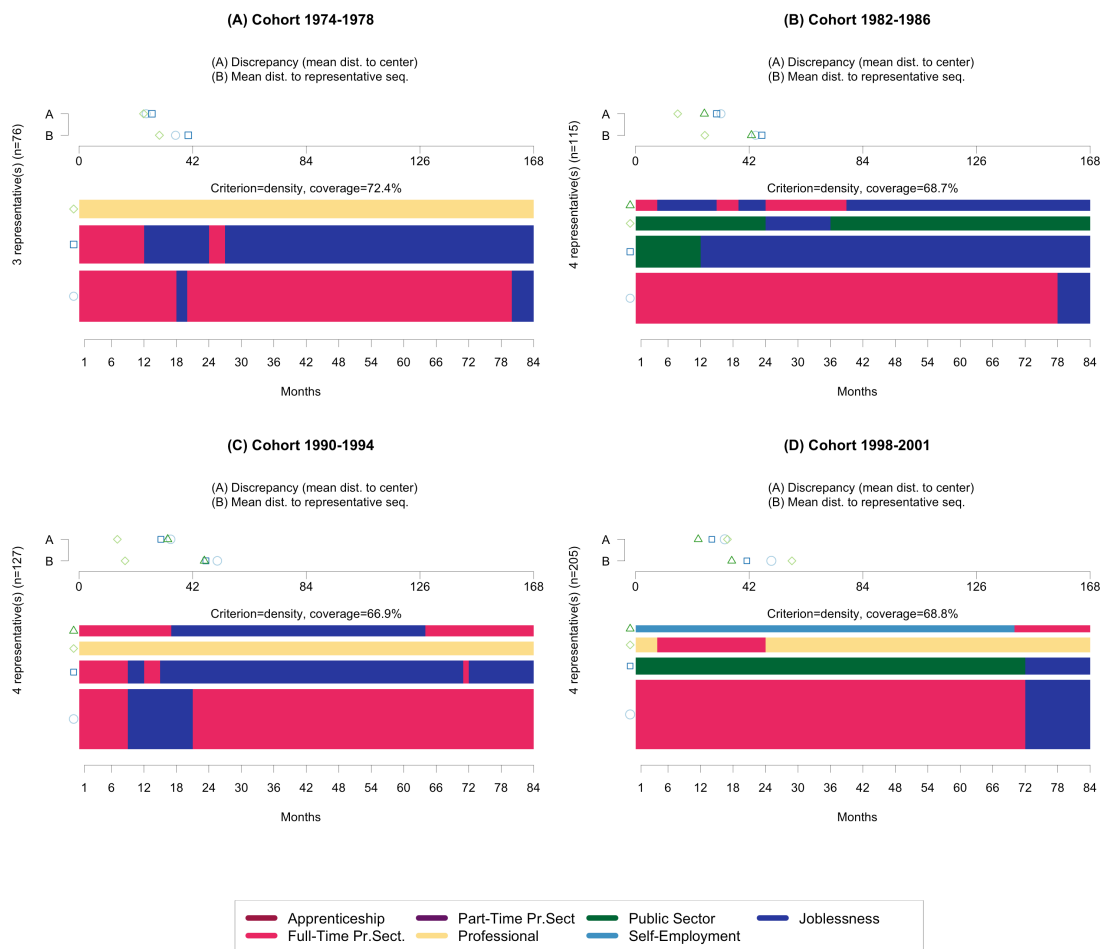
Figure 5.13: Representative sequences by cohort - Men, tertiary education. Source: AD-Silc data, author's calculations.

Summing up the evidence collected by looking at the sets of representative sequences by gender, education and cohort of entry within the labour market, what is clear-cut is that joblessness episodes during the seven year considered seem to be more randomly and pervasively distributed than expected for all the four cohorts. Joblessness episodes occur both for men and women throughout sequences at any point in time for a huge share of individuals and especially for those who have a full-time work oriented trajectory. This can not be straightforwardly assumed as being a women-related issue connected to having children, and consequently exiting from the labour market.

The results from both the discrepancy analysis and the identification of the representative sequences support *Hypotheses 2a* and *2b*: a general increase in differentiation and destandardization of early careers exists for both women and men, but women always show more pronounced growth between sequences variability across cohorts than men do.

Moreover, education strongly affects the characteristics of the destandardization process. Firstly, low and medium-skilled individuals are those more exposed to higher volatility and variability of individual trajectories according to a number of indicators. Secondly, given the fact that I observe four cohorts of entry within the labour market and since it implies that individuals can suffer the consequences of very different economic cycles, the distribution of joblessness across cohorts can not be entirely explained by this this contingent factor. This suggests episodes of joblessness are also structural features of trajectories characterized by long periods spent in full-time jobs in the private sector.

This is the reason why policies should address even more the issue of joblessness occurring in what can be considered a late phase of the early career. We could argue that a more uncertain period constellated by joblessness at the very beginning of individual trajectories can be assumed as acceptable because of a number of factors. However, this is no longer the case if we assess the presence of joblessness in a more advanced stage of the early career; in fact, the consequences of more disrupted patterns due to repeated joblessness episodes are likely to influence the timing of other life-course processes/events such as leaving the parental home, getting married or having children (Spini et al., 2013; Blossfeld et al., 2005b; Mills et al., 2005; Krüger, 2003).

The data used here do not disclose information regarding the nature of these interruptions, that is whether interruptions are due to the natural end of a temporary contract than the early cessation of an open-ended contract. Nevertheless these interruptions – even long-lasting ones – in the late early-career are not protected because they often occur after periods that are too short to permit individuals to reach the threshold needed for receiving unemployment benefits.

5.4   Pathways leading to salient outcomes

This Section deals with the results of the analyses conducted in order to answer the third research question. The latter concerns the quantitatively and qualitatively changes potentially occurred across cohorts in the pathways leading to more or less favourable outcomes (namely having a full-time contract in the private sector and being in unemployment). Then, I propose one last analytical step that consists of considering if and possibly how the pathways leading to these salient outcomes at the end of the first seven years of labour market participation have changed over time.

As extensively explained in Chapter 4, I now switch to another definition of sequences by looking at the so-called event sequences. In fact, for the analyses presented in the previous Sections, I used sequences composed of 84 months, each one defined according to the position (state) individuals occupied within the labour market with correspondence to each single month. This implies that all the individual sequences have a lengths of 84 months. In contrast, I now consider sequences of different lengths because the event sequences (as shown in Figures 4.5 and 4.6) are not time-wise and months spent in the same state are condensed into one single event. Consequently, for example sequence 1

in Figure 4.5 is three-events long because that particular individual entered the labour market as a self-employed person (event number 1), changed to a full-time job in private sector (event number 2) and changed again to self-employment (event number 3). The more transitions experienced, the longer the sequence.

Also in this case, a more in depth analysis conducted by splitting the main women and men subsamples into subgroups according to education sheds light on substantive differences. This variability can be interpreted as a signal of different exposures to different kinds of vulnerability/instability according to a number of the pathway characteristics they are driven by. In fact, the degree of instability to which individuals belonging to certain subgroups are exposed depends on the number of transitions experienced, and between which and how many states, and the states duration.

Moreover the degree of instability can change over time, and instability driven by certain factors can affect the pathways of higher/lower shares of individuals. The evidence collected thus far already gives some hints to define a picture of the distribution of this kind of instability (and eventually the consequent vulnerability) among individuals with different characteristics, but what the analysis of the pathways leading to salient outcomes such as full-time jobs in the private sector and joblessness add is a description of the evolution over time of the pathways individuals follow before reaching a more or less 'safe' position.

Tables 5.6 to 5.15 show a textual representation of the pathways leading to the outcomes of interests by gender, education and cohort of entry within the labour market. Due to the high in-groups variability, for the sake of simplicity and efficiency it is reasonable to reduce the number of pathways by selecting the most frequent pathways representing at least 50% of the subgroup considered. Event sequences that are not represented by those shown in the tables are more heterogeneous and contain a relatively higher number of transitions.

In fact, if we consider both the mean and the maximum number of transitions (columns from 7 to 9 in Tables 5.6 to 5.15) and we compare these values with the number of transitions shown by the textual representation of the 50% most frequent pathways in the third column in the same tables, we can see that the 50% most frequent patterns selected out of the entire set of sequences contain far fewer transitions than the the mean and the maximum values in columns 7 and 9[11].

Looking at Tables 5.6 to 5.15, the fourth column reports the number of patterns that constitute the 50% most frequent patterns for each subsample defined in the third

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[11]Even though the above data are not sufficient to fully justify this statement, an additional indicator could also be the number of transitions out of each complete subgroup (8th column in Tables 5.6 to 5.15) that have lower maximum values. A full description accounting for these features could be provided by a more complex representation by showing all the pathways. However, this does not add any useful information to capture the dynamics of changes over time. Furthermore, since I am referring to sequences of different lengths, even extracting representative sequences (as I did state sequences in the previous Subsection of this Chapter) would not be of some help in order to summarize substantial results. In fact, a distance matrix computed by using sequences of different lengths implies a number of assumptions that possibly even further restrict what we can really obtain on a substantive level (Lesnard, 2006). This kind of choices should then depend on the substantive research interest.

column; column number 5 reports the share of sequences ending in full-time employment in the private sector or in joblessness for each subgroup (showing for example how many sequences end in full-time jobs in the private sector out of the overall number of sequences for women with a lower secondary qualification belonging to the first cohort); finally, the total number of sequences for each subgroup is recorded in the sixth column.

5.4.1 Pathways leading to full-time employment

The first salient outcome I consider is being in a full-time job in the private sector in the seven years time-span. Looking at the top section in Table 5.6 and 5.7, some general common trends can be found for women and men. The number of patterns leading to full-time employment increases slightly across cohorts as well as the maximum number of transitions for the overall subsamples, but this could not be consider as a proper trend.

The share of individuals who end up in this state by the end of the 84 months considered does not change significantly, but the share of men ending up in full-time positions is always higher than women irrespective of the cohorts of entry. If we now consider the pathways, stability in full-time jobs in the private sector prevails as the most frequent pattern for men and women and for all cohorts. This follows the sequential combination of full-time employment in the private sector and joblessness. Apprenticeship appears in the list of pathways starting only from the second cohort (1982-1986), again without gender differences. In contrast, part-time employment in the private sector is one of the starting states for a pathway leading to full-time jobs in the private sector only for women belonging to the last cohort.

As previously highlighted, some features of the evolution that influence the ways in which individuals access a full-time job in the private sector at the end of the period considered change partially depending on education.

I will now consider separately women and men by focusing on differences driven by educational levels.

To start with, Table 5.6 shows a significant decrease across cohorts in the percentage of lower-skilled women who held a full-time job in the private sector at the end of the observation window. In contrast, a significant increase exists for those with a tertiary degree, while the share does not change for medium-educated individuals.

For women with a lower secondary qualification, stability in full-time jobs in the private sector is one of the most frequent patterns for all the cohorts. Moreover, there is an increase across cohorts in longer pathways composed of alternate periods in full-time employment and joblessness.

Education	Cohort	Pathway*	N. pathways	% ending in full-time empl.	N. subsample	N. of transitions** Min.	N. of transitions** Mean	N. of transitions** Max
All	1974-1978	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	36.7	1,038	0	2.1	19
	1982-1986	PRIVSEC.FT APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	3	40.2	1,118	0	2.7	21
	1990-1994	PRIVSEC.FT APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	3	39.9	1,134	0	2.7	21
	1998-2001	PRIVSEC.FT APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.PT – PRIVSEC.FT	4	39.3	1,250	0	2.7	27
Lower secondary	1974-1978	PRIVSEC.FT APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT	5	35.7	517	0	3.1	18
	1982-1986	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – JOBLESS – APPR – PRIVSEC.FT APPR – PRIVSEC.FT	4	41.0	519	0	3.5	20
	1990-1994	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT	4	38.1	357	0	3.4	16
	1998-2001	PRIVSEC.FT APPR – JOBLESS – APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT – APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT	5	27.6	329	0	4.9	21
Upper secondary	1974-1978	PRIVSEC.FT	1	41.7	393	0	2.1	13
	1982-1986	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	42.4	507	0	2.3	17
	1990-1994	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT	3	43.9	649	0	2.8	20
	1998-2001	PRIVSEC.FT APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.PT – PRIVSEC.FT	4	43.1	758	0	3.3	26
Tertiary	1974-1978	PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	17.6	74	1	2.4	12
	1982-1986	PRIVSEC.FT	1	22.8	92	0	1.7	6
	1990-1994	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	25.0	128	0	2.8	14
	1998-2001	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	38.7	253	0	3.3	10

Table 5.6: Pathways leading to full-time employment - Women. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

Stability in full-time jobs is also one of the most frequent patterns for all the cohorts of women with an upper secondary qualification – and it is the only one for the first cohort. Furthermore, for this subgroup an increase in the maximum number of transitions should be pointed out. A new pattern emerges for the last two cohorts (1990-1994 and 1998-2001), as apprenticeship appears as the starting point, and individuals than move from this state to full-time employment in the private sector and to joblessness. Moreover, part-time employment in the private sector is the starting point of one of the most frequent patterns for only the last cohort (1998-2001).

Finally, highly-educated women's pathways show stability with full-time jobs in the private sector and this is the prevalent pathway (with the only exception of the first cohort that has more disrupted patterns). Nevertheless, the other most frequent patterns are constituted only by alternating episodes of full-time employment and joblessness.

For men, the data show slightly different dynamics (Table 5.7). In fact, to start with, men with a lower secondary qualification show no across-cohort trends in the share of individuals in full-time jobs in the private sector at the end of the first seven years of labour market participation. However, the cross-cohort comparison is characterized by an increasing number of pathways that start with a period in apprenticeship followed by more and more transitions between full-time jobs in the private sector and joblessness. As for women, for all the cohorts many pathways include apprenticeships that are followed by full-time jobs in the private sector and, occasionally, some pathways lead to a sequence of alternating episodes of joblessness and full-time jobs. However, in contrast to women with a corresponding educational level, men with a lower secondary qualification from cohort 1998-2001 experienced longer pathways composed of transitions between periods in full-time employment in the private sector and in joblessness.

When we move onto men with an upper secondary qualification, a considerable increase in the number of individuals reaching in full-time employment in the private sector is detected only for the third cohort (1990-1994). However, there are two main common features of all the four cohorts: the first one is stability in full-time employment along the entire period considered, the second one is the pattern that starts with a full-time job followed by an episode of joblessness, and then by a full-time job in the private sector again.

Education	Cohort	Pathway*	N. pathways	% ending in full-time empl.	N. subsample	N. of transitions** Min.	Mean	Max
All	1974-1978	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT	3	49.1	1,162	0	2.9	17
	1982-1986	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT – JOBLESS – PRIVSEC.FT	4	52.2	1,405	0	3.1	17
	1990-1994	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – JOBLESS – APPR – PRIVSEC.FT APPR – PRIVSEC.FT	4	56.0	1,288	0	2.8	19
	1998-2001	PRIVSEC.FT APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – JOBLESS – APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT	5	51.3	1,362	0	2.9	20
Lower secondary	1974-1978	PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT	4	47.0	641	0	4.6	16
	1982-1986	APPR – PRIVSEC.FT PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – JOBLESS – APPR – PRIVSEC.FT	4	55.5	685	0	4.0	20
	1990-1994	APPR – JOBLESS – APPR – PRIVSEC.FT PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT APPR – PRIVSEC.FT – JOBLESS – PRIVSEC.FT	5	52.8	500	0	4.5	18
	1998-2001	PRIVSEC.FT APPR – PRIVSEC.FT APPR – PRIVSEC.FT – JOBLESS – APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – JOBLESS – APPR – JOBLESS – APPR – JOBLESS – PRIVSEC.FT APPR – PRIVSEC.FT – JOBLESS – APPR – PRIVSEC.FT	8	47.0	385	0	4.2	19
Upper secondary	1974-1978	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	53.0	445	0	2.9	15
	1982-1986	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	51.6	605	0	2.8	16
	1990-1994	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	59.8	661	0	3.9	18
	1998-2001	PRIVSEC.FT APPR – PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT APPR – JOBLESS – APPR – PRIVSEC.FT	4	52.7	772	0	2.7	17
Tertiary	1974-1978	PRIVSEC.FT	1	43.4	76	0	1.8	7
	1982-1986	PRIVSEC.FT	1	35.7	115	0	2.2	8
	1990-1994	PRIVSEC.FT	1	48.8	127	0	3.0	14
	1998-2001	PRIVSEC.FT PRIVSEC.FT – JOBLESS – PRIVSEC.FT	2	54.1	205	0	2.7	14

Table 5.7: Pathways leading to full-time employment - Men. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

As a matter of fact, the most frequent pathways for the first three cohorts are exactly the same, while for the last cohort (1998-2001) apprenticeship is a starting point for the first time. These pathways are also almost the same as women's pathways (except that part-time work is also included as a starting point in the patterns for the last cohort).

Stability in full-time employment is a crucial feature of men with a tertiary degree patterns. In fact, stability in full-time work is the only pattern for the first three cohorts (1974-1978,1982-1986 and 1990-1994) and it is the most frequent among the two sequences individuated for the fourth cohort (1998-2001). For this subgroup a quite clear increase in the share of individuals being in full-time jobs in the private sector at the end of the seventh year of labour market participation exists. This trend mirrors the women's trend, but – as mentioned already – fewer women are in full-time jobs in the private sector than men for each cohort-wise comparison.

For example, the 54.1% of men who belong to the last cohort and who have a tertiary degree are in a full-job at the end of the observation window *versus* the 38.7% of the women with the same education and from the same cohort. Moreover, men stay in this state for the whole 84 months considered[12]. An even greater variance exists if we compare the values for the first cohort: 43.4% of highly-skilled men *versus* 17.6% of highly-skilled women are in full-time jobs at the end of the period considered, furthermore for most women this is a state that comes after at least one joblessness episode. Moving back to men, the higher-skilled subgroups experience relatively fewer transitions compared to lower-skilled individuals.

To conclude, when comparing men and women according to educational level and cohort of entry, the share of those whose last episode was a full-time job in the private sector is always smaller for women than for men. Moreover, regarding highly-skilled workers, women's pathways leading to full-time employment include much more jobless-ness episodes than men's pathways.

5.4.2 Pathways leading to joblessness

In the previous Subsection I have considered the outcome that can be seen as one of the most desirable – that is full-time employment in the private sector – according to different parameters concerning the most favorable conditions for labour market participation. In contrast, joblessness can be seen as the most undesirable state exactly for the opposite reasons. As previously pointed out, setting the end of the 'early career' after 84 months from the first working episode is arbitrary (even though literature on this point is diffuse, as shown in Chapter 3). However, instead of considering the transition rate between different states considering two points in time, my contribution consists, first of all, in looking at the (most frequent) pathways leading to a particularly disadvantageous status for a worker, and then in considering how their features have changed over time. This last point is especially important when considering joblessness

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[12]It is worth pointing out once again that this does not mean that individuals did not change jobs in the forms of job-to-job transition within or between firms, but that they did not experience any kind of interruption, e.g. a joblessness episode between two full-time jobs.

because changes in the degree of vulnerability also occurring as a consequence of the repeated experience of more or less enduring joblessness episodes.

To start with, Table 5.8 shows the pathways leading to joblessness for the all-women subsample. The number of patterns increases across cohorts but especially for the last cohort (1998-2001). In contrast, the share of individuals being in joblessness at the end of the time span considered decreases when we move from the older to the younger cohorts (from 42.8% to 22.6%). For men (Table 5.9) the increase across cohorts in the number of pathways covering at least the 50% of the subsample and ending in joblessness is less pronounced than for women, but the share of individuals increases significantly instead (from 29.9% to 37.3%). Both for men and women, the 'full-time job in the private sector–joblessness' pattern is the most frequent (often followed by its sequential combination) and the length of the patterns progressively increases as we move from the first to the last cohort.

For women, this implies that – even though individuals belonging to the last cohort are less likely than those belonging to the previous ones of being in joblessness at the end on the seventh year of labour market participation – they can reach this unfavorable state in many different and complex ways, by passing through a higher number of different states and experiencing a huge number of transition during only 84 months. In other words, if it is true that a smaller number of workers are likely to experience these pattens, the latter are nevertheless the most difficult to face with because of the repeated transitions between different states (especially because joblessness is one of the most frequent states and it is highly likely not to be covered by unemployment benefits).

A new form of vulnerability seems to emerge for the last cohort of workers, less diffuse but confronted by several obstacles that undermine a stable participation/presence within the labour market. Not exactly the same applies to men. In fact, the number of patterns for the last cohort is half of women's and it is not much different from the previous cohorts' values also in terms of the number of transitions in and out joblessness (and consequently in terms of pathways length).

Furthermore, the share of individuals being in joblessness at the end of the 84 months increases over time. In this case an increasing number of individuals are exposed to unfavorable pathways although they are less differentiated. However, do all women and men share the same across cohorts evolution in terms of likelihood of ending up in joblessness and of being exposed to a higher number of potential unfavorable pathways? Education turns out to be, once again, a major factor of differentiation.

Cohort	Pathway*	N. pathways	% ending in joblessness	N. subsample	N. of transitions**		
					Min.	Mean	Max
1974-1978	PRIVSEC.FT – JOBLESS	3	42.8	1,038	1	2.6	16
	PUB – JOBLESS						
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS						
1982-1986	PUB – JOBLESS	4	38.4	1,118	1	3.0	29
	PRIVSEC.FT – JOBLESS						
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS						
	SELF – JOBLESS						
1990-1994	PRIVSEC.FT – JOBLESS	6	30.8	1,134	1	3.3	19
	SELF – JOBLESS						
	PUB – JOBLESS						
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS						
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS						
	PRIVSEC.PT – JOBLESS						
1998-2001	PRIVSEC.FT – JOBLESS	14	22.6	1,250	1	4.3	21
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS						
	SELF – JOBLESS						
	PRIVSEC.PT – JOBLESS						
	APPR – PRIVSEC.FT – JOBLESS						
	PRIVSEC.PT – JOBLESS – PUB – JOBLESS						
	PUB – JOBLESS – PUB – JOBLESS						
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS						
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS						
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.PT – JOBLESS						
	APPR – JOBLESS – PRIVSEC.PT – JOBLESS						
	PRIVSEC.FT – JOBLESS						
	APPR – JOBLESS – SELF – JOBLESS						
	PRIVSEC.FT – JOBLESS – SELF – JOBLESS						
	PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS						

Table 5.8: Pathways leading to joblessness – Women. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

Cohort	Pathway*	N. pathways	% ending in joblessness	N. subsample	N. of transitions**		
					Min.	Mean	Max
1974-1978	PRIVSEC.FT – JOBLESS PUB – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – – PRIVSEC.FT –JOBLESS	4	29.9	1,162	1	3.8	28
1982-1986	PUB – JOBLESS PRIVSEC.FT – JOBLESS PROF – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – – PRIVSEC.FT –JOBLESS	5	28.0	1,405	1	3.3	16
1990-1994	PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – – PRIVSEC.FT –JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – JOBLESS – PRIVSEC.FT – JOBLESS SELF – JOBLESS PUB – JOBLESS	7	33.5	1,288	1	4.1	17
1998-2001	PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PUB – JOBLESS PUB – JOBLESS – PUB – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – – PRIVSEC.FT –JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – – PRIVSEC.FT – – JOBLESS – PRIVSEC.FT – JOBLESS SELF – JOBLESS	7	37.3	1,362	1	4.0	20

Table 5.9: Pathways leading to joblessness - Men. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

To start with, I consider the pathways followed by women with a lower secondary qualification (Table 5.10). Despite the absence of significant changes in the percentage of this subgroup of women who are in joblessness at the end of the seven years, some differences exist when we move from one cohort to another. Firstly, apprenticeship and part-time jobs in the private sector are only the starting states for the second cohort and the fourth cohort respectively. Furthermore, a modest increase in the number of pathways can be found when we move from the first to the fourth cohort. In contrast, some other features are steady to a certain degree. In fact, the sequence 'full-time job in the private sector–joblessness' is one of the most frequent for all the cohorts. Moreover, this same sequence becomes a crucial subsequence for a number of other pathways that are, in fact, constituted by several transitions between these two states in a row. In addition to that, the number of transitions increases when we move towards the younger cohort (1998-2001). Finally, the pattern 'self-employment–joblessness' is also always present in every cohort's set of most frequent pattern to joblessness.

In contrast to low-skilled individuals, the cross-cohort comparison concerning women with an upper secondary qualification (Table 5.11) reveals a considerable linear increase in the number of patterns when moving from the first to the fourth cohort. Starting with the features that do not change over time, the transition from employment in the public sector and joblessness constitutes one of the most frequent patterns for the first three cohorts (1974-1978, 1982-1986 and 1990-1994) and it is also part of the last cohort's set. Similarly, this also applies to the transition between full-time job in the private sector and joblessness, and to its repeated sequential combinations. In contrast, some transitions only appear for the last cohorts: for example 'apprenticeship–joblessness' if only one of the most frequent pathway only for the cohorts 1990-1994 and 1998-2001; 'self-employment–joblessness' is only a frequent pattern for the third cohort; 'part-time job in the private sector–joblessness' only appears for the fourth.

For women with a tertiary degree (Table 5.12), the transition 'employment in the public sector–joblessness' is always the most (or at least one of the most) frequent patterns leading to joblessness. The transition from full-time job to joblessness is also present for all the cohorts and it is one of the most frequent, including its sequential combination. A linear increase in the number of pathways can be found when we move from the first to the fourth cohort (1998-2001). For the latter, the 'apprenticeship–joblessness' transition becomes part of the set of patterns, also in various combinations with full-time job in the private sector.

Cohort	Pathway*	N. pathways	% ending in joblessness	N. subsample	N. of transitions**		
					Min.	Mean	Max
1974-1978	PRIVSEC.FT – JOBLESS SELF – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS	4	40.1	571	1	3.1	15
1982-1986	PRIVSEC.FT – JOBLESS SELF – JOBLESS APPR – PRIVSEC.FT – JOBLESS PUB – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – JOBLESS APPR – JOBLESS – PRIVSEC.FT – JOBLESS	7	37.0	519	1	3.5	28
1990-1994	PRIVSEC.FT – JOBLESS SELF – JOBLESS APPR – JOBLESS PUB – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS	7	36.4	357	1	3.4	18
1998-2001	SELF – JOBLESS PRIVSEC.FT – JOBLESS PRIVSEC.PT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – PRIVSEC.FT – JOBLESS APPR – JOBLESS-SELF – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – SELF – JOBLESS PRIVSEC.PT – JOBLESS – PRIVSEC.PT – JOBLESS PRIVSEC.FT – JOBLESS – SELF – JOBLESS	10	38.1	239	1	4.9	20

Table 5.10: Pathways leading to joblessness - Women, lower secondary education. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

Cohort	Pathway*	N. pathways	% ending in joblessness	N. subsample	N. of transitions**		
					Min.	Mean	Max
1974-1978	PUB – JOBLESS PRIVSEC.FT – JOBLESS	2	43.3	*393*	1	2.1	9
1982-1986	PUB – JOBLESS PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS	3	36.3	*507*	1	2.8	17
1990-1994	PRIVSEC.FT – JOBLESS PUB – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS SELF – JOBLESS PRIVSEC.PT – JOBLESS APPR – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS	7	26.8	*649*	1	3.3	16
1998-2001	PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.PT – JOBLESS APPR – PRIVSEC.FT – JOBLESS SELF – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS PUB – JOBLESS PUB – JOBLESS – PUB – JOBLESS APPR – JOBLESS PRIVSEC.PT – JOBLESS – PRIVSEC.PT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.PT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT PRIVSEC.PT – JOBLESS PRIVSEC.PT – PRIVSEC.FT	13	20.7	*758*	1	3.3	18

Table 5.11: Pathways leading to joblessness - Women, upper secondary education. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

Cohort	Pathway*	N. pathways	% ending in joblessness	N. subsample	N. of transitions**		
					Min.	Mean	Max
1974-1978	PUB – JOBLESS PRIVSEC.FT – JOBLESS	2	60.8	74	1	2.4	9
1982-1986	PUB – JOBLESS	1	57.6	92	1	1.7	11
1990-1994	PUB – JOBLESS PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PUB – JOBLESS – PUB – JOBLESS SELF – JOBLESS	5	35.2	128	1	2.8	13
1998-2001	PRIVSEC.FT – JOBLESS PUB – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.PT – JOBLESS APPR – JOBLESS APPR – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – JOBLESS – PRIVSEC.FT – JOBLESS – – PRIVSEC.PT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – – PUB – JOBLESS	8	13.8	253	1	3.3	12

Table 5.12: Pathways leading to joblessness - Women, tertiary education. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

Pathways leading to unemployment differ only partially for men when considering different educational level. Firstly, if we consider men with a lower secondary qualification (Table 5.13), the transition between having a full-time job in the private sector and joblessness represents the most frequent pattern for all the four cohorts. The same applies to pathways having more than one transition in a row between these same states (full-time job in the private sector and joblessness). Moreover, the number of pathways involving 'full-time job–joblessness' transition increases for the younger cohort. This is also connected, on the one hand, to the general trend that affects the maximum number of transitions that decreases across cohorts, and, on the other hand, to the absolute number of pathways leading to joblessness, which increases instead. Apprenticeship emerges as an important step towards joblessness from the second cohort onwards, while self-employment and employment in the public sector can be found only among the first and second cohorts' most frequent patterns. In contrast, for the last two cohorts (1990-1994 and 1998-2001) transitions from full-time job and apprenticeship to joblessness prevail.

The most frequent patterns to joblessness for men with an upper secondary qualification (Table 5.14) follows a similar evolution over time with respect to the transition 'full-time job in the private sector–joblessness'. Employment in the public sector is a starting point for the pathways leading to joblessness for all the cohorts. Moreover, self-employment and apprenticeship are only in the second and the third cohorts' most frequent patterns; professional employment can be found just in the second cohort's set of patterns.

The scenario for those with a tertiary degree (Table 5.15) differs considerably from what we have seen thus far. In fact, no differences exist between the first three cohorts (1975-1978, 1982-1986 and 1990-1994): full-time jobs in the private sector and employment in the public sector are the only two starting points preceding a single joblessness episode. The only exception is represented by the fact that the 'self-employment–joblessness' transition is one of the most frequent patterns for the first time for the third cohort (1982-1986).

To sum up, single-transition patterns are only found to be the most frequent pathways leading to joblessness for the first three cohorts. However, when we move to the last cohort (1998-2001), the set of patterns also includes another pathway composed by two transitions in and out of joblessness and full-time jobs in the private sector. Finally, the 'apprenticeship–joblessness' transition – which is often one of the most frequent patterns for all the cohorts regardless of education – appears only for the cohort 1998-2001. In general, this subgroup experiences comparatively lower numbers of maximum transitions compared to the lower-skilled's subgroups.

Cohort	Pathway*	N. pathways	% ending in joblessness	N. subsample	N. of transitions** Min.	Mean	Max
1974-1978	PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS SELF – JOBLESS PUB – JOBLESS	5	26.5	*641*	1	4.6	27
1982-1986	PRIVSEC.FT – JOBLESS SELF – JOBLESS APPR – PRIVSEC.FT – JOBLESS PUB – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – JOBLESS APPR – JOBLESS – PRIVSEC.FT – JOBLESS	7	23.1	*685*	1	4.0	28
1990-1994	PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – JOBLESS	6	23.0	*500*	1	4.5	16
1998-2001	PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.PT – JOBLESS APPR – JOBLESS – APPR – JOBLESS APPR – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS APPR – PRIVSEC.FT – JOBLESS	8	21.6	*385*	1	4.2	19

Table 5.13: Pathways leading to joblessness - Men, lower secondary education. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

Cohort	Pathway*	N. pathways	% ending in joblessness	N. subsample	N. of transitions**		
					Min.	Mean	Max
1974-1978	PRIVSEC.FT – JOBLESS PUB – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS	3	36.9	445	1	2.9	13
1982-1986	PRIVSEC.FT – JOBLESS PUB – JOBLESS PROF – JOBLESS	3	35.5	605	1	2.8	15
1990-1994	PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PUB – JOBLESS SELF – JOBLESS APPR – JOBLESS APPR – JOBLESS – PRIVSEC.FT – JOBLESS	7	43.1	661	1	3.9	13
1998-2001	PRIVSEC.FT – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS PUB – JOBLESS – PUB – JOBLESS SELF – JOBLESS APPR – JOBLESS – APPR – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS	6	42.4	772	1	2.7	19

Table 5.14: Pathways leading to joblessness - Men, upper secondary education. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

Cohort	Pathway*	N. pathways	% ending in joblessness	N. subsample	N. of transitions**		
					Min.	Mean	Max
1974-1978	PRIVSEC.FT – JOBLESS PUB – JOBLESS	2	17.1	*76*	1	1.8	8
1982-1986	PUB – JOBLESS PRIVSEC.FT – JOBLESS	2	18.3	*115*	1	2.2	9
1990-1994	PRIVSEC.FT – JOBLESS PUB – JOBLESS SELF – JOBLESS	3	25.2	*127*	1	3.0	15
1998-2001	PRIVSEC.FT – JOBLESS PUB – JOBLESS APPR – JOBLESS PRIVSEC.FT – JOBLESS – PRIVSEC.FT – JOBLESS	4	47.8	*205*	1	2.7	12

Table 5.15: Pathways leading to joblessness - Men, tertiary education. Results from the event sequence analysis. *Coverage: 50% minimum, sorted from the most frequent; **for the overall subsample. Source: AD-Silc data, authors' calculations.

Also in this case, some information on gender differences according to education could help to clarify some main points. In fact, women with a lower secondary qualification have a higher probability of being in joblessness compared to men, irrespective of the cohort. In contrast, women with an upper secondary qualification belonging to the older cohorts have a higher probability than men with the same educational level of being in the joblessness state at the end of the seventh year (36.9% for men *versus* 43.3% for women). However, the gap is minimized for the second cohort and the share for women decreases dramatically if we consider the third and the fourth cohorts. Conversely, for these last two cohorts of men, the trend for the percentage of individuals in joblessness is rather flat and considerably higher than the percentage for women.

Finally, for highly-skilled workers something similar happens. Indeed, looking at the first three cohorts, at the end of the period considered men have lower rates of joblessness episodes than women – even if men and women have different trends, weakly upward and downward respectively. Nevertheless, when we move to the fourth cohort (1998-2001) a dramatic increase for men and an analogous and pronounced decrease for women in the share of individuals in joblessness after seven years of labour market participation changes the previous configuration.

5.5   Summary and concluding remarks

This Chapter aimed to offer a broad overview of the comparison between different cohorts of workers who entered the labour market from the late 1970s to the early 2000s. The two main processes objects of my analyses were differentiation and destandardization of early careers, operationalized by considering the within and between individual sequences variations respectively (Aisenbrey and Fasang, 2010; Brückner and Mayer, 2005). Additional descriptive analyses accounting for more complexity were run to support the results obtained by using synthetic indeces, namely complexity and discrepancy measures. Analyses were run separately for the two genders: the results for the overall male and female samples were then expanded by considering education as a stratification variable.

Tables 5.16 and 5.17 report a summary of the main results. Differentiation was analyzed by using the complexity measure and by considering the number of months spent in each state, the number of transitions throughout the individual sequences, the share of individuals who never changed state, and the number of states throughout the individual sequences. Destandardization was primarily analyzed by computing the discrepancy, the measure for the degree of between-sequences difference. More qualitative information on the latter was provided by looking at the quantitative and qualitative changes in the representative sequences characteristics for each subpopulation of workers. The same was done by considering the pathways leading to full-time employment in the private sector and to joblessness.

The results confirm what I hypothesized (*Hypotheses 1a*, *1b*, *1c*, *2a*, and *2b*) regarding the characteristics of differentiation and destandardization evolution of early careers

pathways: in fact, an overall increase in differentiation and destandardization exists for both women and men, although to different extents. In fact the trends for women always show a more pronounced growth of within and between sequences variability across cohorts than for men. However, education strongly influences the degree to which each process evolved over time. Low and medium-skilled individuals are those more exposed to higher volatility and variability of individual trajectories according to a number of indicators I considered in order to describe the sequences' characteristics. In summary, differences according to education exist, and they confirm the fact that the higher the educational level, the less differentiated and complex the early career pathways.

The same applies to the evolution of the representative sequences' characteristics over time. This analytical step also shows that non linear and disrupted early careers were already widely diffuse before the deregulation process starts. Also in this case the number of representative sequences increases across cohorts, except for higher-skilled individuals, meaning that these workers are less exposed to the destandardization process. Finally, consistently with *Hypothesis 3*, on the one hand, the overall trend of cross-cohort evolution for the most frequent pathways leading to full-time employment and joblessness shows a general increase in the length of the pathways, and a progressively stronger presence of more differentiated states throughout the sequences of the younger cohorts; on the other hand, this trend turns to be stronger for less-skilled individuals.

It is worth making a concluding remark: joblessness episodes throughout the seven year period considered appear more randomly and pervasively distributed than expected, and this is especially surprising in the case of the older cohorts of workers. A large share of individuals experience multiple joblessness episodes, and this is particularly true for those who have what can be defined as a full-time-work-oriented trajectory. The most frequent pathways leading to full-time employment and joblessness – besides showing that the length of the pathways to achieve a certain position at the end of the seven years considered increases when we move from the older to the younger cohorts of workers – offer a good support for arguing that these processes can be actually considered as the two sides of the coin to a great extent. In other words, episodes of joblessness are also structural features of trajectories characterized by long periods spent in full-time jobs in the private sector, both for the older and the younger cohorts of workers.

DIFFERENTIATION	Overall	Differences according to education
Complexity	significant increase	
Number of months spent in each state	*increase in working time for the last cohort / *decrease in joblessness for the last cohort	*no increase for tertiary educ. / *not for lower-secondary educ.
Number of transitions through sequences	increase in dispersion in the upper part of the distribution (especially for 4th cohort)	*higher values for lower-secondary educ. / *values for the last cohort always more disperse
Share of individual who never change state	decrease from the 1st to the 2nd cohort	*increase for tertiary educ.
Number of states through sequences	increase in dispersion in the upper part of the distribution from 1st to 2nd cohort	*no changes for lower-secondary educ / *increase in dispersion in the upper part of the distribution for upper-secondary educ. / *increase in dispersion in the upper and lower part of the distribution for upper-secondary educ.
DESTANDARDIZATION	Overall	Differences according to education
Discrepancy	*increase across cohorts / *increase in the first 12 months and then decrease (no decrease for 4th cohort)	*strong divergence between 1st/2nd cohorts (steep decrease after 36 months) and 3rd/4th cohorts (increase after 36 months) for tertiary educ.
Representative sequences	*increase in N. / *no PROF, PRIVSEC.PT from 3rd cohort, PUB from 2nd cohort	* smaller for tertiary educ. / *no APPR e SELF for tertiary educ. / *yes PROF for tertiary educ. from 2nd cohort / *no PUB for lower-secondary educ.
Pathways to full-time job in the private sector	*small increase in N. / *share of individuals does not change / *stability in full-time job in the private sector prevails as most frequent pattern / *part-time job in the private sector is one of the starting state for 4th cohort	*decrease in share for lower-secondary educ. / * increase in share for tertiary educ. / *increase in pathways composed by alternate periods PRIVSEC.FT and JOBLESS
Pathways to joblessness	*increase in N. / *decrease in share / *increase in pathways length / *PRIVSEC.FT – JOBLESS is the most frequent pathway as well as its sequential combination	*decrease in share for lower-secondary educ. / *small increase in share for upper-secondary educ. / *increase in share for tertiary educ

Table 5.16: Summary of evidence from the cross-cohorts comparison - Women

DIFFERENTIATION	Overall	Differences according to education
Complexity	slight and undefined increase	*small increase only for lower- and upper-secondary educ.
Number of months spent in each state	*increase in working time for the last cohort *decrease in joblessness for the last cohort	*only for tertiary educ.
Number of transitions through sequences	increase in dispersion in the upper part of the distribution for 4th cohort	*higher values for lower-secondary educ. *linear increase for upper sec. *smallest dispersion for tertiary educ.
Share of individuals who never change state	decrease from the 1st to the 2nd cohort	*clear decrease only for upper-secondary educ.
Number of states through sequences	no clear trend	*higher values for lower-secondary educ. *increase in dispersion in the upper distribution for upper-secondary educ. *increase in dispersion in the upper distribution for the last cohort for tertiary educ.

DESTANDARDIZATION	Overall	Differences according to education
Discrepancy	*increase across cohorts *increase in the first 12 months and then decrease steeper than for women	*increase in the first 12 months *stability for tertiary educ.
Representative sequences	*small increase in N. *no PROF, no PRIVSEC.PT and PUB for first 3 cohorts	*no increase for tertiary educ. * no APPR for tertiary educ. * yes PROF PUB, SELF only last cohort for tertiary educ.
Pathways to full-time job in the private sector	*small increase in N. *share of individuals does not change *stability in full-time job in the private sector prevails as most frequent pattern	*increase in share for upper-secondary educ. *increase in share for tertiary educ.
Pathways to joblessness	*small increase in N. *increase in share *increase in pathways length *PRIVSEC.FT – JOBLESS is the most frequent pathway as well as its sequential combination	*bigger increase in N. for 4th cohort *decrease in share for lower-secondary educ. *decrease in share for tertiary educ *PUB – JOBLESS 1st or 2nd most frequent pathway for upper-secondary and tertiary educ.

Table 5.17: Summary of evidence from the cross-cohorts comparison - Men

Chapter 6

Results part II: Cohort 1998-2001

Consistently with the second set of research questions (*Questions 4* and *5*) concerning the early careers of the cohort of workers who entered the labour market between 1998 and 2001 (that is after the reforms of the late 1990s)[1], the first Section of the Chapter will be devoted to the description of the different models of labour market participation as defined by the cluster analysis. In the second Section the results of the multinomial logit regression model estimating the association between the clusters membership and gender and education, analyzed both linearly (for gender) and by considering the interaction between the two variables.

As mentioned in Chapter 4, I adopt now a more differentiated definition of the states people can experience within the labour market for building the individual sequences. As shown in Table 4.3, for this subpopulation I can distinguish not only between full-time and part-time working time, but also between temporary and open-ended contracts in the private sector. This allows me fill the gap existing in the literature on flexibilization as summarized in Chapter 2 by looking at the longitudinal characteristics of patterns that trap individuals in disrupted and insecure trajectories or that, conversely, lead to more stable careers.

Some evidence concerning this population collected in Chapter 5 – especially looking at education, which turned out to be a crucial variable joint with gender in shaping individual opportunities/constraints – can be summarized as follows:

- Complexity (differentiation) decreases as education increases, both for women and for men. Gender differences in complexity exist when we compare men and women with the same educational level, but they are significant only for those with an upper-secondary qualification showing that for women differentiation is higher than for men (see Figure 5.1 in Chapter 5). In fact, even if both low-skilled and highly-skilled women have estimates higher than men, the difference is not statistically significant;

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[1]The previous Chapter focused on the cross-cohort comparison by using a less detailed alphabet of the states (see Table 4.2) compared to the alphabet I use here (see Table 4.3). In fact, AD-Silc data only contain information about temporary contractual arrangements starting from 1998. As explained in Chapters 4, here I prefer to maximize the additional information available for the cohort of workers 1998-2001, and scrutinize into more depth the models of the labour market participation they experienced.

- No gender differences exist in the average number of months spent in joblessness, but low-skilled individuals show higher values than more skilled individuals; women spent more months in part-time jobs in the private sector than men; highly-skilled individuals spent a higher average number of months as employees in the public sector (highly-skilled women more than men) and in professional employment; low and medium-skilled individuals spend more months on average in apprenticeship and self-employment than highly-skilled (see Table 5.3);

- Men have discrepancy values lower than women irrespective of education, but while for women the trend is rather flat or slightly increases over time for highly-skilled individuals, for men it decreases after the first year of labour market participation and never changes in the case of those with a tertiary degree;

- The number of representative sequences (see Table 5.5) and the number of transitions through them decreases as education increases for men. In contrast, for women the number of sequences selected as representative is higher than for men and does not change when we move from low to medium-skilled individuals and it is halved for highly-skilled women, but the average number of transitions increases as education increases;

- The number and nature of pathways leading to full-time jobs in the private sector and to joblessness differ both for men and women according to education in terms of number of patterns and transitions throughout them (they are higher for less-skilled people); the pathway length and number both increase for this cohort compared to the previous, irrespective of education.

6.1 Models of labour market participation

In order to summarize the complex information provided by sequences that describe the individual pathways for the first seven years of their active life, a synthetic representation of models of labour market participation is needed[2]. The cluster analysis addresses this issue by splitting the original sample in subgroups characterized by the highest possible within-group homogeneity and between-groups heterogeneity. The cluster analysis was run for the complete sample of individuals who entered the labour market between 1998 and 2001 and were 15 to 34 years old[3]. The eight-clusters solution is optimal according to a number of criteria for quality checks I mentioned in Chapter 4. The sensitivity analysis for those criteria are presented in Figures A.12 and A.13 in the Appendix.

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[2]The state distribution plots and the index plots referring to the subsamples of women and men (overall and according to education) before the clustering procedure can be found in Figures A.1 to A.8 in the Appendix.

[3]For further details on methods see Chapter 4.

Table 6.1: Average number of months spent in each state for the eight clusters, number of transitions, complexity measure and respective confidence intervals (C.I.).Source: AD-Silc data, author's calculations.

	Cluster							
State	Prevalence of open-ended full-time employment	Self-employment	Professional employment	Dependent self-employment	Prevalence of open-ended part-time employment	Public sector	Apprenticeship + open-ended full-time employment	Patchy participation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Open-ended full-time contract in the private sector	59.9	4.2	3.0	5.5	5.4	1.2	20.4	11.4
s.d.	19.0	8.1	7.7	10.5	9.8	4.6	16.9	13.6
Open-ended part-time contract in the private sector	1.9	0.8	0.3	2.1	58.0	0.3	1.5	3.4
s.d.	5.9	3.8	1.9	6.2	18.2	2.0	5.5	7.6
Temporary full-time contract in the private sector	12.2	1.7	1.3	2.8	2.8	1.5	4.1	7.0
s.d.	15.3	5.6	5.3	6.9	8.4	4.6	9.1	11.6
Temporary part-time contract in the private sector	1.0	0.3	0.6	1.2	4.5	0.5	0.7	2.5
s.d.	4.0	1.9	3.7	3.7	9.3	3.6	3.5	7.1
Employees in the public sector	0.5	0.5	1.6	3.2	0.9	68.2	0.1	2.0
s.d.	3.4	3.6	6.3	8.7	4.3	15.5	1.7	6.8
Professionals	0.4	0.5	67.4	1.9	0.2	1.0	0.1	0.7
s.d.	3.0	3.2	16.7	6.7	1.3	5.4	0.7	3.4
Dependent self-employment	1.1	0.9	2.1	53.0	1.7	1.6	1.0	2.6
s.d.	4.3	3.8	6.4	19.9	5.2	5.4	4.0	6.3
Self-employed	1.0	67.5	2.0	2.8	1.2	0.4	1.6	3.8
s.d.	4.6	17.0	6.9	7.6	4.8	3.3	5.6	8.9
Apprenticeship	1.5	1.9	1.0	1.8	3.3	0.4	47.2	3.3
s.d.	4.7	6.0	4.0	6.5	8.6	3.2	15.7	7.7
Joblessness	4.6	5.7	4.7	9.5	6.0	8.9	7.4	47.2
s.d.	7.6	9.2	8.1	11.4	9.0	10.8	9.2	16.7
Average number of transitions	2.9	2.9	2.7	3.4	3.0	2.3	3.8	5.9
Complexity	0.165	0.148	0.142	0.207	0.171	0.137	0.237	0.290
C.I.	(0.155-0.173)	(0.130-0.165)	(0.108-0.173)	(0.182-0.229)	(0.152-0.191)	(0.121-0.152)	(0.229-0.247)	(0.275-0.304)
Share of individuals assigned to each cluster	29.1	11.8	3.5	5.5	5.2	8.8	16.3	19.8

The eight clusters can be considered as eight different models of participation in the labour market. To start with, I will proceed with a description of each cluster by combining evidence excerpted from Figures 6.1 to 6.8 and from Table 6.1. The latter offers additional information on the average number of months spent in each state for each cluster. Then, I will consider how gender and education are distributed in the clusters (Table 6.2) and what the cluster profiles look like (Table 6.3 and 6.4).

Most of the clusters were named after the name of the state in which the majority of the time was spent. In fact, as the results I am going to present show, the nature of the patterns – or better the models – for labour market participation is clearly informed by the type of contract or type of arrangement.

Figures 6.1 to 6.8 show two different ways of representing clusters in order to get substantive information about the evolution over time of individual trajectories (Plot *A*), and the evolution over time of the state distribution inside of each cluster (Plot *B*). In other words, each line on the *y* axis in Plot *A* represents the trajectory of a single individual through the 84 months considered (*x* axis), while Plot *B* displays the share of individuals being in the different states (*y* axis) at each point in time (*x* axis). What we can easily obtain from Table 6.1 is the information that concerns the point in time in which certain episodes occur and how the whole group of individuals belonging to a cluster moves over time across the different states.
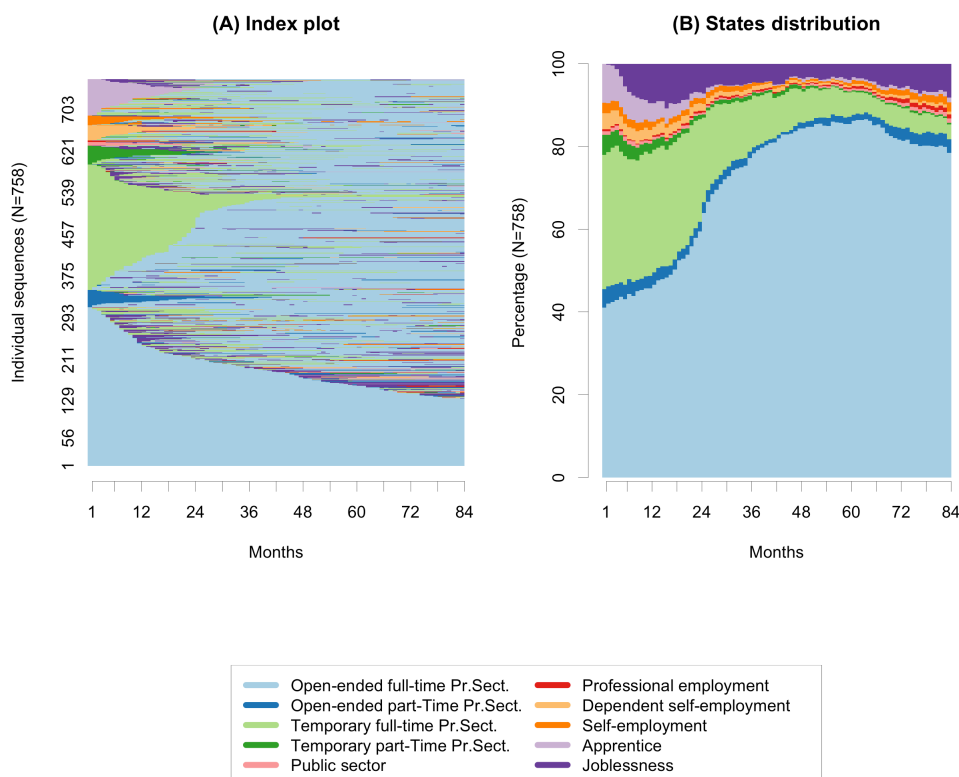
(A) Index plot

(B) States distribution

Figure 6.1: Cluster 1 - Prevalence of open-ended employment full-time: index plot, states distribution plot. Source: AD-Silc data, author's calculations.

Figure 6.1 shows the plots for the cluster named 'Prevalence of open-ended full-time employment'. This cluster is indeed characterized by the prevalence of open-ended full-time contracts in the private sector, since the 758 individuals in this cluster spent 59.9 months on average in this state. However, as Plot *B* shows, more than a half of the individuals belonging to this cluster start their careers in states other than open-ended full-time employment: a large proportion entered the labour market with a temporary full-time contract that lasts on average 12.2 months. In this last case, temporary contracts can be considered as a bridge to a progressive shift to open-ended positions. Very few individuals are in apprenticeship and even fewer in the other states, with the exception of joblessness, which is experienced for 4.6 months on average. What Plot *B* also tells us is that for these individuals temporary employment is mostly present at the start of a the careers and very few individuals are still in this state as time goes by. Furthermore, Plot *A* shows that – especially when we look at the sequences at the bottom of Plot – being in an open-ended full-time job does not protect people from experiencing transitions to other states, first of all from what I have called joblessness.

Figure 6.2 refers to the 'Self-employment' cluster. This cluster is strongly character-
ized by considerable stability in self-employment: approximately the 30% of individuals
belonging to this cluster did not experience any transitions throughout the seven years
considered. This is only evident when we look at Plot *A*, because Table 6.1 reports
an average number of months spent in self-employment of about 67 months. A small
share of individuals enters the labour market as apprentices and then follows a pathway
mainly characterized by self-employment. Finally, individuals belonging to this cluster
spend 5.7 months on average in joblessness.
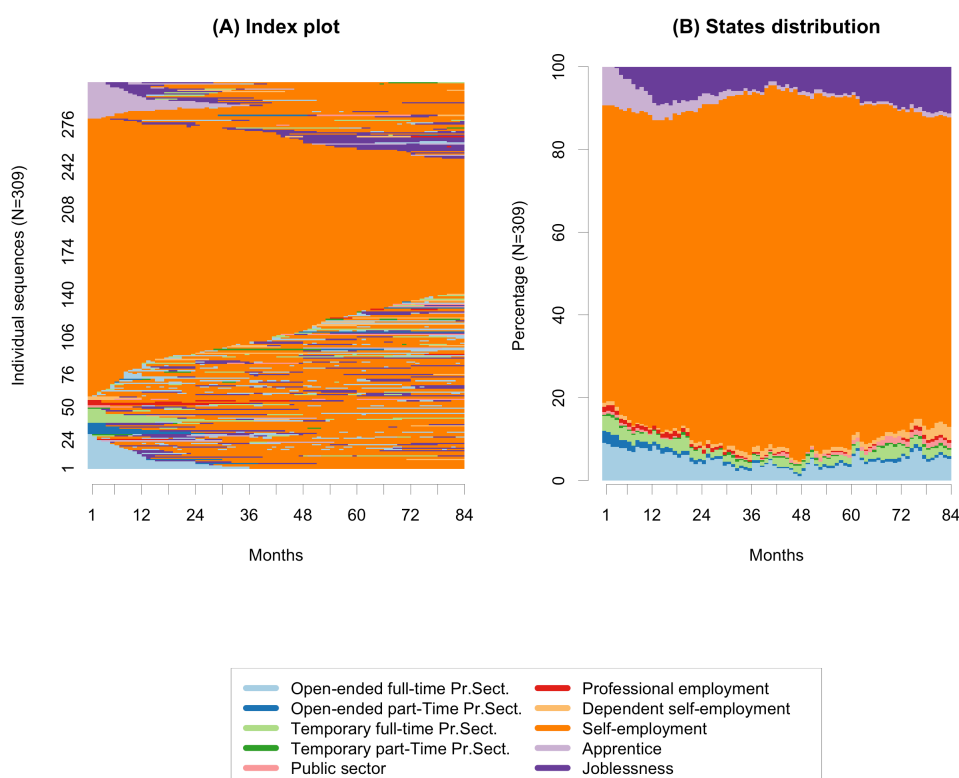
Figure 6.2: Cluster 2 - Self-employment: index plot, states distribution plot. Source: AD-Silc data, author's
calculations.

The 'Professional employment' cluster (Figure 6.3) is the smallest compared to the
others in terms of individuals assigned by the clustering procedure. Also this cluster is
strongly characterized by the long-lasting permanence in one state, which is professional
employment. In fact, more than 40% of the individuals did not experience any transitions
whatsoever in the seven years considered (top section of Plot *A* in Figure 6.3). Table
6.1 tells us that individuals in this cluster spent 67.4 months on average in professional
employment, but also in this case this hides part of the story shown instead by Plot
A in Figure 6.3. In fact, transition between different states occurs mostly during the

(A) Index plot

(B) States distribution

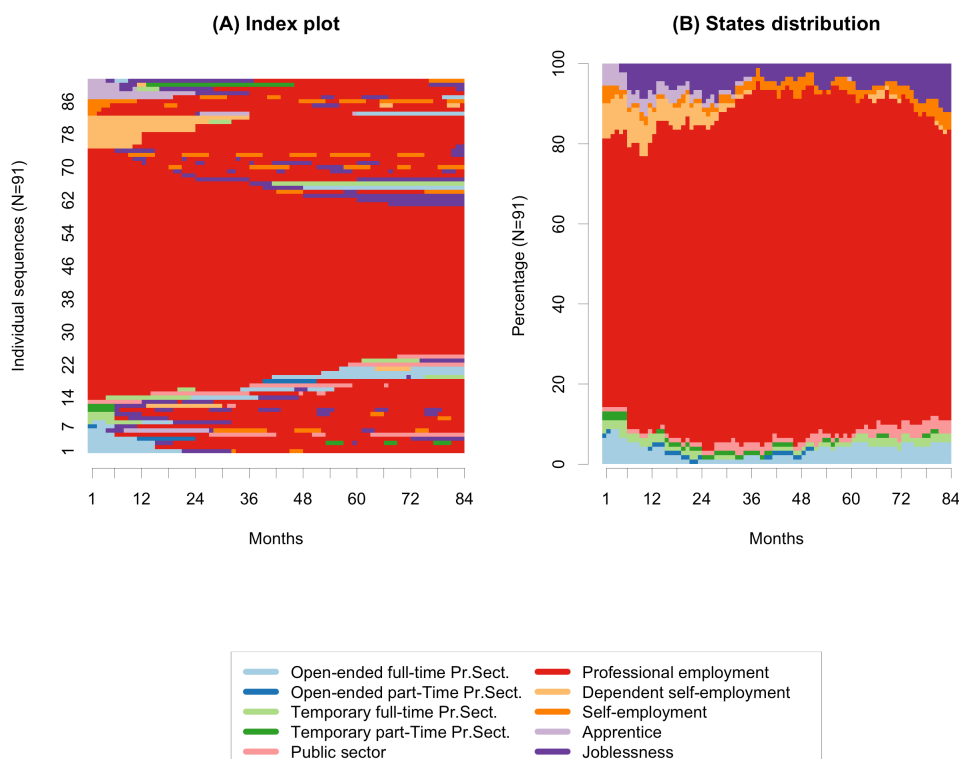Figure 6.3: Cluster 3 - Professional employment: index plot, states distribution lot. Source: AD-Silc data, author's calculations.

first two/three years out of the seven considered and for a little bit more than half of the subsample. Plot *B* completes the picture by showing that both the dependent self-employment state and apprenticeship appears only at the very beginning of individuals' careers.

One of the most interesting clusters is the one I named 'Dependent self-employment' (Figure 6.4). Dependent self-employed are those workers who provide work on the basis of a civil or commercial contract, but who are integrated into the firm for which they work even though they are providing formally outsourcing work. This category of workers arises from the labour market reform and since those who work within this regime have less rights under labour law than other dependent workers and they receive less favourable benefits from social security protection, the medium-/long-term permanence in this state could lead to greater inequality in the long-run. Individuals assigned to this cluster spent 53 months on average in dependent self-employment and 9.5 months in joblessness (see Table 6.1). Plot *A* in Figure 6.3 shows that less than the 20% of these individuals spent the whole 84 months in dependent self-employment. For the rest of the group dependent self-employment is the state that better describes their tra-
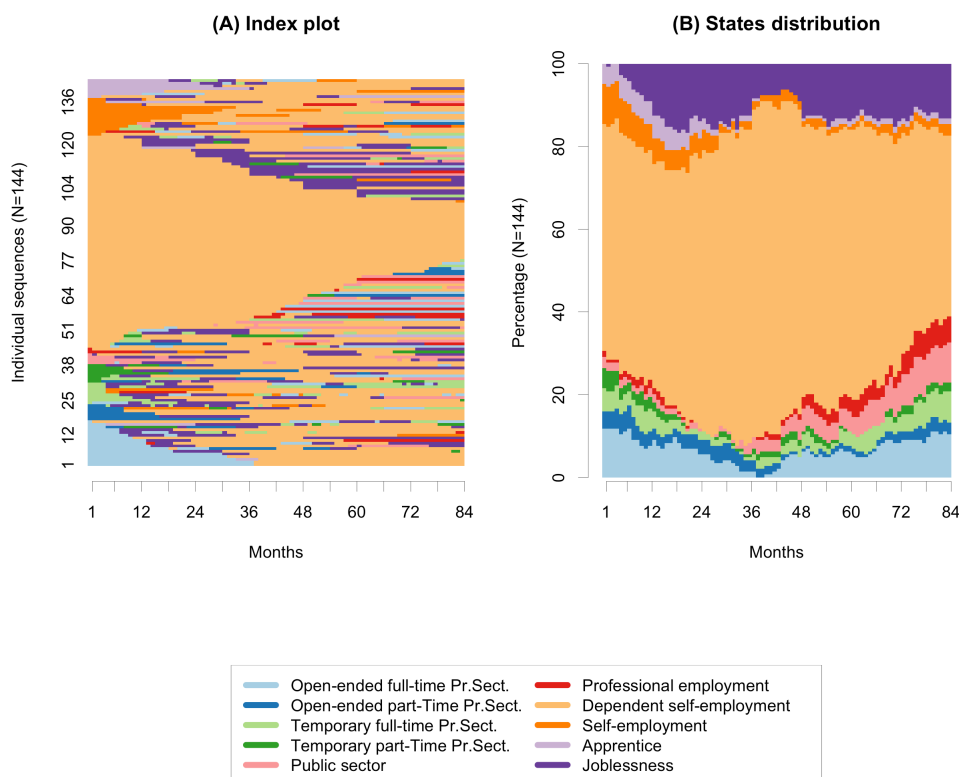
Figure 6.4: Cluster 4 - Dependent self-employment: index plot, states distribution plot. Source: AD-Silc data, author's calculations.

jectory, but this is especially true for the central period of the observation window. In fact, many individual trajectories start and even more end in states other than dependent self-employment. Complexity value for this cluster is the third highest and differs significantly from other clusters' values.

Figure 6.5 shows the plots that refer the cluster called 'Prevalence of open-ended part-time employment'. The average time spent in open-ended part-time employment is 58 months. Again, less than the 15% of individuals belonging to this cluster did non experience any transition remaining for the 84 months in open-ended part-time employment. In fact, apprenticeship, temporary part-time/full-time employment in the private sector and open-ended full-time employment are starting points for almost 50% of the workers who belong to this cluster. Even though for people in this cluster open-ended part-time employment in the private sector is the prevalent status, the left area in Plot *A* and the top area in Plot *B* show that transitions to other states occur and foreshadow more complex pathways afterwards. In other words, open-ended part-time employment seems to represent a fairly stable cluster only for a certain amount of time for the majority of individuals. In fact, as a complexity value of 0.171 confirms, a large

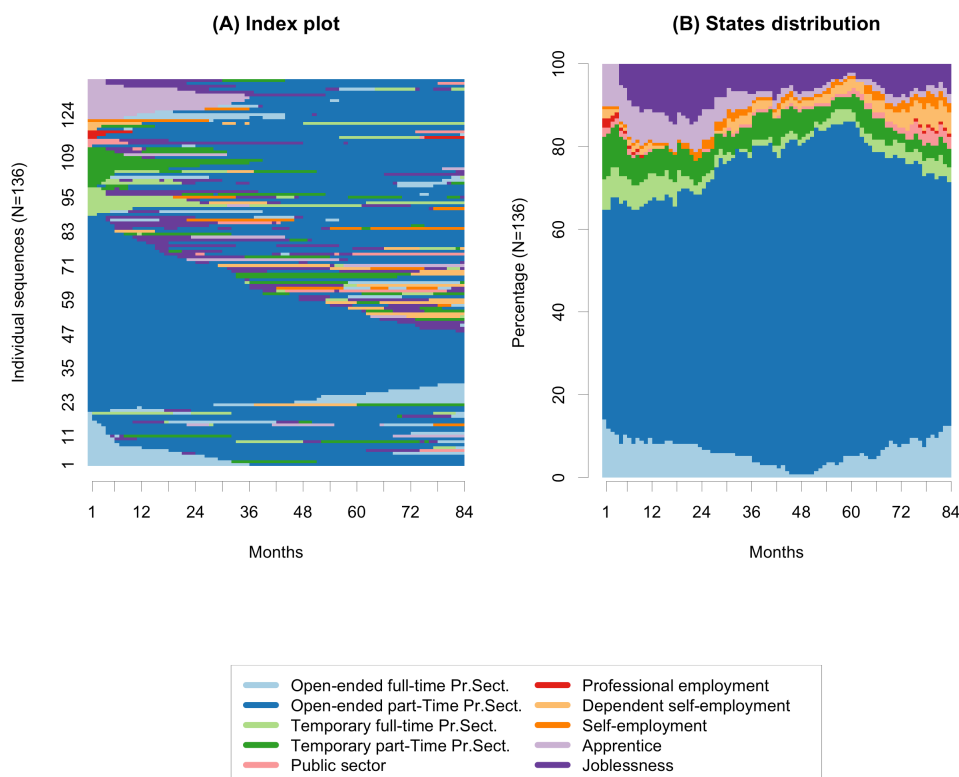**(A) Index plot** **(B) States distribution**

Figure 6.5: Cluster 5 - Prevalence of open-ended part-time employment: index plot, states distribution plot. Source: AD-Silc data, author's calculations.

share of workers belonging to this cluster have highly differentiated trajectories during the first two years or from the second/third year onwards. This differentiation is driven by periods in states other than part-time employment in the private sector that vary in length, but it is worth noticing that time spent in joblessness is residual with respect to the total number of months spent in working states.

One out of four individuals assigned to the 'Public sector' cluster (Figure 6.6) did not experience any status other than employment in the public sector. In fact, even if individuals in this cluster did spend approximately 68 months on average as employees in the public sector (Table 6.1), Plot *A* shows that about the 30% out of the 229 people in the cluster never changed state. This cluster shows the highest average time spent in the characteristic state compared to the other clusters, but this is especially driven by the fact that a great number of individuals did not change status throughout the seven years considered. In fact, if we look at the sequences that refer to the other members of the cluster (Plot *A*), we can see a relatively high number of transitions occurring throughout the whole period and between different states for the majority of the individuals.

Once again, this does not imply that individuals who did not experience any trans-

(A) Index plot   **(B) States distribution**
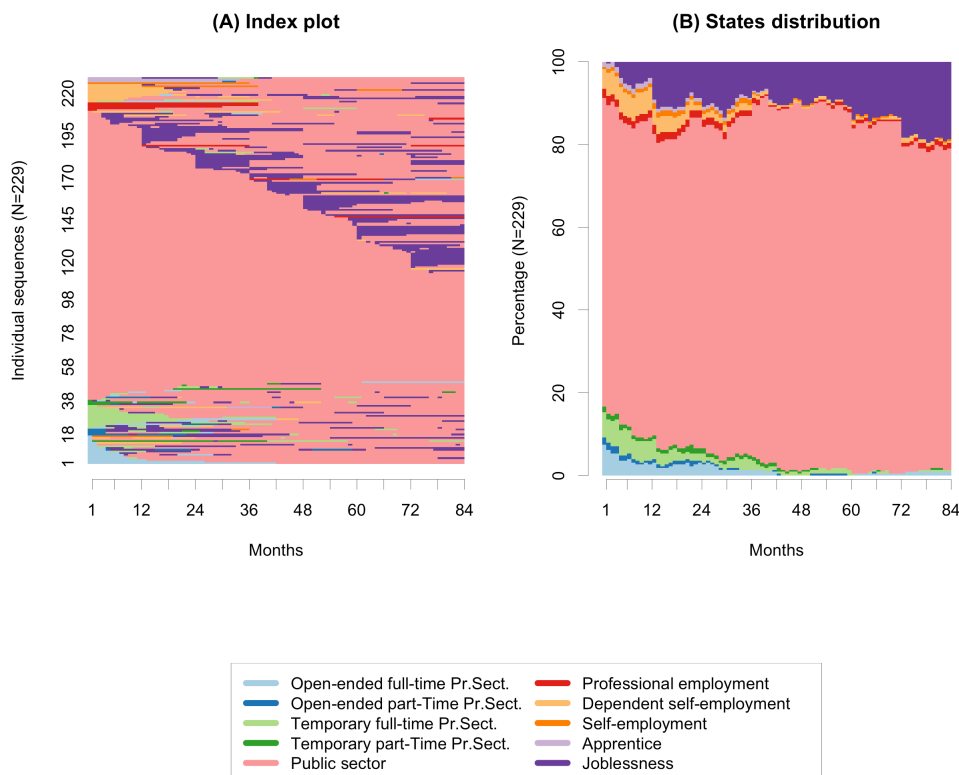
Figure 6.6: Cluster 6 - Public sector: index plot, states distribution plot. Source: AD-Silc data, author's calculations.

itions also never changed position or employer, but that these workers did not experience joblessness or other states included in the alphabet (see Table 4.3). However, the level of stability for these individuals is definitely higher than for the remaining 70% of the cluster' members, who had quite disrupted careers due mainly to repeated episodes in joblessness. In fact, the other side of the coin is that, according to Table 6.1, almost 9 months are spent in joblessness, but we can see that joblessness is actually not equally distributed among the cluster's members. What Plot *B* adds is that the share of time spent in states other than 'public sector' decrease over time, and by the fourth year of labour market participation individuals belonging to this cluster are mainly employees in the private sector or are experiencing joblessness, whose share increases precisely after the fourth year. In keeping with the characteristics of the employment in the public sector in Italy (see Chapter 2), by looking at Plot *A* in Figure 6.6 another pattern emerges besides full stability and repeated joblessness. In fact, the extreme top and bottom areas show that one out of four workers in this cluster started their careers in other states for a couple of years before gaining a long-lasting experience in the public sector.

Figure 6.7 presents the plots for the 'Apprenticeship + open-ended full-time employment' cluster. This cluster is one of the few that show a proper evolution over time in terms of progressive stabilization within open-ended positions. In fact, the majority of the individuals belonging to this cluster enter the labour market with in an apprenticeship or start an apprenticeship fairly soon after entry. People in this cluster spend 47 months on average in apprenticeship, only 7 months in joblessness and about 20 months in open-ended full-time jobs in the private sector. However, the path towards open-ended full-time jobs in the private sector through a sort of bridge represented by apprenticeship is not free from obstacles: from both the visual representation in Plot *A* and the complexity value shown in Table 6.1, this cluster reveals itself to be highly unstable. In fact, on the one hand, Plot *A* shows many transitions between many different states, which is confirmed by a complexity value of 0.237, a significantly higher value than the complexity values for all the other clusters with the exception of the 'Patchy participation' cluster (see Figure 6.8).

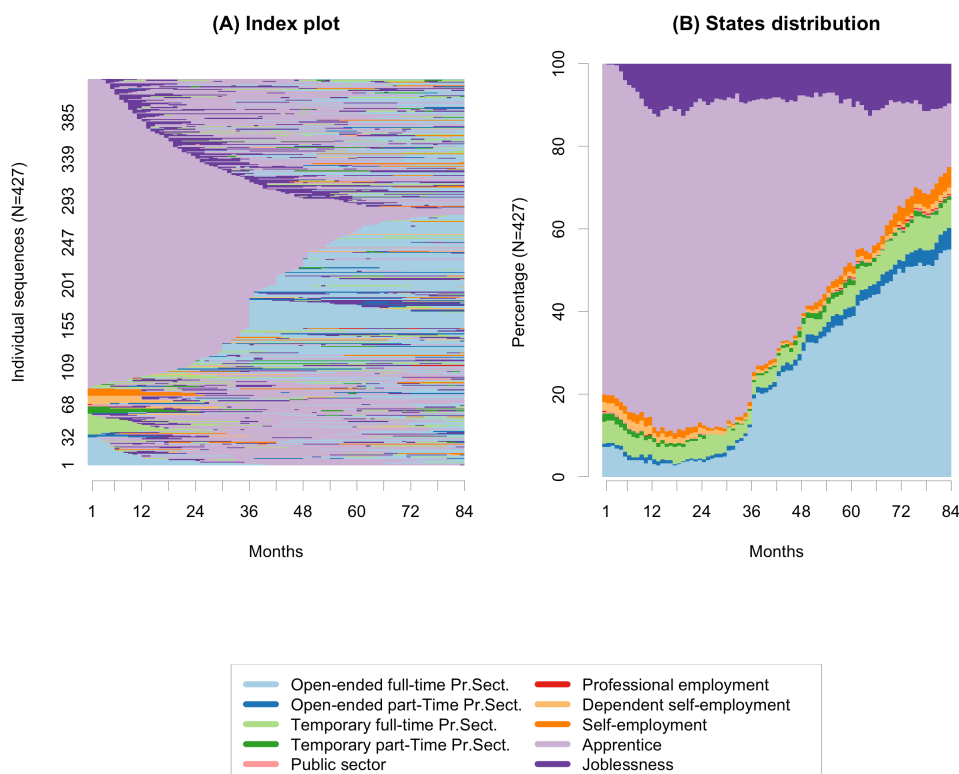Figure 6.7: Cluster 7 - Apprenticeship + prevalence of open-ended full-time employment: index plot, states distribution plot. Source: AD-Silc data, author's calculations.

This implies that individuals belonging to this cluster experienced more transitions between more states, which results in relatively short-lasting working and joblessness

episodes. Even though numerous among the majority of the member of the cluster, joblessness episodes last on average 7 to 8 months out of the 84 months considered. For this reason and for the reason that Plot *B* shows that an increasing number of individuals (more then 50%) are in open-ended full-time jobs in the private sector over time, this cluster, which groups individuals with a long period spent in apprenticeship, can be considered one of the more favorable despite being characterized by high complexity.

The last cluster has been named 'Patchy participation' (Figure 6.8) because the individuals' sequences assigned to this group are mainly characterized by relatively long periods spent in joblessness, but also by periods in many different working states.
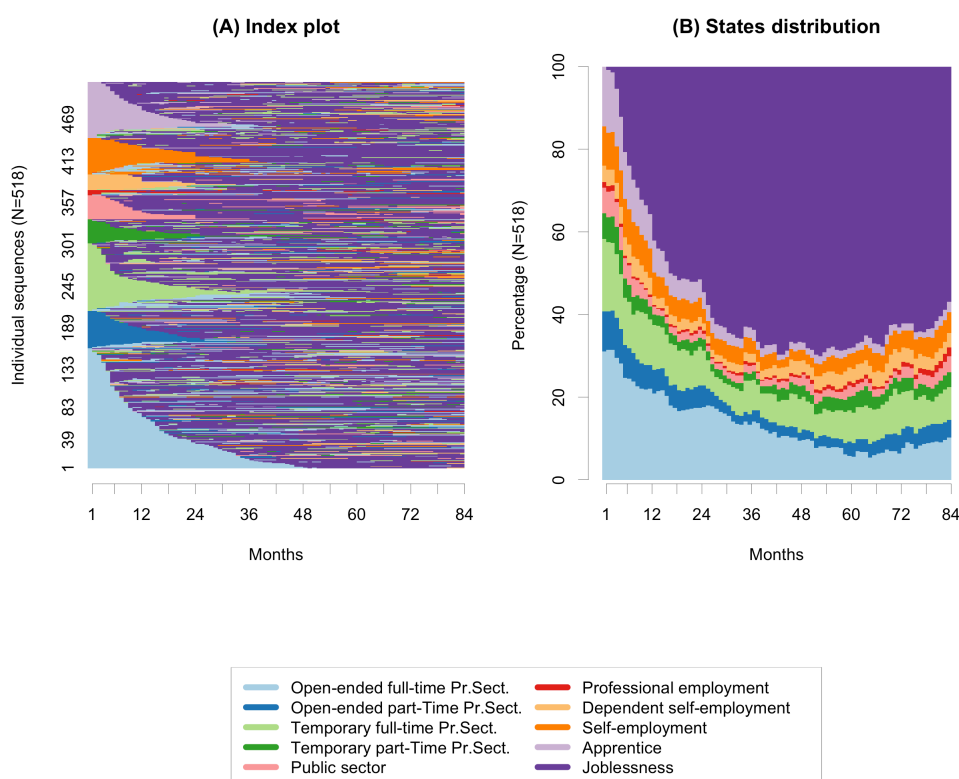
Figure 6.8: Cluster 8 - Patchy participation: index plot, states distribution plot. Source: AD-Silc data, author's calculations.

Despite the fact that more than half of workers are in joblessness at the end of the seventh year of labour market participation (as Plot *B* highlights), Plot *A* shows that individual trajectories are complex and composed of many different short episodes after an initial relatively long period of stability in one of the states at the very beginning of the sequences. Finally, Plot *B* also shows that the share of individuals who are in states other than joblessness does not change very much over time, with the exception of the share of individuals in open-ended full-time employment in the private sector,

which decreases when we move from the start to the end of the period. The complexity of labour market participation for individuals in this group is proved by the related complexity value, which is the highest compared to all the other clusters (0.290) and to a significant degree.

The description of the main features of the clusters and of the common characteristics shared by the sequences assigned to them is a useful starting point for interpreting the substantive meaning of the assignment of individuals to the clusters. In fact, we can now consider how individuals have been allocated to the cluster according to their gender and education. Starting from the last column in Table 6.2 – which reports the total share of women and men assigned to each one of the cluster – the main differences concern the first cluster ('Prevalence of open-ended full-time employment'), the fifth ('Prevalence of open-ended part-time employment') and the sixth ('Public sector'). In fact, women are – as expected – more likely than men to enter the clusters 'Prevalence of open-ended part-time employment' (8.5% *versus* 2.2% respectively) and 'Public sector' (11.5% *versus* 6.2% respectively), while men are more likely than women to belong to the cluster 'Prevalence of open-ended full-time employment' (23.7% *versus* 34.1% respectively).

Before looking at the cluster profiles in Tables 6.3 and 6.4, some other information about the distribution of individuals within the cluster should be highlighted by looking at Table 6.2.

WOMEN

Cluster	Education			
	Lower sec.	Upper sec.	Tertiary	Tot.
1. Prevalence of open-ended full-time employment	15.6	24.3	29.8	23.7
2. Self-employment	21.3	8.2	4.0	9.9
3. Professional employment	0.4	1.2	11.5	3.1
4. Dependent self-employment	1.2	5.3	15.9	6.6
5. Prevalence of open-ended part-time employment	8.6	9.0	6.8	8.5
6. Public sector	1.2	10.6	24.2	11.5
7. Apprenticeship + open-ended full-time employment	17.6	20.8	0.8	16.2
8. Patchy participation	34.0	20.7	7.1	20.6
Tot.	100.0	100.0	100.0	100.0
N.	*243*	*757*	*251*	*1,251*

MEN

Cluster	Education			
	Lower sec.	Upper sec.	Tertiary	Tot.
1. Prevalence of open-ended full-time employment	23.3	36.5	45.2	34.1
2. Self-employment	15.3	14.9	5.3	13.6
3. Professional employment	0.5	3.2	12.6	3.9
4. Dependent self-employment	1.6	3.9	12.1	4.5
5. Prevalence of open-ended part-time employment	1.8	2.6	1.5	2.2
6. Public sector	2.3	6.1	14.1	6.2
7. Apprenticeship + open-ended full-time employment	27.5	15.4	0.5	16.6
8. Patchy participation	27.7	17.5	8.7	19.1
Tot.	100.0	100.0	100.0	100.0
N.	*386*	*770*	*205*	*1,361*

Table 6.2: Cluster distribution by gender and education (column percentages). Source: AD-Silc data, author's calculations.

Lower-skilled women were mainly assigned to 'Patchy participation', 'Self-employment', 'Apprenticeship + open-ended full-time employment' and 'Prevalence of open-ended full-

time employment' clusters (sorted from the higher values). This implies that more than 50% of women with a lower secondary qualification are in clusters with a high complexity value, meaning that they follow pathways that are more complex and disrupted than stable. Women with an upper secondary qualification are more frequently present in cluster 'Prevalence of open-ended full-time employment' than less-skilled women and are more equally distributed among the other clusters, but still with high shares in cluster 'Apprenticeship + open-ended full-time employment' and 'Patchy participation'. In contrast, highly-skilled women are more present in the cluster 'Prevalence of open-ended full-time employment' than in others, followed by 'Public sector' (more than 50% of them are in these clusters), 'Dependent self-employed' and 'Professional employment'. Finally, women with a tertiary degree are less present in the 'Patchy participation' cluster.

The pattern is almost the same looking at distributions for men with different educational levels, but the values change slightly. The two more crowded clusters for men with a lower educational level are 'Apprenticeship + open-ended full-time employment' and 'Patchy participation', which together contain more than 50% of the subsample. These two clusters are then followed by 'Prevalence of open-ended full-time employment' and 'Self-employment' clusters. A lower share of individuals with an upper secondary qualification are in the more complex and disrupted clusters ('Apprenticeship + open-ended full-time employment' and 'Patchy participation') while the 'Prevalence of open-ended full-time employment' cluster is the destination of more than one third of this subsample. No difference exists between men with a lower and an upper secondary qualification in the share of individuals assigned to 'Self-employment' cluster. Finally, highly-skilled men were assigned in large numbers to the 'Prevalence of open-ended full-time employment' cluster (45.2%). After this we find the states 'Public sector', 'Professional employment' and 'Dependent self-employment', the same is true for women with the same educational level. However, differently from the latter, only about 14% of men with a tertiary degree were assigned to 'Public sector' as opposed to 24.2% of women.

Nonetheless, Table 6.2 tells us only a part of the story. Table 6.3 shows the clusters' composition according to gender and Table 6.4 the clusters' composition according to education. As seen before, the first three clusters are characterized by very low complexity values (see Table 6.1) and an increasing stability in terms of participation (in the case of cluster 1, 'Prevalence of open-ended full-time employment') or a high stability within the same state (in case of clusters 2 and 3, 'Self-employment' and 'Professional employment'). More men than women and more individuals with an upper secondary qualification than individuals with higher or lower qualifications were assigned to these three clusters.

Cluster 3, 'Professional employment', represents an exception concerning this last point, since individuals with a tertiary degree are more present than lower-skilled individuals. If we then consider cluster 4, 'Dependent self-employment', more women than men were assigned to this cluster, but no significant difference exists between individuals with an upper secondary qualification and with a tertiary degree; in fact, few lower-skilled individuals are present in this cluster.

	Gender			
Cluster	Women	Men	Tot.	*N.*
1. Prevalence of open-ended full-time empl.	39.0	61.0	100.0	*758*
2. Self-employment	40.1	59.9	100.0	*309*
3. Professional employment	42.4	57.6	100.0	*91*
4. Dependent self-employment	57.6	42.4	100.0	*144*
5. Prevalence of open-ended part-time empl.	77.9	22.1	100.0	*136*
6. Public sector	62.9	37.1	100.0	*229*
7. Apprenticeship + open-ended full-time empl.	47.3	52.7	100.0	*427*
8. Patchy participation	49.8	50.2	100.0	*518*
Tot.	47.9	52.1	100.0	*2,612*

Table 6.3: Clusters' profiles by gender (row percentages). Source: AD-Silc data, author's calculations.

	Education				
Cluster	Lower sec.	Upper sec.	Tertiary	Tot.	*N.*
1. Prevalence of open-ended full-time empl.	16.8	61.2	22.1	100.0	*758*
2. Self-employment	35.9	57.3	6.8	100.0	*309*
3. Professional employment	3.3	37.0	59.8	100.0	*91*
4. Dependent self-employment	6.3	48.6	45.1	100.0	*144*
5. Prevalence of open-ended part-time empl.	20.6	64.7	14.7	100.0	*136*
6. Public sector	5.2	55.5	39.3	100.0	*229*
7. Apprenticeship + open-ended full-time empl.	34.7	64.6	0.7	100.0	*427*
8. Patchy participation	36.7	56.4	7.0	100.0	*518*
Tot.	24.1	58.5	17.5	100.0	*2,612*

Table 6.4: Clusters' profiles by education (row percentages). Source: AD-Silc data, author's calculations.

Unsurprisingly, the cluster characterized by long periods spent in part-time jobs in the private sector (cluster 5, 'Prevalence of open-ended part-time employment'), even though it represents individuals in an open-ended contract, is mainly populated by women (77.9% *versus* 22.1% respectively). Moreover this cluster is massively composed of individuals with an upper secondary qualification (64.7%), and a different share of lower- and higher-skilled that is not statistically significant.

The same gender difference applies to cluster 6, 'Public sector', but in this case the margin between women and men is smaller than in the previous one. Moreover, cluster 6 includes very few individuals that have a lower-secondary qualification: this implies that this cluster – jointly with the clusters 'Professional employment' and 'Dependent self-employment' – is strongly characterized by medium/high profiles in terms of the educational level of its members. In fact, a large proportion of medium and highly-skilled (55.5% and 39.3% respectively) were assigned to the 'Public sector' cluster.

Little difference between genders exists for cluster 7 'Apprenticeship + open-ended full-time employment', which is one of the clusters that reports a high complexity value potentially implying strongly disrupted pathways. Finally, for the 'Patchy participation' cluster (number 8) no gender differences can be found, since a fairly equal number of individuals were assigned to this particularly unfavourable cluster. However, if we consider how individuals with different educational levels are distributed in these two last clusters, some dissimilarities emerge. The trend is the same for both clusters ('Apprenticeship + open-ended full-time employment' and 'Patchy participation'): the majority of individuals belonging to these two clusters have an upper secondary qualification (64.6% and 56.4% respectively), while almost all of the remaining individuals have a

lower-secondary qualification. The share of higher-skilled individuals is negligible in cluster 7 and extremely small in cluster 8 (0.7% and 7.0% respectively).

It is worth restating that some clusters are obviously characterized by a massive presence of individuals with certain characteristics. For example this is the case of cluster 3, 'Professional employment', which is mainly composed of highly-skilled individuals. However, this can not be considered a proper form of inequality against less educated, since almost all the professional positions require a high qualification or degree and automatically excludes those who do not have the proper entitlement. Of course some primary effects could play a role in determining who get high qualification or degree and who don't, and this is exactly the reason why I retain from arguing more along this point. In contrast a hint can be given about clusters that are characterized by one or more type of disadvantages, that are occupational discontinuity, short- and long-term consequences in terms of income (Raitano and Struffolino, 2013; Raitano, 2012; Barbieri and Cutuli, 2010; Bellani, 2009) and pension in the future (Dipartimento del Tesoro and Fondazione Giacomo Brodolini, 2011; Borella and Segre, 2009; Ferraresi and Segre, 2009). On the one hand, the clusters composition is not surprisingly differentiated according to the educational level in most of the cases.

The exception is represented by those cases in which – given the somehow broad definition of some of the states – lower difference could have been expected, such as 'Patchy participation' and 'Prevalence of open-ended full-time employment'. On the other hand, gender differences are more pronounced than expected. In fact, what Tables 6.2, 6.3, and 6.4 show to different extents is that the cohort of young women and men who entered the labour market with a new institutional and regulatory framework are unequal when the odds at stake are represented by more stable and secure pathways and, in contrast, they become more equal when more disrupted and less protected patterns are. But what about the fact that some other variables could mediate the correlations shown by the cross-tabs presented here? The next section offers some answers to this issue by presenting the results from a multinomial logit regression model that estimates the likelihood of belonging to the clusters according to gender and then according to gender and education net of other possible confounders.

6.2 How does gender and education interact with the probability of following different models of labour market participation?

The cross-tabs presented in the previous section have highlighted that gender differences exist to some extent when the cluster composition is considered (see Table 6.3). The main point to make is that men are more present than women in clusters characterized by increasing or permanently high stability in terms of continuity and/or protection (clusters 'Prevalence of open-ended full-time employment', 'Self-employment', 'Professional employment' and 'Apprenticeship + open-ended full-time employment'), while women are more present in clusters with the opposite characteristics (clusters 'Depend-
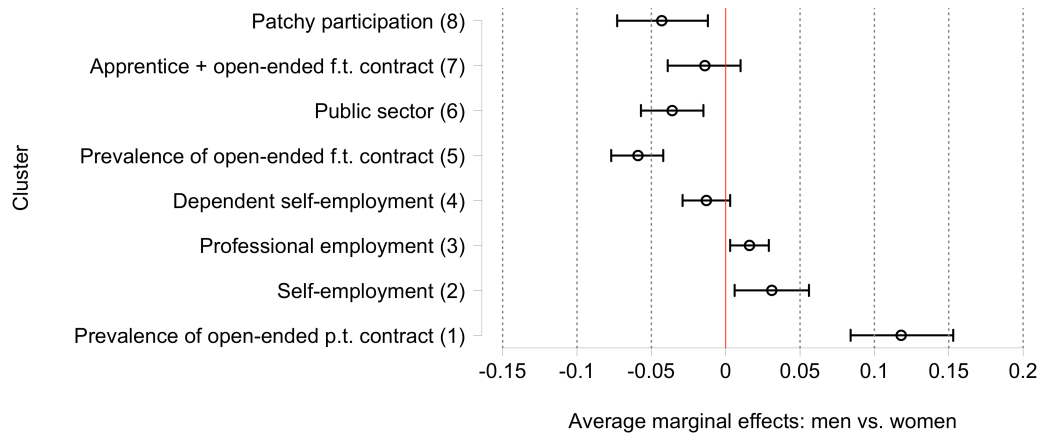
Figure 6.9: Average marginal effects (AME) of gender (men *versus* women) for cluster membership and 95% confidence intervals. The multinomial logit regression model controls for area of birth, education, delay in education, age when the first episode occurred, year when the first episode occurred. Source: AD-Silc data, author's calculations.

ent self-employment' and 'Prevalence of open-ended part-time employment'). The only exception is represented by cluster 6, 'Public sector' – which shows a rather high stability and a prevalence of women. However, this is a quite small cluster (8.8%) if compared to the share of individuals assigned to the first three clusters, which gather about the 45% out of the original sample (see last row in Table 6.1). In contrast, men and women are equally distributed in cluster 8, 'Patchy participation'.

This last analytical step consists of the estimation of a multinomial logit model[4] in order to assess the partial association between the interaction of gender end education and the cluster membership, net of possible confounders (see Chapter 4).

The first empirical evidence I obtain mainly confirms the pattern described above. In fact, by looking at Figure 6.9, which shows the estimates of the difference between men and women in the linear probability of belonging to each cluster[5]. Firstly, we can see that even after controlling for a number of variables, the differences between men and women in the linear probability of belonging to the first three clusters (which are the most stable and protected) is significantly positive for men. Secondly, the difference is confirmed to be positive for women when we consider the linear probability of belonging to clusters 5 and 6, 'Prevalence of open-ended part-time employment' and 'Public sector' respectively.

In contrast, Figure 6.9 shows that once we control for education, area of birth, age when the first episode occurred, delay in education, year when the first episode occurred, the differences between men and women in the linear probability of belonging to cluster

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[4]For the descriptive statistics of covariates see Table A.2.

[5]The estimates of the average partial effects for the difference in the linear probability of belonging to each cluster can be found in Table A.3 in the Appendix.

4 – 'Dependent self-employment' – and to cluster 7 – 'Apprenticeship + open-ended full-time employment' – are not significant. This confirms partly what I have argued before, namely that women and men become more equal when more disrupted and less protected patterns are considered. However, one last point should be made that goes in the opposite direction. Differently from what we saw in Table 6.1 by looking at the complexity values for each cluster, Figure 6.9 shows that a difference in the linear probability of belonging to the cluster 'Patchy participation' (which has the highest complexity value and the highest amount of months spent in joblessness on average) is negative against women, even if only to a s mall extent.

Finally, I want to consider if the differences driven by education for men and women persist and how big they are. As done before, the highest educational level obtained before entering the labour market is operationalized in three categories: 'lower secondary education', 'upper secondary education' and 'tertiary education'. The results of the multivariate analysis are shown in Figure 6.10[6]. Each Plot in Figure 6.10 shows the average partial effect of being assigned to a specific cluster and the related 95% confidence intervals for women and men according to education. The reference category is having a lower secondary qualification (red dots in the Plots).

The trend of the estimates according to education allows one to distinguish between two main groups: in fact, in some cases the probability of entering the cluster increases as education increases (cluster 1, cluster 3, cluster 4 and cluster 6), while in some other cases the probability clearly decreases clearly (cluster 2, cluster 7 and cluster 8). Cluster 5, 'Prevalence in open-ended part-time contract', can be considered as an exception, because only a weak downward trend exists for men, but differences are actually never significant.

Starting from the group of clusters for which a general upwards trend can be found as education increases, estimates for cluster 1 'Prevalence in open-ended part-time contract' does not show any statistically significant difference according to education, both for women and men. In contrast, – but not surprisingly – for cluster 3 'Professional employment'[7] differences exist according to education for both genders, but only by comparing lower-skilled and those with a tertiary degree that are more likely to be in this cluster than their less-skilled peers. It is worth recalling that these two clusters are mainly male-clusters, as shown in Tables 6.3 and 6.4 and in Figure 6.9. In contrast, the first of the other two clusters that show a similar trend is not affected by gender differences: in fact, results from the model displayed in Figure 6.9, show that men and women are equally likely to enter cluster 4 'Dependent self-employment'. However, Figure 6.10 tells us that the probability for medium and highly-educated individuals of entering this cluster is higher than for low-skilled individuals.

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[6]The estimates of the average partial effects can be found in Table A.4 in the Appendix.

[7]Estimates for cluster 3 'Professional employment' are unstable because of the size of this subsample and the little number of cases in some cells.
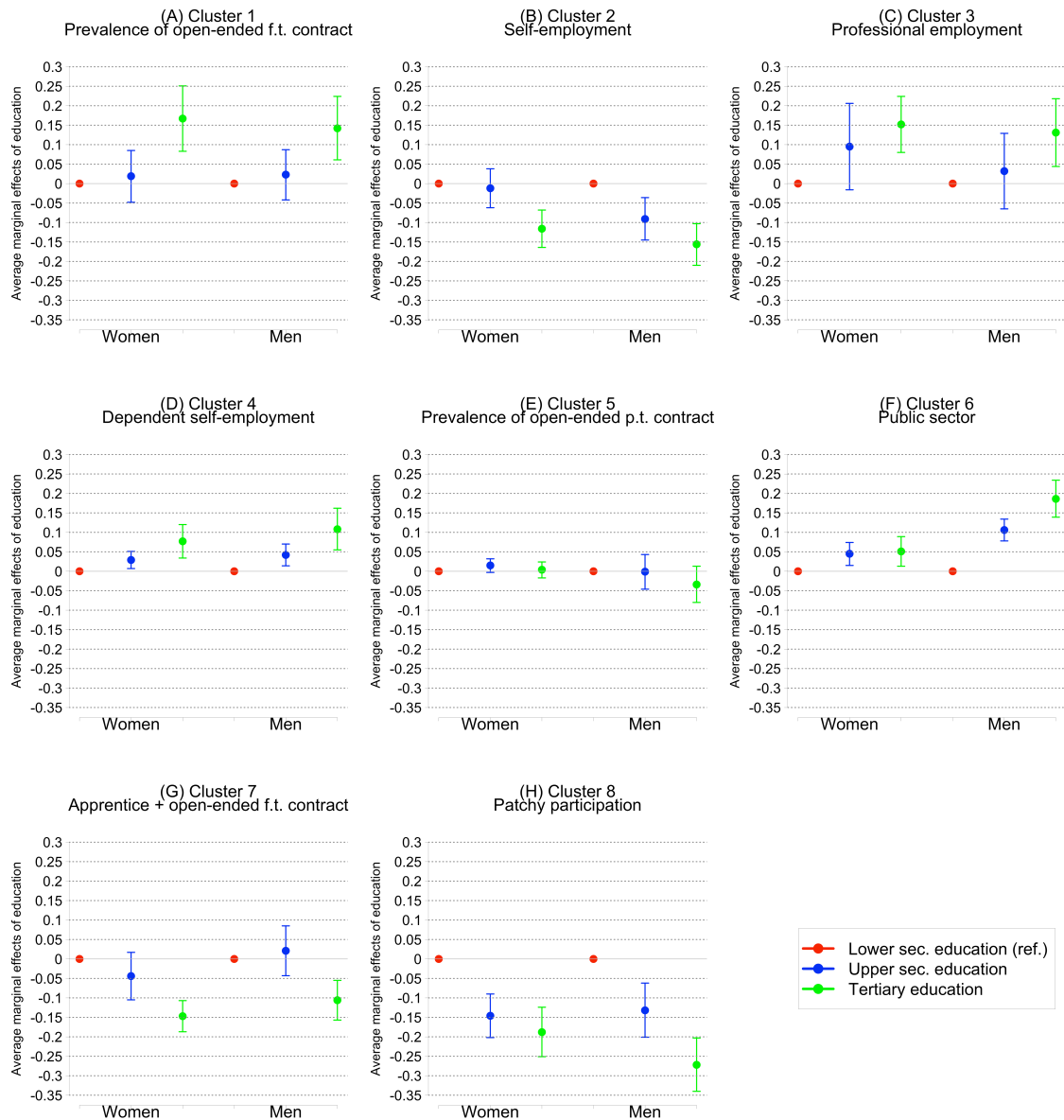
Figure 6.10: Average marginal effects (AME) of gender and education for cluster membership and 95% confidence intervals. The multinomial logit regression model controls for area of birth, delay in education, age when the first episode occurred, year when the first episode occurred. Source: AD-Silc data, author's calculations.

Finally, cluster 6 'Public sector' is also part of this first group of cluster, but in this case the significance of the differences according to education changes as we move from women to men. Indeed, women with an upper secondary qualification and women with a tertiary degree are equally likely to enter the cluster but more so than low-skilled individuals. In contrast, estimates' differences according to education are always significant for men, meaning that those with a higher degree are more likely than everyone else to enter this cluster while the only 'advantage' for medium educated is against those with a lower secondary qualification.

If we now consider the group of clusters that show a downwards trend according to education, men and women have once again similar characteristics but to different extents for the different clusters. In fact, starting from cluster 2 'Self-employment', for women differences according to education are significant between low-skilled (lower- plus upper-secondary qualification) and higher skilled, while for men differences are significant between lower-skilled and more educated individuals (upper secondary qualification plus tertiary degree).

When we move to cluster 7 'Apprenticeship + open-ended full-time employment' men and women show a more similar pattern: difference in probability is not significant between those with a lower and upper secondary qualification, but it is significant between those with an upper secondary qualification and those with a tertiary degree. In fact highly-skilled are less likely that lower-skilled to enter this cluster, highly complex according to the complexity value.

If we then compare the estimates for cluster 8 'Patchy participation', patterns for men and women differ. For women a significant difference in probably exists between those with a lower secondary qualification and more skilled individuals: the latter have a lower probability of belonging to this cluster (regardless of having an upper secondary or a tertiary qualification) strongly characterized by joblessness and by many transitions between many different states. In contrast, what we can define a higher education-driven advantage is stronger and statistically significant for men: differences in probability are always significantly lower when we move from low to medium-skilled and from medium to highly-skilled.

Finally, as stated before, cluster 5 'Prevalence in open-ended part-time contract', should be considered separately, because even though a very weak downward trend exists for men, differences are actually not significant when we compare the estimates for individuals with different educational level, both for men and women.

6.3   Summary and concluding remarks

This Chapter aimed to present a taxonomy empirically grounded for the models of labour market participation during the early career for the cohort of workers 1998-2001, that is within the new institutional framework set up according to the deregulation process. Eight clusters were found to efficiently summarize the high degree of variability existing between individuals' sequences. The clusters turn out to be mainly defined by the contractual arrangements. In fact, one state is often prevalent throughout the individual sequences assigned to a certain cluster.

A relatively high number of individuals belong to clusters that can be considered more stable from the point of view of employment stability. It follows that these workers experienced a rather steady career within a single state. This confirms partially *Hypothesis 4*, because evidence showed that some employment arrangements define particular models of participation characterized by steadiness in that positions. However, those arrangements turned out to be more than expected. In other words, not only

self-employment and professional positions, but also states such as employment in the public sector and dependent and open-ended part-time employment strongly characterized some of the bulging blocks of the taxonomy I obtained.

The two states temporary full-time and part-time in the private sector did not emerge as states that strongly characterized a cluster, but they are rather distributed throughout the sequences for different individuals at different points in time (as Plots *B* in Figure 6.1 to 6.8 show). In other words, if we consider the atypical contractual arrangements as I defined them in Chapter 2, part-time open-ended in the private sector and dependent self-employment do define separated clusters whose members experienced rather steady careers within the same (atypical) state. Apprenticeship trajectories easily result in full-time open-ended positions, despite involving a somewhat bumpy road. In contrast, temporary contracts seem to be transient states, which nevertheless are likely to affect entry careers throughout the seven year period considered.

Given the set of clusters, gender and the interaction between gender and education – net of other relevant variables – define a differentiated probability of accessing certain clusters, that is to be able to start their active life within in the labour market by following certain implicit participation models. Being women and being less-skilled are negatively related to the probability of being in more steady and secure (in terms of employment protection and stability and social security) clusters.

To conclude, I would like to stress on two main points. Firstly, we should not forget that (as recalled in Chapters 3 and 4) the knowledge derived from the cluster analysis is – intentionally – simplified. If follows that it is worth highlighting once more that, in some cases, for both more stable and more disrupted clusters, the internal variability and the variety in terms of states throughout the individual sequences are high. This supports the idea that complexity of the early career is considerable for a great number of young workers and that analyses on this topic should focus more on the within-group differences that – as recalled in Chapter 2 – could strengthen within-group inequalities.

Secondly, even though employment stability characterized a relatively high number of early careers, it is worth recalling that the second most numerous cluster is the one called 'Patchy participation', meaning that one out of five workers in the sample experienced a highly volatile participation characterized by long periods spent in joblessness (not being covered by unemployment benefits) and a high number of transitions between different contractual arrangements (with consequences in terms of future contractual power and in terms of risk of skills depreciation).

Chapter 7

Conclusions and outlook

The aim of this dissertation was to offer a broad in-depth description of a social phenomenon, namely the early careers evolution over time, in order to contribute to the empirical evidence concerning the consequences of the flexibilization process on early careers configuration and on inequalities connected to labour market participation pathways. I referred to methodological and conceptual innovative tools offered by sequence analysis, which are relatively uncommon in the existing sociological literature and generally underused.

The analysis of early careers is crucial because it is exactly during this step that the following trajectories are set up and within or between groups differences (with respect to a number of factors) can positively or negatively act as sources of present and future inequality both in the working life and other life-course domains (Mayer and Tuma, 1990; Kohli, 1986).

The description of the dynamics of labour market careers during recent decades and their variation are fundamental in drawing a plausible image of the labour opportunity structure and its evolution over time (Abbott, 2005; Sackmann and Wingens, 2003). The resulting picture should be able to account for the increasing complexity of the labour market system and the emersion of grey-zones that overlap the boundaries between employment categories triggered by increasing deregulation.

The traditional duality between mutually exclusive states – namely employment and unemployment – is put on probation by a number of less-defined and recognizable states, which differ according to employment protection and security (Lucidi and Raitano, 2008). On a more general level, but in line with these considerations, the dual-labour market perspective appears somehow restricted when considering labour market participation as embedded in a more general process of continuities and discontinuities involving social relations and institutions (Fabrizi and Raitano, 2012; Leontaridi, 1998).

As mentioned above, in this work I analyzed the direction and the quality of the changes that affected pathways of early labour market participation over time by applying sequence analysis to individual careers. This offers new insights by going beyond the singles-transitions-approach (Brzinsky-Fay, 2010) and by adopting a holistic point of view in the life-course framework (Abbott, 1990). I approached early career pathways

from two perspectives, and I consequently developed two sets of hypotheses.

Firstly, I conduced a cross-cohort comparison and I considered a smaller number of states for defining the individual sequences in order to give more attention to the general characteristics of employment arrangements and the shifts among them. It follows that the first set of hypotheses concerned the differentiation and destandardization (the increasing within and between sequences variability) of the early career across cohorts.

Secondly, I opted for a more detailed states definition to focus on the cohort of workers who entered the labour market from 1998 to 2001. In this case it was possible to distinguish among a wider range of contractual arrangements to put in evidence how the latter shape models of labour market participation more or less sharply. Therefore, the second set of hypotheses had to do with the models of early labour market participation experienced by a single cohort of individuals who started to work within the new institutional framework defined by the flexibilization process.

Differentiation. The first research question was about differentiation (that is the internal complexity of individual early careers) and its evolution across cohorts. *Hypothesis 1a* stated the increasing mobility among different statuses due to changes of labour market structure, which should have led to an monotonic increase in complexity of individual early careers. The complexity index gives support to this hypothesis, but to different extents for men and women.

As suggested by *Hypothesis 1b*, differentiation has increased more for women than for men. In fact, the trend for women shows more pronounced growth of within differentiation (partially according to Krüger and Levy 2001), driven by an increase in the average number of transitions and different states experienced by individuals and the increase in time spent in employment rather than in joblessness. The less pronounced and more undefined trend for men seems to be due to the smaller number of different states experienced, at least for the group considered before distinguishing according to education.

In fact, in line with *Hypothesis 1c*, education strongly influenced the degree to which complexity evolved over time. Low and medium-skilled individuals are more exposed to higher volatility and variability of individual trajectories: the higher the educational level, the less complex the patterns. This applies especially to women, who show increasingly large differences across cohorts according to education.

The increasing share of time spent in employment rather than in joblessness across cohort is consistent with other findings (Bison et al., 2010), but the results from the analysis of the cross-cohort comparison show that this applies particularly, once again, to highly-educated workers, especially when looking at more advantageous employment arrangements.

Summing up, the evidence from this fist set of analyses strongly confirms that the hypothetical growing similarity between women and men (Krüger and Levy, 2001) follows – at least in case of early careers – complex pathways according to educational level: one for all, the complexity index does not differ when comparing highly-skilled men and

women, while differences are very pronounced when comparing men and women with lower educational qualification.

Destandardization. The second research question concerned destandarization, that is the variability between sequences. Both the discrepancy measure and the representative sequences (analyzed in order to offer additional 'qualitative' information) support *Hypotesis 2a*, which suggested that a greater increase in destandardization for women than for men exists. In fact, discrepancy is always higher for women when they are compared to the parallel men's cohorts. Furthermore, looking at the temporal evolution of discrepancy, the index always decreases less steeply for women. For the latter, the last two cohorts show a flat or even increasing trend, meaning that a high inter-individual variability persists/increases throughout the period considered. This evidence in consistent with what is found by Widmer and Ritschard (2009) for Switzerland and by Simonson et al. (2011) for Germany. In both cases, when comparing different cohorts of workers, a pluralization of careers exists and destandardization appears to be embedded in gender inequalities.

Moreover, *Hypothesis 2b* argued that less-skilled workers should be more exposed to a higher variety of pathways and for longer periods because opportunities of stabilization in the short run are more volatile than for highly educated. The analyses confirm that the latter are more easily funneled down similar paths, characterized by common timing and statutes order: this applies especially for men and for the two last cohorts of women.

This evidence is strengthened by the detection of the representative sequences. This analytical step also shows that non linear and disrupted early careers were already widely diffuse before the deregulation process started. Also in this case the number of representative sequences increases across cohorts except for higher-skilled individuals, meaning that these workers are more likely to share common pathways and less different to each other. This is consistent with what Hollister (2012; 2011) finds for the US, where less skilled workers have higher probability of experiencing more heterogeneous pathways compared to highly-educated.

The third research question concerned the pathways leading to more or less favourable outcomes, namely full-time contracts in the private sector and unemployment (then renamed as joblessness due to the impossibility of distinguishing between inactivity and unemployment). The evidence supports the (highly general) *Hypothesis 3*: in fact, a cross-cohort increase in variety (that means the types of statuses throughout the individual careers) and number of different pathways leading to the two outcomes considered exist. Moreover an increase in length characterizes the cross-cohort evolution of the pathways.

Although this analytical step is probably the least convincing, it is worth highlighting here that this kind of analysis allowed me to identify the most frequent succession of states leading to outcomes of interest. More in detail, stability in full-time contracts in the private sector is the most frequent way to achieve (or rather to remain in) this state at the end of the seventh year of labour market participation. A further point to add is

that single transitions between full-time contract in private sector and joblessness and their sequential combinations were found to be the most frequent patterns followed by those who were in joblessness at the end of the 84-month period.

Models of labour market participation: a taxonomy and likelihood of experiencing different pathways according to gender and education. This second set of research questions focused on a single cohort of workers who entered the labour market between 1998 and 2001. The fourth research question was highly exploratory, since the aim was to obtain an empirically grounded taxonomy of models of early careers. It follows that also *Hypothesis 4* could have not been very specific. Nevertheless, according to the latter, empirical evidence confirms that self-employment and professional statuses do strongly define a model of participation characterized by steadiness in a single state, but the configuration of the other clusters is rather more complex. In fact, the states temporary full-time and temporary part-time in the private sector did not emerge as states that strongly characterize a cluster, but they are rather distributed throughout the individual sequences at different points in time.

More in detail, looking at some contractual arrangements that are commonly considered as atypical (such as part-time open-ended in the private sector and dependent self-employment), they do define independent clusters, whose members experienced rather steady careers within the same atypical positions. Surprisingly, temporary contracts (both part-time and full-time) does not strongly characterized any of the clusters. This contractual arrangement seem to be transient, rather than working as a proper trap in precarious positions. It is worth mentioning that, in spite of involving a somewhat bumpy road, apprenticeship trajectories easily result in long-lasting full-time open-ended episodes.

Lastly, the fifth research question concerned the association between clusters membership, gender, and education, by assuming the latter two as variables that trigger different probabilities of experiencing more or less stable early career pathways. *Hypothesis 5* claimed that women and lower-skilled individuals in general are expected to be be more likely to be assigned to clusters characterized by higher volatility both in terms of employment and job security.

The main results support the fact that gender and the interaction between gender and education – net of other confounding variables – define differentiated probabilities of accessing certain models of labour market participation. Specifically, being women is negatively associated to the probability of being in more steady and secure clusters (in terms of employment protection and stability and social security). This also applies to individuals having a low educational level, both men and women. By referring to this evidence, the temporization and individualization of inequality (Leisering and Leibfried, 2001) can be partially criticized, at least when talking about the configuration of early career pathways. In fact, it is according to gender and education differences that the risk of both experiencing more or employment stability and avoiding high level of precariousness spreads across the young population.

It is worth highlighting here that, although employment stability characterizes a relatively large number of early careers in my sample, the second most numerous cluster is the one called 'Patchy participation'. This implies that one out of five workers in the sample experienced a highly volatile participation characterized by long periods spent in joblessness (not being covered by unemployment benefits) and by a high number of transitions between different contractual arrangements (with consequences in terms of future contractual power and in terms of risk of skills depreciation). We could consider these 'patchy' careers fitting the definition of 'patchwork' (Beck, 1992) or 'disorderly' careers (Wilensky, 1961)[1]. However, we should not forget that this is not a peculiar characteristic of the pathways followed by the more recent cohorts of workers. In fact, as shown by the empirical evidence presented here and in line with recent research both on Italy and other European countries (Raitano and Struffolino, 2013; Fabrizi and Raitano, 2012; Grunow and Mayer, 2007), more complex patterns of transitions – between both labour market arrangements and qualifications – were significantly present for a high share of individuals also in the past.

To sum up, the results contribute to the empirical evidence on early careers configuration in Italy by offering new understandings of the consequences of processes triggered by flexibilization. In this regard, broadly speaking, the persistence of inequality thesis (Goldthorpe, 2002; Breen, 1997) seems to better explain what is happening in the Italian case. In fact, differences among young workers appear to be filtered not just by gender, but also by education.

When considering the educational level as a stratification variable, men and women are found to be exposed differently to the processes under inspection. Furthermore, the cross-cohort variation in the direction of an increasing similarity between young men and women applies only to higher-skilled individuals. The same is true when considering the likelihood of following a more or less precarious model of labour market participation. In fact, strong high-quality labour force attachment during the early career is not available for everyone and, simultaneously, only workers with some specific characteristics are especially exposed to bumpy pathways.

Empirical evidence on a number of European countries from research that refers to the data-mining approach implemented throughout sequence analysis (see for example Anyadike-Danes and McVicar 2010, Widmer and Ritschard 2009, and Massoni et al. 2009) gives support to the arguments raised by (Doogan, 2005) against the rise of an 'age of insecurity' and the spread of 'boundaryless careers'. It would be rather more realistic referring to the 'bounded' nature of careersKing et al. (2005), since individual characteristics, early career history, occupational identity and institutions (labour market among the others) still structure labour market opportunities and constraints.

In this regard, as highlighted by the numerous contributions presented in Chapter 3, sequence analysis can be understood as a suitable tool for reducing the existing imbalance between the core concepts typical of life-course research (and in general of those fields

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[1]See also Heery and Salmon 2000 and DiPrete and Nonnemaker 1997

of the social sciences in which the focus is on processes unfolding over time) and the empirical analysis. By following these suggestions, using sequence analysis allowed me to provide the existing literature with new evidence on early careers and their longitudinal characteristics expressed in a 'new' language, which turns out to be crucial when the aim of social research is to study processes, pathways and trajectories.

In light of these insights, exploiting the methodological and conceptual inputs that sequence analysis offers could be highly beneficial to future research on this topic, both within the same theoretical framework and by extending the field of interest to other phenomena.

Further analyses should consider, for example, the processes I studied here as they are evolving at present. Unfortunately, the data I used do not cover the period of time that corresponds to the economic crises started in 2008. Moreover, some major changes have recently involved the norms on contracts, especially concerning youth employment (see *Riforma Fornero*, L.92/2012). The consequences of the macro-economic processes and the normative reshaping are highly likely to influence the unfolding of differentiation and destandardization of labour market careers in general, but above all for new entrants.

Experiencing early careers mainly or entirely characterized by some kind of temporary arrangement, and by a large number of transitions due to the short legal duration of contracts, could be detrimental to human capital and give negative signals to future employers. These are the reasons why – differently from what I have done here – it would be conducive to take into consideration also job-to-job transitions that result in the same contractual arrangement with the same employer (both for dependent employment and dependent self-employment in the private and the public sector).

However, it is worth highlighting that the choice I made here was beneficial in pursuing the main aim of identifying and describing patterns of continuity/discontinuity that drove more or less precariousness in labour market participation (that is when individuals can not provide for themselves through labour market participation or through having access to adequate social protection, see Berton et al. 2009), rather than stressing on the contracts' duration.

Furthermore, the early career should be put in direct connection to the successive pathway and long-term outcomes, in order to consider if and to what extent path-dependence processes and cumulative inequality mechanisms are in place. In fact, the latter could foster inequality in terms of final achievements (stability *versus* precariousness, earnings, mobility, etc.). This would partly provide a limitation of the present work due to the fact that the definition of the length of the early career was discretional. The early career – like many other social processes – is a fuzzy concept that need to be analytically defined in its temporal duration every time.

Although it tried to overcome some limitations of previous research on this topic, my choices could be revised in light of new research questions by redefining the states according to that and by extending the period observed. For example, the choice to exclude from the definition the time spent in joblessness between the end of the education and the first employment episode could be criticized. In fact, path dependence mechan-

isms could tie what happens throughout educational and working pathways. However, setting the temporal boundary of early career after seven years from the first working episode should give the processes enough time to go as far as needed to reveal differences not driven by the waiting time after education, but rather by structural features of the labour market opportunity structure.

Finally, by following the petitions brought about by the life-course theory, on the one hand the early working career should be considered in terms of its relationships with individual careers in other fields of social experience (such as for example family and parental careers). On the other hand, individual pathways in those different fields should be analyzed in their connections to other individuals' trajectories in order to highlight interactions and their consequences in terms of opportunities and constraints.

It is only by struggling with the complexity of the interrelations between different social domains and between individuals that fundamental knowledge on the configuration of persistent and emerging inequalities can be built.

Appendix A

Additional tables and figures

Women		1974-1978		1982-1986		1990-1994		1998-2001	
					Cohort				
Education		Est.	S.D.	Est.	S.D.	Est.	S.D.	Est.	S.D.
All	Transitions	2.2	2.5	2.8	3.3	2.9	3.0	3.4	3.6
	States	2.0	0.8	2.2	0.9	2.3	0.9	2.5	1.0
Lower secondary	Transitions	2.6	2.9	3.5	3.7	3.4	3.2	4.6	4.5
	States	2.1	0.8	2.5	0.9	2.5	0.8	2.6	0.9
Upper secondary	Transitions	1.7	2.0	2.3	2.8	2.8	3.0	3.4	3.4
	States	1.8	0.7	2.1	0.8	2.3	0.9	2.5	1.0
Tertiary	Transitions	2.3	2.5	1.8	2.5	2.4	2.6	2.4	2.5
	States	1.9	0.4	1.9	0.5	2.1	0.8	2.2	1.0
Men		**1974-1978**		**1982-1986**		**1990-1994**		**1998-2001**	
					Cohort				
Education		Est.	S.D.	Est.	S.D.	Est.	S.D.	Est.	S.D.
All	Transitions	2.9	3.1	2.9	2.9	2.8	2.9	3.2	3.3
	States	2.0	0.8	2.2	0.9	2.2	0.9	2.3	1.0
Lower secondary	Transitions	3.5	3.4	3.6	2.9	3.5	3.1	4.0	3.5
	States	2.2	0.8	2.5	0.8	2.4	0.8	2.5	1.0
Upper secondary	Transitions	2.2	2.7	2.3	2.9	2.4	2.6	3.1	3.2
	States	1.8	0.7	2.0	0.8	2.1	0.9	2.3	1.0
Tertiary	Transitions	1.2	1.7	1.7	2.2	2.0	3.0	2.1	2.6
	States	1.6	0.6	1.8	0.7	1.8	0.9	1.9	0.9

Table A.1: Average number of transitions and states by gender, education and cohort: estimates (Est.) and standard deviation (S.D.). Source: AD-Silc data, author's calculations.

	Cohort 1998-2001
Gender	
Women	47.9
Men	52.1
Area of birth	
North	39.5
Center	22.5
South-Islands	34.7
Foreign country	3.3
Education	
At most lower secondary	23.9
Upper secondary	58.6
Tertiary	17.5
Delay in education	
No delay	78.2
1 year	9.2
2 or more years	12.6
Age at the entry	
15-19	8.2
20-24	52.9
25-29	26.1
30-34	12.8
Year of the first episode	
1998	24.0
1999	25.4
2000	26.0
2001	24.6
N. 2,612	

Table A.2: Descriptive statistics of covariates, cohort 1998-2001. Column percentages. Source: AD-Silc data, authors' calculations.

Cluster	AME	S.E.	*N.*
1.Prevalence of open-ended full-time employment	0.118	0.018	*758*
2.Self-employment	0.031	0.013	*209*
3.Professional employment	0.016	0.007	*91*
4.Dependent self-employment	-0.013	0.008	*144*
5.Prevalence of open-ended part-time employment	-0.059	0.009	*136*
6.Public sector	-0.036	0.011	*229*
7.Apprentice + open-ended full-time employment	-0.014	0.012	*427*
8.Patchy participation	-0.043	0.015	*518*
Tot.			*2,162*

Table A.3: Average marginal effects (AME) of gender and standard errors (S.E.) for clusters membership. Ref. cat. 'women'. The multinomial logit regression model controls for area of birth, education, delay in education, age when the first episode occurred, year when the first episode occurred. Source: AD-Silc data, author's calculations.

Cluster	Education	Women AME	Women S.E.	Men AME	Men S.E.	N.
1.Prevalence of open-ended full-time employment						*758*
	Lower secondary	0.000	-	0.000	-	
	Upper secondary	0.023	0.033	0.019	0.034	
	Tertiary	0.142	0.042	0.167	0.043	
2.Self-employment						*209*
	Lower secondary	0.000	-	0.000	-	
	Upper secondary	-0.091	0.028	-0.012	0.026	
	Tertiary	-0.156	0.027	-0.116	0.025	
3.Professional employment						*91*
	Lower secondary	0.000	-	0.000	-	
	Upper secondary	0.032	0.049	0.095	0.057	
	Tertiary	0.131	0.044	0.152	0.037	
4.Dependent self-employment						*144*
	Lower secondary	0.000	-	0.000	-	
	Upper secondary	0.042	0.014	0.029	0.011	
	Tertiary	0.108	0.027	0.077	0.022	
5.Prevalence of open-ended part-time employment						*136*
	Lower secondary	0.000	-	0.000	-	
	Upper secondary	-0.001	0.023	0.015	0.009	
	Tertiary	-0.034	0.024	0.004	0.010	
6.Public sector						*229*
	Lower secondary	0.000	-	0.000	-	
	Upper secondary	0.106	0.014	0.045	0.015	
	Tertiary	0.186	0.024	0.051	0.020	
7.Apprentice + open-ended full-time employment						*427*
	Lower secondary	0.000	-	0.000	-	
	Upper secondary	0.021	0.032	-0.044	0.031	
	Tertiary	-0.106	0.026	-0.147	0.020	
8.Patchy participation						*518*
	Lower secondary	0.000	-	0.000	-	
	Upper secondary	-0.132	0.035	-0.146	0.028	
	Tertiary	-0.272	0.035	-0.188	0.032	
Tot.						*2,162*

Table A.4: Average marginal effects (AME) of gender and education and standard errors (S.E.) for clusters membership. Ref. cat. 'women with low secondary education' and 'men with low secondary education'. The multinomial logit regression model controls for area of birth, delay in education, age when the first episode occurred, year when the first episode occurred. Source: AD-Silc data, author's calculations.

	Women Linear probability	Women C.I. lower	Women C.I. upper	Men Linear probability	Men C.I. lower	Men C.I. upper
Cluster						
1.Prevalence of open-ended full-time empl.	0.252	0.228	0.276	0.370	0.345	0.395
2.Self-employment	0.108	0.090	0.125	0.139	0.121	0.156
3.Professional employment	0.023	0.015	0.031	0.039	0.029	0.049
4.Dependent self-employment	0.055	0.043	0.067	0.042	0.031	0.052
5.Prevalence of open-ended part-time empl.	0.082	0.067	0.098	0.023	0.015	0.031
6.Public sector	0.108	0.092	0.124	0.072	0.058	0.085
7.Apprentice + open-ended full-time empl.	0.148	0.130	0.167	0.134	0.119	0.150
8.Patchy participation	0.224	0.201	0.247	0.181	0.162	0.201
Tot. 2,162						

Table A.5: Linear probabilities for clusters membership according to gender and 95% confidence intervals (C.I.). The multinomial logit regression model controls for area of birth, education, delay in education, age when the first episode occurred, year when the first episode occurred. Source: AD-Silc data, author's calculations.

Cluster	Education	Women			Men		
		Linear probability	C.I. lower	upper	Linear probability	C.I. lower	upper
1.Prevalence of open-ended full-time employment	Lower secondary	0.216	0.161	0.271	0.325	0.272	0.378
	Upper secondary	0.239	0.205	0.272	0.343	0.305	0.382
	Tertiary	0.358	0.298	0.417	0.492	0.428	0.555
2.Self-employment	Lower secondary	0.189	0.140	0.237	0.166	0.127	0.206
	Upper secondary	0.098	0.074	0.122	0.154	0.124	0.184
	Tertiary	0.032	0.011	0.054	0.051	0.024	0.078
3.Professional employment	Lower secondary	0.002	-0.001	0.006	0.001	-0.001	0.003
	Upper secondary	0.034	-0.061	0.130	0.096	-0.014	0.206
	Tertiary	0.133	0.048	0.219	0.153	0.082	0.224
4.Dependent self-employment	Lower secondary	0.009	-0.003	0.021	0.007	-0.002	0.016
	Upper secondary	0.051	0.028	0.075	0.036	0.018	0.055
	Tertiary	0.117	0.066	0.168	0.085	0.044	0.126
5.Prevalence of open-ended part-time employment	Lower secondary	0.090	0.054	0.125	0.014	0.003	0.025
	Upper secondary	0.088	0.064	0.113	0.029	0.016	0.042
	Tertiary	0.056	0.028	0.084	0.018	0.001	0.035
6.Public sector	Lower secondary	0.009	-0.003	0.021	0.036	0.016	0.056
	Upper secondary	0.115	0.089	0.140	0.081	0.060	0.102
	Tertiary	0.195	0.149	0.241	0.087	0.055	0.119
7.Apprentice + open-ended full-time employment	Lower secondary	0.137	0.098	0.177	0.157	0.121	0.192
	Upper secondary	0.158	0.111	0.205	0.113	0.065	0.160
	Tertiary	0.031	-0.001	0.063	0.010	-0.008	0.027
8.Patchy participation	Lower secondary	0.348	0.289	0.407	0.293	0.246	0.341
	Upper secondary	0.217	0.182	0.252	0.147	0.119	0.175
	Tertiary	0.077	0.043	0.110	0.105	0.065	0.146
Tot. 2,162							

Table A.6: Linear probabilities for cluster membership according to gender and education and 95% confidence intervals (C.I.). The multinomial logit regression model controls for area of birth, delay in education, age when the first episode occurred, year when the first episode occurred. Source: AD-Silc data, author's calculations.
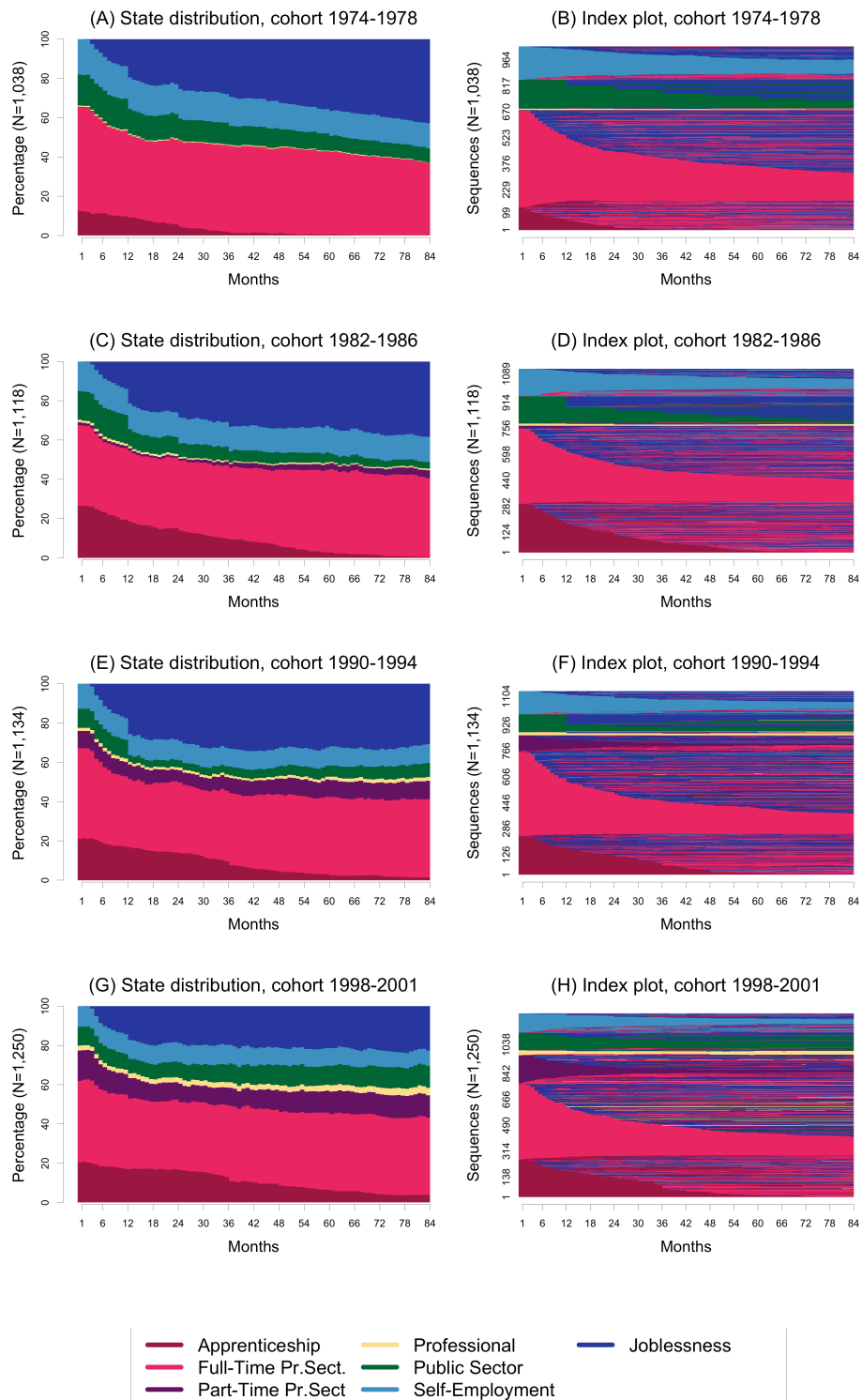
Figure A.1: States distribution plot and index plot by cohort - Women, 4 cohorts. Source: AD-Silc data, author's calculations.
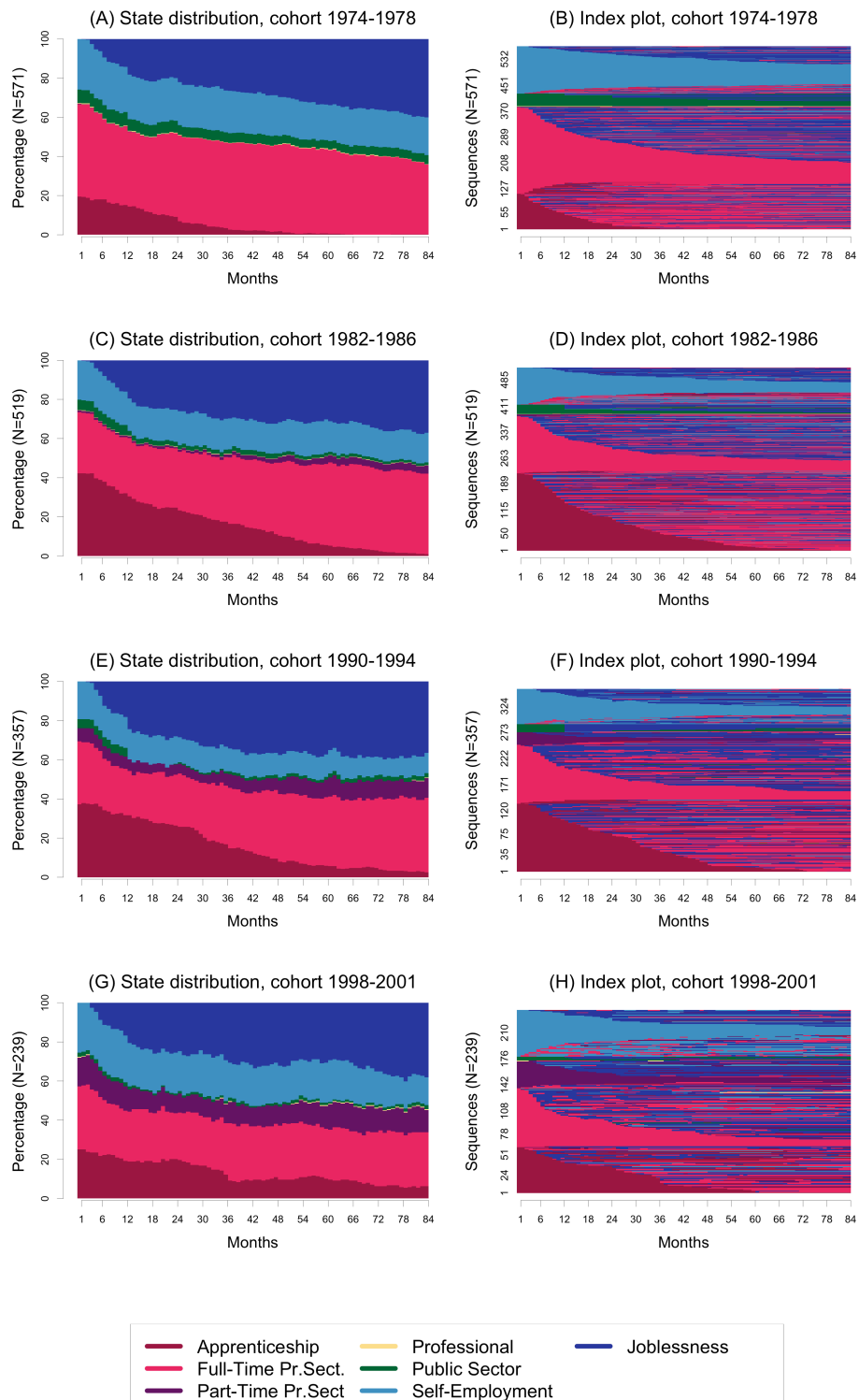
Figure A.2: States distribution plot and index plot by cohort - Women, lower secondary education, 4 cohorts. Source: AD-Silc data, author's calculations.
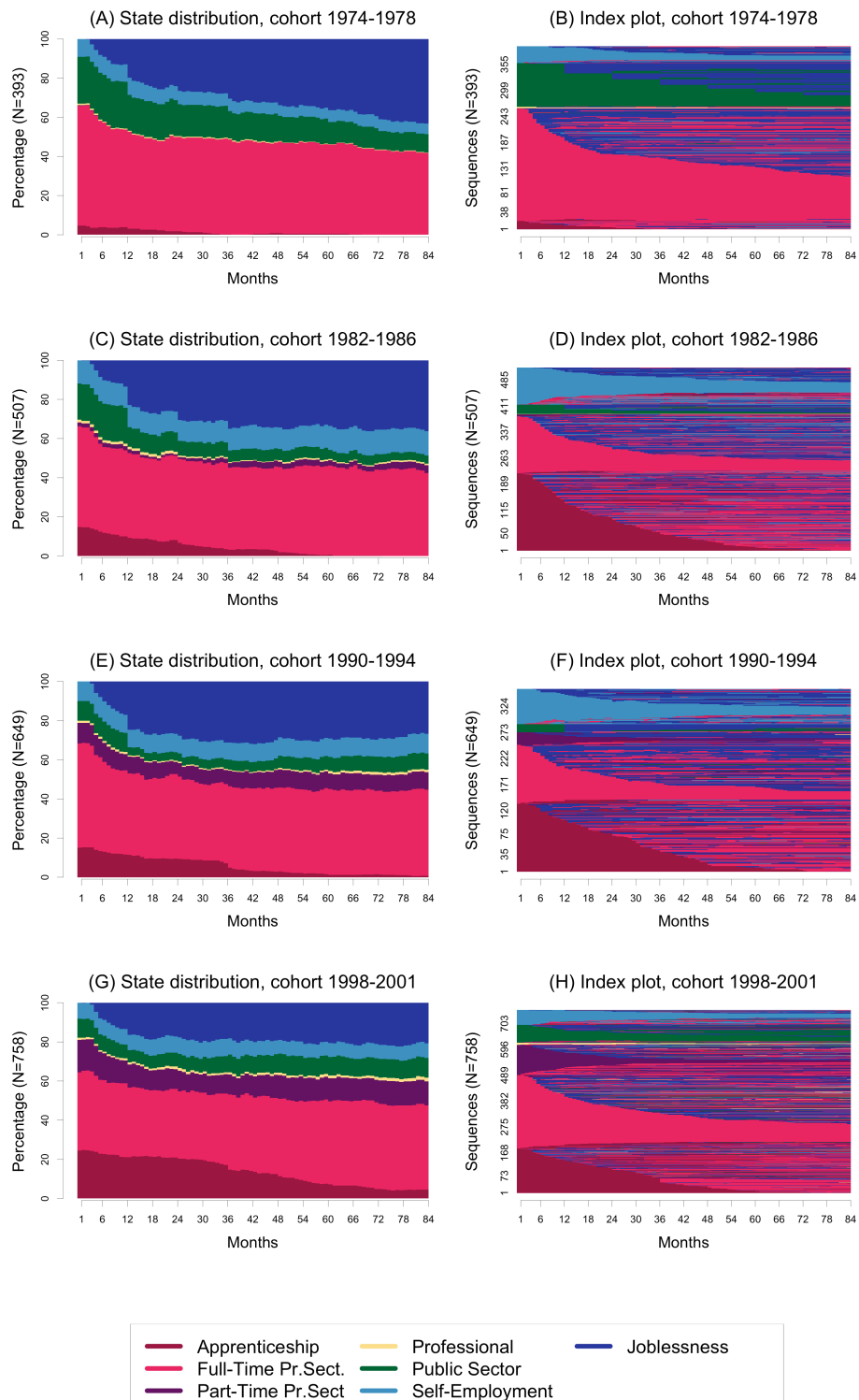
Figure A.3: States distribution plot and index plot by cohort - Women, upper secondary education, 4 cohorts. Source: AD-Silc data, author's calculations.
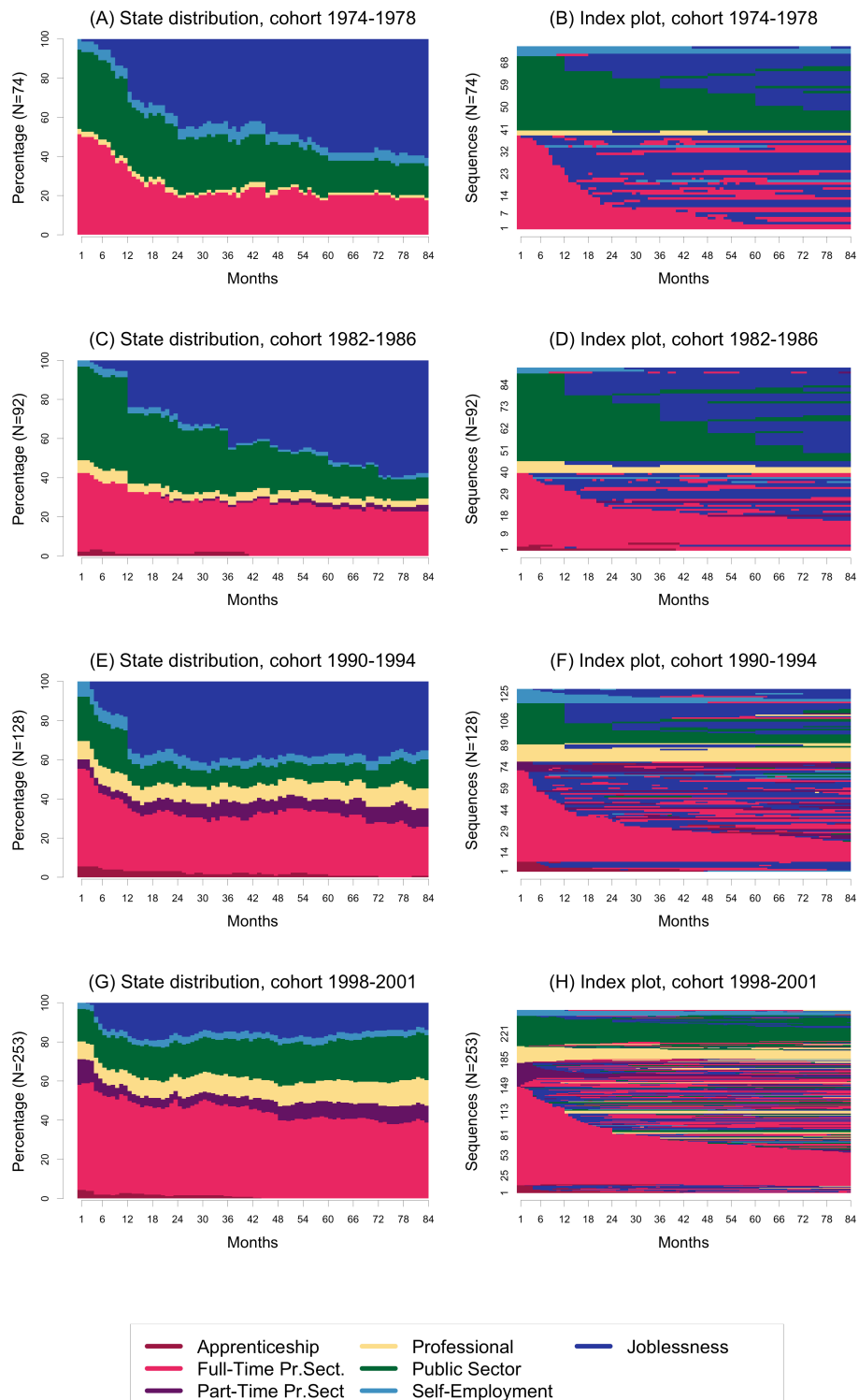
Figure A.4: States distribution plot and index plot by cohort - Women, tertiary education, 4 cohorts. Source: AD-Silc data, author's calculations.
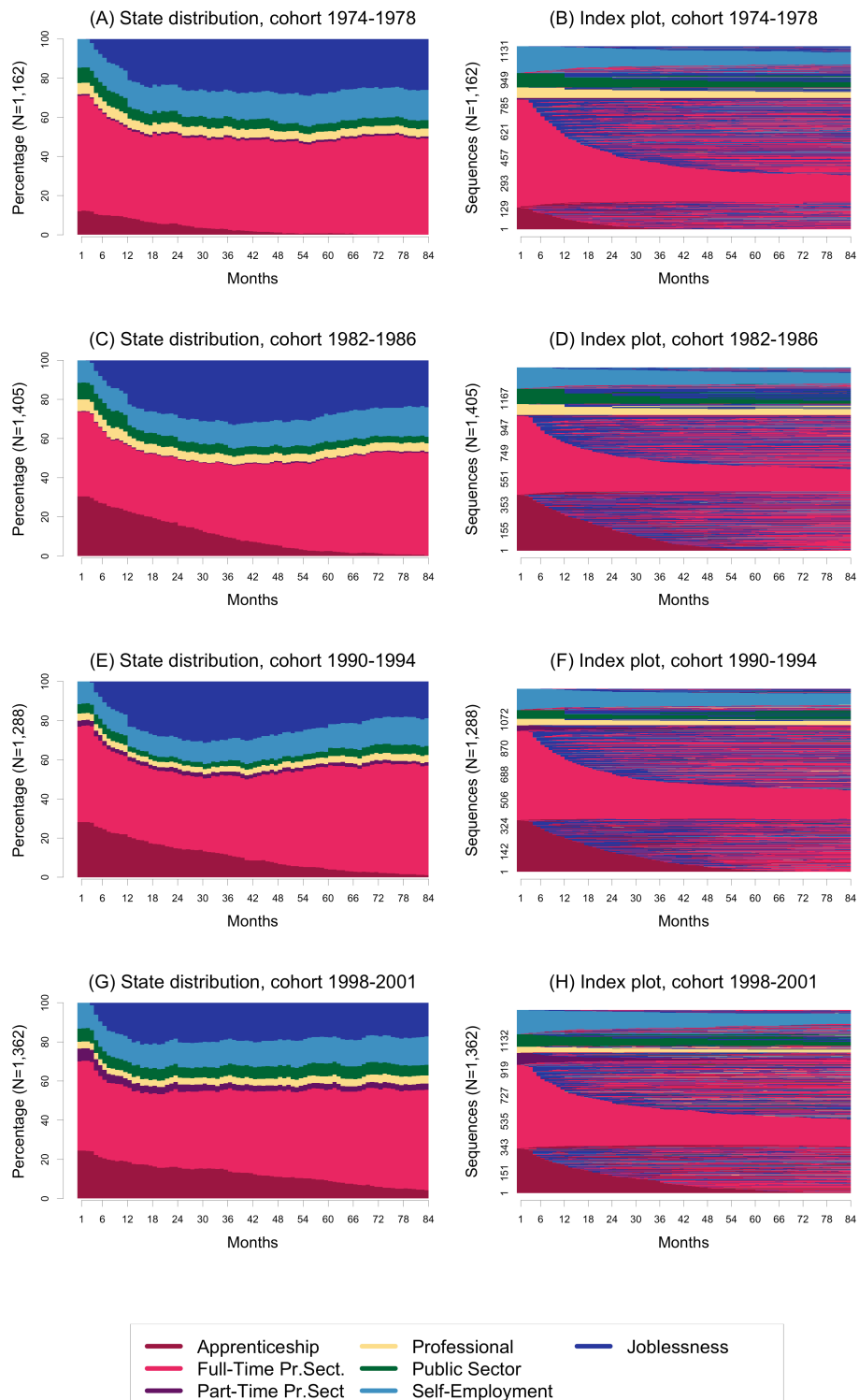
Figure A.5: States distribution plot and index plot by cohort - Men, 4 cohorts. Source: AD-Silc data, author's calculations.
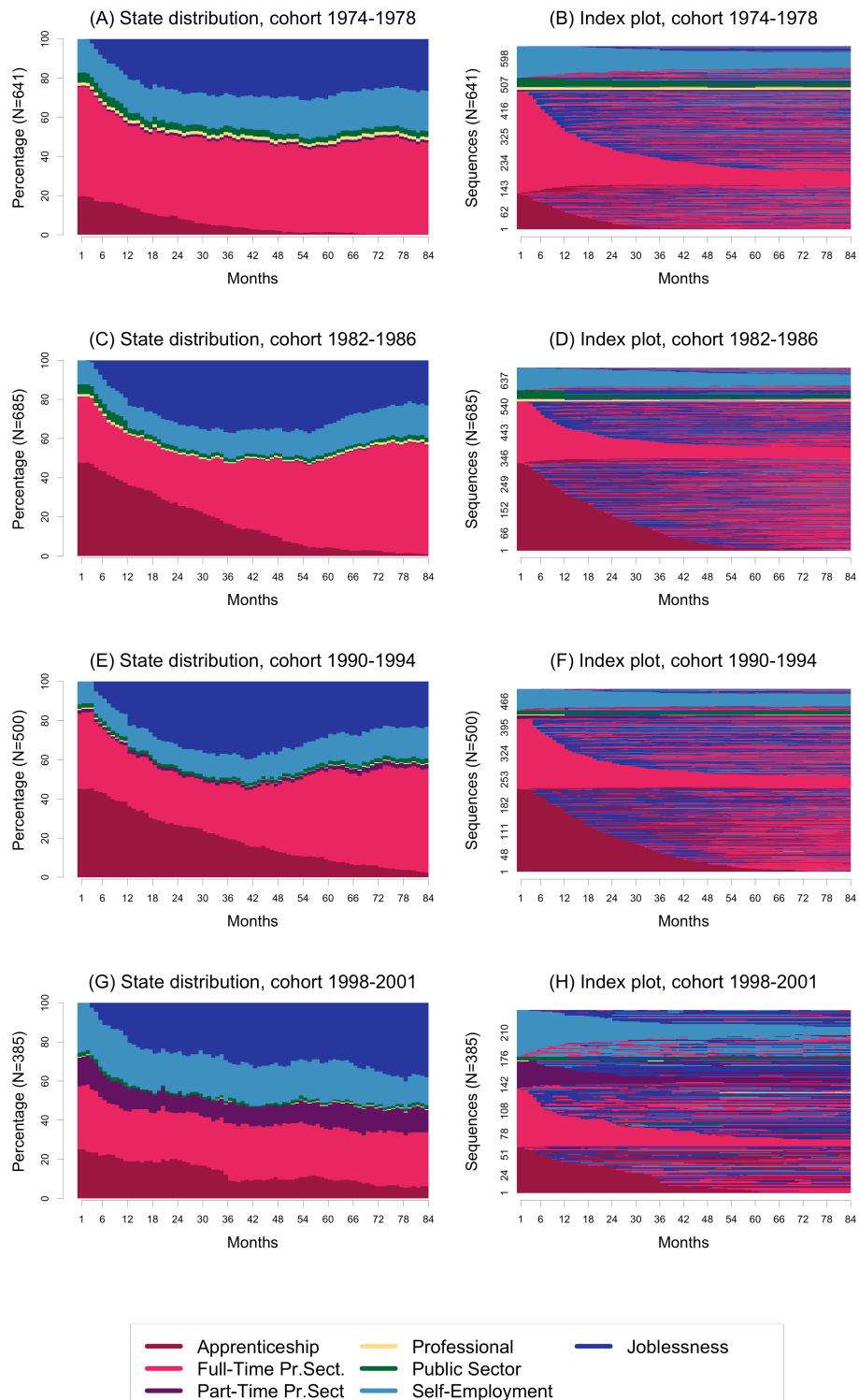
Figure A.6: States distribution plot and index plot by cohort - Men, lower secondary education, 4 cohorts. Source: AD-Silc data, author's calculations.
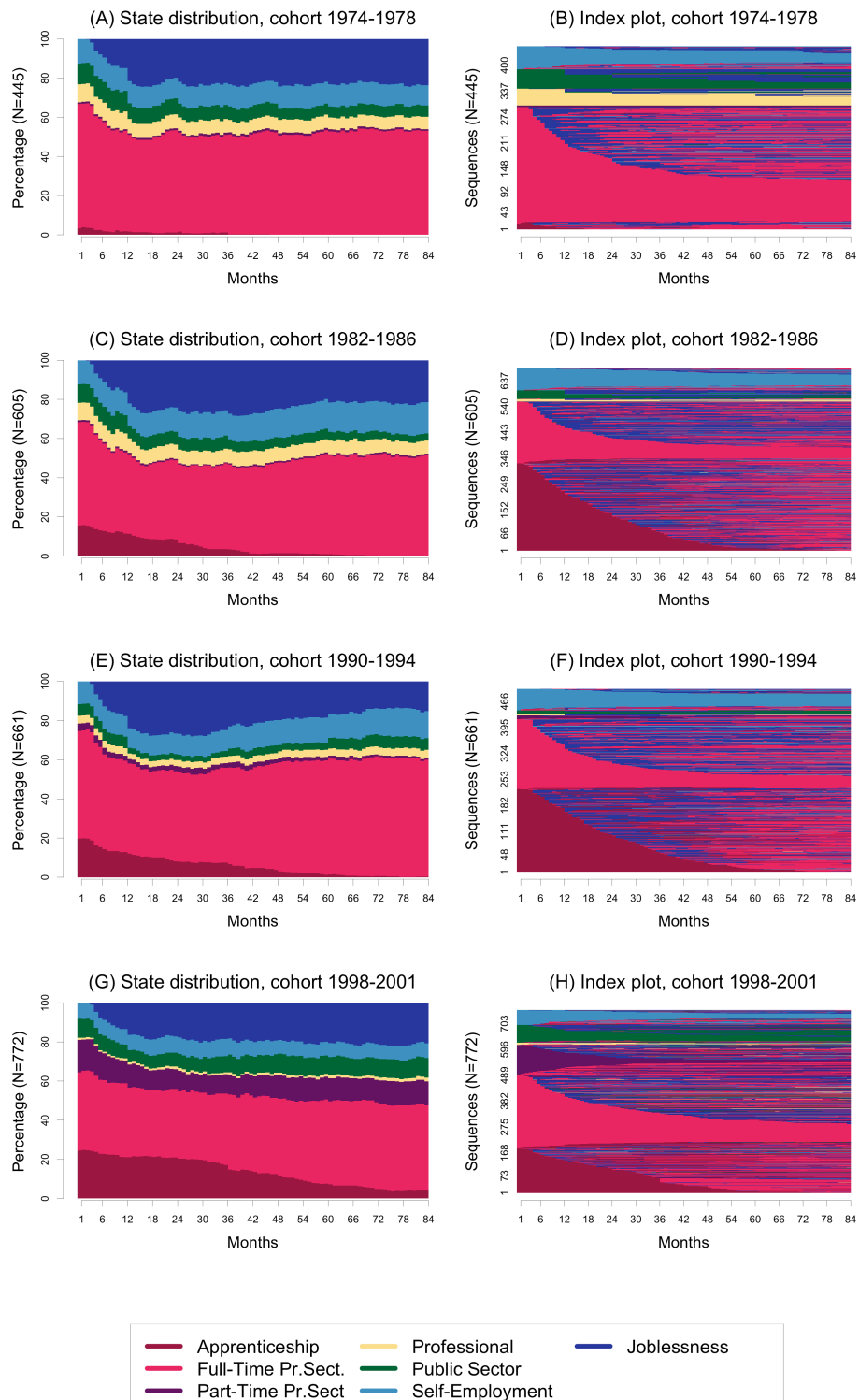
Figure A.7: States distribution plot and index plot by cohort - Men, upper secondary education, 4 cohorts. Source: AD-Silc data, author's calculations.
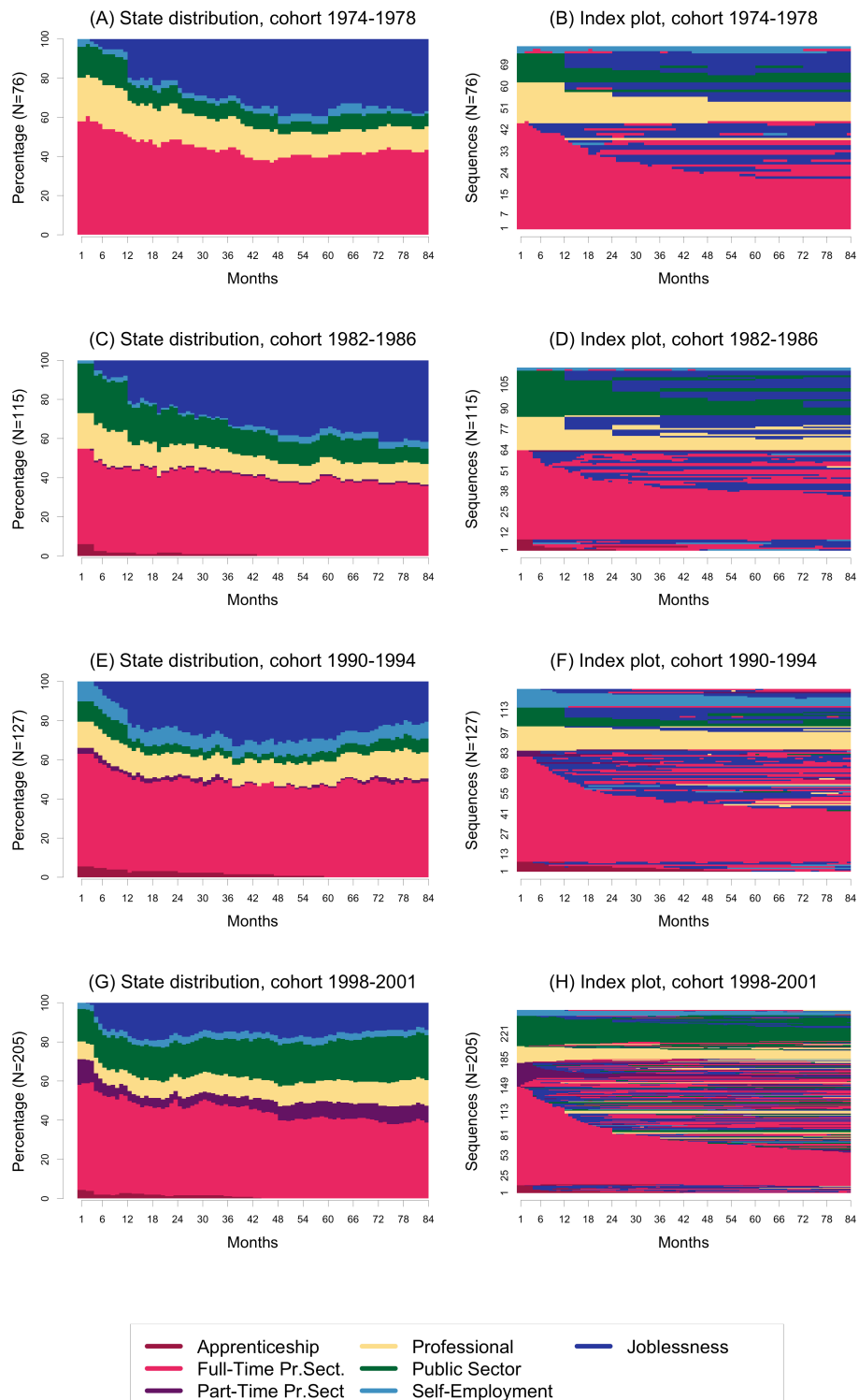
Figure A.8: States distribution plot and index plot by cohort - Men, tertiary education. Source: AD-Silc data, author's calculations.
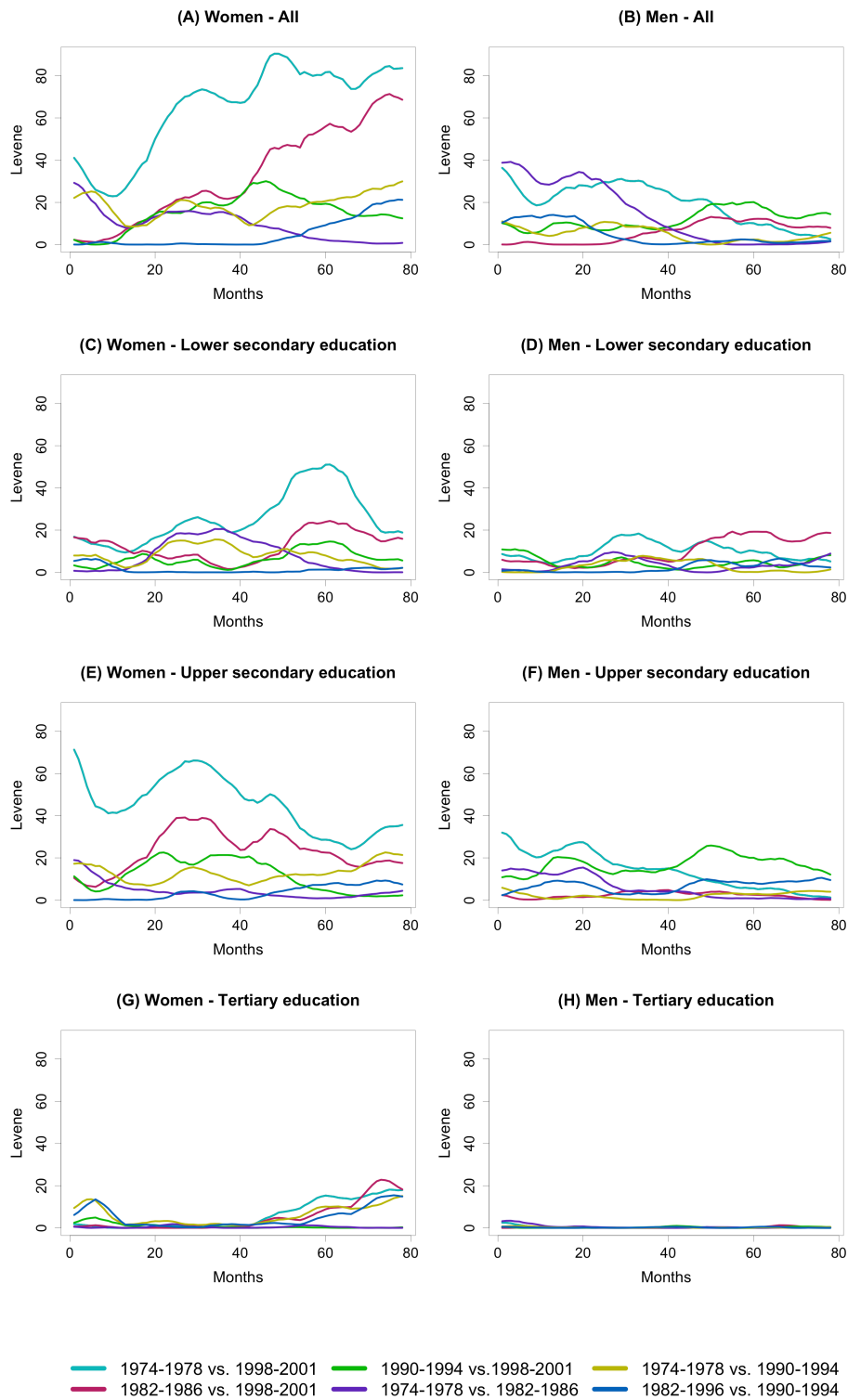
Figure A.9: Trend of the Leven statistic over time by gender, education and cohort. Source: AD-Silc data, author's calculations.
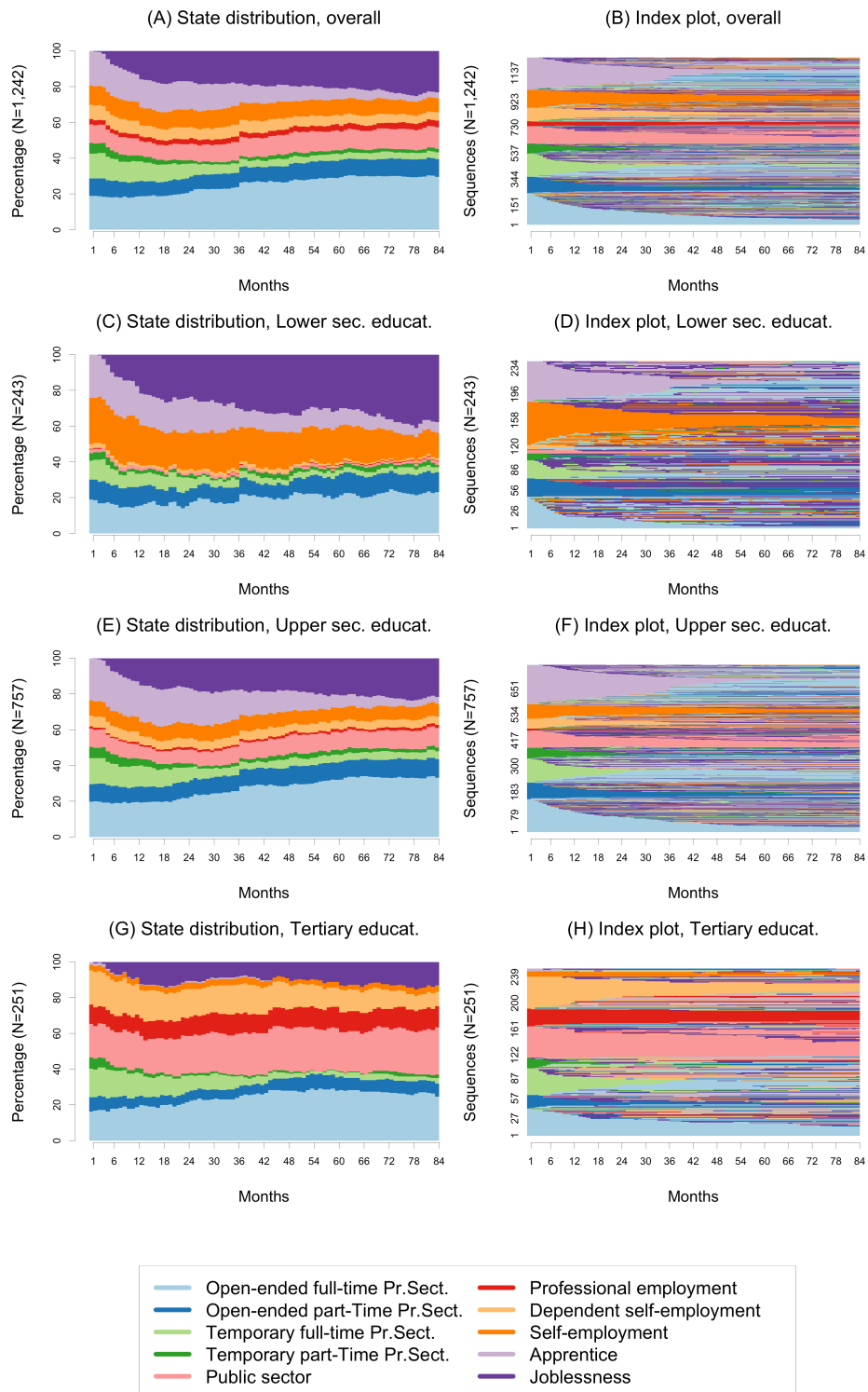
Figure A.10: States distribution and index plots by educational level - Women, cohort 1998-2001. Source: AD-Silc data, author's calculations.

(A) State distribution, overall

(B) Index plot, overall

(C) State distribution, Lower sec. educat.

(D) Index plot, Lower sec. educat.

(E) State distribution, Upper sec. educat.

(F) Index plot, Upper sec. educat.

(G) State distribution, Tertiary educat.

(H) Index plot, Tertiary educat.

Open-ended full-time Pr.Sect.
Open-ended part-Time Pr.Sect.
Temporary full-time Pr.Sect.
Temporary part-Time Pr.Sect.
Public sector
Professional employment
Dependent self-employment
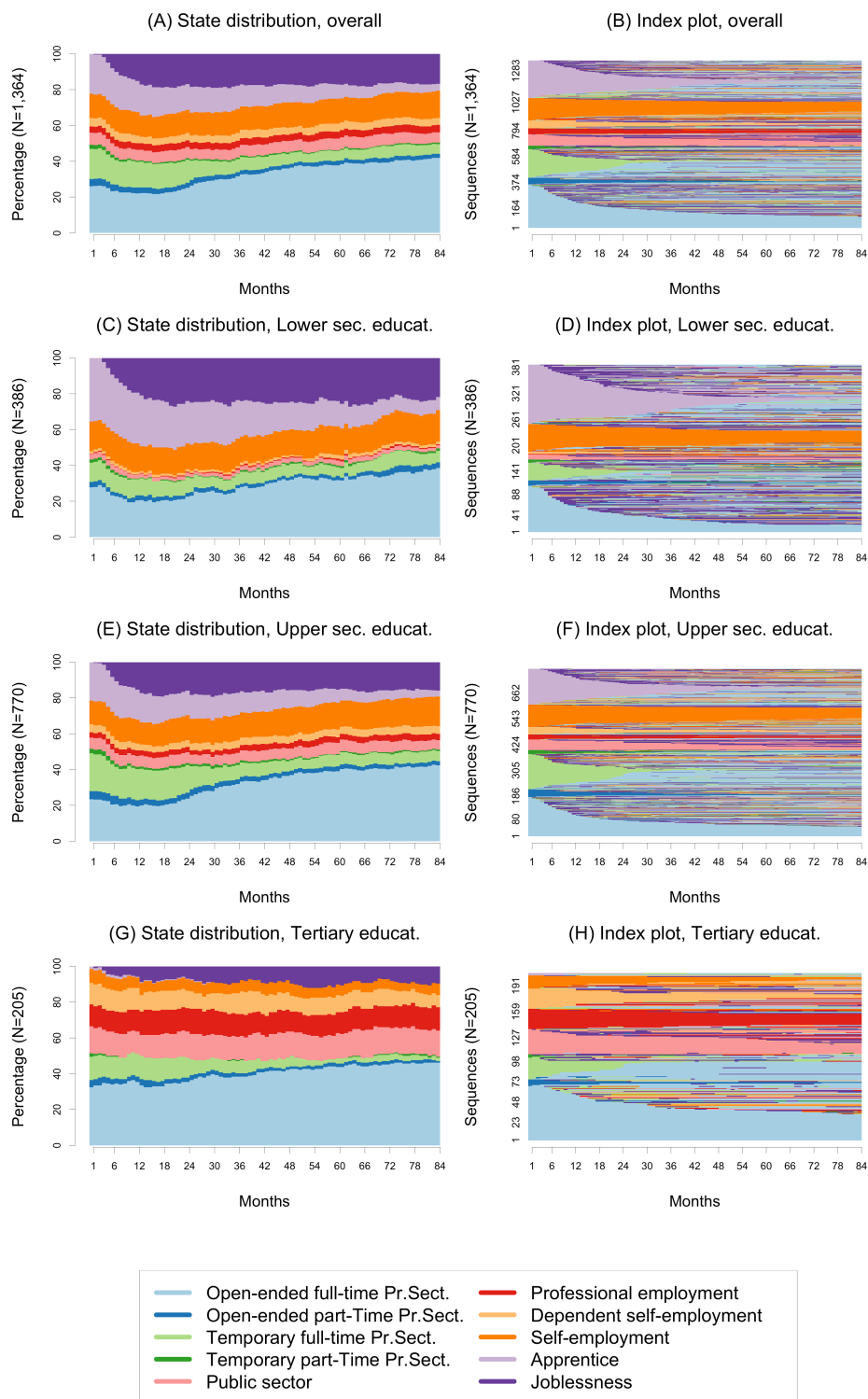Self-employment
Apprentice
Joblessness

Figure A.11: States distribution and index plots by educational level - Men, cohort 1998-2001. Source: AD-Silc data, author's calculations.
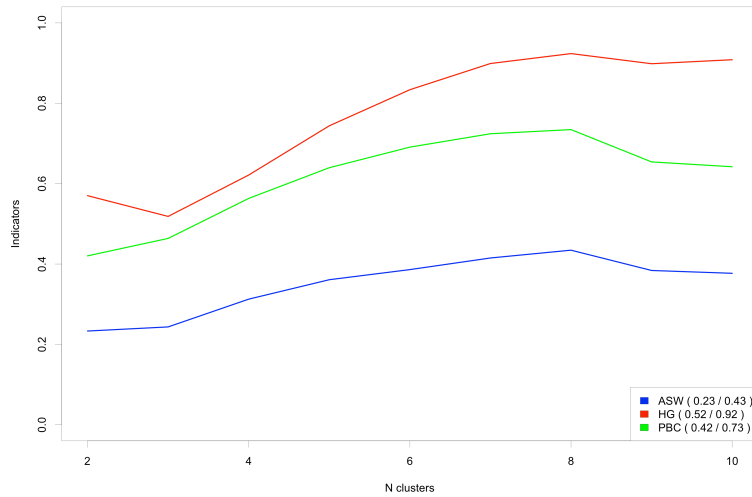
Figure A.12: Cut-off criteria diagnostic for the cluster analysis: Average Silhouette Width (ASW), Hubert Gamma and Somers D (HG) and Point Biserial Correlation (PBC). Source: AD-Silc data, author's calculations.
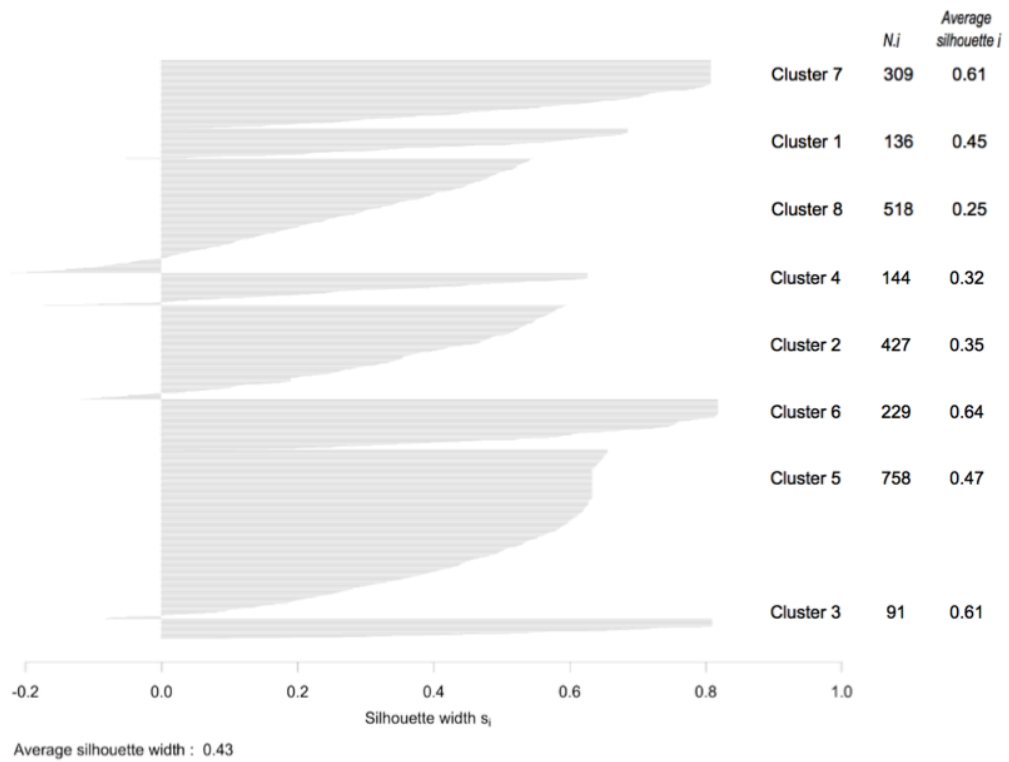

Figure A.13: Silhouette diagnostic for the 8-clusters solution. Source: AD-Silc data, author's calculations.

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