The Trend over time of the labour market opportunities of young people in Italy

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Abstract:

Since the mid-1980s the Italian labour market has been involved by relevant institutional changes aimed at increasing its flexibility and improving the employment opportunities of disadvantaged labour market categories (e.g, young people). In addition, the evolution of social-cultural aspects and changes in workforce composition, have possibly affected both the educational and the labour market perspectives of young people, especially females. We analyze this context focusing on the re-employment probabilities of young people (age range 15-24) in Italy for the period 1985-2004. We find that the reforms and changes in workforce composition increased youth employment. Nonetheless, the employment opportunities offered to disadvantaged workers were primarily atypical and temporary and therefore did not imply a stable and permanent increase of the bulk of youth employment.

1. Introduction

The issue of European unemployment has been largely debated by the academic literature. After the economic downturns due to the oil shock of the 1970s, many European countries have experienced a relevant increase in unemployment rates, especially among young individuals and other disadvantaged groups in the labour market.

Large differences/heterogeneous unemployment trends were observed across European countries. Nonetheless, the problem is magnified everywhere when focusing on young people. Youth unemployment is indeed very high in the late nineties in

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France, Italy and Spain, where it stands around 25 per cent (Contini and Poggi, 2012, and Howell et al. 2006).[1]

The causes of the rise in youth unemployment range from the effectiveness of the educational system at easing the transitions from school to work (OECD, 2000), labour market institutions (e.g., labour costs, flexibility), the role of the family of origin as social and economic buffer (Becker et al., 2004), and factors related to changes in the composition of the population (like the increase of the relative size of the youth population from the mid-1980s until the mid-1990s).

Studies document the presence of state dependence for youth unemployment in Europe and therefore also in Italy (Torelli and Trivellato, 1989; Ordine, 1992; Addison et al., 2005). The existence of negative duration dependence and the mechanism that produce stigmatization, discouragement and human capital depreciation in the course of joblessness is also explored (Contini and Poggi, 2012). In addition, youth unemployment in Italy, as well as in other Mediterranean Countries (e.g., Spain) shows relevant gender and geographical differentials, which are well known structural characteristics of the Italian labour market (Bertola Garibaldi, 2003, and Ricciardi, 1991).

The labour market rigidity and the reduced competitiveness in the globalizing world have been seen as the main causes of the scarce performance of the European labour markets, especially for Southern countries. During the last three decades many labour market institutions have been reformed with the aim of increasing its flexibility and competitiveness, through the reduction of labour costs and incomes policy, and relaxing the employment protection legislation. These gradual and/or partial reforms have been implemented everywhere, bringing about changes in the institutional framework of the labor market (Boeri and Garibaldi, 2007).

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[1] In Italy, the youth unemployment rates is slightly higher with respect to the mentioned 25%. The overall youth unemployment rate is of around 27.7% in 1999. This latter is the average of around 26.6% for male and 37.4% for female. The gender gap in Italian unemployment is quite marked also for young people. These figures are available in Internet at http://stats.oecd.org/.

The main institutional changes, that will be examined in depth in Section 2, involved the mechanism of the wage determination and the bargaining process, through the substitution of the automatic wage indexation ("scala mobile") with an institutional wage indexation providing an ex-post adaptation of wages to the patterns of prices (1993). Among others, Manacorda (2004) shows that the "scala mobile" compressed the wage distribution and its reform has resulted in a rise of wage inequality, whilst Pastore (2010) suggests that incomes policy has determined a permanent downward on real wages and has reduced the elasticity of real wage to the unemployment.

From an employment perspectives, the most relevant changes were introduced since the late-1990s, thought the implementation of a step by step reform at the margin, aimed at making the Italian labour market more flexible. These interventions include the Treu Package (Law No. 196/1997), the Legislative Decree No. 368/2001, the Biagi's Law (Law No. 30/2003), and the subsequent Legislative Decree No. 276/2003. These legislations liberalized the use of some pre-existing temporary contracts and introduced new flexible atypical contractual forms.[2]

The literature suggests that this reforming process had various effects on the Italian labor market. Montanino and Sestito (2003), Ichino et al. (2005), Gagliarducci (2005) and the most recent work of Berton et al. (2011), for instance, emphasized the effect of a wider use of temporary contracts on the job perspectives of young Italian workers (including the existence of port-of-entry effects).[3] Results indicate that undertaking temporary employment, rather than being unemployed, has a substantial positive effect on the probability of transition towards a stable job, conditional on the type of temporary contract and on previous labor market history. Cappellari et al. (2012) evaluated the effects of the legislative changes of the 2000s, finding that the reform of

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[2] Until the second half of the nineties, the standard work arrangement in Italy was full-time, open-ended, and characterized by one of the strictest employment protection legislations, mostly against dismissals, in the OECD area (Lazear, 1990, and Kugler and Pica, 2008).

[3] Other studies on the 'dead end' or 'springboard' effects of temporary contracts include those by D'Addio and Rosholm (2005) and Güell and Petrongolo (2007).

apprenticeship contracts had a positive impact on job turnover and productivity, and the reform of fixed-term contracts had a substantial negative impact.

The empirical evidence, therefore, suggests the these "flexibility" policies enhanced the employment opportunities of the outsiders (young people) and reduced youth unemployment rates since the late-1990s (Treu Package).

The legislative changes also liberalized and decentralized the employment services (at the regional level) and their tasks were extended to the provisions of active labour market policies to assist and help unemployed individuals to find a job (Dell'Aringa and Lucifora, 2000).

The last three decades were also characterized by changes in the workforce composition of young people from the age of 15 to the age of 24. Since the beginning of the 1990s there has been a reduction of the labour market participation of young people, especially because of the increase of the enrollment in tertiary education which especially involved young females.

In addition, the Italian economy was characterized by a deep currency (and financial) recession which began in 1992-1993 (Krugman, 1996). The crisis certainly affected the youth unemployment rates and the employment perspectives of young people.

The aim of this paper is to examine the impact of the legislative and economic changes of the last three decades, together with the changes in the workforce composition, on the employability of the young people in Italy. We distinguish between employment with permanent and atypical (or more in general temporary) contracts. The present study uses data from the Work Histories Italian Panel (WHIP) on young Italian people in the 15-24 age range and for the period from 1985 to 2004.[4]

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[4] For a description of the features and limits of the WHIP data, see Mussida and Sciulli (2014).

The paper provides novelty to the existing literature in at least three directions. First, it provides evidence on jobless duration of the young people for a wide period (three decades) by emphasizing its impact on the structural features of the Italian labour market, i.e. gender and geographical differentials in labour market indicators. Second, our findings confirm the existence of negative joblessness duration dependence of young people in Italy, both for permanent and atypical employment. Third, we analyse the impacts of the changes of the legislations and of the workforce composition effect on re-employment probabilities of young people. Our findings, even though we examine the period 1985-2004, are still relevant for the design of employment policy and for a better understanding of the effects of the non-employment problem on the re-employment/employment prospects of young workers.

Given the availability of interval-censored data and the possibility of identifying exit contract types, we apply discrete time hazard models with competing risks. We also control for unobserved heterogeneity.

Our main finding is that the legislative and workforce composition changes of the mid-1980s - mid-2000s have been associated with a significant and gradual increase in the gap in re-employment probabilities (especially towards permanent contracts) between the short-term and long-term non-employed, corresponding to an increase in negative duration dependence.

In general, we find an increase in employment opportunities since the first half of the 1990s for young people. The rise was especially relevant for atypical contracts. Among the competing causes of the rise of the atypical employment opportunities, there is the impact of the legislation of the nineties, especially since the Treu Package, which spread the use of flexible contractual forms for disadvantaged labour market categories (young people). The macroeconomic fiscal adjustment, together with technological and

organisational changes facilitating access to jobs for a higher number of individuals, also contributed to the increase of the employment opportunities.

However, the overall behaviour of the hazards confirms the tendency towards increased employment stability. The bulk of employment, therefore, is mainly determined by increased permanence in this state and not by increased employment opportunities for disadvantaged categories. The opportunities offered to disadvantaged worker were indeed primarily atypical and temporary contracts and therefore did not imply a stable and permanent increase of the bulk of young employed. This might be a signal of the lack of efficacy of the legislation of the last three decades in increasing permanent employment opportunities for young people.

Finally, the changes in the workforce composition of the young, i.e. reduced labour market participation due to increased enrollment in (tertiary) education, and the deep crisis of the early-1990s might be other forces explaining our findings.

The remainder of this paper is organized as follows: Section 2 describes the main changes of the Italian labour market from the mid-1990s to the mid-2000s; Section 3 provides the empirical specification for this study, and Section 4 describes the data and the samples. The results of the econometric analyses and an in-depth discussion and interpretations of our findings are provided in Section 5 and 6, respectively; Section 7 concludes.

2. Institutional background and workforce composition from the mid-1990s to the mid-2000s

Since the '80s the Italian economy has undergone a relevant reformatory process aimed at contrasting a complex economic condition, characterized by high unemployment rates, especially for young people, high inflation rates and slowing down growth economic rates (stagflation), and increasing public debt. The reformatory process widely affected the Italian labour market, one of the most rigid among EU

labour markets. Legislative changes were aimed at increasing its flexibility and competitiveness, through the reduction of labour costs and incomes policy, and relaxing the employment protection legislation. From a wage perspective, the most relevant legislative changes involved the mechanism of wage determination and the bargaining process, through the abolition of the "scala mobile" and the introduction in 1993 of the "*Protocollo sulla politica dei redditi e dell'occupazione, sugli assetti contrattuali, sulle politiche del lavoro e sul sostegno al sistema produttivo*" (the Protocol, hereafter).[5] The "scala mobile" was a mechanism of wage indexation to price inflation, that was finally abolished in 1992;[6] because it granted the same absolute wage increase to all employees as price increased, it potentially determined a compression of the wage distribution (Manacorda, 2004). Therefore, its abolition has possibly resulted in a widening of the wage distribution with respect to the pre-abolition period. The renewal of the wage formation mechanism went ahead with the stipulation of the Protocol in 1993. The Protocol of July 1993 was also introduced to reduce the risk of the depreciation of the Italian currency (the lira). The Italian economy, indeed, was characterized by a deep currency (and financial) recession which began in 1992-1993. In detail, the contribution of the Protocol was twofold. First, it introduced a two-wage bargaining levels, one at the industry level and a second one at the firm level. Second, it implemented the control of price growth (following the 1984 Tarantelli's proposal, see Acocella and Leoni 2007), through the substitution of the automatic wage indexation (the "scala mobile") with an institutional wage indexation providing for an ex-post adaptation (at the time of contract

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[5] The *Protocollo sulla politica dei redditi e dell'occupazione, sugli assetti contrattuali, sulle politiche del lavoro e sul sostegno al sistema produttivo* (23rd July 1993) introduced also the "lavori socialmente utili" (*lsu*) to enhance the labour market participation of the disadvantaged labour market categories, such as workers fired receiving the "Cassa Integrazione Guadagni Straordinaria" (CIGS). The *lsu* were indeed temporary employment opportunities for labour activities useful from a social and public (collectivity) perspective. The *lsu*, as we will also see in Section 6, attracted a huge number of individuals, generating a noticeable increase almost immediately after their introduction. An additional increase was due to the Legislative Decree No. 468/1997 (which is part of the true Package, Law No. 196/1997) extended the use of the *lsu* also to the workers receiving the CIG (in mobility) and to the long-term unemployed.

[6] The abolition of the "scala mobile" passed through a governmental decree in 1984 and a referendum in 1985 which started a redefinition process of wage fixing in Italy (Pastore, 2010).

renewals) of wages to the price pattern. A potential consequence of the Protocol was a downward impact on real wages (Pastore, 2010).

From an employment perspective, the most relevant change affecting the Italian labour market (like other EU labour markets) in the last three decades, was the implementation of a "step by step" reform "at the margin", aimed at making it more flexible. From the mid-1980s until the mid-2000s, single laws or more complex reforms[7] liberalized the use of some pre-existing temporary contracts and introduced new atypical contractual forms, all characterized by fixed duration limits and with lower labor costs when compared to open-ended contracts. Consistently with theoretical predictions, empirical evidence suggests that flexibility policies enhanced the employment opportunities for outsiders (like young people) and contributed to reduce youth unemployment rates after the introduction of the 1997 Treu Package to the beginning of the recent economic crisis. Nevertheless, temporary workers experience a greater risk of layoffs in case of economic downwards, as suggested by the empirical evidence emphasizing the greater standard deviation characterizing the average employment of the temporary segment of the labour market (e.g. Boeri and Garibaldi, 2007) and the greater turnover characterizing apprenticeship workers after the introduction of the "Biagi's Law" (Cappellari et al. 2012). Flexibility policies affected the re-employment probabilities of Italian workers by increasing segmentation between short and long-term unemployed (Mussida and Sciulli, 2014), and possibly contributed to vary the differentials in re-employment probabilities according to relevant characteristics (like gender and territorial gaps), as a consequence of a reshape of labour force because of the flexibility policies.

Other legislative changes affected the Italian labour market, like the reform of the "Cassa integrazione guadagni" (CIG), a job reduction scheme provided for the Italian

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[7] They include the so-called "Treu Package" introduced by the Law No. 196/1997, Legislative Decree No. 368/2001, Law No. 30/2003 (the so called "Biagi's Law"), and Legislative Decree No. 276/2003.

labour market legislation, and the reform of the public employment services. The legislative changes concerning the CIG have established a maximum duration of the subsidy and introduced an institute, the "liste di mobilità" for the re-insertion of workers under the CIG schemes (Dell'Aringa and Lucifora, 2000).

The introduction of the Treu Package and the reform of the Title V of the Italian Constitution (2001), that increased the autonomy of local governments, have provided a great impulse to the reform of the public employment services. First, legislative changes have liberalized the employment services allowing the entry of private companies. In addition, the public employment services were decentralized at regional level, and their tasks (originally devoted at providing passive policies) have been extended to the provision of active labour market policies in order to favor the re-insertion of unemployed individuals into the labour market.

Finally, the period under investigation has been involved by a reduction (especially among females) of the labour market participation of young people aged 15-24 (Figure 1), especially because of the increase of the enrollment in tertiary education of these individuals. Since the beginning of the 1990s, indeed, there has been a significant increase in the share of young women in tertiary education (Figure 2). The increasing pattern of the enrollment of women in tertiary education characterizes especially women in the age range 20-24. Figure 2 shows that the share of young women (aged 20-24) with upper secondary or tertiary education attainment increased from 58.3% at the beginning of the 1990s to 77.9% in 2004. The share of young men also increased from 51.7% at the beginning of the 1990s to 67.7% in 2004. Nonetheless, the increase in the enrollment and attainment of post-secondary/tertiary education increased also for the overall active population, again especially for the female component. Among the population in the age range 25-64, the share of women with at least a post secondary education went from 33.6% in 1995 to 50.6% in 2005, whilst the corresponding share of

men went from 39.1% in 1995 to 50.2%.[8] The increasing participation/enrollment in education, therefore, help explaining the reduction of labour market participation of both genders (Figure 1). Nevertheless, also the currency (and financial) crisis of the beginning of the nineties (1992-1993), as explained above, might be another factor explaining the reduction in labour market participation.

Figure 1: Labour market participation of young people [15, 24] by gender, 1985-2004
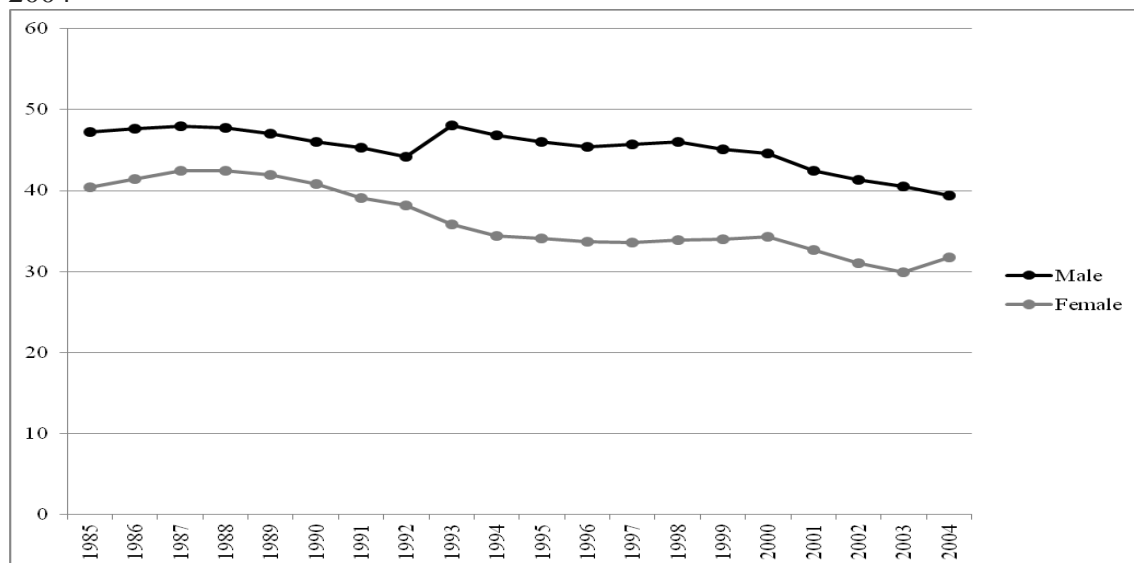
Source: OECD statistics (2013)

Figure 2: Young people [20-24] with upper secondary or tertiary education attainment by gender

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[8] These figures are available in Internet at http://epp.eurostat.ec.europa.eu.
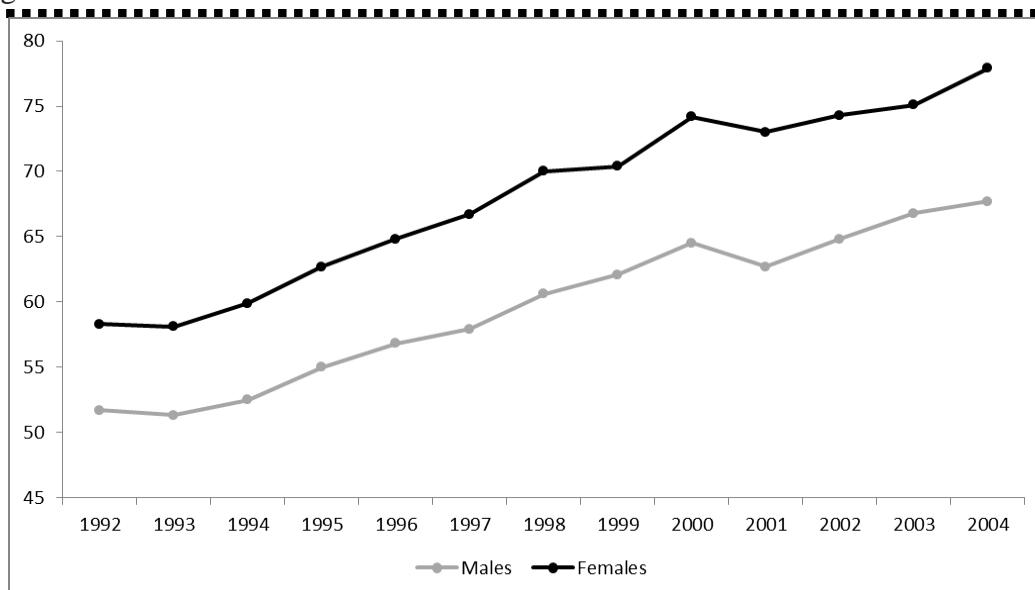
3. Econometric specification: A discrete-time hazard model

The duration analysis is developed using standard job search tools. Since available data are interval-censored, discrete-time hazard models are estimated (Prentice and Gloecker, 1978). According to hazard models, the conditional probability that a transition to employment, either permanent or atypical, takes place in a given interval $[a_{j-1}, a_j)$ in the j_{th} period, conditional on the time already spent in non-employment, is defined as:

$$h_j \equiv \Pr\{T \in [a_{j-1}, a_j) \mid T \geq a_{j-1}\}. \tag{1}$$

Assuming unit length intervals, the realization j of the discrete random variable T is the recorded spell duration.

A discrete-time hazard model requires that data are organized into a 'sequential binary form'. This implies that data form an unbalanced panel of individuals with the i_{th} individual contributing to $j = 1, 2, \ldots t$ observations (where j is the number of periods at risk of the event).[9] Since some individuals transit to employment and possibly revert back to unemployment, multiple spells may be observed, $q = 1, 2, \ldots Q$.

Models are estimated assuming independent competing risks, which permits us to estimate models separately for each destination state (Narendranathan and Stewart, 1993). We adopt a cloglog specification, which consists of the discrete time representation of a continuous time proportional hazard model. The baseline hazard γ_j consists of the log of the difference between the integrated baseline hazard (θ_0) evaluated at the end (j) and the beginning of each interval (j-1):

$$\gamma_j = \log\left[\int_{a_{j-1}}^{a_j} \theta_0(w)dw\right] \tag{2}$$

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[9] Specifically, a binary dependent variable was created. If individual i's survival time is censored then the dependent binary variable always takes value zero. If instead individual i's survival time is not censored, the dependent binary variable is zero in the first j-1 observation and one in the last observation.

In our analysis, we estimate a piecewise constant baseline hazard by using a non-parametric piecewise constant exponential specification, i.e. groups of months are assumed to have the same hazard rate, but the hazard may differ among groups. The total spell of non-employment is divided into specific sub-spells (D) for specific groups of months (e.g. D1_3 for the spells of non-employment with duration from 1 to 3 months, D4_6 for a duration from 4 to 6 months, and so on).[10] The model is estimated by maximum likelihood, and the partial log-likelihood function for each destination, permanent contract (PC) or atypical contract (AC), is:

$$\log L(\beta,\gamma) = \left[\sum_{i=1}^{N}\sum_{q=1}^{Q}\sum_{j=1}^{t}\Big[y_{iqj}\log h_{iqj} + (1 - y_{iqj})\log(1 - h_{iqj}) \Big] \right]_{PC} + \left[\sum_{i=1}^{N}\sum_{q=1}^{Q}\sum_{j=1}^{t}\Big[y_{iqj}\log h_{iqj} + (1 - y_{iqj})\log(1 - h_{iqj}) \Big] \right]_{TC} \quad (3)$$

where y_{ij} takes the value one if the individual transition takes place in month j (i.e. the spell is uncensored) and zero otherwise. Because of the independence assumption, the total log-likelihood function $\log L(\beta,\gamma)$ is the sum of the partial log-likelihood function derived for the contract of destinations PC and AC.

The model presented above assumes that all the differences between individuals are captured by observed explanatory variables. However, as is well known, it may be relevant to use a model that allows for unobservable individual effects in order to prevent estimation bias, deriving for instance from omitted variables and/or measurement errors in the observables (Jenkins, 2005). Unobserved heterogeneity is modeled by assuming a Gaussian distribution defined at individual level. We estimate random-effect cloglog models.[11] By avoiding any assumption about the functional form of the baseline hazard, i.e. by adopting the piecewise constant specification, estimation bias problems are reduced, and estimation results may be considered reliable (Nicoletti and Rondinelli, 2010).

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[10] The complete set of duration dependence estimates is reported in Table 2.

[11] We use the statistical software STATA (ver 12.1), which provides a command, xtcloglog, to estimate random-effect complementary log-log models. There is no command for a conditional fixed-effect model, as a good enough statistic allowing the fixed effects to be conditioned out of the likelihood does not exist.

The hazard function assuming a complementary log-log specification with Gaussian unobserved heterogeneity is defined as:

$$h(j, X \mid v) = 1 - \exp\{\alpha + \beta X + \gamma_j + \log(v)\} \qquad (4)$$

where $\log(v) \equiv u$ has a Normal distribution with zero mean and finite variance, α is a constant term, X is a set of covariates and β is a set of parameters to be estimated. To estimate this model it is necessary that both the survival and the density function expressions which enter the likelihood function are not conditioned by unobserved effects. Therefore, the likelihood contributions are obtained by integrating out the random terms, as appropriate for the Gaussian case, since the integral does not have a simple closed form.

4. Data

The Work Histories Italian Panel (WHIP) is a database of individual working histories based on the Italian Social Security Administration (INPS) archives, and consists of a representative sample of the population of employees of the private sector (excluding agriculture), apprentices, self-employed, atypical contracts. The sample-population ratio is 1:180 for an overall dynamic population of around 370,000 individuals. The reference population s made up of the all individuals

The database provides full information for the period from 1985 to 2004, which was characterized by the introduction of a number of laws aimed at making the Italian labor market more flexible (see Section 2 for details).

The database permits the identification of job relationships on the basis of the social security contributions paid monthly to INPS by employers and workers. As a result, non-employment (NE) spells are indirectly recognizable as complementary

information.[12] We study the effects of the labor market regulation on the hazard of exiting from non-employment to permanent and atypical contracts.

Since survival time occurs in continuous time but the spell lengths are observed only at monthly intervals, the data are actually interval-censored. Nonetheless, even though the data are available only up to 2004, the use of the WHIP dataset is recommended for at least two reasons. First, it provides monthly information on private employment relationships, permitting the accurate estimation of the time of transitions. Second, the data permit the evaluation of the effects of the gradual introduction of flexible employment contracts into the Italian labor market, through several steps.

From the type of contribution rebates it is possible to identify the contractual forms held by individuals, i.e. permanent contracts (PC) or atypical contracts (AC) (including on-the-job training contracts (OJTC) and temporary agency contracts (TAC)), which render a competing risks analysis possible.

From the original sample, we selected information for young individuals in the age range 15-24 in the analyzed period, This selection resulted in a sub-sample of 37702 individuals and 76799 spells, corresponding to 1046041 times at risk. This selection also allowed us to reconstruct complete individual working histories with accuracy and, since we can observe workers from the beginning of their careers, the impact of initial-condition problems is reduced.[13] The first month of a new employment relationship permits identification of the time of exit from the state of non-employment, and the type of contract that characterizes the new job makes it possible to identify the multiple failures characterizing the competing risks analysis. Since TACs only represent a small

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[12] For details on the WHIP data, see http://www.laboratoriorevelli.it/whip/documentazione. WHIP data do not present attrition problems: if the worker or the firm are enrolled with INPS, they must provide INPS with all the information (LABORatorio Revelli, 2009).

[13] When constructing our sub-sample, if an individual was simultaneously in more than one work relationship we eliminated the shorter job relationship; if they were of the same duration, we removed the part-time job or the work relationship characterized by fewer days of actual work. Finally, when the second job started before the end of the first job but ended after it, we censored the second work spell to the left, and hypothesized that the second job started only when the first ended. In this way, the passage from a double job to a single one is seen as a transition from one job to another. This strategy is adopted to reconstruct the non-employment duration spells with accuracy.

share of exit contracts, they are considered together with OJTC indistinctly as atypical contracts.

The WHIP data makes a set of individual and job-related variables available. Specifically, information is provided on age, gender, working area, working conditions, firm-size, illness, wage, sector of economic activity and cumulated previous work experience in permanent and atypical contracts. In the case of the working characteristics, these refer to the conditions held during previous work experience.

The descriptive statistics by gender and for the total sample for the most relevant variables used in the econometric analyses are reported in Table 1 in the usual manner.[14] The business-cycle effect is controlled for by introducing the expected (next quarter) employment growth rate and by assuming rational expectations.[15]

Table 1. Descriptive Statistics by Gender and Total, 1985-2004.

	Male		Female		All	
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
Age	20.618	2.371	20.935	2.233	20.737	2.325
Male	-	-	-	-	.624	.484
North-West	.276	.447	.301	.458	.285	.452
North-East	.283	.450	.372	.483	.316	.465
Centre	.176	.381	.182	.386	.178	.383
South-Islands	.265	.441	.146	.353	.220	.415
Blue collars	.909	.288	.713	.452	.835	.371
Firm size missing	.083	.276	.075	.263	.080	.271
Firm size 1-9	.455	.498	.460	.498	.457	.498
Firm size 10-19	.148	.355	.146	.353	.147	.354
Firm size 20-199	.221	.415	.207	.405	.216	.412
Firm size 200 and more	.092	.289	.113	.316	.100	.300
Illness	.065	.247	.053	.224	.061	.239
Wage	40.408	29.275	40.969	37.755	40.619	32.722
Manifacturing	.355	.479	.310	.462	.338	.473
Building	.207	.405	.010	.101	.133	.339
Commerce	.112	.316	.155	.362	.128	.334
Tourism	.142	.349	.208	.406	.167	.373
Transport	.036	.187	.016	.124	.028	.166

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[14] We also control for time by using yearly dummies for the overall period examined (1985), which are not reported here for the sake of brevity. Nonetheless, these statistics are available upon request.

[15] Employment growth is measured with respect to the next quarter employment level using data from the 'Rilevazione sulle Forze di Lavoro' gathered by ISTAT.

Business-Intermediation	.069	.253	.114	.318	.086	.280
Other sectors	.079	.270	.187	.390	.120	.325
Cumulated PC experience	7.943	13.473	9.189	15.109	8.412	14.123
Cumulated TC experience	6.301	10.804	5.350	10.139	5.943	10.569
Expected employment growth	.128	1.586	.120	1.628	.125	1.602
Spells	47929		28870		76799	

Source: our elaborations on WHIP data

Finally, even though the use the use of the WHIP dataset for analyses of non-employment duration is recommended for a host of reasons, it has at least three relevant limitations. First, individuals pertaining to the labour market states of unemployment and inactivity are collapsed into the category of non-employed. Second, self-employed and public sector employed are not included in our dataset, whilst self-employed 'collaborators', are excluded from the analysis.[16] Finally, FTC are assimilated to PC in the WHIP dataset since the social security contributions associated with FTC do not provide for any particular tax relief and therefore are identical to those for PC (e.g. Cappellari et al., 2012).[17]

5. Results

The relationship between the hazard rate to PC and AC and the time spent in non-employment for the overall sample of young in the age range 15-24 through the period 1985-2004 is shown in Figure 1.

The Figure reveals a negative relationship between the hazard rate and the time spent in non-employment (negative duration dependence) for both the exits to permanent and atypical contracts. We also found that the probability rate has a non-monotonic pattern with two peaks respectively for periods of 1 to 3 months' and 10 to 12 months' duration; however, after one year of unemployment the probability of

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[16]The elimination of the self-employed 'collaborators' implied a reduction of about 2% of sampled individuals. Therefore this does not particularly affect the estimation results.
[17] For details see Mussida and Sciulli (2014).

finding a job (either permanent or atypical) falls quite sharply. In general, the baseline hazards for the exits to PC is higher in absolute values compared to the exits to AC and individuals with Short-Term Non-Employment (STNE) durations exhibit higher probability of exiting from non-employment and entering permanent and temporary contracts compared to individual with Long-Term Non-Employment durations and to women (both STNE and LTNE).[18]

The graphical analysis offered into the Appendix[19] helps to detect the gender and geographical differentials in the employment opportunities which are well known structural characteristics of the Italian labour market. Figures A1 and A2,[20] indeed, show the hazard rates to PC and AC by gender and geographical area. In detail, we show the relationships between the hazard rate by gender and area (interacted) and the time spent in non-employment. We consider the hazard rates for men and women in the North and South of Italy.[21] For both the types of contracts (PC and AC) young in the North - women for PC and men for AC - have higher hazards of leaving non-employment compared to young resident in the South of Italy. The disadvantage of the South, in terms of employment opportunities of the young is especially evident for the exits to AC (the baseline hazards are indeed quite close to zero, especially for men, Figure A2). Our findings therefore confirm the presence of structural gender and

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[18] STNEs are individuals in the state of non-employment for less than twelve months, whilst LTNEs are individuals in the state of non-employment for twelve months or more.

[19] The graphical analysis in the Appendix (Figures A1 and A2) shows the patterns of the hazard by gender and geographical areas to PC (Figure A1) and AC (Figure A2). The hazards inform on the joint impact of the control variables used in our estimates and on the residual year-to-year dynamics suggested by the yearly dummy variables (for the overall 1985-2004 period). We do not report the coefficients of the yearly dummies in Table 3 for the sake of brevity. Nonetheless the pattern of the coefficients for both PC and AC is displayed in the Appendix Figures A3 and A4.

[20] Figures A1 and A2 show the hazard by gender and area for young aged 15-24 through the period 1985-2004. The hazards, as explained above, show the joint effect of the control variables used in our econometric analyses (both individual characteristics and structural indicators) and the residual year-to-year heterogeneity of the pattern of the hazard as captured by the yearly dummy variables. The Figures in the Appendix show the interactions between gender, i.e. (M)ale and (F)emale, and area, i.e. (N)orth and (S)outh, and we get a total of four combinations (MN, MS, FN, abd FS in the legends of the Figures A3 and A4).

[21] In a first attempt we also included the hazard for men and women living in the Centre of Italy. Nonetheless, to keep the graphs more clearly interpretable we decided to keep only the North and the South. These two partitions, indeed, do show the highest gender gap in employment opportunities. Nonetheless, the results including the gender and Centre interactions are available upon request.

geographical differentials in the Italian labour market (Bertola Garibaldi, 2003, and

Ricciardi, 1991).

Figure 1. Piecewise constant baseline hazard rate by contract type. total sample. 1985-
2004
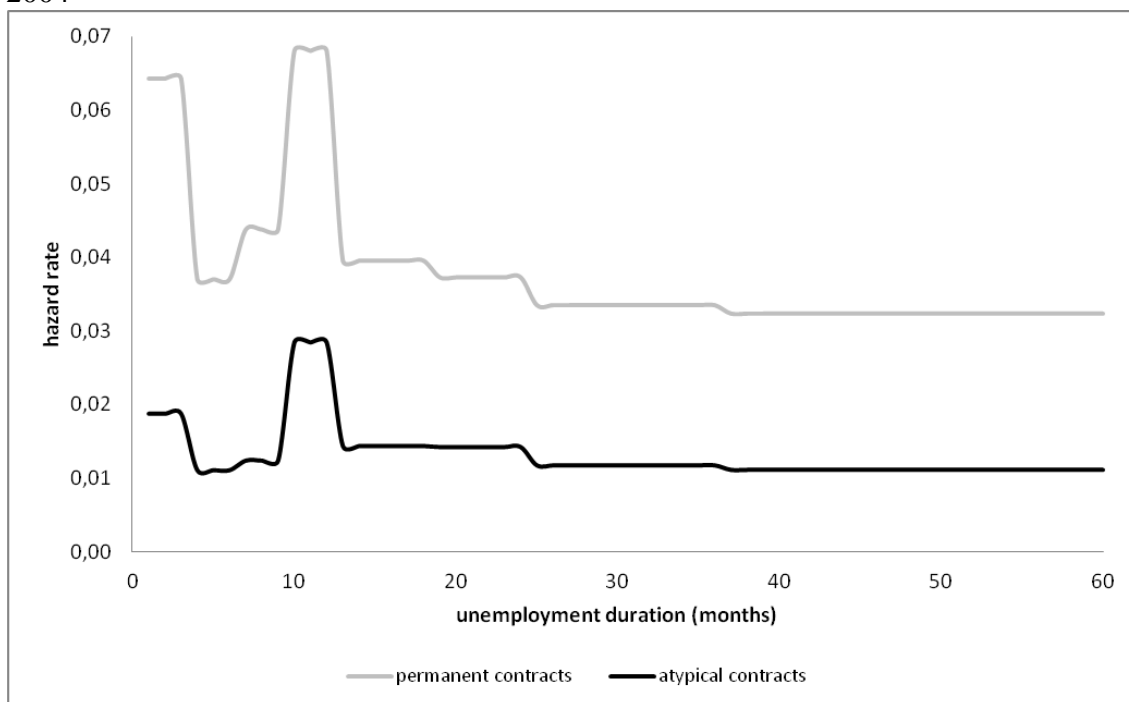
Source: our elaboration of WHIP data

Table 2 shows the effects of the covariates used in our econometric analysis. We control

for individual characteristics, cumulated job experience either in PC or AC, job-related

and macroeconomic characteristics.[22] All the estimates must be interpreted as the

relative effect of each control variable with respect to the base-category outcome. i.e.

the state of non-employment.[23]

In terms of age, we find that youngest people[24] have lower hazards of exiting

from non-employment to permanent contracts, whilst they have higher atypical

employment prospects compared to older. This is in line with expectations, since the

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[22] We also control for firm size, wage, part-time contract, health, and we include yearly dummy variables
for the overall period examined (1985-2004). The full set of estimates is available upon request.

[23] It follows that an estimated coefficient with a positive sign indicates that the explanatory variable
positively affects the re-employment probability rather than favouring permanence in the non-
employment state. Moreover, as the non-employment state is the common base-category, the sign and the
magnitude of the same explanatory variable estimated for different transitions (NE-PC or NE-AC), define
the differential effect (due to a specific covariate) on the probability of transition into alternative
employment statuses.

[24] We use the expression "youngest" since our overall sample includes young in the age range 15-24 and
we refer to individuals at the beginning of this range.

legislation of the nineties aimed at increasing the employment opportunities of the younger by introducing new and atypical contracts.

We add controls for gender and area of residence, which are two relevant and structural characteristics of the Italian labor market. The estimation results confirm the differences by gender for the NE-PC transitions and the geographical differentials for both the exits (to PC and AC, respectively). This is in line with the graphical analyses by gender and area shown in the Appendix (Figures A1 and A2). Our findings therefore suggest the presence of gender and geographical differential also for young people in the labour market.

Table 2. Cloglog coefficient estimates by contract type, 1985-2004

| | Permanent Contract | | Atypical Contract | |
	Coef.	s.e.	Coef.	s.e.
Age	1.250***	.034	-.221***	.047
Age square	-.026***	.001	.001	.001
Male	.040***	.014	-.003	.019
North-West	.276***	.018	.242***	.026
North-East	.306***	.018	.352***	.025
Center		base category		
South-Islands	-.141***	.019	-.551***	.029
Blue-collars	-.163***	.016	.218***	.031
Manufacturing		base category		
Construction	-.038***	.019	-.142***	.027
Commerce	-.134***	.019	-.041	.026
Tourism	.017	.018	-.405***	.026
Transport	.110***	.032	-.336***	.062
Intermediation-Business	.026	.022	-.010	.033
Other sectors	-.149***	.019	-.360***	.034
Cumulated PC	.009***	.000	-.004***	.001
Cumulated AC	.011***	.001	.011***	.001
Expected employment growth	.067***	.003	.136***	.004

Notes: All specifications also control for firm size. wage. part-time contract and health.
Yearly dummy variables are also considered (base year 1985).
* Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level.
Source: our elaboration of WHIP data

Seven dummy variables control for the role of economic sector specialization as regards re-employment probabilities, keeping manufacturing as the reference category. With respect to transitions towards AC, we find reduced employment probabilities, especially for the sectors of Tourism and Transport. With respect to NE-PC transitions,

it is only previous experience in the economic sector of Transport (and to some extents of Tourism) which increases the length of non-employment spells.

The cumulated job experience in PC exerts a positive role on re-employment with the same contractual form, whilst it decreases the likelihood of atypical employment. This is in line with expectations. The cumulated experience in AC, instead, exerts a positive role on re-employment probabilities with both permanent and atypical contracts.

Finally, we find that the expected employment growth variable has a positive and significant effect on re-employment probabilities with PC and AC. Interestingly, a relatively greater impact is found for NE-AC compared to NE-PC transitions.

6. Residual Heterogeneity over a twenty-year time period: Interpretations

Our findings, i.e. the hazard rates for both PC and AC, suggest the presence of gender and geographical differentials also for young people, i.e. in the age range 15-24, in the labour market.

The conditions each individual faces on the labour market change rapidly; in our analysis in the previous section we observed how the impact of structural indicators is significant.

For this reason, the probability of young people exiting from non-employment and entering permanent and temporary contracts will typically be different from year to year. The aim of this section is to see whether the residual year-to-year dynamics may be interpreted in the light of policy intervention or other economic facts/composition effects (see Section 2), after controlling for individual characteristics and the effect of the cycle (expected employment growth).

Although homogeneity of the time series is a nice property, permitting straightforward forecasting and for this reason sometimes assumed in the literature (e.g.

Cook et al., 2002), we expect the probabilities of exiting non-employment (both for permanent and atypical contracts) over a one-year period to be non-homogeneous over the 20-year time span considered in the analysis (1985-2004). This non-homogeneity may be due to four main causes: *i*) the effects of the business cycle; *ii*) the effect of economic policies; *iii*) changes in the population's composition with respect to non-observed characteristics; and *iv)* other structural changes in the labour market.

In the previous section we presented the findings for the hazard rates by gender and geographical area estimated by using the WHIP panel data for the 1985-2004 period (Figure A1 and A2). In modelling employment opportunities, we introduced the individual characteristics used in the models of the previous section (Section 3), assuming their effect as being constant through the twenty-year time period, and we take into account the effects of the cycle by using as structural indicator the expected employment growth. Moreover, we included yearly dummy variables to model the residual variation in transition probabilities (Figures A3 and A4). In this section we assess whether these residual year effects are significant and whether their dynamics may be interpreted in the light of major policy intervention in the labour market. Figures A3 and A4 display the pattern of the residual variation of the hazard rates to PC and AC.

First, we investigate the presence of time-homogeneous hazard rates by calculating simple t-test for the difference between the coefficients of each yearly dummy variable and the dummy for the base year (1985).[25] A dot on the series in Figures A3 and A4 indicates where the behavior differs significantly from the base year. The results of the simple equality tests between the coefficients of our yearly binary variables suggest an absence of time-homogeneous probabilities of exiting non-

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[25] For the differences between the coefficient of the yearly dummy and the base year (1985) for which the we find t-statistic values which exceed the threshold of 1.96, we automatically reject the null hypothesis of not statistically significant differences.

employment to both permanent and temporary contracts. These results are true for both genders and geographical areas.

Second, we try to explain the factors behind the rise in employment opportunities (both PC and AC) as shown in the Appendix Figures A3 and A4.

The increase in employment opportunities, both permanent and atypical, since the first half of the 1990s is likely to be due to macroeconomic fiscal adjustment, which was at work at least up to 1998 (Alesina and Perotti, 1996). These movements suggest that if individual characteristics are taken as constant, and conditional on expected employment growth, an increase in employment opportunities for both genders occurred, especially for atypical contracts. This is what we observed with the computation of the hazard rates by gender and geographical area (Figures A1 and A2).[26] The macroeconomic fiscal adjustments, therefore, seem effective in enhancing employment opportunities the bulk of unemployment which continued up to the end of the period examined (2004).

The increase of the atypical re-employment (Figure A4) might be partly due also to the great increase in a particular form of contract, introduced by the The *Protocollo sulla politica dei redditi e dell'occupazione, sugli assetti contrattuali, sulle politiche del lavoro e sul sostegno al sistema produttivo* (23rd July 1993) mentioned in Section 2: the atypical employment category of *lsu* (lavori socialmente utili), whose aim was to promote and maintain the participation of disadvantaged categories (workers receiving CIGS subsidies) in initiatives of public utility.

The *lsu* attracted a huge number of individuals, generating a noticeable increase almost immediately after its introduction. An additional increase of the *lsu* was due to the Treu Package (in detail, the Legislative Decree No. 468/1997), as explained above,

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[26] The hazard rates in Figures A1 and A2, as explained above, show the joint impact of the individual characteristics used and of the yearly dummy variables. Figures A3 and A4, instead, display only the residual year-to-year dynamics that are the dynamics obtained by assuming the effects of individual/control variables being constant through the twenty-year period, and by taking into account the effects of the cycle.

which extended the use of the *lsu* also to the workers receiving the CIG (in mobility) and to the long-term unemployed.

These tendencies (increase in both the hazards, Figures A3 and A4) might also be determined by technological and organisational changes facilitating access to jobs for a higher number of individuals.

The impact of these forces might indeed confound the relevance of the aforementioned reforms (see Section 2), since these had already been introduced. The overall behaviour of the hazards confirms the tendency towards increased employment stability. The bulk of employment, therefore, is mainly determined by increased permanence in this state and not by increased employment opportunities for disadvantaged categories. The opportunities offered to disadvantaged workers, such as the *ltu*, were indeed atypical and temporary contracts. This might be a signal of the lack of efficacy of the legislation of the last three decades in increasing permanent employment opportunities for young people.

Finally, also the currency (and financial) crisis of the beginning of the nineties represented an obstacle to enhanced employment opportunities.

7. Conclusions

This paper investigates the impact of the legislative and economic changes of the last three decades, together with the changes in the workforce composition, on the employability of the young people in Italy. We distinguish between employment with permanent and atypical (or more in general temporary) contracts. The empirical analysis is based on 1985-2004 WHIP data. We estimate discrete time hazard models with competing risks and unobserved heterogeneity for a sub-sample of young people in the age range 15-24 in the analyzed period.

Through the period examined, the Italian labour market went through relevant reforms and important changes in the labour force composition. These developments affected also the labour market perspectives of the young people. Unfortunately young people were increasingly characterized by high unemployment rates. The causes of the rise in youth unemployment range from the effectiveness of the educational system at easing the transitions from school to work (OECD, 2000), labour market institutions (e.g., labour costs, flexibility), the role of the family of origin as social and economic buffer (Becker et al., 2004), and factors related to changes in the composition of the population.

Our main finding is an increase in employment opportunities since the first half of the 1990s for young people. The rise was especially relevant for atypical contracts. Among the competing causes of the rise of the employment opportunities, there is the impact of the legislation of the nineties (especially since the Treu Package), the macroeconomic fiscal adjustment, and the technological and organisational changes facilitating access to jobs for a higher number of individuals.

However, the overall behaviour of the hazards confirms the tendency towards increased employment stability. The bulk of employment, therefore, is mainly determined by increased permanence in this state and not by increased employment opportunities for disadvantaged categories. The opportunities offered to disadvantaged worker were indeed primarily atypical and temporary contracts and therefore did not imply a stable and permanent increase of the bulk of young employed.

Finally, to enhance the labour market perspectives of young people it is necessary to introduce policies aimed at increasing their labour force participation. The policies might be aimed to help young people to find sustainable employment jobs and to increase their long-term employability by offering a number of options for those who

do not find a job, like periods of full-time education or training and work experience through job placements and subsidised employment (Barham et al., 2009).[27]

In this respect, Germany might act as best practice. The youth labour market in Germany is characterized by high levels of employment and almost no unemployment among those in education. The reason of this favourable conditions for young people in the labour market is primarily due to the presence of established apprenticeships systems or vocational training in secondary education. These systems help to develop competencies and skills not learned on an educational course and therefore help the young people to leave more rapidly and with success the state inactivity and also to reduce the risk of unemployment.

Appendix

Figure A1: Hazard Rates to PC by Gender and Geographical Area

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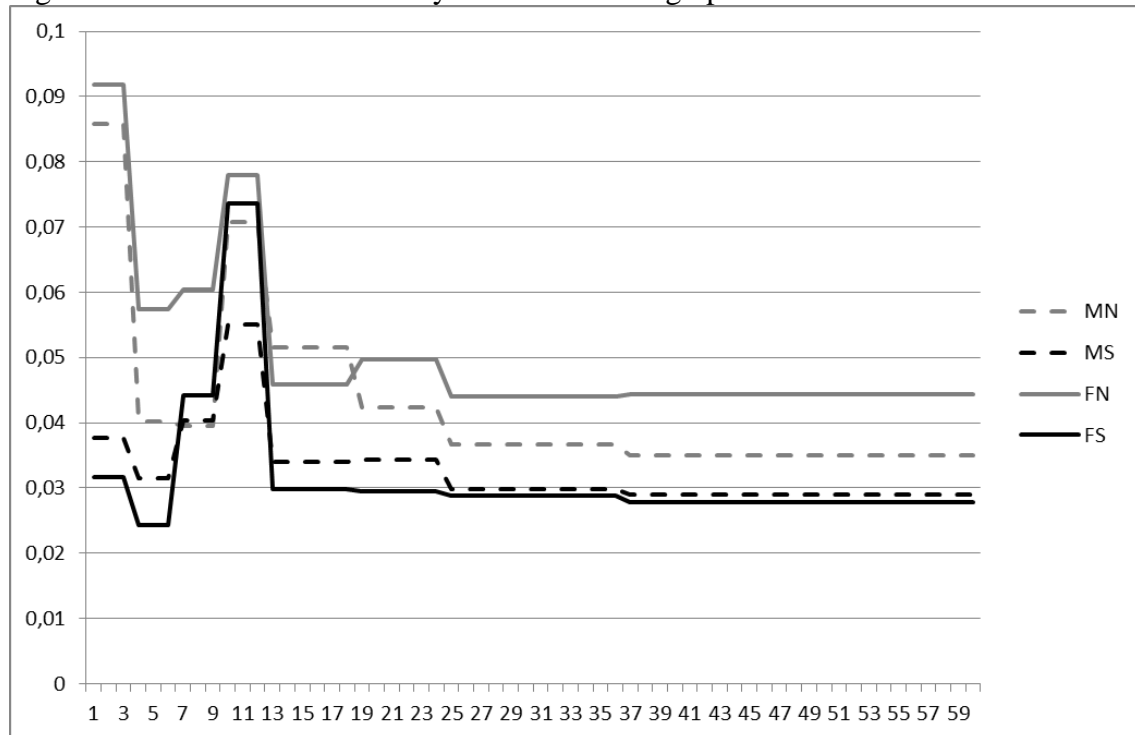
[27] Anglo-Saxon countries, like the UK, already introduced such a kind of schemes. For instance, The New Deal for Young People, was introduced in 1998 as one of the key part of the government's welfare to work strategy. The scheme was quite effective in enhancing employment opportunities and consequently in maintaining relatively (compared to Continental countries, like Italy and Spain) low levels of youth unemployment.

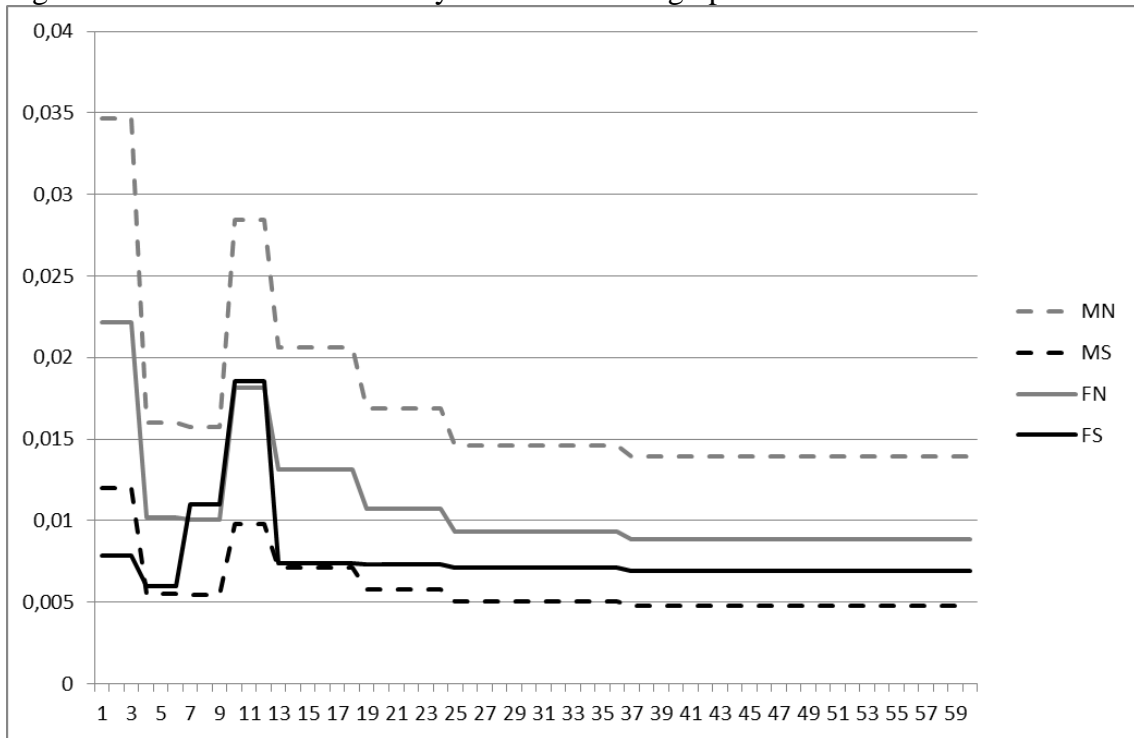Figure A2: Hazard Rates to AC by Gender and Geographical Area

Figure A3: Residual year-to-year dynamics by Gender over the period 1985-2004
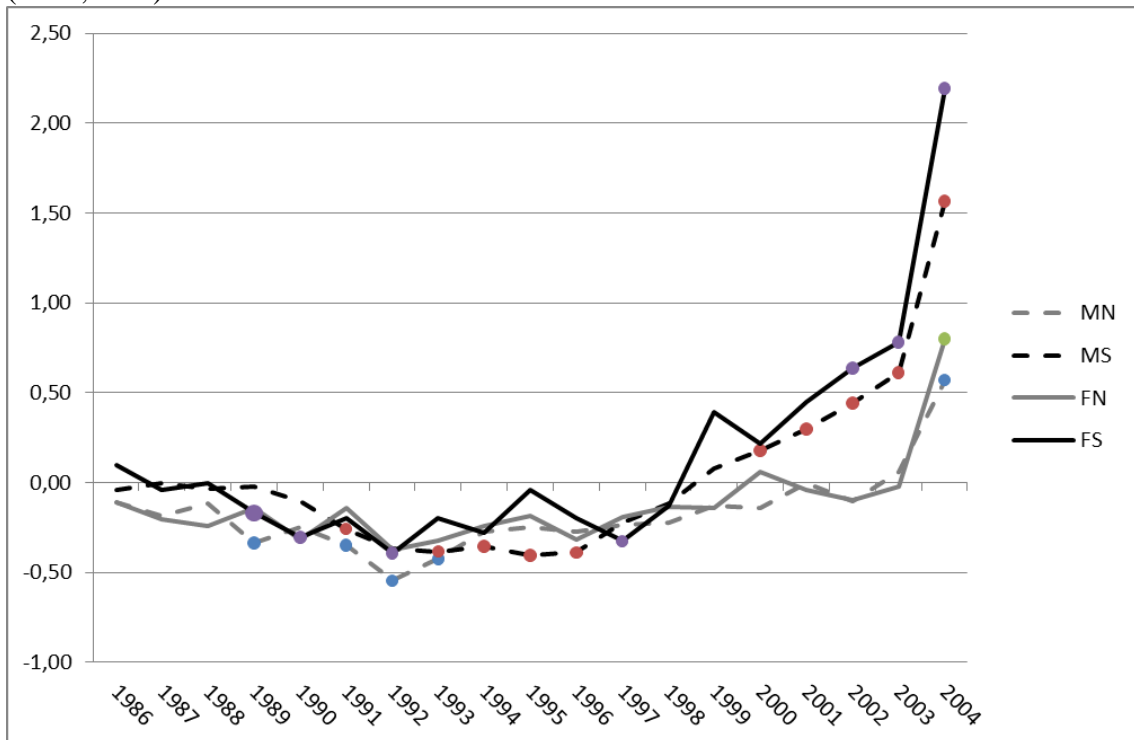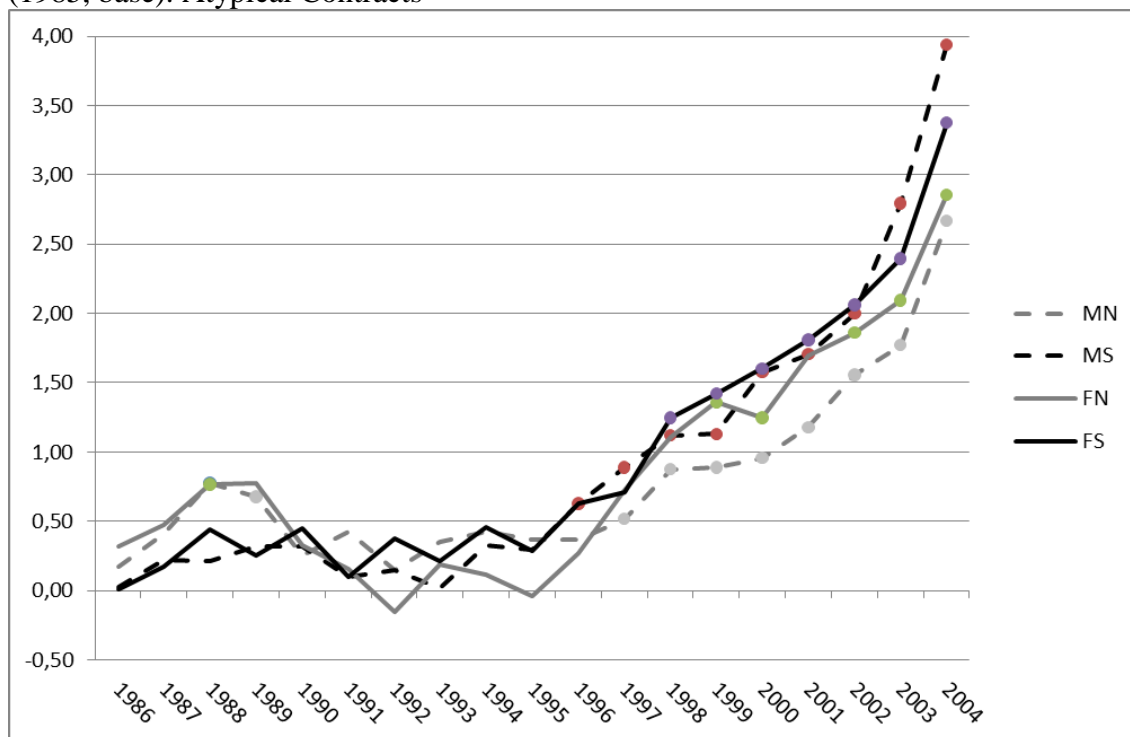(1985, base). Permanent Contracts

Figure A4: Residual year-to-year dynamics by Gender over the period 1985-2004 (1985, base). Atypical Contracts

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