

The employability of older workers in a dual labor market: Assessing the measures taken in Spain since 2000.

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(October 2006)

Acknowledgements: I am very grateful to participants in session A3 of ESPE06 meeting in Verona, June 2006, for the constructive comments and suggestions to a previous version of this paper, and to the Spanish Department of Education and Science for financial support from project SEC 2003-08855c03-02.

Abstract

This paper explores the influence of the recent active policies in Spain aimed at achieving the specific employment rate targets for older women and men set out in the 2010 EU Lisbon Agenda. According to the dual structure of the Spanish labor market, these measures focus on encouraging employers to hire older workers on a regular basis by means of a major reduction in firms' social contribution, which is larger for lower performance workers: i.e. it increases with age and is greater for women than for men. Therefore we propose a gender pseudo natural experiment approach for the beneficiary age groups of 55-64 and 45-54 years, with the non affected central ages of 35-44 years as the control population group.

The empirical strategy deals with the intensity of labor transitions for different pairs of initial and final states: $i_s \rightarrow f_s$. The former focus on unemployment and temporary employment, while the latter refer to employment in general and on regular basis in particular as well as the unemployment and retirement. We use single and competing risk duration models to estimate two statistics for each pair of $i_s \rightarrow f_s$: the cumulated flow during the first year of the current spell, $F(12)$, and the relative marginal effect of a particular independent variable on the event's expected duration, RME . The data come from the matched EPA, cover the decade 1Q1995-4Q2004 and deepen on the period 1Q2000-4Q2004.

The evidence shows an insufficient influence of the measures and thus the target of an employment rate of 50% over the age of 55 years appears unattainable, in spite of the favorable economic situation. In fact, the flows to employment in general and to open ended contracts in particular neither rise nor display the substitution by older workers of middle aged workers that we might have expected. Furthermore, the retirement flows do not sufficiently diminish and the unsatisfactory performance of the training system is revealed, which calls for complementary measures to promote active ageing.

JEL codes: J6, J1, J5.

Key words: labor transitions of atypical older workers; pseudo natural experiment; gender and labor state approaches.

Introduction

Is remaining at work a realistic option for fired and fixed term older workers when their employment rate is under 40% and a quarter of them are atypical workers, as is the case in Spain in early 2000's? To what extent does the low performance of older workers reflect a gender matter since females present half the employment rate yet suffer twice the incidence of atypical work in comparison with their male peers? To what extent can measures reducing the non wage costs for hiring older workers on a regular basis encourage employers to hire them? This paper deals with such questions and for the purpose of clarification this entails to distinguishing between employment creation and employment diversion from non targeted –higher performance- to targeted –lower performance- population groups¹.

As is well known, low economic performance with respect to the USA concerns EU countries in such a way that the Employment Chapter which cover the employment strategy is one of the hallmarks of the Treaty of Amsterdam –together with the Social Chapter- which is intended to accompany the coordination and convergence of member-state economic policies under Economic and Monetary Union. Figures in table 1 for European countries, USA and Japan illustrate that European countries have cause for concern regarding GDP per capita, productivity and employment rates².

Insert table 1 about here

In order to rectify this situation the EU employment strategy sets out the framework for a mutual surveillance system supported on three mainstays: annual employment guidelines, national implementation reports, and joint employment reports. In this context, the Lisbon and Stockholm European Councils respectively in March 2000 and in March 2001 set a new strategic goal for the EU to become the most competitive and dynamic knowledge based economy in the world capable of sustaining economic growth with more and better jobs and social cohesion. More precisely, the Council agreed on an overall employment target for 2010 at a level of 70% and the specific targets, reflecting the gender differences and the demographic challenge for

¹ This is a similar effect to trade diversion resulting from a new FTA which diverts trade away from a more efficient supplier outside the FTA towards the less efficient supplier within the FTA, which in our case correspond to workers under 45 and up to 55 respectively.

² The economic performance of Europe is a central topic in economic literature. For instance, see Blanchard (2004), Bentolila and Bertola (1990), Nickell (1997), Siebert (1997) and Saint Paul (1996b), among others.

employment, of 60% for women as a whole and 50% for older men and women between the ages of 55 and 64. The figures in table 2 show no evidence of these targets having been achieved, in particular for older workers.

Insert table 2 about here

The EU employment guidelines for 2003 and 2004 promote active ageing by means of a large set of complementary measures addressed directly at older workers remaining at work and at employers. These should play a notable role in improving their access to continuing training, conceding the special importance of health and safety at work, adopting innovative and flexible forms of work organization, and simultaneously eliminating incentives for early exit from the labor market. On the other hand, active policies try to encourage employers to keep or to employ older workers, depending on whether or not they are currently employees, by reducing hiring and firing costs.

The Spanish case: A country by country analysis makes it evident that only a few measures are applied in each of them. As summarized in table 3, the active policies in Spain pass over the workers' side to concentrate on the firms' side through a significant reduction of non wage costs; both dismissal costs and pay roll taxes. The former, through the extension to all ages in 2001 of the newly signed open ended contract (*OEC*) under the conditions of the 1997 Reform³ that reduced severance pay for 'unfair' dismissals⁴ from 45 to 33 days per year of seniority with a maximum of 24 months instead of 42. The latter, through a drastic reduction in firms' social contributions for regular hiring of atypical workers which is modulated according to the labor disadvantage of targeted population groups. More precisely, the discount: *i*) is greater for unemployed than for temporary employees under fixed term –flexible- contract; *ii*)

³ Dolado, García Serrano and Jimeno (2002) analyze the Spanish labor reforms about labor contracts during the decade of 1990 related to EU countries. Kugler, Jimeno and Hernand (2003) analyze the incidence of the 1997 Reform for across the age, Canada and Sollogoub (2004) focus on young people and Bentolila and Jimeno (2002) concentrate on collective bargaining.

⁴ Workers dismissed for personal or economic reasons could appeal to Labor Courts and severance pay depends on whether judges sentence the firing as fair or unfair. A dismissal is ruled as fair if the firm is able to prove the risk for their good operation or survival (economic reasons) or worker's incompetence or absenteeism (personal reasons), and unfair otherwise. In practice, this legislation is very stringent since judges rule dismissal as unfair in the majority of the cases. Notice that the 'economic reasons' argument requires advance notice and previous bargaining and agreement between workers and employers, which is normally achieved by raising severance payment above the legally established amounts. Fair dismissals entail 20 days pay per year of seniority with a maximum of 12 months.

is regulated by age groups and increases with age, the maximum being for *AG55-64*⁵, followed by for *AG45-54* and does not cover *AG35-44*; and *iii*) is greater for women, particularly for jobs in which they are underrepresented, and disabled workers.

Insert table 3 about here

Notice that these measures are targeted at making specific groups of workers become regular workers, thus we can expect both creation and diversion of flows into *OEC* in such a way that might affect other segments of the market as well, for example, via substitution by more targeted workers of less targeted and non targeted workers in regular hiring inflows. In these circumstances, our empirical strategy focuses on a pseudo natural experiment for separate genders by comparing the evolution of labor transitions observed for targeted workers of *AG55-64* and *AG45-55* with the unaffected workers of *AG35-44*, which acts as control group, and relating it to the timing of active measures between 2000 and 2004⁶.

As an overview, Figure 1 presents the quarterly evolution of four basic labor indicators (panels A for employment/population rate; B for temporary rate; C for part time employment; and D for unemployment rate) by gender and age groups which we deal with during the expansive decade between 1Q1995 and 4Q2004. Furthermore, panel E plots under each gender the evolution of the economic situation via two indicators: GCD cumulative growth rate (left Y axis) and GDP annual growth rate (right Y axis; red color).

Insert figure 1 about here

The differences among population groups are evident in all the cases: the employment rate and precariousness decrease with age and women always exhibit lower labor performance. The employment-population profiles in panel A show a continuous increase in all the population groups, which is more intense in females at any age -both in absolute and relative terms- and in targeted ages in such a way that the gender and age gaps tend to reduce. The smoothness of these profiles is in agreement with the GDP path and suggests no significant effect of the measures we are assessing, the success of

⁵ Worth mentioning here is that mandatory retirement is at 65 years of age .

⁶ Kugler, Jimeno and Hernand (2003) present a natural experiment approach to the 1997 Reform for the age groups 16-29, 30-44 and 45-64 between 2Q1987 and 4Q2000.

which should be expressed by an upward change on the employment rate path as well as by a downward shift on the temporary rate of targeted groups in quarters following the timing of reforms.

The high incidence of the outsiders (flexible workers, part time employees and unemployed) in panels B, C and D confirm the extreme case of Spain where the temporary rate and the unemployment rate double the EU-15 average and treble UK figures, while the very low presence of part time workers suggests a sudden retirement transition. This evidence together with the labor turnover costs (firing, hiring and providing firm-specific training), which are not uniform across workers groups (advance notice of dismissal and severance pay basically concerns *OEC*; social contributions for new *OEC* are inversely related to labor performance of population groups) suggests a two tier approach (Bentolila and Bertola 1990, Bentolila and Saint Paul 1992, Lindbeck and Snower 1989, Saint Paul 1996a).

The comparative analysis shows that: *i*) the temporary rate is greater and more volatile for women, decreases with the age, and evolves more favorably for older workers of both genders during the last five years; *ii*) the unemployment rate presents a gender and age pattern given that: *ii.1*) increases with the age in females (since 2000) and decreases in males; *ii.2*) remains quasi-stable for *AG45-54* and *AG55-64*, while it presents the expected counter-cyclical path⁷ and largely decreases for *AG35-44* until 2001 when it becomes stable in parallel with a moderation of the GDP growth rate, which has fluctuated between 2.5% and 3% since then.

The joint treatment of results in panels A (increasing of employment rate) and D (stability unemployment rate) for *AG45-54* and *AG55-64* reflects the importance of the two-way transitions between the market and non market states: the retirement flows in both genders and the new entries in the case of women, whose activity rate passes from 38.5% to 57.1% for *AG45-54* and from 19.7% to 27.3% for *AG55-64* between 1Q1995 and 4Q2004.

With respect to the Lisbon Agenda, figure 1 shows a gender gap characterized by the very low performance for females making the target of a 50% employment rate for *AG55-64* unattainable⁸. In spite of this, there is a great lack of research into the

⁷ For an analysis of the stylized facts of labor flows see Blanchard and Diamond (1990), Bentolila and Saint Paul (1992) and Burda and Wyplosz (1994).

⁸ In fact, the performance of females of *AG55-64* is a matter of concern, since their employment rate passes from 17.4% to 25.1% during the decade, while males have been up to 50% since 2Q1996 and exceeded 59% in 4Q2004.

effects of the active policies encouraging the employability of older workers in Spain. Therefore, we aim to address three key questions: How great is the influence of the measures reducing non wage costs on the probability of reaching regular employment for different population groups? Is there a diversion of hiring flows via substitution of non targeted for targeted workers? What is the effect of individual heterogeneity on labor transitions? To answer these questions, we first carry out a comparative analysis of the quarterly evolution of labor flows for males and females of *AG35-44*, *AG45-54* and *AG55-64* between 1Q1995 and 4Q2004, and then for particular individual characteristics between 1Q2000 and 4Q2004, which covers the elapsed period of the Lisbon Agenda with a homogeneous regulation framework, except for the measures we deal with (see table 3)⁹.

Given that alternative labor states (employment E , unemployment U and retirement R) are simultaneously incompatible as well as the employment modalities such as permanent vs. flexible job depending on whether there is an open ended contract (OEC) or a fixed term contract (FTC), and that the intensity of labor flows is dependent on the initial (i_s) and final (f_s) states (see appendix 1 for details), we will analyze a large set of the labor transitions $i_s \rightarrow f_s$ that focuses on the cases of $i_s = \{U, FTC \text{ and } OEC\}$ and $f_s = \{E, U \text{ and } R\}$ as competing destinations, as well as All_d , that computes jointly all destinations, and OEC as targeted employment modality¹⁰. Therefore, the employability of any initial state can be approached in absolute and in relative terms: the former by the intensity of flow $i_s \rightarrow E$; the latter via the normalized flow $i_s \rightarrow E / i_s \rightarrow All_d$ which evaluates it conditional to concluded spell. Furthermore, $i_s \rightarrow OEC$ and $i_s \rightarrow OEC / i_s \rightarrow All_d$ assess employability on a regular basis in absolute and relative terms, and the fraction $i_s \rightarrow OEC / i_s \rightarrow E$ refers to the quality of the new matches.

The structure of the text is as follows. Section I presents the data and methods. Section II expounds the evolution 1Q1995-4Q2004 of the intensity of labor flows of concerned population groups: males and females of *AG45-54* and *AG55-64* being surveyed as unemployed or flexible employees related to their coequals of *AG35-44*. Section III looks in greater depth through the marginal effect of independent variables

⁹ For previous measures of Spanish labor flows see García Serrano (1998), who uses firm data to measure job creation and job destruction flows and transform they to employment level, and Antolín (1999) who analyses the incidence of GDP on labor states and approaches labor transitions from the time series. He uses matched EPA between 2Q1987 and 2q1994 to describe the employment in- and out-flows.

¹⁰ Calculi have been made also for inflows into FTC and self-employment.

on the probability of labor transitions for the restricted period 1Q2000-4Q2004, and Section IV contains the concluding remarks. Furthermore, Appendix I collects the basic topics of the two-tier labor market and Appendix II shows the empirical method we have applied.

I Data and methods.

The empirical analysis is carried out using the individual data from the matched files of EPA (Spanish Labor Force Survey) between 1Q1995 and 4Q2004, and in greater depth between 1Q2000 and 4Q2004. Gathered by the INE (*Instituto Nacional de Estadística* -National Institute of Statistic), the EPA is a quarterly home survey carried out on all of the members of a household (60,000 households and about 200,000 individuals) with a renewal of a sixth (10,000 households per quarter) so that each household remains six consecutive quarters under observation. Matched files provide a panel data with six observations on consecutive quarters which allows for a rigorous monitoring of individual transitions over an eighty-month period. The questionnaire focuses on the situation at the moment in time of the survey being carried out with respect to the marital status, education, training and labor status of the individual. The major shortcomings of this data base are the lack of information on earnings, biographical data and family relations¹¹. The samples we use select all the individuals between the ages of 35 and 64 years old who reported either having an open ended contract, a fixed term contract or experiencing a spell of unemployment in any of the six interviews.

The econometric estimation of labor transitions $i_s \rightarrow f_s$ concentrates on duration models¹² with single and competing risk specification, depending on whether alternative destinations are computed together (*All_d*) or separately (*E*, *U*, *R*; as well as *OEC* inside of *E*). Being the dependent variable the elapsed time on current spell, we use a Weibull accelerated time model to estimate the expected moment of transition and focus on two statistics, $F(12)_{i_s \rightarrow f_s}$ and $RME_{i; i_s \rightarrow f_s}$, that are directly reported by the estimated coefficients β and α (see Appendix 2 for details). Among other properties, both statistics are easy to calculate, simple to interpret, and allow a double approach to

¹¹ Available on cross sectional data, these variables are excluded on matched files because of statistical secrecy.

¹² Furthermore, we make a very specific Logit estimation for leaving regular employment, because of the F12 statistic summarizes the outflows during the first year of current spell, and the duration of open ended contracts is over 15 years in all age groups.

labor flows: unconditional and conditional to concluded spell.

I.1) The statistic $F(12)_{i_s \rightarrow f_s}$ evaluates the cumulative distribution function of transitions $i_s \rightarrow f_s$ during the first twelve months of the current spell. This is the appropriate tool for analyzing the quarterly evolution of flow intensity for different pairs $i_s \rightarrow f_s$. To this end, we estimate the duration model $\log t = \beta X + \omega$ where vector X of explanatory variables is restricted to twenty –dummies- quarter transition moments of time for the period $1Q1995-4Q2004$. Thus $F(12)$ for quarter Q becomes:

$$F(12)_{Q, i_s \rightarrow f_s} = 1 - \exp(- (12 / \text{Exp}(\beta_0, i_s \rightarrow f_s + \beta_Q, i_s \rightarrow f_s))^{1/\alpha_{i_s \rightarrow f_s}})$$

where omitted quarters prior to 1Q1995 are reported by β_0 . For each initial state we estimate the outflows $F(12)$ to all destinations taken together (All_d) under single risk conditions and a set of alternative destinations using the competing risk approach, which differs across origins. Let i_s be¹³:

- Temporary employment: $FTC \rightarrow \{All_d; E, U \text{ and } R, \text{ as well as } OEC\}$.
- Unemployed: $U \rightarrow \{All_d; E \text{ and } R, \text{ as well as } OEC\}$.
- Regular employment: $OEC \rightarrow \{All_d; E, U \text{ and } R\}$.

Worth mentioning here is that a set of complementary alternative destinations involves the additive relation for $F(12)$: $F12_{i_s \rightarrow All_d} = F12_{i_s \rightarrow E} + F12_{i_s \rightarrow U} + F12_{i_s \rightarrow R}$ ¹⁴. There are therefore several approaches to employability and to the incidence of alternative destinations:

- $F12_{i_s \rightarrow E}$ defines the employability at the initial state i_s in absolute terms.
- The normalized statistic $F12_{i_s \rightarrow E} / F12_{i_s \rightarrow All_d}$ defines the employability in relative terms or conditional to concluded i_s spell.
- The fraction $F12_{i_s \rightarrow OEC} / F12_{i_s \rightarrow E}$ evaluates the quality of employability through the weight of the new open ended contract achievement over the total of employment inflow.
- The generalization is immediate for normalized outflows to U and R , for instance $F12_{i_s \rightarrow \{U, R\}} / F12_{i_s \rightarrow All_d}$ and $F12_{i_s \rightarrow \{U, R\}} / F12_{i_s \rightarrow E}$.

Furthermore, in the particular case of flows $OEC \rightarrow All_d$ we estimate the odds ratio¹⁵ corresponding to Logit specification of the probability of leaving regular

¹³ Furthermore, the FTC and self-employment $F12$ inflows are available on request.

¹⁴ This is for the cases of $i_s = FTC$ and OEC , while for $i_s = U$ only computes the first and third addends.

¹⁵ This is with the purpose of a comparison with the $F12_{OEC \rightarrow all_d}$. Worth mentioning here is the difference between these statistics: while $F12$ is directly related to the duration of the OEC spell, the odds ratio is a

employment. This is because of the very low level of this event, given the greatest duration of *OEC* jobs that could cut on the bias the $F(12)$ estimates, particularly in the cases of time dependent hazard and selectivity bias of remaining matches, which means that the expected duration should increase through the age groups.

I.2) The statistic $RME_{i;i_s \rightarrow f_s}$ evaluates the relative marginal effect on the expected $i_s \rightarrow f_s$ event time for a particular independent variable X_i related to the timing of the reference individual. Its expression is (see technical details in Appendix 2) ¹⁶:

$$RME_{i;i_s \rightarrow f_s} = \text{Exp}(\beta_{i;i_s \rightarrow f_s}) - 1$$

It is appropriate to pay attention to the fact that RME_i : *a)* has the same sign as estimated coefficient β_i and thus is directly addressed to the expected duration for a specific destination at the beginning of the current spell, then again it has an inverse relation with the outflow intensity; and *b)* has a lower bound at -1 and is a monotonic and asymmetrical transformation of β_i , whose magnitude is greater for positive values than for negative ones¹⁷.

This is an unconditional measure for each pair $i_s \rightarrow f_s$ that puts us in a position to assess the relative marginal effect conditional to concluded spell ($RME_{i;i_s \rightarrow f_s | All_d}$), which refers the quotient of expected duration for the event f_s in terms of the duration of current spell (All_d) for clone with X_i and reference individual:

$$RME_{i;i_s \rightarrow f_s | All_d} = \frac{1 + RME(X_i)_{i_s \rightarrow f_s}}{1 + RME(X_i)_{i_s \rightarrow All_d}} = \frac{\text{Exp}(\beta_{i;i_s \rightarrow f_s})}{\text{Exp}(\beta_{i;i_s \rightarrow All_d})}$$

The calculus of employability attached to a particular covariate X_i is immediate for unconditional and conditional measures, since it is reported by such statistics for the case of $f_s=E$, while the case of $f_s=OEC$ refers to the quality of matching

In accordance with the purpose of this paper, we maintain the gender approach for each pair $i_s \rightarrow f_s$ and concentrate on the period 1Q2000-4Q2004 to estimate the effect of independent variables, which are grouped into the following five groups:

1. *Interactive variables of age groups with calendar time and GDP growth rate:* To

relative measure between the probabilities of transition and non transition at any moment that is independent of the elapsed duration. The more they fit strongly, the more appropriate it is to use the odds ratio in this particular case.

¹⁶ This is a normalized indicator that allows to circumvent the unsuitable use of estimated coefficients β_i for direct comparison through processes $i_s \rightarrow f_s$, because of differences on timing of the hazard rate.

¹⁷ For instance: $\beta_i = \{0.25, 0.75; -0.25, -0.75\}$ entail $RME_i = \{0.28, 1.13; -0.22, -0.53\}$

differentiate the probabilities of transition among targeted population groups by active measures in table 3 (*AG55-64* and *AG45-54*) and control group (*AG35-44*), we include the three age group dummies in interactive form with:

- Dummies for the transition moment of time grouped in natural years of 2000 (omitted as reference group), 2001, 2002, 2003 and 2004.
 - The Economic situation, which is reported by the quarterly time series of the annual growth rate of GDP¹⁸.
2. *Personal characteristics*: dummies for marital status, four education levels (less than compulsory, compulsory –omitted-, higher secondary school and higher), and the eventualities of being disabled or having problems in conciliating family and work.
 3. *Region*: Dummies for five of the seventeen regions of the country: Andalusia, Madrid, Catalonia, Valencia and the Basque country, with the remaining twelve omitted as reference groups.
 4. *Job related characteristics and labor force attachment for temporary employees*: dummies for six industries (farming and fishing, mining and manufacturing –omitted-, construction, trade, hotel and restaurant, civil service; financing and real estate, and transport and other services); several dummies that equal 1 if the size of the establishment is 50 or more workers, if the individual is attending school or a training program, if s/he looked for but did not find a regular job, if s/he is working in a part time job, if s/he is looking for another job.
 5. *Unemployment benefits and labor force attachment for the unemployed*: a dummy variable that equals 1 if searching for the first job; dummies for finished and currently receiving unemployment benefits; three dummies for declared preferences about the working day (full time; full&part time and part time); a four modality variable for willingness to accept a job that includes a reduction of wage, loss of category, change of place of residence and change of profession.

Therefore, the model specification for estimating the incidence of the observed heterogeneity on labor transitions from temporary employment and from unemployment presents a common set of covariates X_i (1st, 2nd and 3rd groups) and differs on a specific group: 4th for *FTC* and 5th for *U*.

¹⁸ Notice that GDP does not come from the EPA but from the quarterly time series of the National Account.

II- Results for $F(12)$: quarterly evolution of labor flows between 1q.1995-4q.2004.

As has been indicated, the suitable statistic to analyze the evolution of the intensity of the labor market flows is the statistic $F(12)_{i_s \rightarrow f_s}$, which measures the cumulative distribution function of transitions $i_s \rightarrow f_s$ during the first twelve months of the initial state i_s .

Figures 2, 3 and 4 plot the quarterly evolution of $F(12)$ for separate initial states: flexible temporary employment, FTC , unemployment, U , and permanent employment, OEC , respectively. All the figures present the same structure:

- Four panels: two for each gender that map out the absolute statistics $F12_{i_s \rightarrow f_s}$, in panels A¹⁹, and the normalized statistics $F12_{i_s \rightarrow f_s} / F12_{i_s \rightarrow All_d}$ or conditional to concluded current spell, in panels B.
- Three blocs in each panel for the age groups under observation: $AG55-64$ (on the right) and $AG45-54$ (in the middle), that benefit the active measures to encourage OEC hiring with a growing intensity with age (see table 3), as well as the control group $AG35-44$ (on the left).

The upward, horizontal and downward profiles of $F(12)$ refer respectively to increasing, stable or decreasing tendencies of the $i_s \rightarrow f_s$ flow during the first year of the transition process²⁰. The upper (lower) profiles refer to higher (lower) intensity of the flows. Worth mentioning here is the difference on the Y-axis scale, according to the differences on outflows intensity: while figure 2 for $FTC \rightarrow f_s$ and figure 3 for $U \rightarrow f_s$ are reported to $[0,1]$, figure 4 for $OEC \rightarrow f_s$ is submitted to $[0, 0.05]$ ²¹. Furthermore, table 4 summarizes such results for each gender through the average of the $F(12)$ statistics for the two five year periods: 1Q1995-4Q1999 and 1Q2000-4Q2004.

The stylized facts in figure 2 for the transitions of flexible temporary employees are important. The single risk estimates $F12_{FTC \rightarrow All_d}$ display *i)* a declining profile since 1997 with an attenuation in 2002²², which means that the duration of FTC is increasing over the observation period; *ii)* the comparative analysis indicates a similar evolution

¹⁹ Notice that Odds ratio for $OEC \rightarrow All_d$ is reported to the scale at right Y-axis.

²⁰ Bear in mind that the flow intensity for single risk estimate ($i_s \rightarrow All_d$) is inversely associated with the expected duration at the beginning of the current spell.

²¹ Which means a scale twenty times higher.

²² These dates are important, since the former refers to the first reform promoting OEC and simultaneously limiting the possibilities of hiring under FTC modalities, and the latter coincides with the slow down of the GDP growth rate.

for all population groups, as well as some differences among them in such a way that the duration of *FTC* is a little greater in women (slightly below profiles). Competing risk estimates for complementary alternative destinations (*E*, *U*, *R*) exhibit important differences among themselves across the population groups: *i*) the $F12_{FTC \rightarrow E}$ profiles evolve in parallel to $F12_{FTC \rightarrow All_d}$, which indicates that the mobility employment-employment is decreasing over time with the enlargement of *FTC* spells; *ii*) the comparative analysis across population groups displays that employability decreases with the age in both genders and is slightly greater for the men than for the women of each age group; *iii*) the relative index $F12_{FTC \rightarrow E}/F12_{FTC \rightarrow All_d}$ in panels B verifies these results at the same time accentuates the differences among population groups, in such a way that the employability conditional to concluded *FTC* deteriorates more across the and in females, as could be seen in table 4 for five years periods of 1995-1999 and 2000-2004.; *iv*) the quasi-symmetrical profiles for the conditional flows to employment and unemployment display a worsening of the labor performance in all groups in recent years, particularly for *FTC* females over 45 years of age whose probability of unemployment exceeds their employability chances in most recent quarters; *v*) the *OEC* inflows present a gender profile for targeted age groups since 2000, in such a way that they moderately go down for females and moderately go up for males; *vi*) the absolute and relative inflows to retirement *R* verify that labor market separation augments with age, is more intense for females and increases over time.

Insert figure 2 about here

Briefly, these results for *FTC* outflows do not suggest any success of the measures we deal with since the evolution of labor flows seems to be alien to them:

- employability in general and on an *OEC* basis do not present the desired differential upward profiles for targeted population groups,
- the retirement flows are not restrained and even preserve the upward tendency.

The stylized facts in figure 3 for the transitions from unemployment $U \rightarrow f_s$ are also important. The single risk estimates $F12_{U \rightarrow All_d}$ display *i*) an increasing profile in all population groups which means that the duration of unemployment spells is decreasing over the observation period, with more intensity since 1998-1999 and in less aged people; *ii*) the comparative analysis across population groups shows that the duration of

unemployment decreases across the age groups and is longer in females (lower profiles). Competing risk estimates for complementary alternative destinations (E , R) exhibit important differences among themselves across the population groups: *i*) the $F12_{U \rightarrow E}$ profiles evolve in parallel to $F12_{U \rightarrow All_d}$, which indicates that employability is increasing over time in parallel with the reduction of U spells; *ii*) the comparative analysis across population groups displays that employability is higher for men than for women and in both genders decreases over the age groups: moderately between $AG35-44$ and $AG45-54$ and suddenly for $AG55-64$; *iii*) the conditional employability $F12_{U \rightarrow E} / F12_{U \rightarrow All_d}$ in panels B sheds new light on this matter in that it evolves more favorably for females and for targeted age groups; *iv*) the OEC inflows present a gender profile for targeted age groups from 2000, in such a way that they moderately go up for females and moderately go down for males; *vi*) the absolute and relative inflows to retirement R verify that labor market separation increases with age, are more intense for females and increase over time, except for females of $AG55-64$ who exhibit a downward profile.

Insert figure 3 about here

Briefly, these results suggest an improvement in unemployed labor performance, particularly for females, which is in accordance with the measures we are dealing with, since:

- employability in general and on an OEC basis present the aimed differential evolution on targeted population groups and
- the retirement flows exhibit the suitable downward tendency on aged females.

Figure 4, which plots the transitions from regular employment $OEC \rightarrow f_s$, presents the same structure as figures 2 and 3, except for the odds ratio corresponding to flows $OEC \rightarrow All_d$ that we add because of the extreme expected duration of OEC spells and their increase with age that encompasses the good matching selection. The comparison of single risk estimates $F12_{OEC \rightarrow All_d}$ with $Odds\ r_{OEC \rightarrow All_d}$ shows similar profiles in all the cases, with emphasis on an increase of OEC outflows since 1997-reflecting the labor reform of that year - that is more intense in mature workers, and at the same their levels are clearly affected by the measurement method. In fact and according to matching selectivity bias, $F12_{OEC \rightarrow All_d}$ estimates exhibit the lower profiles

for older workers, that means that the estimated probability of leaving an *OEC* depends negatively on the age group of the sample. In contrast, the differences are moderate in *Odds_rOCE→All d* profiles, in that gender are similar and *AG45-54* and *AG55-64* are the more stable and unstable age groups. We will therefore focus on relative flows to alternative destinations (panels B) where we appreciate: *i*) the above mentioned increase of mobility or regular workers encompasses an increase of their employment-employment transitions simultaneously with a reduction of outflows to retirement and unemployment; *ii*) the separations from the labor market are proportionally much lower for regular workers than for atypical ones, which suggests that workers with high-quality jobs are more attached to the labor market; *iii*) the evolution since 2000 exhibits an improvement in employability for the targeted groups which points to the success of the measures whose effects are of interest.

Insert figure 4 about here

Summarizing, these results indicate a moderate improvement of labor performance that could be partially attributed to the active measures taken to encourage the labor stability of older workers.

III-. Results for *RME*: assessing the influence of observed heterogeneity during the period of 2000-2004.

Previous evidence from the evolution of labor flows suggests that we explore in greater depth the factors that influence the labor transitions of older atypical workers by differentiating the annual measures since 2000 -reported in table 3-, the economic situation, the individual characteristics and job conditions. To this assignment we focus on the five year period between 1Q2000 and 4Q2004, and use *RME* statistics as technical device to analyze the effect of specific covariates on labor transitions of unemployed and temporary employed, males and females separately.

As above mentioned, the explanatory variables are classified in five groups, where the 1st (*Interactive variables of age groups*²³ with calendar time and GDP growth rate), 2nd (*Personal characteristics*) and 3rd (*Region*) groups are general, while the 4th and 5th groups are specific for temporary employees and unemployed people

²³ Notice that calendar time variables are grouped into five consecutive annual dummies, instead of the quarter dummies used in previous paragraph.

respectively. Given the age feature of the active measures, we use three sets of interactive variables of age group with calendar time, the aim of which is to compare the targeted population groups of *AG45-54* and *AG55-64* with the control group *AG35-44* in the context of a pseudo natural experiment. Furthermore, the interactive variables of age groups and GDP growth rate are addressed to assess the influence of the economic situation on the labor transitions of each of them.

As in previous paragraph, we estimate single and competing risks transitions for temporary employed and unemployed of each gender separately and present results with a common structure: first, we expound the sample characteristics (table 5 for *FTC* and table 7 for *U*) and then, we discuss the results for estimations of each gender (tables 6-f and 6-m for *FTC*, and tables 8-f and 8-m for *U*, where suffixes f and m denote females and males respectively). For each initial state, we estimate the same model for single and competing risk transitions, and the results are reported in three columns: the coefficient β , its correspondent Chi Square statistic, and the relative marginal effect in percent points (*RME*) for the covariates with significance level of over 90%. Note that tables contain unconditional values for *RME*, being the conditional to conclude spell immediately defined via division $(1+RME_{i_s \rightarrow f_s})$ by $(1+RME_{i_s \rightarrow All_d})$. This is under the consideration of null value for omitted *RME*.

III.1 Transitions from temporary employment. Table 5 shows the sample means for full sample and for sub-samples of concluded spells in general (*All_d*) and on different destinations under observation (*E*, *OEC* and *R* and *U*) and adds the sample sizes at the foot of table, and thus the sample means for censored values can be directly calculated²⁴. The comparison of sample means for full sample and *All_d* (as well as that alternative destinations) informs the variables that, other things being equal, the expected duration could increase ($\beta_i > 0$) or diminish ($\beta_i < 0$) depending on whether sample means for *All_d* are lower or greater than for the full sample. In the same way, the comparison of the sample means for uncensored cases with respect to alternative destinations and for *All_d* informs the variables that, *cæteris paribus*, the expected event time could be delayed or brought forward conditional to concluded spell depending on whether the figures for a particular destination are lower or greater than for *All_d*.

The multivariate estimates for the expected moment of transition for single

²⁴ This is immediate, given that sample means $m = w_{uf_s} m_{uf_s} + w_{cf_s} m_{cf_s}$, where m_{cf_s} and m_{uf_s} denote the sub-sample means for censored and uncensored cases, and the weights w_{cf_s} and w_{uf_s} are their relative sample sizes: $w_{uf_s} + w_{cf_s} = 1$.

($FTC \rightarrow All_d$) and competing risk ($FTC \rightarrow E, OEC, R, U$) approaches are in tables 6-f and 6-m. The interactive calendar time and age group variables for model All_d show that FTC spells are longer for older workers in both genders and present a different trend pattern between them: a flat profile for females under 55 indicates that duration remains stable, at the same time that it jumps over 55 from 2002; in the case of men duration jumps in 2001 and fluctuates then around the new level. Model E evolves in parallel with All_d and thus employability decreases with age and becomes more astringent over time for females over 55. Model OEC presents a flat time profile which means that the opportunities of permanent employment remain stable in absolute terms and increase in relative terms, both conditional to concluded spell and conditional to employment, particularly for $AG55-64$. The retirement inflows also remain stable in females of $AG45-54$ and tend to reduce in the other two age groups, in such a way that conditional flows are reducing in all of them, while conditional flows to retirement are increasing in males. Consequently, other things being equal, these results do not display the effect of active measures either on creation or derivation of hiring flows.

The interactive GDP -Age group variables also present important differences across population groups. In the case of females, their employability is positively affected by GDP only for the control group (they need 5% less time to reach an employment) and has no effect on targeted groups, and OEC opportunities increase under 55 (-12% time for $AG35-45$ and -11% for $Ag45-55$). In the case of males, FTC spells are shorter in good times (-5% in $AG35-45$; -8% in $AG55-65$), which result in faster employment for control group (5% less time) and in an increase of retirement and unemployment inflows (16% and 20%) for the most important targeted group of $AG55-64$, which reveals that firms take advantage of good times for staff adjustment.

The evidence for human capital variables, such as education and training, only partially agrees with the theory. On the one hand, the effects are more intense for males and indicate that education level increases the duration of FTC spell and reduces the retirement flows, and furthermore higher education acts as an insurance against unemployment risk. On the other hand, employability is not affected by education except for females with less than compulsory education who exhibit lower performance. On the other hand, permanent employment opportunities increase with education for males (graduates of $AG55-64$ spend 16% less time on reaching an OEC) while displaying a \cap profile for females, which is in tune with administrative assistant projection of females' jobs. Furthermore, the training system does not exhibit a good

performance, due to the fact that trained people neither increase their employability nor their *OEC* chances, in spite of the fact that unemployment becomes less likely for them. Things should be different for normalized flows, then education (both genders) and training (males) influence employability in the expected way (model *E* vs. *All_d*), as well as permanent employment chances (model *OEC* vs. *All_d*).

Personal characteristics exhibit a gender profile. On the one hand, to be married punishes females (bigger turnover, lower employability and higher propensity leave the labor market early) and benefit males (longer spells, greater employability as well as later retirement and lower unemployment odds) with respect to their unmarried peers. On the other hand, to perceive conciliating family-work problems is a female question that must encompass a self selection problem as much as it increases either the mobility and retirement or *OEC* odds. Furthermore, disabled people exhibit worse labor performance in both genders (more difficult to remain at work and lower employability).

Turning to territorial dummies, Mediterranean shore regions (Catalonia and Valencia) and the Basque country exhibit higher employability and *OEC* chances in both genders, and at the same time Madrid together with Catalonia display lower intensity for retirement and unemployment inflows.

The variables attached to labor relation present effects quite similar for both genders. First, people who are in a *FTC* as a second choice exhibit a high performance since they rapidly leave the current state (30% for females; 42% for males) and exhibit both a high probability of reemployment (32% and 36% faster) and of converting the current *FTC* on a permanent basis (17% and 14% sooner). In contrast, active searching for another employment suggests negative selection problems, since it is associated with shorter duration of current spell and lower reemployment and *OEC* probabilities, at the same time as higher flows out of the labor market. The coefficients for part time jobs ratify the poor attraction of such a modality, since the workers that opt for it suffer from lower employability in general and under permanent bases. The dummy for firm size indicates a bad performance for flexible workers in medium and large firms, whose probabilities of reemployment and of conversion on permanent basis are lower while they are more likely to leave the labor market, which suggests that these firms 'churn' and hence dismiss entrants before they turn into insiders (Lindbeck and Snower 2000) rather than promote internal labor market and employment careers. Finally, the coefficients for the dummy differentiating the renewed *FTC* indicate that firms use it as

probation period, given that the odds of reemployment and conversion on *OEC* basis increase after renewal, as reflected by the measure conditional to concluded spell (by comparing models *E* and *OEC* vs. *All_d*).

Sector dummies display an important source of heterogeneity across them and between genders. Worth mentioning here is that civil servants present the lower employability in both genders together with Construction (males) and Transport (females), while Tourism and Finance activities exhibit higher performance in terms of *OEC* for females.

III.2 Transitions from unemployment.

The sample means are in table 7 and the relevant results in tables 8-f and 8-m for females and males respectively.

The interactive calendar time and age group variables exhibit a reduction of the duration of current spell (model *All_d*) in the three age groups of both genders. Models *E* and *OEC* also display important differences between them and among population groups. On the one hand, employability increases until 2003 and declines in 2004 for the control group AG35-44 and exhibits U-shaped profiles for targeted groups with a minimum in 2002 and upturn path later, more intense for AG55-64 than for AG55-64. On the other hand, the likelihood of reaching labor stability improves for females, more intensely for targeted groups, at the same time as the males' performance remains stubborn, particularly for AG55-64. The gender analysis adds some nuances to the lower performance of unemployed women perceived in figure 1 in that gender gap is decreasing over age. We can assert now that unemployed women exhibit a more efficient transition into *OEC* in absolute terms as well as conditional to concluded spell (model *OEC* vs. *All_d*) and conditional to employment (model *OEC* vs. *E*) for the three age groups and that these differences are more intense for more targeted age-groups.

The alarm is raised on models R in that the outflows from the labor market are increasing for all population groups, which suggests the incentives to keep (firms) and to remain (displaced workers themselves) in the labor market do not play the expected role. Taken together with previous evidence, things are as if the active measures are diverting $U \rightarrow OEC$ flows between genders: away males, toward females.

Insert table 7 about here

Insert tables 8-f and 8-m about here

The interactive GDP growth-age group variables show a positive relation between growth rate and the duration of unemployment, more pronounced for older workers, at the same time that a reduction of their employability in general and under permanent basis which suggest the exhaustion of the employment creation during the slow down phase started in 2001. Taking together the results for interactive variable GDP-age groups in tables 6-f and 6-m we can conclude that labor performance improves with economic situation for flexible workers and deteriorates for the unemployed. We must claim then for additional measures increasing the employability of mature workers, such as more and better training and flexible job conditions.

Turning to personal characteristics, the education level displays important differences on higher education between genders, in such a way that it encompasses higher employability in both while the *OEC* chances increase in men and decrease in women. The training system displays poor performance, particularly in the case of men, since trained unemployed become less likely to achieve employment and reach later labor stability in conditional as well as unconditional estimates. Civil status (married) exhibits an opposing gender pattern, in that with respect to their unmarried coequals married women exhibit lower performance and married men higher in both unconditional and conditional estimates. More precisely, the employability and *OEC* chances are lower for unemployed wives at the same time as they retire earlier, while husbands stay longer in the labor market, are more likely to be employed and the quality of their matches is bigger. Declaring difficulties conciliating labor and family life makes the gender gap wider, since it concerns basically females (23% and 0.2% of men in sample means of table 7) who suffer form longer unemployment spells (8%), lower employability (+100% time spent) and much lower *OEC* chances (+1725% time spent) at the same time as it intensifies outflows from the labor market (18%). Disabled unemployed exhibit remarkably low employability performance since they need a lot of additional time to achieve employment (762% females; 168% males) which effectively expels them from the labor markets to inactivity (45%). These results add new evidence of an important lack of active measures for more disadvantaged social groups.

Dummies related to labor situation reveal the high value of previous labor experience, since those looking for first job (women for the most part: 8.1% of the sample against 0.8% of men) spend ‘cæteris paribus’ more time on leaving the current spell (43% for females; 121% for males) and on reaching an employment (113%

females; 207% males) than the reference individual²⁵. To take unemployment benefits influences differently women and men, since the former move forward all analyzed labor transitions with a similar intensity while the latter stay longer unemployed and become less likely employees, even in conditional estimates. On the other hand, employees exhibit worse performance than laborers, and particularly than unskilled ones, in both genders.

Turning to working day variables, those who have a well defined preference for a full-time job (15% and 28% of the sample for females and males) exhibit higher performance in that their unemployment spells are shorter (-53% for females; -38% for males) and they need on average less time to achieve an employment in general (-77% and 52% for females and males) and an *OEC* in particular (91% and 67% for females and males), while those who look for part time exclusively, mainly women (13.3% of the sample; 1.0% of men), display poor conditional employability and leave the labor market earlier (25% for females). This finding is in agreement with the Spanish labor idiosyncrasy that part-time work is rather uprooted (see figure 1)..

The four modalities variable for willingness to accept a deterioration in job qualities exhibits a negative relation with labor performance in that it entails longer spells (8% and 4% for females and males), spending more time on reaching an employment (9% females) and a lot more for *OEC* (40% and 21% for females and males) which suggests a negative selection in that individuals do not seem to deal between (worse) conditions and (improvement) of employability but seem to accept that once they have admitted they have not employment chances at previous quality level.

Regional dummies corroborate important differences. Valencia exhibits the best performance in both genders (lower duration of unemployment, earlier employment and higher matching quality), followed by Madrid and Catalonia which also show higher employability on regular basis for males, while the Basque country is worse than the reference region (omitted).

IV.- Concluding remarks.

To assess the incidence of these active measures in Spain aimed at achieving the employment rate targets for older workers set out in the 2010 EU Agenda, this paper explores the quarterly evolution of labor performance of the targeted age groups AG55-

²⁵ Notice that this result is in concordance with their lack of market-specific human capital.

64 and AG45-54 in relation to the non targeted one of AG35-44. The theoretical approach refers to the dual labor market, the empirical strategy econometric points out on quasi natural experiment and the econometric estimation is supported by parametric transition models under Weibull specification. The methodological novelty here concerns the two statistics used: $F(12)_{i_s \rightarrow f_s}$ and $RME_{i_s \rightarrow f_s}$. The former summarizes the cumulated probability of transition $i_s \rightarrow f_s$ after 12 months from starting the current spell for different initial i_s and final f_s states, these being temporary work, unemployment, regular job and inactivity). The latter computes the relative effect on expected duration for particular covariates related to the reference individual.

In general terms, the results display a weak increase in employability and *OEC* inflows on targeted age groups in line with active measures which are insufficient for attaining the Lisbon Agenda goals, since early retirement is not controlled and the outflows from the labor market continue to increase, and at the same time the training system exhibits a low performance. This evidence must be related to the nature of the measures themselves, which are exclusively addressed to encouraging employers to employ older workers on a permanent basis by reducing non wage costs, and do not take into account complementary measures addressed at older workers remaining at work through improving their access to continuing training, conceding the special importance of health and safety at work, adopting innovative and flexible forms of work organization, and simultaneously eliminating incentives for early exit from the labor market as the UE guidelines suggest.

Country	Relative indexes to USA			annual work hours	Employment-population rate in % by age groups			
	GDP per capita	Productivity per			15-64y	15-24y	25-54y	55-64y
		Employee	hour					
USA	100	100	100	1815	71.9	55.7	88.6	59.5
Japan	74	72	72	1809	68.2	41.0	92.0	61.6
OECD	75	78	81	na	65.1	43.7	87.0	49.4
UE-15	73	80	91	na	64.3	40.5	86.7	40.6
Germany	75	80	101	1444	65.3	45.6	85.3	38.4
France	77	88	103	1545	61.1	23.3	87.0	34.2
Italy	75	94	105	1619	55.6	26.7	86.0	28.9
Netherlands	82	78	106	1340	73.2	66.9	91.2	41.8
Portugal	50	48	51	1719	68.1	41.9	89.4	50.9
Spain	62	73	74	1807	59.5	36.6	85.8	39.7
UK	74	74	79	1707	72.7	61.0	87.2	53.3

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OECD Economic Outlook 2003

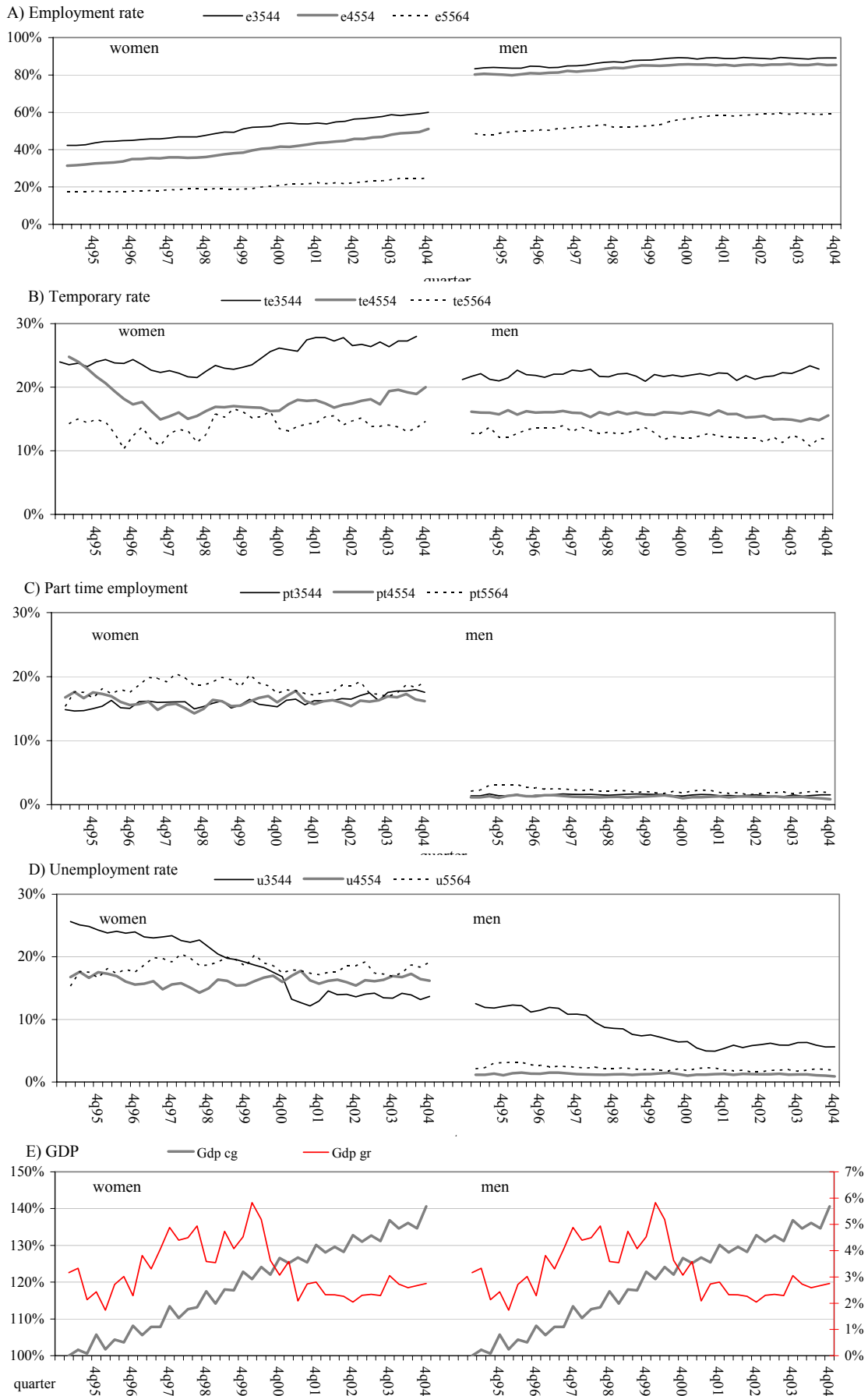
Population group	Two gender 15-64 years				Women 15-64 years				Two gender older workers 55-64 years			
	2001-2002	1999-2002	1993-2002	1993-2002	2001-2002	1999-2002	1993-2002	1993-2002	2001-2002	1999-2002	1993-2002	1993-2002
	Germany	65,3	-0,5	0,1	0,2	58,8	0,1	1,4	3,7	38,6	0,7	0,8
France	63	0,2	2,1	3,7	56,7	0,7	2,7	5,2	34,8	2,9	6	5,1
Italy	55,5	0,7	2,8	3,2	42	0,9	3,7	6,2	28,9	0,9	1,3	-1,3
Netherlands	74,4	0,3	2,7	10,8	66,2	1,0	3,9	14	42,3	2,7	5,9	13,5
Portugal	68,2	-0,5	0,7	3,6	60,8	-0,2	1,2	6,2	50,9	0,8	0,6	5,5
Spain	58,4	0,7	4,7	11,8	44,1	1,1	5,7	13,4	39,7	0,5	4,7	5,2
UK	71,7	0,0	0,7	4,3	65,3	0,3	1,1	4,5	53,5	1,2	3,9	6,8
EU-15	64,3	0,2	1,8	4,2	55,6	0,6	2,7	6,4	40,1	1,3	3	4,3
EU targets for 2010	70%				60%				50%			
Intermediate targets for 2005	67%				57%				-			

Eurostat: 'Labour force survey', several years.

Table 3: Evolution of the Spanish annual program to encourage employment Benefits on firms' social contributions in percentage (%) and months (m) for conversion FTC on OEC basis and for new OEC hiring										
Year	1997, 1998		1999		2000		2001		2002, 2003, 2004	
Benefit	%	m	%	m	%	m	%	m	%	m
A) conversion FTC on OEC basis										
All ages > 45	50%	24	25% ⁽¹⁾ 25% ⁽¹⁾ rwl	24	20%	24	25%	24	25%	24
B) new OEC hiring										
<30	40%	24	35% ⁽¹⁾ 25% ⁽¹⁾ 12 ^(a)	12	20% ⁽³⁾	24				
ULD	40%	24	40% ⁽¹⁾ 30% ⁽¹⁾ 12 ^(a)	12	50% ^(3a) 45% ^(3a) 12	12				
U >6m							20% ^(2,3)	24		
U >6m; w <45 unr									35%	24
>45	60%	24	45%	12	50% ^(1a)	12				
	50%	rwl	40%	rwl	45% ^(1a)	rwl				
45-54							50% ^(2,3) 45% ^(2,3) rwl	12	50% ^(2,3) 45% ^(2,3) rwl	12
55-64							55% ^(2,3) 50% ^(2,3) rwl	12	55% ^(2,3) 50% ^(2,3) rwl	12
social exclusion							65%	24	65%	24
<p>Legend:(a) rwl if 45+; (1) +5% for women in underrepresented jobs; (1a) +10% for women in underrepresented jobs; (2) +10% for women; (3) +5% for women in full time; (3a) +10% for women in full time; ULD unemployment of long duration; U>6m unemployment longer than six months; w<45; unr women younger than 45years in underrepresented jobs; >45 45 years and older; <30 younger than 30 year; OEC open ended contract; FTC fixed term contract; rwl residual of working life;.</p>										

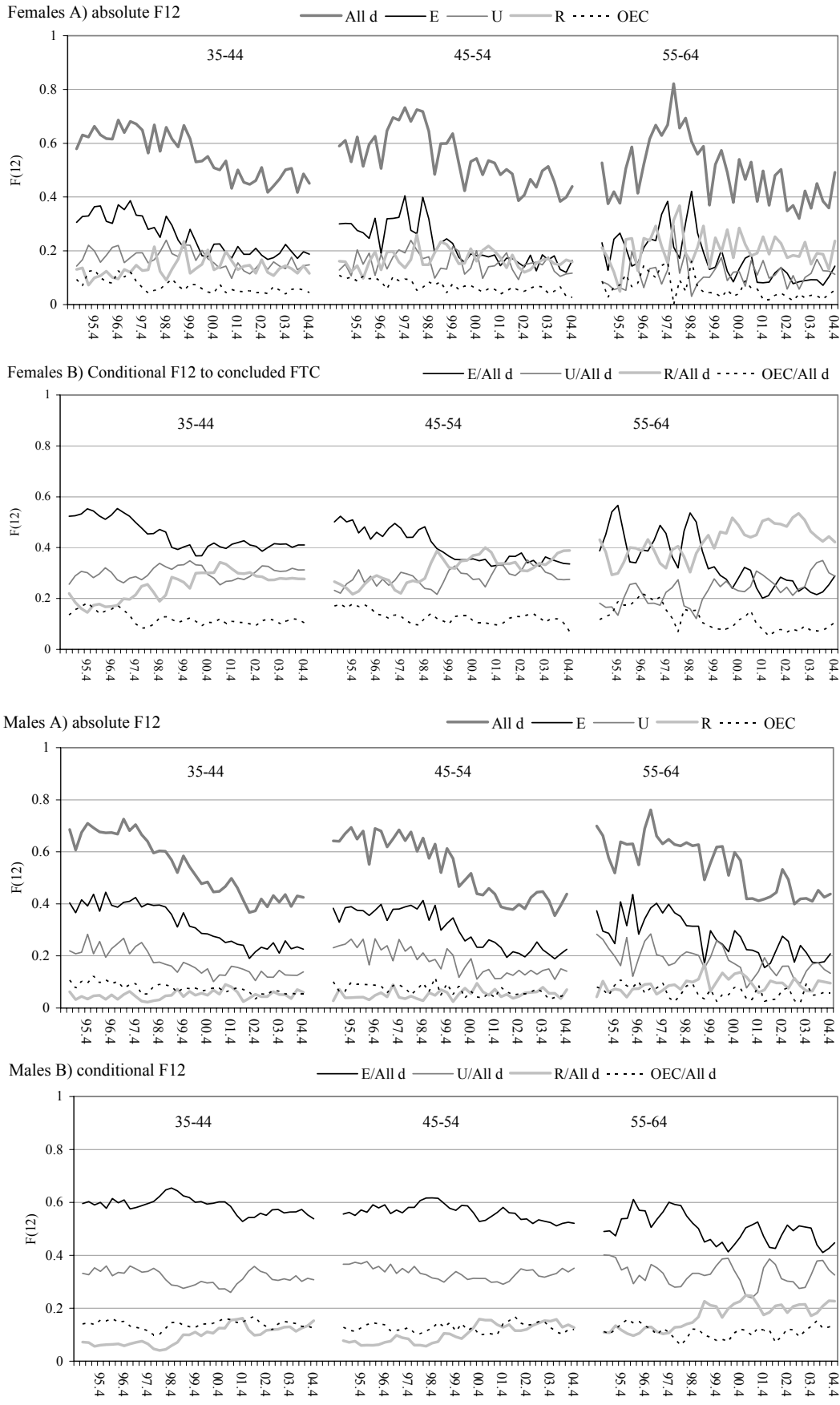
The employability of older workers in a dual labor market: Assessing the measures taken in Spain since 2000

Figure 1 Evolution of Labor market performance by gender and age group



The employability of older workers in a dual labor market: Assessing the measures taken in Spain since 2000

Figure 2 Cumulated F(12) transitions from temporary employment by gender and age group



The employability of older workers in a dual labor market: Assessing the measures taken in Spain since 2000

Figure 3 Cumulated F(12) transitions from unemployment by gender and age group

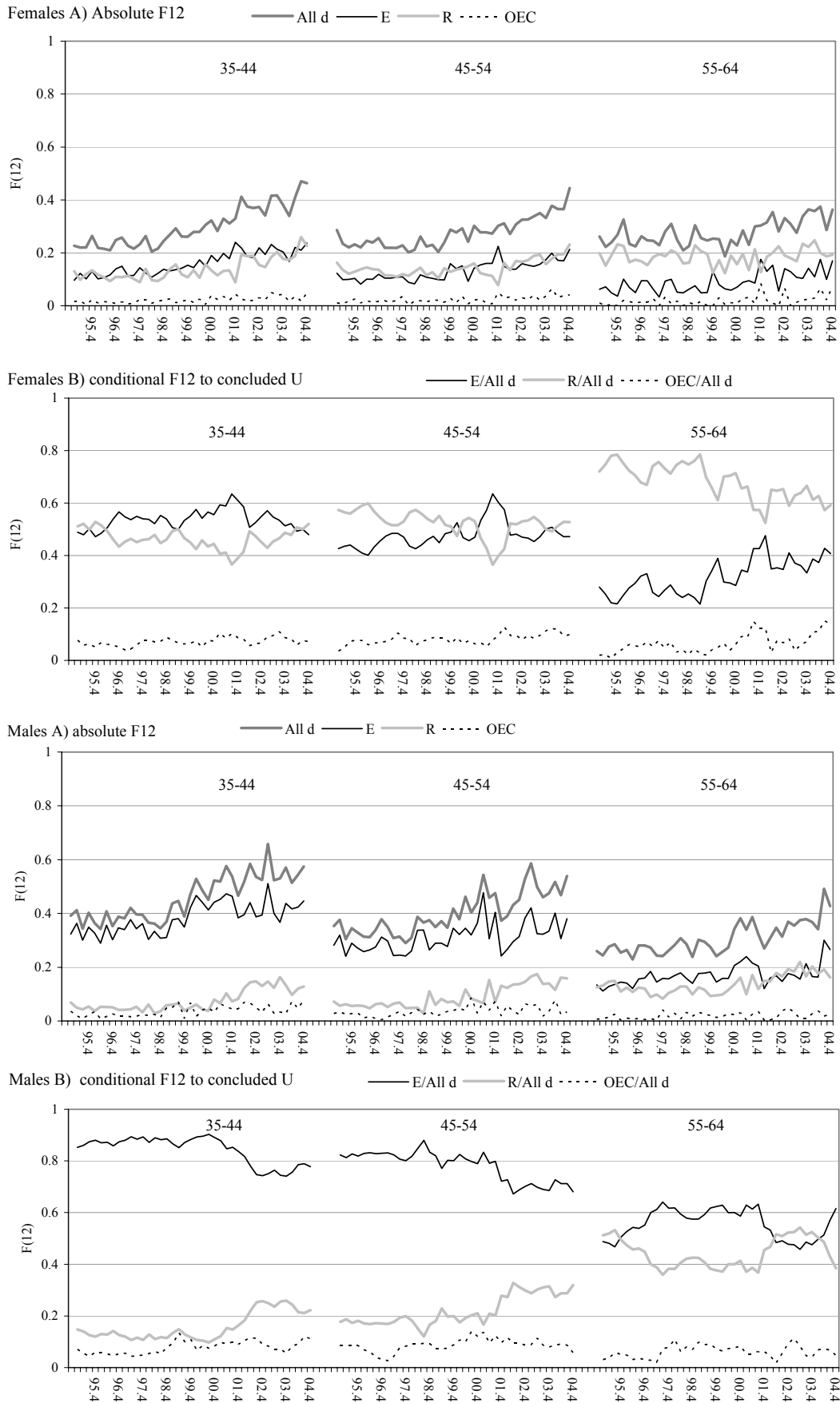


Figure 4 Cumulated F(12) transitions from regular employment by gender and age group

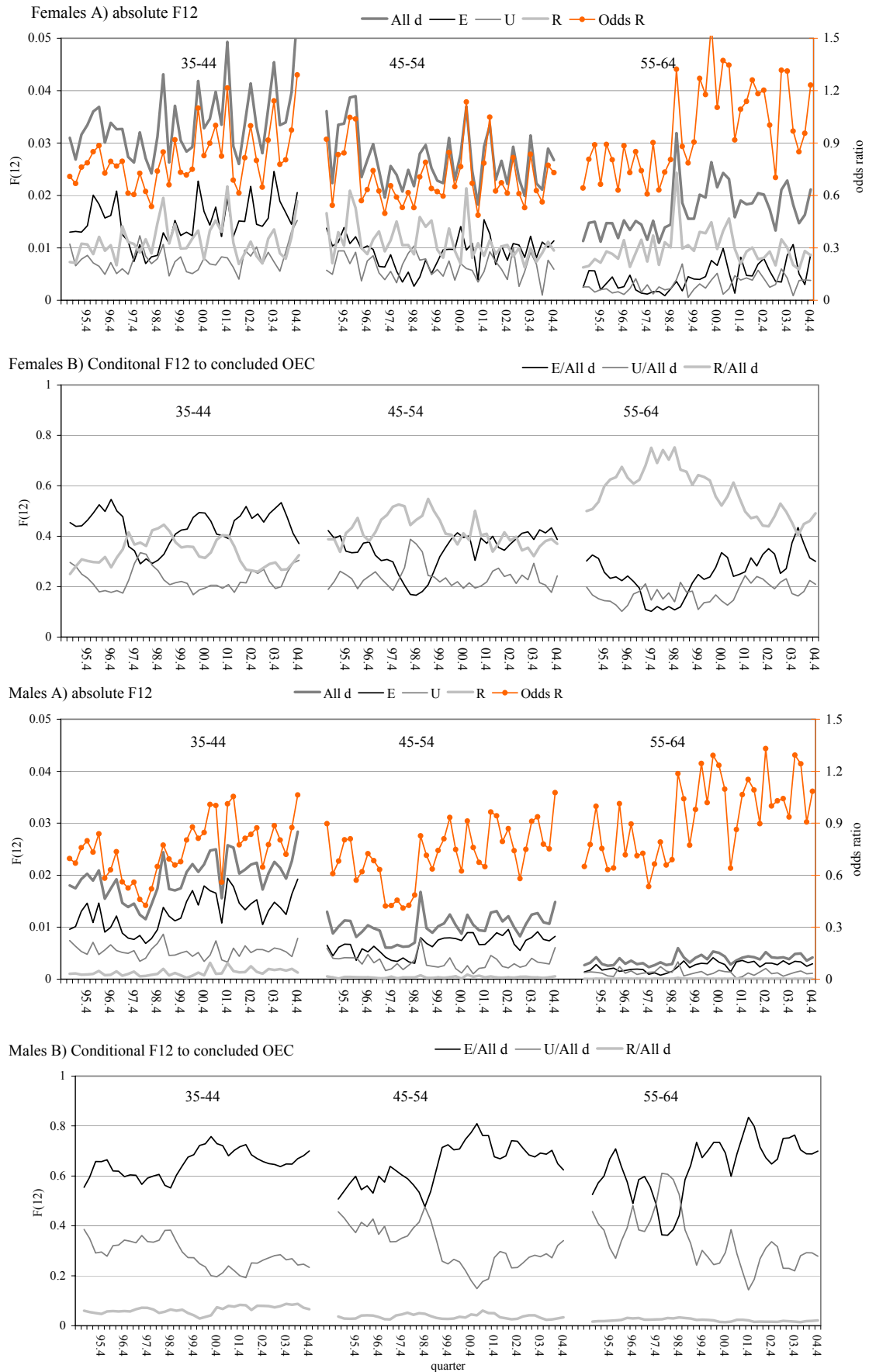


Table 5
Sample's means of females and males temporary employees:
Full sample and sub-samples for concluded spells in different destinations

	Females						Males					
	full samp	concluded spells					Full samp	concluded spells				
	All_d	E	OEC	R	U	All_d	E	OEC	R	U		
ag3544-01	0.113	0.115	0.123	0.109	0.112	0.107	0.107	0.109	0.113	0.120	0.120	0.095
ag3544-02	0.119	0.120	0.131	0.112	0.108	0.114	0.105	0.103	0.107	0.119	0.081	0.103
ag3544-03	0.127	0.125	0.137	0.129	0.103	0.133	0.100	0.101	0.104	0.114	0.086	0.100
ag3544-04	0.132	0.133	0.144	0.138	0.110	0.144	0.111	0.110	0.115	0.112	0.091	0.110
ag4554-01	0.055	0.055	0.051	0.051	0.065	0.049	0.063	0.061	0.063	0.047	0.071	0.052
ag4554-02	0.063	0.064	0.062	0.067	0.067	0.062	0.063	0.060	0.060	0.066	0.056	0.064
ag4554-03	0.064	0.065	0.061	0.071	0.066	0.068	0.067	0.067	0.063	0.072	0.070	0.073
ag4554-04	0.074	0.071	0.066	0.067	0.084	0.066	0.063	0.061	0.060	0.049	0.058	0.066
ag5564-01	0.017	0.018	0.013	0.020	0.026	0.015	0.029	0.029	0.027	0.029	0.047	0.025
ag5564-02	0.019	0.019	0.013	0.016	0.030	0.017	0.032	0.033	0.028	0.022	0.051	0.036
ag5564-03	0.023	0.020	0.013	0.016	0.032	0.016	0.031	0.031	0.028	0.032	0.045	0.032
ag5564-04	0.024	0.024	0.017	0.024	0.033	0.023	0.032	0.033	0.026	0.029	0.052	0.038
ag3544-GDP	1.692	1.707	1.836	1.687	1.481	1.766	1.532	1.548	1.630	1.671	1.319	1.469
ag4554-GDP	0.885	0.876	0.825	0.929	0.945	0.879	0.949	0.926	0.930	0.852	0.854	0.949
ag5564-GDP	0.287	0.285	0.208	0.273	0.419	0.252	0.445	0.465	0.391	0.382	0.715	0.517
Educ < Compul	0.366	0.371	0.294	0.328	0.463	0.386	0.477	0.472	0.433	0.362	0.549	0.523
Higher Secondary	0.160	0.157	0.174	0.168	0.115	0.177	0.106	0.106	0.117	0.144	0.093	0.088
Higher Education	0.168	0.160	0.220	0.171	0.095	0.141	0.103	0.100	0.119	0.153	0.090	0.065
In training	0.042	0.042	0.050	0.039	0.033	0.041	0.015	0.014	0.016	0.020	0.022	0.008
Married	0.745	0.751	0.714	0.718	0.805	0.745	0.771	0.760	0.790	0.806	0.705	0.717
Conciliating prb	0.065	0.064	0.050	0.067	0.083	0.064	0.002	0.002	0.003	0.002	0.003	0.001
Disabled	0.002	0.003	0.002	0.002	0.005	0.002	0.006	0.007	0.004	0.003	0.016	0.007
Andalucia	0.230	0.246	0.155	0.136	0.316	0.309	0.278	0.294	0.254	0.196	0.297	0.380
Madrid	0.037	0.029	0.034	0.031	0.023	0.029	0.029	0.022	0.022	0.025	0.024	0.021
Catalonia	0.096	0.092	0.125	0.138	0.067	0.068	0.073	0.066	0.079	0.095	0.056	0.043
Valencia Country	0.104	0.108	0.114	0.124	0.115	0.090	0.096	0.102	0.114	0.121	0.114	0.072
Basque Country	0.051	0.046	0.058	0.075	0.039	0.036	0.033	0.032	0.038	0.049	0.031	0.022
Didn't find OEC	0.784	0.794	0.794	0.756	0.752	0.842	0.787	0.800	0.784	0.732	0.772	0.846
Looking f ath job	0.131	0.135	0.079	0.084	0.149	0.206	0.062	0.073	0.047	0.028	0.113	0.115
Renewed lab cont	0.172	0.190	0.288	0.241	0.126	0.112	0.180	0.202	0.260	0.264	0.132	0.106
Part time job	0.318	0.297	0.259	0.375	0.387	0.253	0.038	0.041	0.026	0.037	0.113	0.043
Size ≥50 workers	0.251	0.246	0.275	0.230	0.200	0.253	0.191	0.186	0.197	0.211	0.190	0.160
Farming&Fishing	0.106	0.132	0.039	0.019	0.213	0.184	0.136	0.169	0.127	0.070	0.227	0.234
Construction	0.012	0.013	0.011	0.006	0.013	0.017	0.406	0.352	0.355	0.278	0.325	0.357
Hotel&Catering	0.188	0.209	0.238	0.220	0.191	0.186	0.102	0.114	0.121	0.162	0.108	0.101
Financ&Real State	0.097	0.097	0.120	0.159	0.081	0.081	0.035	0.036	0.041	0.054	0.027	0.028
Transport&oth serv	0.203	0.164	0.145	0.246	0.209	0.143	0.089	0.091	0.104	0.133	0.091	0.063
Public Servant	0.292	0.275	0.313	0.249	0.210	0.289	0.105	0.102	0.094	0.101	0.120	0.111
Simple size	12541						13885					
Noncensored values		8991	3790	1279	2789	2412		9676	5827	1441	1181	2668

Table 6 f (females)																				
Outflows from flexible-precarious employment. Weibull duration model																				
	Single risk			Competing risk estimates for particular destinations																
	All d			E			OEC			R			U							
	coef	β	chi2	RME	coef	β	chi2	RME	coef	β	chi2	RME	coef	β	chi2	RME				
Intercept	3.04		451		4.12		498		5.69		368		4.92		308		5.34		267	
AG3544-01	0.09		1.4		-0.06		0.3		-0.16		1.1		0.02		0.0		0.46		7.0	0.58
AG3544-02	0.10		1.4		-0.07		0.4		-0.04		0.0		0.18		1.2		0.35		3.3	0.41
AG3544-03	0.08		1.1		-0.12		1.4		-0.13		0.7		0.34		4.6	0.40	0.21		1.4	
AG3544-04	0.03		0.2		-0.16		2.8	-0.15	-0.23		2.3		0.29		3.9	0.34	0.10		0.3	
AG4554-01	-0.05		0.3		-0.07		0.3		-0.05		0.1		-0.22		1.6		0.23		1.2	
AG4554-02	-0.02		0.1		-0.22		2.8	-0.19	-0.41		4.4	-0.34	0.16		0.7		0.07		0.1	
AG4554-03	0.12		1.6		0.01		0.0		-0.29		2.3		0.28		2.3		0.10		0.2	
AG4554-04	0.18		4.1	0.20	-0.01		0.0		-0.02		0.0		0.18		1.1		0.59		8.1	0.80
AG5564-01	0.15		1.2		0.13		0.4		-0.34		1.5		0.08		0.1		0.27		0.6	
AG5564-02	0.53		14.3	0.70	0.51		6.3	0.66	0.47		2.2		0.40		3.0	0.50	0.80		5.1	1.22
AG5564-03	0.66		23.0	0.94	0.67		10.7	0.96	0.45		2.3		0.57		6.2	0.76	0.82		5.9	1.28
AG5564-04	0.23		2.9	0.25	0.41		4.4	0.51	0.18		0.4		0.18		0.6		-0.01		0.0	
AG3544-GDP	-0.04		1.8		-0.07		3.6	-0.07	-0.13		4.8	-0.12	0.02		0.1		-0.04		0.5	
AG4554-GDP	-0.02		0.6		-0.03		0.6		-0.11		3.5	-0.11	0.01		0.1		-0.04		0.4	
AG5564-GDP	-0.02		0.3		0.02		0.2		-0.04		0.2		-0.08		1.4		0.04		0.3	
Educ < Compul	0.11		7.4	0.11	0.11		3.9	0.11	0.14		2.8	0.15	0.17		5.3	0.18	0.10		1.1	
Higher Secondary	0.08		2.5		-0.06		1.2		-0.05		0.4		0.59		32.3	0.80	-0.11		1.1	
Higher Education	0.44		68.5	0.55	0.05		0.5		0.31		8.7	0.37	1.20		99.8	2.31	0.72		33.7	1.05
In training	0.05		0.4		-0.08		0.7		-0.01		0.0		0.04		0.1		0.33		3.2	0.39
Married	-0.10		8.7	-0.10	0.08		3.0	0.08	0.09		1.9		-0.47		39.4	-0.37	-0.10		1.4	
Conciliating prb	-0.18		7.8	-0.16	-0.09		0.9		-0.34		7.2	-0.29	-0.31		8.0	-0.26	0.06		0.1	
Disabled	0.16		0.4		1.02		5.3	1.78	0.52		0.8		-0.81		5.4	-0.55	0.57		0.7	
Andalucia	-0.05		1.4		0.31		27.3	0.36	0.34		12.3	0.40	-0.33		18.6	-0.28	-0.25		7.6	-0.22
Madrid	0.44		52.5	0.55	0.36		22.5	0.43	0.53		18.9	0.70	0.70		29.8	1.00	0.36		6.8	0.43
Catalonia	0.11		5.5	0.12	-0.21		13.7	-0.19	-0.15		3.1	-0.14	0.83		53.0	1.30	0.27		5.0	0.31
Valencia Country	-0.07		2.4		0.00		0.0		-0.18		3.8	-0.16	-0.30		11.1	-0.26	0.13		1.2	
Basque Country	0.02		0.1		-0.18		4.7	-0.17	-0.37		9.7	-0.31	0.33		4.6	0.40	0.32		3.0	0.37

The employability of older workers in a dual labor market: Assessing the measures taken in Spain since 2000

Didn't find OEC	-0.35	86.1	-0.30	-0.38	62.1	-0.32	-0.19	6.9	-0.17	0.02	0.1		-0.81	70.7	-0.55
Looking f anoth job	-0.41	75.2	-0.34	0.32	17.6	0.38	0.41	12.0	0.50	-0.48	30.1	-0.38	-1.43	227	-0.76
Size ≥50 workers	0.26	47	0.30	0.39	59.7	0.47	0.15	4.1	0.16	-0.30	17	-0.26	0.65	50	0.91
Part time job	0.11	8.9	0.12	0.13	8.2	0.14	0.24	8.8	0.27	0.03	0.1		0.12	1.8	
Renewed Lab Cont	0.83	464.2	1.29	0.23	28.3	0.26	0.36	24.6	0.44	1.41	259.3	3.09	1.90	294.4	5.65
Farming&Fishing	-1.28	378	-0.72	0.07	0.3		0.29	1.5		-2.10	292	-0.88	-1.68	133	-0.81
Construction	-0.28	3.8	-0.24	0.07	0.1		-0.09	0.1		-0.94	11.6	-0.61	-0.39	1.5	
Hotel&Catering	-0.35	41.1	-0.29	-0.33	25.5	-0.28	-0.57	25.4	-0.44	-0.49	18.0	-0.39	-0.29	4.9	-0.25
Financ&Real State	0.08	1.6		-0.04	0.3		-0.61	24.2	-0.46	0.06	0.2		0.34	4.7	0.41
Transport&oth serv	1.32	467	2.75	1.30	285	2.67	0.48	16.2	0.62	0.97	66.2	1.65	1.68	128	4.34
Public Servant	0.58	99	0.79	0.77	116	1.16	0.43	11.7	0.54	0.26	4.3	0.30	0.43	10.0	0.53
Scale	1.41			1.18			1.08			1.49			1.66		
n obs	12541			12541			12541			12541			12541		
Noncensored	8991			3790			1279			2789			2412		
Right cens	3550			8751			11262			9752			10129		
Llk	-19874			-10330			-4628			-9126			-8900		
Destination codes: All-d all destinations together, E employment, OEC permanent employment, R retirement; U unemployment															
Legend: ME% denotes the 'relative marginal effect' in percent points.															

Table 6 m (males)																						
Outflows from flexible-precarious employment. Weibull duration model																						
	Single risk			Competing risk estimates for particular destinations																		
	All d			E			OEC			R			U									
	coef	β	chi2	RME	coef	β	chi2	RME	coef	β	chi2	RME	coef	β	chi2	RME						
Intercept	3.25		648		3.88		736		5.22		393		6.55		220		5.49		334			
AG3544-01	0.03		0.2		0.07		0.8		-0.14		1.0		-0.38		2.8		-0.32		0.19		1.4	
AG3544-02	0.20		7.1	0.23	0.23		7.5	0.26	0.01		0.0		0.47		3.1	0.61	0.04		0.0		0.0	
AG3544-03	0.17		5.3	0.18	0.21		7.0	0.24	0.07		0.2		0.19		0.6		0.06		0.1		0.1	
AG3544-04	0.16		5.2	0.17	0.17		4.9	0.19	0.10		0.5		0.10		0.2		0.16		1.0		1.0	
AG4554-01	0.13		2.5	0.14	0.17		3.5	0.19	0.30		2.6	0.35	-0.47		3.0	-0.38	0.29		2.3		2.3	
AG4554-02	0.31		12.5	0.37	0.33		11.1	0.39	-0.10		0.3		0.48		2.3		0.19		0.9		0.9	
AG4554-03	0.16		3.6	0.17	0.22		5.5	0.25	-0.15		0.8		-0.12		0.2		0.12		0.4		0.4	
AG4554-04	0.31		13.2	0.36	0.37		14.8	0.44	0.27		2.2		0.15		0.3		0.18		0.9		0.9	
AG5564-01	0.35		10.3	0.42	0.25		3.5	0.28	-0.04		0.0		-0.04		0.0		0.88		11.1		1.40	
AG5564-02	0.15		2.0		0.28		4.4	0.32	0.40		2.3		-0.13		0.2		-0.01		0.0		0.0	
AG5564-03	0.37		10.8	0.45	0.24		3.3	0.27	-0.03		0.0		0.30		0.8		0.68		6.8		0.97	
AG5564-04	0.54		25.6	0.72	0.69		27.3	1.00	0.24		1.1		0.11		0.1		0.33		2.1		2.1	
AG3544-GDP	-0.05		4.7	-0.05	-0.05		3.1	-0.05	-0.07		2.0		0.06		0.4		-0.08		1.9		1.9	
AG4554-GDP	-0.04		2.3		-0.02		0.7		-0.01		0.0		0.09		0.9		-0.10		2.6		2.6	
AG5564-GDP	-0.09		8.8	-0.08	0.01		0.1		0.02		0.1		-0.18		3.7	-0.16	-0.23		13.0		-0.20	
Educ < Compul	-0.04		1.0		0.00		0.0		0.08		1.1		-0.30		6.2	-0.26	-0.01		0.0		0.0	
Higher Secondary	0.15		9.0	0.16	0.02		0.1		-0.14		2.3		0.17		0.9		0.56		20.4		0.75	
Higher Education	0.26		22.1	0.30	-0.04		0.6		-0.17		3.1	-0.16	0.45		5.2	0.56	1.29		74.0		2.62	
In training	0.27		5.3	0.31	0.13		1.1		0.03		0.0		-0.41		1.7		1.13		10.1		2.10	
Married	0.18		27.1	0.20	-0.08		3.9	-0.08	-0.34		20.6	-0.29	0.64		34.5	0.89	0.71		86.2		1.02	
Conciliating prb	0.65		4.2	0.92	0.26		0.6		0.42		0.5		0.39		0.2		3.22		4.3		24.02	
Disabled	-0.41		5.2	-0.33	0.00		0.0		-0.11		0.1		-1.58		16.9	-0.79	-0.53		1.8		1.8	
Andalucia	-0.13		12.4	-0.12	0.06		1.9		0.34		18.6	0.41	-0.10		0.7		-0.59		57.2		-0.44	
Madrid	0.29		19.2	0.33	0.23		9.9	0.26	0.08		0.4		0.28		1.7		0.36		5.6		0.44	
Catalonia	0.18		12.1	0.20	-0.04		0.5		-0.18		3.9	-0.16	0.93		19.3	1.52	0.68		22.7		0.97	
Valencia Country	-0.05		1.4		-0.16		11.0	-0.15	-0.22		6.5	-0.20	-0.09		0.4		0.32		8.0		0.38	
Basque Country	0.23		8.4	0.26	0.09		1.1		0.01		0.0		0.36		1.8		0.72		10.6		1.05	

The employability of older workers in a dual labor market: Assessing the measures taken in Spain since 2000

Didn't find OEC	-0.54	226	-0.42	-0.45	126	-0.36	-0.15	4.9	-0.14	-0.34	8.6	-0.29	-0.96	108	-0.62
Looking f anoth job	-0.59	103	-0.44	-0.13	2.9	-0.12	0.54	9.9	0.72	-0.84	26.3	-0.57	-1.39	149	-0.75
Size ≥50 workers	-0.09	1		0.35	12	0.42	-0.05	0.1		-1.72	102	-0.82	0.14	1	
Part time job	0.17	19.6	0.19	0.20	20.7	0.22	0.27	13.0	0.31	-0.11	1		0.24	6.5	0.27
Renewed Lab Cont	0.91	648.6	1.48	0.55	215.9	0.73	0.63	89.0	0.88	1.55	125.3	3.70	2.04	374.7	6.73
Farming&Fishing	-0.38	50	-0.32	0.03	0		0.80	39	1.23	-1.30	49	-0.73	-0.90	52	-0.59
Construction	0.73	252	1.08	0.78	242	1.18	1.19	182	2.28	0.30	3.1	0.36	0.63	30.3	0.87
Hotel&Catering	-0.14	6.3	-0.13	-0.11	3.2	-0.10	-0.14	2.3		-0.40	3.8	-0.33	-0.16	1.4	
Financ&Real State	0.08	1.0		-0.01	0.0		0.11	0.6		0.35	1.3		0.20	0.9	
Transport&oth serv	0.12	3.7	0.12	0.04	0.4		0.06	0.3		-0.03	0.0		0.39	6.2	0.48
Public Servant	0.57	79.8	0.77	0.87	145	1.39	1.03	70.4	1.79	0.11	0.2		-0.18	1.5	
Scale	1.38			1.21			1.08			1.57			1.65		
n obs	13885			13885			13885			13885			13885		
Noncensored	9676			5827			1441			1181			2668		
Right cens	4209			8058			12444			12704			11217		
Llk	-21310			-14464			-5152			-5002			-9688		
Destination codes: All-d all destinations together, E employment, OEC permanent employment, R retirement; U unemployment															
Legend: ME% denotes the 'relative marginal effect' in percent points.															

	Females					Males				
	full sample	Concluded spells in				full sample	Concluded spell in			
		All d	E	OE	R		All d	E	OE	R
AG3544-01	0.090	0.084	0.109	0.102	0.065	0.077	0.079	0.098	0.081	0.036
AG3544-02	0.110	0.110	0.121	0.099	0.102	0.088	0.089	0.096	0.123	0.072
AG3544-03	0.109	0.116	0.125	0.135	0.110	0.086	0.093	0.102	0.083	0.072
AG3544-04	0.124	0.137	0.138	0.115	0.137	0.103	0.106	0.119	0.121	0.077
AG4554-01	0.052	0.048	0.059	0.047	0.039	0.056	0.054	0.063	0.070	0.034
AG4554-02	0.065	0.061	0.053	0.075	0.067	0.064	0.059	0.056	0.047	0.065
AG4554-03	0.070	0.072	0.067	0.078	0.076	0.065	0.067	0.065	0.074	0.072
AG4554-04	0.076	0.080	0.075	0.104	0.084	0.068	0.071	0.071	0.081	0.072
AG5564-01	0.018	0.018	0.012	0.028	0.023	0.038	0.039	0.029	0.025	0.059
AG5564-02	0.024	0.024	0.016	0.017	0.031	0.045	0.044	0.023	0.020	0.090
AG5564-03	0.027	0.029	0.018	0.017	0.036	0.047	0.049	0.027	0.025	0.097
AG5564-04	0.031	0.035	0.022	0.038	0.044	0.047	0.050	0.030	0.034	0.092
AG3544-GDP	1.624	1.608	1.787	1.520	1.475	1.304	1.320	1.567	1.400	0.774
AG4554-GDP	0.954	0.928	0.904	1.017	0.947	0.953	0.928	0.984	1.056	0.806
AG5564-GDP	0.354	0.367	0.223	0.318	0.473	0.712	0.696	0.439	0.486	1.264
Educ < Compul	0.385	0.391	0.342	0.313	0.427	0.509	0.516	0.491	0.390	0.571
Higher Secondary	0.173	0.168	0.184	0.186	0.156	0.107	0.104	0.103	0.126	0.107
Higher Education	0.128	0.124	0.145	0.109	0.108	0.098	0.091	0.092	0.132	0.089
In training	0.053	0.053	0.062	0.042	0.046	0.025	0.025	0.024	0.020	0.025
Married	0.785	0.786	0.735	0.719	0.825	0.733	0.736	0.751	0.796	0.704
Conciliating prb	0.231	0.220	0.133	0.113	0.285	0.002	0.002	0.001	0.007	0.004
Disabled	0.002	0.002	0.000	0.000	0.004	0.008	0.009	0.005	0.004	0.018
Andalucia	0.265	0.279	0.230	0.075	0.315	0.310	0.320	0.334	0.173	0.290
Madrid	0.037	0.036	0.035	0.059	0.037	0.033	0.031	0.026	0.063	0.041
Catalonia	0.075	0.066	0.087	0.115	0.051	0.064	0.057	0.057	0.112	0.057
Valencia Country	0.082	0.088	0.107	0.231	0.073	0.079	0.083	0.085	0.152	0.077
Basque Country	0.043	0.037	0.044	0.021	0.032	0.028	0.025	0.023	0.020	0.027
Searching 1 st job	0.081	0.072	0.040	0.038	0.096	0.009	0.007	0.005	0.004	0.013
acc worse job cond	1.879	1.853	1.822	1.401	1.876	1.964	1.958	2.005	1.599	1.856
U-benefits	0.149	0.162	0.169	0.170	0.156	0.277	0.302	0.267	0.298	0.377
Prefers full time job	0.145	0.161	0.250	0.472	0.095	0.276	0.290	0.334	0.457	0.193
Prefers full&part time	0.293	0.283	0.261	0.174	0.298	0.269	0.260	0.247	0.211	0.291
Prefers part time job	0.133	0.135	0.101	0.102	0.160	0.010	0.010	0.007	0.007	0.017
skilled laborer	0.085	0.082	0.097	0.097	0.070	0.423	0.424	0.447	0.381	0.373
Unskilled laborer	0.345	0.369	0.403	0.411	0.344	0.304	0.324	0.337	0.217	0.295
Simple size	13399					9429				
Noncensored values		9649	4105	576	5545		7004	4821	446	2183

	Single risk			Competing risk estimates for particular destinations								
	All d			E			OEC			R		
	coef β	Chi2	RME	coef β	chi2	RME	coef β	Chi2	RME	coef β	chi2	RME
Intercept	3.99	1120		5.04	585		6.95	181		4.76	1135	
AG3544-01	-0.01	0.0		-0.20	3.4	-0.18	-0.14	0.3		0.16	3.8	0.17
AG3544-02	-0.27	14.7	-0.24	-0.26	4.5	-0.23	0.04	0.0		-0.28	10.9	-0.25
AG3544-03	-0.39	34.2	-0.32	-0.40	12.3	-0.33	-0.66	5.5	-0.48	-0.36	20.7	-0.31
AG3544-04	-0.48	59.1	-0.38	-0.33	9.2	-0.28	-0.27	1.0		-0.58	60.5	-0.44
AG4554-01	0.03	0.1		-0.38	7.8	-0.31	-0.01	0.0		0.32	10.2	0.38
AG4554-02	0.01	0.0		0.12	0.6		0.07	0.0		-0.04	0.2	
AG4554-03	-0.17	4.9	-0.16	-0.08	0.3		-0.25	0.6		-0.19	4.6	-0.18
AG4554-04	-0.33	20.8	-0.28	-0.24	3.5	-0.22	-0.59	3.9	-0.45	-0.37	19.1	-0.31
AG5564-01	0.12	1.1		0.05	0.0		-0.56	1.4		0.08	0.4	
AG5564-02	-0.17	2.4		-0.04	0.0		-0.10	0.0		-0.27	5.4	-0.24
AG5564-03	-0.20	3.4	-0.18	-0.16	0.5		0.37	0.4		-0.27	5.3	-0.23
AG5564-04	-0.29	8.3	-0.25	-0.38	3.0	-0.32	-1.13	7.1	-0.68	-0.32	8.6	-0.27
AG3544-GDP	0.02	1.0		-0.01	0.1		0.06	0.4		0.05	2.6	
AG4554-GDP	0.05	3.4	0.05	0.06	1.8		0.05	0.2		0.04	1.6	
AG5564-GDP	0.11	13.3	0.12	0.34	25.7	0.41	0.22	2.0		0.04	1.2	
Educ < Compul	-0.07	4.2	-0.07	0.01	0.0		0.36	6.7	0.43	-0.11	8.6	-0.11
Higher Secondary	-0.03	0.7		-0.15	5.4	-0.14	0.01	0.0		0.02	0.2	
Higher Education	-0.07	2.3		-0.22	8.4	-0.19	0.29	2.7	0.34	0.02	0.1	
In training	0.04	0.4		-0.07	0.5	-0.06	0.45	2.7	0.56	0.14	3.3	0.15
Married	-0.06	3.8	-0.06	0.24	21.6	0.28	0.28	5.6	0.33	-0.28	47.8	-0.24
Conciliating prb	0.07	4.2	0.08	0.69	93.1	1.00	1.00	29.2	1.72	-0.20	26.1	-0.18
Disabled	0.41	2.6		2.15	7.4	7.62	26.52	0.0		-0.06	0.1	
Andalucia	-0.03	0.9		0.22	12.7	0.25	1.52	47.2	3.56	-0.15	15.1	-0.14
Madrid	0.10	3.9	0.10	0.10	1.5		-0.50	9.1	-0.39	0.08	1.7	
Catalonia	0.29	34.6	0.33	-0.10	1.6		-0.11	0.4		0.57	80.4	0.77
Valencia Country	-0.24	29.8	-0.21	-0.41	33.7	-0.34	-1.17	69.5	-0.69	-0.09	2.6	
Basque Country	0.39	32.6	0.48	0.06	0.3		0.70	3.7	1.01	0.60	48.3	0.82
searching 1st job	0.36	40.9	0.43	0.76	38.3	1.13	0.45	2.3		0.21	13.4	0.24
Acc worse job cond	0.08	53.8	0.08	0.09	23.4	0.09	0.34	56.8	0.40	0.07	33.4	0.08
U-benefits	-0.33	81.9	-0.28	-0.33	29.2	-0.28	-0.33	5.1	-0.28	-0.34	60.1	-0.29
Prefers full time job	-0.76	382	-0.53	-1.46	584	-0.77	-2.43	297	-0.91	-0.09	2.3	
Prefers full&part time	-0.05	2.9	-0.05	-0.06	1.1		0.13	0.7		-0.05	2.0	
Prefers part time job	-0.20	23.9	-0.18	-0.01	0.0		-0.20	1.0		-0.28	39.3	-0.25
Skilled laborer	-0.55	124	-0.42	-0.75	86.4	-0.53	-0.17	0.7		-0.43	48.9	-0.35
unskilled laborer	-0.87	751	-0.58	-1.11	412	-0.67	-0.90	51.6	-0.59	-0.73	371	-0.52
Scale	1.25			1.44			1.33			1.11		
Num of observations	13399			13399			13399			13399		
Noncensored values	9649			4105			576			5545		
Right censored values	3750			9294			12823			7854		
LLK	-20217			-12871			-2857			-13115		

Destination codes: All-d all destinations together, E employment, OEC permanent employment, R retirement.
Legend: ME% denotes the 'relative marginal effect' in percent points.

Table 8-m Labor transitions of unemployed males																
	Single risk			Competing risk estimates for particular destinations												
	All d			E			OEC			R						
	coef	β	Chi2	RME	coef	β	chi2	RME	coef	β	Chi2	RME				
Intercept	4.01		850		4.66		718		5.97		133		4.93		495	
AG3544-01	-0.17		4.5	-0.16	-0.14		2.0		0.36		1.3		-0.16		1.0	
AG3544-02	-0.18		4.0	-0.16	0.01		0.0		0.16		0.2		-0.59		15.6	-0.45
AG3544-03	-0.37		20.2	-0.31	-0.18		3.0	-0.16	0.65		3.8	0.91	-0.86		35.3	-0.57
AG3544-04	-0.28		13.2	-0.25	-0.14		2.0		0.07		0.1		-0.68		23.0	-0.49
AG4554-01	-0.08		0.7		-0.03		0.1		0.50		2.5		-0.05		0.1	
AG4554-02	0.13		1.8		0.49		14.8	0.63	1.17		10.3	2.21	-0.39		7.0	-0.32
AG4554-03	-0.22		5.7	-0.20	0.05		0.2		0.52		2.5		-0.65		20.4	-0.48
AG4554-04	-0.24		7.8	-0.22	0.00		0.0		0.62		3.6	0.86	-0.61		19.2	-0.45
AG5564-01	-0.10		0.9		0.08		0.3		0.78		2.9	1.17	-0.32		5.7	-0.28
AG5564-02	0.17		2.6		1.00		34.1	1.73	1.96		13.2	6.10	-0.45		10.3	-0.36
AG5564-03	-0.07		0.5		0.62		14.8	0.86	1.07		5.6	1.90	-0.65		23.9	-0.48
AG5564-04	-0.23		5.6	-0.21	0.16		1.1		0.72		2.7	1.05	-0.59		20.8	-0.45
AG3544-GDP	-0.02		0.7		-0.04		1.7		0.27		6.3	0.31	0.17		10.2	0.18
AG4554-GDP	0.05		2.7		0.06		2.9	0.06	0.23		4.4	0.26	0.07		2.3	
AG5564-GDP	0.16		28.7	0.18	0.34		63.4	0.40	0.56		19.9	0.76	-0.02		0.1	
Educ < Compul	-0.02		0.3		0.00		0.0		0.21		1.7		-0.08		1.7	
Higher Secondary	0.02		0.1		0.13		3.0	0.13	0.20		0.9		-0.23		7.6	-0.20
Higher Education	-0.15		6.2	-0.14	-0.22		8.4	-0.20	-0.35		3.0	-0.29	-0.09		1.1	
In training	0.19		3.5	0.21	0.25		3.6	0.29	0.94		4.2	1.56	0.05		0.1	
Married	-0.45		146	-0.36	-0.63		164	-0.46	-0.89		33.0	-0.59	-0.13		5.4	-0.12
Conciliating prb	-0.55		2.2		0.20		0.1		-1.22		1.5		-1.06		7.7	-0.65
Disabled	0.12		0.5		0.99		10.0	1.68	0.91		1.0		-0.60		11.6	-0.45
Andalucia	-0.08		3.9	-0.07	-0.16		10.1	-0.15	0.70		12.7	1.01	0.09		2.4	
Madrid	0.16		6.7	0.18	0.25		8.3	0.28	-0.77		15.4	-0.54	0.06		0.6	
Catalonia	0.30		24.8	0.34	0.23		9.0	0.26	-0.49		6.1	-0.39	0.38		19.8	0.46
Valencia Country	-0.10		3.4	-0.09	-0.17		6.2	-0.15	-0.88		23.3	-0.58	0.05		0.4	
Basque Country	0.28		7.8	0.32	0.20		2.3		0.28		0.4		0.40		7.8	0.49
searching 1st job	0.79		17.9	1.21	1.12		15.5	2.07	2.47		4.0	10.85	0.38		3.0	0.46
Acc worse job cond	0.04		10.2	0.04	0.01		0.8		0.19		15.5	0.21	0.08		21.1	0.08
U-benefits	0.25		49.0	0.28	0.37		59.5	0.44	0.07		0.3		0.06		1.3	
Prefers full time job	-0.47		145	-0.38	-0.74		220	-0.52	-1.10		54.7	-0.67	0.09		2.1	
Prefers full&part time	0.03		0.6		-0.02		0.2		0.12		0.5		0.12		4.8	0.12
Prefers part time job	-0.01		0.0		0.23		1.0		0.63		0.7		-0.20		1.3	
Skilled laborer	-0.84		424	-0.57	-1.08		375	-0.66	0.06		0.2		-0.51		79.3	-0.40
Unskilled laborer	-1.11		621	-0.67	-1.34		493	-0.74	-0.26		2.1		-0.79		160	-0.55
Scale	1.28				1.39				1.38				1.04			
Num of observations	9429				9429				9429				9429			
Noncensored values	7004				4821				446				2183			
Right censored values	2425				4608				8983				7246			
LLK	-14619				-12352				-2355				-5810			

Destination codes: All-d all destinations together, E employment, OEC permanent employment, R retirement.
Legend: ME% denotes the 'relative marginal effect' in percent points.

Appendixes

AI.- The Economics of rigidity and labor market reforms.

The purpose here is to explore the influence of turnover costs on labor demand. Bearing in mind the observed dual structure of the labor market, we focus on how dual labor markets operate over the business cycle according to Bertola (1990, 1999) and Bentolila and Saint Paul (1992) approaches. In consequence, we avoid the Blanchard and Landier (2002) perspective concerning the harmful effects of reforms encouraging the fixed-term contracts. We proceed in four steps: firstly, we deal with homogenous workers; secondly, we generalize the analysis to differentiate them according to their levels of labor protection; then we look in greater depth the hiring firms' decisions depending on both job's regime and inside vs. outside applicants and; finally, we sketch the expected effect of the labor reforms in the later case.

AI-1) An Homogeneous Labor Market. In line with the stochastic model in discrete time of Bertola (1990 and 1999), consider a risk neutral firm operating under perfect competition in order to maximize its expected discounted cash flows:

$$\text{Max}_L E_0 \sum_{t=0}^{\infty} \delta^t (R(Z_t L_t) - w_t L_t - c \Delta L_{t,t-1}) \quad [\text{A1-1}]$$

where the discount term $\delta=1/(1+r)$ is presumed to be constant. $R(Z,L)$ denotes the firm's one period revenue as a function of the business conditions Z and the engaged work L with the usual concavity conditions on both arguments ($R'_i \geq 0$, $R''_i \leq 0$; $i=L,Z$). The operating labor cost wL is determined by the wage rate w , that includes payroll (\hat{w}) and payroll taxes summarized by the firm's social contributions (sc): $w = \hat{w}(1+sc)$. In the absence of the staff attrition (i.e. neither quits nor retirement), the costs of adjustment are defined by the staff change between two consecutive periods ($\Delta L = L_t - L_{t-1}$) and the unitary turnover cost (c), which is different for hiring (h) in the case of upturn ($\Delta L > 0$) and firing (f) in the case of downturn ($\Delta L < 0$). All the unitary costs (\hat{w} , sc , h and f) are taken as given by the firm. Worth mentioning here is that the wage labor costs, \hat{w} , are determined by the competitive market and the non-wage labor cost, sc , h and f , depend on regulator.

It is assumed that the firm's economic situation follows a two state Markov chain either in the demand side or in the supply side. The uncertainty is modeled by the probability of transition between the two states P_{ij} being the subscripts $i, j = \{b, g\}$ for

bad and good times respectively. Related to business cycle, the demand shifts entail higher (lower) revenue in upturn (downturn) phase and are modeled through the shifter variable Z_i ($Z_g > Z_b$ then $R(Z_g, L) > R(Z_b, L)$ at given L). On the other hand, the supply shifts match lower (higher) wages in good (bad) times ($w_g < w_b$), and may reflect a change on labor market institutions (Blanchard 1998). For instance, a reduction in firm's social contributions involves a favorable shift and conversely an increase in the generosity of unemployment benefits entails an adverse shift .

Assuming that the current state $i \in \{b, g\}$ is observed before L_0 is chosen, the first order conditions of the firm's problem are given as: $-f \leq V_0 \leq h$ always, where $V_0 = h$ if $\Delta L > 0$ and $V_0 = -f$ if $\Delta L < 0$. Being $V_0 = E \sum_{t=0}^{\infty} \delta^t (R'_t - w_t)$ the shadow product of labor, which satisfies the recursive relationship $V_i = R'_i - w_i + \delta((1-p_{ij})V_i + p_{ij}V_j)$ in the context of the two-state Markov chain. Consequently, in the presence of turnover costs, marginal product of labor R' and wage w differ and the wedge between them $Q_i = R'_i - w_i = \delta((1-p_{ij})V_i + p_{ij}V_j)$ depends on whether the firm actually enjoys good times or suffers from bad times. The specific expressions for the two states are:

$$Q_g = \delta((p_{gb} + r)h + p_{gb}f) > 0; \Rightarrow Q_g = Q(h^+, f^+, p_{gb}^+) \quad [A1-2.1]$$

$$Q_b = -\delta(p_{bg}h + (p_{bg} + r)f) < 0; \Rightarrow |Q_b|_{abs} = Q(h^+, f^+, p_{bg}^+) \quad [A1-2.2]$$

where the sign in superscript denotes the qualitative effect of the particular variable on the size of the wedge Q . Briefly, in good(bad)-times marginal revenue product of labor is larger (smaller) than the wage because of turnover costs and, the wedge increases (in absolute value) with the level of both h and f and with the economic instability, reported by the probability of transition between the states. Furthermore and as our intuition would suggest, hiring costs h have a larger effect on upturn phase and firing costs f on downturn times. Thus, the labor demand of the firm is:

$$L_i = L(Z_i, w_i, h, f, p_{ij}, r) = L(Z_i, w_i, Q_i) \quad [A1-3]$$

with $\delta L / \delta Z \geq 0$, $\delta L / \delta w \leq 0$ and $\delta L / \delta Q < 0$. This means that, if the adjustment cost is not prohibitively high, a firm will choose to hire in upturn phases and fire when times turn down. Therefore inaction is directly related to the wedge, in such a way that everything

that increases Q_g reduces the propensity to hire in good times and conversely everything that increases Q_b increases employment in bad times. Summarizing, the costs of adjustment make firms more cautious about firing and hiring, and thus reduce both inflow into unemployment in recession and the outflow from unemployment in expansion.

Consequently, measures designed to reduce institutional rigidities will increase the firm's labor fluctuations. This must be achieved by encouraging training and skill acquisition on the part of applicants and the direct relationship between partners in the former, and by reducing severance pay for redundancies and speeding up the administrative processes. Furthermore, reforms aiming at increasing the level of employment should encompass measures pressuring wages downwards, such as less unemployment benefits on the side of labor supply or less social contributions on the side of labor demand.

A1-2) A two-tier labor market. However, such a measures do not correspond neither the EU-15 nor the Spain, since the labor market rigidity was fought at the margin twenty five years ago by promoting flexible and low protected contracts jointly with classical regular high protected employment, leading to the current two-tier labor market structure in the EU. The insider-outsider and dual labor market approaches focus on this topic. The former concentrates on individual and union bargaining power of insiders to extract rents from adjustment costs and on blocking the entry of outsiders²⁶. The latter concentrates on the firm's adjustment process. We will focus on this point of view as well as Bentolila and Saint Paul (1992) and Saint Paul (1996a), who applying Bertola's Markov chain conclude that the condition required for the coexistence of the two types of contract is that the flexible contract wage must be marked out the boundary of wage and shadow cost for a rigid worker who is fired when the firm downturns. In the case of regular-rigid workers are more productive than their counterpart atypical-flexible workers, such a condition normalized for productivity differences becomes:

$$w_1/A < w_2 < w_1/A + p_{gb}f \quad [A1-4]$$

where subscripts 1 and 2 denote rigid high-protected and flexible low-protected

²⁶ See David Blanchflower *et al.* (1990), Burda (1990), Alan Carruth and Andrew Oswald (1987), Assar Lindbeck and Denis Snower (1989) and Peter Sanfey (1995). For instance, Lindbeck and Snower show that improvement on productivity of applicants weakens insiders' position that have no incentives on training and other active labor policies addressed to increase the employability of the unemployed.

workers²⁷, and $A > 1$ reflects the assumption of each regular worker provides A efficiency units of labor whereas each flexible worker provides 1 efficiency units of labor. The first inequality shows that in recession rigid workers will be preferred to flexible ones whose dismissal is free. The second inequality indicates that flexible workers are marginally preferred in expansion and that their comparative advantage increases with the expected cost of firing a regular worker, p_{gbf} . Therefore flexible workers account for the body of the suitable employment fluctuations over the business cycle, while rigid ones remain quite stable. In consequence, the presence of flexible contracts involves a reduction in adjustment costs that increases the volatility of employment -firms hire more in expansion and fire more when falling into recession- in such a way that the temporary rate follows a pro-cyclical path: increases in expansion and decreases in recessions. The figures in table-1 point out in this direction for the expansive phase 1994-2000 in the EU-15 as a whole and in particular countries such as France, the Netherlands and UK (until 1998) but not in Spain, where the proportion of flexible workers to the total of employees decreases in expansion, which should be related to labor reforms in the late 1990s’.

A1-3) Hiring in dual labor market. Given that our subject matter is the capacity of Public Policy to weaken the dual structure of the labor market, we are concerned by measures reducing the comparative disadvantage of hiring primary workers in expansion. In the extreme case, the preference for hiring regular workers requires the opposite second inequality in [A1-4]: $w_2 > w_1/A + p_{gbf}$, which means that the shadow cost of hiring regular workers will be lower than the alternative flexible workers. To explore the scope of the Policy measures it is suitable to differentiate *i*) the non wage cost such as the social contributions of the firm (*sc*), *ii*) to relation between the costs of hiring h with the hiring regime (regular h_1 vs. atypical h_2) and with the scale of the market (internal h_i vs. external h_e). Therefore, we distinguish three cases.

1. Increasing the employment level in good time. Then, firm deals with the external labor market and his problem is choose the quality of matching. In such a case, the preference P for hiring regular (H_1) as opposed to flexible workers (H_2) becomes:

²⁷ Note here that following Lindbeck and Snower (1989) we add the regular/atypical relative productivity A to the Bentolila and Saint Paul condition. On the other hand, the inequalities on [A1-4] are the opposite of the insider-outsider approach, that focus on the insiders’ capacity to extract rents from the turnover cost. Then, $R_2 \leq W_1/A \leq R_2 + h + f$, where R_2 is the outsider’s reservation wage, other symbols are already known (see Lindbeck and Snower 1989, chaps 3, 4).

$$H_1 P H_2 = \text{Prob}[\hat{w}_1(I+sc_1)/A+h_1+p_{gbf} < \hat{w}_2(I+sc_2)+h_2] \quad [\text{A1-5}]$$

being $h_1 > h_2$, since the requirements of the firm looking for a good matching will be far greater.

2. Internal promotion via the conversion of temporary to permanent contracts. The scope of decision is now the quality of employment of the firm rather than its level: to fulfill a permanent job the firm must choose between a current temporary employee whose qualities –ability, training, skills and willingness to make an effort– are known and another outside worker whose qualities are unknown and who would involve hiring cost, in such a way that $h_{1i} < h_{2e}$. Therefore, the condition for renewing a flexible worker on a regular basis (H_{1i}) instead of replacing him/her with another outside flexible (H_{2e}) becomes:

$$H_{1i} P H_{2e} = \text{Prob}[\hat{w}_1(I+sc_1)/A+h_{1i}+p_{gbf} < \hat{w}_2(I+sc_2)+h_{2e}] \quad [\text{A1-6}]$$

3. Increasing the level of regular employment. The question is now to choose between the inside and outside applicants for a regular job. *Cæteris paribus* (in particular, equal payroll \hat{w}_1 and productivity -skills- A), the preference for current employee over the external applicants depends on whether the lower hiring costs ($h_{1i} < h_{1e}$) exceed the higher expected firing cost ($p_{gbf_{1i}} > p_{gbf_{1e}}$), which are proportional to tenure. Then

$$H_{1i} P H_{1e} = \text{Prob}[h_{1i}+p_{gbf_{1i}} < h_{1e}+p_{gbf_{1e}}] \quad [\text{A1-7}]$$

Therefore, expressions [A1-6] and [A1-7] show that fixed term contracts play a role of firm specific training and matching probation period aimed at clarifying any uncertainty between partners. Under the assumptions that current employment is a positive signal outside of the firm and the human capital depreciation that encompasses unemployment, we can conclude:

$$\text{Prob}(FTC \rightarrow OEC)_{i_m} > \text{Prob}(FTC \rightarrow OEC)_{e_m} > \text{Prob}(U \rightarrow OEC)_{e_m} \quad [\text{A1-8}]$$

where the subscripts i_m and e_m denote internal and external applicants, and FTC , U and OEC stand for current situations of fixed term contract, unemployed and open ended contract, respectively. All other things being equal, expression [A1-8] says that temporary workers are more likely to reach the labor stability within the firm than their outside counterparts because of hiring costs and firm's specific training.

A1-4) Labor reforms looking for a non segmented labor market: The previous distinction between inside and outside applicants is important in the context of the labor reforms. In order to clarify this topic, let $\Pi(H_i)$ be the propensity to hire regular high-protected workers in a dual market:

$$\Pi(H_i) = \Pi(\Delta \hat{w}^-, \Delta sc^-, A^+, \Delta f^-, \Delta h^-; p_{gb}^-) \quad [A1-9]$$

where Δi $\{i = \hat{w}, sc, f, h\}$ denotes the difference between the alternatives -left hand side minus right hand side- in expressions [A1-5]-[A1-8]. Note here that sp , f and h are sensitive to labor reforms and, in fact, define the core of the Spanish active measures since 2000 which are targeted to divert OEC hiring flows across population groups: away from the more productive toward the less performed ones; for instance from central ages of AG35-44 to older ages of AG55-64. Therefore, other things being equal, the firm's preferences for targeted groups will be attached to the probability of regulated differences on social contribution ($sc_{ntg} > sc_{tg}$) outcomes the observed differences on productivity ($A_{ntg} > A_{tg}$):

$$H_{1,tg} P_{H_{1,ntg}} = Prob[(1 + sc_{1,tg})/A_{tg} < (1 + sc_{1,ntg})/A_{ntg}] \quad [A1-9]$$

where subscripts tg and ntg refer targeted and non targeted population groups.

Appendix A2

Empirical framework.

How great is the influence of the labor reforms on the probability of reaching permanent employment for atypical workers currently unemployed or temporarily employed?, What is the influence of individual heterogeneity in such a transition?, and What is about business cycle? To answer these questions we focus on the individual chances to reach an open ended contract and their evolution during the period 1Q2000 and 4Q2004 which covers a long phase of expansion with a homogeneous legal framework, except for the 2002 reform. From the expression [A1-8] we know that the transition process is dependent on the initial ' i_s ' and final ' f_s ' states, we will then analyze separately the transitions $i_s \rightarrow f_s$ in single and competing risks estimates according on whether f_s denotes all destinations together (All_d) or specific destinations separately (E –employment-, U –unemployment-, and R –retirement-, as well as the particular case of regular employment - OEC -).

In line with Canada-Vicinay and Sollogoug (2004), our analysis of the individual transitions is supported by competing risks duration models. More precisely, we will estimate a Weibull accelerated time model that is log linear in duration t : $\log t = \beta X + \omega$, where ω is an error term with Weibull density function²⁸, the vectors X and β respectively hold the n explanatory variables $\{X_1, \dots, X_n\}$ and their corresponding coefficients of influence to be estimated $\{\beta_1, \dots, \beta_n\}$, plus the constant β_0 . The likelihood function adopts the following log-form:

$$\log L = \sum K_{nc} \log f(t; X, \alpha, \beta) + \sum K_{rc} \log S(t; X, \alpha, \beta) \quad [A2-1]$$

Being α the ancillary parameter to be estimated²⁹ and K_{uc} and K_{rc} (0 vs. 1 and $K_{uc} + K_{rc} = 1$) respectively denote the uncensored and right-censored spells depending on whether its completion is observed or not, which likelihood contribution is in terms of the failure time (sub)density function $f(t; X)$ and survivor function at the elapsed duration $S(t; X)$. The distinguishing feature of competing risks model is that uncensored cases

²⁸ The use of Weibull distribution is supported by the Wilcoxon test. For details about parametric and non parametric duration models see: John Kalbfleisch and Ross Prentice (1980), David R. Cox and David Oakes (1984).

²⁹ Named also shape parameter, since determines the time dependence of the hazard function (positive, negative or null for $\alpha <, > or = 1$). Note here that alternative specification focuses on the estimation proportional hazard function, in which case we get coefficients $\beta_h = -\beta/\alpha$

only concern the transitions ending in the particular destination under examination and the rest of the cases compute as right censored, independently on whether they are unfinished spells or concluded ones into a different destination. Given that specific destinations $f_s \{E,U,R\}$ are complementary on All_d it results its additive property for (sub)density failure time function ($f(t|All_d)=f(t|E)+f(t|U)+f(t|R)$) as well as for hazard rate and for cumulative density function³⁰.

Note here that the uniqueness of the relations among the functions of survivor, S , cumulative distribution, $F=1-S$, density, $f=\delta F/\delta t$, and hazard $h=f/S$ entails that the knowledge of one of them solves the problem for each process $i_s \rightarrow f_s$. For instance, consider the cumulative distribution $F(t, \mathbf{X})_{i_s \rightarrow f_s} = 1 - \text{Exp}(-(t/\text{Exp}(\boldsymbol{\beta}_{i_s \rightarrow f_s} \mathbf{X}))^{1/\alpha_{i_s \rightarrow f_s}})$, and the expected time of event's accomplishment is $ED_{i_s \rightarrow f_s} = \Gamma(1 + \alpha_{i_s \rightarrow f_s}) \text{Exp}(\boldsymbol{\beta}_{i_s \rightarrow f_s} \mathbf{X})$. Therefore, positive coefficients $\beta_{i; i_s \rightarrow f_s}$ correspond with variables X_i which delay the $i_s \rightarrow f_s$ event's accomplishment (reduce cumulative outflows F as well as hazard rate), and vice-versa. The mathematical operator Γ re-scales the expected duration of the product-limit estimator, $\text{Exp}(\boldsymbol{\beta} \mathbf{X})$, in such a way that lower (higher) α speeds up (slows down) the exit process. Consequently, there is not allowed a simple comparison of the coefficients $\boldsymbol{\beta}$ across different transition processes $i_s \rightarrow f_s$, as the underlying path of the hazard rate is not the same. In order to circumvent this difficulty, we will proceed to calculating two statistics for each $i_s \rightarrow f_s$ process:

1. The cumulative f_s outflows during the first twelve months of the current i_s spell: $F(12)_{i_s \rightarrow f_s}$. We will use $F(12)$ for analyze the quarterly evolution of the flows intensity by restricting the explanatory variables X to quarter transition moments of time for the period $1Q1995-4Q2004$. Thus the flow's intensity for each particular quarter Q of the process $i_s \rightarrow f_s$, $F(12)_{Q; i_s \rightarrow f_s}$, becomes:

$$F(12)_{Q; i_s \rightarrow f_s} = 1 - \exp(-(12/\text{Exp}(\beta_0 + \beta_Q + \boldsymbol{\beta}_{i_s \rightarrow f_s} \mathbf{X}))^{1/\alpha_{i_s \rightarrow f_s}}), \quad [\text{A2.2}]$$

being β_0 the intercept that refers omitted quarters, β_Q the estimated coefficient for each observed quarter Q between $1Q1995-4Q2004$ and α the ancillary parameter.

2. The relative marginal effect on the expected $i_s \rightarrow f_s$ event time of any particular variable X_i related to the timing of the reference individual: $RME(x_i)_{i_s \rightarrow f_s}$.

³⁰ This is for $i_s = FTC$. For transitions from U there is $f(t|All_d) = f(t|E) + f(t|R)$ and so for that F and h .

$$RME(x_i)_{i_s \rightarrow f_s} = \frac{ED(X_{ref;i})_{i_s \rightarrow f_s}}{ED(X_{ref})_{i_s \rightarrow f_s}} - 1 = Exp(\beta_i)_{i_s \rightarrow f_s} - 1 \quad [A2-3]$$

being $RME(x_i)_{i_s \rightarrow f_s} \geq < 0$ depending on whether β_i is $\geq < 1$

where the denominator $ED(X_{ref})$ denotes the expected duration for the individual of reference who is defined by 0 value in every dummy variable and by the sample means for continuous variables, and the numerator $ED(X_{ref}; i)$ designates the expected duration for a clone of the reference individual except for the variable X_i , which value adds 1. Therefore, the statistic $RME(x_i)_{i_s \rightarrow f_s}$ provides a device for direct comparison across the processes which is simple to calculate and easy to interpret³¹. Worth mentioning here that:

- $RME(x_i)_{i_s \rightarrow f_s}$ has the same sign of β_i ; $i_s \rightarrow f_s$, therefore negative (positive) values indicate that the variable X_i accelerates (delays) the transition moment, and thus stimulates (discourages) $i_s \rightarrow f_s$ flows intensity.
- $RME(x_i)_{i_s \rightarrow f_s}$ presents a lower bound on the value of -1, since $Exp(-\infty)=0$, and is a monotonic and asymmetrical transformation of β_i , which magnitude is greater and increases faster for positive values (1st and 2nd derivatives are positive) than for negative ones (1st derivative is negative and 2nd negative).
- The comparative analysis allows the evaluation of the relative marginal effect conditional to concluded spell, $RME(x_i)_{i_s \rightarrow f_s | All_d}$, which results from the normalization of the expected duration for a particular alternative destination ($\forall f_s \neq All_d$) by the expected duration of current spell ($f_s = All_d$):

$$RME(x_i)_{i_s \rightarrow f_s | All_d} = \frac{\frac{ED(X_{ref;i})_{i_s \rightarrow f_s}}{ED(X_{ref})_{i_s \rightarrow f_s}}}{\frac{ED(X_{ref;i})_{i_s \rightarrow All_d}}{ED(X_{ref})_{i_s \rightarrow All_d}}} = \frac{1 + RME(X_i)_{i_s \rightarrow f_s}}{1 + RME(X_i)_{i_s \rightarrow All_d}} \quad A2.4$$

that is not negative (≥ 0) and $\geq < 1$ depending on whether $RME(x_i)_{i_s \rightarrow f_s} \geq < RME(x_i)_{i_s \rightarrow All_d}$, which means that the variable X_i discourages, is neutral or stimulates the transition $i_s \rightarrow f_s$ among the uncensored cases.

The estimated models to calculate $RME(X_i)_{rel}$ and $F(12)$ present a different

³¹ Note that $RME(x_i)$ measures the growth rate on expected transition time due to an unit increase on the value of X_i . In fact, reordering A2-2 we get: $[ED(X_{ref;i}) = ED(X_{ref})(1 + RME(x_i))]_{i_s \rightarrow f_s}$.

specification. In the former case we will proceed with an unique sample including all three population groups, use dummy variables to differentiate them and the set of independent variables includes all observed heterogeneity. In the latter case we will use separate samples for population groups and exclusively use the moment of time (consecutive quarter) as independent variables.

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