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# **EMPLOYMENT PROTECTION AND REGIONAL WORKER FLOWS IN ITALY**

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## **Abstract**

*In this paper we point out that the theoretical predictions concerning Employment Protection Legislation (EPL) are not fully confirmed by empirical evidence in Italy, a strict EPL country in the nineties, according to OECD indexes. In particular, worker and job flow rates are remarkably high, also in comparison with the other European countries. Furthermore, the differences in regional worker flow rates -computed on both the social security database and the LFS- are relevant, no matter which measure of worker flows is considered. While EPL is the same across regions, the highest worker flow rates are observed in the South, an area generally recognised as the least dynamic of the country, followed by the Northeast, the Centre and the Northwest. For possible alternative explanations of regional differences investigation focuses on economic structural composition, the black labour market, non-standard contracts, the public sector and self-employment incidence, labour productivity and firm seniority. Using Logit estimates we find that none of these factors can fully explain these differences. Moreover, the predicted negative relation between worker flows and unemployment duration does not seem to hold in the case of Italy.*

JEL code: J63, J65, J68, R1

Keywords: Worker Turnover and Reallocation, Employment Protection, Regional Economics, Italy.

## 1. Introduction

Since the beginning of the nineties a growing literature has been produced on the relation between Employment Protection Legislation (EPL) and different indicators of labour market performance. In particular, this literature<sup>1</sup> has come to the following two –widely shared - conclusions: 1) the higher the degree of EPL (according to the OECD index,<sup>2</sup> for instance), the lower the level of flows in the labour market; 2) the higher the degree of EPL, the longer the unemployment duration.<sup>3</sup>

Of the studies dealing with the relation between EPL and both worker and job flows, we dedicate particular attention to Blanchard-Portugal (2001), who provide an empirical test of points 1) and 2), comparing various characteristics of the US and Portuguese labour markets. According to the OECD indexes, Portugal displays the highest degree of EPL, the US the lowest. Analyzing flow rates and applying a peculiar weighting procedure, Blanchard-Portugal argue that EPL in Portugal is the main cause of both the low level of flows and the long unemployment duration.

In the literature on this issue, the relation between EPL and labour flows is empirically investigated with cross section analysis, showing that where EPL index is high flow rates are low and unemployment duration high.<sup>4</sup>

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<sup>1</sup> See for instance Blanchard-Portugal (2001), Bentolila-Bertola (1990), Pissarides (2000), Cahuc-Zylberberg (2004), OECD (1999, 2004).

<sup>2</sup> The EPL degree is a measure of strictness of labour market legislation according to an aggregate index. Basically, the OECD index is built weighting three main components: legislation concerning regular employment (more in details governmental authorizations to fire, notices of dismissal, severance payments, unfair dismissals), legislation concerning temporary employment, and legislation regarding collective dismissal. See OECD (1999, 2004).

<sup>3</sup> Actually, OECD (2004) claims that various effects on the employment rates of some specific groups emerge from empirical analyses. More specifically, prime age workers seem to benefit from strict EPL while for the young and women this impact is negative. Further, some recent papers have set out to investigate the impact of EPL, and more in general of labour market institutions, on other relevant employment variables such as activity rates, employment rates and gender differences. See for instance Bertola-Blau-Kahn (2002). In this paper we do not further investigate this issue.

<sup>4</sup> Of course this way of proceeding does not investigate causality between variables, i.e. it is only possible to observe correlation between them (EPL and flows). This weakness is shared with the empirical cross section literature concerning this issue. An additional weakness of this literature is that international comparisons are usually carried out without taking into account the fact that legislations and institutions are not the same across different countries. In our paper we can in fact assume that institutions and legislations do not change across the Italian regions.

In this paper we investigate this issue within a single country, taking into account the fact that legislations and institutions are the same. If EPL were binding, in the sense that it played an important role in the hiring and firing processes, we would expect an almost uniform impact on labour market performance in different regions. In Italy we would be expecting low mobility and high unemployment duration, given the strict EPL. Actually, in 2004 the OECD index of EPL placed Italy in an intermediate position, while in 1999 it came second to last, just above Portugal. This is mainly due to the reforms introduced in Italy after 1999, concerning temporary employment. Furthermore, certain changes also affected a deferred wage scheme (Trattamento di fine rapporto -TFR), paid by the employer to the employee after any separation (no matter the reason for the separation). Until 1999 this scheme was ranked as severance payment policy, while the OECD subsequently decided not to consider it as firing costs since it is paid for any kind of separation.<sup>5</sup> However, this change did not significantly affect OECD ranking in the nineties – our period of analysis – when Italy was considered one of the strictest countries for EPL.

Anticipating our results, we find out that Italian job and worker flow rates are remarkably high, also in comparison with the other European countries. Furthermore, even though EPL is the same across the Italian regions, worker flows are significantly different from one region to another. More specifically, the highest are in the South, followed by the Northeast, the Centre and the Northwest. In our analysis the adjustment procedure *à la* Blanchard-Portugal does not produce the expected results: the standard explanation that Southern worker flows are higher solely because of firm size and sectoral composition differences is not empirically verified.

The black labour market, non-standard contracts, public sector incidence, firm seniority, self-employment incidence, and labour productivity are investigated as possible alternative explanations of regional differences. Using logit estimates we point out that none of these factors seems to fully explain such differences. Another interesting result we derive concerns the prevalence of a positive relation, at the regional level, between unemployment duration and worker flow level: where worker flows are high (low) unemployment duration is high (low). This finding is not fully consistent with standard theoretical predictions.

For our computations we use the INPS panel data of employees in the private sector, elaborated by ISFOL. Moreover, in order to test some additional hypotheses we also use

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<sup>5</sup> Note also that Garibaldi-Pacelli (2004) point out that the TFR entails actually similar effects to standard severance payment policies, increasing individual job duration.

the Italian Labour Force Survey, and more specifically a panel version elaborated by IS-FOL.

With respect to the Italian literature on these issues, well summarized in the recent contribution by Contini-Trivellato (2006), we add some original elements in explaining the regional differences of turnover and reallocation rates (black labour market, non-standard contracts, public sector and self-employment incidences, labour productivity and firm seniority). Since our databases account mainly for the supply side of the labour market –considering only firm size and sectoral composition for the demand side–, we cannot devote much attention to other demand side factors (technological change, product market characteristics, firm investment policies, training, etc), or to additional institutional issues (union impact, efficiency of public employment services and regulations, legislation enforcement, etc). Although these issues are relevant, they are beyond the scope of this paper, and will be the object of future research.

The structure of the paper is the following. In section 2 we briefly present the empirical evidence in terms of international comparisons of job and worker flow rates. In section 3 we define the worker flow definitions we use in our computations and we explain the characteristics of our databases. Moreover, Italian worker flow rates are computed and investigated, and the weighting procedure concerning regional differences is presented. Section 4 concerns some possible explanations of the regional differences in flow rates and the relation between flows and unemployment duration. Section 5 attempts to derive some conclusions from the findings of the paper.

## **2. Worker and job flows: an international comparison**

A stricter EPL is supposed to determine two clear and direct effects on labour market structure: it increases unemployment duration and decreases job and worker flows. Besides, the final effect on the unemployment rate is ambiguous.<sup>6</sup> An initial step in order to investigate this issue empirically is to analyze the different mobility rates in different countries. However, it is important to stress that there are serious problems in making comparison, mainly because of idiosyncratic differences in both data the collection methods and the databases utilized, which may affect the official statistics.<sup>7</sup> To cope with this

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<sup>6</sup> See for example OECD (1999, 2004), Pissarides (2000), Blanchard -Portugal (2001), Cahuc-Zylberberg (2004).

<sup>7</sup> More specifically, significant differences could be due to the nature of the reporting agency (government vs. private institutions), the unit of measurement (plant vs. firm), the coverage of the sample (with or without public employees, with or without the smallest firms, etc.), the definition of employment (all workers, only full-time workers, etc.), the frequency of measurement, the differences in labour market structure (firm size, sectoral composition). See for instance OECD (1994), Boeri (1996).

situation we consider some recent papers that use homogeneous databases for European countries in terms of both job and worker flows.

As far as job flows are concerned, Gomez-Salvador *et al* (2004) make use of the *Amedeus* database produced by Bureau van Dijk, containing comparable data at the firm level for European countries (and not at the establishment level) and covering all sectors except for the financial one. *Amedeus* covers firms that meet three basic criteria – they must have: an operating revenue greater or equal to 1 million euro; total assets greater or equal to 2 million euro; at least 10 employees (although for the UK, Germany, France and Italy these thresholds become 1.5 for revenues, 3 for assets and 15 for employees). This means that *Amedeus* underestimates the share of small firms.

Moreover, *Amedeus* does not allow for distinction between newly created firms and firms entering the sample in a given year. Similarly, no distinction is made between firms' closing down and firms exiting from the sample for other reasons; thus Gomez-Salvador *et al* (2004) take only continuous firms into account.

Using this database Gomez-Salvador *et al* (2004) compute the standard job flow measures, i.e. the job creation, job destruction and job reallocation rates (the latter being the sum of the former two), for the period 1995-2000.<sup>8</sup> As we see in table 1, Italy displays the highest rate of job reallocation in Europe (12.3), despite the fact that in the nineties Italy was characterized by a very strict level of EPL. In this framework, it could be argued that the Italian rates were due to the fact that a strict EPL implies segmentation in the labour market, increasing the incidence of fixed term contracts (OECD, 2004). This explanation might apply to the high Spanish reallocation rates, since the incidence of temporary employment at the end of the nineties exceeded 30% in Spain, while it does not hold for Italy, where temporary employment incidence stood at about 6%.

Furthermore, since *Amedeus* undervalues the share of small firms, whose incidence in Italy is considerably higher than in other European countries, the Italian reallocation rates might also be underestimated since small firms are characterized by relatively high mobility.

**(TABLE 1 HERE)**

It might also be argued that the Italian rates could be accounted for by differences in sectoral composition, firm seniority (since newly created firms usually display higher mobility) and size, or cyclical factors. This is not the case. In the last two columns of table 1 we show the country dummies computed by Gomez-Salvador *et al* (2004) in an OLS es-

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<sup>8</sup> For the definitions of these flow measures see Gomez-Salvador *et al* (2004) or Davis-Haltiwanger-Schuh (1996).

timate, using as dependent variable the job reallocation rates (at the firm level) and controlling for the above-mentioned covariates (firm size and seniority, sector, and year dummies as proxy for cyclical fluctuations). The omitted country is the United Kingdom (UK). Even in this framework the Italian dummy is the highest (0.96) and is statistically significant – higher, for instance, than the dummies for the UK, Ireland and the Netherlands, countries characterized by a much lower degree of EPL strictness in the nineties.<sup>9</sup>

Turning our attention to the worker flows, we must consider a database that allows for comparisons among countries. Kruppe (2001) carries out an assessment of the European labour market dynamics using both the European Labour Force Survey (ELFS) and the European Community Household Panel (ECHP). Kruppe computes several mobility rates, in particular inflows and outflows from employment in the period 1994-1995, for which both surveys are available. He considers the difference in occupational status between two periods, computing a sort of reallocation rate. In the first column of table 2 it can be seen that, using the ELFS, the Italian rates come second highest in the European union, after the Spanish rates (which is partially explained by the very high incidence of fixed contracts). Going on to the ECHP database, the results do not change much: the Italian rates are still among the highest.<sup>10</sup>

To sum up, for both worker and job flows the theoretical predictions are not fully confirmed by the empirical evidence in the case of Italy, in the sense that the Italian flow rates are remarkably high although Italy is a strict EPL country.<sup>11</sup>

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<sup>9</sup> It is also worth noting that in the second part of their paper Gomez-Salvador et al (2004) investigate the impact of labour market institutions on labour market flows, pointing out that EPL entails a negative effect on labour dynamics. However, they argue (in a note) that these institutional results are more robust when Italy is dropped from analysis, meaning that the Italian labour market has to be considered as an outlier, in some way not consistent with standard theoretical predictions.

<sup>10</sup> These results on workers flows are consistent with other international comparisons, for instance Leombruni-Quaranta (2002).

<sup>11</sup> Two possible explanations might be sketched out in order to explain why countries with high EPL could display high mobility. The first explanation stresses the idea that the relation between firing restrictions and labour market flows is correctly predicted by the theory and hence, *ceteris paribus*, EPL should lead to lower levels of flows. However, the data might not suffice to test this theoretical result because other institutional differences may determine opposite effects on flows. According to this interpretation, Bertola-Rogerson (1997) detect wage compression as another institution able to offset the effect of EPL on job and worker flows. Bertola-Rogerson claim that when wage compression policies and EPL are implemented simultaneously the effects on job and worker turnover are ambiguous, since EPL tends to reduce flows while wage compression tends to increase them (firms cannot adjust wages and for this reason have to resort to quantity –employment– adjustments). Note that it is not possible to test the Bertola-Rogerson hypothesis using our data since we cannot distinguish between quits and layoffs. The second approach is the one proposed by Blanchard-Wolfers (2000). They try to combine the role of shocks and institutions in the rise of European unemployment, starting from the observation that neither the institutions alone nor shocks alone have been able to explain the appreciable differences between European countries. However, Blanchard-Wolfers do not directly analyze the dynamics of the labour market, focusing their attention only on the unemployment rate dynamics. So far, neither of the two approaches can provide a satisfactory explanation –and empirical verification– of the high dynamics in the Italian labour market.

(TABLE 2 HERE)

### 3. The Italian Case: worker flow rates definitions and database explanations.

In this section we briefly present evidence concerning Italian labour market mobility, focusing our attention on worker turnover and reallocation.

To begin with, let us explain more fully the kind of flow rate definitions we use in this paper.<sup>12</sup> It is useful to bear in mind that job flows refer to job creation and destruction measured at firm level (e.g. having at disposal information at the firm level), while worker flows indicate job transitions measured at the worker level (generally computed on either administrative and social security data or LFS). In the following pages of the paper we focus on two basic standard measures of worker flows: Gross Worker Reallocation and Gross worker Turnover.

We define *Gross worker reallocation at time  $t$*  ( $Gwr$ ) as the number of persons whose place of employment or employment status differs between  $t-1$  and  $t$ . Moreover, we refer to the *Gross worker turnover at time  $t$*  ( $Gwt$ ) as the number of accessions plus the number of separations that occur during the interval from  $t-1$  to  $t$ .<sup>13</sup>

A basic and important difference between  $Gwt$  and  $Gwr$  is that  $Gwr$  compares two situations between two moments in time ( $t$  and  $t-1$ ), without taking into account what happens during the interval. On the other hand,  $Gwt$  measures all the transitions that take place during the interval of time between  $t$  and  $t-1$ . In other words, while  $Gwt$  measures the number of worker transitions,  $Gwr$  measures the number of workers that participate in the transition. For these reasons, the difference between  $Gwt$  and  $Gwr$  can provide a measure of how dynamic mobile workers are.<sup>14</sup>

Following the previous definitions,  $Gwt$  and  $Gwr$  rates are computed by dividing  $Gwt$  and  $Gwr$  by the average employment (expressed in job positions).

For our computations we use an administrative employer-employee database, provided by INPS (the Italian social security institute), working on a panel version of this database, elaborated by ISFOL. The sample units are full-time employees<sup>15</sup> in all the private

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<sup>12</sup> For a deeper examination of the relevance of job and worker flow rates see for instance Blanchard-Diamond (1990), Davis-Haltiwanger (1995), Davis-Haltiwanger-Schuh (1996), Anderson - Meyer (1994), and, for Italy, Contini (2002), Contini-Trivellato (2006).

<sup>13</sup>  $Gwt$  and  $Gwr$  definitions are derived from Davis-Haltiwanger (1995).

<sup>14</sup> In the Northwest this difference is the lowest, meaning that the additional mobility of workers changing employment status or place of employment is not very relevant. On the contrary, regions like the Northeast and the South are characterized by a greater difference between  $Gwt$  and  $Gwr$ , meaning that the additional mobility of workers engaged in  $Gwr$  is substantial. Moreover, by construction,  $Gwt \geq Gwr$ .

<sup>15</sup> Apprenticeships and part-time workers are excluded from our database. This should not alter the mobility rate estimates, as during the '80s and early '90s the respective shares of Italian employment were about 5%.

sectors but agriculture. The panel is constructed by merging INPS employee information database with the employer information database and covers 14 years, from 1985 to 1999.<sup>16</sup>

Using this database we can deal with these mobility issues effectively, because for each worker we have the monthly information about mobility. In other words, we can compute not only the mobility taking place between two consecutive years but also what happens during this interval of time.<sup>17</sup>

Moreover, in order to test additional hypotheses we also use the Italian Labour Force Survey (LFS) supplied by the Italian National Institute of Statistics (ISTAT). More specifically, we used a Panel version of the Labour Force Survey, elaborated by ISFOL,<sup>18</sup> in which we can follow each individual for two consecutive waves.

### 3.1. National and Regional Worker Turnover and Worker Reallocation in Italy

In this section we investigate the main characteristics of Italian labour market dynamics. Table 3 displays the average Italian rates from 1985 to 1999 for *Gwt*, *Gwr*, accession and separation, using the INPS panel. In figure 1 it is possible to observe that, broadly speaking, turnover and reallocation rates grow until 1990, then decrease until 1993, after which they start to grow again. This trend confirms the pro-cyclical pattern of these flow rates for European countries.

**(FIG. 1 HERE)**

Moreover, it is worth noting that all the curves display similar trends. In particular, the accession and separation rates (the two components of worker turnover) do not display significant differences, although the accession rates seem to be more sensitive to the business cycle than the separation rates.<sup>19</sup>

**(TAB. 3 HERE)**

The total turnover and reallocation rates are, as expected, higher in small firms, while they diminish in very large plants. As Table 4 shows, the *Gwt* rates in 1-to-5 employee firms are five times higher than the over-500 employee firms.

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<sup>16</sup> The sample scheme is designed to draw individuals born on the 10th of March, June, September and December of each year, and therefore the proportion of our sample out of the Italian population of employees is approximately 1/90.

<sup>17</sup> Moreover, the results of this paper are, where comparable, consistent with previous analysis carried out on the same INPS database. In particular, Contini (2002) provided an in-depth analysis of the worker turnover evolution in Italy from various points of view, distinguishing flows for both employee and employer characteristics. See Leombuni-Quaranta (2002) for the methodology of flows computation.

<sup>18</sup> See Centra-Discenza-Rustichelli (2001).

<sup>19</sup> These results confirm standard predictions on this issue; see for instance Blanchard-Diamond (1990). Besides, figure 1 shows a clear incremental effect due to fixed term contracts and temporary work contracts on flows, from 1998 on, as labour market legislation on this issue changed significantly (the so-called "Pacchetto Treu").

The *Gwt* and *Gwr* rates in different regions of Italy are set out in table 4, where the figures are computed as 14-year averages. The South, which is supposed to be a low performing region, displays the highest rates for all worker flow measures. The Northeast, which is in fact considered the most dynamic region, is the second most mobile region, followed by the Centre and the Northwest, the latter being the least mobile.

**(TAB. 4 HERE)**

It is worth noting that the remarkable regional differences cannot be explained by differences in EPL or by differences in the institutions, which are basically the same across Italian regions. EPL is not always exactly the same because some details may change according to the specific region concerned, for the basic idea behind the labour market legislation is the same at the national level, but some operational details may change at the regional level.

When regional differences occur in the legislation, EPL is always stricter in the South than in the other regions, in order to reinforce protection against the higher risk of being unemployed (and/or long-term unemployed)<sup>20</sup>. Furthermore, an important point to stress is that Ichino *et al* (2003) showed that the degree EPL of enforcement depends on local labour market conditions. More specifically, they point out that in Italy the higher the unemployment rate, the more effective is the EPL enforcement, entailing higher firing costs in the South than in the other regions (due to court costs). This means that effective EPL should be stricter in the South, in turn implying lower flow rates.

In this legislative and enforcement framework -and according to economic theory predictions- we would expect lower flow rates and higher unemployment duration in the South. Our preliminary findings indicate that in Italy the empirical evidence runs quite counter to what would be predicted by standard economic theory.

### 3.2. *Hypotheses and testing for weighting schemes.*

On the basis of the figures given in the previous sections we can draw some preliminary conclusions. First of all, *Gwt* and *Gwr* rates differ significantly at the regional level. What are the factors that can explain these differences?

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<sup>20</sup> Two typical examples of the stricter EPL in the South are, for instance, the 'Cassa integrazione guadagni' and the 'mobilità lunga', which are more generous in the South, even if the basic idea of the legislation is the same at the national level. Note that these two policies entail different impacts on *Gwr* computation, since a worker engaged in 'mobilità' moves from employment to unemployment while a worker engaged in 'cassa integrazione' remains officially employed. It is also important to stress that in the last decade a large-scale decentralization process in labour market policies took place in Italy (after our investigation period). For a survey of these issues see Pirrone-Sestito (2006).

One intuitive explanation concerns the distribution of firm size in different areas, since the empirical literature on this point clearly shows that flow rates are inversely related to firm size.<sup>21</sup> The Intermediate Census of Industry and Services (ISTAT) reveals that in Southern Italy the share of employment in small firms is higher than in the rest of Italy: more than 44% of workers are employed in under-15 employee firms, while in the Northwest, for instance, the corresponding share is about 27.5%. This evidence suggests that overall rates should be affected by regional economic structures: the higher the shares of employment in small firms, the higher will be the flows rates.

Sectors of activity seem equally important when determinants of mobility are investigated. Contini (2002) points out that construction, trading and social and private services are characterized by higher  $Gwt$  and  $Gwr$  rates than the other sectors. On the other hand, finance intermediation and heavy industries workers are less mobile.

The effects of firm size and sectoral composition can be jointly taken into account applying a weighting procedure -à la Blanchard-Portugal (2001)- to rate computation.

Formally, the adjusted flows can be expressed by the formula:

$$Gwt^a = \sum_{j,k} Gwt_{j,k}^a f_{j,k}^R,$$

Where  $a$  is a geographical area,  $j$  represents the size class,  $k$  represents the sector and  $f_{j,k}^R$  are the employment shares in the reference structure.

We can divide the weighting procedure into two components, turnover ( $Gwt_{jk}$ ) and the structural aspect ( $f_{jk}^r$ ). The former tells us how mobile the workers are in every cell in each country or region (for firm size and sectoral composition), while the latter suggests how much every single cell has to weigh in order to end up with comparable rates among countries/regions.

The set of weights we have chosen is the share of workers in private sectors for each firm size class and activity sector in Italy, derived both from the 'Intermediate Census of Industry and Services' of 1996 and from the panel itself.

In table 5 we display unadjusted and adjusted rates for the period 1985-1999. The main results are: i) the gaps between regional flow rates decrease; ii) the adjusted Southern rates remain higher than the rates in other regions, no matter which kind of weighting system is used.

**(TAB. 5 HERE)**

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<sup>21</sup> See for instance Davis-Haltiwanger (1995), Anderson-Meyer (1994).

In the light of these findings we conclude that in the Italian case the weighting procedure does not produce evidence bearing out the expected theoretical predictions. The standard explanation that in the South worker flows are higher simply because of differences in firm size and in sectoral composition is not empirically verified. Investigating the components of the weighting procedure we find that the structural component is not strong enough to reverse fully the higher mobility observed in the South.<sup>22</sup>

Finally, it is worth noting that, even after the weighting procedure, a wide gap remains between the *Gwt* in the North-East and in the North-West. This is an interesting finding since the North-East and North-West are very similar in terms of EPL enforcement and in terms of social-economic factors other than firm size and sectoral composition. In a sense, the divergence in the *Gwt* rates between these regions is at least as surprising as the one between the North and the South.

#### **4. What lies behind regional differences in worker flows rates?**

In this section we investigate some other possible explanations for regional differences in worker flows rates: the black labour market, the incidence of non-standard contracts, the incidences of the public sector and self-employment, and labour productivity.

##### *4.1.1. Possible explanations (i): the black labour market*

The black labour market, which entails a substantial reduction in labour costs, could be considered as a possible candidate since it is estimated to be very widespread in the South. According to Baldassarini-Pascarella (2003), the share of unregistered full time equivalent units in the South amounts to 22.4% of all working positions, while in the Centre and the North the corresponding rate is 11%: the regional differences emerge quite clearly.<sup>23</sup>

Which could be the main effects on worker flows determined by the black labour market?<sup>24</sup> At first sight, there are at least two different effects.

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<sup>22</sup> Naticchioni-Rustichelli-Scialà (2003) show -in appendix- that for every firm size class, except the last, mobility is higher in the South than in the other regions.

<sup>23</sup> According to international definitions, in particular the definitions included in SNA93 and SEC95, it is possible to distinguish three different types of 'black' labour market: illegal activities, carried out by enterprises entirely unregistered; underground activities, carried out by registered firms that for either economic reasons or statistical problems decide to hide some relevant information concerning the labour market (evasion of social security contributions, distortions of working time and working position procedures, etc.); informal activities, defined by legal firms characterized, for instance, by low levels of organization, unclear separation between capital and labour, family based structure, etc.

<sup>24</sup> A recent paper that seeks to evaluate the impact of the black labour market on employment and unemployment variables is Boeri-Garibaldi (2002). Nevertheless they do not go into the impact of the black labour market on worker turnover.

Firstly, some of the “black” market workers in Italy frequently enter and exit from the legal labour market in order to be eligible for pension contributions. In particular, some of the ‘underground’ workers spend most of the time working in the black market but, in the meanwhile, have informal agreements with their employers in order to work in the legal market, at least the minimum amount of hours needed to be eligible for the pension system.<sup>25</sup> In this way the ‘underground’ market might imply a substantial increase in the “legal” labour market flows. This effect can to some extent be assessed computing the job recall rates using INPS data: since the number of job recalls is very small and does not change significantly across regions, we can conclude that this effect should be negligible.

Secondly, the black labour market could imply a higher reservation wage for workers. In a standard theoretical model (e.g. Mortensen-Pissarides, 1994) a higher reservation wage in the South would imply a higher share of quits, because the outside option for the worker is greater than in other regions. In this framework it would entail a higher job turnover.<sup>26</sup>

Both effects we have considered would imply a positive impact of the black labour market on labour turnover. This would also mean that the regional differences are a spurious phenomenon, caused mainly by the different incidence of the black labour market. In section 4.2 we will attempt to verify this hypothesis, using the Italian Labour Force Survey (ISTAT). Anticipating our results, we can state that it does not seem to be the case. Actually, the relation between the black labour market and turnover is not significant.

#### 4.1.2. Possible explanations (ii): the different impact of non-standard contracts

A second candidate to explain the different *Gwt* rates between the Italian regions might be the uneven incidence of fixed term contracts. Actually, in the South they represent 42% of the total of fixed term contracts in Italy.<sup>27</sup> A higher rate of fixed term contracts implies a higher *Gwt* rate due to the fact that even if a worker continues to be in the same firm at the end of the fixed term period, formally he/she will be laid-off and then hired again: a new contract will begin. On the other hand, part-time contracts are widespread in the Northeast (54% of the part-time contracts in Italy). Since a large share of these kinds of contracts are permanent, they do not imply any impact on *Gwt*. In other words, different kinds of non-standard contracts widespread in the South (fixed term contracts) and in the

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<sup>25</sup> It is worth noting that the same argument may hold to acquire eligibility for unemployment benefits.

<sup>26</sup> Note that there might be at work also some demand side determinants for the black labour market to emerge, such as lower fiscal costs, higher flexibility in the management of the workforce etc.

<sup>27</sup> Eurostat – New Cronos database available on line.

Northeast (part-time contracts) could determine different impacts on *Gwr* in the different regions.

We cannot use the INPS database to test these hypotheses because fixed term contracts are not explicitly recognizable. Hence, we work with a panel version of the Labour Force Survey (LFS) set up by ISFOL. For our purposes, we identify the same type of workers as the INPS database, i.e. subordinate workers in all private sectors but agriculture. Further, using the LFS we have to focus our attention on yearly Gross Worker Reallocation rates alone: we are not able to compute the gross worker turnover rates because we do not have detailed information on what happens during the period.

**(TAB. 6 HERE)**

Table 6 shows that the *Gwr* rates derived from LFS are quite close to those derived from the INPS database. Moreover, the LFS reallocation rates are even higher than the rates derived from the INPS database and the results are also qualitatively very similar (the region rank is basically the same). This represents evidence of the robustness of our previous findings on the INPS data. Besides, when fixed term workers are excluded, the *Gwr* are clearly lower everywhere and, quite strikingly, lower in Southern Italy. Nevertheless, in the latter region the *Gwr* rates remain clearly higher than in the Central and Northern regions of the country.

*4.1.3 Other possible explanations (iii): public sector, self-employed and productivity*

Other macroeconomic issues might have an impact on worker flows. The first issue we deal with is the different incidence of the public sector in the Italian regions, which could partially account for the higher turnover rates in the South. As shown in table 7, the employment share of the public sector in the South is appreciably higher than in the other areas. On one hand, since public employees are typically less mobile, it could imply some local labour market rigidity reducing mobility in the private sector. On the other hand, the higher incidence of public employment might increase labour market segmentation, thus inducing, rather, higher mobility in the private sector.

Other possible factors that might affect mobility rates are the different incidence of self-employment and the different patterns of labour productivity trends across the Italian provinces, as shown in table 7. In the following section we will discuss the role of these factors.

**(TAB. 7 HERE)**

#### 4.2 *An econometric test of our hypotheses.*

In order to test all the possible explanations we have taken into account at the same time, we use a simple econometric model on LFS data. More specifically, we carry out a logit estimate taking as a dependent variable the fact of having had a reallocation in the last year. Among the explicative variables we control for all the 'standard' variables (gender, age, qualification, education) and for the additional variables we have considered in this paper (firm size and sector, fixed term and part time contracts, public sector incidence, self-employed incidence, public sector and self-employed incidences, productivity trends, black labour market rates).

In column 1 we introduce as covariates only the regional dummies (omitting the Northwest), which the variables we are interested in. They are significantly different from one another in the period 1994-1998.

After controlling for standard covariates (gender, age, education, firm size, sector and year dummies), column 2 shows that the regional ranking is the same, although the differences in magnitude are smaller. As expected, the probability of reallocation decreases in firm size, increases for part time workers and even more for fixed term workers, and decreases in worker age.

In column 3 we go on to add all the other possible explanations discussed in the previous sections (black market, unemployment rates, atypical contracts, public sector and self-employed incidences, productivity trends). Moving from column 2 to 3 the ranking of regional dummies partially changes, meaning that the additional explanations we considered play some role. The South remains the region with the highest reallocation rates, the dummy for the Centre becomes significant while the North-east becomes not significant. This is probably due to the fact that the additional explanations are correlated to the regional dummies.<sup>28</sup>

More specifically, we observe that the impact of atypical contracts is positive and, as expected, this impact is higher for fixed term contracts than for part time. Besides, the public sector incidence is negative, as expected, while none of the other macroeconomic

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<sup>28</sup> It is not easy to disentangle the different effects due to the unemployment rates, the black labour market shares and the regional dummies, since they are quite positively correlated with one another as well as with regional dummies. For this reason we have also carried out different logit estimates (not shown in this paper) introducing one by one the unemployment rates and black labour market shares. Basically, the results do not change. Moreover, we estimated a logit introducing activity rates that are quite different across the Italian regions. Also in this case the major results do not change. Note, too, that we also used other, different specifications for both regional black employment and unemployment rates (both quadratic and five deciles dummies). The results do not change much: the coefficients are either insignificant or very small, and do not change the magnitude of the regional dummies.

factors (self-employment, productivity, unemployment rate and black labour market) are significant.

**(TAB. 8 HERE)**

When analysing workers flows, firm seniority is another factor to take into account, since younger firms display higher mobility rates than older ones. Using the INPS dataset we carry out two additional logit estimates. In the first we include firm seniority as explanatory variable (column 2 in table 9), while in the second we limit our sample to continuous firms only. As in Gomez *et al* (2004) this allows to control for ‘spurious’ reallocations due to either newly created firms or firm closures.

We carry out a similar exercise - controlling for different variables - using the panel INPS database. In this way we can control for other additional variables that might have a significant impact on the probability of reallocation. Gomez *et al* (2004) claim that firm seniority has to be considered as control variable, since the empirical evidence shows that younger firms display higher mobility. Furthermore, considering only continuous firms, as in Gomez *et al* (2004), we can indirectly control for ‘spurious’ reallocations due to either newly created firms or firm closures.

**(TABLE 9 HERE)**

In column 1 of table 9, we include as covariates only the regional dummies. The results are consistent with the previous findings on LFS logit. Moreover, column 2 shows -as expected- that firm seniority plays a relevant role in the probability of reallocation, reducing the regional gaps. Nevertheless, differences in regional dummies are still relevant and significant. Finally, in column 3 we have considered only continuous firms,<sup>29</sup> in order to control also for the firm births and closures. Again, in this case the results do not basically change.

*4.3. An unclear relation between worker flows and unemployment duration*

The fact that *Gwt* is higher in the South raises some interesting questions. In particular, it is worth noting that unemployment duration is much higher in the South than in the North. According to Table 10, average unemployment duration (*UD*) in the South (32,6 months) is more than two times higher than in the North-East (14,9 months), and well above the figure of the North-West (20,8). Moreover, long-term unemployment (*LTU*) in the South affects about 11.5%(60%) of the labour force (of the unemployed) while in the North the corresponding rate is about 2-3% (40%), below the European (EU15) average.

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<sup>29</sup> More specifically, we have only considered reallocations that take place at least one year after a firm’s birth and one year before a firm’s closure.

This means that in Italy we observe in all regions but the Northeast a slightly positive relation between worker flows and unemployment duration. Roughly speaking, in the South the worker flows are high and *UD* is high, in the Northwest and the Centre the flows are low and *UD* is quite low. Only in the Northeast are the flows high and *UD* low.

**(TABLE 10 HERE)**

In the light of Blanchard-Portugal (2001) and the standard literature we were expecting to observe a negative relation between these two variables. In Italy we observe a negative relation only in the Northeast (high flows and low *UD*). However, quite surprisingly, this relation is the opposite of what one would expect in a strict EPL country, where the flows should be low and *UD* high.

If EPL was the main institution able to have a significant impact on the labour market structure, we should expect a uniform impact of EPL on unemployment duration across the country, considering also the fact that the current institutions and legislations are the same in the different regions.<sup>30</sup>

## 5. Conclusions

In this paper we point out that the theoretical predictions are not fully confirmed for Italy, a country characterized by strict EPL in the nineties. Using Panel INPS and LFS data we showed that: 1) worker and job flow rates are considerably high in Italy, also in comparison with the other European Countries; 2) worker flow rates are very different at the regional level, even after controlling for all variables of interest (firm size and sectoral composition, non-standard contracts, public sector and self-employment incidences, labour productivity, black labour market and firm seniority); 3) the theoretically predicted negative relation between unemployment duration and flow rates in the different regions is not confirmed for the Italian case.

To sum up, what can be said of EPL in Italy? Roughly speaking, Italy does not seem to suffer from the typical problems related to strict EPL. Does this mean that EPL does not affect the behaviour of workers and employers? Our findings probably fail to justify such an extreme conclusion.

Nevertheless, with this paper we have attempted to provide empirical foundations for the political debate on EPL reform in Italy. If Italian mobility is among the highest in Europe and long term unemployment is not a major problem in the North and Centre,

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<sup>30</sup> This implies that the explanation of Bertola-Rogerson (1997) concerning wage compression cannot apply to this framework because the wage setting in Italy takes place mainly at the national level, and hence wage compression is basically the same across different regions.

why should such a reform be so important for the Italian labour market? Why should it be considered more important than other possible reforms (unemployment benefits, active labour market policies, etc.)?

Certainly, the high long-term unemployment rate in the South is decidedly worrying, and this might have to do with EPL. However, if it depended on factors related either to skill deterioration or worker discouragement, there would be little point in reforming or modifying EPL, while it could be more appropriate, according to economic theory, to introduce active labour market policies, training schemes etc. Similarly, if the high unemployment duration in the South was due mainly to low growth dynamics, structural problems of the economy, lack of private and public investments and matters of technological change, the reform of EPL would not seem to be an appropriate tool to cope with these phenomena.

Furthermore, in order to evaluate the welfare effects deriving from this kind of policy correctly it can not suffice to analyze the impact of EPL on labour market flows and unemployment duration, neglecting other important 'spillovers' and policy coordination effects pointed out in the recent literature<sup>31</sup>.

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<sup>31</sup> For instance, Nickell-Layard (1999) point out that EPL does matter, not only for unemployment issues but also for economic growth. Besides, Belot-Boone-van Ours (2002) sets out to evaluate the welfare effects of EPL in a theoretical framework arguing that EPL "might be desirable both from the point of view of the worker (job stability and wage gains) and of the firm (productivity gains)". Similar conclusions are reached by Pissarides (2001) and Ricci-Waldmann (2006). Another stream of the literature, introduced by Feldstein (1976), stressed the importance of employment protection in taking into account the social cost of firing decisions made by employers. In order to face macroeconomic instability firms hire and fire workers according to their profit maximization, without taking into account the social cost that these firing decisions will determine (unemployment benefits for unemployed workers, training costs, etc.). In this framework, employment protection can be considered as a policy that forces employers both to reduce and to internalize, at least partially, the social costs due to layoffs. This interpretation has been further developed recently in Blanchard - Tirole (2004) and Bertola (2004), which try to design a sort of optimal scheme for EPL following basically two main guidelines: 1) underlying the importance of EPL when workers are risk averse and markets are incomplete; 2) pursuing efficiency, since firms are required to internalize the social cost linked to their layoff decisions. More specifically, the efficiency goal is achieved combining EPL and unemployment benefits: for instance employers have to pay a lay-off tax to the agency that provides the unemployment benefits.

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## Tables and Pictures

**Table 1: Job Creation (JC), Job Destruction (JD) and Job Reallocation (JR) rates, and the countries dummies derived from OLS estimate using as dependent variable the JR rates and several controls (firm size and seniority, sector, year dummies). UK is the reference country.**

	JC	JD	JR	Country dummy	<i>t-stat</i>
Austria	4.6	3.4	7.9	-5.36	-20.33
Belgium	5.2	3.8	9	-2.30	-22.13
Denmark	6.2	3.3	9.5	-4.73	-17.82
Finland	7	3	9.9	-3.59	-22.21
France	5.1	3.2	8.3	-3.51	-38.56
Germany	4.4	3.7	8.1	-3.94	-15.47
Ireland	8.5	3.1	11.5	-1.67	-5.92
Italy	8.2	4.1	12.3	0.96	-5.52
Netherlands	6.5	4.3	10.8	-1.51	-11.22
Portugal	4.9	3.5	8.4	-3.12	-12.36
Spain	8.6	3.4	12.1	0.72	-3.22
Sweden	8.1	3.6	11.7	-1.00	-3.56
UK	6.6	4.4	11	-	-
Euro area	5.6	3.7	9.3		

Source: Gomez-Salvador et al (2004); database *Amedeus* (Bureau van Dijk)

**Table 2: Inflows and Outflows from Employment**

	ELFS	ECHP
Belgium	12.6	15.7
Denmark	22.6	18.7
Germany	16.3	16.1
Greece	18.6	29.8
Spain	29.2	32.2
France	20.2	12.3
Ireland	20.5	25.6
Italy	23.6	22.4
Luxembourg	10.8	8.9
Netherlands	18.7	22.5
Portugal	17	20.7
UK	19.7	21

Source: Kruppe (2001)

**Table 3: Gross worker reallocation, gross worker turnover, accession and separation rates in Italy, 1985-1999.**

Gwr*	Gwt	Accession rate	Separation rate
39.8	66.9	34.0	32.9

\*1986-1998. Source: Panel ISFOL on INPS data

**Table 4: Gwt and Gwr according to regions and firm size**

Region	Gwt	Gwr
	1985-1999	1986-1998
North-West	53.9	35.2
North-East	74.1	39.0
Central	64.1	38.3
South	84.7	50.6
Firm size		
1-5	108.4	53.4
6-15	81.8	45.4
16-49	64.6	40.5
50-199	51.7	34.3
200-499	39.2	29.6
500-W	23.6	24.3
<b>Total</b>	<b>66.9</b>	<b>39.8</b>

Source: panel Isfol on Inps data

**Table 5: 1986-1998 unadjusted and adjusted Gwt according to regions**

	Not adjusted	Census Adjusted	Panel Adjusted
North-West	49,4	56,4	52,6
North-East	68,9	67,6	67,7
Central	58,4	59,3	58,3
South	79,4	71,3	72,6
Italy	61,7	62,8	61,7

Source Panel Isfol on INPS data.

**Table 6: Gwr computed using LFS panel, with and without fixed terms contracts.**

		LFS Gwr		INPS Gwr
		<i>with fixed terms</i>	<i>without fixed terms</i>	
1994-1995	North-West	34.5	32.5	27.0
	North-East	37.8	34.2	30.8
	Centre	34.5	32.2	30.2
	South	40.0	36.2	38.4
	Italy	36.9	33.9	30.9
1995-1996	North-West	34.9	32.9	28.6
	North-East	36.9	33.4	33.5
	Centre	37.5	35.0	34.5
	South	42.3	39.3	42.7
	Italy	38.0	35.3	33.8

Source: Panel Isfol on LFS survey and panel Isfol on INPS data.

**Table 7: Gross Worker Reallocation computed computed with or without Public Sector, 1995-1996**

	Employment share of PA	LFS GWR (with fixed terms)		
		All private sectors	With PA	Workers with at least one member of the family working in PA
North-West	17.7	34.9	33.8	35.7
North-East	18.0	36.9	35.6	46.6
Centre	23.4	37.5	33.8	37.1
South	29.9	42.3	40.8	49.3
Italy	22.9	38.0	36.3	43.6

Source: Panel Isfol on LFS survey.

**Table 8: Logit estimates on the probability of having a reallocation, using LFS**

		Only regions		Std. Controls		All controls	
		B	P-value	B	P-value	B	P-value
Regions	North-West		0.000		0.000		0.024
	North-East	0.116	0.000	0.063	0.021	0.036	0.227
	Centre	0.051	0.053	-0.002	0.937	0.087	0.027
	South	0.290	0.000	0.182	0.000	0.196	0.002
Female				0.118	0.000	-0.027	0.389
Age	15-24						
	25-34			-0.802	0.000	-0.760	0.000
	35-49			-1.197	0.000	-1.086	0.000
	50-W			-0.838	0.000	-0.689	0.000
Education	High education						
	Medium education			-0.020	0.625	0.039	0.354
	Low education			0.032	0.473	0.136	0.004
Profess. status	Blue collar						
	White collar			-0.190	0.000	-0.091	0.001
	Managers			-0.250	0.000	-0.132	0.010
Firm size	Undefined						
	1-5			-0.675	0.000	-0.698	0.000
	6-15			-0.945	0.000	-0.949	0.000
	16-49			-1.080	0.000	-1.077	0.000
	50-199			-1.120	0.000	-1.113	0.000
	200-W			-1.300	0.000	-1.304	0.000
Public Sector Share						-0.023	0.000
Labour Product.						-0.001	0.663
Self-empl share						0.004	0.161
Unempl. Rate						0.005	0.106
Black labour market						0.001	0.871
Atypical contr.	Part-time					0.617	0.000
	Fixed-term					1.805	0.000
Year dummies			NO		YES		YES
Sector dummies			NO		YES		YES
Constant		-0.770	0.000	1.064	0.000	0.762	0.000

Source: panel ISFOL on LFS-ISTAT data

**Table 9: Logit estimate on the probability of having a reallocation, using INPS data**

Dependent variable: having a reallocation.		Only regions		All Controls and firm seniority		All Controls and firm seniority in continuous firms	
		B	Sig.	B	Sig.	B	Sig.
Area	North-West						
	North-East	0.32	0.000	0.18	0.000	0.19	0.000
	Centre	0.15	0.000	0.07	0.000	0.07	0.000
	South	0.46	0.000	0.24	0.000	0.24	0.000
Firm seniority (in year)	1			3.24	0.000	2.70	0.000
	2-3			0.91	0.000	0.50	0.000
	4-10			0.54	0.000	0.47	0.000
	11-20			0.32	0.000	0.31	0.000
	20-W			-	-	-	-
Constant		-1.02	0.000	0.74	0.000	0.77	0.000
Number of cases		418189		415891		392429	

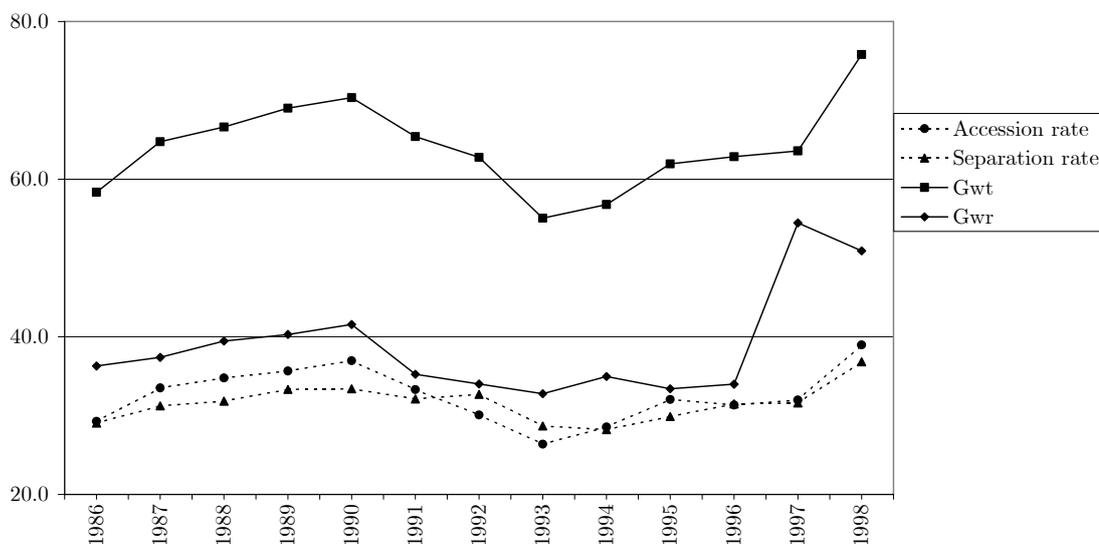
Source: Panel Isfol on INPS data. Others controls (classes are the same as the previous Logit on LFS): age, age<sup>2</sup>, gender, qualification, sector, firm size, yearly dummies. Note that in INPS database there is no information on fixed term contracts and education levels. Part time contracts are excluded.

**Table 10: Regional relation between worker flows, long term unemployment (LTU) and unemployment duration (UD)**

Region	Gwt	Gwr	LTU rate	Average UD	Average tenure
North-West	46.2	30.6	3.3	20.8	34.7
North-East	64.3	34.5	2.0	14.9	28.3
Central	54.2	34.1	4.8	24.1	31.3
South	68.8	43.5	11.3	32.6	24.2

Source: Panel Isfol on INPS data and LFS.

**Fig. 1: Trends in Gwt, Gwr, accession and separation rates in Italy, 1986-1998**



Source: Panel Isfol on Inps data.