

NEW APPROACHES TO THE STUDY OF LONG TERM NON-EMPLOYMENT DURATION VIA SURVIVAL ANALYSIS: ITALY, GERMANY AND SPAIN¹

B. Contini, Università di Torino & Collegio C. Alberto
J. I. Garcia Perez, Universidad Pablo de Olavide
T. Pusch, Hans-Boeckler Stiftung, Dusseldorf
Roberto Quaranta, Collegio Carlo Alberto

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Abstract

This study proposes a new approach to the analysis of non-employment and its duration in Germany, Italy and Spain via administrative longitudinal databases. Non-employment includes the discouraged unemployed not entitled to draw unemployment benefits and the long-term inactives. Many of these individuals will never return into the official labor market. We estimate the magnitude and duration of non-employment, applying the survival methodology developed in recent years to deal with “workforce disposal”. This concept aims at gaining a better understanding of the process that leads people to drop out of the official labour market for very long periods of time. These developments may lead to dramatic changes of individual lifestyles, family and childbearing projects, increasing poverty and welfare at large. In our opinion, the strategy advocated by the EU Commission to promote youth employment - low wages for new entrants and contract flexibility – may have consequences leading to increasing long-term non-employment.

¹ The research by Contini and Quaranta has been in progress for years at the Collegio Carlo Alberto and the LABORatorio R. Revelli, Centre for Employment Studies. We are grateful to Elisa Grand for her very able research assistance, and to the Collegio C.A. for financial support.

1.Introduction

Unemployment figures have reached dramatic levels all over Europe: between 2008 and 2013 the number of unemployed individuals has increased from 16.7 million to 26.2 million. In addition, OECD recently suggested the existence of over 8 million “inactives but willing to work”, for the most part discouraged unemployed. Not only is the magnitude of unemployment, official or unreported, a source of grave preoccupation, but also – and perhaps even more – the length of its duration among people in working age. In this study we propose a new approach to the study of non-employment duration, which, we find to average around 10-15 years for people in their 30's and over 25 for the 40-50 yrs old. Non-employment includes the unregistered unemployed as well as the inactives who would be willing to take a job if they were offered the chance. The difference between the latter and the discouraged unemployed is flimsy. The numbers involved should, be a source of major concern. It is surprising that the literature (not only academic) has so far paid modest attention to the dramatic duration of non-employment among people of working age, and its far reaching implications for social policy. While long-term unemployment has been the object of innumerable studies, almost all referred to the official data that define long-term as 1 year + (seldom 2 yrs +). We claim that non-employment durations as long as they are found here pose much more serious and qualitatively different motives of preoccupation.

We resort to administrative longitudinal databases available in our countries in order to estimate long-term non-employment. Estimation is performed using the approach

developed by B. Contini (2007 and 2012) and denominated “worker disposal”. Worker disposal refers to the process by which individuals are dismissed shortly after the start of a new job and never regain regular employment: they are as it were “disposed” and eventually may become long-term non-employed. Some will eventually join the irregular, unobservable economy.

The paper is organized as follows: section 2 illustrates the main aspects of labor market developments in our countries. Section 3 provides a short survey of the relevant literature. Section 4 illustrates the administrative databases. In section 5 we present estimates of long-term non-employment magnitude. The empirical survival schedules are displayed and discussed in section 6. Section 7 presents the estimates of long-term non-employment duration. Section 8 addresses the question of the end destination of the non survivors. Section 9 is dedicated to an exploration of EHCP data that provides additional information on the non-survivors. Conclusions and policy implications close in section 10.

2 Labor market developments

The unemployment situation of many EU countries and the increasing job precariousness are well known and deserve few comments here. Non-employment and its duration have instead attracted much less attention. In 2012 the EU-LFS reported estimates of the “inactives, but willing to work” (OLF - tab.1) In 2010 Italy’s rate was almost three times the EU average and far above all the larger EU countries, including Spain whose unemployment rate was much higher

than Italy's.² Many of the inactives are presumably discouraged unemployed who have had regular working activities in the past. Many may be working part or full time in the irregular economy. As will be shown, our evidence suggests that only a minority of the long term non-employed will ever return to a regular working life.

In this regard it is worth mentioning that the downward trend of male participation is common to all the OECD countries, beginning in the mid 90's. The decline of youth participation has a longer history, associated to the end of the baby boom, the increasing school attendance and the rise of female employment in the service sector. Only the participation of the elderly (65+) has been trending upwards, as well as their employment rate.

In this study we set out to compare the main features of long-term non-employment (LTNE) in three countries, Italy, Spain and Germany through 2012. The process leading to increasing LTNE was already under way in some EU countries before the dramatic downturn of 2008. The reforms advocated by the EU Commission and implemented almost everywhere since the Eighties aimed at enhancing youth employment opportunities by lowering entry wages and increasing contract flexibility. Employers had profitable incentives to pursue strategies of rapid turnover and replacement of different young people on the same job, with many of the dismissed never to regain employment. LTNE workers may, at some point, join the irregular / unobserved economy. As will be explained (section 8), the footprints of these transitions are difficult to discover, and coarse

² A plausible, yet untested, explanation for the Italian OLF-exception is that only a small fraction of Italy's working population is eligible for unemployment benefits: Italy's reciprocity rate is 32%, against 50% of the UK, 60% of France, 65% of Denmark, 73% of Spain, 94 of Austria and 100% of Germany (although these rates do not imply the same degree of generosity). In Italy there is little incentive to self-report one's true employment status because the opportunity cost is often close to zero. Where unemployment benefits are generously available, as in Germany, the opportunity cost of misreporting is high because the perceived risk of losing the benefits is high as well. If only half of the Italians classified as inactives but willing to work, were (conservatively) counted among the unemployed – as would be the case anywhere else in the EU – Italy's unemployment rate would be well above the optimistic 13% reported by official sources in 2013.

estimates of their magnitude and dimensions can be obtained only via appropriate comparisons across statistical aggregates from different sources

Our analyses have also methodological implications. While long-time non-employment is strongly duration dependent, worker heterogeneity matters too. In order to ascertain heterogeneity we control for several individual characteristics prior to the development of one's career: education, family income at the time of labor market entry, initial contract terms and wage development. The non-employed willing to work have been left out of almost any count in much of the academic literature. Until 2014 few contributions had faced the issues raised by these numbers. A. B. Krueger (2014 and 2015) tackles the problem in the U.S. with the necessarily deep perspective: his conclusion, to which we shall return in what follows, is indeed dramatic “...once a person leaves the labour force, he or she is extremely unlikely to return (*at work*).» Unfortunately, the duration of “long-term unemployment” is reported by Eurostat and OECD as one-year or longer, and only in few instances as lasting more than two-years. This is hardly sufficient to investigate the long-term implications that affecting the labour market and society at large

Tab. 1. Unemployment and out-of-labour force in OECD
 Statistics Database 2011.

	<i>Unempl yed 2010 (000)</i>	<i>Unem pl. rate 2010</i>	<i>OLF- 2010 not searchi ng, but willing to work</i>	<i>OLF Rat e (M+ F) 201 0</i>	<i>Em pl. rate 201 0 (M)</i>	<i>Em pl. rate 201 0 (F)</i>	<i>Youth unem pl. rate 2010 (15- 24)</i>
Italy	2102	8.4	2764	11.6	56.9	46.1	27.9
France	2653	9.4	309	1.1	64.0	59.9	22.5
Germa ny	2946	7.1	530	1.3	71.2	66.1	9.7
UK	2440	7.8	837	2.7	70.3	65.3	19.1
Spain	4632	20.1	973	4.2	59.4	53.0	41.6
EU	22906	9.6	8250	3.5			

Tab. 2 - OECD: Main growth indicators and multifactor
 productivity (MFP) 2000-2008:

Employ ment	GDP const ant	Fixed capital (*)	Labour product ivity	M F P 198	M F P 199	M F P 200
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		price s	invest ment		5- 95	5- 200 7	0- 200 7
Italy	10.3	7.3	- 0.36	- 3.0	1.3	0.1	- 0.7
France	5.8	14.1	1.75	8.3	1.7	2.1	1.0
Germany	6.0	9.7	0.67	3.7	1.4	1.1	0.6
Spain	29.9	28.0	0.83	- 1.9	n.d	0.1	- 0.1
U.K.	8.5	20.4	0.83	11.9	1.0	1.2	1.2

(*) *annual growth rate 2000-2012 (average)*

2.1 ITALY

Italy's unemployment rate hovered around 7-9% from the mid 90s to 2007, rapidly increasing thereafter above 12%. In the early 2000's youth unemployment was about 20%, the second highest in the European Union, and hiked to 40% and over in 2013. Youth employment had steadily increased from 4.0 million in 1968 to slightly less than 5.0 million in 1990, a consequence of the baby boom and of the increased participation of young women. However, prior to the 1993 recession and in the aftermath of the baby boom, the trend had already sharply reversed, and as of 2008 only 3.4 million young people were in employment. The youth participation rate steadily dropped from 45% of the Eighties to 27% in 2013. Since the turn of the millennium Italy was outperformed by all the main EU countries, facing a drastic reversal of its main macroeconomic indicators (tab. 2).

According to ISTAT (National Statistical Institute) overall unemployment reached 2 million individuals at the eve of the 2008 recession, while both the inactives (“willing to work”) and the irregular workers exceeded 3 million. The EU-LFS (Labour Force Survey) reported important comparative data for 2011: Italy’s share of “inactives but willing to work” (OLF) was almost three times the EU average and far above all the larger EU countries, including Spain whose unemployment rate was much higher than Italy’s. Many of the inactives are presumably discouraged unemployed who have had regular working activities in the past. Many may be working part or full time in the irregular economy. The size of Italy’s rate of inactivity is also a consequence of the historical downward trend of male participation. But, in this respect, Italy has not fared differently from many EU member countries.³

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Fig. 1—GDP and employment growth (ISTAT, National Accounts)

³ An additional, though untested, explanation for the Italian OLF-exception lies in the fact that only a small fraction of Italy’s working population is eligible for unemployment benefits: Italy’s recipiency rate is 32%, against 50% of the UK, 60% of France, 65% of Denmark, 73% of Spain, 94 of Austria and 100% of Germany. (OECD Database 2013). In Italy there is little incentive to self-report one’s true employment status in the LFS, because the opportunity cost is often close to zero. Where unemployment benefits are generously available, as in Germany (and, to some extent, also Spain), the opportunity cost of misreporting is high because the risk of losing the benefits is high as well.

The first measures aimed at increasing employment opportunities for the young were implemented at the end of the 70s, with a generous tax exemption scheme in Southern Italy (phased out in the mid 90s), and the so-called CFL (training-and work contract) of 1991 aimed at young people below age 30. In 1996 the Treu Reform Package completed the liberalization of temporary contracts and introduced forms of contract work (referred to as “co.co.co.” contracts), *de-facto* disguised dependent work, exempt from firing costs and subject to very low social security contributions. The latter left workers almost completely unsheltered from any form of welfare coverage. In 2000-2001 the implementation of two EU directives on part-time work and on fixed-term contracts added new elements of flexibility to the system. The share of non-standard contracts, relatively stable around 50% til the mid 90’s, picked up after the Treu Reform Package, reaching 65% of all initial hires in 2000, and over 70% by 2008. The Treu legislation merely sanctioned and legalized practices that were already widely used. The upward trend of non-standard working arrangements is an unambiguous signal of increasing labour market flexibility, and is found also in several EU countries, although not as extreme as in Italy⁴. According to authoritative opinions (in first place the Bank of Italy in several Annual Reports), one of the underlying causes of the fall of labour productivity in Italy is the excessive utilization of temporary, low-pay and high-turnover working contracts, accompanied by the consequent lack of incentives for employers to invest in human capital.⁵

⁴ The annual transition probability from non-employment to employment was 8,3% in the midst of the expansionary 80’s and fell to 5,6% in 2000-01. In the same period the transition probability from unemployment to employment dropped from 27% to 18%.

⁵ The present government has passed new legislation aimed at reducing the extent of precarious jobs (The Jobs Act, introducing the “contract with increasing protection”): its impact will have to be evaluated in the years to come.

The long stagnation of the Italian economy is one of the main determinants of the process leading to the formation of LTNE.⁶ Even more importantly, the reforms advocated by the EU Commission in the last 20 years, aimed at enhancing youth employment opportunities, often provided employers with incentives for pursuing the strategy of worker turnover and quick replacement, both direct causes of premature exit in absence or near-absence of appropriate active measures of re-training and guidance.

An overview of Italy's labour market is not complete without mentioning the irregular/ parallel/ hidden economy. Based on a variety of coarse macroeconomic indicators, ISTAT puts the number of irregular workers in 2009 at about 3 million, 2 million of which completely submerged and 1 million double-job holders. The large majority of double-job holders are men, while the fully irregular women are about one half the number of men. In addition, about half of the young school leavers (15-24) searching for their first job may also be active at least part time in the unobserved economy. As will be shown in the Appendix the magnitude of Italy's LTNE is quite compatible with these estimates.

2.2 SPAIN

The Spanish labour market had been heavily regulated since before the arrival of democracy in 1975. After Franco's death in 1975 changes were introduced to relax some of the previous regulations. The most important one was the

⁶ LFS transition probabilities from non-employment to employment dropped from well above 8% in the early 80s to about 5% at the beginning of the millennium. Similarly, those from unemployment to employment decreased from 27% to 18% (B. Contini and U.Trivellato, 2005). These are clear indicators of the long run deterioration of the labor market.

legalization of free trade unions and the abolishment of the single trade union in 1977.

It was not until 1980 that the strongest modernization of the labor relations system was introduced in Spain with the approval of the Workers' Statute. This law assumed every contract to be an open-ended contract as a general case, whereas temporary contracts were intended to be used only for jobs whose nature was temporary. Furthermore, the Worker's Statute kept most of the restrictions on dismissals. During the first half of the 1980s, the Spanish unemployment rate experienced a rapid growth and climbed over 20%. This event prompted the Spanish government to introduce a new reform in 1984. This was the first reform designed to liberalize the use of temporary contracts and to reduce dismissal costs for this type of contracts. The most important element of the reform is the fact that it eliminated the requirement that the activity associated with a temporary contract had to be of a temporary nature. After the three years, the contract cannot be renewed, and the worker must either be fired or must be offered a permanent contract by his/her current employer. Furthermore, another advantage of this type of contracts is that firing costs at termination are very low (8 days per year of tenure but they can even be zero in some cases). As a result of this legislative change, the proportion of male employees aged 15-24 under temporary contracts increased from less than 40% to over 70% in less than five years after the approval of the reform (See Garcia-Perez et al. 2016).⁷ Between 1985 and 1994, over 95% of all new hires were employed through temporary contracts and the conversion rate from temporary into permanent contracts was only around 10% (Güell and Petrongolo 2007). Thus, the main concern with the

⁷ The rate of temporary employment in the Spanish labor market as a whole moved from less than 10% to over 30% in the same period.

liberalization of temporary contracts after 1984 was that it generated a huge segmentation in the Spanish labor market between unstable low-paying jobs and stable high-paying jobs, without helping to reduce unemployment.

Shifting direction in light of these concerns, in 1994 new regulations limited the use of temporary employment contracts to seasonal jobs, the definition of fair dismissals was widened by including additional “economic reasons” for them. In practice, however, employers continued to hire workers under temporary contracts for all types of jobs. This perceived ineffectiveness of the 1994 reform led to a new reform in 1997, which was eventually extended in 2001. The 1997 reform created a new type of permanent contract, with lower severance costs in case of unfair dismissal and fiscal incentives in the first two years of the contract (i.e., reductions of employers’ payroll taxes).⁸ However, rather than trying to limit the use of temporary contracts by further possibly ineffective regulation, these new reforms widened the employers’ incentives to hire workers from certain population groups under permanent contracts.⁹ The 2001 reform essentially extended the 1997 reform by applying lower subsidies to more worker groups than the previous reform (García-Pérez and Muñoz-Bullón, 2011). These subsidies, however, have not reduced the use of temporary contracts or increased workers’ employment stability but, on the contrary, had only negligible effects on both dimensions because of the important side-effects (basically substitution effects) such subsidies have entailed (García-Pérez and Rebollo, 2009).

⁸ This was the first time (in 1997) since the Workers’ Statute in 1980 that severance costs were changed for permanent workers in Spain.

⁹ In particular, the 1997 reform reduced dismissal costs for unfair dismissals by about 25% and payroll taxes between 40% and 90% for newly signed permanent contracts and for conversions of temporary into permanent contracts after the second trimester of 1997 for workers under 30 years-old, over 45 years-old, the long-term unemployed, women under-represented in their occupations, and disabled workers (Kugler et al. 2005)

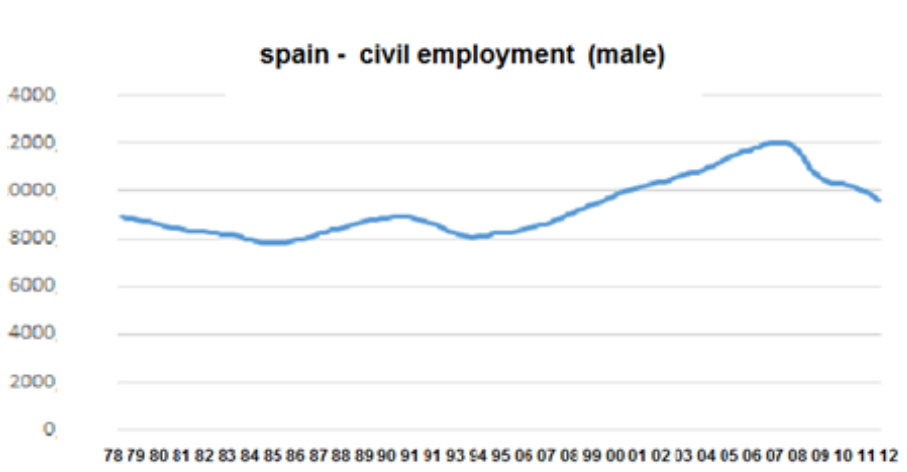
During the last decade, the Spanish economy plummeted from a healthy 3-4 annual GNP growth through 2006, driven also by a strong construction boom, to a dramatic -4% of 2008. Recovery has been difficult, but now Spain's economy may be turning a corner. By the end of 2016, the country is on track to meet, and probably exceed, the government's projection of 2.3% growth. Unemployment is still at 20% but the staggering peak of 27% is far away.

The last labour market reforms implemented in 2010 and 2012 have surely contributed to this result. The first one – among other provisions – facilitated the use of permanent contracts with reduced severance pay in the case of unjustified dismissal.

A second major reform was undertaken in February 2012. This comprehensive reform had two main elements. First, it gave priority to collective bargaining agreements at the firm level over those established at the sector or regional level and made it easier for firms to opt-out from a collective agreement and to implement internal flexibility measures as an alternative to job destruction. Second, the provisions of Spain's Employment Protection Legislation were significantly modified, reshaping the definition of fair economic dismissal, reducing monetary compensations for unfair dismissal and eliminating the requirement of administrative authorisation for collective redundancies. In addition, a new permanent contract for full-time employees in small firms was introduced, entailing an extended trial period of one year.

One crucial reform has dealt with labor laws. A 2012 package altered Spain's notoriously rigid Derecho Laboral by making it easier for employers to dismiss workers if a business needs to do so for economic reasons and reduced the required compensation for dismissals deemed "unfair" under law and facilitated the hiring of employees on a

probationary basis. According to the OECD Review of the 2012 Labour Market Reform in Spain, despite the still difficult economic environment, more firms have been hiring workers on permanent contracts since the 2012 law was passed. Furthermore, this report also credits Spain for improving the competitiveness of firms by facilitating firm-level adjustments in wages and working time in response to a shock. The OECD estimates that more than half of the 3.2% decline in labour costs in the business sector between the end of 2011 and the second quarter of 2013 is due to the labour reform package. In 2013 the reform has also encouraged firms to hire more workers on permanent contracts, by some 30% on average, although the effect on hiring on temporary contracts appears more limited. However, this report also noted that Spain's relatively generous unemployment benefits were an important cushion because labor market reforms will force some workers out of work, but it also warned they should be strongly conditioned and withdrawn for people who refuse job offers. Spain's spending on jobless benefits is equivalent to around 3 percent of economic output, the highest level in the OECD, while spending on more active policies, such as job training programs, is only 1 percent of gross domestic, mostly in tax breaks and other bonuses for companies that make new hires. Spain remains one of the OECD countries with the most generous severance pay requirements.



2.3 Germany

The German economy underwent a long expansion between 1970 and 1991, interrupted by minor cyclical fluctuations. Real GDP grew at annual rate of 3.4% in this period. West Germany employment changed little and only showed a pronounced upswing in the unification boom, leading to an overall expansion of employment by 9% compared to 1970. In the following 21 years up to 2012, then in unified Germany, real GDP increased by 32% and employment replicated the previous 9% growth. Nonetheless, unemployment was trending upwards in both periods for most of the time, leading to a peak of the unemployment rate (11.7%) after the dotcom recession in 2005.

The German demography was undergoing important changes after the German reunification, including the higher labor market participation of women and the net migration of 2.7 million people from the former Soviet Union (until 2004: 2.7 people with German and Jewish origin).¹⁰

¹⁰ As a result, the potential labour supply estimated by the BA (Federal Employment Agency) – including all persons who were working or willing to work – climbed from 43 million in 1991 to 45.0 million in 2005 and added another 500.000 until 2012.

While there have been no major labour market reforms in the 1990s (instead, labour market policy was focused on early retirement and similar programmes; see Wanger 2009¹¹), the early 2000s were characterized by a lively debate about weaknesses of German employment regulations. At that time, German labour market institutions were often seen as the major cause of the high unemployment (Sinn 2003). The enactment of the largest labour market reform package in reunified Germany in 2003-2005 – the so-called Hartz reforms – largely followed this interpretation (Klinger & Rothe 2012). At the time when the Hartz reforms were discussed in 2003, GDP was dipping downward by 0.7% and the unemployment rate reached 10.5%¹² The first three parts of the reform package, Hartz I-III, were concerned with creating new types of employment opportunities (Hartz I, incl. subsidies for starting self-employment), introducing additional wage subsidies (Hartz II), and restructuring the Federal Employment Agency (Hartz III). The last step of the reform package, the Hartz IV reform of 2005 significantly reduced the unemployment benefits for the long-term unemployed.

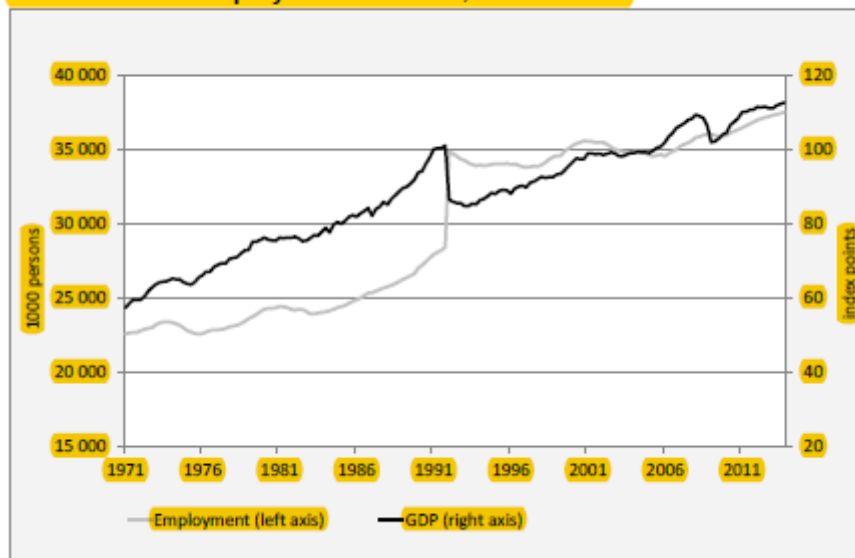
The employment developments shown in Fig. 2 suggest that the Hartz reforms were quite successful. Between 2005 and 2008 the unemployment rate fell from 11.7% to 7.8%. Unemployment barely increased during the Great Recession and then continued its downward trend reaching 5.9% in 2016. While Klinger & Rothe (2012) argue that the Hartz reforms have had some effect, they also show that it has been limited. Dustmann et al. (2014) add that major

¹¹ Labour market policy mainly focussed on setting up retraining schemes or even employment substitutes for East German unemployed (so-called ABM). Another instrument which was used on a large scale was partial retirement according to laws passed in 1989 and 1996. The philosophy of this program was to grant public wage subsidies for a reduction of working time for older workers (making up for larger part of their wage and retirement benefit loss) if a former apprentice or an unemployed person was employed in turn.

¹² In addition, youth unemployment was at 9.9% and the unemployment rate of older workers below pension age (50-65) increased to 25%.

characteristics of macroeconomic developments such as the trend in wage moderation (as compared to major trading partners of Germany) already set in well-before the Hartz reforms. Other factors could be added. First, there was a strong business cycle upswing before the financial crisis. Second, there was a turnaround in demographic net flows in the labour market in about 2005. Third, there has been a pronounced drop of productivity growth since the financial crisis (Klinger and Weber 2014). Firms continued hiring on a net basis even in the crisis year 2009 (that registered a 5.6% drop of GDP), an unprecedented event in history. Weak investment may have been behind the productivity drop after 2008 (average annual growth rate +0.7% from 2008-2015) in addition to the increased use of part-time work, marginal employment (so-called minijobs, paying up to 450 Euros currently) and low-paying agency work.

Figure 2
Level series of employment and GDP, 1971 to 2013



3. A SHORT SURVEY OF RELEVANT LITERATURE

Countless academic studies by economists investigate the consequences of long-term persists due to obsolescence of human capital, stigma and signalling of “bad” performance, all of which result in wage loss at the time of re-employment (Blanchard and Summers,1989; Layard and Nickell, 1987; Machin and Manning, 1999; Arampulam 2000; Guell and Petrongolo 2007). The relevance of these contributions to this paper is modest as all refer to “long term unemployment” as defined by official statistics, namely “longer than 12 months” and only at times “longer than 2 years”.¹³ For instance, K. Tatsiramos (2010) estimates unemployment duration for a number of EU countries based on ECHP data, but his findings are much more optimistic than those reported here..

The negative relation between the duration of joblessness and the probability of being rehired is an important and more relevant issue: Torelli and Trivellato (1989) study youth unemployment duration in Italy,confirming state dependence; their results are replicated by Addison, Centeno and Portugal (2004). Some years before Van den Berg and Van Ours (1994 and 1996) had indicated that state dependence persists also when selection issues related to workers’ heterogeneity are included in the analysis. According to Machin and Manning (1999), however, state dependence and workers’ heterogeneity cannot be identified separately without untenable assumptions. Very recently K.Abraham, J. Haltiwanger et al. (2016) address the same issue in the analysis of U.S. unemployment during the 2007-2009 recession: they control for heterogeneity using information on individual employment experiences prior to becoming unemployed, but find that unemployment duration is strongly

¹³ In the U.S. long-term unemployment is defined as exceeding 27 weeks.

duration dependent and reject the “bad apple” (heterogeneity) explanation

Unfortunately, the crucial issue of the effective length of unemployment/non-employment spells is seldom documented. Mroz and Savage (2006) report re-employment probabilities for US youth who experienced unemployment spells of 10 years or more; evidence of the same order of magnitude is provided by P. Gomes (2012) in his study on the UK; Mussida and Sciulli (2015) explore the Italian case and provide estimates of re-employment probabilities after layoff which are consistent with our findings. Sullivan and Von Wachter (2012) report that for high-seniority male workers, mortality rates in the year after displacement are 50%–100% higher than would otherwise have been expected. Even twenty years after displacement, they estimate a 10%–15% increase in annual death hazards. If such increases were sustained indefinitely, they would imply a loss in life expectancy of 1.0–1.5 years for a worker displaced at age forty.

The work of A.L. Krueger (2015) provides an important perspective on the problem of unemployment and non-employment duration. While not denying the well-known issues of skill obsolescence and discrimination on the part of the employers, Krueger strongly emphasizes the social problems associated to very long non-employment duration: changes of individual lifestyles, family and childbearing projects, increasing poverty and welfare at large. Studies on the dualization of the labour market were also relevant for this paper, and more affine to Krueger’s recent work. Warnings about the very long-run dangers of dualization were launched (Blanchard and Landier (2001), Blanchard (2006) and G. Saint Paul (2004): while the *insider* workers with permanent open-end contracts are sheltered by the welfare institutions, the protection afforded to the *outsiders*

is almost nil. Persistent dualization may undermine cohesion, lead to social dumping and political unrest. Needless to say, the “disposed” individuals of this paper are *outsiders* in every respect.

Sociologists have paid more attention than economists to the dramatic impact of very long unemployment on lifestyles. K.S. Newman (1988) express deep concern over millions of people who became downwardly mobile in the USA between the mid 60' and the mid 80's as a result of downsizing, plant closings, mergers, and divorce. Those who have suffered the most were the middle-aged computer executives, the blue-collar workers phased out of the post-industrial economy, the middle managers whose positions had been phased out, and once-affluent housewives stranded with children. Similar conclusions had been reached at the same time in Australia by A. Mc Clelland and F. McDonald (1998). D. Keating (2009) discusses the enduring impact of long-term unemployment on developmental health. J. E. Brand (2015) indicates declines in psychological and physical well-being, loss of psychosocial assets, social withdrawal, family disruption, lower levels of children's attainment and well-being. Van Horn et al. (2014) report the results of a field study on a sample of unemployed men in New Jersey: 13% had been unemployed more than 2 years, and two thirds of them reported a high degree of stress in their family relationships.

4. The measurement of survival

4.1 Methodology

The basic statistic used in this exploration is labour market survival¹⁴. Survival is estimated by counting the number of individuals employed since a given starting year and who are still present in the database at the end of any given observation period, whether or not they have had unemployment spells in the course of their career. The non-survivors are the individuals who have disappeared from the database. If anyone is unobservable for a period of time and then re-appears as employed, that period is considered to be an unemployment spell. Such spells may last for two, three, four years (additional schooling is, obviously, a likely possibility for young men), but they should ultimately lead to re-entry in employment or self-employment. Our concern refers to individuals still a long way from retirement age who seem to disappear altogether from the labour market after a regular job spell.

Fig. 5 exemplifies the counting method for one cohort of 8 individuals - A, B,...H - whose work histories are observed between 1986 (the year of entry for all) and 2008. Let the survival count take place in 2008. In 1993 we count the following survivors: A, B, C, D, F, G and H (yielding a survival rate in 1993 of $7/8 = 0.875$), as E exited two years after entry and does not reappear. In the year 2000 the following have survived: A, B, C, D, G and H, yielding a survival in 2000 of $6/8 = 0.75$.¹⁵

Needless to say, the survivors may have had several employment and unemployment spells during the observation period, provided they re-enter official employment before the end of the window.

¹⁴ In statistical literature a survival function is the probability that a one-time-event will occur beyond a specific period of time. Our use of the term “survival” is related, but somewhat different.

¹⁵ Some individuals may, nonetheless, reappear at some later date. This is the truncation problem discussed in the next section 4.3.2.

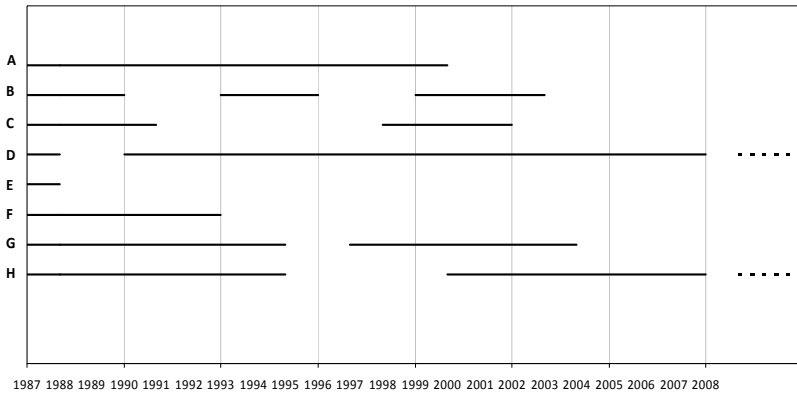


Fig. 5 - Example: counting survival.

4.2 Some notes of caution on comparative analyses of survival

The survival rates of the three countries under study are as follows: Italy 79% (1987-2012), Spain 93% (1991-2012) and 95% Germany (1993-2012).

Caution is due when comparing survival schedules among different countries and contexts, and drawing comparative conclusions.

In first place, the survival schedule depends on the length of the observation period. Our administrative sources deliver data through 2012, but the starting point is different. Backward extrapolation from the start of the observation window (as we do in section 7 in order to compute comparable LTNE statistics) yields reliable results only if performed with due attention to past events.

Second, entrants must be in the same age range: age has an important impact on survival, generally the younger entrants survive longer than their older peers.

Third and last, but not least, not all administrative databases include the same forms of working activities, Some include all private employees but leave out self-employment (Germany); others include self-employment but leave out seasonal workers (Italy, agricultural sectors); yet others may exclude certain contract typologies. Some include public

sector employees, some do not. This is a delicate problem to be handled appropriately using alternative databases and/or *ad hoc* techniques.

4.3 Truncation

Truncation at the end of the observation period leads to upward or downward bias of survival. As widely documented in the literature, re-entry at work after a non-employment spell is robustly state-dependent (H. Farber, 2003 and many others).

Hires taking place shortly before the end of the observation window may be followed by a large number of jobless spells lasting through the end of the window (fig.6). At first sight they appear as non-surviving positions. But many of the workers involved in such spells are back at work within a short time thereafter (1-2 years) and will cause of a downward biased estimate of survival.

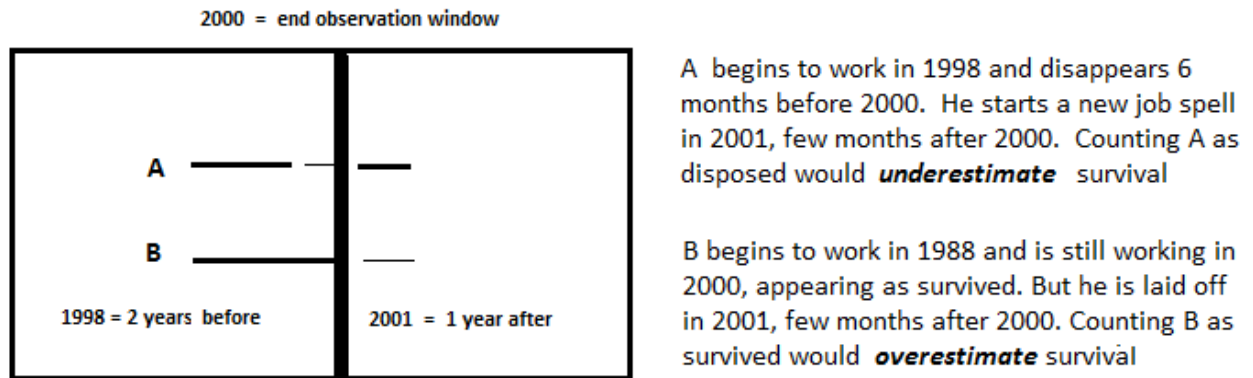
The available databases (WHIP, SIAB, MCVL) allow the observation of all such individuals. Hence bias can be eliminated simply by not counting them as non-survivors.

Truncation may bias estimation also in the opposite direction: a number of job spells active at the end of the observation window, may be terminated shortly following its end. This will upward bias survival: as in the previous case, the distortion can be eliminated by excluding from the count of survival all such occurrences.

The proposed unbiasing procedure is somewhat arbitrary to the extent that the length of the period taken into consideration before and after the end of the observation window is selected on the basis of empirical evidence. The observed bias is roughly constant, independent of the

business cycle: the unbiasing procedure reduces survival by 1-2 p.p. throughout the whole observation period.

Fig. 6 - Two examples of truncation bias



5. LONGITUDINAL EMPLOYER-EMPLOYEE DATA-BASES

5.1 ITALY

We use the WHIP longitudinal database originating from Social Security records, a large sample (1:90) representative of the universe of employees of the private sector, of the non-tenured employees of the public sector, of the self-employed and the professionals, as well as all workers covered by atypical (non-standard) contracts. As of today the WHIP database covers the 1987-2012 period. The Social Security Administration has provided an additional database (Casellario degli Archivi) which integrates WHIP's observation window with the working careers of individuals who move from dependent work into the public sector til 2012.

While prevalent among youth, premature exit takes place at all ages, and young non-survivors will no longer be young as time elapses. WHIP covers individual working careers from entry to retirement at monthly frequency, with data on

skill level, wage, industrial sector, firm size and geographical location, including spells of temporary layoff subsidized by Earning Funds (C.I.G., Cassa Integrazione Guadagni). It provides detailed information on workforce dynamics, composition and relative wages, and official unemployment, while it does not identify unemployed individuals not entitled to draw benefits. Data on educational attainment are, instead, unrecorded in the WHIP database.

The WHIP database is an (almost) ideal instrument for the study of job matching and employment mobility. It provides much richer detail than LFS-type data, as it captures all employment and non-employment spells at monthly frequency¹⁶. Young people are observed upon entering the "official" labour market and their entire careers are tracked. School leavers in search of first job are instead unobservable as they enter the Social Security records only upon being officially hired. Many of the non-survivors may have become inactive by discouragement after a long time in joblessness; some are unemployed, but not eligible for unemployment benefits; and a few may have reached retirement age at the time of observation. Many have joined the irregular economy. Some may have left the country¹⁷ and there may be a few others who are of independent means.

5.2 SPAIN

¹⁶ Job spells lasting only few days may therefore be undetectable in WHIP. Especially in recent years the (utilization of "contract work" has rapidly risen: workers are hired by agencies on a semi-permanent basis, and get leased on demand for jobs that may last only a few days (typical examples are waitors required for special events, actors for the few days of their engagement, nurses on call, etc.). WHIP observes the semi-permanent position with the leasing company, but fails to catch each single job spell.

¹⁷ Foreign workers have been deleted from the database: those who return to their home-country after leaving a position in Italy would be mistakenly counted as non-survivors. We miss instead, at least for the time being, Italian citizens, mostly University graduates, who find a job abroad and leave the country. Their number has rapidly increased in very recent years, but it was relatively small throughout the period of this investigation.

The Spanish labor market is studied by means of the administrative MCVL (Muestra Continua de Vidas Laborales) data-base that covers all workers, whose first employment spell was when they were between 16 and 25 years old. MCVL is a representative sample of the population registered with the Social Security Administration in the reference year. The raw data represent a 4% random sample of the reference population (pension earners, unemployment benefit recipients, employees and self-employed workers) that amounts to approximately 1,2 million individuals each year. The main characteristic of the MCVL is that it offers retrospective information, i.e. the entire labor history of the workers registered with the Social Security Administration during the year the sample is extracted. Moreover, this dataset has a longitudinal structure from 2005 to 2014, meaning that an individual who is present in a wave and remains registered with Social Security stays as a sample member. In addition, the sample is refreshed with new entrants, which guarantees the representativeness of the population in each wave.

In our estimates, we use the last six waves(2006-2014), so that only those workers without a connection to the Social Security Administration during at least one day in the last six years are excluded from our sample. The survival figures are based on a final sample of 271.753 males (those whose first employment spell took place before age 30). The total sample of males in the MCVL dataset is composed of 650.008 males, of which only 412.652 male workers have information on wages.

The MCVL dataset is a 4% random sample of the reference population (pension earners, unemployment benefit recipients, employees, and self-employed workers) that amounts to approximately 1,2 million individuals each year.

Only those workers without a connection to the Social Security Administration during at least one day in the last six years are excluded from our sample. Hence, in this database those with such extremely low attachment to the labor market are in some sense under-represented, mainly if they began working much earlier than 2006.

Our sample contains 447.130 individuals careers with wage data. In the period 1987-96 there are 98.183 male workers entering at age 16-30. The number of new sample entrants each year fluctuates between 6.000 and 13.000, following the ups and downs of overall employment (fig.). . As in Italy, there is no information about what these people do after exiting from Social Security data. Some of them, mainly immigrants, are leaving Spain. Others, mainly young workers and low-qualified women, abandon the labor force or go to the educational system.

5.3 GERMANY

The SIAB 7514v1 which we use in this paper is one of the administrative datasets supplied by the Institute for Employment Research (IAB; Institut für Arbeitsmarkt und Berufsforschung) of the Federal Employment Agency or BA (Bundesagentur für Arbeit). The BA administers the German unemployment insurance and therefore has access to social insurance records as well as unemployment benefit data and labor market policy program data. The SIAB covers the data with a sample/population ratio of 2%, where the population consists of the people registered as dependent employees or recipients of unemployment benefits/participants to labor market policy programs at some point in time between 1975 and 2014. All the data are contained in the Integrated Employment Biographies (IEB).

The database also contains a limited number of administrative data of establishments: number of employees, mean establishment wage, industry code. These data stem from the Establishment History Panel (BHP) of IAB that is contained in a separate file and can be merged to the IAB data.

The estimation of survival requires both administrative data (social insurance and unemployment insurance registers) and survey data. Administrative data of dependent workers are provided by the IAB in the SIAB database. Self-employment and civil servant spells are not covered by the administrative databases as they do not contribute to the same social insurance schemes as dependent employees. The IAB survival estimate must, therefore, be integrated with information retrievable from survey data. The SOEP database released by DIW includes the relevant information on individual working careers: dependent work, apprenticeship, work as civil servant and self-employment, as well as additional qualitative information and longitudinal weights for a good number of entrants. The integration procedure works as follows. Each year after entry we count the SOEP workers (German nationals¹⁸) who shift from dependent positions into self-employment or civil service and do not return to dependent work until the end of the observation window.¹⁹ The share of such job shifts is then added to the SIAB survival of dependent employees. The additional survival attributable to self-employment and civil service is increasing in the observation window: it amounts

¹⁸ The two largest other nationalities are Turkish (7.6%) and Italian (1.1%) in SIAB. In the first step of analysis, we kept only the 1099 German nationals as it is impossible to identify guest workers in SIAB.

¹⁹ This is the case also for civil servants who begin as apprentices (in public service) or serve a probation time under normal social insurance.

to 15.4% after 19 years, yielding an overall survival rate of 95%, 19 years after entry.²⁰

6 - Survival: empirical estimates

A graphical analysis of survival is performed on cells defined by cohorts of young male employees observed at one-year intervals in employer-employee linked longitudinal panels. The databases of Italy, Germany and Spain allow to estimate survival along similar but not identical observation periods, and on similar but not identical dimensions.

We restrict analysis to male workers aged 19-30 at the time of their first job and track their careers in the regular” labour market.

The following dimensions are relevant:

- age group of the relevant cohort
- year of first entry in the labour market
- duration of first employment spell
- economic branch of initial activity
- geographical area
- first employer’s size
- mobility (movers vs. stayers)
- skill level
- education level
- entry wage
- wage dynamics as the career proceeds

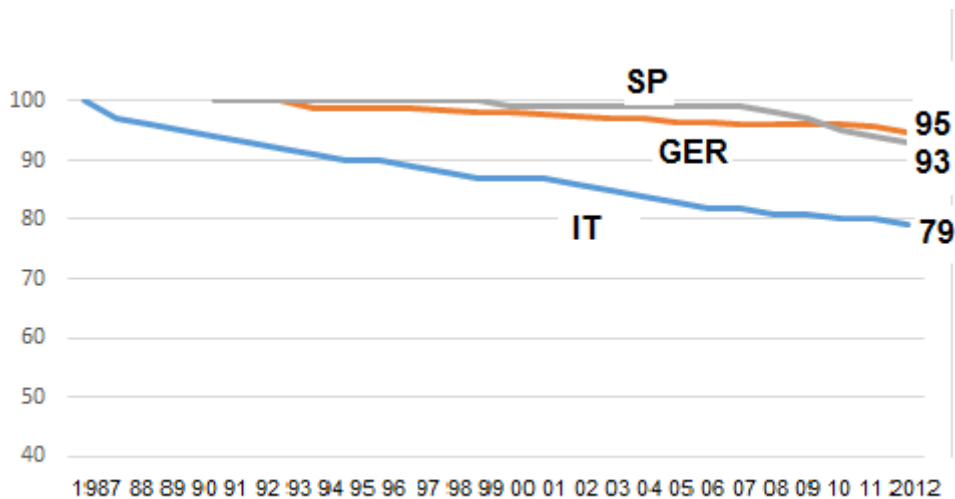
6.1 A survey of results

²⁰ The SOEP selection includes individuals who entered dependent work between 1983 and 1993.

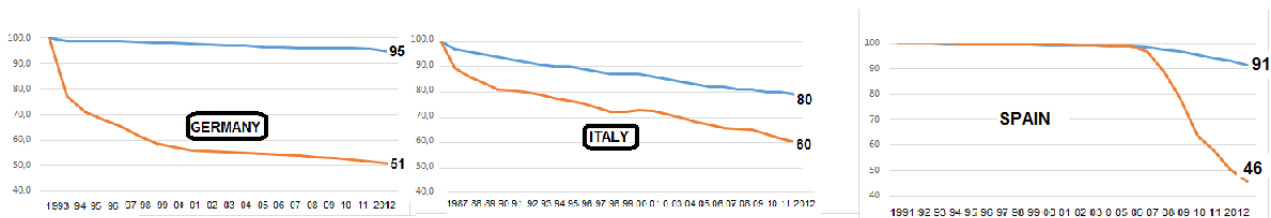
The length of the observation windows is somewhat different in our three countries: all, however end in 2012. The first observable year of entry is 1987 in Italy, 1993 in Germany and 1991 in Spain. Also the entrants' age is not the same: 19-30 in Italy, 16-30 in Germany and Spain. The interpretation is not identical and will be discussed case by case.

- (i) Italy's overall survival rate is 79%. Out of 100 new male entries at age 19-30 at the start of their careers, 88% "survive" in the regular labour market after 10 years, 86% after 16 years in 2003, 82% in 2009, and only 79% in 2012, 25 years after their initial career. Survival among individuals who become self-employed in the course of their career is somewhat higher. Their number was close to 20% of all entrants in the 80s and 90s, and decreases to 13% toward the end of the observation period. The survival rate in Spain is 93%, much higher than Italy's, despite an unemployment rate steadily above 20%. The explanation probably lies in the fact that in Spain unemployment benefits are modest but available to all: therefore the great majority of the unemployed will not drop out of the labor force as it happens in Italy. The 2008 crisis, however, is followed by a drop of survival, more in Spain than elsewhere. The survival rate in Germany is even higher, as it stands at 95%. This is not surprising in view of the strength of the German economy, its much lower unemployment rate and, here too, generalized access to generous unemployment benefits. Self-employed individuals starting their career as

dependent workers account for 16 pp. of the 95% survival.

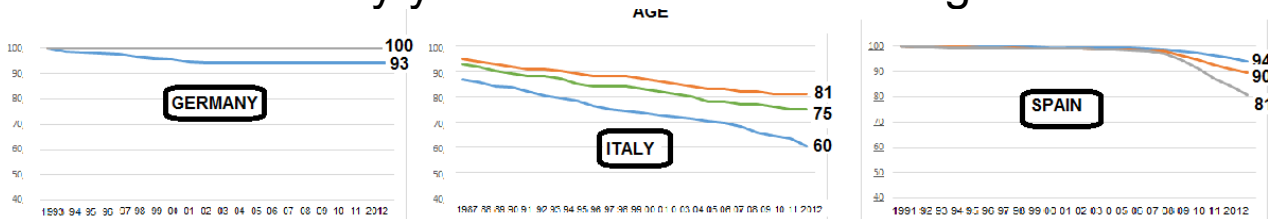


- (ii) Not surprisingly, in all three countries survival is much lower among foreign workers than native ones. However, while differences with natives are still substantial, in Germany workers of Turkish origin survive much longer than peers of any other nationality, a clear indication of the sound policy of integration carried out towards the Turkish minority

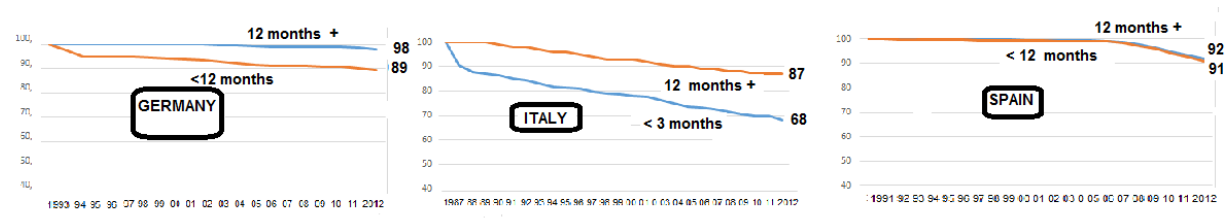


- (iii) The impact of age at the time of entry is similar in all three countries, with young entrants surviving longer than their older colleagues: the difference is much more pronounced in Spain (16 pp. between

the youngest and the oldest cohorts) than in Italy (only 8 pp.). It is, instead, slighter in Germany. Retirement age is uninfluential on this result as even the few who start work in dependent employment at age 30 will be in their fifties in 2012, still many years before retirement age.

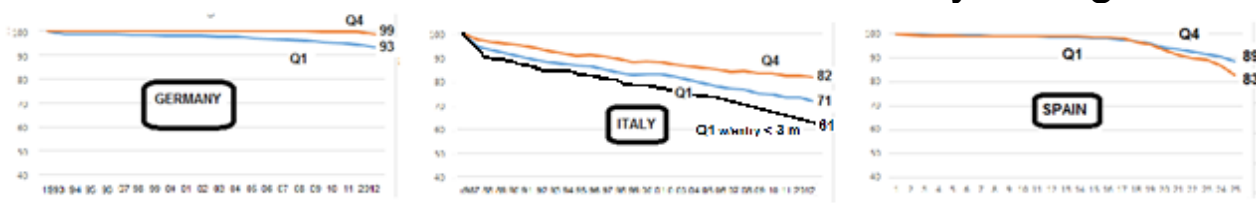


(iv) The length of the first employment spell provides an indication on how employers evaluate the ability of the perspective recruits. It is reasonable to assume that employers who interview a promising youth will offer him a relatively longer starting contract than a less interesting candidate. In Italy the survival of workers starting in 1987 with a long initial spell of employment (12 months +) is about 87%, whereas it drops to 68% for those whose first employment spell lasts less than 3 months. The latter are characterized by an abrupt drop of survival in (t+1) and (t+2), followed by a steady decline thereafter.²¹ A similar pattern is found in Germany and Spain, although the differences are less pronounced as the very short starting spells (less than 3 months) have not been recorded..



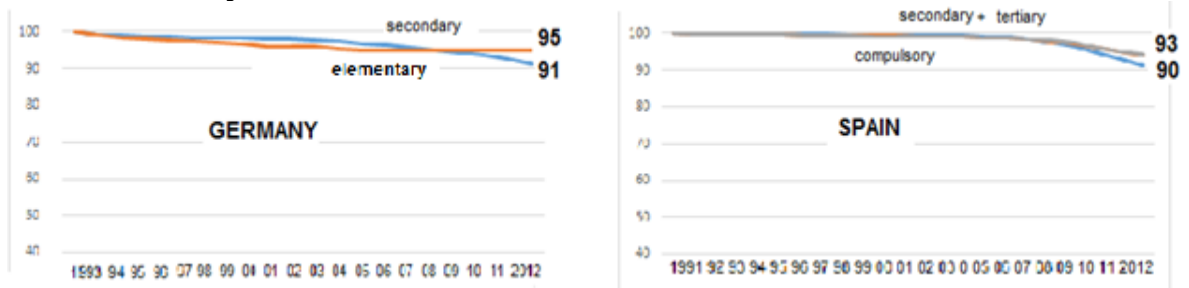
²¹ While about 80% of all entrants leave their job or are dismissed within two years of initial hire, the majority will re-enter after one or more spells of unemployment²¹

- (iv) An additional indicator of individual ability as it is appraised by the employers at the time of one's first hire is his starting salary: a "good" worker will presumably be offered a higher wage than a "bad" one and his survival is likely to be higher for the same reasons indicated above. The differential survival between workers (here, the blue collars) with starting salary in the upper quartile (Q4) of the distribution and those in the lowest quartile (Q1) is remarkable in Italy and Spain, smaller in Germany: nonetheless a clear indicator that human capital is valued by the employers. Italy's schedule displays also the survival of those who are likely to be the very least endowed, namely with starting wages in Q1 cum initial job spell < 3 months. Overall, bad starts have a strong and persistent effect on future labour market outcomes, even when the future lies 15-20 years ahead. In addition, the EHCP exploration (described in section 9) suggests that the non-survivors are likely to be the least endowed also in terms of education and family background.

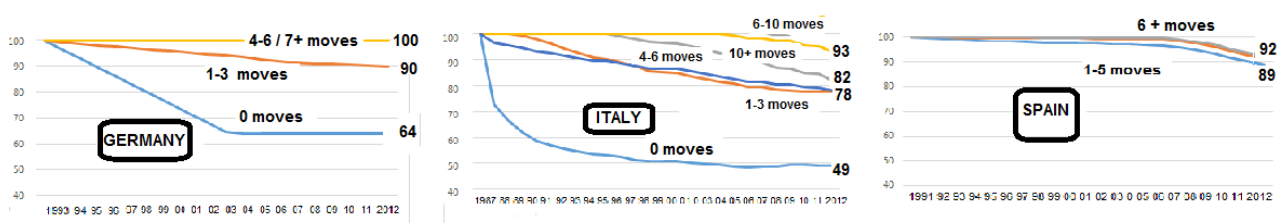


- (v) The education level is observable in Spain and Germany, but not in Italy as schooling is not reported in the Italian administrative databases.. It has a predictable positive impact on survival, but differences are quite small: survival of the less educated reaches 90 and 91% respectively against

93 and 95% for the university graduates. Evidence from field studies (EHCP, section XXX) indicate that educational differences have a similar impact also in Italy.

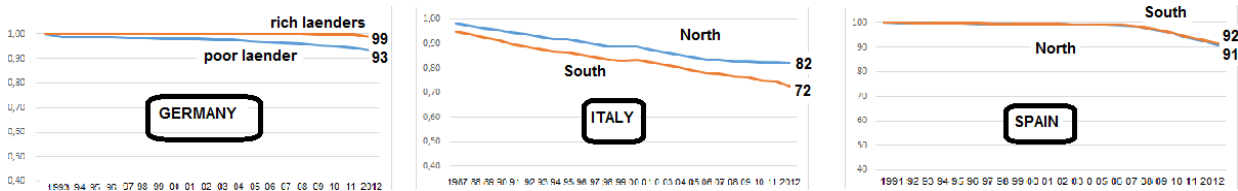


(vi) The impact of mobility on survival is very important (geographical, as well as job-to-job, often with intervening unemployment spells between job switches). Workers who perceive their job at risk start searching for more solid positions, and many appear to be quite successful. In Germany and Italy the stayers (no moves) are shown separately and display a survival rate which is much lower than their moving colleagues: 64% and 49% respectively. Individuals who have moved up to 3 or 5 times in their career survive much longer in Germany and Spain (90 and 89%) and somewhat less in Italy (78%). Frequent movers survive even longer.

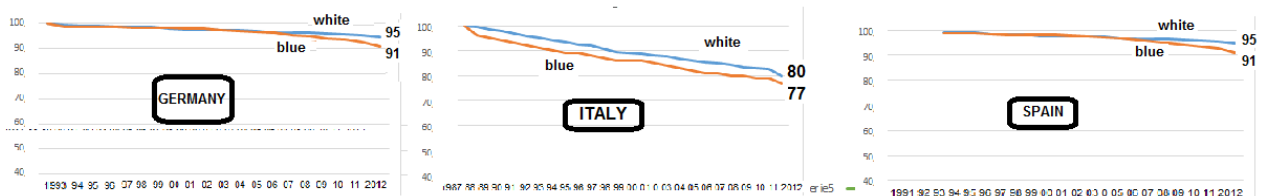


(vii) The employers' geographical location reflects the different degree of industrialization and regional wealth. The survival differential is marginal in Germany (the landers of

the West are the rich ones compared to those of the East) and Spain, while they are somewhat larger in Italy.

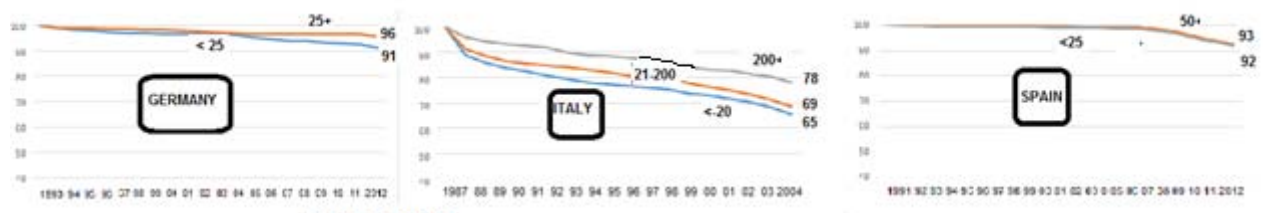


(viii) The qualification divide is also important, in line with the idea that human capital makes a difference: white-collars survive longer than blue-collars everywhere: 95% vs. 92% in Germany, 95% vs. 91% in Spain, 80% vs. 77% in Italy. In this respect, it would have been interesting to have more detailed data by occupational profile, but, for the time being, they are not available.

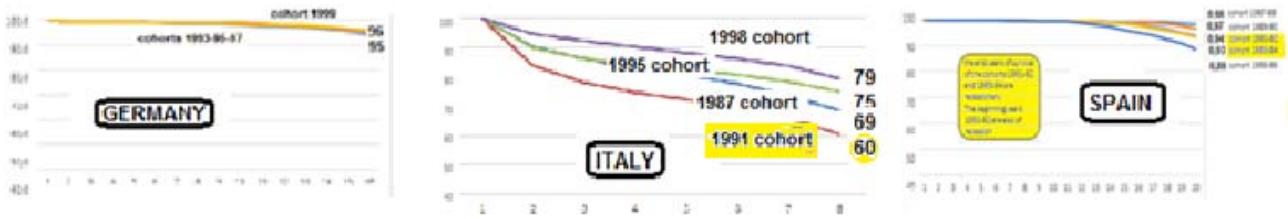


(ix) Employers' size has a modest effect on survival in Germany and Spain where firms are observed above and below the 25-employee threshold. This threshold is probably too low to display interesting differences. In Italy, where establishments with more than 200 employees have been observed separately the difference is larger and in the expected direction of longer survival. To be sure, lifetime employment in the same establishment was frequent many years ago, but no longer nowadays. As a matter of fact

there is a vast body of economic and sociological literature indicating that higher work attachment and loyalty prevails in small establishments where a variety of on-the-job duties are frequently offered instead of repetitive tasks, more opportunities for expanding and upgrading knowhow, personal ties established with peers and employers. There is also empirical evidence that small firms place a higher value on human capital than large enterprises. This fact does not translate, however, into longer survival as small firms are more exposed to the turbulence of economic life, turnover is higher, closures and bankruptcies are frequent events.



(x) The business cycle does not have a clear impact on survival (recessionary years have been shaded). In Germany we observe a 15-year window for each cohort of entrants (1993, 1995, 1997 and 1999): there is practically no difference between the recessionary 1993 and 1995, and the slightly expansionary 1999. In Italy the observed window is only 7 years long: 1991-92 were years of heavy recession leading into a long stagnation: entering cohorts in 1991 are indeed characterized by very low survival. The economy, while never recovering the expansion of the late 80's, moved into a slow upturn in 1995 that lasted through the early 2000's. Spain's observed window is longer but survival differences are indeed quite small.



7 LONG-TERM NON-EMPLOYMENT DURATION

The average duration of continuous “long-term non-employment” (LTNE) is obtained as follows. Consider the exemplified survival function for a given cohort (fig. 7). Survival at $(t+13)$ is $S = 0.68$, implying that at the date of $(t+13)$ the non-employment rate specific of that cohort is 32%. Of the 32% non-employed at $(t+13)$, a few have left the job for the full period of 13 years; 16% ($= 100-84$) for 5 years; and very few, less than 1%, for 1 year between years 12 and 13. In this example the average LTNE is approximately equal to 6.5 years.

More precisely, let $s(t)$ be the downward sloping survival function. Average LTNE duration is given by:

$$\text{average LTNE} = \int_0^T tf(t)dt$$

where $f(t) = s(t) / K$ is the p.d.f. subsumed by the survival function $s(t)$. Average LTNE is a lower bound: workers who have survived through T may have had interrupted unemployment spells of any length in the course of their career, that get left out of this calculation. Survival implies only that they have reappeared in the database before T .

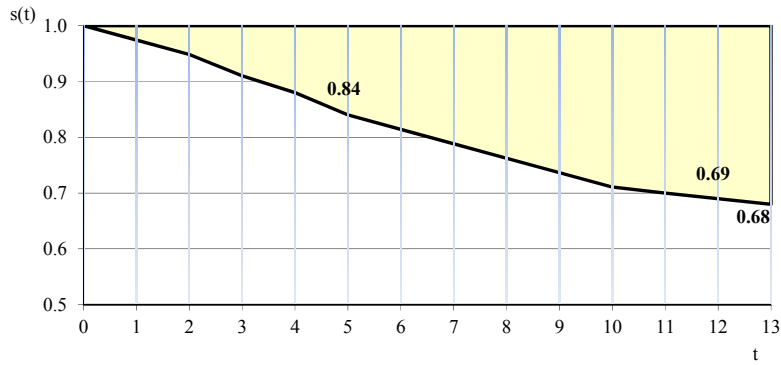


Fig. 7 - Survival and “long-term-non-employment” duration (LTNE).

Notice that while $s(t)$ is seldom known, LTNE can be easily calculated from the empirical survival curve. A quick and approximate estimate of LTNE is one half the length of the observation period, its precision being highest when survival is a straight down-sloping schedule. When it is upward concave, the LTNE estimate is downward biased.

An important issue must be raised at this point. The amplitude of the observation window depends on the researchers’ objectives as the number of people who will be counted as long-term non-employed strictly depends on its length.²² A reasonable choice consists of fixing the starting date in order to include all the individuals in working age, i.e. those who will not be retired by its final date. This requires a compromise as the retirement rules are not identical in our three countries. If the starting date falls before the available observation window it is necessary to perform some backward extrapolation of each country’s survival schedule under two assumptions: (i) survival in the years preceding the available observation window is about the same as the one estimated from its actual beginning; (ii) the number of new labor market entrants in the years of backward

²² The average duration of LTNE is, by construction, about one half of the observation period: hence the crucial difference when comparing different countries is not the average duration of LTNE (bound to be about the same), but the number of LTNE individuals involved in that count, determined by the estimated survival rate at the end of the observation window.

extrapolation follows the dynamics of overall employment in each country. The common observation window chosen for this exploration is 1980-2012. In this way we include among the LTNE's all the individuals who are still in working age at the end of the observation period: maximum age ought to be 62, as people aged 30 in 1980 will be 62 in 2012. *De facto* the upper limit of the oldest age bracket may reach 66 as retirement age is not identical in Italy, Germany and Spain, and has been the object of changes during the observation window.

Tab.3 displays the estimated magnitude of continuous long-term non-employment for the three countries under observation, the average LTNE duration and the ratio of LTNE individuals to the male population in working age. In order to assess the relative magnitude of LTNE, the male population in working age (16-65) provides a better benchmark than either the male labor force or total employment for the ambiguity inherent in the LFS accepted definitions of these categories. Not surprisingly in Germany this ratio is 2,6% compared to 8,6% in Italy and 4% in Spain. The 2011 unemployment rates were 10,7%, 5,4% and 24,8% in Italy, Germany and Spain respectively.

Tab-.3 - LTNE magnitude and duration (2012) vs. OLF 2011 (“out of the labor force but willing to take a job”)

	OLF- male (000)	LTNE (000)	LTNE/mwp	LTNE duration (years)	UN- rate
Germany	332	648	2,6	16,7	5,4
Italy	2092	1608	8,6	14,2	10,7
Spain	643	610	4,0	14,7	24,8

The number of OLF (estimated from Labor Force Surveys) and LTNE are quite close in Italy and almost

identical in Spain. The difference is, instead, larger in Germany, a likely consequence of the generosity of the unemployment benefits that leaves no incentive to report as OLF.

The average duration of LTNE is to some extent “built-in”, as the length of our observation window is 32 years. It is not, therefore, surprising to find it to last between 14 and 17 years on overall average. The oldest 56-66 group is relatively small as many individuals have retired before the end of the observation period: the remaining ones have been continuously jobless for more than 25 years. The 46-56 and 34-51 groups are the most numerous, with LTNE durations between 21-24 and 17-20 years respectively. The dramatic aspect of the duration is that about half of these people are prime-age adults, the majority of other half being still in working age who are spending most of their life outside the labor market. And the non-employed of the next two, less numerous, age groups (24-39) are still young people who have been excluded for as long as 5-15 years. Some of the youngest too, age less than 27, have been continuously jobless for up to 4 years.

There are noticeable country differences in the shares of each age group. In Germany the large fraction of oldest individuals is attributable to the big employment inflows immediately following the reunification. In Spain the employment increase that took place between 2000 and 2007 explains the relative weight of the younger cohorts. In Italy the employment expansion of the late Seventies, following the favorable business cycle, is responsible for the consistent fraction of non-employed people aged 34-51.

Tab. 4 - Long-time non-employment magnitude and duration

Age	LTNE duration (years)	ITALY (%)	GERMANY (%)	SPAIN (%)
57-66 (*)	25-32	170 (0,11)	130 (0,19)	79 (0,13)
46-56	21-24	459 (0,29)	250 (0,38)	177 (0,29)
34-51	16-20	522 (0,32)	169 (0,27)	171 (0,28)
23-39	10-15	233 (0,14)	57 (0,09)	86 (0,14)
24-36	5-9	112 (0,07)	28 (0,04)	54 (0,09)
16-27		112	14	

	0-4	(0,07)	(0,02)	43 (0,07)
Total		1608	648	610
LTNE/male population in working age (%)		8,55	2,64	4,07
LTNE average duration:		14,2	16,7	14,7

(*) The oldest age group may contain people over 62 as some retire of the observation period.

8 The big question “where do the “disposed” workers end up ?”

The crucial question “where do all the long-time jobless individuals end up after being “disposed?” stands waiting for an answer. Discovering the end destination of the “disposed individuals” is a difficult task as no specific micro-data are available to help with the answer. Rough estimates may be obtained by benchmarking survival data with aggregate LFS indicators and official National Accounts data.

Premature exit from the labor market and LTNE have important implications for the study of the shadow/irregular economy, as many of the non-employed may be active in

the irregular sectors. Studies on the irregular economy are mainly concerned with assessing its size and explaining the macroeconomic conditions that favour its expansion (F. Schneider, 2000 and 2011, E. Feige, 1978). The shadow economy has largely negative implications affecting macroeconomic objectives as well as the quality and productivity at work and social cohesion. From a macroeconomic perspective, while it may lead to a net addition to GNP, it reduces tax revenues and undermines the financing of social security systems, paving the way for social dumping. From a microeconomic perspective the irregular economy distorts fair competition and undermines productivity growth. The state of the official economy obviously plays a crucial role in determining people's willingness to work in the shadow economy. In addition to simple tax evasion, a number of factors have contributed to concerns over a growing scope for undeclared work, the main ones being the growing demand for household and care services and the increasing role of self-employment, disguised employment and sub-contracting.

All measurements of the irregular economy are based on coarse macroeconomic indicators. Schneider (2011) estimated the share of irregular activities on GNP for several OECD countries: Italy ranks among the highest at 21.5%, Spain 19.2% and Germany, among the low ones, at 13.5%. The share of irregular employment on overall employment in Italy and Spain is estimated around 16%, and a non-negligible 12.5% in Germany. There are no micro-based databases to uncover the economic and social background of irregular workers, nor what happens during their working career to encourage them to join the irregular economy.²³

²³ E. Battistin and E. Rettore (2008) indicate that people who work in the irregular economy are unlikely to reveal their status in the course of LFS interviews for fear of being disclosed. In their view the likelihood of misclassification among the unemployed, the inactives and the irregulars is always high.

Some information can be obtained from LFS-type surveys: in the next section 9 we report the results of a comparative analysis performed on EHCP data.

Tab. 5 summarizes data from different sources, and Schneider's estimates of the size of the EU shadow (irregular) economy for the year 2012. None of them easily translate into estimates of irregular employment as labour productivity in irregular activities is still an open question, but provide a benchmark for subsequent analysis.

Tab. 6 - LTNE and the irregular economy

	Unemployed men (000)	LTNE (000)	Irregular male workers (000)	Irregular economy as % of GNP (***)
Germany	1505	648	950 (**)	13,3
Italy	1768	1608	1800 (*)	21,5
Spain	2957	610	1300 (^)	19,2

(*) ISTAT National Accounts; (**) IAB estimate; (^) estimate based on F.Schneider; (***) F. Schneider (2011)

9 Benchmarking worker disposal with the ECHP 1994-2002

A natural benchmark of the WHIP estimates of survival is provided by the European Community Household Panel (ECHP), observed between 1994 and 2002 (the final wave of ECHP, thereafter replaced by EU SILK). The ECHP survey provides information on some individual

characteristics, general income conditions and work contract typologies.

We calculate survival in the ECHP data as we have done with the WHIP database on all male individuals (younger than 35 upon first entry) observed in the ECHP sample through the end of the observation period, whether or not they are at work, and select those who self-report as working until year (t), and not after. Once they are no longer working, but still responding to the ECHP questionnaire, they report either as unemployed or inactive. Their status is similar to the individuals whom we define as LTNE, the main difference being that in the ECHP survey they do report their status after the last job termination, as well as some of the circumstances that led to joblessness. No explicit indications are present on shifts into the black economy, although it is an obvious option for many. As a matter of fact the ECHP estimated survival could be higher than the estimate from administrative databases because a number of LTNE who move into the black economy may self-report as “employed” in the ECHP or refuse to take part in the survey, being counted as “attritioners”.

Tab. 5 - Comparative estimates of survival 1994-2002: ECHP vs. administrative databases

Survival 1994-2002	ECHP <i>as if</i> LTNE	Administrative databases LTNE
ITALY	86	79
GERMANY	92	95
SPAIN	93	93

The ECHP information is displayed in Tab. 6. The table includes three groups of columns. The first one (I) display the answers of all individuals who responded in each of the

years 1994-2002; the second group (II) the answers of the ones who appear to have left work comparable to the LTNE; the third group (III) contains the answers of numerous people who have skipped the item on the contract typology.

All answers (except row A) are expressed as % shares in the relevant group. Many are self-explanatory; some deserve comments where they indicate important differences

Row B shows the share of *as-if* LTNE individuals among all respondents (i.e. the complement of EHCP survival). *As-if* LTNE people appear as being worse off than the other respondents on almost all counts: higher previous unemployment (column II - rows I and J), higher job search activity (row G), lower family income (row M), frequent elementary occupations (row O), more difficulty to make ends meet (row H), lower educational degree (row K). Conversely, high education is less frequently mentioned among the individuals who are disposed (row L).

Row F (“missing answers”) reports the frequency of people who skip the answer to the contract typology. Their share is high, almost one third of all sampled individuals in Italy and Germany, about one sixth in Spain. It is an obvious choice of the self-employed (row T), who represent 20%, 7% and 12% of all respondents respectively in Italy, Germany and Spain. The choice of not answering the contract typology could also hide some presence in the irregular economy.

Row E indicates the answers of respondents who report to have worked in absence of any contract. As suggested above, also the “missing answers” could hide the presence in the irregular economy. These mixed indications reveal important, although incomplete facts about the number of irregular workers. Rescaling the sample shares of Row E to the respective male populations in working age, we obtain

the following orders of magnitude: 760 thousand irregulars in Italy, over 400 thousand in Germany, and 450 thousand in Spain. Their number is certainly higher: we are in fact, discarding all hints from the “missing answers” as no quantitative information is provided. Notice, to conclude on this point, that irregular workers may also self-report as regularly employed for fear of being discovered (in which case we would have no hints to help their recognition).

The condition reported after premature exit indicates unemployment for two thirds of the people in Italy and Germany and almost half in Spain (row Q). Its complement, inactivity is reported in row R.

Exit could be the consequence of quit or involuntary dismissal: row S reports the frequency of reported voluntary quits (family reasons, study, military career, better opportunities): it is very high in Italy (60% of answers), very low in Spain (9%), with Germany midway. While the data of Germany and Spain appear coherent with other answers, those of Italy do not: in Germany many report voluntary quits and many, coherently, declare to be inactive after their last job; in Spain the high number of involuntary job losses matches the high frequency of unemployed. In Italy, instead, we see many quits *cum* few inactives. A plausible explanation may reside in a common, yet illegal practice followed by many employers in order to avoid the firing costs associated to unjustified layoffs: at the time of a new hire the worker was requested to sign a letter of voluntary resignation withheld by the employer. Many newly hired would agree for fear of losing the job. If the employer decided to layoff for whatever reason, the letter would serve to show that it was the employee’s voluntary decision to terminate his engagement, and no firing costs could be levied on the employer.

Tab. 6 – A summary of information from the EHCP survey

% share of responses among entrants, disposed and “missing”	ALL ENTRANTS			DISPOSED			MISSING answer to contract typology		
	(I)			(II)			(III)		
	IT	GE	SP	IT	GE	S	IT	GE	S
		R			R	P		R	P
A - Number of respondents	10	87	13	13	66	94	28	28	19
	25	5	49	3			5	4	8
B- Disposed									
	14	8	7	10	10	10	5	11	7
C- Permanent				0	0	0			
	17	7	40				<i>n.</i>	<i>n.d</i>	<i>n.</i>
				31	21	18	<i>d.</i>	.	<i>d.</i>
D-Temp	15	4	42						
				13	27	61	<i>n.</i>	<i>n.d</i>	<i>n.</i>
							<i>d.</i>	.	<i>d.</i>
E-No contract	4	2	3						
				12	1	4			
							<i>n.</i>	<i>n.d</i>	

F-Missing	28	32	15				d.	.	
				35	45	15.			
G-Searching	17	n.d	11				10	10	10
		.		35	n.d.	14	0	0	0
H-Difficulty to make ends meet	56	n.d	56				15	n.d	11
		.		78	n.d.	66		.	
I-Unempl	45	31	43				45	n.d	48
				72	30	45		.	
J-Long-T-UN	18	4	23						
				24	5	21			
K-Low edu	32	35	46				48	18	41
				55	56	57	18	1	26
L-High edu	8	19	31						
				5	8	20	30	66	44
M-Q1 fam.inc	25	20	15						
				33	26	26	11	7	32
N-Q1 pers.inc	52	30	11						
				34	50	13	22	18	20
O-Elem. Occ	11	5	18						
				21	6	33	17	63	15
P-High skill	12	4	22						
				28	21	10	10	1	7

	12	6	8						
				68	44	69			
Q-UN at exit	7	8	4	26	54	31	19	24	38
R-INACT at exit	<i>not relevant</i>						11	16	8
				60	9				
				25			1	6	7
S- voluntary. quit at exit (*)	20	7							
	12								
T- Self-empl.				6	0		<i>not relevant</i>		
				9					
							71	20	
							81		

(*) Row S includes family reasons, study, military choice, better outside opportunity

10 Conclusion and policy implications

The crucial question on how to effectively deal with youth unemployment is the dilemma -between “austerity-based” and “growth-based” policies. Past experience in almost all EU countries was prevalently of the first kind, and implemented to various degrees by enhancing contract flexibility and lowering labor costs via generous subsidies to the employers. Active labor market policies focused on setting up training facilities for the young and retraining and upskilling schemes for the adults, long-term unemployed. All in all this approach – strongly supply-sided - has performed poorly in the aftermath of the 2008 crisis, although serious problems of youth unemployment were

present in the EU since the turn of the millennium. The supply-side approach yielded non-marginal improvements on the employment outlook only in few countries, in Germany more than elsewhere.

Our explorations suggest, nonetheless, a number of supply-side implications, not applying equally to the three countries under observation:

- (i) a very general indication, valid especially for Italy and Spain, is the need to improve the match between demand of higher skills and supply, by investing in the education system and strengthening the placement and re-training agencies (public and private). The share of expenditure on active labor market policies (ALMP) in GNP is low both in Spain (0,8%) and especially in Italy (0,6%) compared to Germany (1,1%);
- (ii) we see no scope for introducing additional flexibility to contract termination. Measures aimed at facilitating the transition between precarious jobs and permanent positions are instead very auspicious (also in Germany where the dropout rate after termination of *mini-jobs* appears to be quite high);
- (iii) nor do we see compelling evidence that measures aimed at further reductions of labor costs (mainly by way of tax subsidies) would substantially improve youth employment. As of today the labour cost of young people is already much lower than that of their older peers in the three countries under observation. The incentive to upgrade human capital is lost if the cost of hiring a new recruit is too low compared to

the cost of retaining and upgrading young workers already on the job. Moreover, the current practice of frequent replacement of people already on the job with new unskilled recruits, generates adverse consequences of premature exit from the labor market and ultimately on long-term non-employment..

Some indications apply specifically to the Italian case:

- (iv) it is crucial to improve the generosity of unemployment benefits. Initial steps in this direction have been taken with the Fornero reform in 2012;
- (v) less invasive regulation is necessary: in Italy a vast number of positions, perfectly legal in many EU countries, are “irregular” by Italian standards: many low-pay, often part-time or temporary jobs in the service sectors held mainly (but not exclusively) by young people, such as waiters, janitors, salespeople, domestic helpers and caretakers. This would provide an incentive to work in the “regular” economy, enjoying the benefits of social security and, at the same time, paying very modest taxes;
- (vi) a realistic estimate of Italy’s unemployment rate is higher than the official estimate – at least by 3-4 p.p. - in view of the fact that a large number of individuals self-reporting as “inactive but available to work” are discouraged unemployed;
- (vii) Italy’s employment/population rate is also higher than the official one based on LFS estimates (55,5% in 2013, against 64% in France and above 70% in Germany and UK), as many individuals who are active in the irregular economy refrain from self-reporting as “working” for fear of being discovered.

Demographic trends in the coming decades may improve the job prospects for younger generations: the baby-boomers will begin to retire by 2020-25, and their replacement ought to increase the demand of young workers. A major labour shortage may be behind the corner in Europe. But it will spur additional massive migrations of largely unskilled migrants from non EU-countries with high fertility rates. This will be a source of ever growing governance problems for Italy and the European Union, as social unrest will not cease lurking outside the door.

APPENDIX ON ITALY

The available information on Italy's irregular economy is somewhat richer than that on Germany and Spain. There is reasonable evidence that a large majority of disposed individuals join the ranks of the irregular economy of Italy, many self-reporting as inactive and/or unemployed in the LFS. It is, instead, difficult to assess the extent to which irregular workers self-report as "employed", which is another obvious possibility.

Firstly, we must deal with the magnitude of the irregular economy: indirect evidence from a variety of sources is the only instrument that allows coarse estimation. ISTAT (Italy's National Statistical Institute) puts the number of irregular workers in 2009 at about 3 million, 2 million of which completely submerged and 1 million double-job holders, the latter regularly employed and working extra-time in the

*black.*²⁴ No breakdown by sex is provided, but some fragile evidence (Lucifora, 2004) suggests that the large majority of double-job holders are men, while the fully irregular women are about one half the number of men. In addition, about half of the young school leavers (15-24) searching for their first job may also be active in the unobserved economy. Altogether the number of men working full-time in the irregular economy is in the order of 2.0 million individuals – 12.2% of total employment - 200 thousand of whom are young school leavers unobservable in the WHIP database. ISTAT also provides estimates of the age distribution and of the regional presence of irregular workers. Two independent comparisons between WHIP-based worker disposal and ISTAT statistics can be performed at this stage, both crucial to establishing a plausible result.

Consider the age distribution of worker disposal against that of the LFS-ISTAT “out-of-the-labour-force” plus the unemployed from the same source (tab.6). The latter amount to about 1.2 million male individuals defined “inactive but willing to work”, the former to 1.1 million (half of them aged 15-24), for a total of 2.3 million individuals.²⁵ Overall estimates as well as the age distribution are almost identical to our count of worker disposal in the age group 25-54, somewhat less so among the oldest and, as expected, among the youngest with no previous work experience who account for most of the difference of 500 thousand.²⁶

²⁴ In 2011 the ISTAT estimate of men working full time in the irregular economy in 2011 was 12,2% of the male workforce. The relative weight of the black/irregular economy on GNP was estimated at 24%. See also M. Piacenza et al. 2013 for an alternative method of estimation: these authors indicate 16.5% of GNP attributable to irregular work in legitimate activities and 27.4% inclusive of all criminal activities.

²⁵ The same comparison among the women yields 1.7 disposed persons in our data vs. 1.7 million OLF but willing to work + 0.6 million unemployed women. Our exploration is on the male workforce only, and therefore we shall not deal further with the women's counts.

²⁶ The LFS estimate of 625 thousand male youth includes 500 thousand individuals in search of first job, unobservable in the WHIP database that covers individuals who have already had some regular work experience. The latter are by construction excluded from the count of “disposed” individuals.

A quick glance at the geographical distribution (tab. 7) is also very reassuring: our counts of disposed individuals and the ISTAT estimates of irregular workers are very similar, certainly not as a result of coincidence.

Tab. 6. Age distribution in WHIP and LFS indicators (in 000).

<i>Age</i>	<i>“disposed” M-workers 2012 (our estimates)</i>	<i>LFS 2010: unemployed + OLF available to take a job (M)</i>	<i>survey LTNE duration of WHIP “disposed” workers (years)</i>
<i>55+</i>	<i>170 (*)</i>	<i>320</i>	<i>25-32</i>
<i>35-54</i>	<i>781</i>	<i>750</i>	<i>16-24</i>
<i>25-34</i>	<i>545</i>	<i>525</i>	<i>5-15</i>
<i>15-24</i>	<i>112</i>	<i>725(*)</i>	<i>0-4</i>
<i>All</i>	<i>1608</i>	<i>2320</i>	<i>14,2</i>

() The WHIP count includes “disposed” individuals of age strictly less than 66, while the LFS reports individuals aged 55+, without any upper limit.*

*(**) Inclusive of 500 thousand young male individuals in search of first job (ISTAT estimate), unobservable in the WHIP database.*

Tab. 7. Geographical disaggregation (male individuals, 000).

		North	Centre	South	Italy
<i>Disposed</i>	(*)	483	308	816	1608
<i>Irregular</i>	(**)	650	350	800	1800

(*) *WHIP, our calculations*

(**) *ISTAT estimates*

The close match between the age and geographical distribution suggests that a large majority of disposed individuals is active in the irregular economy. The disposed ones are of age 16-66, the irregulars, as estimated by ISTAT, of any age. All the disposed individuals have had an initial spell of activity in the official economy and joined the ranks of the irregulars after dismissal. We know that the collective layoffs from the industrial sectors in the 80s and 90s involved mainly the blue-collars, often qualified technicians (electricians, plumbers, maintenance workers) who may have easily found profitable niches in the irregular sectors.

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