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The Legacy of the Crisis: The Spanish Labour Market in the Aftermath of the Great Recession

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The Legacy of the Crisis: The Spanish Labour Market in the Aftermath of the Great Recession

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non-technical summary

In this first report of New Skills at Work we focus our attention on the employment prospects of the jobless in Spain. The report analyzes the profiles of the unemployed and evaluates their job finding probabilities using basic econometric techniques. Our main objective is to identify the most vulnerable groups and to call for effective measures to minimize the risk of social and economic exclusion.

The report is motivated by concerns over the unprecedented rise in long-term unemployment during the crisis. Long-term unemployment is a concern in many countries, but our analysis unveils several aggravating factors that turn it into a policy priority in Spain.

The analysis is divided in three parts. The first part of the report offers descriptive evidence on the legacy of the crisis. It documents the incidence of unemployment by age, education, gender and duration and offers a comparison between Spain and the rest of the countries of the OECD. The reported evidence indicates that long-term unemployment is more pervasive and entrenched than elsewhere in the OECD. Fourteen percent of the civilian labour force is unemployed for more than a year and out of this group almost seventy percent is unemployed for more than two years. Moreover, we document a strong concentration of the longest unemployment spells among disadvantaged groups such as workers from the construction sector, the low-educated and older workers above fifty. In the second part of the report, we proceed with a formal econometric analysis to determine the relative importance of workers' characteristics and the duration of unemployment for the observed job finding probabilities between 2007 and 2015. Finally, in the last part of the report we use longitudinal Social Security data to study the cumulative effects of the crisis for selected groups of workers.

Our results indicate that the high incidence of long-term unemployment cannot be attributed to a single cause. There are problems on both the demand and the supply side of the labour market that require a different policy response. A clear indication of the adverse effects of a lack in labour demand is the strong negative impact of unemployment duration on the subsequent job finding probabilities of the affected workers, a phenomenon

known as negative duration dependence. Controlling for workers' characteristics, we find that an unemployment spell of two or more years is associated with a 13 percentage point drop in the quarterly job finding probability. This drop is twice as large as the absolute difference in the corresponding job finding rates of university graduates and high-school dropouts.

Several factors may explain the occurrence of negative duration dependence. The skills of unemployed workers may depreciate over time or the unemployed may reduce the intensity of their search as they fail to encounter a job. Moreover, employers may have a preference for workers with recent work experience. All these factors help to explain how a protracted reduction in labour demand may turn into a chronic problem due to the buildup of a large stock of long-term unemployed whose job finding probabilities are falling over time. On the contrary, for the most vulnerable groups with the longest spells, mostly older and low-educated persons and workers from the construction sector, the causality runs predominantly in the opposite direction. Their low job finding probabilities are mainly explained by personal characteristics rather than duration, pointing to problems on the supply side of the labour market. This observation is important because the optimal policy response is radically different depending on whether long-term unemployment is the outcome of duration dependence, skill mismatch or the age profile of the unemployed. In the case of pure duration dependence targeted hiring subsidies may produce good results. On the contrary, the reinsertion of the most vulnerable groups of long-term unemployed requires intensive assistance from the public employment services that often involves some form of training.

Finally, the third part of the report offers evidence on the cumulative losses of displaced workers. It illustrates the enormous difficulty for the displaced workers to rebuild their working careers. The persons in our sample who were unemployed at the end of the first recession in October 2010 still suffered unemployment rates over 75% at the end of 2014, and in this four-year period they managed to work on average less than 20% of the time. Moreover, they receive lower wages and are much less likely to hold a permanent contract than the workers who managed to keep their job during the first recession.

Our overall conclusion is that the combination of pervasive long-term unemployment, low outflow rates and ill-equipped Public Employment Services create a substantial risk of social and economic exclusion. The job finding probabilities of the most vulnerable groups are stuck at an exceptionally low level since the end of 2011

and many of these workers may lose the connection to the labour market before the recovery is completed. To revert this situation, Spain will have to step up its effort to improve its active labour market policies. The concluding section of the report identifies the main priorities and stresses the need of a profound reform of the Public Employment Services.

overview

Spain's economic climate has improved considerably in recent times. The recovery is gathering momentum and employment has been on the rise for more than a year. Nonetheless, the situation on the labour market is still critical in many respects. The crisis has left behind it a stock of over five million jobless persons and the recovery of employment is predicted to take at least until 2020, making this the most severe crisis in decades.

In this first report of the ***New Skills at Work*** initiative we focus our attention on the employment prospects of the jobless in Spain. The report analyzes the profiles of the unemployed and evaluates their job finding probabilities using basic econometric techniques. Our main objective is to identify the most vulnerable groups on the labour market and to call for measures that help to minimize the risk of social and economic exclusion.

Until now the public debate on the legacy of the crisis has focused primarily on the issue of youth unemployment and the associated risk of a lost generation of youth who are missing out on opportunities to build up their working careers. But the exceptionally long duration of the crisis has created another equally pressing problem in the form of record levels of long-term unemployment among adults.

Long-term unemployment is not a problem unique to Spain, but our analysis unveils several aggravating factors that turn the struggle against long-term unemployment into a policy priority for the next years. To start with, long-term unemployment is much more entrenched and pervasive in Spain than elsewhere in the OECD area. Fourteen percent of the civilian labour force is unemployed for more than a year and out of this group 70 percent is without a job for a period of over two years. Second, the problem of long-term unemployed is widespread, but the data reveal a strong concentration of the longest spells among the low-educated. Nearly sixty percent of the very long-run unemployed, with spells of over two years, have no more than mandatory education and many of them used to work in the construction sector. The protracted boom in this sector lured scores of young males into the labour market, provoking high dropout rates, and nowadays these persons find themselves at home without the necessary credentials to build up a stable career. Lastly, the report draws attention to the need for reforms because Spain's institutions are ill equipped to tackle the problem of long-term unemployment. The Public Employment Services are understaffed and play at best a residual role as intermediaries in the labour

market. In our opinion, the interplay of these three factors generates a substantial risk of social and economic exclusion. The observed job finding rates for several groups of long-term unemployed are at such low levels that these persons may lose the connection to the labour market before the recovery is completed.

The numbers speak for themselves. Controlling for standard worker characteristics, we find large and robust differences in the job finding rates of the short- and long-term unemployed. An unemployment spell of two or more years is associated with a 13 percentage point reduction in the quarterly job finding rate. By comparison, the difference between the quarterly exit rates of university graduates and high-school dropouts is estimated to be in the range of 5 to 6 percentage points. In other words, the negative effects of long unemployment spells dwarf the differences in the job finding rates between workers with different educational backgrounds. Second, while we observe a clear improvement in the job finding rates of the short-term unemployed in recent quarters, we fail to observe a similar improvement in the job finding rates of the long-term unemployed. By way of example, for long-term unemployed persons with no more than mandatory education the job finding probability is stuck at a level of 10 percent since 2011, compared to a job finding probability of over 25 percent in 2008. Thus, under the current circumstances, this group would have to wait on average another 10 quarters for a job. The second group for which we observe similar figures are the long-term unemployed in the age group over fifty, but these workers already encountered serious difficulties to exit unemployment even before the crisis. These exceptionally low outflow rates explain why low-educated and older workers are strongly over-represented in the pool of the very long-term unemployed, together with a third group of workers who used to work in the construction sector.

Our analysis suggests that the exceptionally low outflow rates of the above-mentioned groups of vulnerable workers are driven to a large extent by problems on the supply side of the labour market. That is, the low outflow rates and the lack of improvements in these rates during the recent recovery are explained by personal characteristics such as low educational attainments, lack of experience in sectors with a clear growth potential or age. On the contrary, for the remaining long-term unemployed the low job finding probabilities seem to be primarily the outcome of negative duration dependence, ***i.e.*** the negative impact of the length of unemployment spells on subsequent job finding rates. The causality therefore runs in the opposite direction as the lower job finding rates are the result of the long period of unemployment, rather than the other way around. Several factors can

explain the occurrence of negative duration dependence. The unemployed may lose motivation and reduce the intensity of their search for a job as time goes by. Alternatively, the skills of the worker may depreciate over time due to a lack of practice, or employers may simply prefer to hire unemployed workers with recent work experience.[1] In all three cases the final result is the same: the transitory reduction in job finding rates due to a shortfall in aggregate demand turns into a chronic problem as some workers accumulate very long spells of unemployment. Finally, from a policy perspective it is vital to have a good understanding of the causes of long-term unemployment because the optimal policy response is radically different depending on whether long-term unemployment is driven by duration dependence, skill mismatch of the age profile of the unemployed. In the case of pure duration dependence it may suffice to offer the affected persons some work experience, either directly or through the introduction of targeted hiring subsidies for the long-term unemployed. On the contrary, the reinsertion of workers from the construction sector with low educational attainments and no relevant work experience in other sectors will often require some form of training. Finally, in the case of older workers there may also be a need for retraining, but often there are also other impediments such as the relatively high (reservation) wages of older workers or the fear on part of employers that older experienced workers are over-qualified for the available entry-level jobs that may explain their difficulties to exit unemployment.

The rest of this report is organized as follows. Section 2 describes the legacy of the crisis. The first part of this section provides historical data for Spain and in the second part of the section we offer a cross-country comparison of the adjustments in employment and unemployment during the crisis using data from the OECD. Next, in Section 3 we analyze the profiles of the unemployed along many dimensions using data from the Spanish Labour Force Survey (SLFS), while Section 4 presents our main econometric results. This section presents estimations of the quarterly transition rates between unemployment and employment on the one hand, and unemployment and inactivity on the other, specified as a function of worker characteristics and the duration of the unemployment spell. This is followed in Section 5 by an analysis of the cumulative effects of job losses during the crisis using longitudinal Social Security Records. The longitudinal data allow us to study the importance of

1 For recent studies that try to disentangle the contribution of duration dependence and composition effects to the rise in long-term unemployment in the U.S., see Kroft, Lange, Notowidigdo and Katz (2014), Krueger, Cramer and Cho (2010), or Valetta (2011). For a recent survey of employers' attitudes towards long-term unemployed, see IPPR (2015). Finally, De la Rica and Anghel (2014) provides a survey of the incidence and the determinants of long-term unemployment in Spain.

workers' previous experience, contract type and sector of occupation. Finally, Section 6 offers some guidelines for the design of policies to tackle the problem of long-term unemployment.

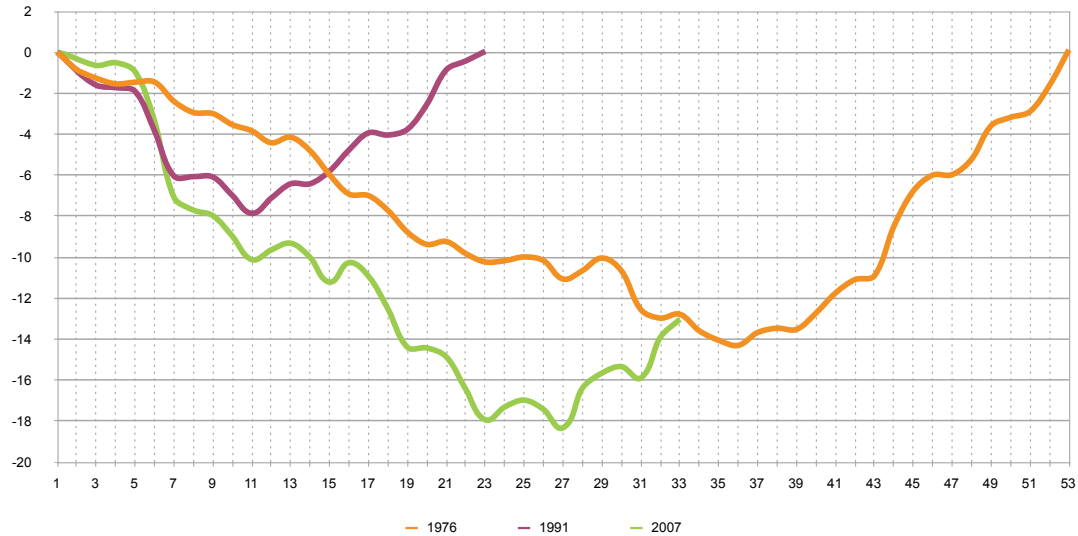
the legacy of the crisis

2.1 A historical comparison

A close inspection of the available historical data offers two important lessons. It brings to the surface structural problems in the Spanish labour market and it reveals the profound scars the recent crisis has inflicted on the economy. The contraction of employment and the rise in unemployment are more pronounced than in any of the previous recessions for which data are available, pushing many persons to the fringes of the labour market after years of unemployment.

The first figure compares the drop in employment during the three most recent crises. The chart depicts the percentage drop in employment at different stages of each crisis relative to its pre-crisis peak. The length of the crises is measured in quarters and is represented on the horizontal axis. From peak to trough (in 2007:Q3 and 2014:Q1, respectively) employment fell by as much as 18% in the current crisis, and after 33 quarters employment is still 13% below its pre-crisis level. Indeed, a further 2.7 million jobs are needed to return to the level of employment that existed prior to the crisis. By comparison, in the crisis of the nineties, employment dropped by at most 8% and the recovery was completed within 23 quarters.

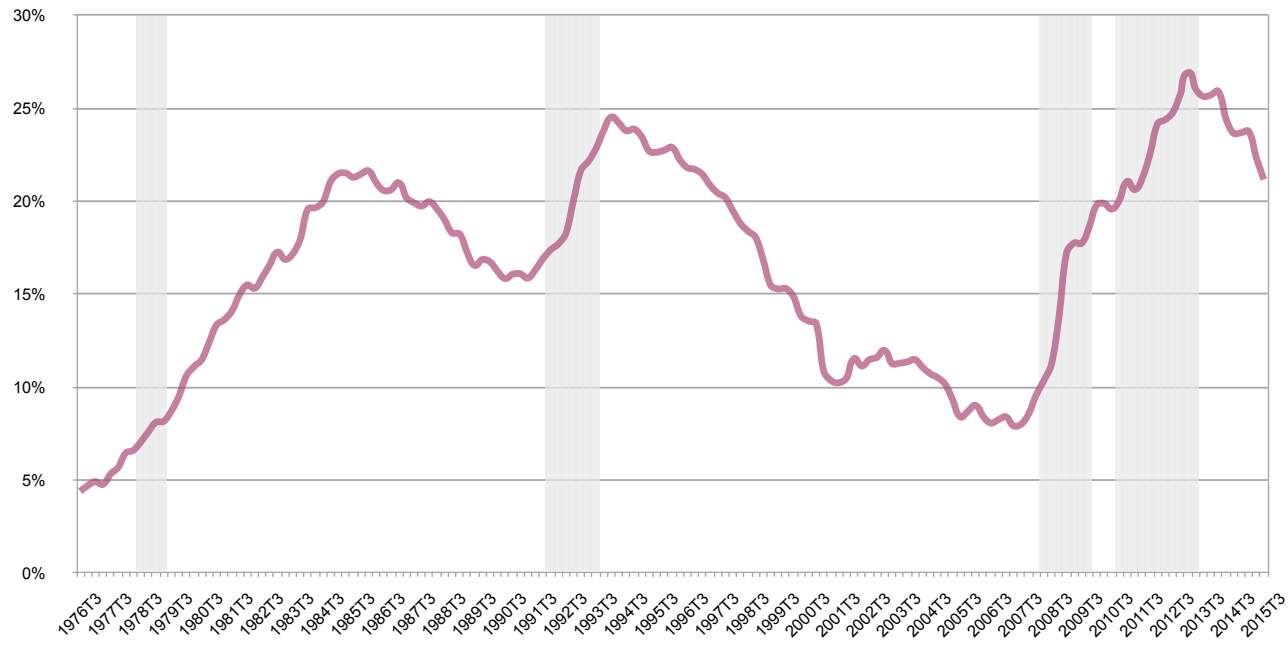
Figure 1: The contraction in employment in the past three crises.
Percentage deviation from the pre-crisis maximum



Source: Own elaboration based on data from the Spanish Labour Force Survey

The next figure illustrates the evolution of the unemployment rate since the mid-seventies. The grey bars correspond to periods of recessions, where we have used the official timing of recessions of the Spanish Business Cycle Dating Committee. The figure allows us to identify the compound effects of the two recessions that hit the Spanish economy in recent years. The unemployment rate started to grow in 2007:Q3, reaching a level of 18.6% at the end of the first recession (2008:Q2 – 2009:Q4) and it peaked at 26.9% at the end of the second recession (2010:Q4 – 2013:Q2). From bottom to peak this corresponds to a 19 percentage point (p.p.) increase in the unemployment rate and since the start of the recovery this rate has only come down by 4.6 p.p. The pronounced volatility of the unemployment rate along the business cycle, with the unemployment rate rising above 20% on three occasions in less than 30 years, is a reflection of deep structural problems in the Spanish labour market. A second indicator of the poor performance of the Spanish labour market is the high level of structural unemployment. The average value of the unemployment rate over the period 1976-2015 is equal to 16.4%. This proxy for the structural component of unemployment is quite close to the official estimates of the structural unemployment rate of Spain published by the European Commission.

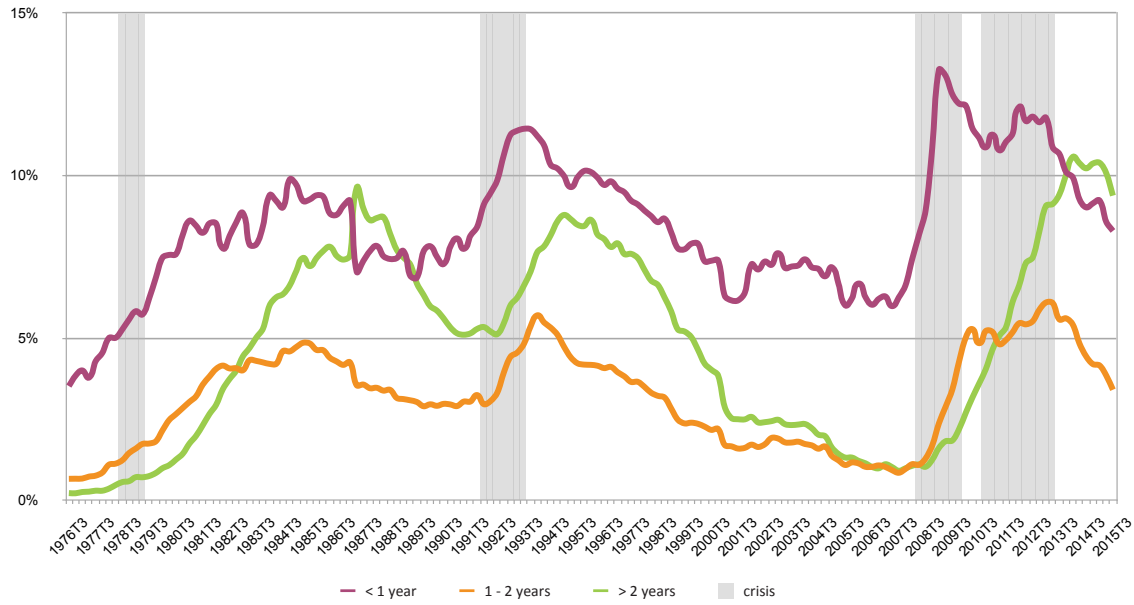
Figure 2: The cyclical volatility of the unemployment rate, 1976-2015



Source: Spanish Labour Force Survey

The labour market reforms implemented between 2010 and 2012 aimed to address some of the structural problems[2], but in the short run they could not prevent a further deterioration of the labour market. A particular reason for concern is the strong growth in the extent of long-term unemployment. This feature is illustrated in Figure 3.

Figure 3: Duration-specific unemployment rates, 1976-2015
Percent of the civilian labor force



Source: Own elaboration using data from the Spanish Labour Force Survey.

The three lines represent duration-specific unemployment rates, i.e. the share of the civilian labour force with unemployment spells of a certain length.[3] Following the standard definition in Spain, we classify someone as ***long-term unemployed*** if the person has been jobless and actively seeking a job for more than a year. Similarly, the person is classified as ***short-term unemployed*** if the unemployment spell is shorter than a year and as ***very long-term unemployed*** if the person has been unemployed for more than two years.

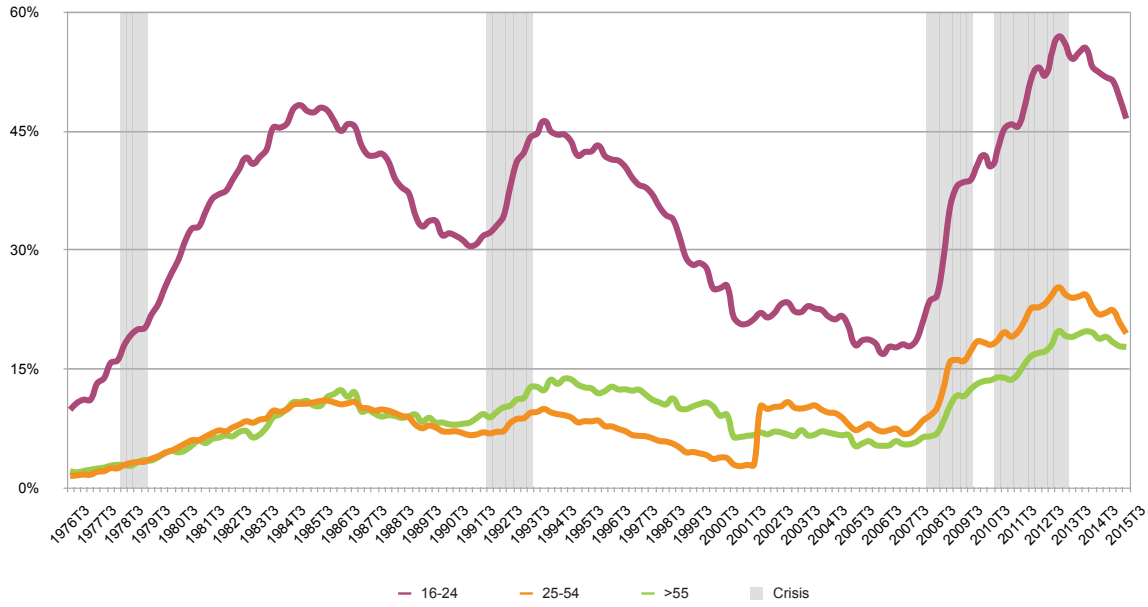
All three duration-specific unemployment rates reached a record level during the crisis. Short-term unemployment peaked during the first recession and has been falling ever since, except for a brief interruption during the second recession. By contrast, the percentage of long-term unemployed persons with spells between one

2 For a detailed overview of the latest labour market reform and its impact on the Spanish labour market, see OECD (2013) and García-Pérez and Jansen (2015).

3 The duration-specific unemployment rates are standard unemployment rates except that the numerator contains the number of persons whose unemployment spell length falls within a given interval. Adding up the different duration-specific unemployment rates yields the standard unemployment rate.

and two years peaked in 2013, while the percentage of very long-term unemployed persons has continued to grow until last quarter. Indeed, for the second time in history, there are currently more persons who have been unemployed for more than two years (2.4 million) than short-term unemployed with spells shorter than a year (2.1 million). The large number of (very) long-term unemployed persons is one of the legacies of the crisis that inspires this report. The other one is the unsustainably high level of youth unemployment.

Figure 4: Age-specific unemployment rates, 1976-2015



Source: Own elaboration using SLFS data

Inspection of the data reveals that the youth unemployment rate (16-24) is even more volatile along the business cycle than the adult unemployment rate. In the current crisis, the youth unemployment rate increased by almost 40 p.p. to reach a record level of 56.9% in 2013:Q1 and nowadays it is still close to 50%, compared to a historical average of 34.3%. One factor that helps to explain the strong cyclical volatility of the unemployment rates is the dual structure of the Spanish labour market. The large share of temporary contracts acts as a buffer stock against the fluctuations in the economic activity of firms and since the vast majority of youngsters are employed on fixed-term contracts this generates strong fluctuations in the youth unemployment rate. Nonetheless, it should be stressed that Spain does not have a specific problem of youth unemployment. The ratio between the adult and the youth unemployment rates (1:2.3) is close to the European average and it has remained virtually constant during the crisis. Hence, youth unemployment is a severe problem but the underlying causes

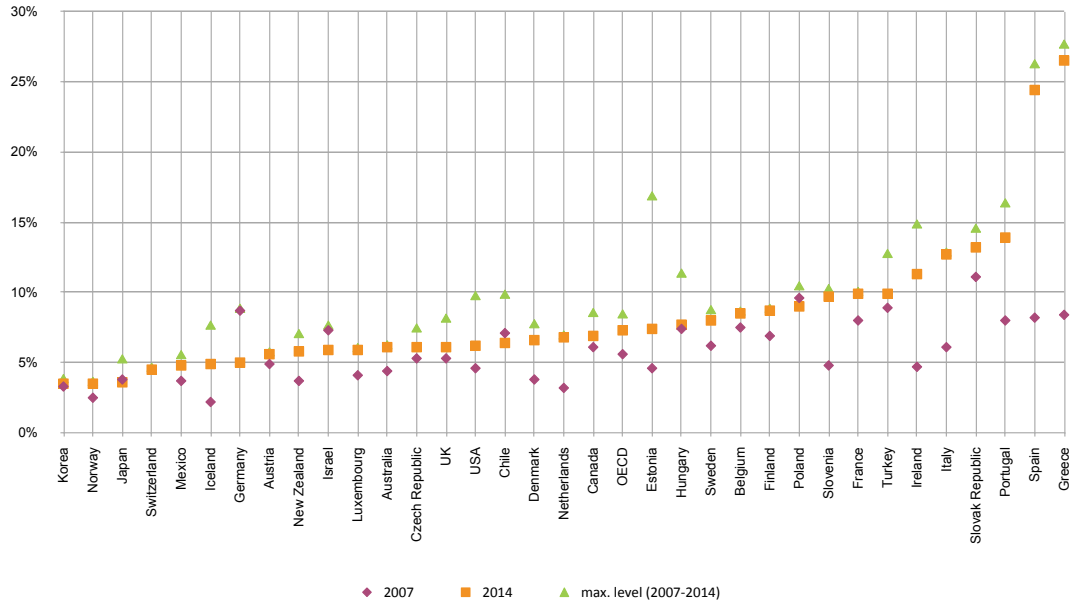
are mainly related to structural problems in the labour market that generate high and volatile unemployment rates for all age groups and not just for youth.

In later sections we will also analyze the impact of the crisis on workers with different levels of education, gender and nationality, but before we do so, we first want to place the recent adjustments on the Spanish labor market in an international context.

2.2 A cross-country comparison

The next two figures show that Spain suffered the second-largest increase in the unemployment rates for adults and youth among the OECD member states. Moreover, even before the crisis Spain belonged to the top quintile of OECD countries with the highest unemployment rates.

Figure 5: The recent evolution of unemployment rates. OECD, 2007-2014



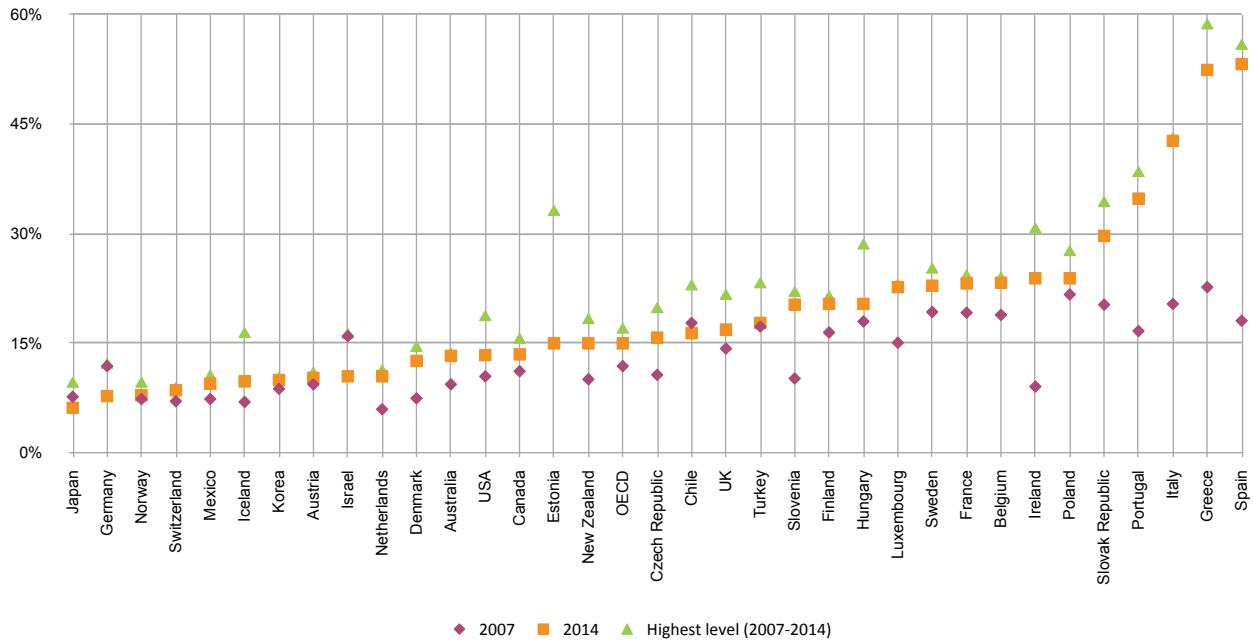
Source: OECD statistics

In 2014, the Spanish unemployment rates for youth and adults were, respectively, 3.5 and 3.3 times higher than the OECD average. The similarity between these two ratios is a confirmation of the fact that the problems on the Spanish labour market are not limited to the segment of youth. Moreover, it is widely recognized that the youth unemployment rate tends to overstate the true extent of the problems of youth. The activity rates for youth are low compared to the corresponding rates for the adult population, as a large share of youth is still enrolled in

education, and this feature tends to inflate the unemployment rates for youth. At the end of this section we will therefore also report data on NEET rates (youth not in employment, education or training), addressing particular attention to the share of inactive and/or low-educated NEET.

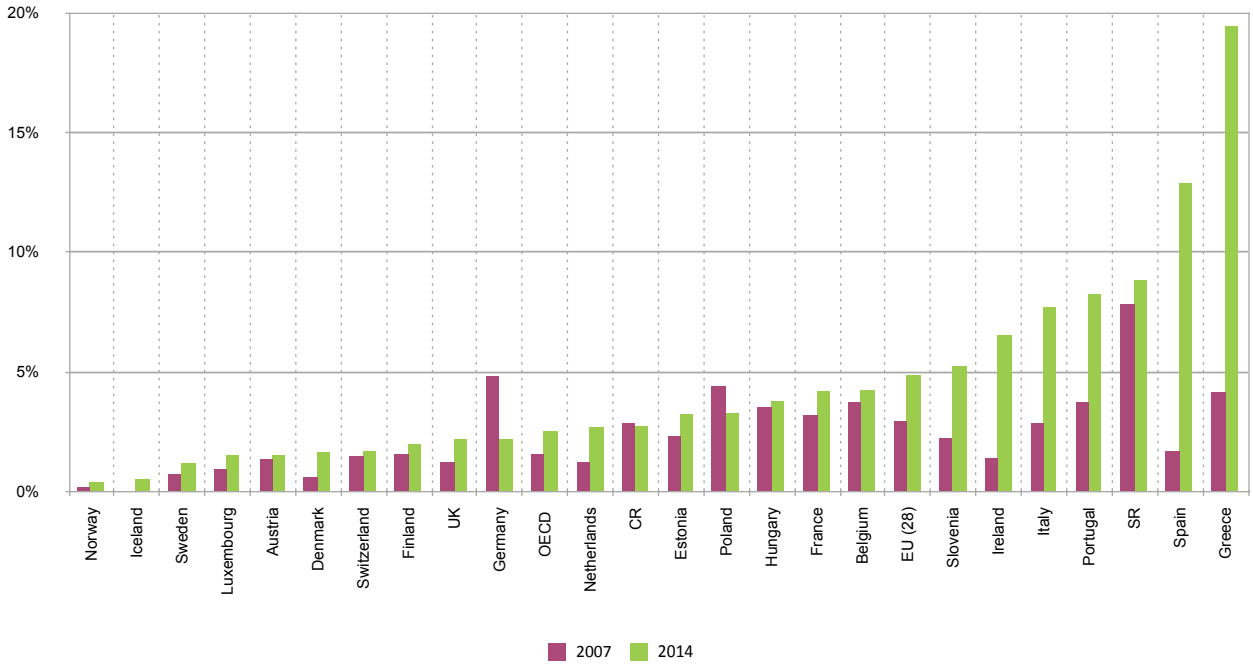
An international comparison of the incidence of long-term unemployment yields a similar picture although the differences are somewhat bigger. In 2014, almost 13% of the civilian labour force in Spain was unemployed for more than a year. This rate is almost five times the OECD average. In other words, Spain does not only have a problem in terms of the volume of the pool of unemployed persons. To the extent that long spells of unemployment reduce the subsequent job finding probability of workers, it also faces a problem in terms of the poor employability of the unemployed job seekers. The evidence presented in the next section corroborates this view. Yet, the causality also seems to go in the opposite direction. That is, the lack of appropriate skills of some categories of low-educated workers reduces their job finding rates and this explains why they ended up with long unemployment spells

Figure 6: The recent evolution of youth unemployment rate (15-24). OECD, 2007-2014



Source: OECD statistics

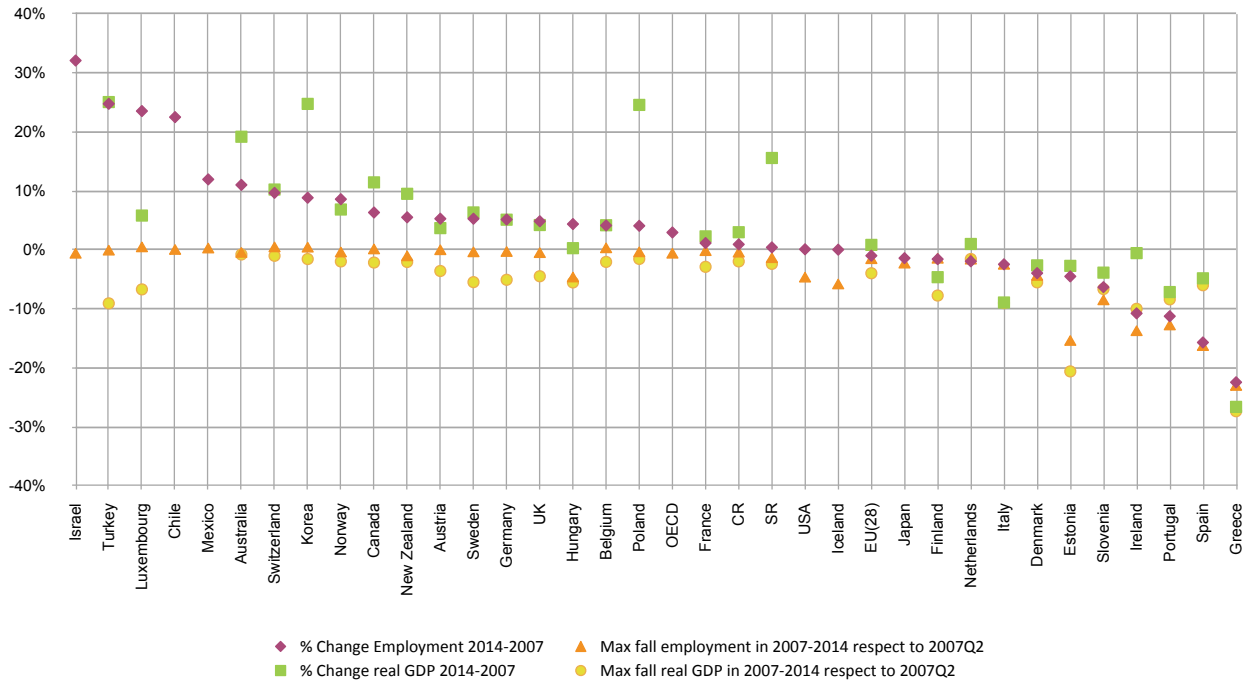
Figure 7: The recent evolution of long-term unemployment. OCDE, 2007 vs. 2014
Percent of civilian labour force



Source: OECD statistics

Finally, our last chart serves to show that the crisis in the peripheral countries is both more profound and more persistent than in the rest of the OECD countries, as evidenced by the fact that Ireland, Portugal, Spain and Greece are the countries that suffered the largest drop in employment during the crisis and for which the employment levels in 2014 were still farthest away from the pre-crisis level in 2007. Moreover, in the case of Spain, the figure also highlights the anomalous response of employment to changes in the growth rate of GDP. In most countries, the fluctuations in GDP are more pronounced than the fluctuations in employment as firms tend to hoard labour over the cycle, but in the case of Spain we observe the opposite pattern. Indeed, during the first recession, Spain suffered a similar contraction of GDP as countries like Germany, Sweden or the UK, but in these countries the drop in employment was much smaller and less persistent than in Spain.

Figure 8: The recent evolution of employment and real GDP. OCDE, 2007-2014
Maximun and current deviation from pre-crisis levels (%)



Source: OECD statistics

the differential impact of the crisis

After this brief look at the historical and cross-country evidence, we now proceed with a detailed description of the landscape after the crisis. Our main aim is to document the unequal impact of the crisis across different cohorts of workers, industries and occupations.

3.1 Main trends

Table 1. Descriptive Statistics[a]

	EMPLOYMENT RATE		UNEMPLOYMENT RATE		ACTIVITY RATE	
	2007	2015	2007	2015	2007	2015
Total	65.96	56.50	8.47	23.86	71.65	74.14
GENDER						
Male	76.13	61.44	6.40	22.76	81.39	79.87
Female	54.68	51.61	11.26	25.14	61.66	68.63
AGE						
16-24	41.86	18.44	17.72	51.36	50.87	37.90
25-34	79.19	65.12	8.54	26.73	86.59	88.88
35-49	77.51	69.86	6.88	20.93	83.00	88.43
50-65	50.69	50.88	6.32	19.46	54.11	63.17
NATIONALITY						
Spanish	65.02	57.14	7.17	22.14	70.34	73.36
European	70.74	57.93	7.07	26.85	79.56	79.19
Non-European	69.57	50.52	8.93	35.80	79.57	78.69
EDUCATION						
Primary	50.18	31.96	11.37	40.32	55.84	53.54
Lower-secondary	63.49	47.57	9.75	31.34	70.26	69.28
Upper-secondary	67.75	55.77	8.36	23.79	73.71	73.18
Tertiary	80.64	75.55	5.82	14.08	85.06	87.94

Source: Own elaboration on the basis of microdata from the Spanish Labour Force Survey.
[a]The sample consists of the population between 16 and 65 years of age.

Table 1 provides an overview of the changes during the crisis in three core indicators. The employment rate is the ratio between the number of employed persons and the size of the corresponding population. Similarly, the activity rate or labour force participation rate measures the ratio between the number of active persons (the occupied labour force plus the unemployed) and the total population. Finally, the unemployment rate measures the share of the active labour force that is unemployed at a given point in time. The table reports both the economy-wide numbers and the disaggregated numbers by gender, age, nationality and level of education.

Throughout the analysis we use a standard classification to measure the educational attainments of workers. The term primary education refers to persons who have not completed lower-secondary education or ESO (***educación secundaria obligatoria***). Similarly, lower-secondary education refers to persons who have at most completed ESO, while upper-secondary education refers to persons who have completed either ***bachillerato*** or intermediate level vocational training (***formación profesional de nivel medio***). Finally, tertiary education refers to the persons who hold a university or equivalent degree.

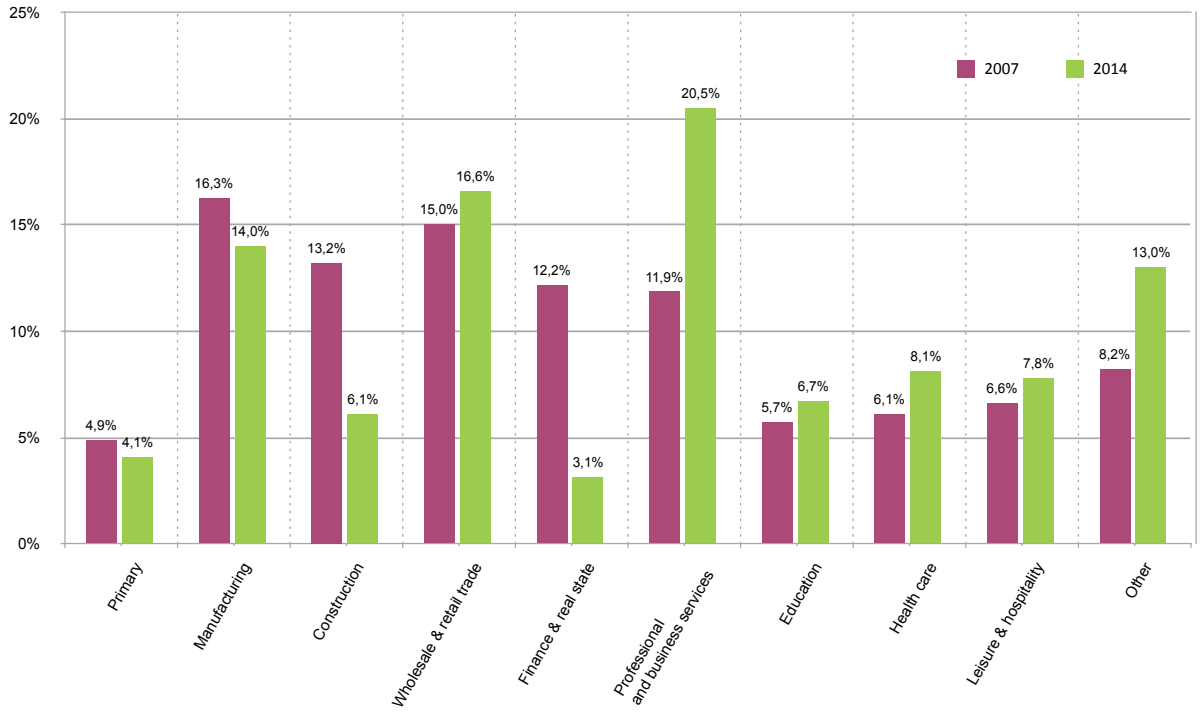
The data reported in Table 1 provide a first indication of the unequal impact of the crisis. Vulnerable groups such as youth, immigrants and low-educated workers are clearly the main victims of the crisis. The employment rates of youth in the age group 16-24, immigrants from outside Europe and low-educated workers with at most primary education have fallen by as much as 20 p.p. This sharp drop contrasts with the mild increase in the employment rates of older workers above 50 and the comparatively modest reduction in the employment rate for people with tertiary education.

In addition, the data confirm a well-known fact: the current crisis harmed males more than females. At the onset of the crisis, the employment rate of males exceeded the 75%-target established in the Europe2020 agenda, but since then this rate has fallen by around 15 p.p., compared to a 3 p.p. reduction for females. Moreover, the labour force participation rate of females increased substantially during the crisis, while it decreased for males, mainly as a result of a strong reduction in the labour force participation of young males. During the last seven years, the labour force participation rates of young males in the age groups 16-19 and 20-24 fell from levels of 32.7% and 71.5% in 2017 to levels of 15.7% and 58.4%, respectively, in 2015.

3.2 The changing structure of employment

A key factor behind some of the above-mentioned trends is the collapse of the construction sector. Before the crisis, the construction sector accounted for 13.22% of total civilian employment and by 2015 this share had fallen to 6.09%.

Figure 9: Changes in sectoral composition of employment, 2007 vs. 2015



Source: Own elaboration on the basis of data from the Spanish Labour Force Survey.

In absolute numbers this corresponds to a loss of 1.7 million jobs that were mostly held by low-educated males, including many immigrants. Nonetheless, the construction sector is certainly not the only sector that destroyed jobs for low-skilled workers. In total, Spain lost nearly 3 million jobs for low-educated workers and close to 1 million jobs for workers with intermediate levels of education. By contrast, the total employment of university graduates or persons with equivalent degrees remained virtually constant during the crisis as can be seen in Figure 10.

Furthermore, the destruction of employment was neither limited to low-productivity sectors. Even sectors like manufacturing, that traditionally resist well during recessions, suffered a strong contraction, as evidenced by the fact that its share in employment has fallen from a level of 16.26% in 2007 to a level of 14.02% in 2015.

The growth in employment is concentrated in sectors like professional and business services, health care and tourism. Yet it is clear that, with the exception of tourism, these sectors have a limited capacity to absorb the low-educated workers from declining sectors like construction.

Figure 10: Changes in employment by level of education. SLFS, 2007-2015

Source: Own elaboration on the basis of microdata from the Spanish Labour Force Survey.

3.3 The profile of the unemployed

The impact of the crisis is reflected in unsustainable unemployment rates for the most vulnerable workers and a rather unfavourable composition of the pool of unemployed.

Table 2 documents the unemployment rates by level of education for three different age groups and for the whole of the civilian labour force in the first quarter of 2015. It complements the data on the rise in unemployment rates provided in Table 1. The figures reported in Table 2 indicate that more than half of the unemployed in Spain (54.8%) have no more than mandatory secondary education. The unemployment rates of these low-educated workers have increased dramatically during the crisis from levels around 10% in 2007 to levels between 30% and 40% in 2015.

There are minor differences in the distributions of the unemployment rates across age groups, but overall the unemployment rates follow the usual pattern. That is, unemployment rates go down with both age and the ed-

ucational attainment of the workers. University graduates above the age of 45 enjoy the lowest unemployment rate (10.1%), while the unemployment rate for youth with no more than primary education stands at a level of 68.7%. In fact, the poor labour market position of youth is reflected in the fact that even young university graduates suffer unemployment rates of 35%.

Lastly, the unemployment rate for persons over 45 is 3.3 p.p. lower than the economy-wide average. However, it is important to keep in mind that there are almost 1.8 million persons in this age group, and almost two-thirds of them have no more than mandatory education.

Table 2. The distribution of the unemployed by age and level of education
SLFS, 2015:Q1 (%)

EDUCATION	TOTAL		16-24		25-44		45-65	
	Rate	Share	Rate	Share	Rate	Share	Rate	Share
Primary	40.2	14.8	68.7	12.3	42.9	10.4	35.2	22.5
Lower- secondary	31.5	40.0	59.8	45.6	31.8	37.3	25.5	41.7
Upper- secondary	23.4	23.2	46.4	28.1	23.6	24.0	17.8	19.9
Tertiary	14.1	22.0	35.0	14.0	14.9	28.2	10.2	16.0
Total	23.5	100.0	51.4	100.0	23.1	100.0	20.2	100.0

Source: Own elaboration on the basis of microdata from the Spanish Labour Force Survey

The level of education is a key determinant of the future employment prospects of the unemployed. Another key determinant, besides the worker's previous work experience, is the duration of the unemployment spell. As time goes by, the employment opportunities of the unemployed tend to deteriorate. The unemployed person may loose skills or motivation and there is evidence that employers often prefer to hire persons with more recent work experience.[4] In Section 1 we already documented the strong growth of long-term unemployment during the crisis. Our next table reports the distribution of the duration of the unemployment spells for workers with different levels of education.

Inspection of the data reveals that low-educated workers are under-represented among the short-term

4 For recent evidence on this issue see Kroft, Lange and Notowidigdo (2013). The authors send out fictitious resumes to real job postings in 100 US cities and their findings show that the likelihood of receiving a callback for an interview decreases significantly with the duration of the unemployment spell.

unemployed and over-represented among the very long-term unemployed. And the reverse is true for persons with at least upper-secondary education. Moreover, the breakdown of the data according to the level of education shows that more than half of the unemployed at all levels of education are long-term unemployed. To a large extent this is a logical consequence of the sharp drop in economic activity in recent years. However, at the same time we observe a strong negative correlation between the level of education and the proportion of very long-term unemployed. This feature suggests that the lack of aggregate demand may not fully explain the recent rise in long-term unemployment as we indicated above.

Table 3. The distribution of the unemployment by duration of the unemployment spell and level of education
SLFS, 2015:Q1

DURATION (MONTHS)	TOTAL	PRIMARY	LOWER-SECONDARY	UPPER-SECONDARY	TERTIARY
0 – 3	12.7	11.2	11.8	14.5	13.3
3 – 6	9.5	7.0	9.1	10.7	10.5
6 – 12	11.3	9.9	11.2	11.3	12.5
12 – 24	17.0	14.5	16.1	19.2	18.0
24 or more	44.5	53.7	46.4	39.9	39.9
Already found a job	4.9	3.8	5.2	4.4	5.8

Source: Own elaboration on the basis of microdata from the Spanish Labour Force Survey

Indeed, there is abundant evidence that the recent shifts in the composition of employment and the selective dismissal of low-educated workers have led to an increase in the degree of mismatch between the supply and demand of skills (***e.g.*** Bank of Spain, 2013). Mismatch is harmful because it creates bottlenecks in the labour market, but it is relatively hard to measure because data on skill demand is scarce.

To circumvent this problem, we use the characteristics of the employed workers as a proxy for labour demand. This is a standard procedure in the literature. Similarly, the characteristics of the unemployed are used as a proxy for labour supply. In the case of the unemployed we offer separate figures the short-run unemployed with spells shorter than 6 months and long-run unemployed with spells longer than 24 months. Hence, we can use the comparison between the characteristics of the employed and the short-run unemployed to identify

discrepancies between the demand and supply of skills and we can use the comparison between the characteristics of the short-term and long-term unemployed to analyze whether mismatch leads to a higher incidence of long-term unemployment.

A comparison of the first two columns of Table 4 shows that low-educated workers with no more than mandatory education and workers from the construction sector[5] are over-represented among the short-term unemployed, together with youth in the age group 16-24 and immigrants from outside Europe. A comparison between the first and the third column shows that persons with the same characteristics are also over-represented among the long-term unemployed. However, the problem seems much more severe for low-educated persons and workers from the construction sector. For example, the persons with at most primary education make up only 6.84% of employment while they make up almost 12% of the short-run unemployed and 18% of the long-term unemployed. The corresponding numbers for the workers from the construction sector are similar as they make up 6.09% of employment and 17.07% of the long-term unemployed.

Another group of concern is the cohort of workers above 50. This group accounts for 27.5% of the employed compared to 28.7% of the long-term unemployed and 13.3% of the short-run unemployed. These figures indicate that older workers are less likely to lose their job than the average worker, but conditional on job loss they are much more likely to end up in long-term unemployment. By contrast, youth and immigrants are more likely to lose their jobs than the average worker, but they also exit unemployment relatively quickly. As a result, their share among the long-term unemployed is lower than their share among the short-run unemployed.

Overall, the results seem to suggest that the lack of appropriate skills and insufficient educational attainments are the main determinants of the high incidence of long-term unemployment among the low-educated and the workers from construction. The share of both groups in total employment has fallen substantially in recent years and the workers from these groups are overrepresented among the long-term unemployed. Older workers, on the contrary, mainly suffer from low exit rates out of unemployment and in Section 4 we will show that these low rates are mainly driven by age rather than skills or duration dependence.

5 The data on the last occupation of the unemployed are taken from the Muestra Continua de Vidas Laborales. This data set provides information on the entire working history of the individuals in the sample. By contrast, the SLFS only provides reliable information about the last job of the unemployed for those persons who lost their employment during the last six months.

Finally, in line with our earlier observations, we find that workers with a university degree and persons with previous work experience in growing industries and also in manufacturing, a sector that shrank during the crisis, are under-represented among the unemployed, reflecting their relatively strong position on the labour market.

Table 4. The profiles of the employed, short-term unemployed and long-term unemployed, SLFS 2015:Q1 (%)

	EMPLOYED	UNEMPLOYED (<6MONTHS)	UNEMPLOYED (> 2 YEARS)
GENDER			
Male	54.5	52.3	51.5
Female	45.5	47.7	48.5
AGE			
16-24	4.3	17.7	8.5
25-34	22.0	29.8	22.5
35-49	46.3	39.2	40.3
> 50	27.5	13.3	28.7
NATIONALITY			
Native	85.32	75.28	78.74
European	5.67	8.10	5.71
Non-European	9.01	16.62	15.56
EDUCATION			
Primary	6.84	11.69	18.00
Lower-secondary	26.89	37.59	40.58
Upper-secondary	24.15	27.11	21.74
Tertiary	42.11	23.60	19.67
SECTOR			
Primary	4.08	5.02	6.21
Manufacturing	14.02	9.30	10.42
Construction	6.09	10.47	17.07
Wholesale and retail trade	16.59	14.12	13.89
Finance and real state	3.13	2.13	1.39
Professional and business services	20.51	22.59	19.27
Education	6.72	3.03	3.21

	EMPLOYED	UNEMPLOYED (<6MONTHS)	UNEMPLOYED (> 2 YEARS)
Health care	8.10	5.88	3.67
Leisure and hospitality	7.77	16.94	7.02
Other	13.00	10.53	17.86

Source: Own elaboration on the basis of microdata from the Spanish Labour Force Survey and the Muestra Continua deVidas Laborales. Short-term unemployed include all persons with unemployment spells of up to six months. Long-term unemployed includes persons with spells of over two years.

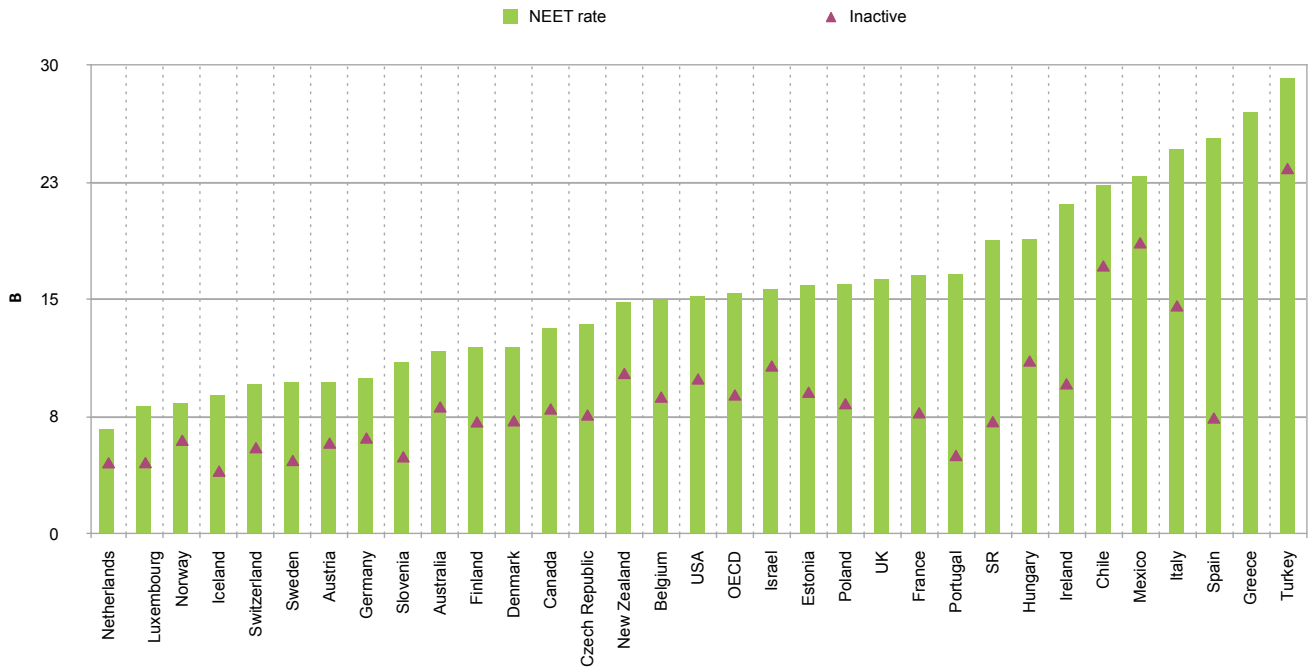
3.4 NEET rates

To round off our description of the current state of the Spanish labour market, we devote a separate section to discuss the recent trend in NEET rates.

The NEET rate is defined as the proportion of the youth population that is neither in employment, education or training. It is commonly regarded to be a better indicator for the labour market position of youth than the unemployment rate as it measures the proportion of youth who are neither working nor studying. Moreover, the NEET rate is not affected by changes in the participation rate of youth. The data presented below include youth up to the age of 30. Moreover, we focus primarily on low-educated youth with no more than mandatory education.

In a first step we offer comparative evidence for the NEET rates in the age group 15 – 29. Once again we use data from the OECD. In 2012, 27% of the Spanish youth below 30 was neither working nor studying. This corresponds to the third-highest NEET rate among the OECD, but only a small fraction of them are inactive. Indeed, once we restrict attention to inactive NEET, Spain occupies a middle position, close to countries like Denmark or Finland. In other words, despite the comparatively high level of youth unemployment a relatively large proportion of the NEET keeps actively seeking a job. By contrast, Italy has a lower NEET rate than Spain, but the share of youth who are neither in education or the labour force is almost twice as high as in Spain.

Figure 11: NEET and youth not in education or in the labour force (15-29). OCDE, 2012
Percentage of the youth population



Source: OECD statistics.

Our next two figures illustrate the recent evolution of the Spanish NEET rates for low-educated youth in the age groups 16-24 and 25-30. The first figure presents the NEET rates for youth with at most primary education, while the second figure includes all youth with at most lower-level secondary education.

The two figures highlight the strong growth in the NEET rates of youth in the age group 25-30. Currently, more than 50% of those without lower-secondary education (ESO) and more than 40% of those with at most ESO are NEET. In both cases this corresponds to an increase of about 20 p.p. compared to 2007. Moreover, the differences between the NEET rates for the two age groups have widened considerably during the crisis. Indeed, the NEET rates for the older age group are currently more than twice as high as the respective NEET rates for the younger age group. The above figures reveal that the NEET status is very persistent among the generation of low-educated youth who abandoned their studies in the years prior to the crisis. Finally, in recent years we observe a substantial drop in the number of low-educated youth in the age group 16-24, from a peak of 1.2 million persons in 2009 to about 800.000 in 2015, but this drop is mostly driven by a drop in the size of the population in this age bracket from 2.5 million youth in 2007 to 2 million youth in 2015.

Figure 12: Low-educated NEET rate Without lower-secondary education

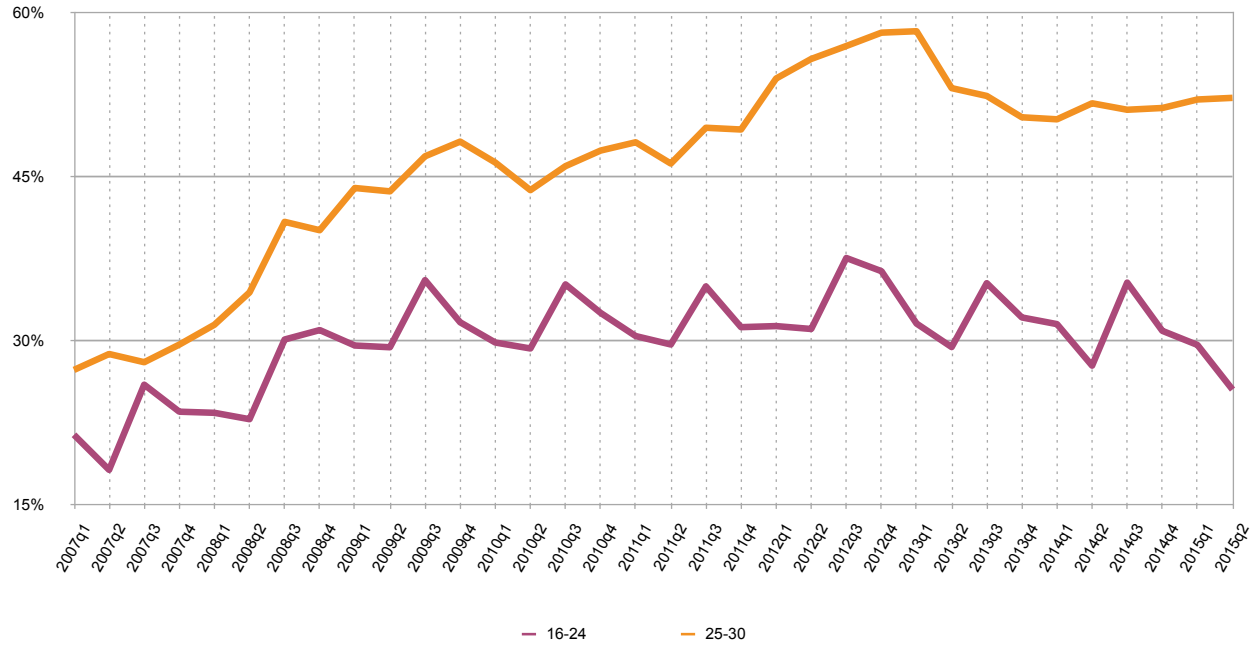
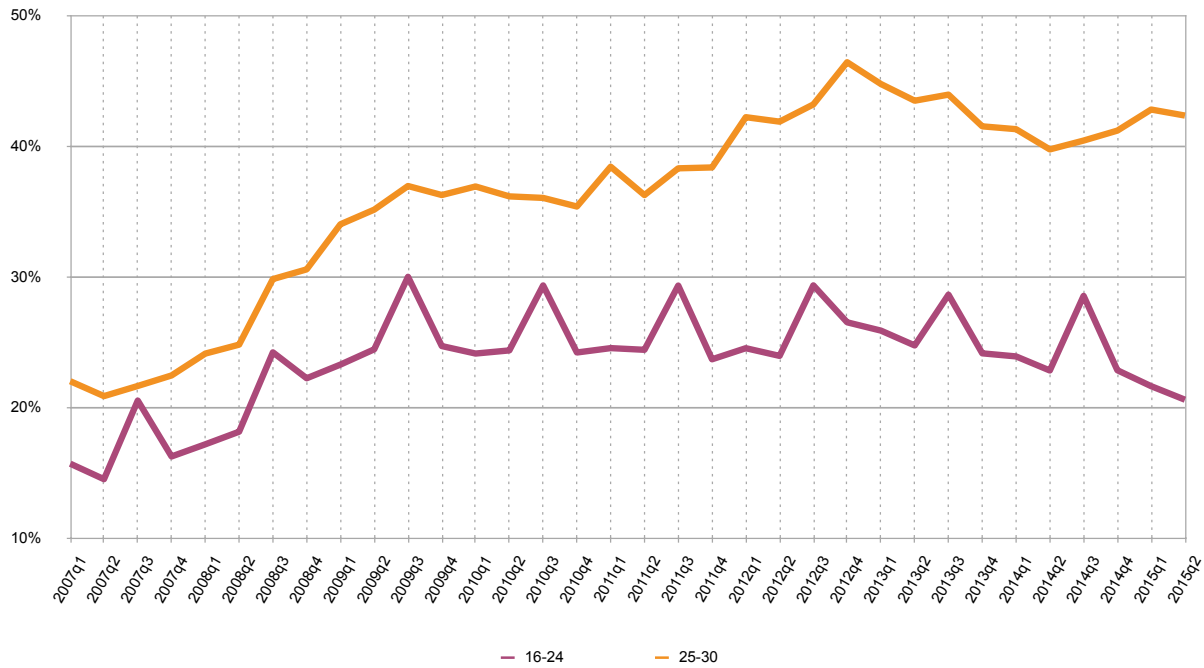


Figure 13: Low-educated NEET rate At most mandatory secondary education



transition probabilities

The evidence presented so far offered a static picture of the state of the Spanish labour market after the crisis. The analysis showed that there are large groups of vulnerable persons who have accumulated long spells of unemployment and who may face difficulties to return to employment during the recovery. The standard procedure to evaluate the risks associated with long-term unemployment is to estimate job finding probabilities or hazard rates, ***i.e.*** the probability that an unemployed worker manages to find a job in a given period. Below we offer such estimates and we analyze how the job finding probabilities vary with observable characteristics of the workers and the length of the unemployment spell. Our basic econometric exercises confirm the existence of large and robust differences in the job finding rates of short- and long-term unemployed workers. The poor employment prospects of the long-term unemployed raise the concern that many of these persons may abandon the labour market. To assess this issue, we also perform separate estimations of the likelihood of transitions between unemployment and inactivity.

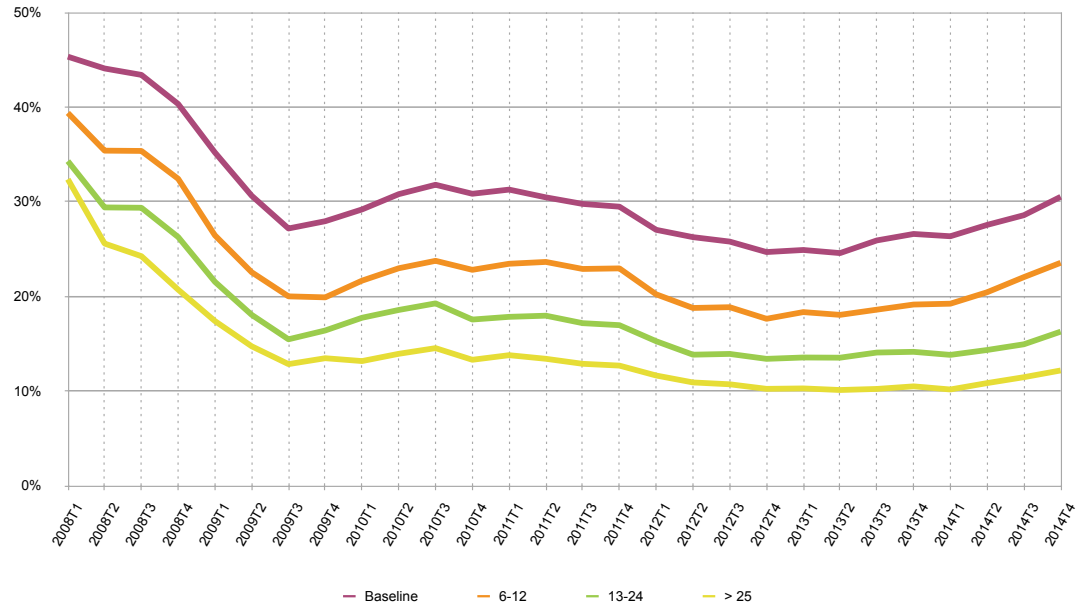
Throughout this section we use flow data from the Spanish Labour Force Survey. The SLFS is a rotating panel that follows households during a maximum of six consecutive quarters. For the moment we make no distinction between the types of contract. We simply estimate the probability of transitions into paid employment. The transition probabilities are derived by estimating a Probit model in which the dependent variable takes the value of 1 if a worker who was classified as unemployed in quarter ***t*** is classified as employed in ***t+1*** and 0 if the worker is still classified as unemployed. All our specifications include the usual controls for age, gender, education, nationality, family status, benefit entitlement, no previous work experience, region fixed effects and four dummies to capture the duration of the unemployment spell. In particular, we distinguish between spells from 0 to 6 months, 6 to 12 months, 1 to 2 years and spells that last more than 2 years.

4.1 Quarterly transition probabilities

Our first set of figures analyzes the evolution of the transition probabilities during the crisis. To obtain these figures, we have estimated a sequence of quarterly transition probabilities on sub-samples of consecutive quarters.

The first figure analyzes the evolution of the transition probability if we alter the duration of the unemployment spell holding all other characteristics fixed. Our baseline individual is a native male in the age group 35 to 50 years with at most upper-level secondary education and previous work experience who is unemployed for less than 6 months and not entitled to benefits. The other three lines are obtained by adding the marginal effects from larger durations – negative in all cases - to the baseline.[6]

Figure 14: Quarterly transitions probabilities by duration of unemployment, 2008-2015



Source: Own estimations based on flow data from the rotating panel of the Spanish Labour Force Survey.
The reported figures correspond to annual averages of the estimated coefficients to eliminate seasonal effects.

The results confirm the existence of a strong negative correlation between the job finding probability and the duration of the unemployment spells. In 2008, the maximum difference in the job finding probability of short- and long-term unemployed was almost 20 p.p. During the crisis this difference has narrowed to approximately 15 p.p.7 Nevertheless, the overall picture is broadly similar. All four job finding probabilities drop steeply in the first recession and, after a tiny recovery, they feature another mild drop during the second recession. By the end

6 Alternatively, we could simply have calculated the average transition probability for all workers within the same discrete period of duration. However, this alternative procedure might lead us to overestimate the effect of duration dependence. The reason is that the workers with relatively unfavorable characteristics are over-represented among the long-term unemployed as we showed in the previous section. Our procedure eliminates this composition effect because we control for selection on observables.

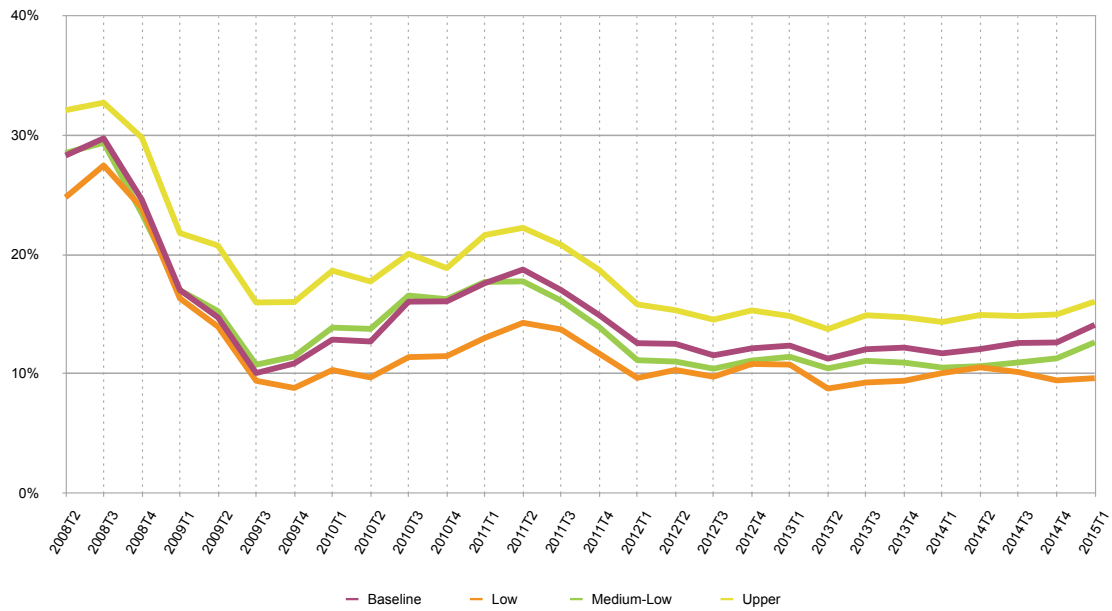
7 The larger differences in job finding probabilities at the start of the crisis are probably due to heterogeneity. In 2008 the incidence of long-term unemployment was very low, and so it is likely that the pool of long-term unemployed contained many of the least attractive workers. Similarly, in these circumstances it makes more sense for employers to use long-term unemployment as a signal of low productivity than in the current circumstances in which all unemployed workers face a considerable risk of long-term unemployment.

of this second recession, the job finding probability for our baseline group of short-term unemployed had fallen from a pre-crisis level of nearly 45% to a minimum level of 25%. In other words, at the worst moment during the crisis, the short-term unemployed faced the same job finding probability as the very long-term unemployed in 2008. In turn, by 2013 the job finding probability of those with unemployment spells of more than two years had fallen to a level of 10%.

In recent quarters we do observe a modest improvement in the labour market prospects of the unemployed, but so far this improvement is mainly restricted to the short-term unemployed. Many of the short-term unemployed have been entering and exiting unemployment during the crisis and they are the first ones to benefit from the improvement in the economic climate. On the contrary, for the most disadvantaged groups we still do not observe a significant improvement. Their job finding probabilities are stagnant at the lowest levels since the start of the crisis. To illustrate this feature, our next two figures depict the job finding probabilities of the long-term unemployed.

The first figure reports the conditional job finding probabilities for workers with different levels of education after an unemployment spell of at least twelve months.

Figure 15: Quarterly transitions probabilities of long term unemployed by education, 2008-2015

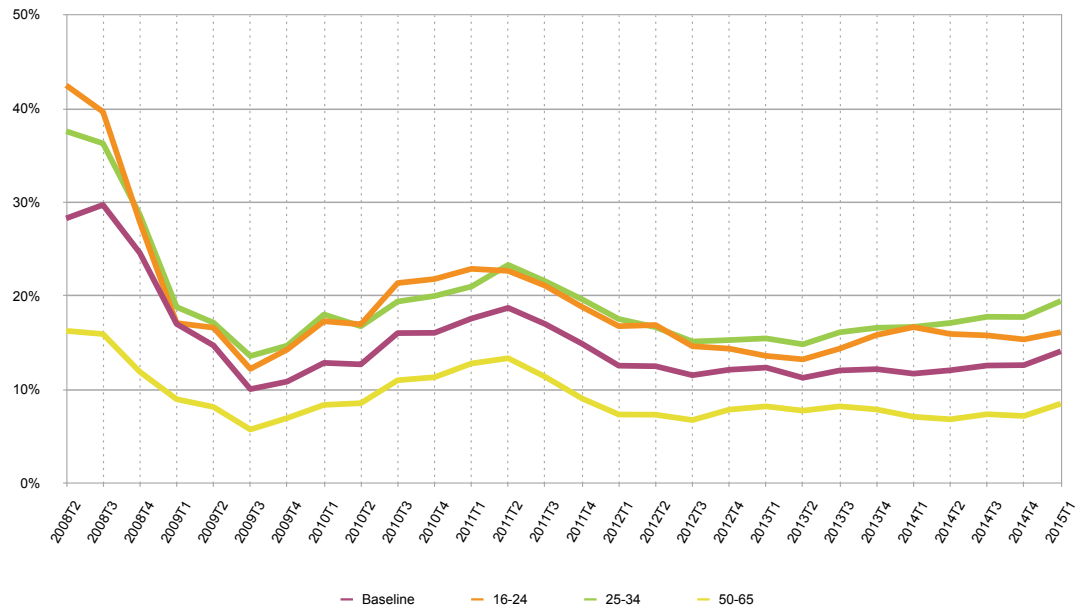


Source: Own estimations based on microdata from the rotating panel of the Spanish Labour Force Survey.
The reported figures correspond to annual averages of the estimated coefficients.
All individuals in the sample are unemployed for at least one year.

Inspection of the figure shows that the job finding probability of the long-term unemployed with no more than primary education is stuck at levels near 10% since the end of the first recession. The only exception is a brief period between the two recessions in which this probability temporarily increased to 15%. Thus, without a substantial improvement in the job finding probability for the long-term unemployed, this group is expected to spend another 10 quarters in unemployment. Similarly, the second figure depicts the conditional job finding probabilities for long-term unemployed workers of different ages. We find that the conditional job finding probabilities are decreasing in the age of the workers, but the striking feature of this graph are the consistently poor labour market prospects of the long-term unemployed above 50. Before the crisis only 16% of these workers managed to find a job in a given quarter and during the crisis this number has fallen below the level of around 7.5%.

After this first look at the time profile of the job finding probabilities, we now turn our attention to a systematic analysis of the determinants of the job finding probabilities.

Figure 16: Quarterly transitions probabilities of long-term unemployed by age group, 2008-2015



Source: Own estimations based on microdata from the rotating panel of the Spanish Labour Force Survey.
The reported figures correspond to annual averages of the estimated coefficients.
All individuals in the sample are unemployed for at least one year.

4.2 Pooled estimations

Table 5 (see page 52) presents the results from a set of pooled regression models. The difference with before is that we now estimate a single model with constant coefficients for the entire sample period. Moreover, our regressors now include the quarterly unemployment rate to control for the profound changes in the aggregate state of the labour market.[8] To facilitate the interpretation of the results, we only report the marginal effects, ***i.e.*** the percentage point increase in the quarterly job finding probability associated with each individual characteristic.

The first column of Table 5 (see page 52) reports the results for our benchmark. All coefficient estimates have the expected sign and are highly significant. Other things being equal, we find that a university degree raises the baseline job finding probability by 3 p.p. (from 17 to 20%), while the difference in the average job finding probabilities of university graduates and high-school dropouts is 5.7 p.p. Similarly, the lack of previous work experience reduces the job finding probability by 8 p.p, while the job finding probability of older workers is 5 p.p lower than that of similar worker in the age group between 35 and 50. Importantly, the negative effects from long unemployment spells dwarf all of the above coefficient estimates. A spell of unemployment that lasts for more than two years is associated with a job finding probability that is 13 p.p. lower than the job finding probability of the short-run unemployed. For a male worker older than 50 with experience and upper-secondary education this corresponds to a 50% reduction in their job finding probability. We have also introduced interactions between the dummy for durations longer than two years and the dummies for specific age groups, but none of these interactions are significant.

The above results have important policy implications as they suggest that duration dependence is a pervasive phenomenon. Nonetheless, some caution is necessary. Despite the fact that our estimations include controls for a wide variety of observable worker characteristics, they should not be interpreted as ***causal*** evidence for the existence of negative duration dependence. The reason is that the negative correlation may be due to a process of selection on unobservables. That is, employers typically observe worker characteristics that are unobservable to the econometrician and if employers consistently hire the best workers this generates a negative

8 The results do not change if we include the square of the unemployment rate.

correlation between duration and the average quality of the workers. Nonetheless, the results strongly suggest that unemployed workers' employment prospects deteriorate substantially after a long spell of unemployment as the adverse effect of large durations seems to be stronger than the adverse affects of low education or a lack of experience.

So far, our estimations included region fixed effects to control for time invariant differences across regions. In our second set of exercises we replace these fixed effects with regional control variables that capture the degree of local mismatch between the demand and the degree of wage compression in the lower part of the wage distribution. Their inclusion is based on the premise that a higher degree of mismatch and a more compressed wage distribution may act as an impediment to hiring. Moreover, we include step dummies for the labour market reforms in 2010 and 2012 to check whether these reforms have had a significant effect on the outflows from unemployment in the period after their adoption.

Our first regional control variable is an educational mismatch-indicator defined as:

$$EMI_{i,t} = \sum_{j=1}^{3} (S_{i,j,t} - D_{i,j,t})^2$$

where $S_{i,j,t}$ is the share of unemployed in region i with educational attainment j in period t while $D_{i,j,t}$ denotes the corresponding share of workers with the same educational attainment among the employed in period t in region i. In the exercise we distinguish between three levels of education as we have grouped the persons with at most primary and lower-secondary education in one group. The second control variable is the difference between the 20th and the 50th percentile of the wage distribution at the regional level.[9] It is an indicator of the degree of wage compression in the lower part of the distribution. The basic idea behind this indicator is that less wage compression at the bottom of the distribution offers more room for wage adjustments and this may foster the reemployment of relatively low-educated workers.

The estimation results are reported in columns 2 to 5. The first three columns estimate the separate effects of the two control variables and the reform dummies, while the fifth column reports the joint effect of the three types of controls. The results indicate that wage flexibility raises the outflow probabilities, both when its effects

9 The wage data correspond to the salary base for Social Security contributions, which is subject to a ceiling. Hence, the data on base wages are top coded but this feature is irrelevant for workers in the lower half of the wage distribution.

are estimated separately and in the joint specification. The same is true for the two reforms with a marginal effect of around 1.4 p.p. in the case of the 2010 reform and 3.2 p.p. in the case of the 2012. Thus, the results seem to indicate that the latest reform has been the more effective of the two. Moreover, the reform dummies seem to capture the fact that the reforms have increased the degree of wage flexibility as our indicator for wage compression loses importance when we introduce the reform dummies. Finally, our mismatch indicator is insignificant in isolation, but when combined with the rest of the controls it has a significant and negative effect on the outflow probabilities, albeit at a significance level of 5%.

Finally, in the sixth column we restrict attention to transitions to permanent jobs. Interestingly, in this specification the two reform dummies do not produce any significant effect. For the moment the reforms therefore seem to have benefitted primarily the creation of fixed-term positions. A potential problem with the estimation

of transition probabilities to permanent employment is the low number of such transitions. Only 2.5% of the transitions from unemployment to employment are transitions to permanent employment. Nonetheless, this does not seem to affect our results, since we obtain the same result if we use social security records, with much larger sample sizes, to evaluate the impact of the reforms on the transition probability to permanent and temporary employment.[10]

4.3. Annual transition probabilities between unemployment and inactivity

As mentioned at the start of this section, the poor employment prospects for the long-term unemployment raise the concern that a substantial share of these persons may withdraw from the labour market. To analyze this issue, we estimate annual transition probabilities between unemployment and inactivity. That is, we estimate the probability that a given person who is unemployed in a given quarter in year ***t*** is inactive in the same quarter in year ***t+1***. The rest of the estimation procedure is the same as before, except that we estimate separate specifications for men and women. The reason is that there is a large group of women who entered the labour market during the crisis and whose labour force attachment may be weaker than that of men. Moreover, we restrict attention to persons in the age group between 25 and 60.

10 The details are available upon request to the authors.

Table 6. Pooled estimations of annual transition rates between unemployment and inactivity, SLFS, 2008:Q1-2015:Q1

	MALE		FEMALE	
Education				
Primary	0.0249***	(0.00566)	0.0460***	(0.00758)
Lower-secondary	-0.0109**	(0.00466)	0.0179***	(0.00597)
Tertiary	-0.0176***	(0.00514)	-0.0275***	(0.00628)
Age				
25-34	-0.0152***	(0.00463)	-0.00935	(0.00590)
>50	0.143***	(0.00655)	0.125***	(0.00790)
Duration				
6-12 months	0.00268	(0.00516)	-0.00525	(0.00675)
12-24 months	0.0204***	(0.00497)	0.0130**	(0.00634)
>24 monts	0.0350***	(0.00598)	0.0404***	(0.00669)
No experience	0.0902***	(0.0148)	0.0822***	(0.0108)
Benefit entitlement	-0.0298***	(0.00366)	-0.0507***	(0.00461)
Foreign	-0.0308***	(0.00561)	-0.0215***	(0.00798)
Obs. P	0.1259879		0.2305894	
Pred P.	0.1110784		0.2173095	
Prob > c2	0		0	
No. Observations	37,075		38,072	

Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.10.
The estimations include regional fixed effects and controls for marital and parental status

The results partially confirm our concerns. Unemployment spells that last longer than two years are found to increase the probability of a transition into inactivity for males and females by, respectively, 3.5 and 4.0 p.p., and more so for low-educated workers. Moreover, older workers are much more likely to abandon the labour market than prime age workers. For males, the estimated coefficient of the dummy for old age of 14.3 p.p. is more than three times as large as the marginal effect of very long unemployment spells. It should be noticed that our

estimations include all transitions into inactivity and not just the transitions by those who define themselves as discouraged workers. The transitions of this latter group are just a tiny fraction of the total number of transitions to inactivity and for the vast majority of the workers we do not observe the precise motive behind their transition into inactivity. Nonetheless, we have performed additional tests to avoid the danger that the dummy for older workers may be capturing other effects, such as increased health risks, that are not (directly) related to the employment status of the workers. Moreover, we also analyze the reverse transitions from inactivity to activity to guarantee that we are capturing irreversible decisions.

The importance of the employment status can be seen by comparing the flows between activity and inactivity by workers of the same age group who are either employed or unemployed. In a given year 10.86% of the active workers in the age group between 50 and 60 abandon the labour market. By contrast, for unemployed workers in this age group the corresponding share is 29.78%. Hence, the unemployed workers in this age group are on average three times as likely to leave the labour market as the average worker in the same age group. Similarly, for the entire sample of workers between 25 and 60, we find shares of, respectively, 7.08% and 17.80%. Obviously, the unemployed workers are not a random sample, but it is highly unlikely that the difference in the transition probabilities between employed and unemployment is solely driven by selection effects.

Next, to discard that we are mainly capturing temporary transitions into inactivity, we also estimated the annual transition probability from inactivity to activity.[11] Transitions of this kind are very frequent among the discouraged workers in the age group between 25 and 34. Almost 70% of these workers return to the labour market after a year. In contrast, older workers in the age group are 22 p.p. less likely to return to activity than similar workers in the age group between 35 and 50. Interestingly, this coefficient is almost identical in absolute value to the coefficient that captures workers' eligibility to unemployment benefits.[12] A benevolent interpretation of this result would indicate that income support is an effective mechanism to keep workers active. But an alternative and probably more realistic interpretation is that a substantial share of the unemployed does not search actively for jobs while they are entitled to benefits. These observations highlight the importance that any financial aid to

11 The results are available upon request.

12 Around 9% of the persons who are inscribed as unemployed and who are entitled to benefits declare themselves to be inactive.

the long-term unemployed should be made conditional on active participation in activities that foster the reintegration of these workers into the labour market.

the cumulative effects

In this final section we use longitudinal data to study the employment histories of selected groups during the crisis. For the design of effective employment policies it is not sufficient to know who is unemployed and what his or her job opportunities are. We also need to know how that person has arrived at such a situation and the details of his or her previous work experience. Moreover, the longitudinal data allow us to study the cumulative effects of job losses during the crisis. There is abundant evidence that workers who are displaced in recessions suffer considerable earnings losses (***e.g.*** Davis and Von Wachter, 2011). Upon reemployment the displaced workers typically receive a lower salary and often enter a cycle of recurrent job losses before they land on a stable job, if they ever do so. In this section we explore both issues drawing on longitudinal Social Security records from the Muestra Continua de Vidas Laborales (MCVL). The MCVL contains exhaustive information on the entire labour market history of 4% of the workers who pay contributions to the Social Security System, either as employed or as unemployed. Throughout this section we restrict attention to persons who were employed in July of 2007.

The victims of the first recession

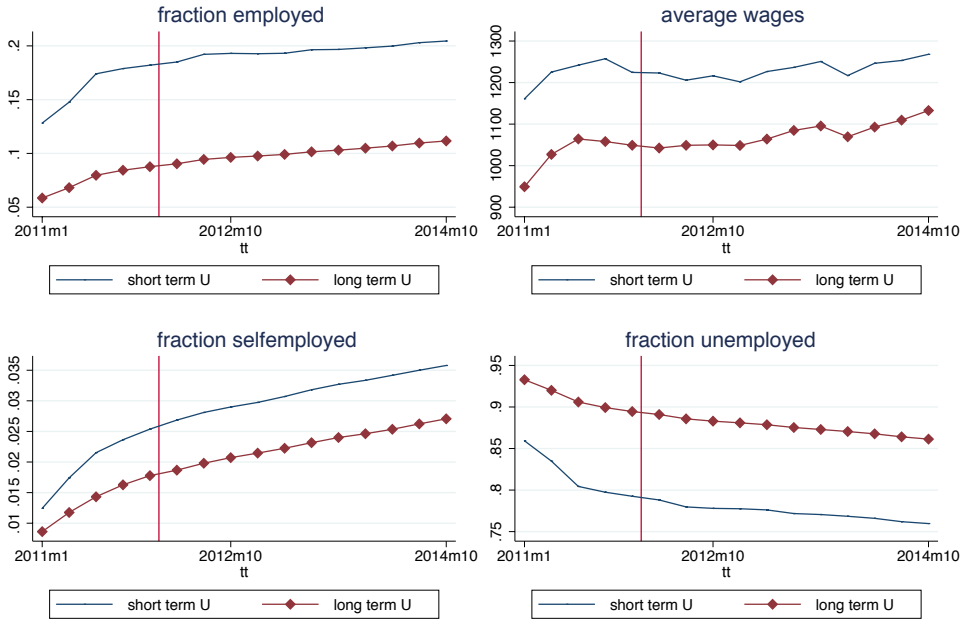
In our first exercise we analyze the labour market histories of a large sample of male workers who lost their job during the first recession and who were unemployed in October of 2010. The data from the MCVL allow us to track these workers during a period of four years until the end of 2014. To understand how the duration of the unemployment spell has affected their subsequent work experience, we have divided the sample up in short-term and long-term unemployed. The individuals in the first group were unemployed for less than twelve months at the end of 2012, while the individuals in the second group were unemployed for more than twelve months at the start of our sample period.[13]

Figure 17 summarizes the subsequent working histories of both groups. It reports the average fraction of time the workers in both groups have been either employed, unemployed or self-employed, plus it provides data on the evolution of the salary base for social security contributions that is the best available proxy for wages.

13 Formally, it would be more correct to use the term non-employed rather than unemployed as the administrative data do not allow us to distinguish between unemployed and inactive workers. To avoid possible contamination of the results we have eliminated all workers with spells of non-employment longer than five years.

The data are very revealing. The short-term unemployed accumulate more time in employment and/or self-employment and less time in unemployment than the long-term unemployed and they earn substantially higher wages. Nonetheless, both groups of workers incur severe losses. On average they only manage to work 11 to 20 percent of the time and at the end of the sample period they still suffered unemployment rates over 75%. The differences in the experiences of the short- and long-term unemployed may seem small given the findings of the last section, but it should be reminded that the job finding rates were low for all unemployed workers. As a result, the conditional probability that a short-term unemployed turned into a long-term unemployed several months later was very high. Furthermore, self-employment is clearly not a viable option for many of the unemployed. The persons in our sample devote at most 3.5% of their time to activities as self-employed.[14]

Figure 17. The cumulative experiences of the unemployed males in 2010:Q4: short-term versus long-term unemployed



Source: Own calculations based on data from the Muestra Continua de Vidas Laborales.
The vertical lines indicate the timing of the 2012 labour market reform.

The above figures contrast sharply with the experiences of the workers who managed to hold on to their jobs during the first recession. This group of survivors was employed 80% of the time between October 2010 and October 2014 and their average salary was almost twice as high as the one received by the above-mentioned groups. However, it is clear that the three groups are not random samples. The vast majority of the survivors

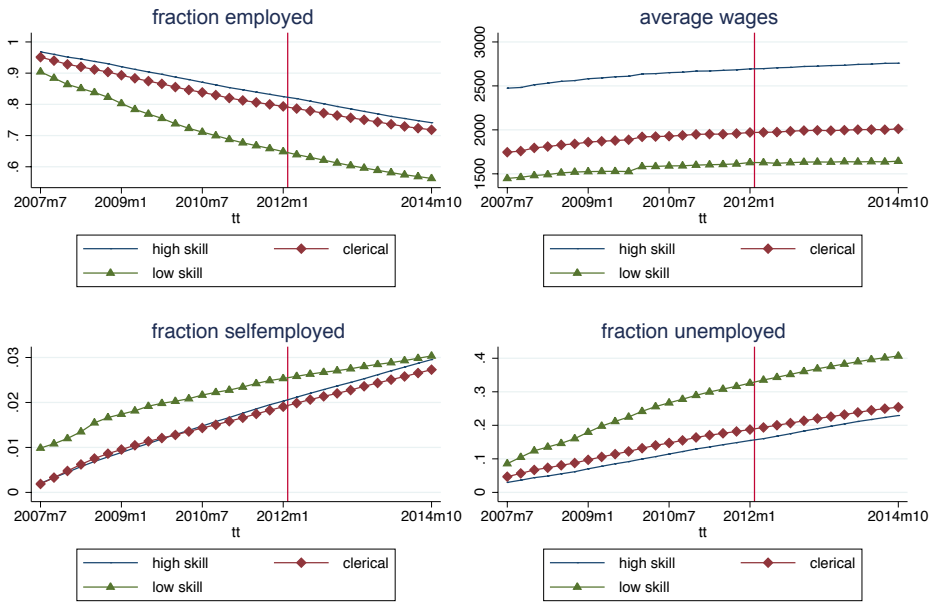
14 The fact that less long-term unemployment opt for self-employment may reflect a selection effect, but it could also be due to credit constraints. The Spanish government offers facilities to launch a new business to unemployed workers who are entitled to benefits, but many long-term workers are excluded from these facilities as they are no longer entitled to benefits.

(83%) were experienced workers with a permanent contract and tenure on the job of, on average, 6 years. By contrast, the unemployed in 2010 were younger and rather inexperienced workers who predominantly held fixed-term contracts at the onset of the crisis.[15] Moreover, the contract type of workers is correlated with their skill profile. The majority of the unemployed in 2010 are blue-collar workers while they are a minority among the survivors. In our next experiments we try to disentangle the relative importance of skills, experience and contract type. In these exercises we follow the workers from the start of our sample period.

The importance of skills and contract type

We start by considering the role of skills. Since the MCVL does not contain reliable information on educational attainments we use workers' occupational category as a proxy for education and we divide workers up in three groups: managerial, white collar and blue collar. The analysis offers a number of interesting insights. First, abstracting from the differences in wages, the two top categories followed very similar trajectories during the crisis. In particular, they incurred substantially smaller losses than blue-collar workers. Even so, these skilled workers only managed to work 70% of the time, implying that they spent a total of eight quarters in either unemployment or inactivity. Blue-collar workers, on the contrary, lost more than 40% or 2.5 years of potential working time.

Figure 18. The cumulative experiences of males by level of skill 2Q/2007

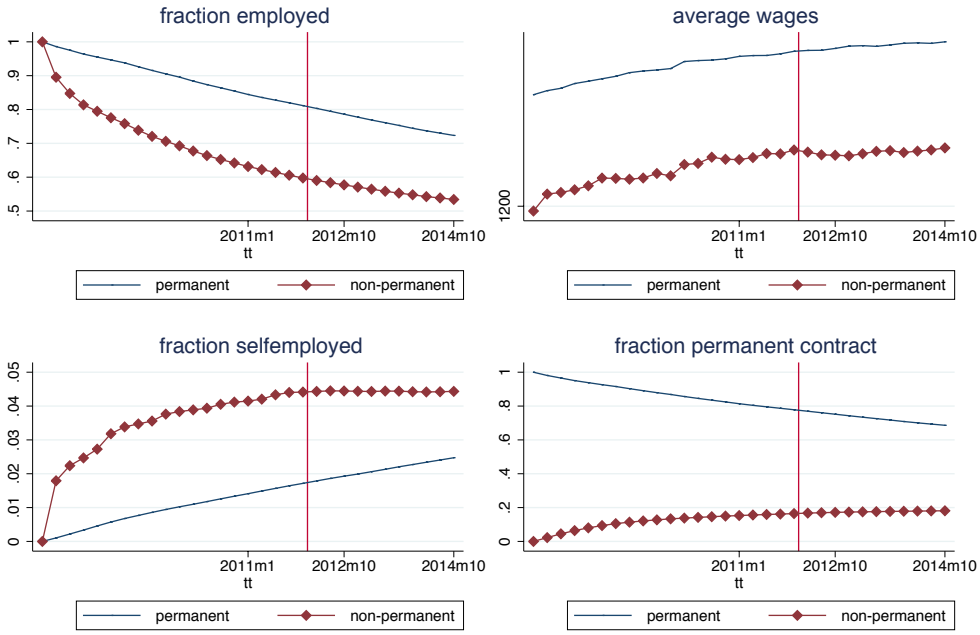


Source: Own calculations based on data from the Muestra Continua de Vidas Laborales.
The vertical lines indicate the timing of the 2012 labour market reform.

15 A total of 73% of the short-term unemployed and 58% of the long-term unemployed in 2010 were employed on a fixed-term contract in 2007.

The above estimates of the cumulative losses are surprisingly close to the ones that we obtain when we split up the sample according to the workers' type of contract in 2007 (see Figure 19). The workers who held a permanent contract in 2007 accumulated an average loss of working time of almost 30%, while the corresponding losses for those on temporary contracts is close to 50%. Moreover, the differences in contract type are very persistent. Almost 70% of the persons who held a permanent contract in 2007 and who are employed in 2014 still hold a permanent contract, although not necessarily with the same employer. By contrast, for those who held a temporary contract in 2007 the corresponding figure is just 20%. The rest is still employed on a temporary contract or unemployed.

Figure 19. Cumulative experiences of males by type of contract in 2007



Source: Own calculations based on data from the Muestra Continua de Vidas Laborales.
The vertical lines indicate the timing of the 2012 labour market reform.

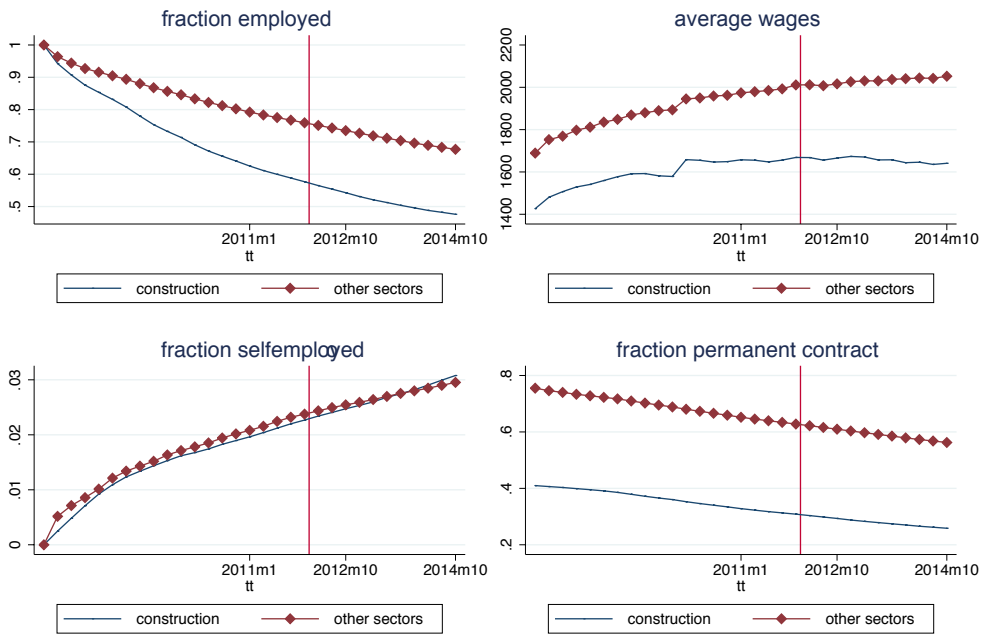
To some extent both exercises measure the same effects as blue-collar workers are over-represented among the workers with temporary contracts. However, this is not the entire story. Age, experience and the sector of occupation also play an important role on their own. A substantial share of the workers with temporary contracts were young workers who had the misfortune that they entered the labour market right before a deep recession. Here we have measured the losses that those workers have incurred up to date, but in the case of youth the losses are bound to grow further in the future. The reason is that long spells of unemployment in the initial stages of the working career of a young person are known to have adverse effects on their careers on

adults. Finally, the last aspect that impinges on the magnitude of the cumulative effects, and that we could not explore in the previous section due to a lack of data, is the sector of occupation.

Workers from the construction sector

In our last exercise we focus on the persons who were employed in the construction sector at the start of the crisis. We have already shown (see Table 4) that these workers make up a disproportionately large share of the long-term unemployed. Here we want to assess how their cumulative losses compare to the losses suffered by workers from other sectors, and we want to assess their capacity to switch to other sectors. The results are reported in Figure 20.

Figure 20. Cumulative experiences of males with an initial job in the construction sector



Source: Own calculations based on data from the Muestra Continua de Vidas Laborales.
The vertical lines indicate the timing of the 2012 labour market reform.

Inspection of the top left panel indicates that the workers from the construction sector have worked less than 50% of the time during the crisis. Once again, this number is surprisingly close to the cumulative loss of working time for those who were employed on a temporary contract in 2007. Seen from this perspective, the workers from the construction sector can hardly be considered outliers. Nonetheless, their future employment prospects are particularly bleak. Only 46.67% of the construction workers in our sample worked during the last quarter of 2014. The rest was either unemployed or inactive and out of this group 79.96% are long-term unemployed and

69.78% have been unemployed for more than two years. In other words, the overwhelming majority of those who did not have a job at the end of 2014 are very long-term unemployed and only 37.4% of the non-employed received some form of benefits, and out of these only 36% are entitled to contributive unemployment benefits. The rest receives unemployment subsidies that are means tested and unrelated to the worker's previous salary.

Lastly, out of those who had work, the majority continued in the construction sector (50.08%) and only 9.74% obtained a job in the manufacturing or energy sector. The rest of the jobs are concentrated in low-skilled occupations in the service sector. In sum, the data reveal not only a very delicate labour market situation for those who were employed in the construction sector in 2007, but also a limited ability to relocate to other sectors in the economy. One obvious explanation for the limited relocation is the apparent lack of appropriate skills, reflected in the large percentage of high-school dropouts with no relevant work experience in other sectors. But the numbers also point at weaknesses in the design and the scope of the activation programs for the long-term unemployed. There are no specific programs for workers from the construction sector and the stringent criteria for entitlement reduce the scope of these programs well below the objectives set by the government.

concluding remarks

The Spanish economy has returned to growth and is currently leading employment growth in Europe. Over the last twelve months the number of jobs increased by half a million and the forecasts for this year are even better. Nonetheless, the evidence presented in this report suggests that these high growth rates may be difficult to sustain for a long period without effective measures to promote the reinsertion of the long-term unemployed. The incidence of long-term unemployment is higher than ever before and the job finding rates of those who are out of a job for several years are so low that these workers may lose the connection to the labour market before the recovery is completed.

One of the main contributions of this report is the careful analysis of the determinants of the low outflow rates of the long-term unemployed and, in particular, the distinction between duration dependence on the one hand and the role of personal characteristics such as age, education and experience on the other hand. The econometric analysis offers overwhelming evidence of duration dependence. Unemployment spells of over two years are very common and the associated 13 p.p. reduction in the quarterly outflow rate is twice as large as the difference between the outflow rates of university graduates and high-school dropouts. One way to neutralize or mitigate the effects of duration dependence are policies that allow the long-term unemployed to acquire some work experience, preferably in the form of targeted hiring subsidies for employment in the private sector rather than direct employment in public employment programs. But there are there large groups of vulnerable workers for which these measures may not be sufficient. A clear example are the low-educated workers who used to work in construction and who have no relevant work experience in other sectors. For these workers some form of training may be indispensable in order to prepare them for employment in other sectors.

Our overall conclusion is that the combination of pervasive long-term unemployment, low outflow rates and ill-equipped Public Employment Services create a substantial risk of social and economic exclusion. To revert this situation, Spain should step up its effort to promote the reinsertion of the unemployed and implement further reforms to improve the design of its active labour market policies. In recent months, the government has introduced measures to link the funding of active labour market policies to outcomes and the latest program

directed at long-term unemployed persons with children (***Programa de Activación para el Empleo***) includes the commitment of a personal tutor who is charged with the design of individual itineraries. The itinerary specifies the rights and obligations of the participant and is supposed to lead the person back into employment. Similarly, within the scope of the Youth Guarantee the Government has committed itself to offer assistance to young persons who have been out of a job for more than four months since they left the educational system.

The above measures are all steps in the right direction, but more is needed. The promises need to be matched with sufficient resources and Spain needs to develop a coherent activation strategy that offers personalized assistance to a much broader group of job seekers. Nowadays the criteria for activation measures depend exclusively on the duration of the unemployment spell and individual characteristics such as age or parenthood. As a result, activation often starts several years after the person first registered as unemployed. Moreover, the activation measures and training programs are too generic and there is no systematic evaluation of their impact.

The implementation of a coherent activation strategy requires profound changes in the internal organization and the ***modus operandi*** of the Public Employment Services (PES), starting with the development of state-of-the-art profiling tools. Such tools are essential to rank job seekers on the basis of their distance to the labour market and to identify the barriers that may impede a quick return to the labour market. In addition, measures should be taken to integrate the services of the national and the regional PES so that all relevant decisions concerning benefit entitlements and activation measures are taken by one and the same person. The experience of other countries has shown that such measures may lead to significant improvements in the performance of the PES, but these reforms take time and there is a scale issue. At the moment, personnel needs are much bigger than in normal circumstances due to the exceptionally high levels of unemployment.

One way to tackle this problem is through the use of public-private partnerships between the PES and private intermediaries. The legal basis for such partnerships was created in 2010, but five years later the first referrals still need to take place. The private intermediaries are experts in the placement of workers and, contrary to the PES, they will be rewarded on the basis of results. This reduces the financial risks associated with an upscaling of the services to the long-term unemployed and a proper design of the referral process could grant the long-term unemployed access to more and better services.

The recent meta-analysis of the impact evaluations of active labour market programs of Card, Kluve and Weber (2015) suggests that these programs are an effective tool to tackle the problem of long-term unemployment and more so in periods of recessions. Yet only a small number of the included impact evaluations refer to interventions in Spain. The existing literature therefore offers little guidance about the kind of policies that are most effective in the Spanish context. Spanish policy makers should therefore experiment with different kind of interventions that proved to be efficient elsewhere and carefully evaluate their impact to make sure that they deliver the desired effects. The public sector will have to play a leading role in this process, but the active participation of all stakeholders, including unions, employers' organizations and the third sector, is indispensable to create the conditions for an inclusive recovery that leaves no one behind.

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Appendix

Pooled estimations table

	-1	-2	-3	-4	-5	-6
Female	-0.0181***	-0.0177***	-0.0166***	-0.0182***	-0.0167***	0.00572***
	-0,0014	-0,0014	-0,00144	-0,0014	-0,00144	-0,000481
Education						
Primary	-0.0269***	-0.0277***	-0.0277***	-0.0253***	-0.0265***	-0.00461***
	-0,00219	-0,00219	-0,00223	-0,00221	-0,00225	-0,000685
Lower-secondary	-0.00672***	-0.00555***	-0.00587***	-0.00665***	-0.00594***	-0,000675
	-0,0018	-0,00181	-0,00185	-0,0018	-0,00186	-0,000609
Tertiary	0.0304***	0.0309***	0.0320***	0.0293***	0.0313***	0.00241***
	-0,00209	-0,0021	-0,00216	-0,00209	-0,00216	-0,000704
Age						
16-24	0.00935***	0.0108***	0.0108***	0.00982***	0.0113***	-0.00632***
	-0,00266	-0,00268	-0,00274	-0,00267	-0,00275	-0,000765
25-34	0.0311***	0.0320***	0.0317***	0.0316***	0.0320***	0,000801
	-0,00202	-0,00203	-0,00208	-0,00202	-0,00208	-0,000652
>50	-0.0500***	-0.0496***	-0.0501***	-0.0506***	-0.0506***	-0,000137
	-0,00181	-0,00182	-0,00188	-0,00181	-0,00187	-0,000658
Duration						
6-12 months	-0.0533***	-0.0540***	-0.0544***	-0.0530***	-0.0540***	-0.00961***
	-0,00163	-0,00163	-0,00167	-0,00163	-0,00167	-0,000462
12-24 months	-0.0945***	-0.0959***	-0.0968***	-0.0946***	-0.0969***	-0.0126***
	-0,00145	-0,00145	-0,00148	-0,00145	-0,00149	-0,00044
>24 monts	-0.130***	-0.132***	-0.134***	-0.132***	-0.135***	-0.0162***
	-0,00144	-0,00144	-0,00147	-0,00144	-0,00147	-0,000461

	-1	-2	-3	-4	-5	-6
No experience	-0.0827***	-0.0833***	-0.0839***	-0.0834***	-0.0845***	-0.00592***
	-0,00197	-0,00198	-0,00203	-0,00196	-0,00203	-0,000789
Benefit entitlement	-0.00862***	-0.00869***	-0.00898***	-0.00787***	-0.00836***	-0,000737
	-0,00151	-0,00152	-0,00155	-0,00151	-0,00155	-0,0005
Foreign	0.00778***	0.00820***	0.00973***	0.00799***	0.0103***	0.00393***
	-0,00237	-0,00234	-0,0024	-0,00237	-0,00241	-0,000834
Mismatch		0,0401			-0.168**	0.130***
		-0,074			-0,0787	-0,0258
Wage flexibility			0.0745***		0.0570***	-0.0669***
			-0,0128		-0,0129	-0,00437
Reform 2010				0.0142***	0.0145***	-0.00135*
				-0,00258	-0,00264	-0,000797
Reform 2012				0.0323***	0.0323***	0,00103
				-0,00318	-0,00341	-0,00107
Obs. P	0,1846033	0,1850069	0,186608	0,1846033	0,186608	0,0215588
Pred P.	0,1701502	0,1708889	0,1723841	0,1701216	0,1723691	0,0175778
Prob > c2	0	0	0	0	0	0
No. Observations	322.031	319.426	306.557	322.031	306.557	306.557

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