Catastrophic Job Destruction

Anabela Carneiro,

Pedro Portugal,

Jose Varejão

OECD

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

23-Sep-2013
_____
English - Or. English

DIRECTORATE FOR EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS
EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS COMMITTEE

OECD SOCIAL, EMPLOYMENT AND MIGRATION WORKING PAPERS, No. 152

CATASTROPHIC JOB DESTRUCTION

Anabela Carneiro, Pedro Portugal and José Varejão

NOTE: This working paper is available only in pdf version.

For further information please contact Alexander Hijzen (alexander.hijzen@oecd.org) +33 1 45 24 92 61. All Social, Employment and Migration Working Papers are available at www.oecd.org/els/workingpapers.

JT03344844

DIRECTORATE FOR EMPLOYMENT, LABOUR AND SOCIAL AFFAIRS

www.oecd.org/els

OECD SOCIAL, EMPLOYMENT AND MIGRATION WORKING PAPERS

www.oecd.org/els/workingpapers

This series is designed to make available to a wider readership selected labour market, social policy and migration studies prepared for use within the OECD. Authorship is usually collective, but principal writers are named. The papers are generally available only in their original language – English or French – with a summary in the other.

Comment on the series is welcome, and should be sent to the Directorate for Employment, Labour and Social Affairs, 2, rue André-Pascal, 75775 PARIS CEDEX 16, France.

The opinions expressed and arguments employed here are the responsibility of the author(s) and do not necessarily reflect those of the OECD.

**Applications for permission to reproduce or translate
all or part of this material should be made to:**

**Head of Publications Service
OECD
2, rue André-Pascal
75775 Paris, CEDEX 16
France**

Copyright OECD 2010

ACKNOWLEDGEMENTS

ABSTRACT

In this article we study the resilience of the Portuguese labor market, in terms of job flows, employment and wage developments, in the context of the current recession. We single out the huge contribution of job destruction, especially due to the closing of existing firms, to the dramatic decline of total employment and increase of the unemployment rate. We also document the very large increase in the incidence of minimum wage earners and nominal wage freezes. We explored three different channels that may have amplified the employment response to the great recession: the credit channel, the wage rigidity channel, and the labor market segmentation channel. We uncovered what we believe is convincing evidence that the severity of credit constraints played a significant role in the current job destruction process. Wage rigidity is seen to be associated with lower net job creation and higher failure rates of firms. Finally, labor market segmentation seemed to have favored a stronger job destruction that was facilitated by an increasing number of temporary workers

RÉSUMÉ

Dans cet article, nous analysons la résilience du marché du travail portugais, en termes de mouvements de main d'œuvre, d'emplois et d'évolution des salaires, dans le contexte de la récession actuelle. Nous mettons en évidence la contribution significative des destructions d'emplois, notamment en raison des fermetures d'entreprises, à la baisse importante de l'emploi total et à l'augmentation du taux de chômage. Nous examinons également le très fort accroissement du nombre de travailleurs rémunérés au salaire minimum et le gel des salaires nominaux. Nous explorons trois différentes causes pouvant avoir amplifié la réaction de l'emploi à la grande récession : l'accès au crédit, la rigidité des salaires, et la segmentation du marché du travail. Nous mettons en lumière une preuve, que nous jugeons convaincante, que la rigueur des contraintes de crédit pesant sur les entreprises a joué un rôle important dans le processus actuel de destruction d'emplois. La rigidité des salaires est considérée comme allant de pair avec une création nette d'emplois plus faible et des taux plus élevés de faillite d'entreprises. Enfin, la segmentation du marché du travail semble avoir favorisé des destructions d'emplois plus fortes rendues possibles par un nombre croissant de travailleurs temporaires.

TABLE OF CONTENTS

1 Introduction

In Economics, resilience is typically defined as the rate at which an economic system responds to an exogenous shock. It is greater when the response preserves or minimizes changes to the pre-existing status quo. Hence, resilience may be quantified as the cumulative loss in some variable of interest and/or documented with the depth of structural reforms triggered by the shock.[1] Given its implications for aggregate welfare, labor market resilience - defined as 'the extent to which labor markets weather economic downturns with limited social costs' (OECD, 2012: 57) - is of special interest.

The depth of the 2008-2009 economic crisis put the resilience of labor markets across the globe to the test and provided us with the ideal setting for studying how labor markets respond to shocks. In its 2012 Employment Outlook Report, the OECD concluded that labor market institutions crucially shaped the response to the global crisis with coordinated bargaining increasing resilience and the spread of temporary employment reducing it (OECD, 2012: 55). As the global crisis kicked in, substantial differences across countries both in terms of labor market institutions and economic fundamentals were already apparent. It is clear that some economies were better-equipped to deal with the consequences of the recession than others.

In this paper, we focus on the case of Portugal which is of interest for two major reasons. First, despite all the regulatory changes implemented since 2002, the Portuguese labor market is, according to the OECD index of employment protection legislation strictness, an extreme case of labor market regulation. Second, even before the recession set in, the Portuguese economy was already facing severe macroeconomic imbalances that amplified the domestic impact of the international recession. Portugal clearly stands out as one of the OECD countries most ill-equipped to weather the effects of the current recession.

Our aim is to analyze how the Portuguese labor market responded to the re-

---

[1] One of the definitions of resilience used in Ecology focuses on the magnitude of a disturbance that can be absorbed before the system changes its structure, the greater that magnitude is the more resilient the system is.

cession, focusing on the employment and wage response to the great recession and considering three different channels that may have amplified the employment response: the credit channel, the wage rigidity channel, and the labor market segmentation channel.[2] In the empirical part of the article we use microdata from the Personnel Records database (*Quadros de Pessoal*), henceforth *QP*, that are available for the years 1985 to 2010. These data are linked employer-employee data. They do not have information on financial variables. For that reason, to analyze the importance of the credit channel we use data from the Simplified Business Information database (*Informação Empresarial Simplificada*), henceforce *IES*, available for the years 2005 to 2011.[3]

The article is organized as follows. Section 2 gives an overview of the evolution of the Portuguese economy and the Portuguese labor market over the last 20 years. In Section 3 the role that each transmission channel played during the current recession is analysed. Section 4 concludes.

2 Background information on the Portuguese case

2.1 The macroeconomy

When the 2008-2009 recession hit Portugal, the Portuguese economy was already facing severe macroeconomic imbalances. Blanchard (2007) offers a very precise diagnosis of the country's economic problems at the onset of the recession: *'Portugal is in serious trouble. Productivity growth is anemic. Growth is very low. The budget deficit is large. The current account deficit is very large. In the absence of policy changes, the most likely scenario is one of competitive disinflation, a period of sustained high unemployment until competitiveness has been reestablished'.*

The diagnosis proved accurate (Figure 1): the large decrease in nominal interest rate (1995-2001) opened the way to an increase in debt-funded private expenditure

---

[2]Other mechanisms are, surely, at work. The role of fiscal multipliers (Blanchard and Leigh, 2013), the consequences of the combination of generous unemployment benefits with strict employment protection (the unemployment time-bomb suggested in Ljungqvist and Sargent (1998), or the persistence of unemployment generated by hysteresis (Blanchard and Summers, 1986) certainly deserve a deep analysis. With the current available microdata, however, this is beyond the scope of this study

[3]For a description of the data, see Appendix 1. Whenever appropriate we also use data from a random sample extracted from Social Security records.

that originated an increase in labor demand and a 6 percent annual average increase of nominal wages and an inflation rate of 4 percent. Competitiveness *vis-à-vis* the eurozone countries rapidly and significantly deteriorated (see Franco, 2013).
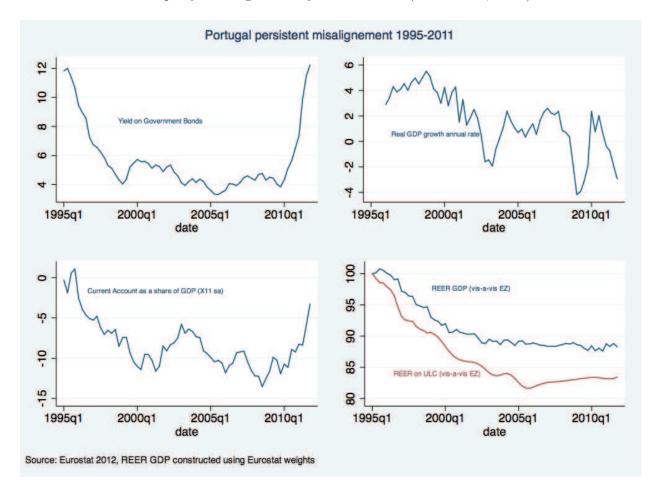
Figure 1: Portuguese Macroeconomic Imbalances

Source: Franco (2013).

In such a context the government's immediate response to the international financial crisis was driven by two objectives: to maintain the stability of the Portuguese financial sector, and to smooth the domestic effects of the crisis. The combined effects of the increased public spending and reduced public revenue (due to the activation of automatic stabilizers) made access to international financial markets increasingly more difficult, and eventually (May 2011) led to a rescue

plan agreed between the Portuguese government, the European Union, the European Central Bank, and the International Monetary Fund. Structural reforms are one essential ingredient of this plan, including the reform of a large number of institutions, namely labor market institutions.

The implementation of the said plan in the context of a global recession originated a severe domestic recession that generated historically high unemployment rates - in the first quarter of 2013 the unemployment rate reached 17.7 percent, which nearly tripled the average rate of unemployment that prevailed for decades (see Figure 2).
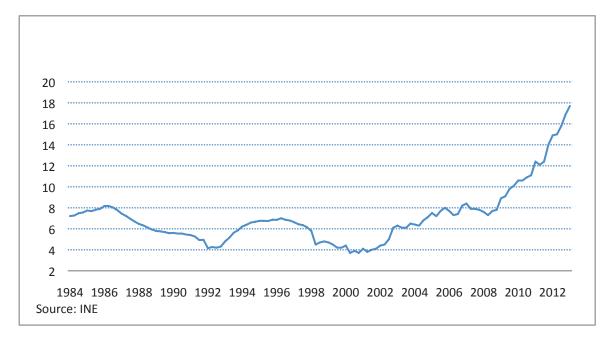
Figure 2: The Evolution of the Unemployment Rate (in %) – 1984-2012

Source: INE - Labour Force Survey.

Four years into the recession the unemployment rate is ten percentage points higher than it was at the onset and employment fell by more than 12 percentage points. This evolution reflects not only the depth of the recession, but also the underlying macroeconomic dynamics.

The sharp fall of total employment that characterizes this recession can be decomposed into two sources: the employment variation accounted for by continuing

firms and the employment variation accounted for by the entry and exit of firms. Figure 3 shows that, as the recession hit in 2008-09, employment creation fell along both margins: the level of job creation by expanding firms dropped in 2009 to a level that is similar to that observed in 1993, whereas job creation by newly-created firms in 2009 equaled the period's minimum.
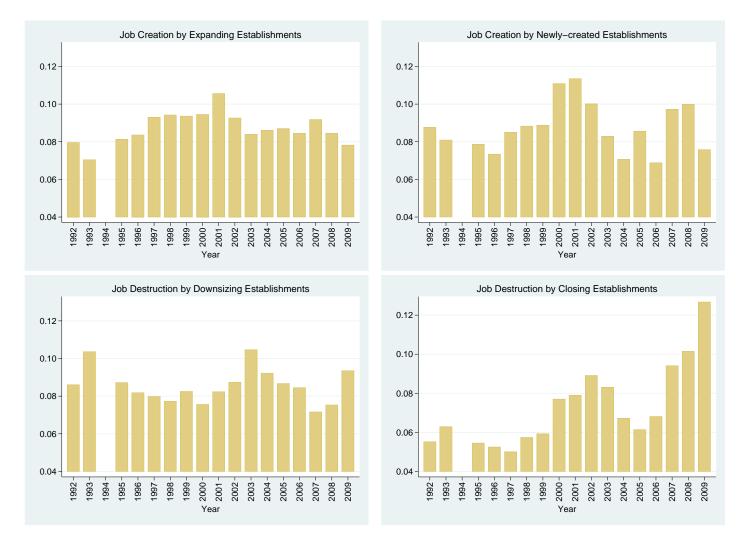
Figure 3: Job Creation and Job Destruction, by margin of adjustment (1992-2009)

Note: All measures of job turnover were computed using Davis *et al.* (1996) definitions using *QP* firm level data.

However, it is along the destruction margin that, relatively to past recessions, the employment path during this recession shows the most striking differences. Job destruction by firms that continue in operation increased very significantly in 2009, but not more so than during the 1993 recession. Yet, along the exit margin, we do observe an unprecedented massive and immediate amount of job destruction. From 2007 to 2009, the rate of job destruction by closing firms increased 2.6 p.p. - in 2009, firms that closed down destroyed 6.9 percent of the corresponding average number of jobs that existed in that year. Over the entire period analyzed, firm shutdowns accounted, on average, for 36.4 percent of total job destruction. However, as the current recession sank in, the share of closings in the total increased sharply, from 37.5 percent in 2006 to 45.6 percent in 2009. In the same year, the share of job turnover accounted for by the turnover of firms was 40.6 percent, 5 p.p. above its pre-recession (2006) level.

Hence, if one wants to understand the causes of the employment crisis it is essential to look at both the intensive (downsizing) and extensive (exit) margins of firm adjustment. Firm closings are a major ingredient of the current situation, and much more so than they were in past recessions.

2.2 The labor market

2.2.1 Labor market flows

Strict job security rules have been blamed for low intensity transitions between employment and unemployment, and very long unemployment spells (Blanchard and Portugal, 2001).

Data from the European Household Panel shows that Portugal has the lowest arrival rate of job offers among all the countries represented in the panel (Jolivet *et al.* 2006; Addison *et al.*, 2009). The evidence available (Torres, 2010, Elsby *et al.*, 2008) also indicates that job separation and job finding probabilities are very low, with job separations being essentially acyclical whereas the probability of job finding is strongly cyclical. However, Torres (2010), using Employment Survey data finds evidence of an upward shift in job separation probabilities in

more recent years.

During the nineties, the Portuguese labor market was already conspicuous for exhibiting high mean unemployment duration. In comparison with the US, Portugal presented three times longer unemployment durations. During the second half of the 2000s, mean unemployment duration increased significantly (from a minimum of less than 14 months in 2003) to all-time high values in 2013 (above 23 months).

Properly accounting for the fact that only unemployment spells in progress are sampled, and assuming stationarity of unemployment inflows it is estimated that mean unemployment duration increased by 68.7 percent over the period and that the fraction of long-term unemployed (those with a low hazard rate) changed from 25,3 percent to near 70 percent.[4] Since the unemployment rate was roughly multiplied by a factor of three during the same period, this means that inflows into unemployment increased by around 78 percent.

TABLE 1: DISTRIBUTION OF UNEMPLOYMENT DURATION

	Exponential Mixture	
	2001-2002	2011-2012
Short-term λ_1	0.158*	0.167*
	(0.009)	(0.013)
Long-Term λ_2	0.045*	0.044*
	(0.001)	(0.001)
Fraction of long-term	0.253*	0.696*
Mean unemployment duration	10.4 months	17.5 months
N	7 045	21 260

Source: INE-Labour Force Survey.

In such a setting, unemployment protection will tend to cushion the pain associated with the joblessness experience, that is severe both due to the long duration of unemployment spells and to significant wage cuts after reemployment (Raposo, *et al.*, 2013). Yet, unemployment protection also generates an even steeper fall in the transition from unemployment into employment. Addison and Portugal (2008) analyzed pre-1998 transitions from unemployment to employment using a

---

[4]All these results were obtained from the estimation of a discrete mixture exponential model, accounting for censored durations and for stock sampling, on data from the INE employment survey records for the period 2001-2002 until and 2011-2012.

regression discontinuity design that fits the characteristics of the unemployment insurance at that time when the maximum period of potential benefit depended in a deterministic way on the age of the unemployed person. The authors find that a large proportion of the population (44.5%) never makes a transition out of unemployment, but they also conclude that longer maximum potential duration of benefits translate into much lower escape rates.

2.2.2 Institutional Wage Setting

Wage setting in Portugal is dominated by the presence of mandatory minimum wages and by the widespread use of government extensions of sectoral agreements. Collective bargaining differs from that in other nations by virtue of its fragmentation and extent of multiunionism.

There is a modicum of firm-level bargaining but formally decentralized bargaining of this nature is the exception rather than the rule – covering less than 10 percent of the workforce – and often taking place in large enterprises that were formerly part of the public sector. Sectoral agreements, conducted by employer and union confederations, may cover a wide range of industry specific occupations but the system does not rule out overlapping collective agreements, such that a single enterprise may be covered by two or more agreements depending on the union affiliation of its workers. Overall, coverage of collective agreements in the Portuguese private sector is above 90 percent.

Collective agreements are at once extensive and general. They are extensive insofar as they cover many categories of workers. They are general in that they set only minimum conditions of which the most important is base level monthly wages – though others include normal working hours and overtime pay. The focus is upon wage floors rather than anticipated wage growth that in some centralized bargaining regimes (*e.g.* Sweden) is then incorporated into sectoral agreements. In consequence, employers have freedom of maneuver to tailor remuneration to their prevailing economic circumstance (see Cardoso and Portugal, 2005).

The most relevant mechanism shaping the formation of wages is the system-

atic extension of industry-wide agreements by the Ministry of Employment. Even though by law the collective agreement only binds the trade union members and the employer associations' affiliated firms that are parties to the agreement, there is no legal mechanism that obliges the trade unions and the employers association to reveal their constituency. This legal conundrum is almost always circumvented by extending the agreement to the whole sector through the use "portarias de extensão". This means that even wage agreements reached by trade unions and employers' associations with very low representation have a strong impact in setting wage floors. Indeed, in any given year, collective bargaining sets around 30,000 minimum wages that correspond to 30,000 job-titles.

These minima apply if they are set over and above the wage floors set under national minimum wage machinery that was established in 1974. National legal minimum wages and pervasive wage floors set by collective bargaining coupled with the legal prohibition of nominal wage cuts (that survives since the 1950s) creates a *de facto* situation of extreme nominal wage rigidity. However, in a high inflation regime, this restriction proved to be not binding in real terms as real salary concession is achieved by raising nominal wages at a rate below the inflation rate, and for firms paying wages above the corresponding new minimum, by reducing the wage drift.

In such a setting, the higher the inflation rate, the more leeway on wages is available for companies. However, in a low-inflation regime nominal wage rigidity may stop companies from adjusting to negative shocks to the demand for their products through wage manipulation.[5] In situations like this, employers' response on the wage margin is limited to the possibility of reducing the wage drift or going for the minimum nominal wage increase possible, ultimately freezing wages. Hence, in a low-inflation regime, negative shocks are expected to shift the employment distribution of nominal wage adjustment towards zero, the magnitude of real wage adjustment being conditional on the inflation rate. This is, in fact, what is observed during the current recession, with the wage response being characterized as in the

---

[5]Extra leeway for adjustment could also be obtained from using the structure of total pay, which is made up of base pay, regular and occasional payments and overtime, to reduce wages.

past by no (or limited) nominal negative variations (measured from base pay), but a much higher likelihood than in the past that wage variations are nil; there is also a salient move towards zero in the distribution of wage variations, corresponding approximately to the expected inflation rate and accentuating even more the low distribution spread.

Furthermore, mounting evidence indicates that the cyclicality of real wages declined after the accession to the Euro area (Portugal *et al.*, 2012). With due proviso for the care to be taken over the interpretation of these results, owing to the uncertainty of the timeline associated with the measurement of the economic cycle, claim may naturally be made to the loss of real wage sensitivity as one of the mechanisms responsible, *inter alia*, for the Portuguese economy current macroeconomic imbalances (Blanchard, 2007).

3   Transmission channels

In previous sections we documented three main features of the current recession in Portugal: (i) severe credit constraints, (ii) limited real wage flexibility with nominal wage downwards rigidity, and (iii) labor market segmentation with an increasingly larger share of temporary contracts in total employment. Arguably, all these features have the potential to influence the employers' response to macroeconomic shocks. The purpose of this section is to analyze if and how they contributed to the massive destruction of jobs, *i.e.* if they acted as channels through which the effects of the financial crisis were transmitted to the labor market. We consider each transmission channel separately.

3.1   The credit channel

The unfortunate combination of the financial crisis, the sovereign debt crisis, and regulatory requirements of the international assistance program necessary to reestablish financial stability generated severe credit restrictions for the Portuguese non-financial firms. Figure 4 illustrates the decoupling of Portuguese interest rates on new loans to firms from selected European economies (panel A) and the evolu-
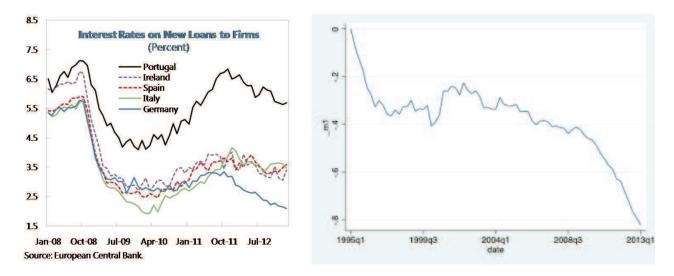
Figure 4: A. Interest Rate Fragmentation; B. Firms' Debt Levels

Note: Panel B plots the variation of firms' debt levels with respect to the 1st quarter of 1995 (on a logarithmic scale). Source: European Central Bank and IMF.

tion of the level of debt of Portuguese firms (panel B).[6]

From the figure, it is clear that since the begining of 2009 the Portuguese interest rates on new bank loans to firms are increasingly diverging from other European markets' levels (panel A) - the difference relatively to Germany, for example, more than tripled between January 2009 and January 2013. At the same time, the typical level of the firms debt decreased sharply (around 40 log points or 33 percent) since 2009 (panel B).

Regarding the credit channel, the question of interest is if (and how) the severe credit constraints faced by Portuguese firms may be linked to the destruction of jobs both at the intensive (*i.e.*, by downsizing firms) and the extensive (*i.e.*, by closing firms) margins.[7] We proceed in two steps.

First, we estimate by pooled OLS a model of the determinants of net job creation (NJC) at the firm level that includes a measure of firm-specific interest rates and outstanding debt, and a number of controls. The model is written as:

---

[6]The graph in panel B displays the evolution of quarterly fixed effects from a regression of the (log of) the level of debt that also includes firm-bank fixed effects.

[7]See Nickell and Nicolitsas (1999) for an early study of the relationship between financial pressure and employment.

17

$$NJC_{ft} = \alpha_0 + \alpha_1 logSales_{ft} + \alpha_2 logWages_{ft} + \alpha_3 logCapital_{ft} + \alpha_4 logTFP_{ft}$$
$$+\alpha_5 Debt_{ft} + \delta_t + \xi_t r_{ft} + \epsilon_{ft}$$
$$(1)$$

where $Sales$ is the annual value of shipments, $Wages$ is the firm-level annual labor costs per worker (the wage bill divided by the number of workers), $Capital$ is the year-end value of the company's fixed assets, $Debt$ is the total amount of outstanding debt as of the end of the year, and TFP is total factor productivity.[8] r is the firm-specific interest rate, computed as the ratio between total financial costs and debt stock. Subscript f denotes the firm and subscript t denotes the year. ϵ_{ft} is an idiosyncratic error term.

Equation 1 was estimated using IES data for manufacturing firms. Results, reported in Table 2, show that interest rates have a negative impact on the employment outcomes of surviving firms. More significantly, the magnitude of the negative effect of interest rates on employment increases sharply in 2010 and 2011.

---

[8]Total factor productivity is obtained as the sum of the firm fixed-effect and the residual in a two-factor (labor and capital) Cobb-Douglas production function.

TABLE 2: DETERMINANTS OF NET JOB CREATION
Pooled OLS regression (2006-2011)

	Estimates
log sales	0.053*
	(0.003)
log wages	-0.140*
	(0.007)
log capital	-0.052*
	(0.003)
total factor productivity	0.060*
	(0.005)
log debt	0.005*
	(0.001)
firm interest rate * 2006	0.023
	(0.051)
firm interest rate * 2007	0.038
	(0.037)
firm interest rate * 2008	0.034
	(0.042)
firm interest rate * 2009	-0.058
	(0.042)
firm interest rate * 2010	-0.184*
	(0.051)
firm interest rate * 2011	-0.221*
	(0.054)
Number of firms	90 014
R^2	0.064

Source: *IES*.
The regression also includes five year dummies and a constant term.
Data are restricted to firms with at least one wage-earner with valid
i.e. non-missing and non-negative on value-added, capital and all
the other variables used to compute TFP and estimate the model.
Only firms with positive debt and debt service were sampled.
Firm-cluster robust standard errors in parentheses.

To consider the effect of credit constraints on the extensive margin we estimate a standard firm failure Probit model augmented to include the same two debt related variables: the firm-specific interest rate (r) and the firm total amount of outstanding debt (*Debt*). The model writes as:

$$Prob(Exit_{ft+1} = 1) = \Phi(\alpha_0 + \alpha_1 logSales_{ft} + \alpha_2 TPF_f + \alpha_3 logDebt_{ft}$$
$$+\alpha_4 logWages_{ft} + \alpha_5 logWorkers_{ft} + \delta_t + \xi_t r_{ft}) \quad (2)$$

where $Exit_{ft+1}$ is a dummy variable equal to 1 if firm f exited at year $t+1$, and $Workers$ refers to the year-average count of employees. All the other variables are defined as above. From the regression results in Table 3 it can be seen that

higher (firm-level) interest rates are associated with higher probabilities of firms shutting-down, as expected. What seems to be worth noting is the evidence that the role of interest rates significantly aggravated after 2009, leading to a higher failure rates in 2009 and 2010.

TABLE 3: DETERMINANTS OF FIRM CLOSURE (2006-2010)

	Probit Regression	
	Coefficients	Marginal effects
log sales	-0.104*	-0.008
	(0.018)	
log wages	0.131*	0.01
	(0.033)	
log employment	0.175*	0.013
	(0.018)	
log capital	-0.144*	-0.011
	(0.011)	
total factor productivity	-0.293*	-0.021
	(0.017)	
log debt	0.160*	0.012
	(0.011)	
firm interest rate * 2006	1.771*	0.129
	(0.260)	
firm interest rate * 2007	1.274*	0.093
	(0.245)	
firm interest rate * 2008	1.419*	0.104
	(0.223)	
firm interest rate * 2009	2.008*	0.147
	(0.220)	
firm interest rate * 2010	3.037*	0.222
	(0.218)	
Number of firms	75 525	

Source: *IES*.
The regression also includes four year dummies and a constant term.
Firm-cluster robust standard errors in parentheses.

3.2   The wage rigidity channel

In section 2 we described wage setting mechanisms in Portugal and argued that the increase in the percentage of the total number of employees that are paid at the minimum wage and the obstacles to reducing nominal wages below what is collectively agreed upon led to the freezing of nominal wages of increasing numbers of workers, wage freezes being the only feasible alternative response to adverse demand shocks on the wage margin.

All the evidence indicates virtually non-existent negative nominal wage varia-
tion until 2009 but a growing share of zero wage variation (wage freezes) - in 2009,
wage freezes represented nearly 40 percent of all observations (figure 9 in Appendix
2). In the same period, the distribution of the variation of the wage drift becomes
unequivocally sparser to the right of zero, and more populated to the left (figure
10, Appendix 2).[9]

In figure 5 we reproduce the information on wage freezes plotted in figure A1
(Appendix 2) obtained from QP data for the years 2003-2009 (panel A), and
complement that with similar information from Social Security Records for 2009-
2012 (panel B).
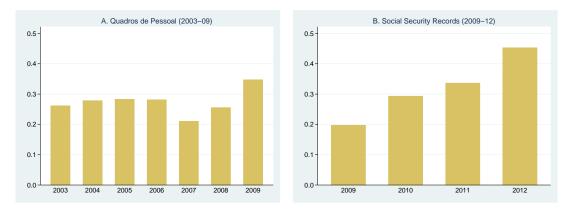
Figure 5: Incidence of Wage Freezes Among Job Stayers

Note: Wage freezes are defined as zero wage variation from one year to the next. In Panel B we present
the results kindly provided by the Ministry of the Economy obtained from a representative sample of
individuals that pay contributions to the public Social Security pension system (18,650 observations *per*
year). Only wage-earners receiving full payment were considered. Annual wage variations were computed
with January data.

Although the figures in the two panels are not comparable in levels, they show

[9]Other than non-compliance with the legal ban on nominal wage cuts, some factors, most notably, the reduction
of the number of normal hours of work (*e.g.* moving from full-time to part-time work or reducing the duration of
part-time work) may generate nominal negative variation of monthly wages. Besides, there is evidence obtained
from Social Security records that in 2012 the incidence of negative variation of nominal wages for continuing
matches is not negligible. We do note this fact even though it is not clear how much of this variation is due to
the wage cut of civil servants with individual contracts and workers employed in state-owned firms implemented
in 2011, or to other special circumstances, including possibly wage arrrears. The same data also indicate a very
sharp increase of the incidence of wage freezes since 2009, even though this outcome is partially blurred by the
fact that the definition of the base wage in 2011 is more comprehensive than in the other years thereby biasing
downwards the fraction of wage freezes.

that the 2009 record should not be seen as the result of a point process of adjustment of the wage distribution. Panel B in the same figure makes it very clear that if anything 2009 was in fact the first of at least a row of three years of persistent and increasingly pervasive wage freezing. Data from Social Security Records indicate that for 45.3 percent of all wage-earners the base wage in January 2012 was exactly the same as in January 2011 (in January 2010, the corresponding figure was 29.3 percent).

The huge increase in the share of minimum wages earners amongst full-time workers - from 6.7 percent of total employment in surviving matches in 2006 to 16.6 percent in 2010 - is plotted in Figure 6. In part this increase can be attributed to the real increase of the value of the minimum wage that was agreed upon at the end of 2006 and was not reversed as the recession set in (Carneiro *et al.*, 2011, Pina and Abreu, 2012), but it can also be attributed to the recession itself, the absence of spillover effects in the vicinity of the new minimum being responsible for the bunching of low-pay workers paid above the previous minimum at the new level.
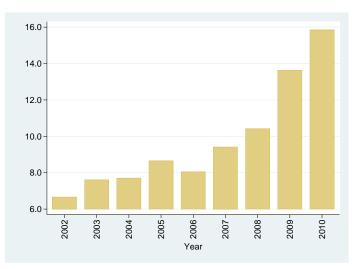

Figure 6: Incidence of Minimum Wages (2002-10)

Source: *QP* worker-level data. Sample is restricted to wage earners aged 18 to 61 working at least 120 hours per month and with a monthly wage equal or above the legal minimum in the same year.

To see how nominal wage rigidity impacts total employment we again estimate on firm data a model of net job creation where we include as independent variables two proxies of downward wage rigidity - the share of the firm workforce that is paid at the legal minimum and the firm-level incidence of wage freezes between year t and $t - 1$.[10] We also decomposed net job creation into hires rate and separations rate and estimated the same model taking the two latter variables as the dependent variable.[11] Results, reported in Table 4, indicate that both nominal wage rigidity proxies are negatively correlated with net job creation and hirings, the correlation being specially strong in the case of the incidence of wage freezes. It is also noticeable that the incidence of minimum wages also increases separations. However, wage freezes have no effect on the separation margin.

TABLE 4: DETERMINANTS OF NET JOB CREATION AND WORKER FLOWS
Pooled OLS regression (1987-2009)

	Net Job Creation	Hires Rate	Separations Rate
Log sales	-0.003**	-0.013*	-0.011*
	(0.001)	(0.001)	(0.001)
Log wages	-0.005	-0.064*	-0.059*
	(0.005)	(0.005)	(0.006)
Minimum Wage earners (%)	-0.048*	-0.026*	0.022*
	(0.004)	(0.003)	(0.001)
Incidence of Wage Freezes	-0.160*	-0.160*	0.0001
	(0.003)	(0.003)	(0.003)
R^2	0.050	0.091	0.064
N		2 268 854	

Source: QP.
Note: standard errors in parentheses; *, **, *** denote
statistical significance at 1, 5, and 10 percent levels.
The regression also includes year dummies.

The negative effect of wage rigidity on total employment is also apparent when we consider the exit margin. Re-estimating the same Probit model as in Equation 2 with the same two wage rigidity proxies in the regressor set.[12] Results reported in Table 5 show that both the proportion of minimum wage earners at the firm

---

[10] We estimate the same labor demand equation as in Equation 1 but replaced all the interest rate variables in the regressors' set with the two variables proxying for wage rigidity. The model is estimated on QP data and for that reason firmspecific interest rates, the total amount of outstanding debt,and total factor productivity could not be included as explanatory variables.

[11] Hires occur whenever one worker is at time t employed by firm f but not at time $t - 1$. Separations occur whenever one worker is at time t employed by firm f but not at time $t + 1$.

[12] Because once again we are using QP data we cannot include the debt-related variables and total factor productivity considered in the previous sub-section as explanatory variables.

and the incidence of wage freezes are positively and significantly correlated with the probability of the firm shutting down.

TABLE 5: DETERMINANTS OF FIRM CLOSURE (1987-2008)

	Probit Regression	
	Coefficients	Marginal Effects
Log Sales	-0.090*	-0.007
	(0.008)	
Log Wage	-0.034	-0.003
	(0.033)	
Minimum Wage Earners (%)	0.225*	0.018
	(0.021)	
Incidence of Wage Freezes	0.236*	0.019
	(0.013)	
N	24 691 349	

Source: *QP*.
Note: standard errors in parentheses; *, **, *** denote statistical significance at 1, 5, and 10 percent levels.
The regression also includes year dummies.

3.3 The labor market segmentation channel

Segmentation along contractual types is an essential feature of the Portuguese labor market. As we documented before, temporary contracts represent a large and growing share of total employment. In 2009, the first year to witness a decrease in the share of temporary employment, temporary workers accounted for 28 percent of total employment in surviving firms and 42 percent in newly-created firms (Figure 7).

Over the period surveyed here (2003-2008), temporary employment increased twice as much as permanent employment (Table 6). More importantly, workers employed with temporary (fixed-term contracts) bear most of the brunt of employment adjustment. On average, every worker with a temporary contract changes jobs during the course of one year whereas nearly one out of every three workers with permanent (*i.e.*, open-ended) contracts, also switches jobs over the same period of time.[13] The turnover of jobs filled with temporary (54.9 percent) workers

---

[13]Notice, however, that the rate of worker turnover by type of contract does not control for promotions from temporary to permanent positions, and are therefore higher than they would be if within-firm transitions between types of contracts were excluded.
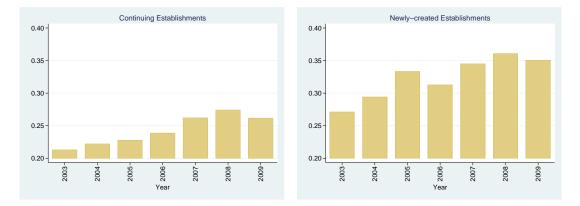
Figure 7: Share of Temporary Employment in Total Employment (2003-2009)

Note: Data from *QP*.

also exceeds (doubles) that of jobs filled with permanent workers (26.1 percent). Worker turnover in excess of job turnover - *i.e.*, churning - is five times higher for temporary contracts than for permanent contracts.

TABLE 6: ANNUAL JOB AND WORKER FLOWS, BY TYPE OF CONTRACT (2003-2008)

	Continuing Firms			All Firms		
	Net employment variation	Job turnover rate	Worker turnover rate	Net employment variation	Job turnover rate	Worker turnover rate
Open-ended	0.017	0.194	0.288	0.004	0.261	0.354
Temporary	0.044	0.451	0.879	0.053	0.549	0.966

Source: *QP*. All variables computed as in Davis *et al.* (1996).

Following Davis *et al.* (2006), a more clear picture of the relationship between worker turnover and job turnover at the micro-level may be obtained by plotting hire and separation rates on the vertical axis and the firm net employment growth rate, both measured as a percentage of the annual average of the corresponding stock (Figure 8). All lines are well behaved in the sense that the hires and separation rates corresponding to the two types of contracts increase with the magnitude of the variation of net employment and that they are essentially flat to the right of zero in the case of the separations lines, and to the left of zero in the case of the hires line. Independently of the employment regime the firm is in, the hires and separations lines of temporary workers are systematically above, well above in the case of the hires rate, the corresponding line of permanent workers. Both the hires (separations) line of temporary and permanent workers increase with the positive (negative) net employment variation but the gap between the two widens. Consistent with the high churning rate documented above, the hires (separations) rate of temporary workers is always above 20 percent, even if the employer is in the negative (positive) employment variation regime.
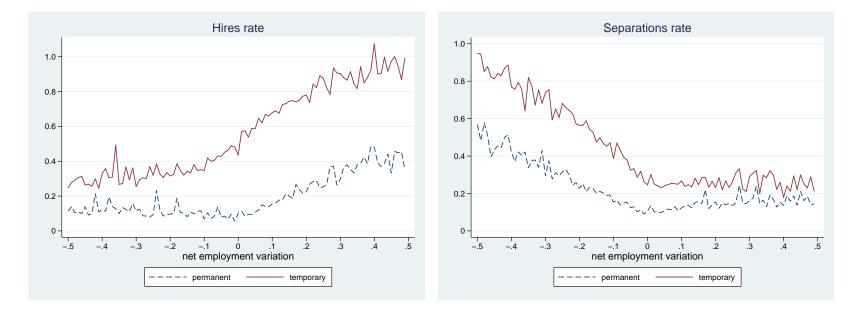
Figure 8: The relationship of hires and separations to net employment variation, by contract type

Next, we focus on how firms decompose total employment adjustment (job turnover) into adjustment of temporary employment and open-ended employment (worker turnover for each type of contract). To do that we estimate a parametric model of employment adjustment, as measured by hires and separations rates, assuming that worker flows are linear in the rate of employment change (job turnover). The model is written as:

$$x_{it} = \alpha_i + \beta_t^n \Delta l_{it} I(\Delta l_{it} < 0) + \beta_t^p \Delta l_{it} I(\Delta l_{it} > 0) + e_{it} \qquad (3)$$

where β_t^n measures the response of x to negative variations in employment (job destruction) at time t and β_t^p measures the response of x to positive variations in employment (job creation) also at time t. x is replaced sequentially by the hiring rate and the separation rate of temporary, permanent and all workers at firm i in period t. I is an indicator variable that takes the value 1 if the condition in brackets is true and 0 otherwise. l denotes total employment. α_i is the firm fixed-effect.

The results displayed in Table 7 show that, independently of the employment regime the firm is in (job creation or job destruction regime), the flows of workers of the two types of employment move in the same direction (the hires rate increases and the separations rate decreases as job creation increases, and vice-versa when the magnitude of job destruction increases) for both temporary and permanent contracts, but the magnitude of the response in the two margins is quite different. Employers respond to shocks by increasing in absolute terms the hires and separations rate of temporary workers more than they do in the case of permanent workers. Temporary employment shows again as the preferred margin of employment adjustment (positive or negative) acting as the source of flexibility that employers cannot obtain from standard open-ended contracts. Or, differently put, temporary workers bear most of the brunt of employment adjustment.

TABLE 7: EMPLOYMENT ADJUSTMENT - RESULTS BY CONTRACT TYPE

Firm FE (2003-2009)

	Temporary contracts		Open-ended contracts	
	Hires rate	Separations Rate	Hires rate	Separations Rate
Positive employment variation	1.418*	-0.290*	0.838*	0.045*
	(0.016)	(0.012)	(0.006)	(0.006)
Positive employment variation*Year 2004	-0.063**	0.046*	-0.032*	0.005
	(0.021)	(0.016)	(0.008)	(0.007)
Positive employment variation*Year 2005	-0.041**	0.004	-0.371*	-0.039*
	(0.021)	(0.016)	(0.008)	(0.007)
Positive employment variation*Year 2006	-0.216*	0.002	-0.240*	-0.086*
	(0.021)	(0.016)	(0.008)	(0.008)
Positive employment variation*Year 2007	-0.213*	-0.012*	-0.286*	-0.074*
	(0.020)	(0.015)	(0.008)	(0.007)
Positive employment variation*Year 2008	-0.288*	0.003*	-0.320*	-0.062*
	(0.021)	(0.016)	(0.008)	(0.008)
Positive employment variation*Year 2009	-0.577*	-0.042**	-0.422*	-0.131*
	(0.024)	(0.018)	(0.009)	(0.009)
Negative employment variation	0.163*	-0.935*	-0.062*	-0.779*
	(0.018)	(0.014)	(0.006)	(0.006)
Negative employment variation*Year 2004	0.176*	-0.192*	0.025*	-0.061*
	(0.023)	(0.017)	(0.007)	(0.007)
Negative employment variation*Year 2005	0.216*	-0.197*	0.051*	-0.071*
	(0.023)	(0.017)	(0.007)	(0.007)
Negative employment variation*Year 2006	0.374*	-0.223*	0.176*	-0.057*
	(0.022)	(0.017)	(0.007)	(0.007)
Negative employment variation*Year 2007	0.336*	-0.210*	0.178*	-0.058*
	(0.022)	(0.017)	(0.007)	(0.007)
Negative employment variation*Year 2008	0.373*	-0.210*	0.188*	-0.074*
	(0.022)	(0.017)	(0.007)	(0.007)
Negative employment variation*Year 2009	0.497*	-0.250*	0.216*	-0.051*
	(0.021)	(0.016)	(0.007)	(0.007)
N	368 867	368 867	559 483	559 483
R^2	0.152	0.231	0.177	0.323

Note: standard errors in parentheses; *, **, *** denote statistical significance at 1, 5, and 10 percent levels.

Data from QP.

The estimates of the coefficients of the interaction between the employment variation and the year dummies futher indicate that as we approach 2009 both the hires and the separations rate become more responsive to negative employment shocks, with greater declines in the hires rate and greater increases of the separations rate. Again, the effect is larger for temporary contracts on both margins.

4   Conclusion

Severe macroeconomic imbalances and inappropriate labor market institutions impaired the Portuguese economy ability to cope with the consequences of the 2008 global crisis. As the financial crisis turned into a sovereign debt crisis, the labor market response originated huge social costs associated with catastrophically high job destruction rates, record high unemployment rates, and massive long-term unemployment. Differently put, the depth of the recession exceeded the resilience of the labor market, *i.e.*, its ability to weather economic downturns with limited social costs.

The response was characterized by a large fall of job creation both at the intensive and extensive margin. Yet, it was on the job destruction margin that the response differed the most from past recessions. Especially along the exit margin, an unprecedented amount of job destruction occurred, shutdowns being responsible for nearly half of the total job destruction in 2009.

We conclude that the severity of credit constraints played a significant role in the current job destruction process. The worrying consequences of credit market fragmentation appear to have been translated into a sharp drop in the average amount of bank debts by Portuguese firms. We provided evidence showing that the firms that faced higher financial costs exited or destroyed jobs at higher rates than those that operated under less stressful financial conditions, most notably in 2010 and 2011.

Wage rigidity was seen to be associated with lower net job creation and higher failure rates of firms. The current recession is marked by a huge increase of the proportion of workers paid at the legal minimum wage (which was considerably

raised in the early years of the recession), and by the freezing of nominal wages for nearly one third of all workers that did not switch jobs in 2009, and about 45% in 2012. The observed incidence of wage freezes for stayers is evidence of high nominal wage rigidity, wage cuts being introduced via firm turnover (and displacement), not within surviving firms or matches.

Finally, labor market segmentation seemed to have favored stronger job destruction that was facilitated by an increasing number of temporary workers. Temporary employment contracts were the primary source of employment adjustment, especially on the expansionary margin.

For decades, the Portuguese labor market operated in a fragile equilibrium characterized by a very large portion of low-qualified, low-wage, low-productivity jobs. Many of those jobs, which survived due to firm-specific human capital investments, were destroyed with the event of the financial crisis and the adjustment program under way. The workers displaced from those jobs face near insurmountable prospects to find a suitable job. Retraining of unskilled workers (in a large scale) and employment policies aimed to facilitate hires of low-wage workers (*e.g.*, permanent social security reductions or tax credits on labor income) seemed to be justified. On the labor segmentation front, the arguments in favor of a single contract for new hires are increasingly gaining support (Bentolila *et al.*, 2012). Reducing the employment security gap between insiders and outsiders is likely not only to reduce excessive churning, but also to improve firm-specific investments, by employers and employees, and thus productivity growth. The fragmentation of the credit markets is imposing a serious threat to the survival of Portuguese firms. This problem, which is common to other countries, arguably needs to be addressed urgently by European decision makers (Reichlin, 2013).

Appendix 1

Data description

A. Simplified Business Information (*Informação Empresarial Simplificada*) - IES

IES is an administrative dataset that gathers information reported by businesses for statistical purposes, but also for the purposes of tax administration, business registry, and financial supervision.

Every year, each firm has to report information covering different areas of their activity from corporate restructuring, to production and employment, and annual accounting and tax statements. Reporting is mandatory and penalties apply in case of non-compliance. All information must be reported on-line, as a rule, until June 30.
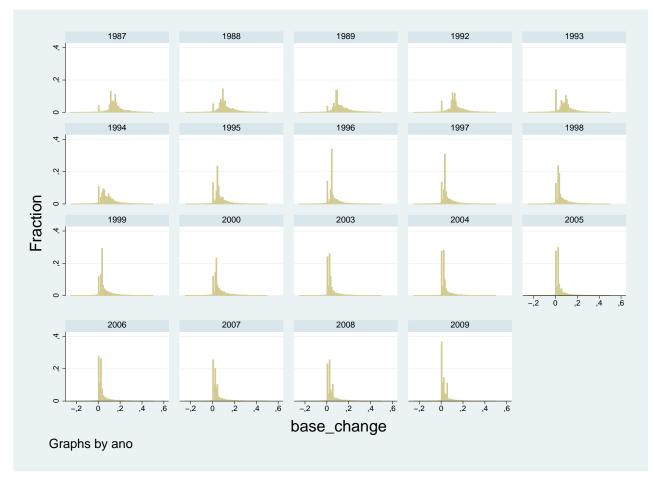
Data are considered to be accurate for a number of different reasons: (i) they are reported in a single coherent operation with multiple automatic editing rules that ensure the consistence of the information; (ii) the Statistics Portugal Agency monitors the quality of the data, regularly checks with the respondents their accuracy of the information, and corrects any data missreported.

On average, every year about 350 thousand firms report information to the database.

B. Personnel Records (*Quadros de Pessoal*) - QP

QP is an annual mandatory employment survey collected by the Portuguese Ministry of Employment that covers all establishments with wage earners. Every year, all employers with wage earners are legally obliged to fill in a standardized questionnaire. Currently, the dataset contains yearly information on about 350,000 firms, 400,000 establishments and 3 million employees. Data are available on each establishment (location, economic activity, and employment), the firm with which it is affiliated (location, economic activity, employment, sales, and legal framework) and each and every one of its workers (gender, age, educa-

tion, skill, occupation, tenure, earnings, and duration of work). The information on earnings is very detailed and complete. It includes the base wage (gross pay for normal hours of work), regular benefits, irregular benefits, and overtime pay, as well as the underlying mechanism of wage bargaining. Information on standard and overtime hours of work is also available. The dataset is longitudinal in nature. Each firm/establishment entering the database is assigned a unique identifying number and the Ministry implements several checks to ensure that a unit that has previously reported to the database is not assigned a different identification number. This dataset allows us to compute measures of job turnover and the shares of employment creation and destruction accounted for by the entry and exit of establishments/firms. All these variables may be computed from QP establishment/firm-level files. Since year 2000, the data set also contains information on the type of contract - regular or fixed-term -, making it possible to compute job and worker turnover measures separately for the two types of contracts.

Appendix 2
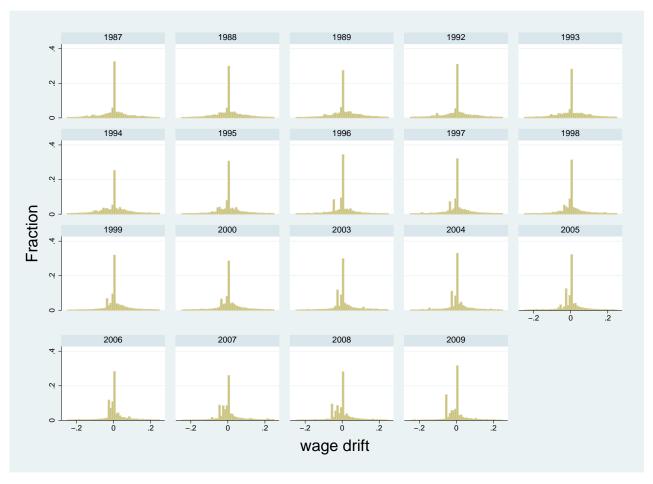
Wage Variation and Wage Drift

Distribution of the Variation of Nominal Wages

Figure 9: The distribution of annual change of nominal wages, by year (1987-2009)

Data from *Quadros de Pessoal*.

Distribution of the Variation of the Wage Drift

Figure 10: The distribution of the annual change of the wage drift, by year (1987-2009)

Data from *Quadros de Pessoal*.

References

ADDISON, JOHN T., AND PEDRO PORTUGAL (2008), How Do Different Entitlements to Unemployment Benefits Affect the Transitions from Unemployment into Employment?, *Economics Letters*, 101: 206-209.

ADDISON, JOHN T., MÁRIO CENTENO AND PEDRO PORTUGAL, (2009), Do Reservation Wages Really Decline? Some International Evidence on the Determinants of Reservation Wages, *Journal of Labor Research*, 30: 1-8.

BENTOLILA, SAMUEL, PIERRE CAHUC, JUAN J. DOLADO AND THOMAS LE BARBANCHON, (2012), Two-Tier Labour Markets in the Great Recession: France *Versus* Spain , *Economic Journal*, 122: F155-F187.

BLANCHARD, OLIVIER (2007), Adjustment Within the Euro; The Difficult Case of Portugal, *Portuguese Economic Journal*, 6: 1-21.

BLANCHARD, OLIVIER, AND DANIEL LEIGH (2013), Growth Forecast Errors and Fiscal Multipliers, *IMF Working Paper*, 13/1.

BLANCHARD, OLIVIER, AND LARRY SUMMERS (1986), Hysteresis And The European Unemployment Problem, *NBER Macroeconomics Annual 1986*, Volume 1: 15-90.

BLANCHARD, OLIVIER AND PEDRO PORTUGAL (2001), What Hides Behind an Unemployment Rate: Comparing Portuguese and U.S. Labor Markets, *American Economic Review*, 91: 187-207.

CARDOSO, ANA RUTE AND PEDRO PORTUGAL (2005), Contractual Wages and the Wage Cushion under Different Bargaining Settings, *Journal of Labor Economics*, 3: 875-902.

CARNEIRO, ANABELA, CARLA SÁ, JOÃO CEREJEIRA, JOSÉ VAREJÃO AND MIGUEL PORTELA (2011), Estudo sobre a Remuneração Mínima Mensal Garantida em Portugal - Relatório Final, Lisboa: Direção Geral do Emprego e das Relações de Trabalho.

CARNEIRO, ANABELA, PAULO GUIMARÃES, AND PEDRO PORTUGAL (2012), Real Wages and the Business Cycle: Accounting for Worker, Firm, and Job-Title Heterogeneity, *American Economic Journal: Macroeconomics*, 4: 133-152.

DAVIS, STEVEN J., JOHN HALTIWANGER, AND SCOTT SCHUH (1996), *Job Creation and Destruction*, Cambridge (Ma): MIT Press.

DAVIS, STEVEN J., R. JASON FABERMAN AND JOHN HALTIWANGER (2006), The Flow Approach to Labor Markets: New Data Sources and Micro-Macro Links, *Journal of Economic Perspectives*, 20: 3-26.

ELSBY, MICHAEL, BART HOBIJN, AND AYSEGUL SAHIN (2008), Unemployment Dynamics in the OECD, NBER Working Paper 14617.

FRANCO, FRANCESCO (2013), A Projection of the Market Based Adjustment Path of the Portuguese Economy, mimeo.

JOLIVET, GREGORY, FABIEN POSTEL-VINAY, AND JEAN-MARC ROBIN (2006), The Empirical Content of the Job Search Model: Labor Mobility and Wage Distributions in Europe and the US, *European Economic Review*, 50: 877-907.

LJUNGQVIST, LARS AND THOMAS J. SARGENT (1998), he European Unemployment Dilemma, *Journal of Political Economy*, 106: 514-550.

NICKELL, STEPHEN AND DAPHNE NICOLITSAS (1999), How Does Financial Pressure Affect Firms?, *European Economic Review*, 43: 1435-1456.

NICKELL, STEPHEN, AND DAPHNE NICOLITSAS (1999), How Does Financial Pressure Affect Firms?, *European Economic Review*, 43: 1435-1456.

OECD (2012), *Employment Outlook*, Paris: OECD Publishing.

PINA, ÁLVARO AND ILDEBERTA ABREU (2012), Portugal: Rebalancing the Economy and Returning to Growth Through Job Creation and Better Capital Allocation, OECD Economics Department Working Papers, No. 995.

PORTUGAL, PEDRO, ANABELA CARNEIRO, AND PAULO GUIMARÃES (2010), On the Cyclical Sensitivity of Real Wages, Banco de Portugal - Economic Bulletin, Winter 2010: 87-99.

RAPOSO, PEDRO, PEDRO PORTUGAL AND ANABELA CARNEIRO (2013), The Sources of the Wage Losses of the Displaced, mimeo.

REICHLIN, LUCREZIA (2013), Monetary Aspects of the Euro-Area Crisis, *Journal of Macroeconomics*, this issue.

TORRES, SÓNIA (2010), Unemployment, Worker Flows and Wage Formation in the Portuguese Labour Market, University of Porto, PhD Thesis.

OECD SOCIAL, EMPLOYMENT AND MIGRATION WORKING PAPERS

Most recent releases are:

No. 151 *THE PERVERSE EFFECTS OF JOB-SECURITY PROVISIONS ON JOB SECURITY IN ITALY: RESULTS FROM A REGRESSION DISCONTINUITY DESIGN*, Alexander Hijzen, Leopoldo Mondauto, Stefano Scarpetta (2013)

No. 150 *REDISTRIBUTION POLICY IN EUROPE AND THE UNITED STATES: IS THE GREAT RECESSION A 'GAME CHANGER' FOR WORKING-AGE FAMILIES?* Herwig Immervoll, Linda Richardson (2013)

No. 149 *A BIRD'S EYE VIEW OF GENDER DIFFERENCES IN EDUCATION IN OECD COUNTRIES* Angelica Salvi Del Pero and Alexandra Bytchkova (2013)

No. 148 *TRENDS IN POVERTY AND INEQUALITY IN DECENTRALISING INDONESIA* Riyana Miranti, Yogi Vidyattama, Erick Hansnata, Rebecca Cassells and Alan Duncan (2013)

No. 147 *WOMEN ENTREPRENEURS IN THE OECD: KEY EVIDENCE AND POLICY CHALLENGES* Mario Piacentini (2013)

No. 146 Forthcoming

No. 145 *DRIVERS OF FEMALE LABOUR FORCE PARTICIPATION IN THE OECD* Olivier Thévenon (2013)

No. 144 *THE ROLE OF SHORT-TIME WORKING SCHEMES DURING THE GLOBAL FINANCIAL CRISIS AND EARLY RECOVERY,* Alexander Hijzen, Sébastien Martin (2012)

No. 143 *TRENDS IN JOB SKILL DEMANDS IN OECD* COUNTRIES, Michael J. Handel (2012)

No. 142 *HELPING DISPLACED WORKERS BACK INTO JOBS AFTER A NATURAL DISASTER: RECENT EXPERIENCES IN OECD COUNTRIES,* Danielle Venn (2012)

No. 141 *LABOUR MARKET EFFECTS OF PARENTAL LEAVE POLICIES IN OECD COUNTRIES,* Olivier Thévenon & Anne Solaz (2012)

No. 140 *FATHERS' LEAVE, FATHERS' INVOLVEMENT AND CHILD DEVELOPMENT: ARE THEY RELATED? EVIDENCE FROM FOUR OECD COUNTRIES*, Maria C. Huerta, Willem Adema, Jennifer Baxter, Wen-Jui Han, Mette Lausten, RaeHyuck Lee and Jane Waldfogel (2012)

No. 139 *FLEXICURITY AND THE ECONOMIC CRISIS 2008-9 – EVIDENCE FROM DENMARK,* Tor Eriksson (2012)

No. 138 *EFFECTS OF REDUCING GENDER GAPS IN EDUCATION AND LABOUR FORCE PARTICIPATION ON ECONOMIC GROWTH IN THE OECD,* Olivier Thévenon, Nabil Ali, Willem Adema and Angelica Salvi del Pero (2012)

No. 137 *THE RESPONSE OF GERMAN ESTABLISHMENTS TO THE 2008-2009 ECONOMIC CRISIS,* Lutz Bellman, Hans-Dieter Gerner, Richard Upward (2012)

No. 136 Forthcoming *THE DYNAMICS OF SOCIAL ASSISTANCE RECEIPT IN GERMANY* Sebastian Königs

No. 135 *MONEY OR KINDERGARTEN? DISTRIBUTIVE EFFECTS OF CASH VERSUS IN-KIND FAMILY TRANSFERS FOR YOUNG CHILDREN,* Michael Förster and Gerlinde Verbist (2012)

No. 134 *THE ROLE OF INSTITUTIONS AND FIRM HETEROGENEITY FOR LABOUR MARKET ADJUSTMENTS: CROSS-COUNTRY FIRM-LEVEL EVIDENCE,* Peter N. Gal (VU University Amsterdam), Alexander Hijzen and Zoltan Wolf (2012)

No. 133 *CAPITAL'S GRABBING HAND? A CROSS-COUNTRY/CROSS-INDUSTRY ANALYSIS OF THE DECLINE OF THE LABOUR SHARE,* Andrea Bassanini and Thomas Manfredi (2012)

No. 132 *INCOME DISTRIBUTION AND POVERTY IN RUSSIA,* Irinia Denisova (2012)

No. 131 *ELIGIBILITY CRITERIA FOR UNEMPLOYMENT BENEFITS,* Danielle Venn (2012)

No. 130   *THE IMPACT OF PUBLICLY PROVIDED SERVICES ON THE DISTRIBUTION OF RESOURCES: REVIEW OF NEW RESULTS AND METHODS,* Gerlinde Verbist, Michael Förster and Maria Vaalavuo (2012)

No. 129   *AN OVERVIEW OF AUSTRALIA'S SYSSTEM OF INCOME AND EMPLOYMENT ASSISTANCE FOR THE UNEMPLOYED,* Peter Davidson, Peter Whiteford (2012)

No. 128   *THE INTEGRATION OF IMMIGRANTS AND THEIR CHILDREN INTO THE LABOUR MARKET IN SWITZERLAND,* Thomas Liebig, Sebastian Kohls and Karoline Krause (2012)

No. 127   *THE LABOUR MARKET INTEGRATION OF IMMIGRANTS AND THEIR CHILDREN IN AUSTRIA,* Karolin Krause and Thomas Liebig (2011)

No. 126   *ARE RECENT IMMIGRANTS DIFFERENT? A NEW PROFILE OF IMMIGRANTS IN THE OECD BASED ON DIOC 2005/06,* Sarah Widmaier and Jean-Christophe Dumont (2011)

No. 125   *EARNINGS VOLATILITY AND ITS CONSEQUENCES FOR HOUSEHOLDS,* Danielle Venn (2011)

No. 124   *CRISIS, RECESSION AND THE WELFARE STATE,* Willem Adema, Pauline Fron and Maxime Ladaique (2011)

No. 123   *AGGREGATE EARNINGS AND MACROECONOMIC SHOCKS* Andrea Bassanini (2011)

No. 122   *REDISTRIBUTION POLICY AND INEQUALITY REDUCTION IN OECD COUNTRIES: WHAT HAS CHANGED IN TWO DECADES?* Herwig Immervoll, Linda Richardson (2011)

No. 121   *OVER-QUALIFIED OR UNDER-SKILLED,* Glenda Quintini (2011)

No. 120   *RIGHT FOR THE JOB,* Glenda Quintini (2011)

No. 119   *THE LABOUR MARKET EFFECTS OF UNEMPLOYMENT COMPENSATION IN BRAZIL* , Alexander Hijzen (2011)

No. 118   *EARLY MATERNAL EMPLOYMENT AND CHILD DEVELOPMENT IN FIVE OECD COUNTRIES,* Maria del Carmen Huerta, Willem Adema, Jennifer Baxter, Miles Corak, Mette Deding, Matthew   C. Gray, Wen-Jui Han, Jane Waldfogel (2011)

No. 117   *WHAT DRIVES INFLOWS INTO DISABILITY?EVIDENCE FROM THREE OECD COUNTRIES* Ana Llena-Nozal and Theodora Xenogiani (2011)

No. 116   *COOKING, CARING AND VOLUNTEERING: UNPAID WORK AROUND THE WORLD,* Veerle Miranda (2011)

No. 115   *THE ROLE OF SHORT-TIME WORK SCHEMES DURING THE 2008-09 RECESSION,* Alexander Hijzen and Danielle Venn (2010)

No. 114   *INTERNATIONAL MIGRANTS IN DEVELOPED, EMERGING AND DEVELOPING COUNTRIES: AN EXTENDED PROFILE,* Jean-Christophe Dumont, Gilles Spielvogel and Sarah Widmaier (2010)

No. 113   *ACTIVATION POLICIES IN JAPAN* , Nicola Duell, David Grubb, Shruti Singh and Peter Tergeist (2010)

No. 112   *ACTIVATION POLICIES IN SWITZERLAND,* Nicola Duell and Peter Tergeist with contributions from Ursula Bazant and Sylvie Cimper (2010)

No. 111   *ECONOMIC DETERMINANTS AND CONSEQUENCES OF CHILD MALTREATMENT* Lawrence M. Berger, Jane Waldfogel (forthcoming)

No. 110   *DISTRIBUTIONAL CONSEQUENCES OF LABOR DEMAND ADJUSTMENTS TO A DOWNTURN: A MODEL-BASED APPROACH WITH APPLICATION TO GERMANY 2008-09,* Herwig Immervoll, Olivier Bargain, Andreas Peichl, Sebastian Siegloch (2010)

No. 109   *DECOMPOSING NOTIONAL DEFINED-CONTRIBUTION PENSIONS: EXPERIENCE OF OECD COUNTRIES' REFORMS,* Edward Whitehouse (2010)

No. 108   *EARNINGS OF MEN AND WOMEN WORKING IN THE PRIVATE SECTOR: ENRICHED DATA FOR PENSIONS AND TAX-BENEFIT MODELING,* Anna Cristina D'Addio and Herwig Immervoll (2010)

No. 107   *INSTITUTIONAL DETERMINANTS OF WORKER FLOWS: A CROSS-COUNTRY/CROSS-INDUSTRY APPROACH,* Andrea Bassanini, Andrea Garnero, Pascal Marianna, Sebastien Martin (2010)

No. 106   *RISING YOUTH UNEMPLOYMENT DURING THE CRISIS: HOW TO PREVENT NEGATIVE LONG-TERM CONSEQUENCES ON A GENERATION?*
Stefano Scarpetta, Anne Sonnet and Thomas Manfredi (2010)

No. 105   *TRENDS IN PENSION ELIGIBILITY AGES AND LIVE EXPECTANCY, 1950-2050*
Rafal Chomik and Edward Whitehouse (2010)

No. 104   *ISRAELI CHILD POLICY AND OUTCOMES*
John Gal, Mimi Ajzenstadt, Asher Ben-Arieh, Roni Holler and Nadine Zielinsky (2010)

No. 103   *REFORMING POLICIES ON FOREIGN WORKERS IN ISRAEL*
Adriana Kemp (2010)

No. 102   *LABOUR MARKET AND SOCIO-ECONOMIC OUTCOMES OF THE ARAB-ISRAELI POPULATION*
Jack Habib, Judith King, Asaf Ben Shoham, Abraham Wolde-Tsadick and Karen Lasky (2010)

No. 101   *TRENDS IN SOUTH AFRICAN INCOME DISTRIBUTION AND POVERTY SINCE THE FALL OF APARTHEID*
Murray Leibbrandt, Ingrid Woolard, Arden Finn and Jonathan Argent (2010)

No. 100   *MINIMUM-INCOME BENEFITS IN OECD COUNTRIES: POLICY DESIGN, EFFECTIVENESS AND CHALLENGES*
Herwig Immervoll (2009)

No. 99   *HAPPINESS AND AGE CYCLES – RETURN TO START…? ON THE FUNCTIONAL RELATIONSHIP BETWEEN SUBJECTIVE WELL-BEING AND AGE*
Justina A.V. Fischer (2009)

No. 98   *ACTIVATION POLICIES IN FINLAND*
Nicola Duell, David Grubb and Shruti Singh (2009)

No. 97   *CHILDREN OF IMMIGRANTS IN THE LABOUR MARKETS OF EU AND OECD COUNTRIES: AN OVERVIEW*
Thomas Liebig and Sarah Widmaier (2009)

A full list of Social, Employment and Migration Working Papers is available at *www.oecd.org/els/workingpapers*.

Other series of working papers available from the OECD include: *OECD Health Working Papers*.