Catastrophic Job Destruction

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Background

• The global crisis hits an economy with problems of its own:
  
  – “Productivity growth is anemic. Growth is very low. The budget deficit is large. The current account deficit is very large.” (Blanchard, 2005)
Background

• Ill-designed labour market institutions
  – Two reforms since the early 2000s
    • EPL strictness reduced – specially in terms of individual dismissals of permanent work and requirements for collective dismissals
    • 2010 not that different from 2000
Background

Protection of permanent workers against (individual) dismissal
Regulation on temporary forms of employment
Specific requirements for collective dismissal
OECD employment protection index

OECD EPL Strictness Index
Background

• High-protection of permanent workers coexists with below-average protection of temporary workers.

• A two-tier labour market developed:
  – Temporary employment peaked at 19.4 percent (>25% in the private sector) of total employment in 2010;
  – Fixed-term contracts account for:
    • 2/3 of all transitions from unemployment to employment;
    • 50 percent of all job losses
Background

• Generous unemployment benefits
Background
Background

• Nominal wage rigidity with falling real wage flexibility

The fall in the real wage cyclicality (N = 30 906 573)

<table>
<thead>
<tr>
<th>Cyclical variable</th>
<th>Worker, Firm and Job Fixed Effect</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stayers</td>
<td>New-hires</td>
</tr>
<tr>
<td></td>
<td>Coefficient</td>
<td>Change in coefficient</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>-2.612</td>
<td>1,808</td>
</tr>
<tr>
<td></td>
<td>(0.709)</td>
<td>(1.213)</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>-2.460</td>
<td>2.462</td>
</tr>
<tr>
<td></td>
<td>(0.560)</td>
<td>(1.213)</td>
</tr>
</tbody>
</table>

Source: Quadros do Pessoal (1986-2007)
Robust standard errors in parenthesis

\[
\ln w_{it} = X_{it} \beta + \gamma_1 u_t + \gamma_2 u_t d_{1t} + \gamma_3 u_t d_{2t} + \gamma_4 u_t d_{1t} d_{2t} + u_{it}
\]
Background

- Minimum wage is high in relative terms
The response to the crisis

Dynamics of hours worked vs employment
(Last year before recession=100; annual data)

Source: European Commission (AMECO).

In the last 2 recessions, most of the adjustment was made at the “extensive margin” (average hours worked per employee were very stable)
The response to the crisis

- Massive employment decline;
- Sharp increase in unemployment without subsequent recovery.

Employment behaviour in Portugal over the last recessions

Unemployment rate behaviour in Portugal over the last recessions

Source: INE and Banco de Portugal estimates.
The response to the crisis - unemployment

Unemployment rate
(quarterly data; percentage of civilian labour force)

Source: INE
The response to the crisis - wages

• Wage responsiveness to the business cycle comes from establishment turnover
  – Wages are lower and vary more in the groups of establishments that go in and out of activity.
The response to the crisis - wages

• And, the share of job flows (job destruction) due to the turnover of establishments (shutdowns) increased since 2007.

<table>
<thead>
<tr>
<th></th>
<th>% JC accounted for by</th>
<th>% JD accounted for by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Startups</td>
<td>Expansions</td>
</tr>
<tr>
<td>1995-2009</td>
<td>36.9</td>
<td>63.1</td>
</tr>
<tr>
<td>2007-2009</td>
<td>32.1</td>
<td>67.9</td>
</tr>
</tbody>
</table>
The response to the crisis - wages

- Incidence of nominal wage freezes on the rise (35% of matches surviving from one year to the next (despite the large mandatory increase of the legal minimum wage))
The response to the crisis - $\Delta E$

Elasticity of employment changes to output shocks

<table>
<thead>
<tr>
<th></th>
<th>Positive regime ($\beta^p$)</th>
<th>Negative regime ($\beta^n$)</th>
<th>Constant</th>
<th># obs</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full sample</td>
<td>0.0608 (0.0008)</td>
<td>0.0100 (0.0010)</td>
<td>-0.0026 (0.0003)</td>
<td>1,169,473</td>
<td>0.071</td>
</tr>
<tr>
<td>Restricted sample</td>
<td>0.1160 (0.0121)</td>
<td>0.0813 (0.0126)</td>
<td>-0.0013 (0.0006)</td>
<td>479,251</td>
<td>0.0009</td>
</tr>
</tbody>
</table>

- Very low elasticities in both regimes
- Stronger reaction in the positive regime (full sample and restricted sample)
The response to the crisis - WT

• At zero net employment change, yearly hiring and separation rates above 5 percent.
• More churning in the positive growth regime than in the negative (but worker-initiated separations)
The response to the crisis - WT

- Hard to interpret (too much noise in sales data?)
- Intense churning/heterogeneity at large variations of sales
- More similarities with previous chart in the restricted domain
The response to the crisis – FTC

- Increase of the share of temporary contracts
The response to the crisis – FTC

Worker Turnover, 2002-2009

<table>
<thead>
<tr>
<th></th>
<th>All Firms</th>
<th>Firms with FTC employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>16.1</td>
<td>26.7</td>
</tr>
<tr>
<td>SR</td>
<td>18.1</td>
<td>22.7</td>
</tr>
<tr>
<td>WT</td>
<td>34.2</td>
<td>49.4</td>
</tr>
</tbody>
</table>

• Worker turnover is especially high in firms that use FTC
• The difference is larger for hires than for fires
Data

• Most of the evidence so far, derived from Quadros de Pessoal data:
  – Linked employer-employee longitudinal administrative data
  – Cover all firms and establishments with at least one wage-earner
  – Detailed information on firms, establishments and workers
Who is displaced?

- Analysis of match destruction (separations)
- Three types of separations: job-to-job transitions (quits?), mass layoffs, and plant shutdowns
- Wage differences related to permanent unmeasured differences between employees, firms, and job titles – three-way high-dimensional regression model of wage determinants
Who is displaced?

- **Wage equation:**
  \[ \ln w_{ijft} = X_{ijft} \beta + \theta_i + \varphi_f + \lambda_j + \varepsilon_{ijft} \]
  
  \[(i = \text{worker}, f = \text{firm}, j = \text{job title}, t = \text{date})\]

- **Wage variation due to:**
  - Observed time-varying characteristics of workers and firms
  - Worker fixed-effects
  - Firm fixed-effects
  - Job-title fixed-effects
  - Residual
Who is displaced?

• Analysis based on the empirical distribution of the three fixed-effects – continuing matches (coded 0) and destroyed matches (coded 1) considered separately
Who is displaced?

- On the right-hand side panel, the distribution of worker fixed-effects is shifted to the left;
- Workers that left their jobs have permanent unmeasured characteristics associated to lower wages.
Who is displaced?

- Workers that left their jobs received lower wages because they worked for firms that pay (paid) lower wages.
Who is displaced?

- Workers that left were in worse paid occupations.

Job title: occupational categories within collective agreements
Who is displaced?

• Except in the case of job-to-job transitions, workers who leave their jobs received wages that were lower than those of stayers

• Differences by type of separation:
  – firm closure: -0.15
  – mass layoff: -0.049
  – job-to-job: +0.012
  – all: -0.089
Who is displaced?

- Gelbach’s conditional decomposition method
  - unambiguously disentangles the contribution of each fixed-effect to the difference between workers that left and remained with their employers, by type of separation

<table>
<thead>
<tr>
<th>Fixed effect</th>
<th>Match destruction</th>
<th>Firm closure</th>
<th>Mass-layoff</th>
<th>Job-to-job transition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker</td>
<td>-0.031</td>
<td>-0.045</td>
<td>-0.026</td>
<td>0.015</td>
</tr>
<tr>
<td>Firm</td>
<td>-0.052</td>
<td>-0.100</td>
<td>-0.020</td>
<td>-0.004</td>
</tr>
<tr>
<td>Job-title</td>
<td>-0.006</td>
<td>-0.005</td>
<td>-0.003</td>
<td>0.001</td>
</tr>
<tr>
<td>Sum</td>
<td>-0.089</td>
<td>-0.150</td>
<td>-0.049</td>
<td>0.012</td>
</tr>
</tbody>
</table>
Who is displaced?

• The main driver of the wage differential received by displaced workers is the firm fixed-effect (especially if the separation is due to a firm closure).
• In case of mass layoffs and job-to-job transitions, worker fixed-effects are more relevant (negative effect in the former case, positive in the latter).
• Preliminary evidence indicates that, if anything, better matches and matches with better firms are currently being destroyed.