European Integration in Crisis: Did the Great Recession Inflict Regionally Asymmetric Shocks?

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IPES Conference 2016
Motivation:
Krugman’s (1991) Prediction for the EU

1. European Integration
2. Increased Specialization
3. Vulnerability to Asymmetric Shocks
4. Endanger the Monetary Union?
Motivation:
Krugman’s (1991) Prediction for the EU

European Integration → Increased Specialization → Vulnerability to Asymmetric Shocks → Endanger the Monetary Union?
Evidence of Asymmetry?

265 NUTS-2 regions in 27 countries, 2003–2011 (N=2,120)

(a) % \Delta GDP, 08-09

(b) Specialization, 03-07 avg.
Differential Impact of the Crisis
Specialization vs. % $\Delta$GDP with Country-Specific Slopes
Differential Impact of the Crisis
Specialization vs. % ΔGDP with Country-Specific Slopes

$\Delta \log GDP_t \text{ to } t+1 = \beta_1 (\text{Specialization}_t \times \text{Shock}) + \beta_2 \text{Specialization}_t + \beta_3 \text{Shock} + \beta_n \text{Control}_t + \mu_0[k] + \mu_1[k] (\text{Specialization}_t \times \text{Shock}) + \eta_t[k]$

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# Multilevel Analysis Results:
Specialization and Asymmetric Shocks

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>shock</td>
<td>-0.07</td>
<td>***</td>
</tr>
<tr>
<td>specialization</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>shock_X_specialization</td>
<td>0.03</td>
<td>*</td>
</tr>
<tr>
<td>years.in.EU</td>
<td>-0.10</td>
<td></td>
</tr>
<tr>
<td>eurozone</td>
<td>-0.01</td>
<td>***</td>
</tr>
</tbody>
</table>

**Note:**
- **Star***: Significance level is 0.01.
- **Double Star**: Significance level is 0.05.
Multilevel Analysis Results:
Country Random Effects of Specialization × Shock2009 on ΔGDP

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What Explains This Heterogeneity?

Sectoral Analysis

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What Explains This Heterogeneity?

Sectoral Analysis: Manufacturing vs. Public Sector Specialization

(a) Manufacturing

(b) Public Sector

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What Explains This Heterogeneity?
Sectoral Analysis: The Italian Case

%ΔGDP (2008-2009)
What Explains This Heterogeneity?
Sectoral Analysis: The Italian Case

(a) Manufacturing Specialization  (b) Public Sector Specialization
Government Tools to Cushion Against Shocks:
Monetary Options: Adjust Overnight Interest Rates

(a) Floating XRs

(b) ECB and Pegged XRs
Government Tools to Cushion Against Shocks:
Monetary Options: Central Bank Asset Purchases

(c) Floating XRs

(d) ECB and Pegged XRs
Government Tools to Cushion Against Shocks:
Monetary Options: Central Bank Asset Purchases Effect on $\Delta$GDP

<table>
<thead>
<tr>
<th></th>
<th>Change in GDP$_t$ to $t+1$</th>
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<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>Central Bank Assets $\times$ Shock</td>
<td>0.002*** (0.001)</td>
</tr>
<tr>
<td>Central Bank Assets</td>
<td>-0.0012*** (0.001)</td>
</tr>
<tr>
<td>Shock</td>
<td>-0.104*** (0.012)</td>
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<tr>
<td>Specialization</td>
<td>0.060 (0.040)</td>
</tr>
<tr>
<td>Inflation</td>
<td></td>
</tr>
<tr>
<td>Exports (Intra-EU28)</td>
<td></td>
</tr>
<tr>
<td>Exports (Extra-EU28)</td>
<td></td>
</tr>
<tr>
<td>Real Effective XR</td>
<td></td>
</tr>
<tr>
<td>Interest Rate</td>
<td></td>
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<tr>
<td>Observations</td>
<td>1865</td>
</tr>
<tr>
<td>XR Regimes</td>
<td>3</td>
</tr>
</tbody>
</table>
### Government Tools to Cushion Against Shocks: Predicted Effect of Shock and Unemployment Benefits on ΔGDP

<table>
<thead>
<tr>
<th>Shock</th>
<th>% Change GDP</th>
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<tbody>
<tr>
<td>0</td>
<td>−0.08</td>
</tr>
<tr>
<td>1</td>
<td>−0.06</td>
</tr>
<tr>
<td></td>
<td>−0.04</td>
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<tr>
<td></td>
<td>−0.02</td>
</tr>
<tr>
<td></td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>0.04</td>
</tr>
</tbody>
</table>

The diagram illustrates the relationship between unemployment benefits and the percentage change in GDP under different shock scenarios. The shaded area represents the range of predicted outcomes, with the solid line indicating the central tendency. The y-axis represents the percentage change in GDP, while the x-axis shows different levels of unemployment benefits. Flaherty, Peritz, Rogowski, and Weldzius presented this analysis at the IPES Conference on November 11, 2016.
What Does This Mean for the EU?

- Specialization **NOT** the main threat to EU stability

- Specialization *per se* is not the problem, but specialization in manufacturing (as opposed to the public sector) was problematic

- Holding specialization constant:
  - **EuroZone** limits monetary policy
  - **Floating** XR Regimes fared better than **Eurozone** by using monetary policy, specifically asset purchases
  - Unemployment benefits impeded recovery

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