The changing demographic risk of temporary employment: A comparative study of European countries

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Background

- Is the risk of experiencing a fixed-term contract (FTC) changing across demographic groups over time and across countries?
- Why is the question important?
- What do the terms mean?
- Previous research
  - What do we know?
  - What do we not know?
Why the question is important

- Labor market risks are rising
  - Institutional changes (i.e. employment protection legislation)
  - Structural changes (i.e. technological change)
- Decline in more traditional ‘standard’ employment relationship (SER)
- Rise in more flexible ‘non-standard’ employment relationship (NSER)
  - Part-time
  - Self-employment
  - Temporary work
    - Contract
    - Seasonal
    - Temporary help agency
Why do we focus on fixed-term contract (FTC)?

- FTC
  - Smallest type of NSER
  - Largest type of temporary work
  - More insecure, by definition
  - Involuntary

- Part-time employment
  - Largest type of NSER
  - Majority are voluntary
  - Majority have a permanent contract

- Self-employment (very heterogeneous)
Why are demographic trends important?

- **Distribution and consequences**
  - The distribution of FTC are not equal (young, low edu, low income)
  - The consequences of FTC are not uniform (+, −, ∅)
  - The unequal consequences exacerbate the unequal distribution

- **Distribution and trends over time**
  - Changes in who experiences what types of consequences
What do we know?

- We know a lot
  - OECD, (2002, 2015, 2018); Gebel & Giesecke, 2009; Allmendinger et al., 2013; Hipp et al., 2015

- Differences in levels across countries

- Constant trends over time within countries, especially after 2005

- The distribution
  - The young
  - Polarized with respect to education
  - Low income
  - Gender split

- Trends - little change in the distribution of temporary employment
What do we not know?

- Evidence is exclusively based on cross-sectional data
- Cross-sectional data only knows FTC > 0
- Does not distinguish between the number of FTC over time
  - FTC = 1
  - FTC > 1
- As a result, what looks like stability could hide change
Questions

1. Has the probability of a FTC changed by number of FTC?
   a. Over time?
   b. Across countries?
   c. Between demographic groups (age, edu, gender)?
   d. Interaction (time*country*groups)?
Data - Survey on Living and Income Conditions (EU-SILC)

3 overlapping panel waves
- 2012 (2009 - 2012)

Each country must be present in all 3 panel waves
Each individual must be present in all 4 years of study period
- Age 25-54
- LFP (unemployed or employed)
- Must be employed at least 1 time
- Case-wise deletion for all missing values (age, edu, gender)

9,001 person, period observations in 5 countries
- Austria, Netherlands, Spain, Sweden, and Ireland
Method - fully interacted logistic regression

\[ y_e = \alpha + \sum_{c=1}^{C} \sum_{p=1}^{P} \sum_{k=1}^{K} (\beta_{p,c,k}) + \epsilon_{i,p,c,k} \]  

\[ y_s = \alpha + \sum_{c=1}^{C} \sum_{p=1}^{P} \sum_{k=1}^{K} (\beta_{p,c,k}) + \epsilon_{i,p,c,k} \]  

\[ y_m = \alpha + \sum_{c=1}^{C} \sum_{p=1}^{P} \sum_{k=1}^{K} (\beta_{p,c,k}) + \epsilon_{i,p,c,k} \]

Where:

- \( y_e \) = Pr(\( FTC_{i,p,c} > 0 \)), probability of individual (\( i \)) having Ever FTC in period (\( p \)) in country (\( c \))
- \( y_s \) = Pr(\( FTC_{i,p,c} = 1 \)), probability of individual (\( i \)) having Single FTC in period (\( p \)) in country (\( c \))
- \( y_m \) = Pr(\( FTC_{i,p,c} > 1 \)), probability of individual (\( i \)) having Multiple FTC in period (\( p \)) in country (\( c \))
- \( c \) = 5 countries (AT, ES, NL, SE, IE)
- \( k \) = \( K \times 1 \) vector of covariates for:
  - Education (Primary, Secondary, Tertiary)
  - Gender (Female, Male)
  - Age (<35, 35 - 45, >45)
Theory - recommodification vs. individualisation

- Classical determinants of risks are age, gender, edu, *income*
- “Recommodification” of risks (Breen, 1997; Goldthorpe, 2002)
  - Classical determinants of risk increase
  - Risks shift between groups
- “Individualisation” of risk (Beck, 2000; Esping-Anderson and Regini, 2000)
  - Classical determinants of risk decrease
  - Risks shift within groups
- Country-level changes (Streeck, 2014)
  - Differences between countries remain
  - Trends within countries are similar
Hypotheses

1. **H1**: Within stability, there is change
   - Probability of FTC > 0 is constant
   - Probability of FTC = 1 is declining
   - Probability of FTC > 1 is rising

2. **H2**: The changing distribution in the probability of FTC
   - Increasing heterogeneity or “individualisation” in the risk of FTC = 1
   - Decreasing heterogeneity or “recommodification” in the risk of FTC > 1

3. **H3**: Country level comparisons
   - Differences across countries remain
   - Similarity in the trends
### Descriptive means

<table>
<thead>
<tr>
<th></th>
<th>Austria</th>
<th>Spain</th>
<th>Ireland</th>
<th>Netherlands</th>
<th>Sweden</th>
<th>All countries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variables:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>FTC &gt; 0</td>
<td>0.105</td>
<td>0.306</td>
<td>0.127</td>
<td>0.165</td>
<td>0.152</td>
<td>0.210</td>
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<tr>
<td>FTC = 1</td>
<td>0.071</td>
<td>0.116</td>
<td>0.078</td>
<td>0.053</td>
<td>0.091</td>
<td>0.090</td>
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<tr>
<td>FTC &gt; 1</td>
<td>0.033</td>
<td>0.190</td>
<td>0.049</td>
<td>0.112</td>
<td>0.061</td>
<td>0.120</td>
</tr>
<tr>
<td><strong>Control variables:</strong></td>
<td></td>
<td></td>
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<tr>
<td>Panel periods:</td>
<td></td>
<td></td>
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<tr>
<td>2006 - 2009</td>
<td>0.284</td>
<td>0.329</td>
<td>0.319</td>
<td>0.280</td>
<td>0.404</td>
<td>0.318</td>
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<tr>
<td>2009 - 2012</td>
<td>0.396</td>
<td>0.362</td>
<td>0.360</td>
<td>0.375</td>
<td>0.374</td>
<td>0.373</td>
</tr>
<tr>
<td>2012 - 2015</td>
<td>0.320</td>
<td>0.309</td>
<td>0.321</td>
<td>0.345</td>
<td>0.223</td>
<td>0.309</td>
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<tr>
<td><strong>Demographic characteristics:</strong></td>
<td></td>
<td></td>
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<tr>
<td>25 – 34</td>
<td>0.146</td>
<td>0.189</td>
<td>0.146</td>
<td>0.171</td>
<td>0.179</td>
<td>0.173</td>
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<tr>
<td>35 – 44</td>
<td>0.370</td>
<td>0.398</td>
<td>0.448</td>
<td>0.392</td>
<td>0.411</td>
<td>0.394</td>
</tr>
<tr>
<td>45 – 55</td>
<td>0.484</td>
<td>0.414</td>
<td>0.406</td>
<td>0.437</td>
<td>0.411</td>
<td>0.432</td>
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<tr>
<td>Primary edu</td>
<td>0.081</td>
<td>0.326</td>
<td>0.175</td>
<td>0.114</td>
<td>0.051</td>
<td>0.195</td>
</tr>
<tr>
<td>Secondary edu</td>
<td>0.533</td>
<td>0.225</td>
<td>0.214</td>
<td>0.383</td>
<td>0.400</td>
<td>0.340</td>
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<tr>
<td>Tertiary edu</td>
<td>0.386</td>
<td>0.449</td>
<td>0.611</td>
<td>0.503</td>
<td>0.550</td>
<td>0.464</td>
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<tr>
<td>Male</td>
<td>0.545</td>
<td>0.542</td>
<td>0.479</td>
<td>0.501</td>
<td>0.483</td>
<td>0.525</td>
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<tr>
<td>Observations</td>
<td>1931</td>
<td>3929</td>
<td>411</td>
<td>1724</td>
<td>1006</td>
<td>9001</td>
</tr>
<tr>
<td>Percent of total</td>
<td>0.215</td>
<td>0.437</td>
<td>0.046</td>
<td>0.192</td>
<td>0.112</td>
<td>1</td>
</tr>
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</table>
Model fit - not good

<table>
<thead>
<tr>
<th>FTC &gt; 0</th>
<th>FTC = 1</th>
<th>FTC &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>McFadden $R^2$</td>
<td>0.095</td>
<td>0.053</td>
</tr>
</tbody>
</table>

- **McFadden $R^2$**
  - Represents the improvement from null model to fitted model
  - “…values of 0.2 to 0.4 for rho-squared represent excellent fit.” (McFadden, 1979)
Average marginal effect (AME)
Average marginal effect (AME) of *Period*

The figure shows the average marginal effect of the period variable for different countries: Spain, Austria, Ireland, Netherlands, and Sweden. The x-axis represents the 4-year panel period ending in 2012 and 2015, and the y-axis represents the average marginal effect. For each country, the effect is plotted for three different FTC categories: FTC≤0, FTC=1, and FTC>1.
Average marginal effect (AME) of Country

<table>
<thead>
<tr>
<th>Country</th>
<th>2009</th>
<th>2012</th>
<th>2015</th>
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</thead>
<tbody>
<tr>
<td>Austria</td>
<td></td>
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<tr>
<td>Ireland</td>
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<tr>
<td>Netherlands</td>
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<tr>
<td>Sweden</td>
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</tbody>
</table>

4 year panel period ending

FTC>0

FTC=1

FTC>1

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Average marginal effect (AME) of Age
Average marginal effect (AME) of $Edu$

![Graph showing AME of Edu across different countries and education levels over time.](image-url)
Average marginal effect (AME) of Male

- Spain
- Austria
- Ireland
- Netherlands
- Sweden

4 year panel period ending

FTC>0
FTC=1
FTC>1
Summary of results

- FTC trends are generally stagnant
- Spain and Sweden are the exception
  - Spain
    - Rising number of ever FTC (+24%)
    - Rising number of single FTC (+13%)
    - Rising number of multiple FTC (+24%)
  - Sweden
    - Rising number of ever FTC (+9%)
    - Declining number of single FTC (-22%)
    - Rising number of multiple FTC (+81%)
- Demographic trends are constant
Summary of hypotheses

- Model fit is not good - FTC is more associated with individual characteristics than group characteristics
- H1 (mixed): FTC is rising over time
  - AME is positive across countries, but . . .
  - Not everywhere - only Sweden and Spain
  - Primarily because of rising *multiple* FTC
- H2 (reject): Demographic differences are constant
- H3 (reject): Country differences in risk of FTC > 0 are constant
  - Countries are similar in the risk of *single* FTC
  - Countries are different in the risk of *multiple* FTC
Conclusion

- Confirm previous work
  - FTC is constant over time
  - The distribution of FTC is also constant over time
- Contribute new knowledge
  - Risk of *single* FTC is constant
  - Risk of *multiple* FTC is rising
Thank you