Expenditure Cuts and Access to Healthcare under the Great Recession in Europe
Income Groups Are Unequally Affected

Lore Torfs, Stef Adriaenssens, Susan Lagaert, Sara Willems
This presentation is based on the following – hot from the virtual press – article:


Freely available at https://doi.org/10.1186/s12939-021-01412-7
Appetizer: who got “squeezed” more?

- The ‘Great Recession’ is the prolonged series of economic downturns that started in 2008.
- Tooze ends his monumental history of the ‘Great Recession’ with a comparison: 1914 may also be a good way for thinking about the kind of historical problem that the financial crisis of 2008 represents (Tooze, 2018, p. 473).
- He argues that similar effects can be discerned.
- One notable absence in his little list of questions: which income group or social class suffered more?
- The effect on inequality probably is opposite:
  - a decrease due to World War I
  - a marked increase due to the Great Recession.
Content

I. Introduction
II. Access to healthcare and the Great Recession
III. Data and method
   1. Sample and data
   2. Specifications
IV. Results
V. Conclusion & discussion
Introduction

- The general and the direct effect of any recession is: loss of welfare
- Within this, the distributional effects of the ‘Great Recession’ are intensely discussed
- We focus on the access to healthcare: *Unmet Medical Needs* (UMN)
- For purposes of clarity, we discern two potential sources of increased UMN due to the crisis:
  1. *Direct effects*: lower standard of living due to trends in wages, unemployment, or profits
  2. *Policy effects* following from the recession: Increased out-of-pocket payments, decreased supply, other barriers to access to care
Introduction

- We focus on the latter: do budget (under control of the severity of the recession) affect access to healthcare?
- In particular, we conjecture that the effect is more severe in low-income groups.
- We develop an intuitive design that allow to control for the direct effects of the crisis → isolate health budget effects.
- How? Comparisons between similar countries with a same level of recession (negative growth), but with different responses in the retrenchment of public health budgets.
I. Introduction
II. Access to healthcare and the Great Recession
III. Data and method
   1. Sample and data
   2. Specifications
IV. Results
V. Conclusion & discussion
II. Access to healthcare and the Great Recession

- 2008 marked the start of what is termed ‘the great Recession’
- Especially in Europe, this spilled over in a sovereign debt crisis
- Forced many governments to cut expenditures, also (but not universally) in healthcare
- Relationship between and
  ✓ the severity of the crisis, and
  ✓ health expenditures
  is quite strong
  (2008-14: \( r=0.603; p < 0.001 \))

**Figure 1.** Average annual change in health expenditures, 2008-2014 (PPP)

*Source: OECD Health Statistics*
Figure 2. Average annual change in GDP and health expenditures, 2008-2014
Sources: OECD Economic References Database; Health Statistics
II. Access to healthcare and the Great Recession

- Between both pairs of countries
  - quite clear similarity in business cycle
  - quite clear difference in health expenditures

- Provides a good basis for a natural experiment disentangling the effects of the Great Recession itself from the healthcare policy (in terms of budget)

- This difference also extends to qualitative dimensions of healthcare interventions
<table>
<thead>
<tr>
<th>POLICY MEASURE</th>
<th>COUNTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Level of contributions</strong></td>
<td></td>
</tr>
<tr>
<td>- Cutbacks</td>
<td>✔️</td>
</tr>
<tr>
<td>- Increasing or introducing user charges</td>
<td></td>
</tr>
<tr>
<td>- Expanding benefits, targeting low-income groups</td>
<td>✔️</td>
</tr>
<tr>
<td><strong>II. Volume and quality of public healthcare</strong></td>
<td></td>
</tr>
<tr>
<td>- Changing the scope of coverage</td>
<td>✔️</td>
</tr>
<tr>
<td>- Changing in the population of coverage</td>
<td>✔️</td>
</tr>
<tr>
<td><strong>III. Costs of publicly financed healthcare</strong></td>
<td></td>
</tr>
<tr>
<td>- Reduction of health professional salaries</td>
<td>✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>- Changes in provider infrastructure /capital investment</td>
<td>✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>- Centralization: hospital mergers</td>
<td>✔️</td>
</tr>
<tr>
<td>- Reduction of tariffs paid to providers</td>
<td>✔️</td>
</tr>
</tbody>
</table>
II. Access to healthcare and the Great Recession

- These elements make us expect differential effects in access to healthcare.
- Our focus is not just on the effect healthcare budget → access to healthcare.
- We test as to whether low-income groups suffer more from healthcare retrenchment.
- Earlier one-country studies found a larger increase in unmet medical needs...
  - ✓ for low-income groups in Greece (Zavras et al, 2016)
  - ✓ for unemployed in Portugal (Legido Quigley et al, 2016)
  - ✓ for above-median incomes in Ireland (Schneider & Devitt, 2018)
II. Access to healthcare and the Great Recession

- We thus exploit the difference between the two pairs of countries with
  ✓ similar recession traits and background
  ✓ differences in healthcare budgets and policies
- The standard conjecture is: budget cuts strengthen the make low-income groups suffer more in terms of unmet medical needs
- The two pairs of countries have an interesting difference in terms of their policies toward low-income groups
- Especially the Irish health policy changes may be informative:
  ✓ Severe retrenchment
  ✓ Concomitant policy to spare the worst effects for low-income groups
  (Maresso et al, 2015; Mladovsky et al, 2012)
II. Access to healthcare and the Great Recession

- With this information, we define our working hypotheses as follows
  1. Austerity measures in healthcare affect low-income groups more
  2. Measures tailored for low-income groups mitigate or offset this effect
- The differential effect is estimated with a difference-in-difference-in-differences (DDD) approach
III.1. Sample and data

- Individual and household data from the European Union Statistics on Income and Living Conditions program (EU-SILC)
- Most of the policy measures implemented in 2008-2014 → data of the 2008 and the 2014 waves
- Repeated cross-sections
- Dependent variable: unmet medical needs (UMN)
  ✓ respondents indicate as to whether they were unable to take up needed medical care the past year
  ✓ they also provide the reason (7 + ‘other’)
  ✓ we constructed a dummy of UMN due to cost-related reasons (direct costs, waiting lists, travel distance)
III.1. Sample and data

- Descriptives of UMN
- One problem: large proportion of missing values in Iceland and Sweden

<table>
<thead>
<tr>
<th></th>
<th>Iceland</th>
<th>Sweden</th>
<th>Ireland</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>UMN</td>
<td>1.6</td>
<td>2.4</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>Missing %</td>
<td>56.4</td>
<td>50.2</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6,618</td>
<td>14,889</td>
<td>10,116</td>
</tr>
<tr>
<td>2014</td>
<td>UMN</td>
<td>4.4</td>
<td>1.4</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>Missing %</td>
<td>56.8</td>
<td>48.7</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6,934</td>
<td>11,277</td>
<td>10,629</td>
</tr>
<tr>
<td>Difference pp</td>
<td>+2.8</td>
<td>-1.0</td>
<td>+2.2</td>
<td>+1.0</td>
</tr>
</tbody>
</table>

Table 2. Descriptives – UMN, 2008-2014
III.2. Specifications

- Difference-in-differences allows to estimate differences in trends due to a ‘treatment’ (usually some policy measure)
- It does compare
  - first difference: before-and-after outcomes for the country with austerity measures
  - second difference: before-and-after change in outcomes for the control country
- In our case, a DD approach would estimate as to whether austerity measures affect access to healthcare (it does!)
- We add a third difference (second interaction term): income groups
- Big advantage compared to the existing research: not just one country, but controlling for overall trends
III.2. Specifications

- We estimate a Linear Probability Model (advantage: coefficients comparable between models)
- Robust standard errors clustered at the level of country-years
- The following design elements are relevant:
  ✓ treatment and control cases share geographic, historical, institutional, social-cultural, and economic commonalities
  ✓ Also applies to welfare state institutions (including healthcare policies)
  ✓ Set of control variables: age, gender, marital status, urbanization, basic activity, general health, suffering from a chronic illness, and limitations because of health status
III.2. Specifications

- One important requirement in DD(D): equal trends assumption in the absence of a treatment
- EU-SILC has not run long enough to test the parallel trends assumption in a pre-treatment period (the standard test)
- We developed several other tests and arguments:
  - Plausibility increases if the cases are similar in levels before the treatment (Kahn-Lang & Lang 2019)
  - Before 2008, EU countries invested in the coordination of health policies through OMC, counterbalancing potential divergence
  - Placebo test with Portugal as a control case
Content

I. Introduction

II. Access to healthcare and the Great Recession

III. Data and method
   1. Sample and data
   2. Specifications

IV. Results

V. Conclusion & discussion
IV. Results

- We test two different DDD-estimations
  1. Iceland control: Sweden
  2. Ireland (control: UK)
- Results for the Iceland-Sweden effect are clear-cut, and in line with the prediction
- In Ireland, the effect is even stronger than predicted: middle-class citizens’ UMN increases more than the first income quintile

<table>
<thead>
<tr>
<th></th>
<th>Iceland</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β (SE)</td>
<td>B (SE)</td>
</tr>
<tr>
<td>Income quintile 2</td>
<td>-0.0196** (0.0005)</td>
<td>0.0029** (0.0002)</td>
</tr>
<tr>
<td>Income quintile 3</td>
<td>-0.0162* (0.0019)</td>
<td>0.0160** (0.0003)</td>
</tr>
<tr>
<td>Income quintile 4</td>
<td>-0.0183** (0.0007)</td>
<td>0.0058* (0.0006)</td>
</tr>
<tr>
<td>Income quintile 5 (highest)</td>
<td>-0.0351** (0.0011)</td>
<td>0.0005 (0.0005)</td>
</tr>
<tr>
<td>Control country</td>
<td>Sweden</td>
<td>United Kingdom</td>
</tr>
</tbody>
</table>

* p<0.01; ** p<0.001
Cluster-robust standard errors (country-year)

**Table 3.** DDD-results
IV. Results

- We tested how UMN-levels differed in 2008 and 2014 ($\chi^2$):
  - 2008: only Q5 had lower UMN than Q1
  - 2014: Q3 scored higher than Q1 in UMN

<table>
<thead>
<tr>
<th>Income quintile 2</th>
<th>Iceland</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$ (SE)</td>
<td>B (SE)</td>
</tr>
<tr>
<td>Income quintile 2</td>
<td>-0.0196** (0.0005)</td>
<td>0.0029** (0.0002)</td>
</tr>
<tr>
<td>Income quintile 3</td>
<td>-0.0162* (0.0019)</td>
<td>0.0160** (0.0003)</td>
</tr>
<tr>
<td>Income quintile 4</td>
<td>-0.0183** (0.0007)</td>
<td>0.0058* (0.0006)</td>
</tr>
<tr>
<td>Income quintile 5 (highest)</td>
<td>-0.0351** (0.0011)</td>
<td>0.0005 (0.0005)</td>
</tr>
<tr>
<td>Control country</td>
<td>Sweden</td>
<td>United Kingdom</td>
</tr>
</tbody>
</table>

* $p<0.01$; ** $p<0.001$

Cluster-robust standard errors (country-year)

**Table 3.** DDD-results
Content

I. Introduction

II. Access to healthcare and the Great Recession

III. Data and method
   1. Sample and data
   2. Specifications

IV. Results

V. Conclusion & discussion
V. Conclusion & discussion

- Clear-cut effects as predicted:
  - Austerity measures tend to hamper lower-income groups’ access to healthcare more
  - In case of retrenchment, attenuating policies can limit and even overshoot this expected effect

- Problem with common trends?
  - Difficult to test due to data limitations, but
  - Policies tended to converge pre-2008, due to OMC (IE-UK)
  - Differences before treatment were small

- Problem with self-reported UMN?
  - Item response rate in Iceland –Sweden is low
  - Hypothetical adaptation: more deprivation leads to less reported UMN? If anything, leads to an underestimation of low-income UMN trend