Thumbscrews for agencies or for individuals?
How to reduce unemployment

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1. How to reduce unemployment?
1.1 The role of institutions

- Central institutions
  Minimum wages, unions, hiring subsidies, labour taxes, unemployment benefits (Blau and Kahn, 1999; Nickel and Layard, 1999)

- Equilibrium employment effect of institutions
  - All of above: Pries and Rogerson (2005), Yashiv (2004)
  - Experience rating: Cahuc and Malherbet (2004)
  - Union coverage: Boeri and Burda (2009)
  - In-work benefits: Immervoll et al. (2007)
  - Layoff tax & payroll subsidy: L’Haridon and Malherbet (2009)
  - Temporary contracts & firing costs: Bentolila et al. (2012)
  - Unemployment benefits: Launov and Wälde (2013)

- Public Employment Agency (PEA)?
  Largely left aside, although key to reducing coordination frictions
1. How to reduce unemployment?

1.2 Evidence on Public Employment Agencies (PEA)?

- **Search and matching literature**
  - Pissarides (1979), Fougère et al. (2009): Search through agencies and private search; potentially negative but quantitatively positive effect of more effective agencies.
  - Jung and Kuhn (2013): Explain difference in labour market flows between the US and Germany in 80s-90s by the difference in matching effectiveness of PEA.
  - Selected aspects / Other views: Counseling (Cahuc and Le Barbanchon, 2010) / Middleman (Yavaş, 1994)

- **Reduced-form literature**
  - Holzer (1988), Blau and Robins (1990) and the followers: Fairly wide but no link between impact estimates and the change of equilibrium unemployment rate.
1. How to reduce unemployment?

1.3 Our goal and contribution

- **Our goal**
  - Analyze effects of increasing the effectiveness of matching
    - Thumbscrew for agencies
  - Compare it with a more traditional reform (of unemployment benefits)
    - Thumbscrew for the unemployed

- **Our contribution and findings**
  - We evaluate the equilibrium effect of a Public Employment Agency (PEA) reform
  - Finding 1: Successful reform of PEA in Germany explains around 33% of the post-reform reduction in unemployment
  - Finding 2: Traditional benefits and entitlement reduction of a reasonable size explains only around 7% of unemployment reduction
1. How to reduce unemployment?

1.3 How do we reach our conclusions

• Labour market reform of 2003-2005 in Germany: The Hartz reform
  • Four packages of policy measures affecting nearly all aspects of the market (aiming at higher flexibility)
  • Unique reform design that allows identification of the effect of PEA reform from the rest of the policy measures

• Conceptual modelling framework
  • Structurally estimated nonstationary equilibrium matching model with time-dependent benefits (Launov and Wälde, 2013)
  • Extension for productivity of PEAs
  • Link to reduced-form estimates of the change in the number of matches due to the reform of PEAs (Klinger and Rothe, 2012)
  • Allows for comparison of PEA reform with unemployment benefit reform
2. German unemployment and Hartz reforms

2.1 Stylized facts

Figure 1  Unemployment rate in Germany in 2001-2008

(Source: Bundesagentur für Arbeit)

- Structural break in March 2005 (benefit reduction: January 2005!)
- Reduction of 3.9 percentage points (ppt) between 2005 and 2008
2. German unemployment and Hartz reforms

2.2 Institutional setting

- **Hartz I** (effective as of 01.01.2003)
  - Various training and employment-stimulating measures
  - Job market integration of workers over 50
  - Strengthened sanctions and increased pressure to search
  - Established personnel service agencies as intermediaries between job searchers and employers to coordinate loan work placement

- **Hartz II** (effective as of 01.01.2003)
  - New taxation rules for Mini- and Midi-Jobs
  - New start-up subsidies

- **Hartz III** (effective as of 01.01.2004)
  - Internal administrative reform of the entire Federal Employment Agency
  - Creation of “Job Centers” as a unified address for benefit claimants

- **Hartz IV** (effective as of 01.01.2005)
  - Fixed unemployment assistance benefits (reduction of benefits on average)
  - Reduced entitlement to unemployment insurance benefits
2. German unemployment and Hartz reforms

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- **Hartz II**
  - New taxation rules for Mini- and Midi-Jobs
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- **Hartz III: Reform of PEA** *(change in matching effectiveness)*
  - Internal administrative reform of the entire Federal Employment Agency
  - Creation of “Job Centers” as a unified address for benefit claimants

- **Hartz IV: Benefit reform** *(pure change in benefits & entitlement)*
  - Fixed unemployment assistance benefits (reduction of benefits on average)
  - Reduced entitlement to unemployment insurance benefits
3. Theory

3.1 General structure, labour income, transition rates

Pissarides matching model with: a) time-dependent unemployment benefits, b) endogenous search effort, c) risk-averse workers, *ex-ante* heterogeneous over: i) observed characteristics ($k$) ii) unobserved search productivity ($\chi$).

- Labour income

  Employed: $w$
  Unemployed: $b(s) = \begin{cases} 
  b_{UI} = \xi_{UI}w, & \text{if } 0 < s \leq \bar{s} \\
  b_{UA} = \xi_{UA}w, & \text{if } \bar{s} > s. 
\end{cases}$

- Transition rates

  $U \rightarrow E$:  $\mu(.)$ depends on tightness $\theta$ and search effort $\phi(s, b_{UI}, b_{UA}, \bar{s})$ search productivity $\chi$ (unknown to Bayesian worker) productivity $\psi(s)$ of public empl. agency
  - objective:  $\mu(s) \equiv \mu(\phi(s)\theta, \psi(s), \chi)$
  - subjective:  $\mu(s) \equiv \mu(\phi(s)\theta, \psi(s), p(s))$

  $E \rightarrow U$:  $\lambda$ exogenous
3. Theory
3.2 Workers, firms, equilibrium unemployment

- **Value of being unemployed**

\[
\rho V_k (b(s), s) = \max_{\phi_k(s)} \left\{ v(b(s), \phi_k(s)) + dV_k(b(s), s) / ds \right. \\
\left. + \mu_k(s, p(s)) [V(w_k) - V_k(b(s), s)] \right\} .
\]

Optimal search requires a choice of search effort \( \phi(s) \) given the evolution of the subjective belief \( p(s) \) about own search productivity

\[
dp(s) / ds = -p(s) [1 - p(s)] [\mu_k(s, 1) - \mu_k(s, 0)] < 0
\]

- **Value of a filled job**

\[
\rho J(w_k) = A_k - w_k / (1 - \kappa) - \lambda_k J(w_k),
\]

where \( A_k \) is the output of the worker-firm pair and \( \kappa \) is the tax rate.

- **Wages and Government**

Wages: Set by collective bargaining. Government: Runs balanced budget
3. Theory
3.2 Workers, firms, equilibrium unemployment

- **Value of a filled job**

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- **Wages and Government**
  - Wages: Set by collective bargaining. Government: Runs balanced budget

- **Equilibrium unemployment**

\[ u_k = \frac{p^k_{eu}}{p^k_{eu} + \int_0^\infty p^k_{ue}(s) dF^k(s)} \]

where \( p^k_{eu} \{p^k_{ue}(s)\} \) is a steady-state probability of being unemployed \{employed\} conditional on having had a job \{unemployment spell of \( s \)\}. 

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The Hartz reforms in Germany
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3. Theory
3.3 The effect of more productive public employment agencies (PEAs)

- Uniform increase in productivity of PEAs
  - Matching rate increases, unemployment goes down
  - Theoretical prediction as expected
  - Quantitative question: By how much did productivity increase and by how much did this reduce the unemployment rate?

- Heterogeneous increases in productivities of PEAs
  - Reform of PEAs in Germany affected short-term and long-term unemployed differently (Klinger and Rothe, 2012)
  - Apparently productivity of PEAs increased differently for short- and long-term unemployed
  - Makes sense by institutional setup - e.g. special focus on individuals above 50
  - An increase in productivities of PEAs can actually increase the unemployment rate
3. Theory
3.3 The effect of more productive public employment agencies (PEAs)

- Heterogeneous increases in productivities of PEAs
  - An increase in productivities of PEAs can actually increase the unemployment rate
  - Reminds of 'immiserizing growth' in trade literature (Bhagwati, 1958)
3. Theory

3.3 The effect of more productive public employment agencies (PEAs)

- Where does this paradox come from?
  - Why can more productivity of PEAs for long-term unemployed workers increase the unemployment rate?
  - Channel 1 (positive): more productivity of PEA helps long-term unemployed workers to find a job
  - Channel 2 (negative): Anticipating higher future exit rates, short-term unemployed workers put less effort into finding a job
Structural estimation

- Estimates from Launov and Wälde (2013) from Hartz IV analysis
- Valid here as well (data from 1997-1998, i.e. before the Hartz reforms)

Targets for calibration

- Based on reduced-form estimate(s) of %-increase in number of matches (Klinger and Rothe, 2012)
- Homogenous case (PEA reform had same effects on short-term and long-term unemployed workers): 3.5 %
- Heterogenous case: 2.1% (short-term) and 6.1% (long-term)

Identifying the effect of the reform of PEAs (i.e. of Hartz III)

- Timing of Hartz III (implemented 1 January 2004, no other policy change)
- Homogeneity of Hartz III (almost exclusively targeted at PEAs)
4. The role of public employment agencies

4.1 Link between reduced-form and structural form matches

- Parameter(s) for calibration: Productivity of public employment agencies
  - Homogenous increase of productivity in PEAs
    \[ \bar{\mu} (\psi) U = \delta \hat{m} \]
    where \( \hat{m} \) are matches before the reforms \( \psi \) is productivity of PEAs
  - Heterogenous increase of productivities of PEAS (paradox arises)
    \[ \bar{\mu}^{UI} (\psi^{UI}) U^{\text{short}} = \delta^{UI} \hat{m}^{UI} \]
    \[ \bar{\mu}^{UA} (\psi^{UA}) U^{\text{long}} = \delta^{UA} \hat{m}^{UA} \]
    where productivity rises in PEAs differs between short-term \( (\psi^{UI}) \) and long-term \( (\psi^{UA}) \) unemployed workers
  - Knowledge of \( \psi \), \( \psi^{UI} \) and \( \psi^{UA} \) allows to compute response of the equilibrium unemployment rate (which is the reason why we do this ...
### 4. The role of public employment agencies

#### 4.2 The reduction of equilibrium unemployment rates

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### 4. The role of public employment agencies

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Relative importance of reforms and design of reforms

- Reform of PEA (1.32) is 4 - 5 times more successful than reform of benefits (0.29)
- Reform should be balanced (1.98 higher than 1.32)
- Reduction of benefits (H. IV) has more effect when productivities are high (0.29 vs 0.11)
4. The role of public employment agencies

4.2 The reduction of equilibrium unemployment rates

- The unemployment reduction effect in a figure

- Hartz III (reform of PEA) is 4-5 times more successful in reducing unemployment than Hartz IV (reduction of benefits)
4. The role of public employment agencies

4.3 Implications of the PEA reform

- PEA can be an important source for improving market performance
  - Social acceptability: Reduction of coordination frictions does not lead to distributional effects, unlike benefit reduction (poverty and inequality)

- Example from Germany – what did they actually do? (Weise, 2011)
  - PEA in Germany by 2000 was perceived as slow, ineffective and in part fraudulent (reporting too high placements/matches)
  - Abolish PEA or reform? → Hartz III reform
  - Remodel an administrative bureaucracy into a service center
  - Complete restructuring of work flow (call center, reception desks, consultation upon appointment and without interruptions)
  - Targets for workload: 150 claimants per case worker, 75 claimants under 25 years of age p.c.w. (met in 2012 only)
  - Priorities: Priority scheme in processing cases of those over 50
5. Comparison to other findings

The effects of Hartz IV on equilibrium unemployment

- Krause and Uhlig (2012)
  Matching model with stochastic human capital accumulation and depreciation
  Calibrated effect: 2.8 ppt reduction

- Krebs and Scheffel (2011)
  Matching model with consumption savings and investment into risky human capital
  Calibrated effect: 1.2 ppt reduction

- Launov and Wälde (2013a)
  Matching model with two-step time-dependent benefits and productivity learning
  Estimated effect: 0.1 ppt reduction

Why are existing structural results on the effect of the reduction of unemployment benefits (Hartz IV) so diverse? Different models?

- No! - Different benefits!
5. Comparison to other findings

- Post- relative to pre-Hartz-IV unemployment assistance benefits
  - Krause and Uhlig (2012):
    - Vary between 0.33 and 0.76 depending on skills. All workers loose.
    - Benefits: Endogenous; big discrepancy is artefact of the assumptions on the initial skill distribution
  - Krebs and Scheffel (2011):
    - Single value of 0.65 for all. All workers loose.
    - Benefits: “Rule of thumb” (?)
  - Launov and Wälde (2013a):
    - On average 0.94. Some workers lose, some gain.
    - Benefits: GSOEP data and OECD, IAB and DIW estimates

- Predictions of our model with benefit reductions as in the above two

<table>
<thead>
<tr>
<th>Benefit reduction</th>
<th>Change in unemployment (ppt)</th>
<th>prediction (our model)</th>
<th>original</th>
</tr>
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<td>Krause and Uhlig</td>
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<td>2.0 - 2.2</td>
<td>2.8</td>
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<td>1.3 - 1.5</td>
<td>1.2</td>
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6. Conclusion

- The role of public employment agencies (PEA)
  - Improved bureaucracy appears to have high significant unemployment reducing potential in a typical welfare state
  - Reduction in unemployment rate due to PEA reform (Hartz III): around 1.3 percentage points
  - PEA reform explains around 33% of reduction of unemployment rate as of 2005

- The role of benefit reform
  - Traditional unemployment benefit reform turns out to have an order of magnitude weaker effect
  - Reduction in unemployment rate due to benefit reform (Hartz IV): 3/10th of a percentage point
  - Hartz IV explains only 7.4% of reduction of unemployment rate as of 2005

- How should unemployment be reduced?
  - Don’t focus exclusively on benefits
  - Look into reforming bureaucracies
Thank You!