Econ 4715 Lecture 5

Lessons from research on unemployment policies

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Insurance vs. incentives

- Policy makers face difficult trade-offs when designing unemployment insurance
- Insurance vs. incentives
  - Anyone can end up as unemployed
  - Economic commitments are easier with insurance
  - Good matches may take some time
  - Search effort hard to verify – private alternatives hard to find

Theoretical framework

- The principal agent model (next lecture)
  - Principal: Unemployment insurance agency
  - Agent: Worker
- Way to think:
  - How can we make the agent do as we like (apply for jobs), provide him with a given level of utility and minimize costs

Observable effort

- Simple solution:
  - Unemployment considered random:
    - Provide unemployed with the same utility as employed
  - Unemployment self-inflicted:
    - Provide unemployed with less utility than the employed
  - Constant utility over time
  - Monitor search effort to avoid incentive problems

Unobservable effort

- The principal must trade insurance against incentives
  - The better insurance the more incentive problems
- Simplest way to provide incentives: Pay less
  - If it is bad enough to be unemployed, the unemployed will do whatever the can to find a job

Can we do better?

- The principal can find a better policy by taking into account the dynamics of the problem

- Solution: Make unemployment benefits dependent on unemployment duration
  - Benefits should be falling over time

Why? A simple example

- Assume:
  - If a job seeker provides effort he will find a job for sure withing 3 months
  - If no effort – finding a job is less likely
- ”Optimal” unemployment insurance policy
  - Pay unemployment benefits for 3 months, and afterwards nothing
  - Rational and forwardlooking agents take future payments into consideration and provide effort

Optimal unemployment benefits

- Benefits should be decreasing over time to stimulate to effort without cutting consumption (too much)
- From consumption smoothing: Marginal utilities should never ”jump”
- Unemployed should start on full wages and they should then fall towards social assistance benefits
- Even better: Use taxes/tranfers on future earnings
- If unemployment is self-inflicted, taxes and benefits should have experience rating

From partial to general equilibrium

- All results so far are obtained from partial equilibrium – any impacts from unemployment insurance to wages are ignored
- Lowered unemployment benefits => less bargaining power for employees => lower wages => more demand for labour => (even) higher employment
- However, *regressive benefits*, increases V_u at the onset of an unemployment spell
  - More bargaining power for workers => negative empl. Effects
  - In G.E. *Regressive benefits* have both positive and negative effects – calibrated models show a slightly positive *net effect* on employment

Soft constraints

- Models are often highly stylized
  - ”Either effort is observable or it is not”
- Part of unemployment policies are also softer measures
- Example: Compulsory meetings with unemployment agency
  - Purpose: Both to guide job seekers and to provide ”incentives”
    - Uncomfortable to attend such meetings if you provide zero effort

Empirical research

- Theory can teach us principles, but is (more) silent on quantification
- Taking theory to the data is not always easy
  - Example: Theory focus on *reservation wage*, in data only observe *accepted wages*
  - Two strategies
    - ”Structural”: Make necessary assumptions to identify theory model
    - ”Reduced form”: Forget reservation wage and focus on the job-finding rate

Duration models

- Unemployment and other labor market data is often organized as ”spells”
- Suitable model: Duration models
  - Also known as: Survival analysis, event history models, hazard rate models
- Key concept: The hazard rate
  - $h(t) = P(t<T<t+dt)/P(T>t)$
  - Duration dependence
  - Unobserved heterogeneity

Does unemployment compensation affect unemployment duration?

Knut Røed and Tao Zhang from *The Economic Journal,* 2003

- From job-search theory unemployment benefits (b) are predicted to increase unemployment duration
  - Because: The value of continued search increases
  - Mechanisms: Higer reservation wage, lower search effort
  - As workers approach b's expiry date – the transition rates out of unemployment increases
- The latter conclusion may be reversed..
  - If long-term unemployment causes discouragement
  - If unemployment duration is used as screening device (Blanchard and Diamond, 1994)

Study design

- Aim: Find the effect of the replacement rate and benefit exhaustion on the exit rate from unemployment
  - b = unemployment benefits/expected earnings = B/Y
- Institutions:
  - Replacement rate: 62,4% up to 6G (1G = 75641 NOK in 2010)
  - < 1997: 80 weeks benefits, 13 weeks without, 80 new weeks with sligthly lower benefits
  - > 1997: Benefits paid for 156 weeks

Study design (2)

- To find the causal effect of b we need variation in b not arising from variation in Y
- Røed and Zhan exploits two subtle sources of variation – assuming that these are exogenous to job-seekers
  - B is calculated from earnings in the previous year
    - For workers with short employment history, *when* they become unemployed influences B
    - For all workers: B is index regulated in May, butB is unchanged for ongoing spells

Study design (3)

- Construct 3 data samples:
  - A: Unemployed workers whose *b* is driven entirely by when they became unemployed and how long they been employed prior to unemployment
  - B: Low wage workers, whose expected earnings are imputed by relevant minimum earnings in full-time jobs
  - C: High wage workers, whose variation in *b* arises from how much their earnings exceed 6G

Data

Descriptive Statistics

	Men	Women
No. of individuals	58,625	41,874
No. of spells	60,226	42,879
No. of monthly observations	499,648	437,015
Averages and fractions over monthly observations:		
Age (years)	38.04	37.50
Previous work experience (years)	14.28	11.15
Unemployment benefits (Euro)	13,818	11,549
Expected income (Euro)	26,812	22,031
Replacement ratio	0.53	0.51
Fraction with only compulsory education	0.19	0.20
Fraction with lower secondary education	0.23	0.30
Fraction with upper secondary education	0.38	0.35
Fraction with lower university degree	0.13	0.12
Fraction with higher university degree	0.02	0.02
Fraction immigrants (Non OECD countries)	0.06	0.03
Fraction married	0.39	0.53
Fraction with children (below 18 years)	0.42	0.51

Variation in *b*

Table 2

Distribution of Replacement Ratios According to the Source of Variation

	Men			Women		
	Group *A* Independent	Group *B* Low wage	Group *C* High wage	Group *A* Independent	Group *B* Low wage	Group *C* High wage
No. of obs.	209,091	112,511	178,046	155,096	238,045	43,874
Mean	0.6088	0.4517	0.4858	0.6059	0.4509	0.5076
Std. Dev.	0.0280	0.1022	0.0923	0.0331	0.0990	0.0941
Maximum	0.6374	0.6374	0.6373	0.6374	0.6371	0.6362
Third quintile	0.6292	0.5471	0.5623	0.6285	0.5400	0.5772
Median	0.6125	0.4528	0.5019	0.6111	0.4539	0.5352
First quintile	0.5985	0.3439	0.4202	0.5971	0.3495	0.4624
Minimum	0.2104	0.2747	0.1168	0.2269	0.2721	0.1097
Range	0.4270	0.3627	0.5204	0.4105	0.3650	0.5265

Empirical model

- Duration model with unobserved heterogeneity and a flexible non-parametric hazard function
- Separate estimates for the effect of b for each of the three groups
- Separate estimates for men and women

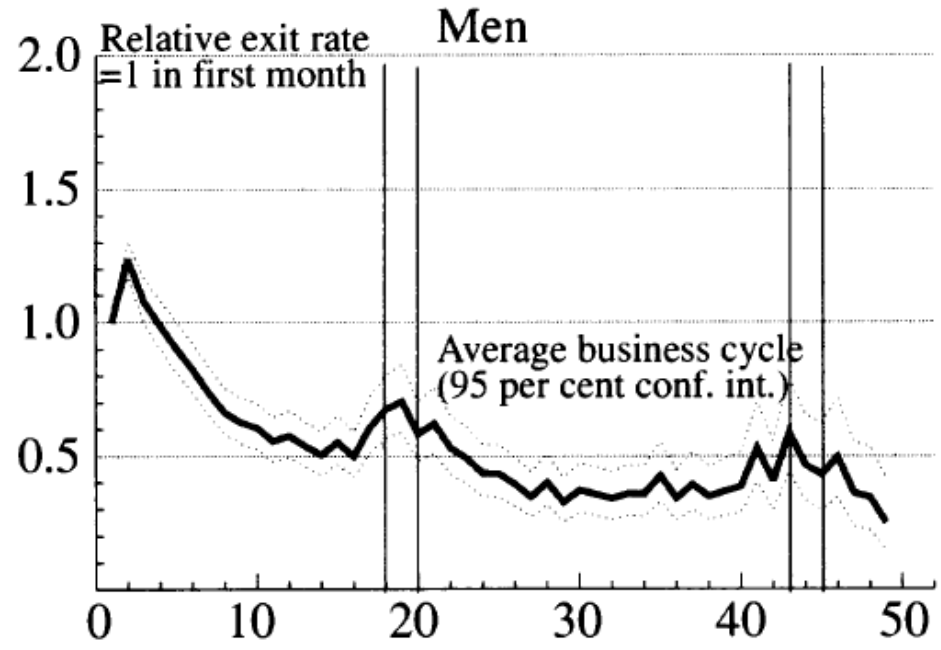
Results: Elasticity of b for men and women

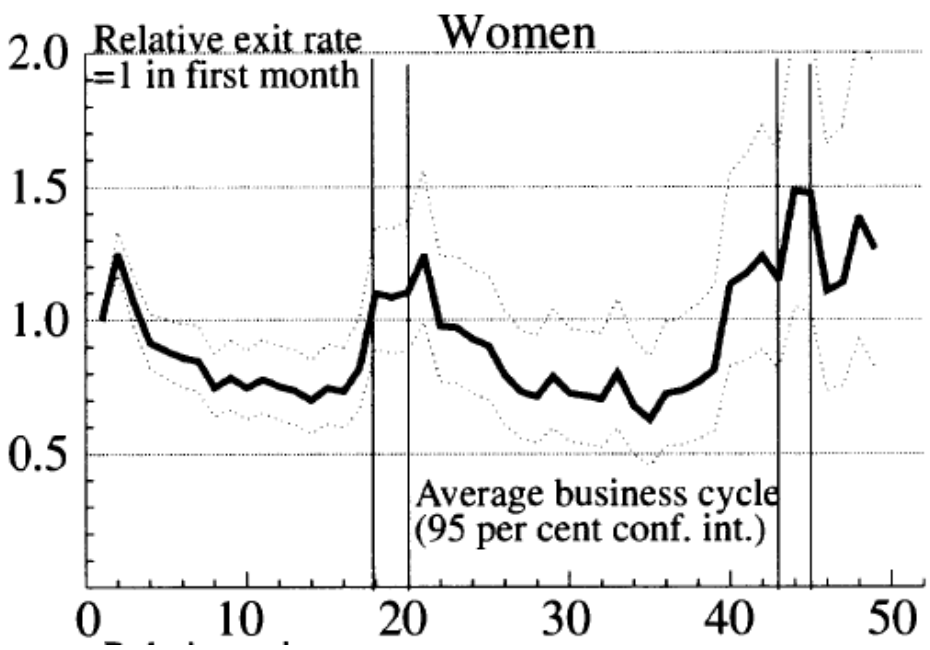
Table 4

Selected Maximum Likelihood Estimation Results

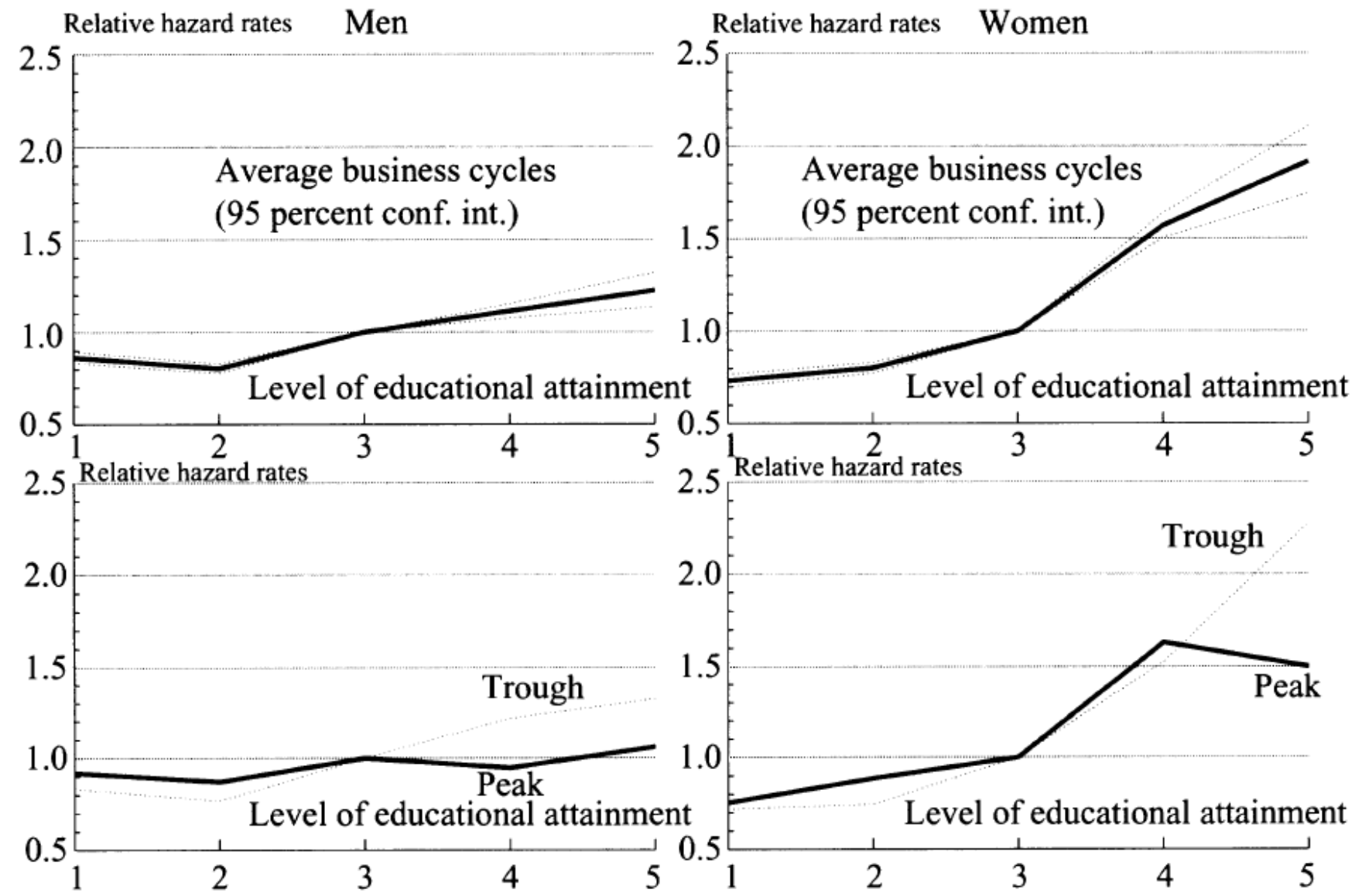
	Men		Women	
	Estimate	SE	Estimate	SE
I. Group-specific disincentive effects				
Group A				
Log replacement ratio	−0.9463	0.1642	−0.3492	0.1910
Log replacement ratio × Business cycle	0.6806	0.7217	−1.0799	0.8199
Log replacement ratio × Log spell duration	−0.0293	0.1183	−0.0022	0.1327
Group B				
Log replacement ratio	−0.4047	0.0549	−0.2510	0.0472
Log replacement ratio × Business cycle	0.6076	0.2432	0.7109	0.2145
Log replacement ratio × Log spell duration	−0.0585	0.0450	0.0234	0.0359
Group C				
Log replacement ratio	−0.3561	0.0523	−0.2263	0.0993
Log replacement ratio × Business cycle	0.3739	0.2661	0.8033	0.4913
Log replacement ratio × Log spell duration	−0.1393	0.0409	−0.0529	0.0776

Results: Duration dependence and benefit exhaustion





Results: Skills and business cycles



Results: Age differences