

# **ECON 4921: Lecture 13**

Jon Fiva, 2009

# Roadmap

1. Introduction
2. Institutions and Economic Performance
3. The Firm
4. Organized Interest and Ownership
5. Complementarity of Institutions
6. Institutions and Commitment
7. Agency problems: Voters- Politicians-Bureaucrats
8. Fiscal Federalism
9. **System Competition**

# Welfare migration mechanism

- Relevant for both:
  - Migration within countries
    - Which level of government should have responsibility for redistribution to the poor?
  - With increasing economic integration
    - 'Can the welfare state survive?'
      - EUR moving towards US system?
      - France, Germany, Italy have argued in favor of minimum social norms within EU.

# Evidence from within countries

- Existing studies predominantly from the US
  - Earlier studies find mixed support for the welfare migration hypothesis
  - More recent US studies find welfare migration effects, but rather small in magnitude
- We focus on recent Norwegian analysis (Fiva, 2009):
  - Question: Do generous jurisdictions attract and retain welfare recipients?

# Evidence from within countries

- Empirically hard to identify welfare migration
  - Policy endogeneity
    - Actual migration flows may be small but localities respond to competitive pressure
    - Large literature documenting strategic interaction in welfare policy (US, UK, SWE, NOR)
  - Omitted variable problem

# 1. Omitted variable bias

- Unobserved local attributes affect migration patterns and are correlated with welfare policy.
  - Early attempts on US data involved comparing poor and non-poor single mothers, or poor single mothers to poor married mothers.
  - More recent US studies are more convincing, in particular:
    - Gelbach (2004 JPE): comparing low-skilled single mothers with young children to low-skilled single mothers with older children.
    - McKinnish (2005 JHR, 2007 JPUBE) comparing individuals in border areas of states to individuals in non-border areas of states.

## 2. Policy endogeneity

- If welfare benefits affect residential decisions of the poor, then residential choices of the poor is likely to affect how benefit levels are set.
- Dahlberg and Edmark (2008 JPUBE) utilize a natural experiment and find that increases in the welfare population reduce welfare benefits.
- Mostly ignored by the welfare migration literature.

# Contribution of Fiva (2009)

- Utilize a policy reform taking place in Norway in 2001 to obtain exogenous variation in changes in welfare benefits.
- Investigate welfare migration hypothesis in a setting where mobility across (jurisdiction lines) is considerably higher than in the US.
  1. Different types of welfare recipients
    - US: mothers with dependent children.
    - Norway: different households (e.g. single men without dependent children)
  2. Size
    - Average Norwegian loc.gov = 700km<sup>2</sup>
    - Smallest continental US state = 4 000km<sup>2</sup>
    - Largest continental US state = 700 000km<sup>2</sup>



# Institutional setting

- The provision of welfare benefits is decentralized to Norway's 434 local governments.
  - Final safety net.
  - Intended as temporary support.
- Local governments main responsibilities are: care for the elderly, child care and schooling.
  - Spending is decentralized, but centrally financed.
  - Grants are based on spending and tax equalization.
- Local governments face the full marginal cost of one welfare recipient migrating to the local government.

# Data – welfare receipt

- Data on welfare receipt exist for the entire Norwegian grown up population (4.5 million).
  - I constrain the data set to: single men, aged 16-66, without dependent children (Approx. 400k individuals each year).
- These are divided into welfare recipients and non-recipients.
  - Welfare participation rate: 10%
  - Single men without children are overrepresented as welfare recipients
    - Welfare participation rate in the general population: 3%

# Data – migration rates

- Focus on aggregate migration flows.
  - People moving across local government lines from January 1st in year  $t$  to January 1st in year  $t+1$ .
- Migration rates are higher for welfare recipients (approx 10%) than for non-recipients (approx 5%).
- In comparison, McKinnish (2007) investigate migration responses of never-married high school drop outs in the US. Of these only 5-6% percent move across state lines during a five year period.

# Data – welfare benefits

- The elected local councils sets guidelines for standard users of welfare.
- These works as guidelines for the administration.
  - Here: norms for single persons without children.
- National guidelines introduced in Feb. 2001.
  - “contribute to a more homogenous practice across local governments and to provide more similar support for equal recipients” (Circular I-13/2001).

**Table 1**

Descriptive statistics on welfare benefit levels across local governments

	1995	1996	1997	1998	1999	2000	2001
Mean	3620	3710	3808	3969	4044	4119	4119
Mean in constant 1995 NOK	3620	3667	3668	3739	3724	3678	3570
Standard deviation	524	525	556	605	613	624	543
Coefficient of variation	0.14	0.14	0.15	0.15	0.15	0.15	0.13
Minimum	1900	1900	2102	2258	2484	2600	2760
Median	3660	3697	3800	3935	4005	4068	3950
Maximum	5281	5520	5722	6441	5964	6969	7291
National instructive norm, in NOK							3880
Number of local governments above instructive norm						265*	220
Number of local governments at instructive norm						0*	119
Number of local governments below instructive norm						165*	91
Observations	430	430	430	430	430	430	430

Notes: Welfare benefits are measured as the politically determined norm for single-person households without children, per month in nominal NOK (unless otherwise noted).

\* Relative to the norm announced in 2001.

# Empirical strategy

- Difference-in-difference approach comparing:
  - Change in net inflow of welfare recipients (in 10 000s)
  - Change in net inflow of non-recipients (in 10 000s)
  - Condition on welfare receipt in year t.
  - Before differencing, the two distributions are standardized to have mean equal to 0 and standard deviation equal to 1.

- The main regression is given by:  $(\Delta M_{it}^r - \Delta M_{it}^n) = \beta \Delta b_{it} + u_{it}$

$$M_{it}^r = \delta_i^r + \theta_{it} + \beta b_{it} + \varepsilon_{it}^r$$

where:

$$M_{it}^n = \delta_i^n + \theta_{it} + \varepsilon_{it}^n$$

- The welfare migration hypothesis suggests that  $\delta_2 > 0$

# Empirical strategy (cont'd)

- OLS likely to biased and inconsistent estimates.
- ***Policy endogeneity*** is likely to give a negative bias in  $\delta_2$ .
- Need variation in  $\Delta$ Benefits which is not subject to the choice of the local governments.
- I suggest that a centrally implemented reform taking place in Norway in 2001 may provide such variation.
  - The reform introduced central guidelines concerning welfare benefit provision for different households
  - I expect those below (above) the guidelines to be inclined to increase (reduced) their welfare benefits, and that this effect depend on the distance to the guidelines.

# Empirical strategy (cont'd)

- But also the local response to the national guidelines may be endogenous to welfare migration.
- Since local governments chose whether or not to respond to the national guidelines, I rely on information on local governments' welfare policy prior to the reform.
- First stage regression:

$$\Delta b_{i,2001} = \alpha_0 + \alpha_1 \text{below}_{i,2000} + \alpha_2 b_{i,2000} + \alpha_3 \text{below}_{i,2000} * b_{i,2000} + v_{i,2001}$$

- Identifying assumption?

# First stage

**Table 3**  
First-stage regression

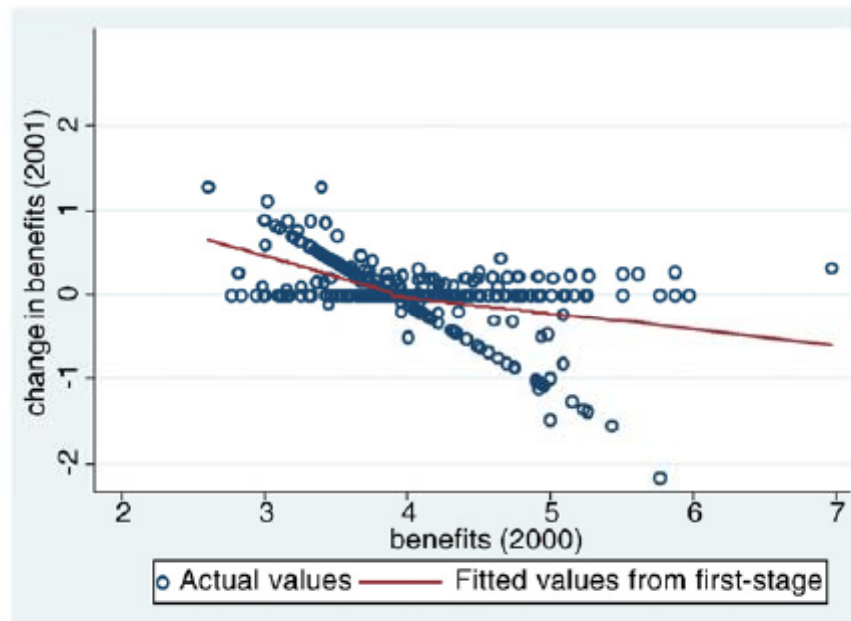
	1	
	Coeff.	St. error
Constant	0.719**	0.347
Below <sub>2000</sub>	1.192**	0.501
b <sub>2000</sub>	-0.189**	0.081
b <sub>2000</sub> * Below <sub>2000</sub>	-0.296**	0.129
R <sup>2</sup>	0.275	
Number of observations	430	
Year	2001	
Estimation method	OLS	

Notes: The dependent variable is  $\Delta b$ . Standard errors are robust to unknown forms of heteroscedasticity. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

- Strong instruments (F=51.84)



# First stage



Note: Welfare benefit levels are measured in NOK 1000.

Fig. 1. Changes in welfare benefit levels against lagged welfare benefit levels.

# Second stage

**Table 4**  
The effect of welfare generosity on migration flows

	1		2	
	Coeff.	St. error	Coeff.	St. error
$\Delta b$	7.02*	4.01	7.96***	3.07
Number of observations	430		429	
Year	2001		2001	
Moves	All		Within county	
F statistic from first-stage	51.84		52.10	
Estimation method	2SLS		2SLS	

Notes: The dependent variable is  $(\Delta M_{it}^r - \Delta M_{it}^p)$ . A constant term is included in all regressions. Standard errors are robust to unknown forms of heteroscedasticity. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

# Second stage (cont'd)

- Economically important and statistically significant welfare migration effects
  - Even though 60% of all moves are 'long distance', the point estimates from specification 1 and 2, indicates similar effects.
  - A NOK 500 increase in welfare benefits yields an inflow of 4 welfare recipients for the average loc.gov.
    - Full sample effect:  $0.5 * 0.62 * 11.38 = 3.5$  welfare recipients (95% confidence interval: [-0.4, 7.5]).
    - Within county effect:  $0.5 * 1.14 * 6.96 = 4.0$  welfare recipients (95% confidence interval: [1.0, 7.0]).
  - This corresponds to an increase in the welfare population under study of around 4%.
  - Large effect, considering that the mean welfare participation rate is 9.6% (sd=3.6%).

# OLS estimates for comparison

**Table 5**

The effect of welfare generosity on migration flows, all years, OLS estimates

	1		2		3		4		5		6	
	Coeff.	St. error	Coeff.	St. error	Coeff.	St. error	Coeff.	St. error	Coeff.	St. error	Coeff.	St. error
$\Delta b$	4.82***	1.85	1.19	1.19	2.44	1.99	-0.42	1.89	1.93	2.29	-0.18	2.08
Number of observations	429		429		429		429		429		429	
Year	2001		2000		1999		1998		1997		1996	
Moves	Within county		Within county		Within county		Within county		Within county		Within county	
Estimation method	OLS		OLS		OLS		OLS		OLS		OLS	

Notes: The dependent variable is  $(\Delta M_{it}^r - \Delta M_{it}^n)$ . A constant term is included in all regression. Standard errors are robust to unknown form of heteroscedasticity. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

- Interestingly, the cross-section regression for 2001 is the only regression with a positive and statistically significant welfare migration effect.
  - Possible interpretation OLS estimates for other years is biased due to policy endogeneity.
- The OLS point estimate for 2001 is smaller in magnitude than the IV point estimate, but the difference is not statistically significant.

# Why welfare migration is likely to be a concern

- An average sized local government (10,450 inhabitants) with an average sized welfare population (2.8 percent welfare recipients) considers increasing its welfare benefits from NOK 4000 to NOK 4500 for all types of welfare recipients.
  - No-mobility case: NOK 148,500 (293 recipients)
  - Additional welfare migration cost 1: NOK 18 000. (4 new recipients from the welfare population under study (31% of total))
- What about other welfare recipients (69% of total)? Likely to be far less mobile.
  - Conservative additional welfare migration cost 2: NOK 0.
- But still, the cost of increasing welfare benefits is 12% higher than it would be in the absence of welfare migration.
  - 95% confidence interval [3%, 21%].

# Sensitivity analysis

- 1. Introducing control variables
- 2. Looking closer around the discontinuity
- 3. Placebo regressions

# Concluding remarks

- Anecdotal evidence suggest that Norwegian local politicians are concerned about 'welfare magnetism'.
- The current analysis confront the welfare migration hypothesis with Norwegian data.
  - With proper handling of the endogeneity problem solid welfare migration effects are found.
  - Effect driven by short distance moves.
- Consistent with the literature on welfare competition
  - The strong geographical pattern typically observed seems to be driven, at least partially, by a concern of 'welfare magnetism'.

# Empirical evidence across countries and over time



# Empirical evidence across countries and over time

- 'Can the welfare state survive?'
  - EUR moving towards US system?
  - France, Germany, Italy have argued in favor of minimum social norms within EU.
- Hard to pin down causal effects in cross-country setting.

# Rodrik 1998

- The public sector tend to be larger in open economies

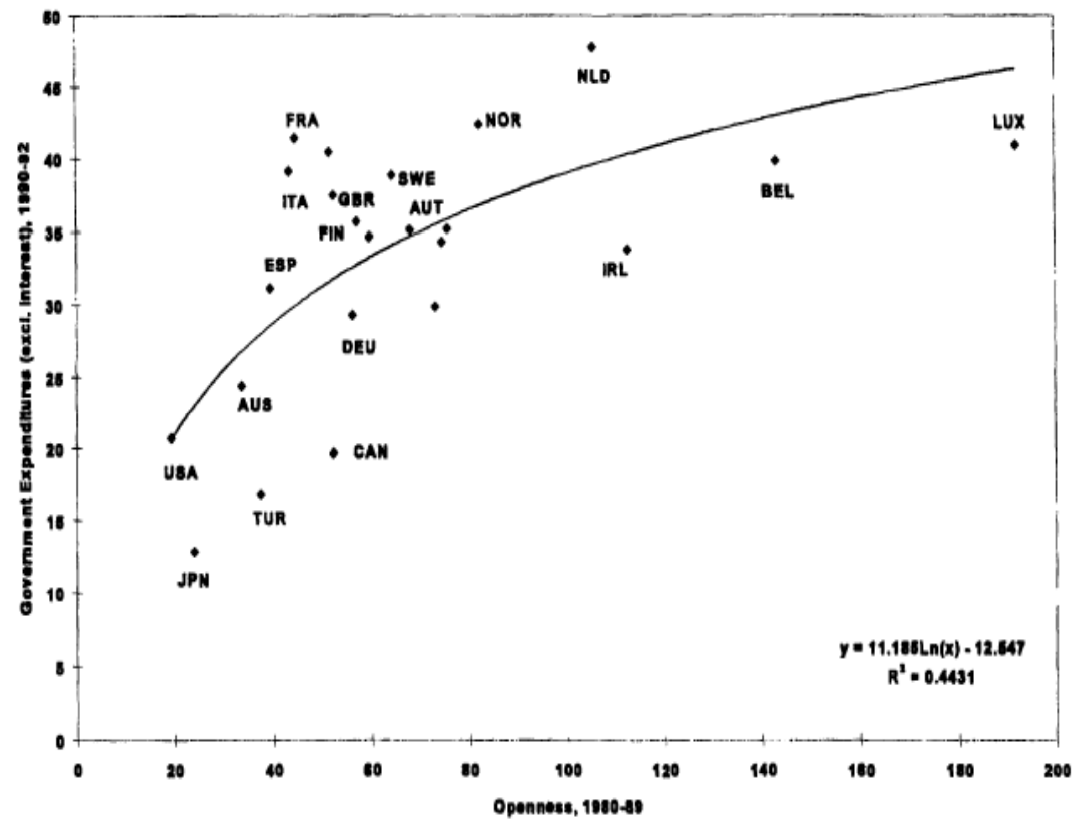


FIG. 1.—Relationship between openness and government expenditures

# Openness and government size

- This cross country relationship is robust to:
  - Including a set of control variables
  - Different measures of gov. Spending
  - Different subsamples (high and low income countries).
  - Excluding outliers
- Rodrik concludes that the association is not driven by omitted variables.
- The effect is strongest on transfer and social security spending.

# Explanation

Economic integration :

→ Higher external risk

→ Need for an active welfare state increase

Risk mitigated when government controls larger share of the economy's resources

# But...

- More recent studies show that when only relying on variation over time within countries, the stylized fact do no longer hold.
  - E.g. Barth and Moene (2009)

Table 1: Welfare Generosity and Wage Inequality

	3SLS FE		3SLS FE+Year	
	Generosity Coef./se	Inequality Coef./se	Generosity Coef./se	Inequality Coef./se
Inequality - ln(Wage Disp.)	-.6412*** (.1251)		-.5403*** (.1290)	
Generosity - ln(Gen.Index)		-.5324*** (.0744)		-.5552*** (.1673)
Trend	-.0196*** (.0029)		-.0245*** (.0042)	
Right cab. [0,1]	-.0264** (.0083)		-.0368** (.0119)	
ln GDP per cap.	.4464*** (.0387)	.1642*** (.0204)	.5202*** (.0602)	.1321 (.1134)
Openness (pct GDP)	-.0037*** (.0011)	-.0043*** (.0010)	-.0032** (.0012)	-.0047*** (.0010)
Share 65+ pct	.0071 (.0046)	-.0084** (.0030)	.0105* (.0047)	-.0091* (.0039)
Union Density	-.0024** (.0008)	-.0010 (.0008)	-.0026** (.0008)	-.0013 (.0008)
Barg. Coordination		-.0208** (.0065)		-.0178** (.0069)
Conflict (pct)		.0015*** (.0003)		.0014** (.0006)
Tertiary (pct pop)		-.0021* (.0009)		-.0010 (.0012)
Empl.pct. 16-64		.0024*** (.0006)		.0031*** (.0007)
Constant	-.7411 (.5218)	1.4466*** (.1911)	-1.6799* (.7116)	1.7266** (.6550)
Country fixed effects	Y	Y	Y	Y
Year fixed effects			Y	Y
P-value years			.2747	.9830
No. of cases	356	356	356	356

Table 3: Welfare Generosity

Dependent variable: ln(Generosity Index)					
	OLS	OLS-FIX	IV-1	IV-2	IV-3
	Coef./se	Coef./se	Coef./se	Coef./se	Coef./se
ln(Wage Dispersion)	-.4938*** (.0453)	-.3743*** (.0601)	-.6343*** (.1315)	-.7833*** (.2005)	-.5083* (.2226)
Trend	-.0219*** (.0027)	-.0226*** (.0027)	-.0196*** (.0030)	-.0171*** (.0046)	-.0213*** (.0033)
Right cabinet [0,1]	-.0341* (.0170)	-.0382*** (.0111)	-.0285* (.0121)	-.0223 (.0138)	-.0366** (.0128)
log GDP per capita	.4248*** (.0503)	.4649*** (.0386)	.4482*** (.0400)	.4120*** (.0527)	.4498*** (.0403)
Openness (pct GDP)	.0051*** (.0005)	-.0032** (.0011)	-.0037** (.0011)	-.0046** (.0015)	-.0031** (.0012)
Age 65+ (pct pop)	.0167*** (.0023)	.0122*** (.0039)	.0073 (.0047)	.0023 (.0068)	.0106* (.0053)
Union Density	.0003 (.0005)	-.0021* (.0008)	-.0024** (.0009)	-.0026** (.0010)	-.0015 (.0010)
Empl.pct 16-64				.0015 (.0015)	
Tertiary (pct pop)				.0008 (.0018)	
Bargaining Coord.					-.0088 (.0142)
Workers in confl.(pct)					-.0009 (.0007)
Constant	-.9989* (.5027)	-1.0704* (.4300)			
F-value fixed ctry		75.8640			
Sargan test p-value			.2413	.0965	.1988
Cragg-Donald F-value			21.85	20.15	14.47
Hausman test p-value			.0219	.0163	.3733
P-value composition				.5633	
P-value bargaining					.2509
No. of cases	356	356	356	356	356

Note: The instruments for wage inequality include Bargaining coordination, Share of workers in conflict, Share with tertiary education and the Employment rate 16-64, when not included in the equations.

<sup>12</sup>The effect of openness and union density has the opposite sign in specifications without fixed country effects. The long run relationships between both openness and union density and welfare generosity are positive, but the transitory effect appears to be negative.

# Possibly

- May indicate that closer economic integration makes it **more difficult to maintain the welfare state.**
  - Each country has incentives to limit redistribution to avoid attracting net recipients and repelling net contributors.