Employment Protection Reform, Enforcement in Collective Agreements and Worker Flows

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Plan of presentation

- Differential enforcement of EPL
- The reform we analyze and its implementation in collective agreements
- Empirical strategy
- Econometric results
- Conclusions

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Differential enforcement of EPL

1. By explicit design of legislation – easy to observe

2. Not defined by the letter of the law – difficult to observe

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Regulation of EP in collective agreements

Widespread in OECD countries (Venn, 2009)

- Typically apply same rules as EPL or more stringent rules
- Specify notice periods, severance pay, etc.
- Significance depends on difference from EPL and coverage of agreements

The Swedish case

- Far-reaching possibilities to undo EPL, at firm & industry level
- Can go either way, less or more stringent in relation to EPL
- High coverage of collective agreements

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The EPL reform we analyze

Reform of the Swedish Employment Protecion Act (EPA) in 1997

- Aim was to improve labour market prospects for older workers
- Change in periods of notice for workers *hired after the reform*, from age-based criteria to tenure-based
- This meant reduced notice periods for older workers (45+), from 6 months to 1 (5/12 of annual salary)
- Smaller or no reductions of notice for younger workers
- Reform was initiated at different times in different collective agreements

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EPL reforms for older workers

- Swedish reform in 1997 was a "carrot"-type policy:
  Encourage hiring by reducing firing costs!

- Related EP policies in other countries often of "stick" type:

  Discourage firings by explicit firing taxes!

  E.g.: France, Austria

  See Behaghel, Crepon & Sedillot (2008),

  Schnalzenberger & Winter-Ebmer (2009)

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We will look at effects on worker flows

Predictions of conventional theory:

- Hirings will increase
- Firings will increase
- Net effect on employment is ambiguous

We need empirics to see if the EPA reform worked (better than related policies in other countries)

We also predict that more stringent implementation in collective agreements yields stronger effects

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The EPL reform in 1997

I. Rules *before* the reform, based on age of the employee:

    1 month if age is 24 or younger
    2 months if age is 25 to 29
    3 months if age is 30 to 34
    4 months if age is 35 to 39
    5 months if age is 40 to 44
    6 months if age is 45 or older

II. Rules *after* the reform, based on tenure of the employee:

    1 month if tenure is shorter than 2 years
    2 months if tenure is at least 2 years but shorter than 4 years
    3 months if tenure is at least 4 years but shorter than 6 years
    4 months if tenure is at least 6 years but shorter than 8 years
    5 months if tenure is at least 8 years but shorter than 10 years
    6 months if tenure is at least 10 years

How the reform was implemented in various collective agreements

Industry	Manual Workers			Non-manual workers		
	Pre-reform rules	Post-reform rules	Date of reform	Pre-reform rules	Post-reform rules	Date of reform
Engineering	Old EPA, age-based	New EPA, tenure-based	1997	CA-NM, age/tenure-based	New EPA, tenure-based	2001
Construction	CA-C, age-based	New EPA, tenure-based	2000–01	CA-NM, age/tenure-based	New EPA, tenure-based	1998
Retail	Old EPA, age-based	New EPA, tenure-based	2001	Various	Various	Various

Empirical strategy

Assumption that 1997 reform was *unanticipated* and that the *timing* of its implementation in collective agreements was exogenous

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Empirical strategy II

- Estimate the following regression:

$$y_{it} = \alpha_0 + \alpha_1 Treated\_Age\_Group_{it} + \alpha_2 Post_t + \alpha_3 (Treated\_Age\_Group * Post)_{it} + X_{it}'\beta_1 + F_{it}'\beta_2 + \varepsilon_{it}$$

- *Treated_Age_Group* is a dummy variable for belonging to the treated age group in time t
- *Post* is a dummy variable for the post-reform period
- (*Treated_Age_Group*Pos*t) is an interaction term. The estimated coefficient is the d-i-d estimate of the reform effect.

Empirical strategy III

Treated group: 45-64-year-olds

    Various control groups:

- 18-24-year olds in *same* agreement (benchmark)

- older age groups (25-29 etc) in *same* agreement

- 45-64-year-olds in *different* agreement

Placebo tests:

    "wrong" reform years, "wrong" agreements

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RESULTS: Manual workers in engineering, (t-3) – (t+1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Hirings				Separations			
Age 45-64	−0.385	−0.365	−0.364	−0.362	−0.095	−0.088	−0.090	−0.096
	(22.96)	(20.67)	(19.97)	(19.46)	(10.86)	(11.91)	(11.54)	(13.04)
Post-reform Period	−0.107	−0.120	−0.130	−0.119	−0.022	0.014	−0.022	−0.017
	(3.25)	(3.81)	(3.86)	(3.68)	(0.85)	(0.94)	(0.92)	(1.13)
Reform effect (DD)	0.117	0.128	0.139	0.142	−0.000	0.006	0.007	0.007
	(3.86)	(4.27)	(4.37)	(4.54)	(0.04)	(0.75)	(0.77)	(0.79)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y
No. observations	116,872	116,872	107,029	107,029	113,285	113,285	96,127	96,127
No. firms	363	363	134	134	436	436	124	124
R-squared (adj)	0.244	0.257	0.259	0.269	0.044	0.060	0.064	0.089

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Manual workers in engineering: longer post-reform periods

- (t-3) – (t+2):

	Hirings				Separations			
Reform effect (DD)	0.007 (0.20)	0.017 (0.50)	0.024 (0.62)	0.028 (0.75)	–0.028 (2.02)	–0.021 (1.48)	–0.011 (0.76)	–0.008 (0.58)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y

- (t-3) – (t+3):

	Hirings				Separations			
Reform effect (DD)	0.031 (1.06)	0.037 (1.25)	0.041 (1.20)	0.042 (1.26)	–0.023 (2.01)	–0.017 (1.47)	–0.010 (0.80)	–0.012 (0.92)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y

Non-manual workers in engineering

(t-3) − (t+1):

	Hirings				Separations			
Reform effect (DD)	0.085	0.085	0.087	0.085	0.033	0.036	0.043	0.032
	(3.34)	(3.20)	(2.99)	(2.91)	(2.17)	(2.48)	(2.68)	(2.12)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y

(t-3) − (t+2):

	Hirings				Separations			
Reform effect (DD)	0.084	0.080	0.051	0.051	0.033	0.034	0.040	0.036
	(3.32)	(3.16)	(1.79)	(1.71)	(2.66)	(2.78)	(3.01)	(3.26)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y

(t-3) − (t+3):

	Hirings				Separations			
Reform effect (DD)	0.082	0.077	0.029	0.029	0.023	0.022	0.030	0.025
	(3.47)	(3.15)	(1.18)	(1.15)	(1.80)	(1.72)	(2.18)	(2.05)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y

Manual workers in retail

(t-3) – (t+1):

	Hirings				Separations			
Reform effect	0.063	0.057	0.058	0.059	0.086	0.085	0.098	0.106
(DD)	(7.19)	(6.62)	(5.90)	(5.67)	(7.47)	(7.52)	(8.11)	(9.68)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y

(t-3) – (t+1):

	Hirings				Separations			
Reform effect	0.089	0.081	0.083	0.081	0.101	0.099	0.106	0.109
(DD)	(8.75)	(8.04)	(6.67)	(6.21)	(12.11)	(12.07)	(18.66)	(17.67)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y

(t-3) – (t+1):

Reform effect	0.105	0.096	0.097	0.093	0.114	0.112	0.119	0.120
(DD)	(11.47)	(10.80)	(8.44)	(7.61)	(13.74)	(13.82)	(17.52)	(17.42)
Individual & firm-specific controls	N	Y	Y	Y	N	Y	Y	Y
Firm panel	N	N	Y	Y	N	N	Y	Y
Firm fixed effects	N	N	N	Y	N	N	N	Y

Manual workers in engineering: Robustness

	(1)	(2)	(3)	(4)	(5)	(6)
	Hirings			Separations		
	1994–97	1994–98	1994–99	1994–97	1994–98	1994–99
Benchmark (Table 4)	0.128	0.017	0.037	0.006	–0.021	–0.017
	(4.27)	(0.50)	(1.25)	(0.75)	(1.48)	(1.47)
Subgroups						
Age:						
25–29 / 45–64	0.043	0.003	0.013	–0.000	–0.013	–0.011
	(3.20)	(0.23)	(0.99)	(0.01)	(1.78)	(1.78)
30–34 / 45–64	0.029	0.009	0.015	–0.002	–0.006	–0.007
	(3.36)	(1.23)	(2.26)	(0.37)	(0.78)	(1.09)
35–39 / 45–64	0.014	–0.027	0.002	0.004	–0.002	–0.005
	(2.11)	(0.22)	(0.44)	(0.95)	(0.40)	(0.96)
40–44 / 45–64	0.001	–0.009	–0.008	0.007	0.000	0.001
	(0.17)	(2.11)	(2.04)	(2.57)	(0.02)	(0.29)
18–24 / 45–59	0.128	0.018	0.038	0.007	–0.021	–0.017
	(4.26)	(0.53)	(1.29)	(0.77)	(1.50)	(1.47)
45-64*/45-64	0.002	0.018	0.014	-0.022	-0.006	-0.008
	(0.21)	(1.46)	(1.28)	(2.44)	(0.48)	(0.93)

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Placebo I: effects in "wrong" agreements

	(1)	(2)	(3)	(4)	(5)	(6)
	Hirings			Separations		
Placebo reform 1997:	1994–97	1994–98	1994–99	1994–97	1994–98	1994–99
Retail, manuals	-0.042	-0.1231	-0.133	0.008	-0.040	-0.036
	(2.25)	(4.99)	(6.29)	(0.52)	(2.60)	(2.35)
Engineering, non-manuals	0.088	0.011	0.047	0.017	-0.017	-0.017
	(3.03)	(0.35)	(1.53)	(0.97)	(1.18)	(1.65)
Placebo reform 2001:	1998–01	1998–02	1998–03	1998–01	1998–02	1998–03
Engineering, manuals	0.085	0.052	0.072	0.012	0.022	0.028
	(3.74)	(4.29)	(7.18)	(1.09)	(2.26)	(2.79)
Placebo reform 2002:	1998–02	1998–03	1998–04	1998–02	1998–03	1998–04
Engineering, manuals	-0.003	0.044	0.033	0.031	0.035	0.048
	(0.16)	(2.25)	(1.77)	(2.99)	(3.28)	(4.63)

Placebo II: effects in "wrong" years

	(1)	(2)	(3)	(4)	(5)	(6)
	Hirings			Separations		
Placebo reform year:	(t-3) - t	(t-3) - (t+1)	(t-3) - (t+2)	(t-3) - t	(t-3) - (t+1)	(t-3) - (t+2)
Engineering, manuals						
1995	-0.282	-0.177	-0.134	0.011	0.020	0.023
	(9.91)	(7.29)	(5.30)	(0.83)	(1.33)	(1.58)
1996	0.048	0.061	-0.010	0.023	0.024	0.010
	(1.24)	(1.66)	(0.23)	(1.18)	(1.50)	(0.57)
Engineering, non-manuals						
1995	-0.300	-0.308	-0.261	-0.060	-0.039	-0.020
	(7.37)	(10.09)	(7.04)	(3.84)	(3.21)	(1.74)
1996	-0.159	-0.093	-0.128	-0.011	0.000	-0.023
	(2.69)	(1.68)	(2.47)	(0.81)	(0.03)	(1.99)
1998	-0.073	0.008	-0.003	-0.049	-0.031	-0.030
	(2.05)	(0.25)	(0.11)	(3.18)	(2.60)	(2.29)
1999	0.118	0.056	0.072	-0.006	-0.011	-0.002
	(3.69)	(1.91)	(2.56)	(0.31)	(0.59)	(0.12)
2000	-0.051	0.004	0.014	-0.012	0.004	0.007
	(1.82)	(0.13)	(0.50)	(0.61)	(0.26)	(0.52)

Conclusions

We analyzed a reform of notice periods and its implementation in collective agreements

- Heterogeneous effects across agreements
- Effects increase in treatment dose
- Placebos significant in many cases

- Reforms did not produce perverse effects found in other studies

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