

# HOW WAGES CHANGE: MICRO EVIDENCE FROM THE INTERNATIONAL WAGE FLEXIBILITY PROJECT

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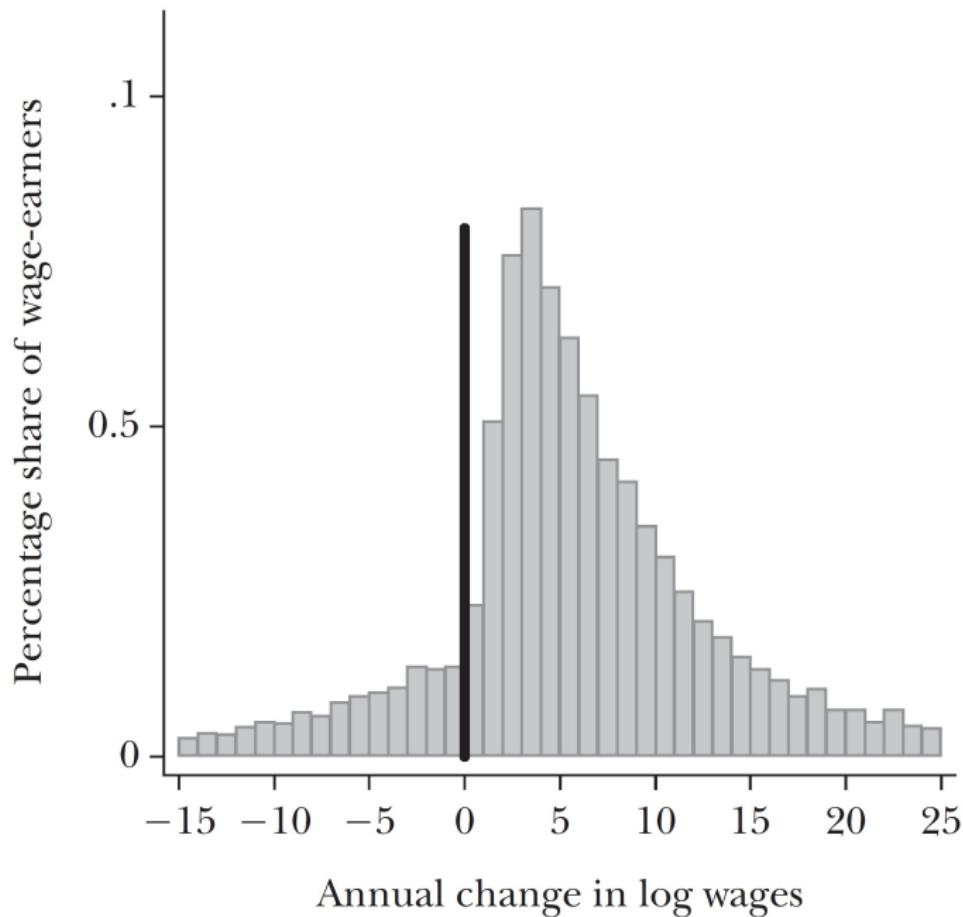
## MOTIVATION

- International Wage Flexibility Project (IWFP): a consortium of over 40 researchers with access to individual workers' earnings data for 16 countries
- To provide new microeconomic evidence on how wages change for continuing workers
- Specifically, the main interest lies in the degree of downward wage rigidity
- What determines the wage rigidity?

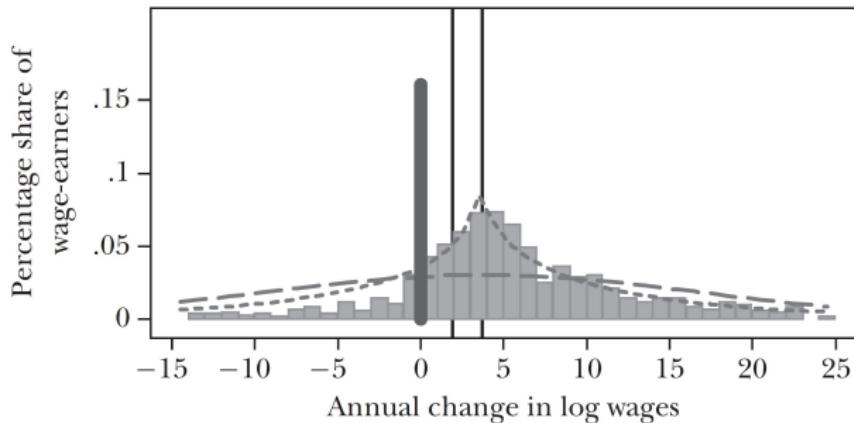
<i>Country</i>	<i>Dataset*</i>	<i>Years</i>	<i>Wage Measure</i>
1. Austria	Social Security	1972–1998	Annual earnings
2. Belgium	Social Security	1978–1985	Annual earnings
3. Denmark	Statistics Denmark register of employees	1981–1999	Annual earnings
4. Finland	Service employers	1990–2001	Wages/hour
	Industry employers (manual)	1985–2000	Wages/hour
	Industry employers (nonmanual)	1985–2000	Wages/hour
5. France	La Déclaration Automatisé des Salaires (DADS)	1976–1980, 1984–1989, 1991–2000	Annual earnings/hour
	Labor Survey (households)	1994–2000	Earnings/hour
6. Germany	Institut für Arbeitsmarkt und Berufsforschung (IAB)	1975–1996	Earnings**
7. Italy	Social Insurance	1985–1996	Annual earnings
8. Norway	Business and industry employers (blue collar)	1987–1998	Wages/hour
	Business and industry employers (white collar)	1981–1997	Wages/hour
9. Portugal	Quadros de Pessoal	1991–2000	Wages/hour
10. Sweden	Employers (blue collar)	1979–1990, 1995–2003	Wages/hour
	Employers (white collar)	1995–2003	Wages/hour
11. Switzerland	Social Insurance	1988–1999	Annual earnings
	Labor Force Survey (households)	1992–1999	Wages
12. U.K.	National Employment Survey	1976–2000	Earnings/hour
13. U.S.	Panel Study of Income Dynamics (household survey)	1970–1997	Wages/hour
14. Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, U.K.	European Community Household Panel (household survey)	1993–2001***	Earnings/hour

## DISTRIBUTION OF NOMINAL WAGE CHANGE

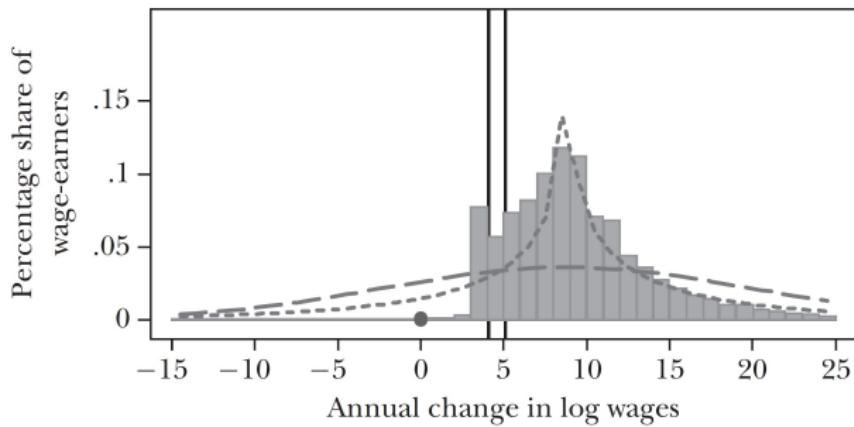
- In the dataset, about 8 percent of workers receive nominal wage freezes
- The distribution of wages is not symmetric: there are fewer observations below zero
- However, it does not necessarily mean that there exists downward nominal wage rigidity
- Actually, there exists large heterogeneity across countries (e.g., U.S. and Finland)



United States 1987



Finland 1988



## MEASURING RIGIDITY

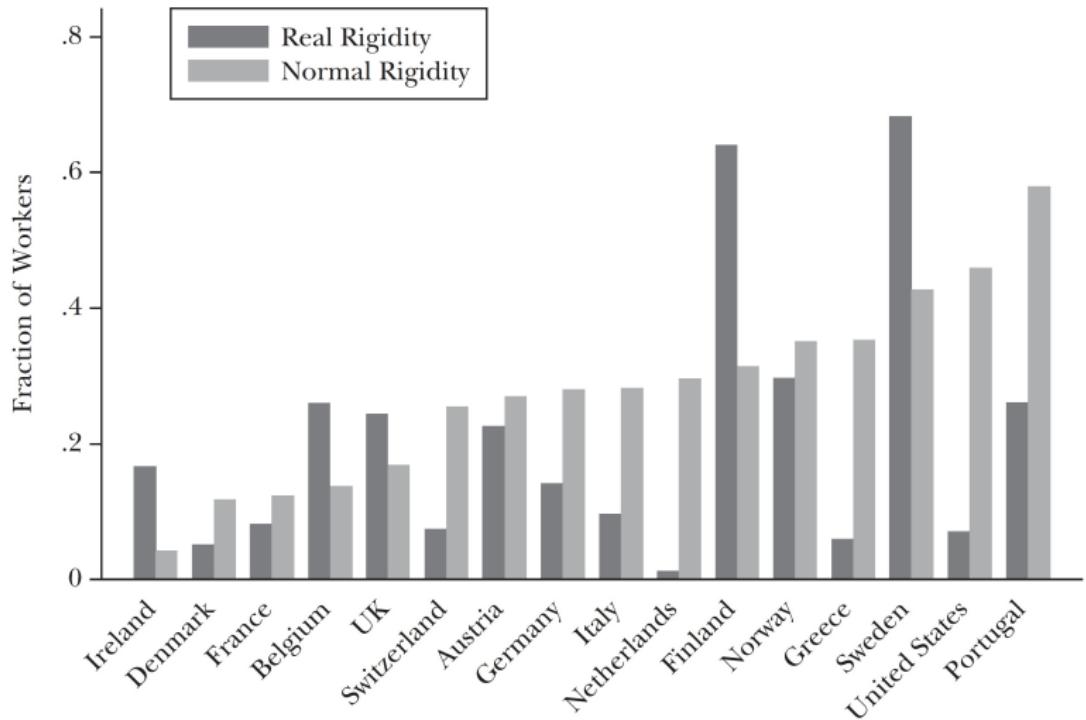
- Define the measure of wage rigidity
  - How is wage rigidity different across countries?
  - What determines the rigidity?
- Nominal Wage rigidity is defined as:

$$n = f_n / (f_n + c_n)$$

- $f_n$  is the fraction of workers with nominal wage freezes and  $c_n$  is the fraction with nominal wage cuts
- Assumption is that everyone who had a wage freeze would have had a wage cut in the absence of downward nominal rigidity
- For real wage, definition is the same (but assumptions are different)

## Real and Nominal Rigidity by Country

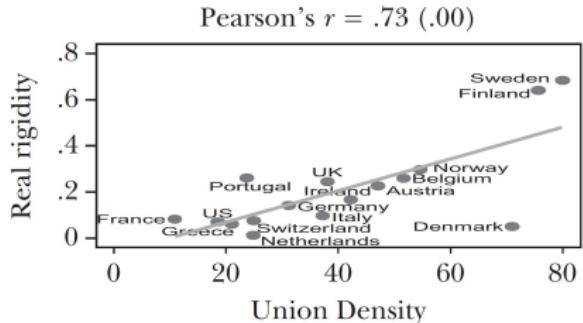
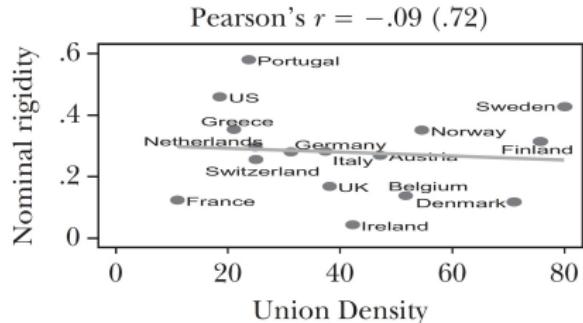
(fraction of workers potentially affected)



Note: The table shows the fraction of worker in each country potentially affected by downward real and nominal wage rigidity.

## WHAT DETERMINES THE RIGIDITY?

- What determines the rigidity?
  - Measures of strike activity
  - Union density
  - Degree of coordination in bargaining etc...
- By calculating the correlation of the country average of the rigidity and each component, only union density can explain the country rigidity (they confirm with country-year regressions)



Sources: Aggregate Employment Protection Legislation: OECD (2004), Corporatism and Union Density: Elmeskov, Martin, and Scarpetta (1998).

Notes: Aggregate Employment Protection Legislation: Index of the strictness of employment protection legislation; categorical variable coded 0 to 6, where 6 is most restrictive. Corporatism: Wage-bargaining corporatism index, summary measure of collective bargaining structures of centralization and coordination; categorical variable coded 1 = low to 3 = high. Union Density: The proportion of workers who are members of a trade union, in percent. Pearson's  $r$  gives the correlations; significance levels in parentheses.

## CONCLUSION

- Substantial differences across the countries in the extent of both nominal and real downward wage rigidity
- Only union density has a robust positive association with downward real rigidity
- Some thoughts:
  - the distribution of real wage changes (no sharp spike)
  - the validity of the assumption of rigidity measure
  - more detailed regression results
  - upward rigidity?