

(III) Debating the Minimum Wage

Bocconi University, March 2009

Outline

- Definition and cross-country comparisons
- Theory
 - Competitive labor market (review)
 - Noncompetitive labor market (review)
 - Dual labor market
- Empirical evidence
 - Firm-level data
 - Natural experiments
- Policy issues
 - Should it be increased or reduced?
 - Does it reduce poverty?

Definition and US experience

- Unlike other institutions, the minimum wage acts on minima. It sets a wage floor
- The first minimum wage was introduced in the US in 1938 and paid 25 cents per hour (coverage: 47% of nonsupervisory workers)
- In 2007, the federal minimum wage was \$5.85, in nominal terms 23 times larger, but, in real terms, only 1.4 times larger than 70 years ago
- Coverage has also been greatly expanded

Types of minimum wages

- National, government-legislated (perhaps after consultations with trade unions and employers' associations)
- National, outcome of collective bargaining agreements and extended to all workers
- Industry-level, resulting from industry-level collective bargaining and extended to all workers in that industry

Types of minimum wages (contd.)

- Can vary also within country:
 - cross-industry
 - cross-regional
 - age-dependent
- Can be hourly, daily, weekly, or monthly
- Can be indexed or not (*cycles*)

How to measure it (for cross-country comparisons)

- Ratio of the minimum wage (MW) to the average (or median) wage
- Coverage of the minimum wage: share of workers with jobs eligible for the MW
- Kaitz Index: minimum wage as a proportion of the average wage adjusted by the industry-level coverage of the MW

Problems with these measures

- Spillover effects.
 - Increase of MW may affect the average wage leaving the ratio unchanged
 - Increase of MW may reduce wages in the uncovered segment (absorbing more low-skilled workers)
- Earnings should not include bonuses and overtime premia
- Which minimum wage? (In Mexico 267!)

Cross-country comparisons

| | Minimum wage to average wage ratio | Minimum wage | Minimum wage | Determination | | Coverage |
|-----------------|------------------------------------|----------------|------------------------|---------------|-------|----------|
| | (1) (%) | (€ per hour) | (€ per month) PPP | setting | level | (4) |
| Australia | | 7,25 | 1277 | - | - | 80 |
| Austria | | | | CB-L | P | 95 |
| Belgium | 43 | 6,93 | 1220 | CB | N | 90 |
| → Canada | 35 | 4,75 | 836 | L | F-P | 100 |
| Czech Republic | 39 | 1,58 | 278 | L | N | 100 |
| Denmark | | | | CB | - | 80 |
| Finland | | | | CB | N | 90 |
| → France | 52 | 7,51 | 1322 | L | N | 100 |
| Germany | | | | CB | - | 68 |
| Greece | | 3,29 | 578 | L | N | 100 |
| Hungary | 38 | 1,28 | 225 | L | N | 100 |
| Iceland | | | | CB | - | - |
| Ireland | 53 | 7,43 | 1308 | CB | N | 100 |
| Italy | | | | CB | N | 80 |
| → Japan | 40 | 4,15 | 731 | L | P | 100 (a) |
| → Korea | 27 | 2,64 | 464 | - | - | 10 |
| Luxembourg | | | | L | N | 100 (b) |
| Netherlands | 39 | 7,30 | 1284 | L | N | 100 (c) |
| New Zealand | 48 | 4,98 | 877 | L | N | 25 |
| Poland | 40 | 1,35 | 237 | L | N | 100 |
| Portugal | 53 | 2,08 | 366 | L | N | 100 |
| Slovak Republic | | | | L | N | 100 |
| Spain | 40 | 3,40 | 599 | L | N | 100 |
| Turkey | | 2,78 | 489 | L | - | 100 |
| United Kingdom | 39 | 6,40 | 1127 | L | N | 100 (d) |
| → United States | 31 | 3,48 | 613 | L | N | 100 |

Historical trends

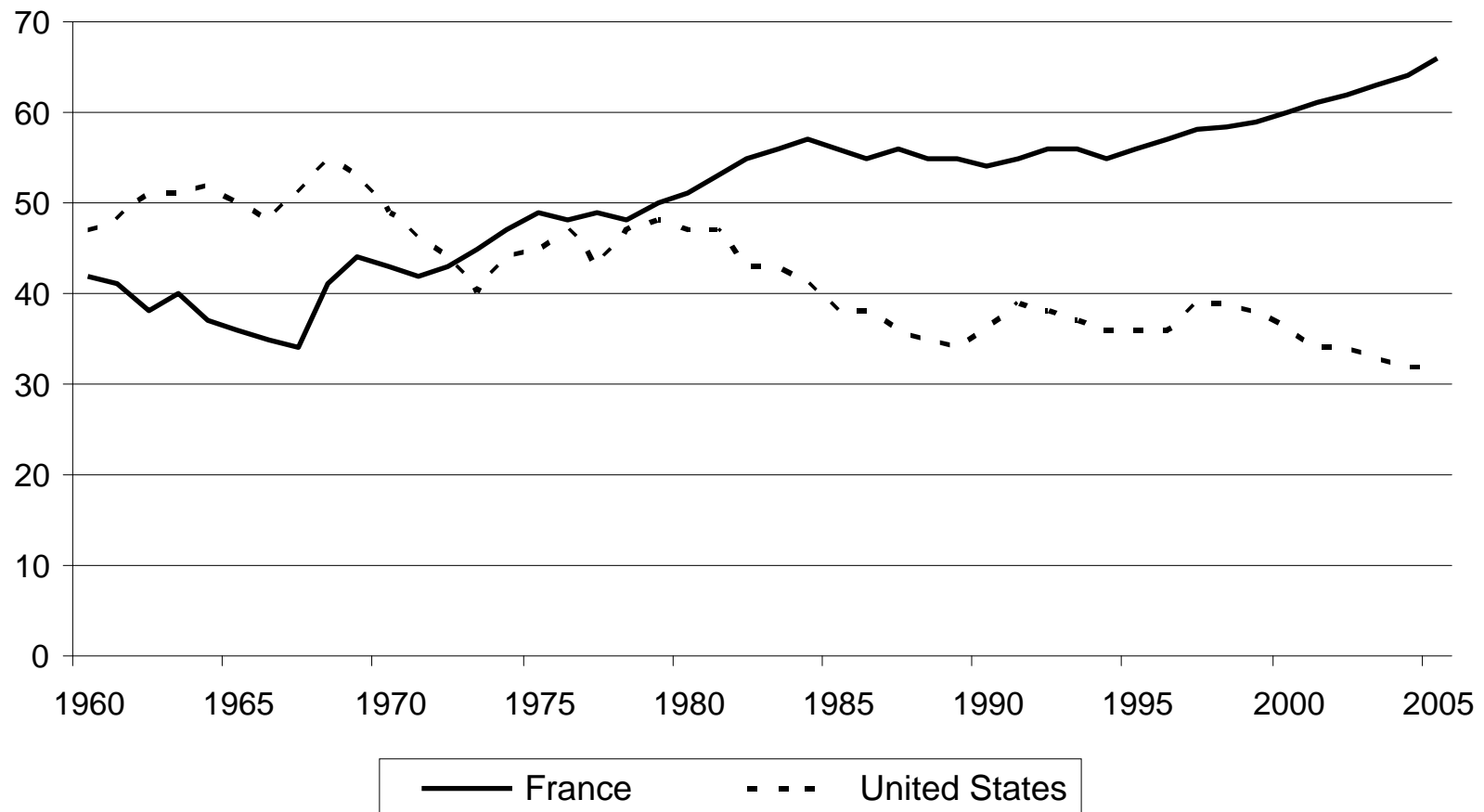


Figure 2.1 Ratio of Minimum to Median Wage
Source: OECD Minimum Wage Database.

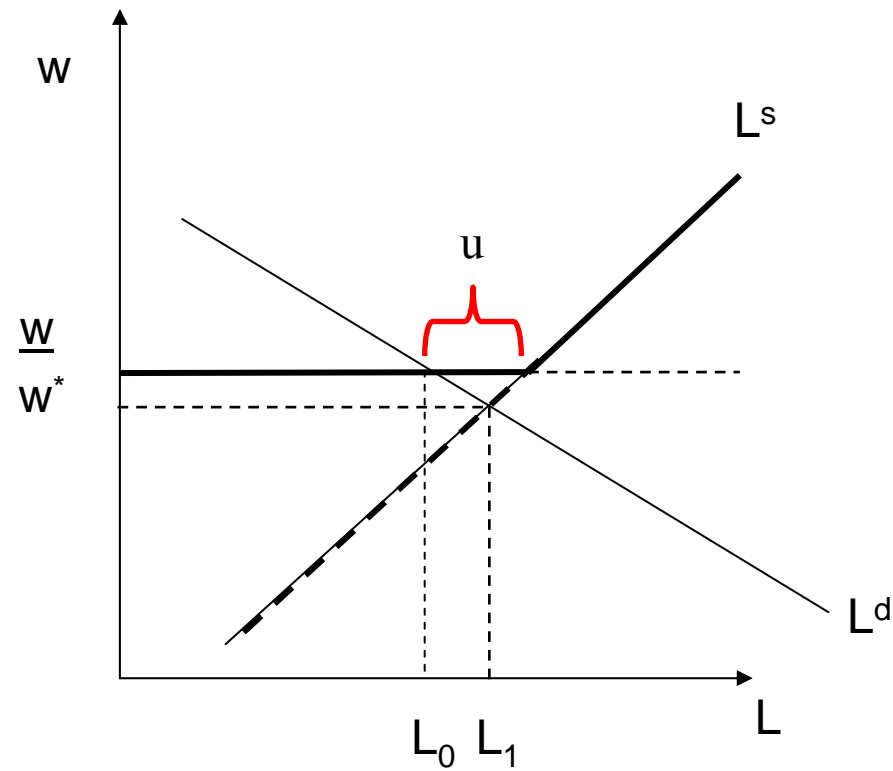
To sum up

- Lower in US, Canada, and Japan than in Europe
- New members of the EU at the low end of the European MW distribution
- Asymmetries related to diverging historical developments (i.e., increasing in Europe, decreasing in the US)

Theory: MW in a competitive market

- **Positive perspective:**
 - MW reduces employment (displaced workers)
 - It increases unemployment (displaced workers plus new unemployed)
 - It increases the equilibrium wage
 - The unemployment cost depends on demand/supply elasticity
- **Normative perspective:**
 - MW favors insiders and hurts outsiders/firms
 - It reduces total surplus (deadweight loss)

Competitive labor market

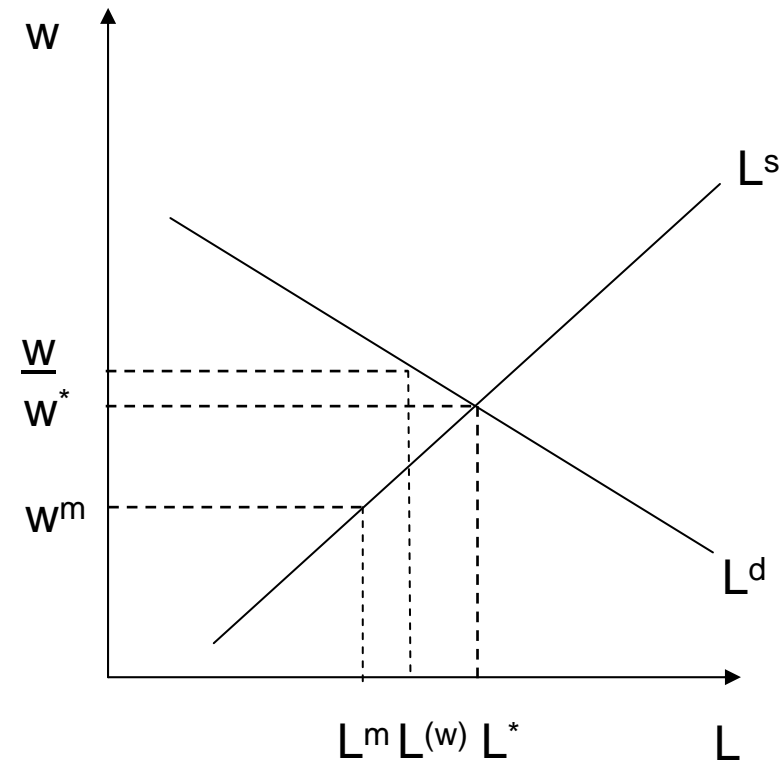
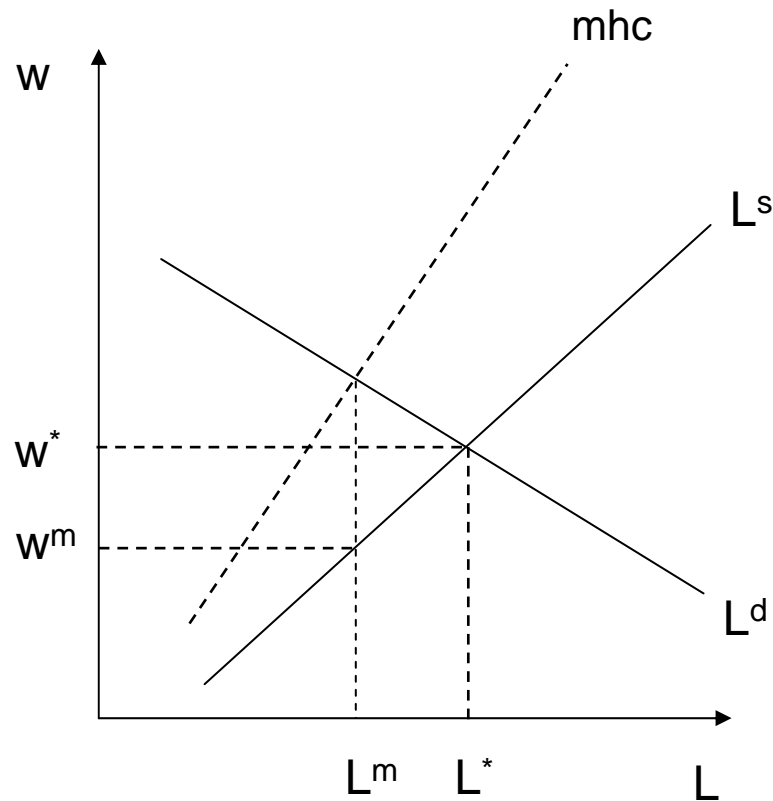


Source: Tito Boeri and Jan van Ours (2008), *The Economics of Imperfect Labor Markets*, Princeton University Press.

Theory: MW in a monopsonistic market

- **Positive perspective:**
 - MW may increase employment (as it flattens the labor supply faced by the monopsonist)
 - But non-monotonic relationship between MW and employment (reverse U-shaped)
 - It increases the equilibrium wage
- **Normative perspective:**
 - MW favors insiders/outsidees and hurts firms
 - As long as it raises employment, it increases total surplus (efficiency gain)

Monopsonistic labor market



Source: Tito Boeri and Jan van Ours (2008), *The Economics of Imperfect Labor Markets*, Princeton University Press.

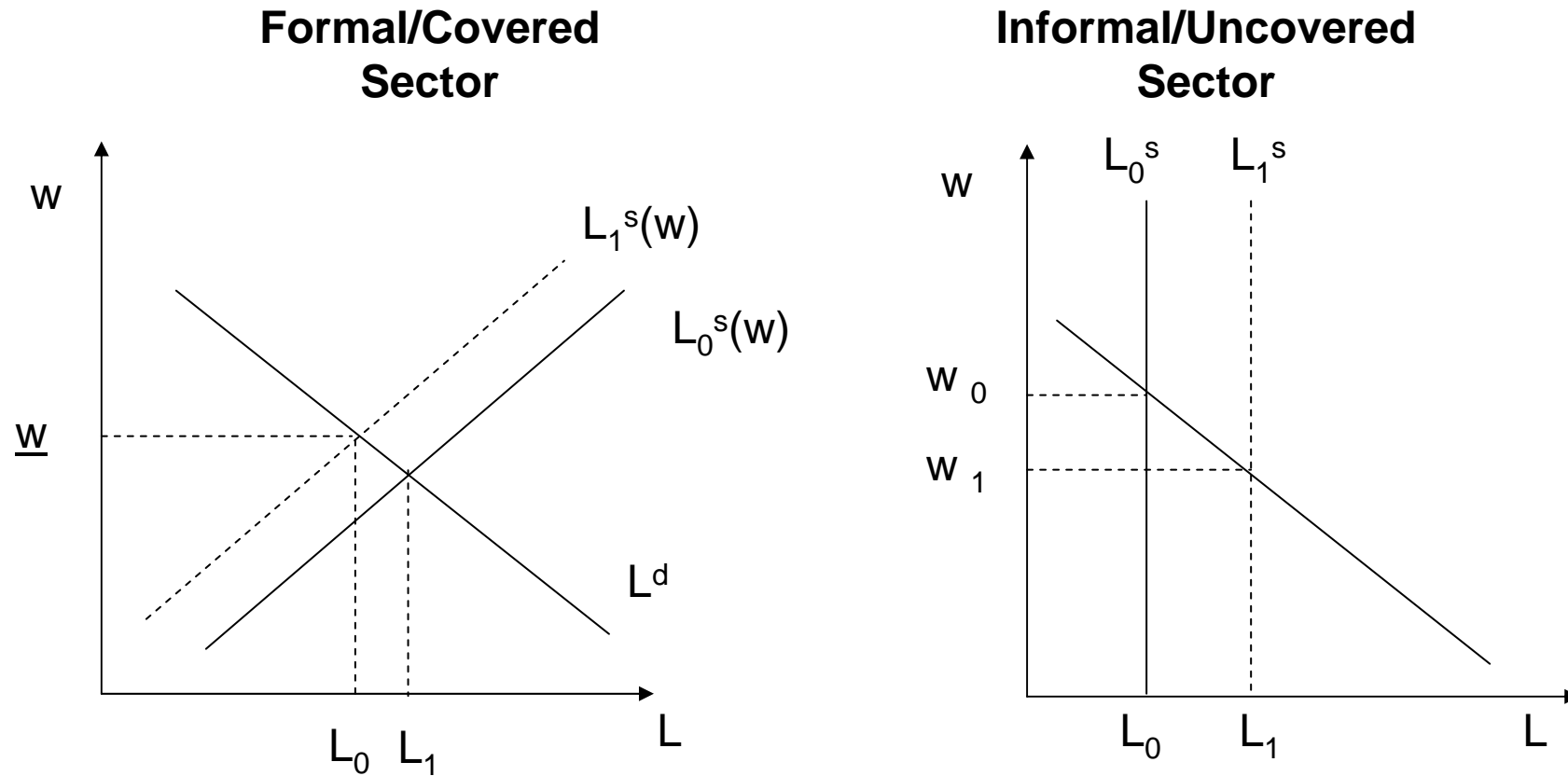
Other cases in which the MW may increase employment/productivity

- Switching costs: if relevant, labor supply not completely horizontal also with many firms
- Efficiency wages: when imperfect monitoring, wage may act as a discipline device (and, with diseconomies of scale in monitoring, hiring implies wage increase)
- Productivity effect: as the productivity of a job depends on the investment in human capital, MW induces workers to acquire education in order not to be crowded out

Theory: MW in a dual market

- If an informal/uncovered sector exists, displaced workers may decide to go there
 - This would increase labor supply and decrease the wage in the informal sector
 - It would also decrease unemployment in formal sector
 - The overall effect on employment could be zero
- But some workers could decide to move to the formal sector and queue for better paid jobs
 - With complete mobility: $\Pi \times \underline{W} = W_I$
 - Turnover in the formal sector (Π) is a crucial determinant of the decision to move

Dual labor market



Source: Tito Boeri and Jan van Ours (2008), *The Economics of Imperfect Labor Markets*, Princeton University Press.

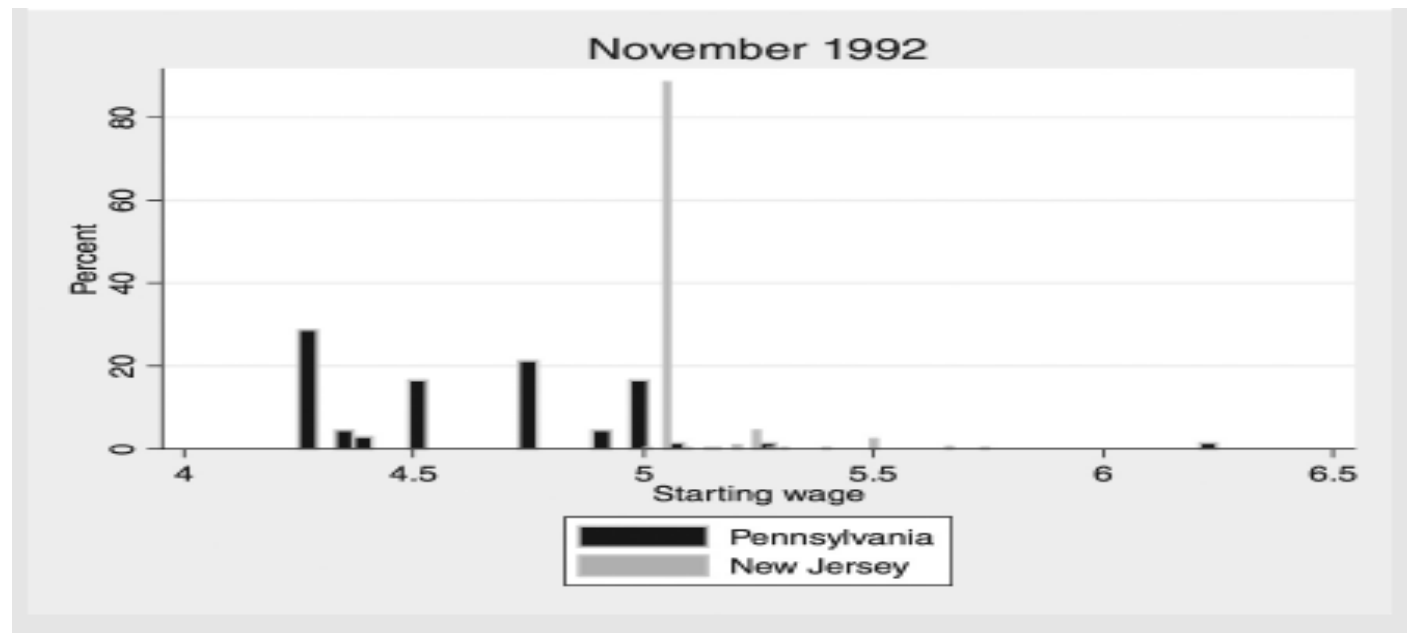
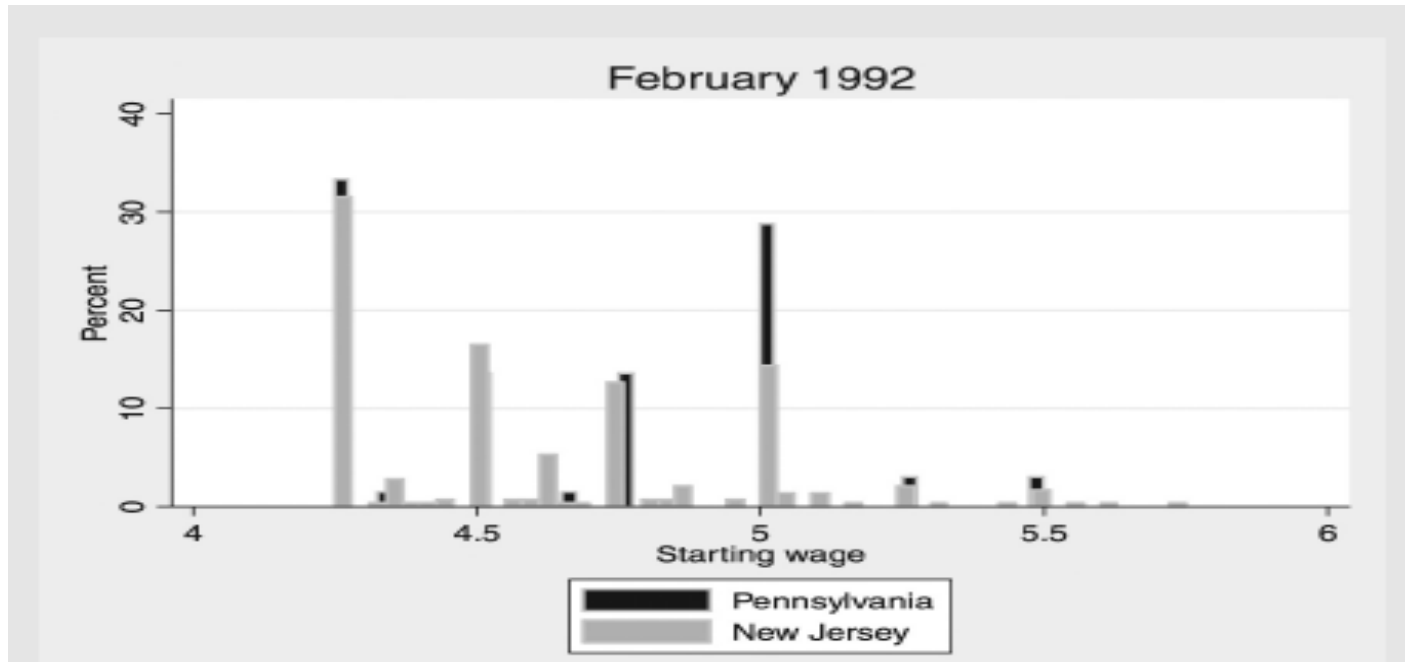
Empirical evidence: studies based on firm-level data

- Focus on *fraction affected* (workers earning wage between old and new MW) or *spikes* (workers earning exactly MW)
- In OECD countries, MW usually found to have negative impact on employment, but magnitude depends on country and/or category. Stronger (negative) effect on youngsters
- In 2001, in US, 10% of 16-19 earned MW (vs. 2% of over 25). For them, elasticity of employment to MW -0.1/-0.3.
- Surprisingly positive effect on wage in the informal sector. Explanation: movers to formal sector or *lighthouse effect*?

Studies based on policy experiments (e.g., Card & Krueger 1994)

- Impact of increase in the MW in New Jersey (*treatment group*) in April 1992 from \$4.25 to \$5.05. In Pennsylvania (*control group*), MW unchanged at the federal level of \$4.25
- New Jersey and Pennsylvania are bordering states with very similar economic structures
- Data on employment in 410 fast-food restaurants in the two states in February 1992 (*before* the MW increase) and in November 1992 (*after*)
- They control for store closings, but not openings

*Card and
Krueger (1994)*



Difference-in-Difference estimator

- Assume the employment in state i is determined by an equation of this type:

$$L_i = \alpha w_i + X_i \gamma$$

where w_i is the level of the MW and X_i contains all the other variables that influence L_i

- If we have two observations which refer to two dates for the same state:

$$\Delta L_i = L_{i2} - L_{i1} = \alpha(w_{i2} - w_{i1}) + (X_{i2} - X_{i1})\gamma$$

Difference-in-Difference estimator (contd.)

- If we have also data for another State j which is identical to i in each characteristic except for w , which is not changed, so:

$$\Delta L_i - \Delta L_j = \alpha(w_{i2} - w_{i1})$$

- If we think that NJ e PA are enough similar, we can obtain an estimation of α simply calculating the difference of the difference
- Crucial assumption: common trend

Diff-in-diff results

- Table: average employment per store, full-time equivalent
- Result: the increase of the minimum wage has increased the number of employees
- Explanation: imperfect competition in American fast-food industry or imperfect data/econometric strategy (Neumark & Washer 2000)?

| | NJ | PA |
|---------------------|------------|------|
| <i>Before</i> | 20.4 | 23.3 |
| <i>After</i> | 21.0 | 21.2 |
| <i>Diff</i> | 0.6 | -2.1 |
| <i>Diff-in-diff</i> | 2.7 | |

Policy: why does the MW exist?

1. Efficiency: to correct market failures, e.g., deriving from excessive monopsonistic power or asymmetric information
2. Equity: to reduce earnings inequality by supporting income of low-earning workers, e.g., low-skilled individuals

Policy issues

- Should the MW be increased or reduced?
 - Difficult fine-tuning
- Does the MW increase or reduce poverty?
 - Trade-off between earnings and unemployment
 - In dual labor market, earnings inequality may rise
 - Problem of *target efficiency* (are all MW earners poor?)