

# Offshoring and the Decline of Labor Unions

## How Globalization Fosters Technological Change

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# Motivation

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- PE debates
  - ▶ Automation (e.g. Gallego et al 2022, Mansfield and Rudra 2021 )
  - ▶ Globalization (e.g. Walter 2021, Milner 2021a)
  - ▶ Democratic capitalism (e.g. Iversen & Soskice 2020, Milner 2021b)

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- ▶ Rise of global production, automation
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  - ▶ Two strategies to reduce labor costs
- Workers
  - ▶ Decline in economic opportunity
  - ▶ Decline in unions

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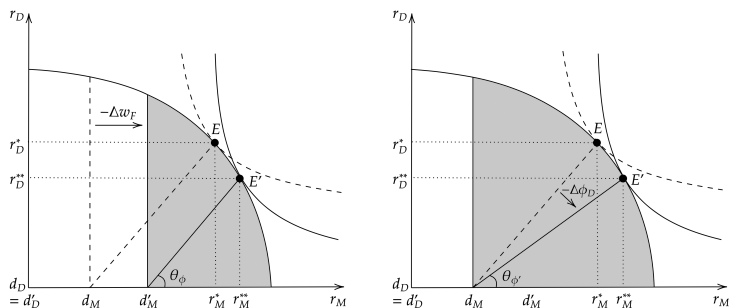


Figure: Offshoring and the Decline of Domestic Labor Unions

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- 4 regular vs. non-regular workers

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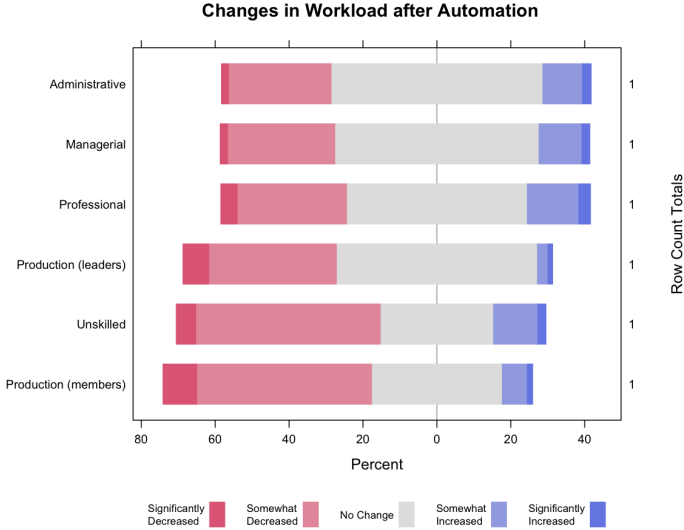
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- Sample: limited to non-public sectors (e.g. transportation excluded)

# Job Losses due to Automation in Korea



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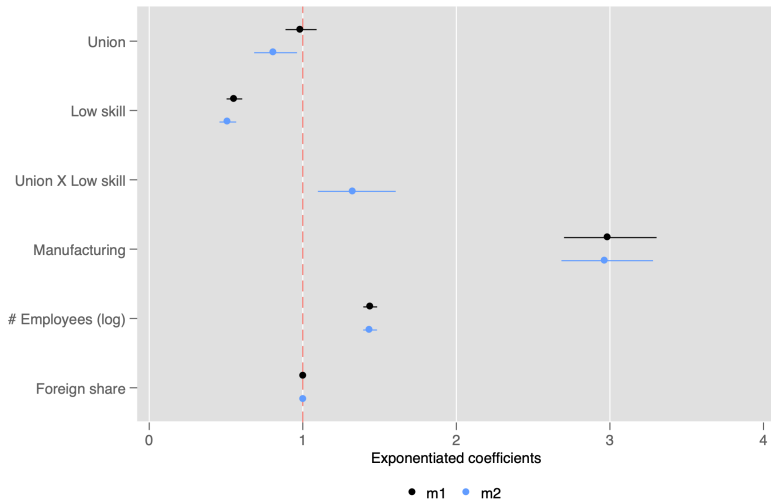
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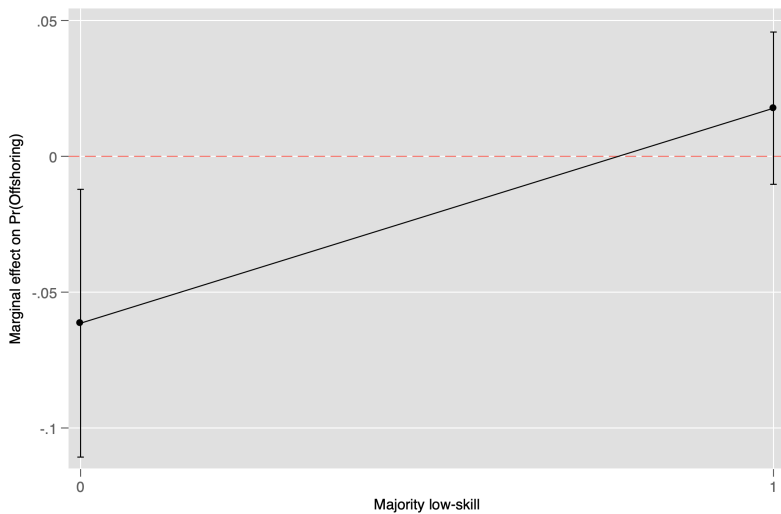
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Unions + Low skill  $\Rightarrow$  offshoring

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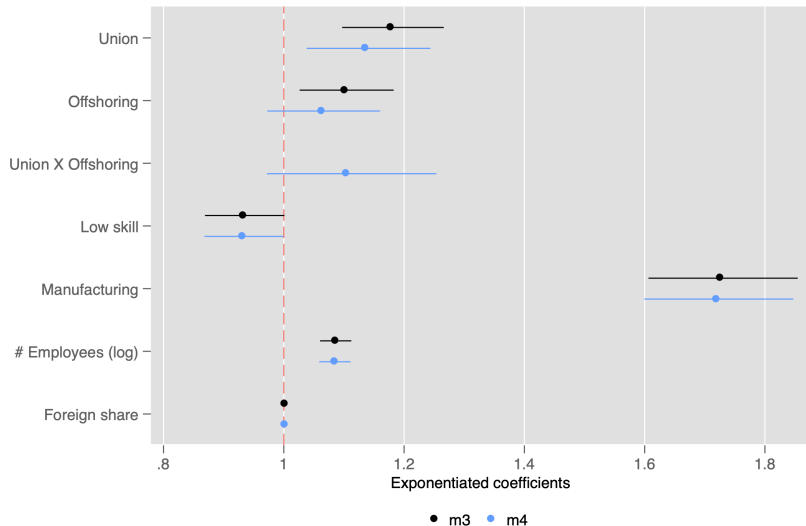
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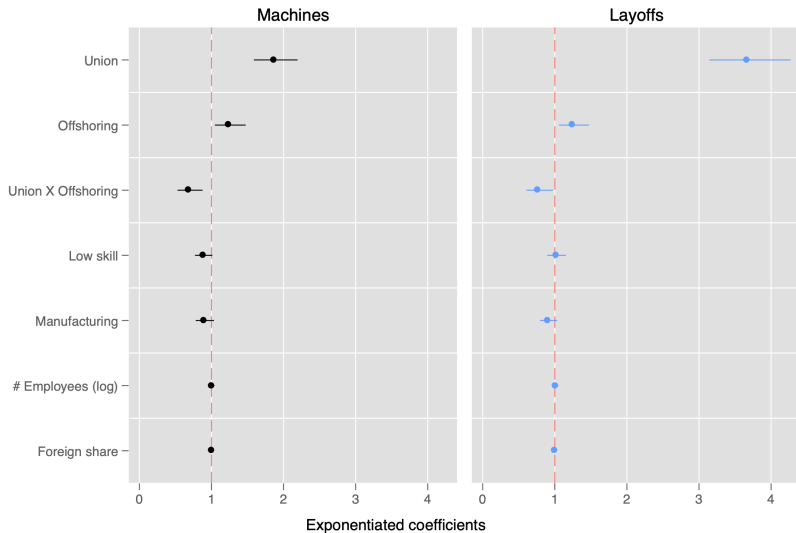
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  - ① union elections (e.g. voter turnout, electoral turnover, regional membership)
  - ② regular vs. irregular workers and government redistributive policies

Additional slides

# Question wording

- 1 Worker influence: “Decision-making of workers on the introduction of [new machinery and equipment, layoffs], through either official channels or other unofficial channels”
  - not informed before the decision
  - only informed of the decision
  - can express their opinions on the decision
  - labor unions' opinions are reflected in the decision
  - labor unions can veto the decision made
  - managers and labor unions jointly make the decision
- 2 Offshoring: “Overseas advancement strategy for its core businesses”
  - has never been discussed
  - discussed, but was not pursued
  - discussed, and is now being pursued
  - currently being undertaken
- 3 Automation: Level of work process 'automated'
  - 0 20%
  - 20 40%
  - 40 60%
  - 60 80%
  - 80 100%

# Summary Statistics

Table: Summary Statistics (2005-2013)

Variable	Mean	St. Dev.	Min	Max
<i>Plant-by-year level</i>				
Offshoring				
– never discussed	3106			
– discussed but not implemented	428			
– discussed and being implemented	959			
– implemented	1613			
Rate of automation				
– 0~20%	87			
– 20~40%	196			
– 40~60%	1240			
– 60~80%	1043			
– 80~100%	340			
– not answered	3200			
# employees	2,005.895	5,159.909	3	57,105
Major occupation: low-skilled	0.690	0.462	0	1
Labor productivity: relatively high	0.895	0.307	0	1
Foreign capital ratio	0.096	0.234	0	1
Sales (in millions, KRW)	1,499,539	4,209,123	107	42,774,077
Assets (in millions, KRW)	2,844,751	12,248,717	0	237,991,539

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Variable	Mean	St. Dev.	Min	Max
<i>Plant-by-year level</i>				
how much involved workers are in firm-level decision making through unions: <i>Automation</i>				
– not informed before the decision	870			
– only informed of the decision	2064			
– can express their opinions	1921			
– their opinions are reflected	860			
– can veto the decision made	14			
– jointly make the decision	377			
Union chairman reelected: yes	0.529	0.499	0	1
% Turnout in the election: $\leq 50\%$	0.029	0.168	0	1
# candidates in the election: $\leq 1$	0.447	0.497	0	1
Age of chairman: $\leq 50$	0.686	0.464	0	1
Gender of chairman: male	0.976	0.153	0	1
Occupation the chairman: low-skilled	0.599	0.490	0	1

# Logit analysis of offshoring

Table: Logit analysis of offshoring

	(1)	(2)
Union	-0.017 (0.052)	-0.210** (0.087)
Low skill	-0.594*** (0.047)	-0.675*** (0.055)
Union X Low skill		0.283*** (0.097)
Manufacturing=1	1.094*** (0.051)	1.088*** (0.051)
# Employees (log)	0.364*** (0.016)	0.363*** (0.016)
Foreign share	0.005*** (0.001)	0.005*** (0.001)
Constant	-2.365*** (0.094)	-2.306*** (0.096)
Observations	9580	9580
# plants	3438.00	3438.00
log likelihood	-4540.87	-4532.47
BIC	9191.76	9184.12

Standard errors clustered workplace in parentheses. Year fixed effects included

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

# Ordered logit analysis of automation

Table: Ordered logit analysis of automation

	(1)	(2)	(3)	(4)
<b>Automation</b>				
Union	0.164*** (0.037)	0.128*** (0.046)	0.230*** (0.053)	0.232*** (0.087)
Low skill	-0.070* (0.036)	-0.071** (0.036)	0.101 (0.118)	0.102 (0.127)
Union X Low skill				-0.003 (0.102)
Offshore	0.097*** (0.036)	0.060 (0.045)		
Union × Offshore		0.099 (0.065)		
Manufacturing	0.546*** (0.037)	0.542*** (0.037)	0.285 (0.210)	0.285 (0.210)
# Employees (log)	0.082*** (0.012)	0.081*** (0.012)	0.028 (0.069)	0.028 (0.069)
Foreign share	0.002* (0.001)	0.002* (0.001)	0.002 (0.001)	0.002 (0.001)
Constant	2.706*** (0.073)	2.727*** (0.075)	3.293*** (0.694)	3.293*** (0.694)
<b>Offshoring</b>				
Union			-0.017 (0.052)	-0.017 (0.052)
Manufacturing			1.094*** (0.051)	
Majority low-skill			-0.595*** (0.047)	-0.595*** (0.047)
Manufacturing			0.000 (.)	1.094*** (0.051)
# Employees (log)			0.364*** (0.016)	0.364*** (0.016)
Foreign share			0.005*** (0.001)	0.005*** (0.001)
Constant			-2.366*** (0.094)	-2.366*** (0.094)
Observations	8122	8122	9580	9580
# Clusters	3139.00	3139.00	3438.00	3438.00
Log likelihood	-12352.64	-12350.94	-8660.99	-8660.99
BIC	24822.30	24827.92		

Standard errors clustered by workplace in parentheses. Year fixed effects included

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# Ordered logit analysis of influence

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	Machines (1)	Layoffs (2)
Union	0.624*** (0.082)	1.299*** (0.078)
Offshoring	0.217** (0.087)	0.222*** (0.084)
Union X Offshoring	-0.384*** (0.129)	-0.264** (0.121)
Low skill	-0.124* (0.069)	0.017 (0.065)
Manufacturing	-0.106 (0.072)	-0.098 (0.067)
Employees (log)	-0.001 (0.022)	0.011 (0.020)
Foreign share	0.001 (0.002)	0.002 (0.001)
Constant	-1.605*** (0.133)	-1.584*** (0.123)
Observations	10118	10118
# Clusters	3497.00	3497.00
Log likelihood	-4792.07	-5414.67
BIC	9713.24	10958.45

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