Eclipse of Rent-Sharing: The Effects of Managers' Business Education on Wages and the Labor Share in the US and Denmark

Daron Acemoglu
MIT

Alex Xi He
University of Maryland

Daniel le Maire
University of Copenhagen

June 19, 2023
CSEF-RCFS Conference on Finance, Labor and Inequality

Motivation

- Major changes in the distribution of income in advanced economies. For example:
  - Labor share declined from 65% to 60% in the US
  - Median (real) wage growth decreased from 2% per year between the 1950s and 1970s to only 0.3% per year since 1980 in the US
- In this context, the focus has been on:
  - skill-biased technological change/automation;
  - trade;
  - market power and superstar firms;
  - erosion in the value of the minimum wage, the decline in unionization, the threat of offshoring, etc.
- But as important may be changes in “vision” and “values” of powerful players in the economy

This paper

- Managers are **powerful actors** and their characteristics and practices matter for firm policies and productivity (e.g., Bertrand and Schoar, 2003; Malmendier and Tate, 2005; Bloom and Van Reenen, 2007)
- By the same token, managers' "vision" and "value" could matter for *how high wages are*, *who benefits from higher profits,* and *how well workers are treated.*
  - For example, in the first half of the 20th century, ideas of "welfare capitalism" were popular among managers, and remain so in the 1950s and 60s. Arguably replaced by "shareholder values" and focus on stock market performance in later decades.
- In this paper, we focus on one important aspect that shapes priorities, ideas, and ideologies of managers — **business school education**.

Business Education

- The share of managers with business education (e.g., MBAs) has increased among CEOs both in the US and Denmark.

Company	Current CEO	Degree	Start year
Amazon	Andy Jassy	MBA, HBS	2021
Google	Sundar Pichai	MBA, Wharton	2015
Microsoft	Satya Nadella	MBA, Chicago Booth	2014
Apple	Tim Cook	MBA, Duke Fuqua	2011
Walmart	Doug McMillon	MBA, U of Tulsa	2014
CVS	Karen Lynch	BA accounting, Boston College	2021
Exxon	Darren Woods	MBA, Northwestern Kellogg	2017
Lego	Niels Christiansen	MBA, INSEAD	2017
Maersk	Søren Skou	BA, Copenhagen Business School	2016

- The share of US public companies with business CEOs grew from 26% in 1980 to 43% in 2020

What Does Business Education Do?

- Management practices and values often originate and are imparted by business schools, including:
  - Emphasis on shareholder value maximization
  - Reengineering and creating lean corporations and cutting “unnecessary” costs
  - “The two institutions of management and business education have reciprocally defined the ultimate ends of the corporation” – Rakesh Khurana, *From Higher Aims to Hired Hands*
- Did these ideas popularized by business schools have a meaningful impact on wages and inequality?
- Viewed as a case study of powerful institutions propagating ideas with major effects on economic outcomes and distribution

Summary of Main Findings

- Business education does not make managers more productive—business managers do not have significantly greater sales, employment, or investments.
- However, both in Denmark and the US, the appointment of a business manager is associated with a significant decline in average wages and the labor share and an increase in profits and shareholder value.
  - For example, in the US, a business manager reduces wages by 6% and the labor share by 5 percentage points five years after his or her accession.
- The results are largely accounted for by a decline in rent-sharing—exogenous positive shocks are shared with workers by non-business managers, but zero sharing by business managers.

Agenda

Data and Summary Statistics

Event Study Estimates

Endogeneity Concerns and IV Strategy

Mechanism: Rent-Sharing

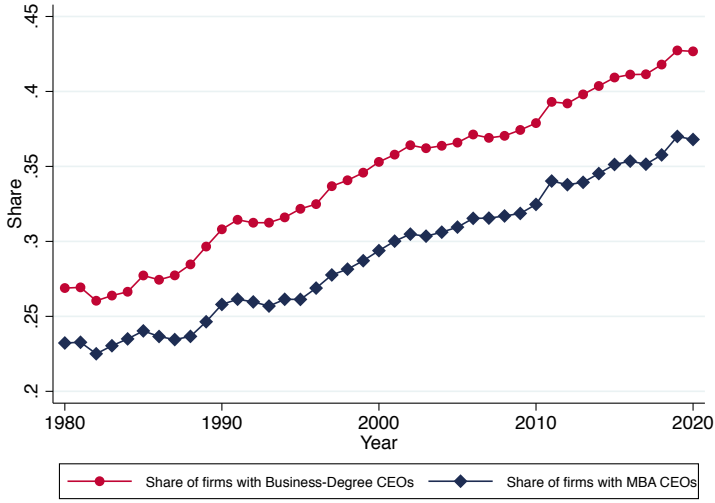
Selection vs. Causal Effect of Business Education

Conclusion

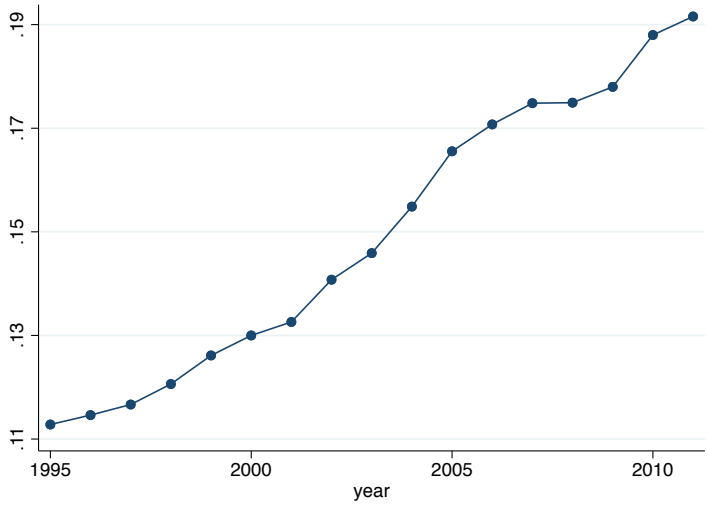
Data

- Biographical information of US public firm CEOs from BoardEx
  - Business degrees include MBAs, business undergraduates, EMBAs, etc
- US matched employer-employee data from Census Longitudinal Employer Household Dynamics Program (LEHD) and firm-level data from Longitudinal Business Database (LBD)
  - LHED covers 22 states and DC (about half of the US population) from 1990s
  - Sample: public firms in Compustat
- Danish matched employer-employee data from Statistics Denmark, 1995–2011
  - Full education history of managers and financial statements of firms (sales, value added, investments)
  - Sample: all firms with at least 5 employees

Share of Business Managers in the US



Share of Business Managers in Denmark



Empirical Strategy

- The key relationship we are interested in estimating is:

$$y_{it} = \gamma_t B_{it} + X'_{it}\beta_t + \lambda_i + \delta_t + \varepsilon_{it}$$

B_{it}: indicator variable for whether manager at firm i in year t has a business degree
λ_i: firm fixed effects
δ_t: year fixed effects
X_{it}: vector of covariates, including industry$\times$year fixed effects, state(region)$\times$year fixed effects, initial firm size quintile$\times$year fixed effects

- We start by conducting event studies focusing on firms that transition from being run by non-business managers to business managers for the first time
  - We use the Sun and Abraham estimator to compute dynamic difference-in-differences models with staggered timing

Agenda

Data and Summary Statistics

Event Study Estimates

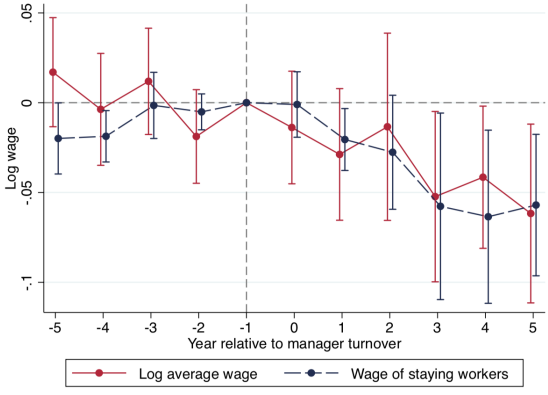
Endogeneity Concerns and IV Strategy

Mechanism: Rent-Sharing

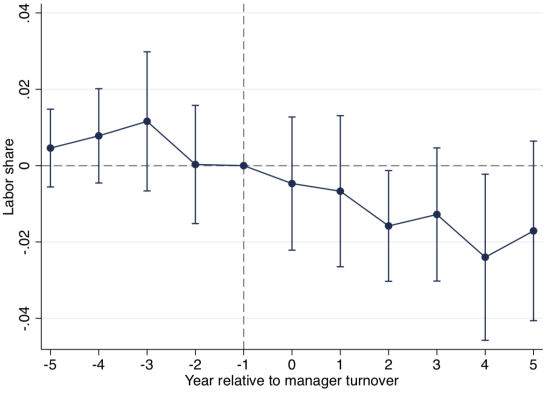
Selection vs. Causal Effect of Business Education

Conclusion

Event Study Estimates of Wage and Labor Share in the US

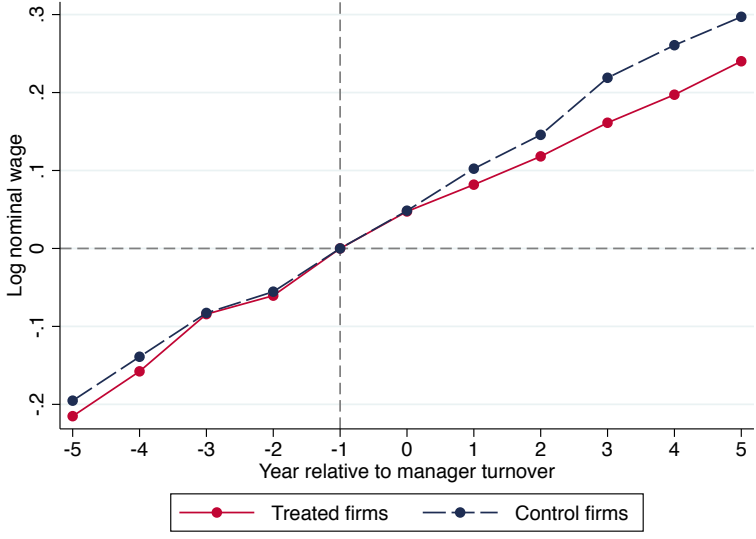


(a) Wage

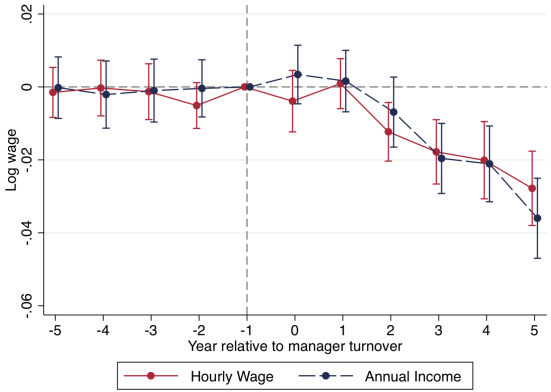


(b) Labor Share

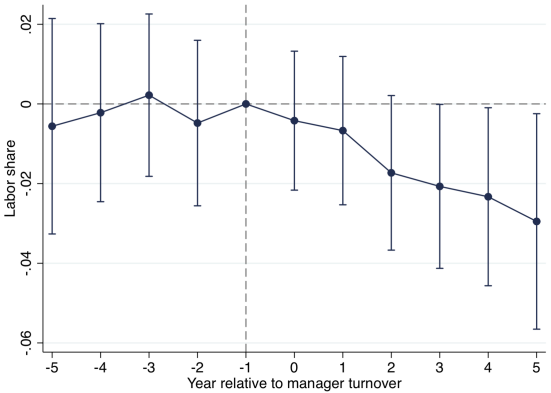
Nominal Wage Trends in Treated and Control Firms in the US



Event Study Estimates of Wage and Labor Share in Denmark

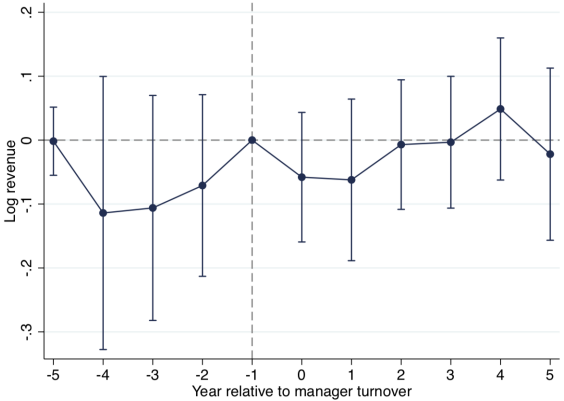


(a) Wage

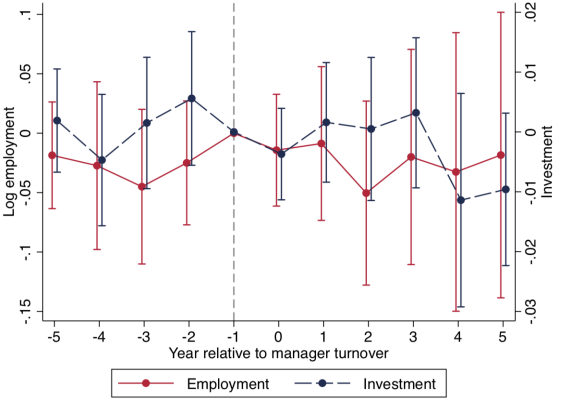


(b) Labor Share

Event Study Estimates of Employment, Output, and Investment in the US

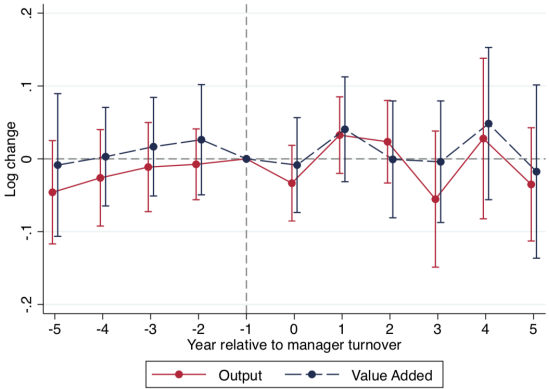


(c) Output



(d) Employment and Investment

Event Study Estimates of Employment, Output, and Investment in Denmark



(c) Output and Value Added

(d) Employment and Investment

Quantitative Magnitudes

- In the US, wages decrease by 6% and labor share decreases by 5 percentage points five years after the transition
- A 17% increase in share of business managers translates into a 1 percentage point decrease in labor share (of value added) and 0.3% lower wage growth per year
- This accounts for **20%** of the overall decline in labor share and **15%** of the decline in wage growth

Agenda

Endogeneity Concerns

1. There may be other **organizational, economic, or financial changes** implemented at the same time as new business managers come in
   - There are no major organizational changes at the same time; some increase in leverage and robot purchase but magnitudes too small to explain wage changes more
   - Results are not driven by manager age and robust to excluding family CEOs
   - No effect for placebo transitions to non-business managers or more educated managers

Endogeneity Concerns

1. There may be other **organizational, economic, or financial changes** implemented at the same time as new business managers come in
   - There are no major organizational changes at the same time; some increase in leverage and robot purchase but magnitudes too small to explain wage changes more
   - Results are not driven by manager age and robust to excluding family CEOs
   - No effect for placebo transitions to non-business managers or more educated managers
2. **Time-varying omitted factors** correlated with both manager transitions and wages. In particular, perhaps business managers are brought in when the firm is in hardship and needs to cut wages.

Endogenous Manager Choice: No Signs of Hard Times

- Event study estimates show no declines in sales or profits or before or after switches.
- In fact, our results are largely driven by profitable/more concentrated industries.

	High Concentration Wage	Low Concentration Wage	High Concentration Labor share	Low Concentration Labor share
	(1)	(2)	(3)	(4)
Business manager	-0.052**	0.024	-0.019*	0.004
	(0.022)	(0.022)	(0.011)	(0.010)

- Results are also stronger for firms that are growing faster before the manager transition.

Alternative Control Groups

- Firms hiring business managers are larger, older, have higher labor share and lower profitability, but do not differ in terms of productivity or growth
- Results are robust to **propensity score matching**: comparing treated firms to similar firms based on propensity score
- Results are robust to using **last-treated firms** as control

Endogenous Manager Choice: IV

- When CEOs retire, the timing of manager transition is unrelated to unobserved shocks to the firm
- We instrument for share of external board members with business degrees prior to manager retirement:

$$y_{it} = \beta Business_i \times Post_{it} + \alpha_i + \gamma_t + \epsilon_{it} \quad \text{(IV)}$$

$$Business_i \times Post_{it} = BusinessDirectorShare_i \times Post_{it} + \alpha_i + \gamma_t + \epsilon_{it} \quad \text{(First Stage)}$$

  - Sample: firms whose manager retires and who have never hired a business manager
  - $Business_i$: dummy for hiring a business manager
  - $Post_{it}$: dummy for post-retirement
  - $BusinessDirectorShare_i$: lagged share of external directors with business degree (one year or five years before retirement)
- Assumption: the share of external directors with business degrees only affects changes in firm outcomes around retirement through the hiring of business managers

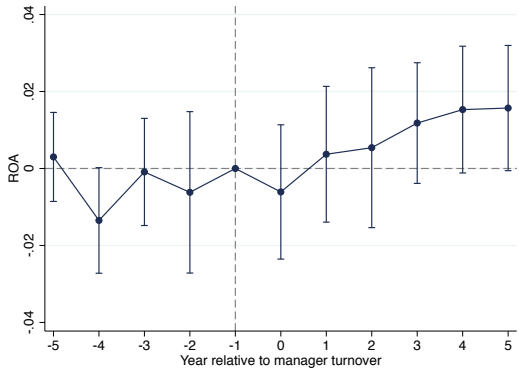
Endogenous Manager Choice: IV

	Business manager * Post retirement		Log revenue		Log wage		Labor share	
Business director share * Post retirement	0.5739 (0.0116)	0.5807 (0.0113)						
Business manager * Post retirement			0.0487 (0.0595)	0.0102 (0.0605)	**-0.0681** (0.0192)	**-0.0527** (0.0182)	**-0.0279** (0.0076)	**-0.0373** (0.0074)
Business director share	1 year ago	5 years ago	1 year ago	5 years ago	1 year ago	5 years ago	1 year ago	5 years ago
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000

- Board composition does not correlate with trends in wages, labor share, or revenue before retirement Pre-trends

Who Benefits?

- One clear group of beneficiaries of business managers are shareholders: ROA and stock market valuations go up



- Firms appointing business managers get an abnormal return of 5% in the US
- Firms increase their payout (through dividends or stock buybacks) by 1.6% of assets after 5 years

Who Benefits?

- Managers themselves also benefit by getting higher compensation denmark

	Log Total Compensation of Managers			
	(1)	(2)	(3)	(4)
Business Major	0.164***	0.137***	0.065***	0.048***
	(0.012)	(0.012)	(0.010)	(0.013)
Year FE	Y	Y	Y	Y
Manager Characteristics	N	Y	Y	Y
Firm Characteristics	N	N	Y	Y
Firm FE	N	N	N	Y
Obs	37,873	36,495	36,049	35,971

Agenda

Rent-Sharing: Alternative Strategy and Mechanisms

- Empirical strategy so far focusing on variation coming from changes in CEO
- An alternative is to look at how different CEOs respond to similar shocks
- This is informative both about the main finding reported so far and about the hypothesized mechanism of rent-sharing
- Follow Hummels et al. (2014) to measure exogenous demand shocks coming from export markets

Rent-Sharing: Alternative Strategy and Mechanisms

- Specifically, we use differences in exporting destination by six-digit product for each firm and exploit the fact that the demand for exports from Danish firms is changing differentially across these destination-products

$$WID_{jt} = \sum_{c,k} s^{e}_{jck} WID_{ckt}$$

  - s^{e}_{jct}: pre-sample share of exports to country c and six-digit product k of firm j
  - WID_{ckt}: country c's total purchases of product k from other countries (except Denmark) at time t
  - For example, a change in demand for a product in Germany will disproportionately impact Danish firms exporting that product to the German market, and we proxy for the demand using overall German imports for that product (except from Denmark)

Business and Non-business Managers Grow Similarly After the Shocks

	Log Exports	Log Value Added	Log Employment	Log Value Added Per Worker	Log Profit Per Worker
	(1)	(2)	(3)	(4)	(5)
Export Shock*Non-Business Manager	**0.384*** **	**0.243*** **	**0.150*** **	**0.093*** **	**0.157***
	(0.084)	(0.065)	(0.030)	(0.031)	(0.086)
Export Shock*Business Manager	**0.424*** **	**0.265*** **	**0.179*** **	**0.086** **	**0.171***
	(0.122)	(0.077)	(0.049)	(0.040)	(0.093)
Industry-year FE	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y

But Business Managers Do Not Share Rents

	Log Hourly Wage	Log Income	Labor Share	Log Hourly Wage	Log Income	Labor Share
	(1)	(2)	(3)	(4)	(5)	(6)
Export Shock*Non-Business Manager	**0.017*** **	**0.022*** **	**-0.013**	**0.013*** **	**0.015*** **	**-0.001**
	(0.003)	(0.004)	(0.009)	(0.003)	(0.004)	(0.008)
Export Shock*Business Manager	**0.002**	**0.010**	**-0.027** **	**-0.003**	**-0.001**	**-0.018** **
	(0.007)	(0.007)	(0.012)	(0.007)	(0.006)	(0.009)
Log Output				0.013***	0.013**	-0.163***
				(0.003)	(0.005)	(0.011)
Log Employment				0.014***	0.045***	0.164***
				(0.004)	(0.005)	(0.012)
Log Capital-labor Ratio				0.003**	0.000	-0.010**
				(0.001)	(0.001)	(0.004)
Share of High-skilled Workers				0.088***	0.076***	0.224**
				(0.020)	(0.025)	(0.056)

- For non-business managers, a 10% increase in profits (value added) per worker is associated with a 1.0% (1.9%) increase in hourly wages. The elasticity is in the ballpark of the estimates (0.05-0.2) in the literature (Jäger et al., 2020)
- For business managers, the rent-sharing elasticity is almost zero

Business Managers Do Not Share Rents After *Positive* Shocks

	Log Hourly Wage	Log Income	Labor Share	Log Hourly Wage	Log Income	Labor Share
	(1)	(2)	(3)	(4)	(5)	(6)
Pos Export Shock*Non-Business Manager	**0.022*** **	**0.017*** **	**-0.006**	**0.020*** **	**0.022*** **	**-0.003**
	(0.005)	(0.004)	(0.012)	(0.005)	(0.004)	(0.011)
Pos Export Shock*Business Manager	**0.006**	**0.008**	**-0.033*** **	**0.005**	**0.008**	**-0.026** **
	(0.011)	(0.007)	(0.013)	(0.011)	(0.007)	(0.013)
Neg Export Shock*Non-Business Manager	**0.004**	**0.001**	**-0.011**	**-0.006**	**0.005**	**-0.008**
	(0.004)	(0.003)	(0.008)	(0.004)	(0.004)	(0.008)
Neg Export Shock*Business Manager	**0.007**	**0.006**	**-0.016**	**0.003**	**0.010**	**-0.004**
	(0.010)	(0.007)	(0.014)	(0.010)	(0.007)	(0.013)
Log Output				0.012***	0.013**	-0.164***
				(0.003)	(0.005)	(0.011)
Log Employment				0.013***	0.044***	0.165***
				(0.004)	(0.005)	(0.012)
Log Capital-labor Ratio				0.003**	0.000	-0.010**
				(0.001)	(0.001)	(0.004)
Share of High-skilled Workers				0.079***	0.072***	0.228***
				(0.020)	(0.028)	(0.056)
Industry-year FE	Y	Y	Y	Y	Y	Y
Worker-firm FE	Y	Y		Y	Y	
Firm FE			Y			Y

Rent-Sharing

- We find similar results for US public firms using the same strategy
- Quantitatively, this difference in rent-sharing can explain most of the wage changes: diff in rent-sharing $\Rightarrow$ 2.3% lower wages and 2.5pp lower labor share in 5 years (compared to 3% lower wages and 3pp lower labor share in the baseline)
- Similar results when looking at rent-sharing elasticities around manager transitions, or instrumenting for business manager hiring transition IV
- The rent-sharing mechanism is also consistent with larger effects in more concentrated industries

Agenda

Selection vs. Causal Effect of Business Education

- Our results could be due to selection of individuals into business major and business degrees
- We attempt to distinguish selection vs. causal effect of business degrees by instrumenting for major choice using major choice of high school "role models" (students in previous cohort of the same high school & in the same GPA quartile):

$$BM_i = \beta BM^{Peer}_{s_i,c_i-1,q_i} + \alpha_{s_i c_i} + \omega_{q_i} + \epsilon_i$$

  This allows us to flexibly control for cohort$\times$school FE and GPA quartile FE, and exploit only within-cohort, within-high school and within-GPA quartile variation
- The IV results are similar to the main results, suggesting that our results are just not driven by selection

Agenda

Data and Summary Statistics

Event Study Estimates

Endogeneity Concerns and IV Strategy

Mechanism: Rent-Sharing

Selection vs. Causal Effect of Business Education

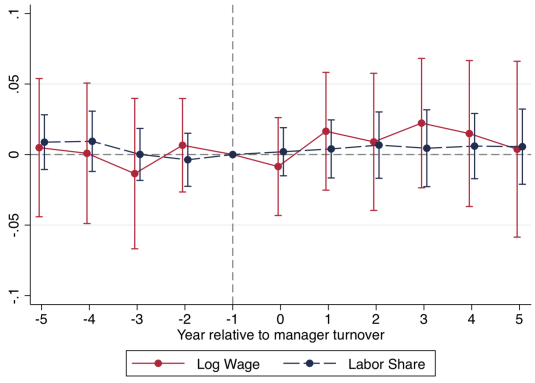
Conclusion

Preliminary Conclusions and Implications for Future Research

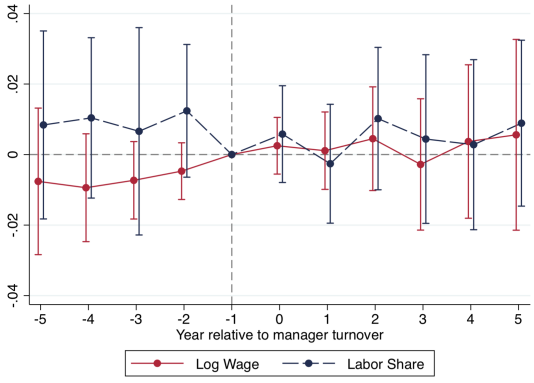
- We document that managers with business education reduce wage growth and the labor share because they do not share rents with their workers following positive shocks.
- Changes in priorities, values, and beliefs of powerful actors could have major implications.
  - The effects of business schools on managers can be viewed as a case study in this context.
  - Our results suggest that this could be a potent channel impacting wages, labor share, and inequality.
  - Are business schools the tip of the iceberg? General diffusion of shareholder values and virtues of leanness; management consulting.

Appendix

Event Study from Non-Business Manager to Non-Business Manager



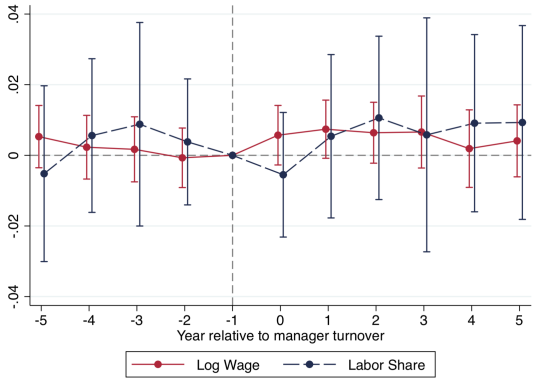
(a) Non-business to non-business, US



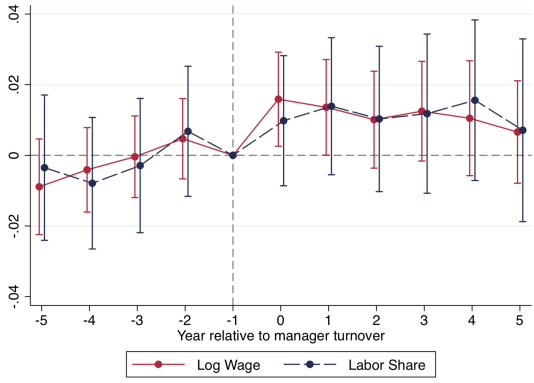
(b) Non-business to non-business, Denmark

back

Event Study from Less Educated Manager to More Educated Manager



(c) Non-college to college, Denmark



(d) Non-master to master, Denmark

back

Confounding Factors

- The only notable differences between business and non-business managers concern leverage and robot purchases
- These changes take place after the manager changes, and thus we interpret them to be not confounding factors, but potential outcomes of the new business manager's overall strategy
- In addition, the changes are not large enough to account for the (relative) decline in wages and the labor share
  - Using estimates from Acemoglu, Lelarge and Restrepo (2020) and Humlum (2019), the increase in robot purchases can account for at most 4% of our labor share results and at most 5% of our wage results
  - Using estimates from Michaels, Beau Page, and Whited (2019), the increase in leverage can account for at most 6% of the wage decline back

Endogenous Manager Choice: IV

- Hiring a manager with a business degree may become popular among certain types of firms at different times, akin to democratization waves in Acemoglu et al. (2019)
- Instrument the hiring of business manager using lagged business manager hiring of peer firms (who did not have a business manager at the beginning of the sample):

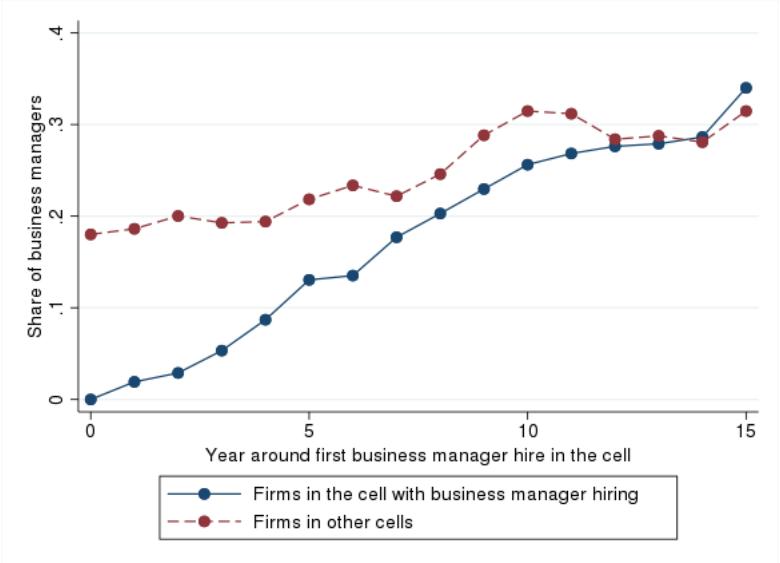
$$B_{it} = \sum_{k=1}^{3} \theta_k Z_{i,t-k} + X_{it}'\beta^F + \lambda_i^F + \delta_t^F + \epsilon_{it}$$

$Z_{it} = \frac{1}{|I_i|} \sum_{j \in \{I_i : j \neq i, C_j = C_i, B_{jt_0} = 0\}} B_{jt}$ is the jackknifed average of business manager among firms in the same region$\times$industry$\times$size cell

	Log Value Added			Log Average Wage			Labor Share		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Business Major	-0.027	-0.051	-0.032	-0.094*	-0.075*	-0.105***	-0.035*	-0.023	-0.036**
	(0.052)	(0.046)	(0.043)	(0.055)	(0.044)	(0.041)	(0.019)	(0.015)	(0.016)
Number of lags as control	1	2	3	1	2	3	1	2	3
F statistic	32.6	44.8	41.9	32.6	44.8	41.9	32.6	44.8	41.9

back

First Stage of Diffusion IV



back

First Stage of Diffusion IV

	Business Manager							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Peer Firm Business Manager t-1	0.160***	0.083	0.158***	0.081	0.164***	0.066	0.149***	0.053
	(0.039)	(0.059)	(0.039)	(0.059)	(0.047)	(0.065)	(0.047)	(0.065)
Peer Firm Business Manager t-2		0.270***		0.274***		0.285***		0.291***
		(0.058)		(0.058)		(0.065)		(0.065)
Peer Firm Business Manager t-3		0.242***		0.239***		0.411***		0.394***
		(0.052)		(0.052)		(0.059)		(0.059)
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Size quintile-year FE			Y	Y	Y	Y	Y	Y
Industry*year FE					Y	Y	Y	Y
Lagged revenue and wages							Y	Y
F statistic	16.7	30.2	16.2	29.8	12.3	43.6	9.9	41.9

back

Compensation of Business Managers in Denmark

	Log Wage of Managers			
	(1)	(2)	(3)	(4)
Business Major	0.451***	0.142***	0.105***	0.084***
	(0.005)	(0.005)	(0.004)	(0.005)
Year FE	Y	Y	Y	Y
Manager Characteristics	N	Y	Y	Y
Firm Characteristics	N	N	Y	Y
Firm FE	N	N	N	Y
Obs	280,389	280,012	280,012	267,850

back

Response to Export Shocks Before and After Manager Transitions

	Value Added per Worker		Log Hourly Wage		Log Income		Labor Share	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Export Shock*Pre	0.084**	0.074**	0.031***	0.017***	0.030***	0.021***	0.006	-0.013*
	(0.042)	(0.033)	(0.007)	(0.003)	(0.009)	(0.006)	(0.009)	(0.007)
Export Shock*Post	0.103**	0.082**	0.012	0.002	0.013	-0.012	-0.021**	-0.028***
	(0.044)	(0.039)	(0.008)	(0.008)	(0.009)	(0.010)	(0.011)	(0.010)
Industry-year FE	Y	Y	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Worker-firm FE			Y	Y	Y	Y		
Obs	1,582	6,296	544,119	1,303,209	544,117	1,303,050	1,402	5,504

back

IV Estimates of Wage Response to Export Shocks

	Log Hourly Wage		Log Income		Labor Share	
	(1)	(2)	(3)	(4)	(5)	(6)
Export Shock*(1-Predicted Business Manager)	0.019***	0.013***	0.021***	0.017***	-0.002	-0.002
	(0.002)	(0.001)	(0.004)	(0.003)	(0.012)	(0.010)
Export Shock*Predicted Business Manager	0.001	-0.006*	0.000	-0.001	-0.028**	-0.019*
	(0.004)	(0.003)	(0.007)	(0.004)	(0.013)	(0.011)
Log Output		-0.004		0.011**		-0.174***
		(0.003)		(0.005)		(0.016)
Log Employment		0.092***		0.099***		0.172***
		(0.006)		(0.010)		(0.017)
Log Capital-labor Ratio		0.002***		-0.006***		-0.011**
		(0.001)		(0.001)		(0.005)
Share of High-skilled Workers		0.395***		0.277***		0.322***
		(0.033)		(0.058)		(0.075)
Industry-year FE	Y	Y	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y	Y	Y
Worker-firm FE	Y	Y	Y	Y		
Obs	737,000	737,000	737,000	737,000	2,917	2,917

back

Placebo 1: Students in Same High School and Different GPA Quartile

	Business degree		Becoming a manager	Residual log annual wage	Residual log hourly wage	Residual labor share
	(1)	(2)	(3)	(4)	(5)	(6)
Share of Business Majors in Same High School and Different GPA Quartiles	0.010	-0.052	-0.010	0.006	0.032	0.010
	(0.012)	(0.108)	(0.006)	(0.039)	(0.044)	(0.044)
School FE	Y	Y	Y	Y	Y	Y
Cohort FE	Y	Y	Y	Y	Y	Y
GPA Quartile FE	Y	Y	Y	Y	Y	Y
Obs	505,963	13,076	505,963	13,076	13,076	9,191

Placebo 2: Students in Different High School and Same GPA Quartile

	Business degree		Becoming a manager	Residual log annual wage	Residual log hourly wage	Residual labor share
	(1)	(2)	(3)	(4)	(5)	(6)
Share of Business Majors in Same GPA Quartile and Different High Schools	0.046	0.042	0.027	-0.029	-0.055	0.011
	(0.036)	(0.332)	(0.019)	(0.121)	(0.136)	(0.137)
School FE	Y	Y	Y	Y	Y	Y
Cohort FE	Y	Y	Y	Y	Y	Y
GPA Quartile FE	Y	Y	Y	Y	Y	Y
Obs	505,970	13,076	505,970	13,076	13,076	9,191

Placebo 3: Students in Same High School, GPA Quartile, But More Than Three Cohorts Ahead

	Business degree		Becoming a manager	Residual log annual wage	Residual log hourly wage	Residual labor share
	(1)	(2)	(3)	(4)	(5)	(6)
Share of Business Majors in Same High School, GPA Quartile, and Three Cohorts Ahead	0.018**	0.051	0.007	0.005	-0.014	0.019
	(0.008)	(0.059)	(0.005)	(0.021)	(0.024)	(0.024)
School FE	Y	Y	Y	Y	Y	Y
Cohort FE	Y	Y	Y	Y	Y	Y
GPA Quartile FE	Y	Y	Y	Y	Y	Y
Obs	504,138	13,076	504,138	13,076	13,076	9,191

back

Pre-trends for Board IV

	Δ log wage $_{t-2,t-1}$	Δ log wage $_{t-3,t-2}$	Δ log wage $_{t-4,t-3}$	Δ log wage $_{t-5,t-4}$
Business director share$_{t-5}$	-0.0128	-0.0042	-0.0210	-0.0058
	(0.0290)	(0.0299)	(0.0330)	(0.0302)
Obs	1000	1000	1000	1000

	Δ labor share $_{t-2,t-1}$	Δ labor share $_{t-3,t-2}$	Δ labor share $_{t-4,t-3}$	Δ labor share $_{t-5,t-4}$
Business director share$_{t-5}$	-0.0103	-0.0044	-0.0034	0.0017
	(0.0121)	(0.0118)	(0.0131)	(0.0140)
Obs	1000	1000	1000	1000

	Δ log revenue $_{t-2,t-1}$	Δ log revenue $_{t-3,t-2}$	Δ log revenue $_{t-4,t-3}$	Δ log revenue $_{t-5,t-4}$
Business director share$_{t-5}$	0.0243	0.1005	0.0179	-0.0387
	(0.0517)	(0.0645)	(0.0683)	(0.0773)
Obs	1000	1000	1000	1000

back