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# Broad-based Employee Stock Ownership: Motives and Outcomes

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# CES Disclaimer

- The research was conducted while the authors were Special Sworn Status researchers of the U.S. Census Bureau at the University of Michigan and Triangle Census Research Data Center. Any opinions and conclusions expressed herein are those of the author(s) and do not necessarily represent the views of the U.S. Census Bureau. All results have been reviewed to ensure that no confidential information is disclosed.
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# Broad-Based Employee Share Ownership (BESO)

- ❑ Firms which adopt BESO plans justify their decision by arguing such plans increase worker productivity. But are these claims accurate?
  - ❑ If BESO plans do increase worker productivity then who gains, workers or shareholders?
  - ❑ Are there other motivations for adopting BESO plans?
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# Research Outline

- We investigate how adopting a BESO plan affects
    - employee compensation;
    - shareholder value;
    - total factor productivity; and,
    - the level of employment.
  - We focus on a specific type of BESO plans – ESOPs, which provide a clear, sharp difference in BESO before and after the initiation.
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# ESOP Institutional Details

- ESOPs are a type of tax-qualified pension plan.
  - The plan must allocate shares in a broad-based manner.
  - ESOP shares cannot be sold by employees unless they leave the firm or near retirement age.
  - Employees must be allowed to vote if an ESOP is created with voting shares.
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# Motivations for Establishing an ESOP

- To increase employee incentives
  - To conserve cash
  - To create a worker-management alliance
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# To Increase Employee Incentives

- Employee ownership aligns incentives of employees with shareholder but free-rider effect might dominate.
  - Kandel and Lazear (1992)
  - Freeman et al. (2010)
  - Jones and Kato (1995)

*Prediction 1: If ESOPs are adopted to improve incentives, worker productivity increases when the number of employees is not-so-numerous. The incentive effects will not work with numerous employees, unless the size of ESOP is sufficiently large.*

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# To Increase Employee Incentives (2)

- If ESOP increase worker productivity, how are the gains shared between employees and shareholders?
- Workers want a fair share of any surplus.
  - Akerlof and Yellen (1990)
- If unhappy, workers can shirk or quit. But, threat is weak when workers have few alternative employment opportunities or low worker bargaining power (WBP).
  - Bhaskar, Manning, and To (2002)
  - Manning (2003)
- *Prediction 2: If ESOPs increase productivity, wages (shareholder value) will increase more (less) at establishments where WBP is greater.*

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# To Conserve Cash

- Firms can conserve cash by substituting cash wages with equity-based compensation.
- However, risk-averse employees will value ESOP shares below market price. This motivation should only apply to most cash constrained firms.
  - Core and Guay (2001)
  - Ittner, Lambert and Larcker (2003)
  - Oyer and Schaefer (2005)

*Prediction 3: ESOPs adopted by cash-constrained firms are more likely to lead to lower cash wages than non-constrained firms.*

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# To Create a Worker-Management Alliance

- In a worker-management alliance, management bribes employees with above-market wages to garner their support in voting against a hostile takeover bid.
  - Pagano and Volpin (2005)
  - Chaplinsky and Neihaus (1994)
  - Rauh (2006)
- Business combination statutes that delay a takeover if a sufficient block of unaffiliated investors vote against (BCS\_Block) make large ESOPs especially effective anti-takeover devices.

*Prediction 4: Wages will increase following large ESOPs adopted by firms incorporated in states with BCS that allows a block of investors unaffiliated with management to thwart hostile bids.*

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# Datasets

- **ESOP database**

- Covers ESOPs at US public firms between 1980 and 2004
- Hand-collected using Factiva news article searches
- ESOP size is then estimated by reading firm proxies
- Complete information on 410 unique ESOPs

- **Longitudinal Business Database (LBD)**

- Panel of all US establishments
- Information on total payroll, number of employees, location, industry, and ownership
- Wages includes all worker compensation which will be taxed as ordinary income

- **Compustat**

- Firm-level accounting variables
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## **Table I: Employee Stock Ownership Plan (ESOP) Initiations and Firm-year Observations by Year.**

A count of initiations and firm-year observations for the ESOP sample identified by our two step search procedure and screens, 1982 through 2001.

Fiscal Year	ESOP Initiations	Count of ESOP firm-year observations
1982	2	6
1983	5	13
1984	8	22
1985	13	38
1986	14	50
1987	24	72
1988	36	105
1989	82	189
1990	53	247
1991	16	262
1992	22	275
1993	10	314
1994	24	332
1995	15	349
1996	26	388
1997	18	396
1998	16	393
1999	17	396
2000	7	381
2001	2	362
Total	410	4,594

## Table II, Panel A: Summary Statistics for ESOP Firms and Matched Firms.

Means are reported with standard deviations in brackets. Pre-ESOP Firms include firm-year observations before the ESOP is adopted for firms that eventually adopt an ESOP.

Post-ESOP Firms include all firm-year observations for firms with ESOPs.

Matched firms are a group of control firms, which are not identified as having an ESOP, matched to the ESOP firms.

	Pre-ESOP Firms	Post-ESOP Firms	Matched Firms	Difference between Pre-ESOP and Post-ESOP	Difference between Pre-ESOP and Matched Firms	Difference between Post-ESOP and Matched Firms
Operating Income/Assets	0.129 [0.094]	0.117 [0.091]	0.110 [0.108]	***	***	***
Leverage	0.169 [0.157]	0.209 [0.172]	0.194 [0.183]	***	***	***
Assets (millions)	5,377.72 [11,953.69]	7,175.55 [13,545.77]	4,394.99 [11,655.32]	***	***	***
Sales (millions)	3,124.70 [6,233.29]	4,452.52 [7,728.11]	2,468.98 [5,616.81]	***	***	***
Capex/assets	0.070 [0.054]	0.063 [0.048]	0.063 [0.051]	***	***	insignificant
Industry Adjusted Q	0.082 [0.561]	0.098 [0.699]	0.103 [0.745]	insignificant	insignificant	insignificant
N	1480	1884	8265			

## Table II, Panel B: Summary Statistics for ESOP and Matched Establishments.

Means are reported with standard deviations in brackets. Pre-ESOP Firms include firm-year observations before the ESOP is adopted for firms that eventually adopt an ESOP.

Post-ESOP Firms include all firm-year observations for firms with ESOPs.

Matched firms are a group of control firms, which are not identified as having an ESOP, matched to the ESOP firms.

	Pre-ESOP Firms	Post-ESOP Firms	Matched Firms	Difference between Pre-ESOP and post-ESOP	Difference between Pre-ESOP and Matched Firms	Difference between Post-ESOP and Matched Firms
Annual payroll (thousands)	2,490.32 [6,807.09]	2,479.67 [6,783.98]	3,130.58 [8,886.49]	insignificant	***	***
Number of Employees	58.41 [136.42]	52.42 [130.07]	65.58 [160.55]	***	***	***
Wages per employee (thousands)	40.52 [30.79]	51.89 [42.11]	46.51 [27.11]	***	***	***
N	206,433	364,820	657,700			

### Table III, Panel A: Summary Statistics for ESOP Firms, Pre- and Post-ESOP.

Means are reported with standard deviations in brackets. Pre-ESOP Firms include firm-year observations before the ESOP is adopted for firms that eventually adopt an ESOP.

Post-ESOP Firms include all firm-year observations for firms with ESOPs. Firms with ESOPg5 include all firm-year observations for firms with ESOPs controlling 5% or more of the firm's outstanding common stock at its maximum point.

	Pre-ESOP Firms	Post-ESOP Firms	Pre-ESOPg5 firms	Post-ESOPg5 firms	Difference between Pre-ESOP and Pre-ESOPg5	Difference between Post-ESOP and Post-ESOPg5	Difference between Pre- and Post-ESOPg5
Operating Income/Assets	0.129 [0.094]	0.117 [0.091]	0.126 [0.078]	0.110 [0.082]	insignificant	**	***
Leverage	0.169 [0.157]	0.209 [0.172]	0.178 [0.159]	0.217 [0.173]	insignificant	insignificant	***
Assets (millions)	5,377.72 [11,953.69]	7,175.55 [13,545.77]	4,394.99 [11,655.32]	6,418.75 [13,039.51]	***	insignificant	***
Sales (millions)	3,124.70 [6,233.29]	4,452.52 [7,728.11]	2,468.98 [5,616.81]	4,255.22 [7,610.72]	insignificant	insignificant	***
Capex/assets	0.070 [0.054]	0.063 [0.048]	0.066 [0.049]	0.062 [0.048]	insignificant	insignificant	*
Industry-Adjusted Q	0.082 [0.561]	0.098 [0.699]	-0.028 [0.389]	-0.029 [0.489]	***	***	insignificant
N	1480	1884	657	1136			

### Table III, Panel B: Summary Statistics for ESOP Establishments, Pre- and Post-ESOP.

Means are reported with standard deviations in brackets. Pre-ESOP Firms include firm-year observations before the ESOP is adopted for firms that eventually adopt an ESOP.

Post-ESOP Firms include all firm-year observations for firms with ESOPs. Firms with ESOPg5 include all firm-year observations for firms with ESOPs controlling 5% or more of the firm's outstanding common stock at its maximum point.

	Pre-ESOP Firms	Post-ESOP Firms	Pre-ESOPg5 Firms	Post-ESOPg5 Firms	Difference between Pre-ESOP and Pre-ESOPg5	Difference between Post-ESOP and Post-ESOPg5	Difference between Pre- and Post-ESOPg5
Annual Payroll (thousands)	2,490.32 [6,807.09]	2,479.67 [6,783.98]	2,346.84 [6566.68]	2,220.18 [6,407.07]	***	***	***
Number of Employees	58.41 [136.42]	52.42 [130.07]	57.02 [137.19]	48.05 [126.05]	***	***	***
Wages per Employee (thousands)	40.52 [30.79]	51.89 [42.11]	38.41 [31.59]	52.98 [45.66]	***	***	***
N	206,433	364,820	92,834	232,664			

### **Table IV: Unexplained Wages per Employee around ESOP Initiations.**

Average unexplained wages for the sample of firms with small ESOPs never controlling more than 5% of the firm's outstanding stock, large ESOPs controlling 5% or more of the firm's outstanding common stock at its maximum point, and matched control firms. Unexplained wages are reported by relative year to the year of ESOP initiation (year 0) or to the year of match (year 0). Means are reported with standard deviations in parentheses.

#### **Panel A: All firms**

Relative Year	Small ESOPs	Large ESOPs	Matched Firms
-2	0.049 (0.365)	-0.055 (0.444)	0.017 (0.420)
-1	-0.026 (0.495)	-0.113 (0.395)	-0.002 (0.290)
0	0.054 (0.479)	-0.070 (0.383)	0.017 (0.477)
1	0.098 (0.579)	-0.048 (0.415)	0.015 (0.450)
2	0.060 (0.526)	-0.067 (0.448)	-0.001 (0.510)
diff year -2 vs 1	(+) ***	insignificant	insignificant
diff year -2 vs 2	(+) *	(-) **	(-) ***
diff year -1 vs 1	(+) ***	(+) ***	(+) ***
diff year -1 vs 2	(+) ***	(+) ***	insignificant

### Table IV: Unexplained Wages per Employee around ESOP Initiations.

Average unexplained wages for the sample of firms with small ESOPs never controlling more than 5% of the firm's outstanding stock, large ESOPs controlling 5% or more of the firm's outstanding common stock at its maximum point, and matched control firms. Unexplained wages are reported by relative year to the year of ESOP initiation (year 0) or to the year of match (year 0). Means are reported with standard deviations in parentheses.

#### Panel B: Not-so-numerous-employee firms

Relative Year	Small ESOPs	Large ESOPs	Matched Firms
-2	-0.072 (0.379)	-0.090 (0.433)	-0.024 (0.419)
-1	-0.100 (0.370)	-0.125 (0.442)	-0.026 (0.310)
0	0.003 (0.327)	-0.116 (0.396)	-0.034 (0.450)
1	0.052 (0.405)	-0.095 (0.406)	-0.014 (0.447)
2	0.054 (0.427)	-0.128 (0.472)	-0.026 (0.518)
diff year -2 vs 1	(+) ***	insignificant	(+) ***
diff year -2 vs 2	(+) ***	(-) **	insignificant
diff year -1 vs 1	(+) ***	(+) ***	(+) ***
diff year -1 vs 2	(+) ***	insignificant	insignificant

## Table IV: Unexplained Wages per Employee around ESOP Initiations.

Average unexplained wages for the sample of firms with small ESOPs never controlling more than 5% of the firm's outstanding stock, large ESOPs controlling 5% or more of the firm's outstanding common stock at its maximum point, and matched control firms. Unexplained wages are reported by relative year to the year of ESOP initiation (year 0) or to the year of match (year 0). Means are reported with standard deviations in parentheses.

### Panel C: Numerous-employee firms

Relative Year	Small ESOPs	Large ESOPs	Matched Firms
-2	0.091 (0.350)	-0.018 (0.453)	0.062 (0.417)
-1	0.000 (0.531)	-0.101 (0.340)	0.023 (0.263)
0	0.062 (0.522)	-0.024 (0.364)	0.079 (0.501)
1	0.113 (0.624)	0.002 (0.419)	0.057 (0.450)
2	0.063 (0.556)	-0.005 (0.412)	0.037 (0.494)
diff year -2 vs 1	(+) ***	(+) **	insignificant
diff year -2 vs 2	(-) ***	insignificant	(-) ***
diff year -1 vs 1	(+) ***	(+) ***	(+) ***
diff year -1 vs 2	(+) ***	(+) ***	(+) ***

**Table V: Wage Changes following ESOP Initiations.**

The dependent variable is log wages per employee. The set of observations includes a sample of ESOP firms and a sample of matched control firms, as described in the text. Columns 1 and 2 include all observations. Columns 3 and 6 include observations at not-so-numerous-employee firms. Columns 4 and 5 include observations at numerous-employee firms. ESOP is a dummy variable which takes the value of 1 if the firm has an ESOP. ESOPg5 is a dummy variable which takes a value of 1 if the firm has an ESOP that controls at least 5% of the firm's outstanding common stock at any given time. Maxesop is equal to the maximum fractional share ownership attained by an ESOPg5, if an ESOPg5 exists, and zero otherwise.

	1	2	3	4	5	6
<b>Sample</b>	All	All	Not-numerous	Numerous	Numerous	Not-numerous
<b>ESOP</b>	0.01 (0.02)	0.06 (0.04)	0.20*** (0.07)	0.01 (0.04)	0.01 (0.03)	0.06** (0.03)
<b>ESOPg5</b>		-0.08 (0.05)	-0.29*** (0.08)	0.02 (0.05)		
<b>Maxesop</b>					0.13** (0.07)	-0.23*** (0.08)
<b>S-Y mean wages</b>	0.67*** (0.08)	0.68*** (0.08)	0.50*** (0.12)	0.70*** (0.06)	0.70*** (0.06)	0.50*** (0.12)
<b>I-Y mean wages</b>	0.29*** (0.07)	0.29*** (0.07)	0.29** (0.13)	0.27*** (0.04)	0.28** (0.05)	0.29*** (0.13)
<b>Establishment age</b>	-0.02 (0.02)	-0.02 (0.02)	-0.04 (0.03)	0.01 (0.03)	0.01 (0.03)	-0.04 (0.03)
<b>Sales</b>	0.01 (0.01)	0.02 (0.01)	0.03 (0.01)	-0.00 (0.02)	-0.00 (0.03)	0.02 (0.02)
<b>Leverage</b>	-0.04 (0.04)	-0.03 (0.04)	-0.01 (0.04)	-0.10** (0.04)	-0.10** (0.04)	-0.03 (0.04)
<b>Ad</b>	0.32* (0.18)	0.31* (0.17)	0.29* (0.15)	0.40 (0.72)	0.38 (0.71)	0.28* (0.15)
<b>Ad_missing</b>	0.03* (0.02)	0.03* (0.02)	0.02 (0.02)	0.05*** (0.02)	0.05*** (0.02)	0.02 (0.03)
<b>R&amp;D</b>	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-1.04 (0.87)	-1.00 (0.88)	0.00 (0.00)
<b>R&amp;D_missing</b>	-0.02 (0.04)	-0.02 (0.03)	-0.10 (0.06)	0.03 (0.03)	0.03 (0.03)	-0.10 (0.07)
<b>Tangibility</b>	0.06 (0.08)	0.07 (0.08)	0.05 (0.12)	0.10 (0.12)	0.10 (0.11)	0.05 (0.12)
<b>Cap_labor</b>	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
<b>N</b>	1,045,138	1,045,138	512,216	532,922	532,922	512,216
<b>Adjusted R<sup>2</sup></b>	0.74	0.74	0.70	0.77	0.77	0.70



**Table VII: Changes in Industry-adjusted Q following ESOP Initiations.**

The dependent variable is industry-adjusted Q, winsorized at 1%. Q is fiscal year-end market value of equity plus market value of preferred stock plus total liabilities divided by total assets. Industry-adjusted Q is obtained by subtracting the median Q matched by industry (3-digit SIC code) and year. The set of observations includes a sample of ESOP firms and a sample of matched control firms, as described in the text. Columns 1 and 2 include all observations. Columns 3 and 6 include not-so-numerous-employee firms. Columns 4 and 5 include numerous-employee firms.

	1	2	3	4	5	6
<b>Firm employment sample</b>	All	All	Not-so-numerous	Numerous	Numerous	Not-so-numerous
<b>ESOP</b>	0.13*** (0.05)	0.23*** (0.08)	0.21** (0.10)	0.12 (0.15)	0.09 (0.10)	0.13** (0.06)
<b>ESOPg5</b>		-0.17* (0.09)	-0.20* (0.11)	0.02 (0.17)		
<b>Maxesop</b>					0.39 (0.41)	-0.31* (0.17)
<b>Sales</b>	0.02 (0.06)	0.02 (0.06)	0.02 (0.06)	0.27 (0.22)	0.27 (0.22)	0.02 (0.06)
<b>Assets</b>	-0.12** (0.05)	-0.12* (0.06)	-0.12** (0.05)	-0.26 (0.16)	-0.27* (0.16)	-0.12* (0.05)
<b>R&amp;D</b>	0.07*** (0.03)	0.07*** (0.03)	0.07*** (0.03)	9.45 (7.00)	9.73 (7.05)	0.07*** (0.03)
<b>R&amp;D_missing</b>	0.04 (0.05)	0.04 (0.05)	0.05 (0.05)	0.06 (0.14)	0.06 (0.14)	0.05 (0.05)
<b>Capex</b>	1.30*** (0.24)	1.33*** (0.24)	1.46*** (0.25)	-0.40 (1.39)	-0.47 (1.36)	1.44*** (0.25)
<b>Sigma</b>	-0.04 (0.25)	-0.05 (0.25)	0.05 (0.26)	-1.11 (0.89)	-1.08 (0.89)	0.08 (0.26)
<b>Sigma_missing</b>	-0.13 (0.09)	-0.13 (0.09)	-0.11 (0.11)	-0.12 (0.10)	-0.12 (0.10)	-0.10 (0.11)
<b>N</b>	5014	5014	4074	940	940	4047
<b>Adjusted R<sup>2</sup></b>	0.56	0.56	0.57	0.59	0.59	0.57

**Table VIII: Changes in Industry-adjusted Q following ESOP Initiation—Interactive Effects of Worker Bargaining Power (WBP).**

The dependent variable is industry-adjusted Q, winsorized at 1%. The set of observations includes a sample of not-so-numerous ESOP firms and a sample of matched control firms, as described in the text. Control variables are not reported to conserve space.

	1	2	3	4
<b>ESOP</b>	0.88*** (0.34)	0.21** (0.10)	0.99** (0.48)	0.21** (0.10)
<b>ESOPg5</b>	-0.98** (0.50)	-0.34 (0.38)	-1.09** (0.56)	-0.33 (0.35)
<b>Equal weighted WBP</b>	0.00 (0.15)	-0.05 (0.16)		
<b>Equal weighted WBP*ESOP</b>	-0.82* (0.43)			
<b>Equal weighted WBP*ESOPg5</b>	0.96 (0.60)	0.18 (0.43)		
<b>Payroll weighted WBP</b>			-0.15 (0.20)	-0.22 (0.20)
<b>Payroll weighted WBP*ESOP</b>			-0.91* (0.53)	
<b>Payroll weighted WBP*ESOPg5</b>			1.03* (0.63)	0.16 (0.39)
<b>N</b>	4074	4074	4074	4074
<b>Adjusted R<sup>2</sup></b>	0.57	0.57	0.57	0.57

**Table IX: Total Factor Productivity (TFP) Changes following ESOP Initiations.**

The dependent variable is TFP. The sample covers only establishments in manufacturing industries. Columns 1 and 2 include all observations. Column 3 and 6 include not-so-numerous-employee firms. Columns 4 and 5 include numerous-employee firms.

	1	2	3	4	5	6
<b>Firm employment sample</b>	All	All	Not-so-numerous	Numerous	Numerous	Not-so-numerous
<b>ESOP</b>	0.80*** (0.24)	0.34* (0.20)	0.90*** (0.25)	0.20 (0.19)	0.47 (0.30)	0.73*** (0.23)
<b>ESOPq5</b>		0.70*** (0.28)	-0.17 (0.29)	0.87*** (0.26)		
<b>Maxesop</b>					4.81** (1.97)	1.16 (2.29)
<b>Maxesop<sup>2</sup></b>					-4.79*** (1.97)	-2.05 (2.17)
<b>Sales</b>	-0.08 (0.06)	-0.07 (0.06)	0.09 (0.08)	-0.07 (0.15)	-0.08 (0.15)	0.09 (0.08)
<b>Leverage</b>	-0.09 (0.19)	-0.11 (0.19)	-0.09 (0.21)	-0.04 (0.40)	-0.01 (0.41)	-0.07 (0.21)
<b>Ad</b>	1.94 (2.58)	1.79 (2.49)	0.41 (2.30)	1.37 (5.44)	1.77 (5.83)	0.46 (2.30)
<b>Ad_missing</b>	0.31 (0.26)	0.38 (0.27)	0.15 (0.40)	0.45 (0.30)	0.36 (0.29)	0.16 (0.40)
<b>R&amp;D</b>	-0.12*** (0.02)	-0.12*** (0.02)	-0.11*** (0.01)	-19.06*** (6.03)	-18.85*** (6.05)	-0.10*** (0.01)
<b>R&amp;D_missing</b>	-0.13 (0.22)	-0.12 (0.22)	-0.02 (0.22)	-0.65 (0.56)	-0.66 (0.56)	0.02 (0.22)
<b>Tangibility</b>	-0.29 (0.53)	-0.40 (0.50)	-0.67 (0.49)	0.13 (0.91)	0.34 (1.00)	-0.68 (0.49)
<b>Cap_labor</b>	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
<b>Establishment age</b>	0.39* (0.21)	0.38* (0.20)	0.32 (0.27)	0.55* (0.29)	0.56* (0.30)	0.31 (0.28)
<b>N</b>	68671	68671	30431	38240	38240	30431
<b>Adjusted R<sup>2</sup></b>	0.47	0.47	0.50	0.47	0.47	0.50

**Table X: Employment Changes following ESOP Initiations.**

The dependent variable is log employee per firm. The set of observations includes a sample of ESOP firms and a sample of matched control firms, as described in the text. Columns 1 and 2 include all observations. Column 3 includes not-so-numerous-employee firms. Column 4 includes numerous-employee firms.

	1	2	3	4
<b>Firm employment sample</b>	All	All	Not-so-numerous	Numerous
<b>ESOP</b>	0.02 (0.06)	0.06 (0.07)	0.21*** (0.07)	-0.47** (0.20)
<b>ESOPg5</b>		-0.06 (0.07)	-0.11 (0.09)	-0.00 (0.09)
<b>Sales</b>	0.19** (0.10)	0.19** (0.10)	0.18* (0.10)	0.54* (0.29)
<b>Assets</b>	0.38*** (0.08)	0.38*** (0.08)	0.37*** (0.08)	0.15 (0.31)
<b>R&amp;D</b>	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-6.75** (3.43)
<b>R&amp;D_missing</b>	-0.07 (0.09)	-0.07 (0.09)	-0.08 (0.11)	-0.00 (0.10)
<b>Capex</b>	0.43 (0.53)	0.44 (0.53)	0.38 (0.53)	1.51 (1.90)
<b>Sigma</b>	-0.01 (0.25)	-0.01 (0.25)	-0.03 (0.24)	0.25 (1.33)
<b>Sigma_missing</b>	-0.20 (0.14)	-0.20 (0.14)	-0.21 (0.17)	-0.05 (0.20)
<b>N</b>	5014	5014	4074	940
<b>Adjusted R-squared</b>	0.93	0.92	0.9	0.54

**Table XI: Wage and Industry-adjusted Q Changes following ESOP Initiations—Interactive Effects of Cash Constraints and Business Combination Statutes (BCS).**

The dependent variable in columns 1-3 is log wages per employee. The dependent variable in columns 4-6 is industry-adjusted Q, winsorized at 1%. The set of observations includes a sample of ESOP firms and a sample of matched control firms, as described in the text. Columns 1 and 4 include all observations. Columns 2, 3, 5 and 6 include observations at numerous-employee firms. Control variables are included by not reported to conserve space.

	1	2	3	4	5	6
<b>Firm employment sample</b>	All	Numerous	Numerous	All	Numerous	Numerous
<b>ESOP</b>	0.06 (0.04)	0.02 (0.04)	0.03 (0.03)	0.23*** (0.08)	0.12 (0.15)	0.03 (0.12)
<b>ESOPg5</b>	-0.12** (0.06)	0.02 (0.05)		-0.14 (0.09)	0.01 (0.17)	
<b>CashConst_y0</b>	-0.00* (0.00)			0.00 (0.00)		
<b>CashConst_y0 *ESOPg5</b>	-0.03*** (0.01)			0.01* (0.00)		
<b>BCS_Blk</b>		-0.00 (0.02)	-0.00 (0.03)		0.03 (0.10)	0.04 (0.12)
<b>BCS_Board</b>		0.05** (0.02)	0.05** (0.02)		0.10 (0.08)	0.05 (0.06)
<b>Maxesop</b>			-0.04 (0.10)			0.01** (0.00)
<b>BCS_Blk *ESOP</b>			-0.02 (0.05)			0.08 (0.19)
<b>BCS_Blk *Maxesop</b>			0.20* (0.12)			-0.01 (0.00)
<b>N</b>	1045138	532922	532922	5014	940	940
<b>Adjusted R<sup>2</sup></b>	0.74	0.77	0.77	0.56	0.58	0.59

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# Conclusion

- ESOPs can lead to productivity increases, but it depends on the size of the ESOP and employment size of the firm.
  - ESOPs at not-so-numerous employee firms are associated with greater productivity gains
    - Incentivizing employees with share price is susceptible to free-rider problems.
  - Small ESOPs are associated with greater productivity gains because this sample is less likely to be confounded by non-incentive motives.
    - Evidence for cash conservation motivation
    - Evidence for worker-management alliance motivation
  - Productivity gains following small ESOPs adopted by not-so-numerous employee firms are shared by employees and shareholders according to their relative bargaining power.
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