

TABLE 1: Variable Definitions

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Variable	Definition
Broad-based stock ownership > 50%	Firms where fifty percent or greater of non-management employees have been granted the right to purchase shares after a required vesting period (dummy variable)
Ln (Employment)	Natural logarithm of total company employment (continuous)
Ln (Sales)	Natural logarithm of total company sales, adjusted for inflation with GDP deflator (continuous)
Ln (Capital Intensity)	Total property, plant, and equipment divided by total employment, with book values adjusted to current market value using GDP deflator and estimate of age of capital stock (continuous)
Ln (Productivity)	Natural logarithm of output per worker (total sales adjusted for inventory changes and inflation divided by the number of employees) (continuous)
Return on assets	$\frac{[(\text{Income minus adjusted depreciation}) \times 100]}{(\text{market value of capital stock} + \text{current assets} - \text{current assets} - \text{current liabilities})}$ (continuous)
Tobin's q	$\frac{(\text{Market value} + \text{preferred stock} + \text{long term debt})}{(\text{capital stock} + \text{current assets} - \text{current liabilities})}$ (continuous)
Total shareholder return	$\frac{(\text{Stock price} + \text{adjusted dividend})[t]}{\text{stock price}[t-1]}$ (adjusted for stock splits)(continuous)
Ln(labor costs per employee)	Natural logarithm of total labor expenses divided by number of employees
Industry controls	2-digit industry codes (dummy variables)

TABLE 2: Descriptive Statistics, 1997 levels

	Full set of companies, 1997				Paired differences, 1997 [^] (mean of SO minus non-SO paired values)	
	All non-SO cos. (1)	Stock option cos. (2)	All surveyed stock option cos. (3)	Surveyed SO cos. w > 50% (4)	All paired cos. (5)	Paired cos w > 50% (6)
Sample size	7165	490	105	73	490	73
Sales (000,000's)	1151.26 (5716.137)	3562.746 (8929.085)***	2769.606 (10474.95)***	2731.662 (11960.170)**	784.19 (4674.435)***	879.592 (4675.732)
Employees (000's)	5.654 (27.916)	14.451 (33.497)***	11.888 (37.701)**	10.053 (38.186)	-0.364 (16.068)	-1.641 (13.345)
Capital Intensity (total assets/ee)(000's)	264.338 (2800.588)	110.557 (304.687)	161.843 (448.753)	156.061 (436.980)	-12.717 (699.928)	-189.801 (1717.53)
Ln (Sales)	4.532 (2.427)	6.23 (2.196)***	5.359 (2.390)***	4.959 (2.521)	0.361 (0.902)***	0.074 (1.104)
Ln (Employees)	-0.598 (2.253)	0.868 (2.012)***	0.171 (2.120)***	-0.261 (2.117)	0.001 (0.187)	-0.012 (0.622)
Ln (Capital Intensity)	3.625 (1.577)	3.769 (1.612)*	3.811 (1.306)	3.912 (1.256)	0.122 (1.252)**	0.025 -1.435
Industry						
Agriculture	0.35 %	0.48 %	1.12 %	0.25 %	0.26 %	0.28 %
Mining/construction	5.56 %	0.97 %	2.33 %	0.79 %	1.04 %	0.84 %
Manufacturing	47.87 %	57.39 %	60.24 %	57.9 %	58.66 %	58.94 %
Communications	9.81 %	8.47 %	8.01 %	8.42 %	7.23 %	7.54 %
Wholesale	4.94 %	2.9 %	0.56 %	3.16 %	3.1 %	3.35 %
Retail	8.52 %	4.6 %	6.98 %	3.68 %	4.91 %	3.91 %
Finance, real estate	4.84 %	1.69 %	7.63 %	1.32 %	1.3 %	0.82 %
Service	18.12 %	23.49 %	13.13 %	24.47 %	23.51 %	24.3 %

Notes: Standard deviations in parentheses.

* Significantly different from all non-SO companies (cols. 2-4) or from zero (cols. 5-6) at $p < .10$ ** $p < .05$ *** $p < .01$

[^] The actual number of companies is close to three times larger than the number of paired differences. The non-SO company's value was subtracted from the SO company's value to create a single paired difference value. Where there was more than one paired company, the values were averaged before being subtracted from the SO value.

TABLE 3: Simple performance comparisons

	Full set of companies, 1997				Paired data, 1997 [^] (mean of SO minus non-SO paired values)	
	All non-SO cos. (1)	Stock option cos. (2)	All surveyed stock option cos. (3)	Surveyed SO cos. w > 50% (4)	All paired cos. (5)	Paired cos w > 50% (6)
Levels in 1997						
Productivity--ln(sales/ee)	5.07 (0.01)	5.38 (0.03)***	5.23 (0.09)***	5.27 (0.11)***	0.37 (0.36)***	0.21 (0.13)*
ROA	10.02 (0.30)	16.5 (1.06)***	8.08 (2.92)***	0.63 (4.58)	0.44 (2.37)	-7.57 (5.37)
Tobin's Q	2.44 (0.03)	3.67 (0.13)***	3.21 (0.21)***	3.35 (0.28)***	0.51 (0.16)***	-0.28 (0.38)
TSR	6.72 (0.67)	12.11 (2.39)***	9.51 (5.19)*	-0.09 (6.67)	-7.18 (2.97)**	-12.28 (7.59)
Sample size	6618	471	104	67	462	67
Average annual change 1992 - 97						
Productivity	0.03 (0.00)	0.04 (0.003)***	0.04 (0.01)***	0.04 (0.01)***	0.02 (0.01)***	0.03 (0.018)
ROA	-0.13 (0.06)	0.85 (0.23)***	0.58 (0.62)	0.45 (1.08)	0.20 (0.35)	-0.06 (1.59)
Tobin's Q	0.01 (0.01)	0.10 (0.03)***	0.02 (0.07)	-0.07 (0.12)	-1.78 (0.07)***	-2.28 (0.26)***
TSR	-1.55 (0.40)	-3.55 (1.52)**	-4.18 (3.61)	-7.94 (5.53)	-6.16 (1.69)***	-9.80 (5.83)*
Ln (Sales)	0.12 (0.001)	0.18 (0.01)***	0.19 (0.01)***	0.24 (0.02)***	0.06 (0.01)***	0.12 (0.02)***
Ln (Employment)	0.05 (0.001)	0.11 (0.00)***	0.12 (0.01)***	0.16 (0.01)***	0.04 (0.01)***	0.07 (0.02)***
Sample size	34183	2438	504	316	2328	299

Notes: Standard errors in parentheses.

* Significantly different from all non-SO companies (cols. 2-4) or from zero (cols. 5-6) at $p < .10$ ** $p < .05$ *** $p < .01$

Figures represent robust means that minimize influence of outliers.

[^] The actual number of companies is close to three times larger than the number of paired differences. The non-SO company's value was subtracted from the SO company's value to create a single paired difference value. Where there was more than one paired company, the values were averaged before being subtracted from the SO value.

TABLE 4: Total Shareholder Returns, 1992-1997

Year	All Non-SO cos.		Compustat 500		All Stock Option		Stock Option > 50%		Stock Option < 50%	
	(1) Mean	Median	(2) Mean	Median	(3) Mean	Median	(4) Mean	Median	(5) Mean	Median
All cos. reporting in given year:										
1992	33.7%	10.1%	17.0%	10.3%	29.7%	15.3%	9.7%	-4.7%	25.1%	7.7%
1993	33.0%	11.7%	47.1%	15.6%	31.9%	20.0%	32.6%	29.8%	4.3%	6.1%
1994	-4.5%	-9.3%	2.5%	1.7%	10.0% ***	5.0%	16.1% *	-0.7%	4.6%	9.8%
1995	31.8%	16.3%	33.9%	30.2%	51.4% ***	38.3%	72.9% ***	44.4%	42.7%	45.6%
1996	35.4%	8.7%	24.6%	20.9%	19.9%	14.2%	9.0%	5.9%	23.3%	13.1%
1997	31.7%	9.7%	28.8%	27.8%	16.4%	13.3%	5.9%	-7.1%	25.5%	21.9%
Cos. reporting in every year:										
1992	34.9%	11.1%	17.2%	10.3%	29.7%	15.3%	9.7%	-4.7%	25.1%	6.3%
1993	35.8%	12.8%	47.7%	15.1%	32.1%	19.6%	34.1%	25.7%	4.2%	5.8%
1994	-1.7%	-7.1%	3.0%	1.8%	10.9% ***	5.8%	23.4% *	0.1%	4.4%	7.2%
1995	33.4%	19.3%	34.0%	30.9%	45.7% **	37.2%	67.2% **	57.1%	46.3%	44.3%
1996	23.2%	11.6%	24.0%	20.5%	20.2%	14.2%	11.7%	11.9%	24.9%	14.8%
1997	46.3%	17.4%	29.3%	29.3%	21.3%	20.9%	9.2%	-5.5%	30.5%	30.8%
Avg. individual company:										
cumulative return [^]	193.1%	81.8%	275.0%	151.7%	303.2% ***	163.9%	232.5%	108.9%	318.9%	128.0%
yearly return [^]	19.6%	10.5%	24.6%	16.6%	26.2% ***	24.0%	22.2%	13.1%	27.0%	14.7%

* Significantly different from non-SO companies at p<.10 ** p<.05 *** p<.01

[^] Average cumulative and yearly returns are calculated just for those companies that reported data in each year from 1992 to 1997

These represent the average of individual company returns, not the portfolio returns.

Note: These results give equal weight to each company's data, in contrast to the regression results in Tables 3-6 which use robust regression to minimize the influence of outlying values.

TABLE 5: Stock Option Plans and 1997 Performance Levels

Dependent variables: Sample:	Ln(output/employee)		Total Shareholder Return		Tobin's Q		Return on Assets	
	Full set (1)	Paired (2)	Full set (3)	Paired (4)	Full set (5)	Paired (6)	Full set (7)	Paired (8)
Independent variables								
Stock option co.	0.277 *** (8.97)	0.306 *** (8.61)	-3.44 (1.31)	-6.43 ** (1.96)	0.61 *** (6.33)	0.62 *** (3.75)	1.14 (0.99)	0.87 (0.61)
Paired co.	0.002 (0.07)		3.33 (1.46)		0.01 (0.64)		1.41 (1.46)	
Ln(total employment)	-0.316 *** (41.39)	-0.603 *** (3.20)	5.81 *** (8.52)	-12.75 (0.75)	0.36 *** (15.15)	1.44 * (1.67)	5.52 *** (19.74)	8.39 (1.13)
Ln(net assets)	0.30 *** (46.13)	0.261 *** (9.12)	0.62 (1.07)	-2.05 (0.78)	-0.29 *** (14.21)	-0.38 *** (2.72)	-1.15 *** (4.87)	-1.98 (1.66)
2-digit industry dummies	Yes		Yes		Yes		Yes	
n	6630	444	5874	418	6379	434	6716	443
50%+ coverage of non-mgt.	0.22 *** (2.96)	0.213 ** (2.35)	-11.92 * (1.84)	-11.16 (1.29)	0.53 ** (2.32)	-0.163 (0.20)	-6.6 ** (2.40)	-6.2 (1.73)
<50% coverage of non-mgt.	0.118 (0.17)	0.061 (0.48)	7.68 (.895)	10.72 (0.91)	0.20 (0.63)	0.213 (0.36)	0.71 (0.19)	-0.18 (0.01)
Unknown coverage of non-mgt.	0.301 *** (8.71)	0.344 ** (8.53)	-3.26 (1.12)	-7.56 ** (2.06)	0.68 *** (6.33)	0.824 *** (4.37)	2.49 ** (1.93)	1.91 (1.20)
Paired co.	0.003 (0.11)		3.35 (1.47)		0.01 (0.09)		1.47 (1.52)	
Ln(total employment)	-0.316 *** (41.36)	-0.635 *** (3.35)	5.76 *** (8.45)	-9.14 (0.53)	0.37 *** (15.16)	1.24 (1.40)	5.5 *** (19.66)	7.05 (0.94)
Ln(net assets)	0.297 *** (46.10)	0.262 *** (9.13)	0.67 (1.15)	-1.68 (0.64)	-0.29 *** (14.26)	-0.37 *** (2.67)	-1.15 *** (4.88)	-1.76 (1.47)
2-digit industry dummies	Yes		Yes		Yes		Yes	
n	6630	444	5874	418	6379	434	6716	443

Based on robust regressions that minimize influence of outliers.

T-statistics in parentheses. * p<.10 **p<.05 ***p<.01

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TABLE 6: Stock Options Plans and Pre-post Change in Performance Levels

Independent variables	Dependent variables: Ln(output/employee)		Total Shareholder Return		Tobin's Q		Return on Assets		
	Sample:	Full (1)	Paired (2)	Full (3)	Paired (4)	Full (5)	Paired (6)	Full (7)	Paired (8)
All companies w/data in both periods [^]									
Stock option companies									
1 1985-87		0.093 *** (4.35)	0.054 * (1.81)	1.003 (0.53)	0.742 (0.30)	0.312 ** (6.80)	0.269 *** (3.28)	0.540 (0.87)	0.354 (0.41)
2 1995-97		0.294 *** (13.56)	0.222 *** (7.33)	3.506 * (1.82)	4.846 ** (1.96)	0.659 ** (14.18)	0.299 *** (3.59)	4.319 ** (6.88)	2.40 *** (2.75)
Paired companies									
3 1985-87		-0.005 (0.30)		2.47 (1.56)		-0.037 (0.98)		0.467 (0.94)	
4 1995-97		0.048 *** (2.76)		4.15 *** (2.62)		0.094 ** (2.47)		1.723 ** (3.43)	
Change from 1985-87 to 1995-97									
5 Stock option co.		0.201 *** (6.82)		2.503 (0.97)		0.347 ** (5.53)		3.779 ** (4.43)	
6 Paired co.		0.053 ** (2.24)		1.680 (0.78)		0.131 ** (2.54)		1.256 * (1.84)	
7 Difference		0.148 *** (4.22)	0.168 *** (3.96)	0.823 (0.26)	4.104 (1.19)	0.216 ** (2.85)	0.030 (0.26)	2.523 ** (2.48)	2.048 * (1.68)
Total observations		12870	768	9942	636	11088	630	13032	774
Number of stock option companies represented		165	128	147	106	153	105	166	129
Number of paired companies represented		1980	128	1510	106	1695	105	2006	129
Within-company change following adoption of non-management stock option plans ^{^^}									
8 Pre-adoption		0.063 * (1.75)	-0.082 (1.53)	1.978 (0.58)	-1.619 (0.29)	0.458 (2.94)	0.378 * (1.69)	3.604 ** (2.26)	1.912 (0.96)
9 Post-adoption		0.14 *** (3.85)	0.009 (0.14)	-0.704 (0.16)	-0.517 (0.07)	0.782 (3.00)	0.359 (1.16)	4.611 * (1.82)	2.483 (0.79)
10 Difference		0.077 ** (2.53)	0.091 * (1.65)	-2.682 (0.55)	1.10 (0.14)	0.325 (1.91)	-0.019 (0.06)	1.007 (0.60)	0.57 (0.20)
Total observations		238	186	207	154	216	161	238	188
Number of stock option companies represented		16	13	15	12	16	12	16	13
Number of paired companies represented			13		12		12		13

* p<.10 ** p<.05 *** p<.01

[^] Based on robust regressions run on all companies with complete data for the 1985-87 and 1995-97 periods. Controls include ln(employment) and ln(assets) interacted with each period, plus year dummies and 2-digit industry dummies.

^{^^} Based on residuals from robust regressions of performance variables on ln(employment), ln(net assets), and 2-digit industry variables run separately for each year. Reported results are based on stock option companies with at least two pre-adoption observations and two post-adoption observations. Observations were weighted using robust regression weights and number of observations per company so that the weighted number of pre-adoption observations equals the weighted number of post-adoption observations for each company, to provide a balanced pre/post comparison.

TABLE 7: Stock Options Plans and Pre-post Annual Growth in Performance

Independent variables	Dependent variables: Ln(output/employee)		Total Shareholder Return		Tobin's Q		Return on Assets	
	Sample: Full (1)	Paired (2)	Full (3)	Paired (4)	Full (5)	Paired (6)	Full (7)	Paired (8)
All companies w/data in both periods [^]								
Stock option co.								
1 1985-87	0.022 ** (3.18)	0.017 ** (2.12)	4.132 * (1.67)	3.59 (1.14)	0.075 ** (3.52)	-0.483 *** (5.38)	0.583 * (1.82)	-0.087 (0.18)
2 1995-97	0.01 (1.46)	0.022 *** (2.70)	-0.208 (0.08)	4.97 (1.58)	0.173 ** (8.14)	-1.672 *** (18.66)	0.799 ** (2.49)	0.52 (1.07)
Paired co.								
3 1985-87	0.004 (0.77)		0.435 (0.21)		0.014 (0.75)		-0.034 (0.13)	
4 1995-97	0.001 (0.25)		-3.348 (1.57)		0.072 ** (4.01)		0.419 (1.60)	
Change from 1985-87 to 1995-97								
5 Stock option co.	-0.012 (1.24)		-4.34 (1.28)		0.098 ** (3.38)		0.216 (0.49)	
6 Paired co.	-0.003 (0.37)		-3.783 (1.31)		0.058 ** (2.39)		0.453 (1.26)	
7 Difference	-0.009 (0.77)	0.005 (0.41)	-0.557 (0.14)	1.38 (0.31)	0.04 (1.11)	-1.189 *** (9.34)	-0.237 (0.44)	0.60 (0.88)
Total observations	11478	696	9666	570	9648	588	11532	696
Number of stock option companies represented	152	116	144	95	144	98	152	116
Number of paired companies represented	1761	116	1467	95	1464	98	1770	116
Within-company change following adoption of non-management stock option plans ^{^^}								
8 Pre-adoption	0.029 *** (2.71)	0.029 (2.06)	2.413 (0.49)	1.276 (0.23)	0.028 (0.52)	-0.937 (6.55) ***	0.381 (0.66)	-0.953 (1.26)
9 Post-adoption	-0.023 * (1.88)	-0.014 (0.78)	-3.456 (0.54)	-5.808 (0.74)	0.174 (1.29)	-2.288 (5.84) ***	0.638 (0.50)	-1.612 (0.77)
10 Difference	-0.052 *** (3.25)	-0.043 ** (1.97)	-5.870 (0.74)	-7.084 (0.77)	0.148 (1.24)	-1.350 *** (4.00)	0.257 (0.21)	-0.659 (0.34)
Total observations	210	174	192	145	187	147	209	171
Number of stock option companies represented	15	13	15	12	15	12	15	13
Number of control companies represented		13		12		12		13

* p<.10 ** p<.05 *** p<.01

[^] Based on robust regressions run on all companies with complete data for the 1985-87 and 1995-97 periods. Controls include ln(employment) and ln(assets interacted with each period, plus year dummies and 2-digit industry dummies.^{^^} Based on residuals from robust regressions of performance variables on ln(employment), ln(net assets), and 2-digit industry variables run separately for each year. Reported results are based on stock option companies with at least two pre-adoption observations and two post-adoption observations. Observations were weighted using robust regression weights and number of observations per company so that the weighted number of pre-adoption observations equals the weighted number of post-adoption observations for each company, to provide a balanced pre/post comparison.

TABLE 8: Compensation Levels and Growth

Dependent variable: ln(labor costs per employee)

Sample:	Compensation levels, 1997	Compensation levels, 1985-87 and 1995-97	Annual growth, 1985-87 and 1995-97	Descriptive Statistics for ln(labor costs) Levels and Growth	
Independent variables	All cos. (1)	All cos. w/complete data for 85-87 and 95-97 (2)	All cos. w/complete data for 85-87 and 95-97 (3)	All cos. w/complete data for 85-87-95-97 (4)	
Stock option co.					
1997	0.201 *** (2.57)			3.90	
1985-87		0.078 * (1.73)	-0.017 (1.28)		3.45
1995-97		0.077 * (1.72)	-0.01 (0.75)		3.95
Paired co.					
1997	0.123 ** (2.40)			3.69	
1985-87		-0.002 (0.08)	-0.006 (0.69)		3.42
1995-97		0.013 (0.44)	-0.015 (1.60)		3.92
Difference between 1985-87 and 1995-97					
Stock option co.		-0.001 (0.00)	0.007 (0.40)		
Paired co.		0.015 (0.40)	-0.009 (0.70)		
Difference	0.078 (0.90)	-0.016 (0.24)	0.016 (0.77)		
Total observations	697	1236	1044	581	
# of stock option companies represented		13	12	31	39
# of paired companies represented		193	162	85	99
50%+ coverage of non-mgt.	0.172 (0.87)				
<50% coverage of non-mgt.	0.260 (1.31)				
Unknown coverage of non-mgt.	0.195 ** (2.10)				
Paired cos.	0.124 ** (2.40)				
n	696				
# of stock option companies represented					

*p<.10 **p<.05 ***p<.01

^ Based on robust regression run on all companies with complete data for 1985-87 and 1995-97 periods.

Controls include ln(employment) and ln(assets) interacted with each period, plus year dummies and 2-digit industry dummies.