Supplementary Material to:
"Alternative Work Arrangements and Cost of Equity: Evidence from a Quasi-Natural Experiment"

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A1. Wage Rigidity of Regular and Nonregular Workers by an Alternative Definition of Real Wages in Section II.B.1.

Table A1 reports the (time-series) means and standard deviations of the annual growth rates of the average monthly real wages per employee, by an alternative definition of real wages, for regular and nonregular workers for 12 broad industries during the sample period (2006-2018). Real wages in Table A1 include the average monthly overtime pay and the average amount of annual bonus divided by twelve, both in real terms, per employee, in addition to the average monthly real wages in Table 1. The last row reports the Levene's robust test statistic for the equality of the variances of real wage growth between regular and nonregular workers.

A2. Summary Statistics of Selected Firm Characteristics in Section III.B.2.

Panel A in Table A2 shows the summary statistics of my primary measure of the cost of equity (i.e., GLS implied cost of equity in %) and selected firm-level characteristics of all sample firms. Panels B and C present the same statistics separately for the treatment group (i.e., manufacturing firms) and the control group (i.e., nonmanufacturing firms).

A3. Sample Means of Covariates Matched by an Entropy-Balancing Method in Section IV.B.

Table A3 presents the sample means of covariates matched by the entropy-balancing method between the treatment group firms (i.e., manufacturing firms) and the control group firms (i.e., nonmanufacturing firms) in 2002.

A4. Robustness Check: GLS Implied Cost of Equity with IBES Consensus Analyst Forecasts

In this section, I conduct a robustness check for my main results on the effects of deregulation on the cost of equity in Table 3. Recall that, due to limited availability of data on analyst forecasts in my sample period in Japan, I used the cross-sectional earnings forecast model by Hou, Van Dijk, and Zhang (2012) when I computed the GLS implied cost of equity by Gebhardt, Lee, and Swaminathan (2001). A natural question is whether I could obtain similar results when I use analyst forecasts for the estimation of the GLS implied cost of equity. To address this question, I collect consensus analyst forecasts from the IBES for a limited number of my sample firms and compute the GLS implied cost of equity using those forecasts. The computation of the GLS implied cost of equity requires a one-year-ahead, a two-years-ahead, and a three-years-ahead earnings-per-share (EPS) forecast. I require firms to have a one-year-ahead and a two-years-ahead earnings-per-share (EPS) consensus analyst forecast. I also require both of these forecasts to be positive. After this screening, I obtain 4,130 firm-year observations, which is approximately 30% of the whole sample size in Table 3. A three-years-ahead EPS forecast is not always available for those firms and, when it is missing, I use the composite growth rate implicit in a one-year-ahead and a two-years-ahead EPS forecast to estimate a three-years-ahead EPS forecast.[1] I compute the analyst-based GLS implied cost of equity estimates using a firm's closing stock price on June 30 and the latest IBES consensus analyst forecasts as of June 30 in each year.

Table A4 presents the estimation results. The specifications of models 1 through 6 are analogous to those in Table 3 except that the dependent variable in Table A4 is the GLS implied cost of equity estimated with the IBES consensus analyst forecasts. In all specifications, the

[1] The IBES does not report an estimate of the long-term growth rate (*Ltg*) for Japanese firms, so that I cannot use this information to infer a three-years-ahead EPS forecast.

coefficients of DEREGULATION are significantly negative, consistent with the estimation results with the GLS implied cost of equity with the cross-sectional forecasting model by Hou et al. (2012). Overall, the difference in forecasting methods of future earnings does not *qualitatively* affect my main results in Table 3.

However, in terms of economic magnitudes, the coefficients of DEREGULATION in Table A4 are generally larger in absolute terms than those in Table 3. For example, the coefficients of DEREGULATION in model 5 with a full set of control variables in Table 3 and in Table A4 are −1.085 and −2.671, respectively. Then, one might wonder which estimate (i.e., −1.085 vs. −2.671) is more plausible. This is ultimately a question of which forecasting method (i.e., the model-based forecasts in Hou et al. (2012) vs. the IBES consensus analyst forecasts) yields more precise estimates of future earnings, which is still an important question but is beyond the scope of my paper. In the next section, I conduct another robustness check with the Fama-French cost of equity, that does not require future earnings forecasts for its computation.

A5. Robustness Check: Fama-French Cost of Equity

In this section, I check the robustness of my main results using the alternative measure of cost of equity. I use the Fama-French (1993) three-factor model to estimate the cost of equity (hereafter, FFCOE) and repeat the main analysis. Differently from the GLS implied cost of equity, the computation of FFCOE does not require the firms' future earnings forecasts. Another potential advantage of FFCOE over the GLS implied cost of equity is that FFCOE is explicitly based on the firm-level measures of systematic risk (i.e., factor loadings), making it easier to interpret estimation results from the risk-based perspective, as the labor-induced operating

leverage would supposedly affect the firms' cost of equity through its effects on the firms' exposure to systematic risk.

However, a caveat of using FFCOE in Japanese markets is that approximately 10-15 % of the firm-year values of FFCOE in my sample period are negative, though this does not necessarily cause a problem as I am estimating the within-firm changes in the cost of equity around the deregulation. I keep those negative values for my regressions, but unreported results when I replace the negative values of FFCOE with zero are qualitatively similar. Another potential issue of the cost of equity based on an asset pricing model is the use of past realized returns to estimate factor loadings, which is essentially backward-looking. The predicted returns from estimated factor loadings using past realized returns are known to be notoriously imprecise. As the amendment to the 'Worker Dispatching Act' was approved in the parliament in June 2003, and this news was incorporated into stock prices at that time, I need to use a measure of the cost of equity that reflects expectations about the potential effects of the deregulation on the flexibility in labor costs. Thus, similar in spirit to Chen, Kacperczyk, and Ortiz-Molina (2011), I compute a forward-looking measure of FFCOE, for which I estimate factor loadings using 24 monthly observations including a current and a next calendar year for each firm-year. I then use the estimated factor loadings and long-run historical average premiums of factor returns during 1977-2011 to compute FFCOE for each firm-year.[2]

Table A5 presents the regression results of FFCOE on DEREGULATION, the indicator variable which is equal to one for manufacturing firms on and after year 2003 and zero otherwise.

[2] I obtain the historical factor returns and their average premiums in Japanese stock markets from a local data vendor, Financial Data Solutions Corporation.

Models 1 through 6 are analogous to those in Table 3.[3] Consistent with the main results with the GLS implied cost of equity in Table 3, the coefficients of DEREGULATION are negative and significant in all models, indicating that my main findings are robust to the Fama-French cost of equity. In terms of economic magnitudes, the coefficients of DEREGULATION in models 5 and 6 are far greater in absolute terms than those with the GLS implied cost of equity, which potentially originates from a wide range of FFCOE given that 10-15 % of FFCOE estimates take negative values. Nevertheless, the results with the Fama-French cost of equity are qualitatively consistent with the risk-based explanation that the cost of equity decreased in manufacturing firms due to the expected decrease in the labor-induced operating leverage and the firms' exposure to systematic risk after the deregulation.

A6. The Effects of the Deregulation on the Labor Share

In this section, I examine the effects of the deregulation on the labor share, or the amount of labor expenses relative to value added, in manufacturing firms (Donangelo, Gourio, Kehrig, and Palacios (2019), Favilukis and Lin (2016a), (2016b), Favilukis, Lin, and Zhao (2020)). Conceptually, it is not a priori clear how the deregulation should affect the level of the firm-level labor share in manufacturing firms. On one hand, if an increase in temporary agency workers leads to an increase in labor expenses without yielding a sufficient increase in output and sales, the firm-level labor share may go up. On the other hand, if the increase in those workers causes a sufficiently large increase in output and sales which outweighs an increase in labor expenses, the firm-level labor share may go down.

[3] I drop IVOL, a firm's idiosyncratic volatility estimated from the Fama-French (1993) three factor model, from a list of the firm-level controls in this section as the dependent variable is the Fama-French cost of equity.

To examine the effects of the deregulation on the firm-level labor share, I estimate the following equation using all public firms except those in the financial and utilities industries during the period of 1998–2008 in a DID framework:

$$\text{(IA-1)} \qquad \text{Labor\_Share}_{i,j,t} = \alpha + \beta\,(\text{AFTER\_2004}_{t} \times \text{M\_DUMMY}_{j,t}) + \gamma\,\text{CONTROLS}_{i,j,t-1} + \text{FIRM\_FE} + \text{YEAR\_FE} + \varepsilon_{i,j,t}$$

where i denotes a firm, j denotes a four-digit JSIC industry, and t denotes a year. The dependent variable is LABOR_SHARE, defined as the firm-level labor expenses divided by the sum of labor expenses and operating income (before interest and taxes).[4] AFTER_2004 is an indicator variable that is equal to one for observations in and after 2004, because the amendment to the Act was approved in the parliament on June 2003 and went into effect on March 2004. M_DUMMY is an indicator variable that is equal to one if a firm primarily operates in a four-digit JSIC industry in the manufacturing sector. ε is an error term. The coefficient β of the interaction term AFTER_2004×M_DUMMY measures the treatment effect of the deregulation on the labor share on manufacturing firms relative to nonmanufacturing firms. I include firm- and industry-level controls as well as firm and year fixed effects. Note that AFTER_2004 and M_DUMMY will be absorbed by these fixed effects. I also include different time trends for manufacturing firms and nonmanufacturing firms to control for a potential difference in the time trends in the labor share between those firms.

Table A6 presents the estimation results. The coefficients of AFTER_2004×M_DUMMY are significantly negative in both models, indicating that the firm-level labor share decreased in manufacturing firms, relative to nonmanufacturing firms, after the deregulation. The results are consistent with the interpretation that an increase in temporary agency workers after the

[4] I require operating income to be non-negative.

deregulation caused an expansion in sales and output that outweighs an increase in labor expenses in manufacturing firms. This finding is in line with the theoretical mechanism in Favilukis and Lin (2016a), (2016b), and Favilukis et al. (2020) that the labor share will go down when the output goes up, as long as the labor expenses are sticky and not perfectly variable with the output.

A7. The Effects of the Deregulation on Firm Value

In the last section, I examine the effects of the deregulation on firm value. The amendment to the 'Worker Dispatching Act' in 2003 induced manufacturing firm to increase temporary agency workers, which increased the flexibility in labor costs and decreased the labor-induced operating leverage and the cost of capital. Then, one would naturally expect an increase in the firm value of manufacturing firms after the deregulation due to a decrease in the cost of capital, or discount rate. I examine whether firm value increased in manufacturing firms, relative to nonmanufacturing firms, after the deregulation in 2003.

I estimate a DID model which is similar to the one I estimated for the cost of equity. I use Tobin's Q as the measure of firm value and estimate the within-firm change in firm value in manufacturing firms, relative to nonmanufacturing firms, around the deregulation in 2003. I define Tobin's Q as the stock price multiplied by the number of outstanding shares plus the total (short- and long-term) debt, divided by the total assets. The stock price is a closing price on June 30 every year, to be consistent with the computation of the GLS implied cost of equity in my main analysis. The variable of interest is DEREGULATION, which is equal to one for manufacturing firms on and after year 2003 and is zero otherwise.

Table A7 reports the estimation results. All models include firm and year fixed effects, as well as different time trends for manufacturing and nonmanufacturing firms. Standard errors are clustered at the four-digit JSIC industry level. In model 1, consistent with the conjecture, the coefficient of DEREGULATION is significantly positive, indicating that the firm value increased in manufacturing firms after the deregulation in 2003. In model 2, I include firm-level controls such as firm size, profitability, sales growth, book leverage, and asset tangibility. In models 3 through 5, in addition to the firm-level controls, I include the same set of the industry-level control variables considered in my main analysis on the cost of equity (i.e., IND_LOG_SALES, IND_ROA, M_NM_RETURN, and M_JPY_USD). The coefficients of DEREGULATION in these models are consistently positive, in line with my findings on a decrease in the cost of capital, which led to an increase in firm value through a lower discount rate after the deregulation.

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Table A1: Real Wage Rigidity of Regular and Nonregular Workers by Industry

Table A1 reports the (time-series) means and standard deviations of the annual growth rates of the average monthly real wages, which includes the average monthly overtime pay and the average annual bonus divided by twelve, per employee for regular and nonregular workers for 12 broad industries during 2006-2018. The payroll data are from the 'Basic Survey on Wage Structure' published by the Ministry of Health, Labor, and Welfare (MHLW).

Real wage growth ($=W_t/W_{t-1}$) (incl. overtime pay and bonus)	Regular workers			Nonregular workers		
	Mean	St.dev	N	Mean	St.dev	N
Real estate	0.995	0.033	13	0.994	0.039	13
Medical welfare	0.996	0.017	13	1.004	0.020	13
Wholesale/Retail	0.999	0.019	13	1.007	0.029	13
Restaurants/Lodging	1.000	0.012	13	1.005	0.011	13
Construction	1.005	0.028	13	1.004	0.036	13
IT	0.996	0.050	13	1.011	0.058	13
Education	0.991	0.026	13	1.004	0.032	13
Manufacturing	0.998	0.023	13	1.008	0.022	13
Transportation	1.001	0.025	13	1.003	0.027	13
Finance/Insurance	0.997	0.037	13	1.000	0.083	13
Mining	1.006	0.038	13	1.039	0.073	13
Utilities	0.992	0.033	13	1.000	0.073	13
Total	0.998	0.029	156	1.007	0.047	156
Levene's test statistic (for equality of variances) = 12.260 (p-value=0.000)						

Table A2: Summary Statistics

Panel A in Table A2 presents the summary statistics of selected firm characteristics of all sample firms. The sample consists of all public firms (except financials and utilities) over the period 2000-2006. The primary measures of the cost of equity is GLS, the implied cost of equity of Gebhardt, Lee, and Swaminathan (2001), estimated with the earnings forecasting model in Hou et al. (2012). Firm characteristics include (1) IVOL, a firm's idiosyncratic volatility estimated from the Fama-French (1993) three factor model using monthly returns in last two years, (2) ln(TA), the natural log of total assets, (3) BE_ME, the book-to-market equity ratio, (4) SGR, the growth rate of sales from a previous year, (5) DEBT_TA, the total debt (i.e., short-term + long-term debt) over total assets, (6) FA_TA, the net property, plant, and equipment over total assets, (7) ROA, the net income over total assets, and (8) ln(SALES), the natural log of sales. Panel A includes all samples firms. Panel B includes only manufacturing firms (i.e., treatment group) while Panel C includes only nonmanufacturing firms (i.e., control group).

Panel A

All firms	Mean	Median	St.dev	p25	p75	N
GLS_t (%)	5.580384	5.292469	2.46037	3.836559	6.992289	13112
$IVOL_{t-1}$	.0852076	.0740382	.0474668	.0530356	.1043379	13112
$ln(TA)_{t-1}$	24.7703	24.63253	1.287783	23.87318	25.55297	13112
BE_ME_{t-1}	1.327167	1.107919	1.087958	.6806786	1.707082	13112
SGR_{t-1}	.0295804	.0128521	.152777	-.0448558	.0776644	13112
$DEBT\_TA_{t-1}$	.2427987	.2202265	.1895069	.0756532	.374421	13112
FA_TA_{t-1}	.3214081	.3097091	.166908	.2004443	.4222533	13112
ROA_{t-1}	.0136146	.014545	.0400327	.0027445	.0310566	13112
$ln(SALES)_{t-1}$	24.72456	24.61957	1.315661	23.80962	25.57638	13112

Panel B

Manufacturing firms (i.e., treatment group)	Mean	Median	St.dev	p25	p75	N
GLS_t (%)	5.07605	4.812985	2.151591	3.574908	6.25511	7533
$IVOL_{t-1}$	.0838531	.0740561	.0439756	.0539247	.1022514	7533
$ln(TA)_{t-1}$	24.83253	24.64399	1.269169	23.89844	25.64043	7533
BE_ME_{t-1}	1.322456	1.104292	1.080155	.7139554	1.667909	7533
SGR_{t-1}	.0202719	.0110334	.1403531	-.0496344	.0715537	7533
$DEBT\_TA_{t-1}$	.2375078	.2229696	.1748184	.0848142	.3628141	7533
FA_TA_{t-1}	.327968	.3232141	.1258098	.2341816	.4110304	7533
ROA_{t-1}	.0123153	.0144019	.0397195	.0017211	.030349	7533
$ln(SALES)_{t-1}$	24.68953	24.53006	1.301733	23.75292	25.52865	7533

Panel C

Nonmanufacturing firms (i.e., control group)	Mean	Median	St.dev	p25	p75	N
GLS_t (%)	6.261356	6.109381	2.677712	4.390849	7.88343	5579
$IVOL_{t-1}$	.0870363	.073973	.0517566	.0520801	.1071202	5579
$ln(TA)_{t-1}$	24.68628	24.6094	1.307922	23.83984	25.46859	5579
BE_ME_{t-1}	1.333528	1.115264	1.098471	.6238511	1.75892	5579
SGR_{t-1}	.0421492	.0158481	.1672948	-.0401764	.087286	5579
$DEBT\_TA_{t-1}$	.2499426	.2139947	.2075004	.0631139	.3972511	5579
FA_TA_{t-1}	.3125506	.272953	.2096928	.1464391	.454318	5579
ROA_{t-1}	.015369	.0147273	.040389	.0036869	.0320165	5579
$ln(SALES)_{t-1}$	24.77185	24.74134	1.332893	23.90776	25.6456	5579

Table A3: Sample Means of Covariates Matched by the Entropy-Balancing Method

Table A3 presents the sample means of covariates matched by the entropy-balancing method between the treatment group firms (i.e., manufacturing firms) and the control group firms (i.e., nonmanufacturing firms) in 2002. See section IV.B. for an overview of the entropy-balancing method. The covariates include (1) IVOL, a firm's idiosyncratic volatility estimated from the Fama-French (1993) three factor model using monthly returns in last two years, (2) ln(TA), the natural log of total assets, (3) BE_ME, the book-to-market equity ratio, (4) SGR, the growth rate of sales from a previous year, (5) DEBT_TA, the total debt (i.e., short-term + long-term debt) over total assets, (6) FA_TA, the net property, plant, and equipment over total assets, (7) ROA, the net income over total assets, and (8) FIRM_AGE, the number of years since a firm's incorporation.

	Manufacturing firms (i.e., treatment group)	*Matched* nonmanufacturing firms (i.e., control group)
	Sample means in 2002	Sample (weighted) means in 2002
IVOL	0.082134	0.082132
ln(TA)	24.78662	24.78669
BE_ME	1.59078	1.590839
SGR	-0.04734	-0.04736
DEBT_TA	0.239956	0.239954
FA_TA	0.336331	0.336334
ROA	0.002184	0.002181
FIRM_AGE	57.42295	57.42576
Observations	1,017	733

Table A4: The Effects of the Deregulation in 2003 on the Cost of Equity Based on the IBES Consensus Analyst Forecasts

Table A4 presents the regression results of the cost of equity on the deregulation in 2003. The sample consists of all listed firms except financials and utilities. The sample period is 2000-2006. The dependent variable is GLS, the implied cost of equity of Gebhardt, Lee, and Swaminathan (2001), estimated with the IBES consensus analyst forecasts. DEREGULATION is an indicator variable which is equal to one for manufacturing firms in and after 2003 and zero otherwise. Firm-level control variables include (1) IVOL, a firm's idiosyncratic volatility estimated from the Fama-French (1993) three factor model using monthly returns in last two years, (2) ln(TA), the natural log of total assets, (3) BE_ME, the book-to-market equity ratio, (4) SGR, the growth rate of sales from a previous year, (5) DEBT_TA, the total debt (i.e., short-term + long-term debt) over total assets, (6) FA_TA, the net property, plant, and equipment over total assets. Industry-level controls are (7) IND_LOG_SALES, the industry-year means of the natural log of sales, (8) IND_ROA, the industry-year means of net income over total assets, (9) M_NM_RETURN, the mean of annual stock returns of manufacturing (nonmanufacturing) firms in each year if a firm operates in a manufacturing (nonmanufacturing) industry, and (10) M_JPY_USD, the annual change in JPY/USD exchange rate for manufacturing firms and zero otherwise. Firm and year fixed effects are included in all models. I also include different time trends for manufacturing and nonmanufacturing firms. Model 6 uses the matched sample by the entropy-balancing method described in section IV.B. Clustered standard errors at the four-digit JSIC industry level are calculated to account for within-industry correlations of error terms. Standard error of each coefficient is reported in parenthesis. Subscripts***, **, * denote significantly different from zero at the 1%, 5% and 10% level, respectively.

Dep.var = GLS (%)	1	2	3	4	5	6
	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample	Matched Sample
$DEREGULATION_t$	-0.690***	-0.675***	-0.687***	-0.648***	-2.671***	-1.905***
	(0.192)	(0.192)	(0.195)	(0.200)	(0.522)	(0.481)
$IVOL_{t-1}$		-3.956***	-3.952***	-3.945***	-3.862***	-4.457***
		(0.912)	(0.911)	(0.911)	(0.908)	(1.039)
$ln(TA)_{t-1}$		0.172	0.147	0.142	0.170	0.681***
		(0.277)	(0.277)	(0.277)	(0.277)	(0.241)
BE_ME_{t-1}		0.857***	0.853***	0.852***	0.859***	0.800***
		(0.086)	(0.088)	(0.088)	(0.088)	(0.111)
SGR_{t-1}		0.073	0.081	0.090	0.015	-0.048
		(0.220)	(0.214)	(0.216)	(0.219)	(0.228)
$DEBT\_TA_{t-1}$		-0.269	-0.271	-0.250	-0.270	-2.457***
		(0.610)	(0.602)	(0.600)	(0.599)	(0.862)
FA_TA_{t-1}		0.710	0.694	0.673	0.695	-0.200
		(0.859)	(0.854)	(0.854)	(0.861)	(1.262)
$IND\_LOG\_SALES_{t-1}$			0.119	0.121	0.128	0.152
			(0.141)	(0.141)	(0.139)	(0.146)
IND_ROA_{t-1}			-1.085	-1.118	-0.690	1.005
			(2.273)	(2.279)	(2.300)	(1.651)
$M\_NM\_RETURN_{t-1}$				-0.440	0.934	1.248*
				(0.652)	(0.654)	(0.685)
$M\_JPY\_USD_{t-1}$					-4.845***	-3.536***
					(1.058)	(0.933)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Different time trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,130	4,130	4,130	4,130	4,130	3,016

Table A5: The Effects of the Deregulation in 2003 on the Fama-French Cost of Equity

Table A5 presents the regression results of the Fama-French cost of equity on the deregulation in 2003. The sample consists of all listed firms except financials and utilities. The sample period is 2000-2006. The dependent variable is FFCOE, the Fama-French (1993) cost of equity. DEREGULATION is an indicator variable which is equal to one for manufacturing firms in and after 2003 and zero otherwise. Firm-level control variables include (1) ln(TA), the natural log of total assets, (2) BE_ME, the book-to-market equity ratio, (3) SGR, the growth rate of sales from a previous year, (4) DEBT_TA, the total debt (i.e., short-term + long-term debt) over total assets, (5) FA_TA, the net property, plant, and equipment over total assets. Industry-level controls are (6) IND_LOG_SALES, the industry-year means of the natural log of sales, (7) IND_ROA, the industry-year means of net income over total assets, (8) M_NM_RETURN, the mean of annual stock returns of manufacturing (nonmanufacturing) firms in each year if a firm operates in a manufacturing (nonmanufacturing) industry, and (9) M_JPY_USD, the annual change in JPY/USD exchange rate for manufacturing firms and zero otherwise. Firm and year fixed effects are included in all models. I also include different time trends for manufacturing and nonmanufacturing firms. Model 6 uses the matched sample by the entropy-balancing method described in section IV.B. Clustered standard errors at the four-digit JSIC industry level are calculated to account for within-industry correlations of error terms. Standard error of each coefficient is reported in parenthesis. Subscripts***, **, * denote significantly different from zero at the 1%, 5% and 10% level, respectively.

Dep.var = FFCOE (%)	1	2	3	4	5	6
	Full Sample	Full Sample	Full Sample	Full Sample	Full Sample	Matched Sample
$DEREGULATION_t$	-1.686**	-1.780**	-1.755**	-1.235*	-5.731**	-5.178*
	(0.727)	(0.736)	(0.742)	(0.710)	(2.856)	(3.073)
$ln(TA)_{t-1}$		1.901*	1.882*	1.847*	1.901*	1.926
		(1.056)	(1.061)	(1.060)	(1.052)	(1.575)
BE_ME_{t-1}		1.331***	1.336***	1.335***	1.343***	1.331***
		(0.306)	(0.308)	(0.307)	(0.307)	(0.351)
SGR_{t-1}		0.013	-0.021	0.054	-0.038	0.119
		(1.005)	(1.009)	(1.009)	(1.008)	(1.120)
$DEBT\_TA_{t-1}$		3.766	3.848	3.933	3.938	4.853*
		(2.628)	(2.575)	(2.572)	(2.572)	(2.902)
FA_TA_{t-1}		-3.170	-3.160	-3.225	-3.186	-2.257
		(3.273)	(3.270)	(3.265)	(3.257)	(4.280)
$IND\_LOG\_SALES_{t-1}$			0.077	0.104	0.115	0.874
			(0.865)	(0.858)	(0.859)	(0.854)
IND_ROA_{t-1}			2.019	1.381	1.810	-3.006
			(8.078)	(8.059)	(8.048)	(8.600)
$M\_NM\_RETURN_{t-1}$				-7.134***	-3.744	-3.283
				(1.455)	(2.321)	(2.761)
$M\_JPY\_USD_{t-1}$					-10.713*	-9.405
					(6.500)	(6.862)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Different time trends	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,574	12,574	12,574	12,574	12,574	10,797

Table A6: The Effects of the Deregulation on the Labor Share

Table A6 presents the regression results examining the effects of the deregulation on the firm-level labor share. The sample consists of all listed firms except financials and utilities. The sample period in Table A6 is 1998-2008. The dependent variable is LABOR_SHARE, the firm-level labor expenses divided by the sum of labor expenses and operating income (before interest and taxes). I require operating income to be non-negative. AFTER_2004 is an indicator variable that is equal to one for observations in and after 2004, because the amendment to the Act was approved in the parliament on June 2003 and went into effect on March 2004. M_DUMMY is an indicator variable that is equal to one if a firm primarily operates in a four-digit JSIC industry in the manufacturing sector. Firm-level control variables include (1) ln(TA), the natural log of total assets, (2) BE_ME, the book-to-market equity ratio, (3) SGR, the growth rate of sales from a previous year, (4) DEBT_TA, the total debt (i.e., short-term + long-term debt) over total assets, (5) FA_TA, the net property, plant, and equipment over total assets. Industry-level controls are (6) IND_LOG_SALES, the industry-year means of the natural log of sales, (7) IND_ROA, the industry-year means of net income over total assets. Firm and year fixed effects are included in all models. I also include different time trends for manufacturing and nonmanufacturing firms. Clustered standard errors at the four-digit JSIC industry level are calculated to account for within-industry correlations of error terms. Standard error of each coefficient is reported in parenthesis. Subscripts***, **, * denote significantly different from zero at the 1%, 5% and 10% level, respectively.

Dep.var = LABOR_SHARE	1	2
AFTER_2004×M_DUMMY	-0.027***	-0.018**
	(0.008)	(0.007)
$ln(TA)_{t-1}$		0.028***
		(0.010)
BE_ME_{t-1}		0.004
		(0.003)
SGR_{t-1}		-0.123***
		(0.011)
$DEBT\_TA_{t-1}$		0.166***
		(0.024)
FA_TA_{t-1}		0.036
		(0.036)
$IND\_LOG\_SALES_{t-1}$		-0.008
		(0.008)
IND_ROA_{t-1}		-0.879***
		(0.094)
Firm FE	Yes	Yes
Year FE	Yes	Yes
Different time trends	Yes	Yes
Observations	18,316	18,316

Table A7: The Effects of the Deregulation on Firm Value

Table A7 presents the regression results of firm value on the deregulation in 2003. The sample consists of all listed firms except financials and utilities. The sample period is 2000-2006. The dependent variable is TQ, a firm's Tobin's Q, defined in section A7. DEREGULATION is an indicator variable which is equal to one for manufacturing firms in and after 2003 and zero otherwise. Firm-level control variables include (1) ln(TA), the natural log of total assets, (2) ROA, the net income over total assets, and (3) SGR, the growth rate of sales from a previous year, (4) DEBT_TA, the total debt (i.e., short-term + long-term debt) over total assets, and (5) FA_TA, the net property, plant, and equipment over total assets. Industry-level controls are (6) IND_LOG_SALES, the industry-year means of the natural log of sales, (7) IND_ROA, the industry-year means of net income over total assets, (8) M_NM_RETURN, the mean of annual stock returns of manufacturing (nonmanufacturing) firms in each year if a firm operates in a manufacturing (nonmanufacturing) industry, and (9) M_JPY_USD, the annual change in JPY/USD exchange rate for manufacturing firms and zero otherwise. Firm and year fixed effects are included in all models. I also include different time trends for manufacturing and nonmanufacturing firms. Clustered standard errors at the four-digit JSIC industry level are calculated to account for within-industry correlations of error terms. Standard error of each coefficient is reported in parenthesis. Subscripts***, **, * denote significantly different from zero at the 1%, 5% and 10% level, respectively.

Dep.var = TQ	1	2	3	4	5
$DEREGULATION_t$	0.058***	0.080***	0.083***	0.095***	0.238***
	(0.020)	(0.022)	(0.022)	(0.022)	(0.084)
$ln(TA)_{t-1}$		-0.269***	-0.264***	-0.265***	-0.267***
		(0.053)	(0.054)	(0.054)	(0.054)
ROA_{t-1}		0.998***	0.936***	0.934***	0.930***
		(0.148)	(0.162)	(0.162)	(0.162)
SGR_{t-1}		0.139***	0.138***	0.140***	0.143***
		(0.040)	(0.040)	(0.040)	(0.041)
$DEBT\_TA_{t-1}$		0.123	0.119	0.121	0.121
		(0.079)	(0.080)	(0.080)	(0.080)
FA_TA_{t-1}		-0.084	-0.085	-0.087	-0.088
		(0.096)	(0.097)	(0.097)	(0.097)
$IND\_LOG\_SALES_{t-1}$			-0.023	-0.022	-0.023
			(0.024)	(0.024)	(0.024)
IND_ROA_{t-1}			0.314	0.300	0.291
			(0.244)	(0.244)	(0.242)
$M\_NM\_RETURN_{t-1}$				-0.166**	-0.274***
				(0.067)	(0.074)
$M\_JPY\_USD_{t-1}$					0.341**
					(0.171)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Different time trends	Yes	Yes	Yes	Yes	Yes
Observations	13,087	13,087	13,087	13,087	13,087