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Stakeholder participation in a company's success and resilience against shocks*

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Abstract

This paper investigates how several of a company's stakeholders (labor, capital, and the government) share in a company's success and how this division affects firms' resilience to shocks. The analysis draws on detailed microdata of Japanese manufacturing companies (listed and unlisted). The labor share (the share of wages in operating income before depreciation and wages) is larger in smaller, less profitable, and older firms; in fact, labor share has fallen substantially over the last 20 years. The opposite holds for the residual share, potentially accruing to shareholders. In theory, a higher labor share either acts as operating leverage, amplifying exogenous shocks, or helps to mitigate such shocks by inducing higher effort and loyalty from workers. Empirically, firms' profit growth with higher labor shares turns out to be more resilient to macroeconomic shocks. These results have implications for understanding the consequences of societal changes such as technological progress that reduce the labor share.

Keywords: Stakeholder, Leverage, Labor, Shock

JEL classification: E23, J23

* This study is conducted as a part of the Project "East Asian Industrial Productivity" undertaken at the Research Institute of Economy, Trade and Industry (RIETI). This study utilizes the micro data of the questionnaire information based on "the Basic Survey of Japanese Business Structure and Activities" which is conducted by the Ministry of Economy, Trade and Industry (METI), and the Kikatsu Oyako converter and the Kigyo Shoken converter, which are provided by RIETI. The author is grateful for helpful comments and suggestions by Discussion Paper seminar participants at RIETI.

1 Introduction

How is the success of a company shared among the stakeholders of the company? How is this allocation to stakeholders changing over time, and what are its determinants across firms? And is the allocation in turn associated with the success of the firm? Studying these questions is of interest for several reasons. First, firms' role in society receives substantial attention in recent discussions, and the question of who participates to which extent in a company's success is intimately linked to this issue.[1] Second, the issue of inequality also looms large. Specifically, some argue that while company profits have been rising, little of those rising profits have benefited workers in the form of increased wages or society at large in terms of taxes.

To examine the development, determinants, and consequences of the allocation of profits to various stakeholders in companies, we use detailed data from 1995 to 2017 of the universe of listed and non-listed manufacturing firms in Japan. Japan is an interesting country to study for this purpose, not only because it is one of the world's largest economies. First, the data quality on wages, a key variable for this research project, is high, even for non-listed firms. Second, contrary to the standard Western perception, Japan exhibits a great variety of cultural differences, especially between cities and rural areas and broadly across the 47 prefectures.[2] Finally, Japan has experienced substantial societal and economic change in the last two decades. For example, in our data, the average foreign ownership in listed firms has increased from 1.9% in 1995 to above 10.7% in 2017. The cross-sectional cultural differences and the changes over time raise the question of whether the distribution of profits to stakeholders also varies across prefectures or over time.

[1] While the idea of shareholder primacy is often associated with Milton Friedman's New York Times article in 1970, his article in fact noted that shareholders can only do well if other stakeholders also thrive. See Bebchuk et al. (2021) and Edmans (2020) for discussions of the promises and challenges of stakeholder capitalism.

[2] See, for example, Ito et al. (2017) and Okubo et al. (2017).

Our analysis proceeds in three steps. We first briefly provide a simple descriptive analysis. We compute the shares of operating income before depreciation and wages (OIBDW) distributed to labor, debtholders, the government, as well as the residual share. This residual share is either paid out to shareholders or becomes retained earnings. Thus, the residual share potentially accrues to shareholders, but it is also possible that sometime in the future, management (on behalf of shareholders) decides to invest these monies into, say, hiring workers. Over the whole period from 1996 through 2017, the average labor wages, tax, interest, and residual shares are 74.9%, 2.9%, 3.3%, and 18.8%, respectively. The labor share in Japan is, therefore, at the high end globally.[3] In the second part, we analyze the variation over time and across companies of these ratios. Between 1996 and 2017, the average shares of labor, government, and debtholders in OIBDW have declined from 72% to 67%, from 3.4% to 2.5%, and from 4.2% to 1.4%, respectively. In an environment of falling interest rates, the decreasing share going to debtholders is unsurprising, but it is striking that this development did not benefit the labor share.[4] Instead, the residual share of OIBDW has increased from 14% to 24.9%.

Controlling for prefecture and year fixed effects, larger firms exhibit a lower labor share but pay a higher fraction of their OIBDW to the government, debtholders, and shareholders. Perhaps interestingly, more profitable firms have a lower labor share, a lower tax share, a lower debt share, and, consequently, a much higher residual share.

[3] See Gollin (2002) for international evidence. Labor shares in developed countries range between 65% and 80%.
[4] While internationally the aggregate labor share is declining (Karabarbounis and Neiman 2014; Piketty 2014), the firm-level evidence occasionally paints a different picture. In particular, Hartman-Glaser et al. (2019) document an increase in labor share for the median US firm.

In the third part of the analysis, we turn to the consequences of differences in allocating profits to the various groups. That is, we examine whether the ex-post distribution is associated with the ex-ante level of value generation. Prior work suggests ambivalent results.

Donangelo et al. (2019) find that US firms with a labor share exhibit more sensitivity to aggregate productivity or economic shocks. They interpret this finding as indicating the presence of labor leverage. Effectively, this is the same effect as when a firm has financial leverage, in which case any business fluctuation exerts amplified effects on return on equity. As their model highlights, this interpretation depends on the assumption that labor and capital are complements. Firing workers in recessions is hardly accepted in Japan. Therefore, one might expect such a labor leverage effect in Japan as well.[5]

However, anecdotal evidence suggests that Japanese workers have traditionally been willing to accept downward wage adjustments. This is a relatively unusual response by international standards. Thus, it is possible that the labor leverage effect is not as pronounced in Japan. Some work even suggests a bright side of labor leverage. For example, Ouimet and Simintzi (2020) find that UK firms with higher wages (driven by wage agreements) also had higher labor productivity in the financial crisis. They argue that the higher salaries induce greater effort by workers precisely in times of crisis.

Overall, therefore, firm profits' response to aggregate fluctuations in economic strength is an empirical question. We study this effect by running regressions of firm-level profit growth on prefecture-level deviations of GDP from its trend, interacted with the labor share. We find robust evidence that firms with a higher labor share are less sensitive to macroeconomic shocks. Further

[5] Models of labor leverage arising from labor market frictions include Danthine and Donaldson (2002), Chen et al. (2012), Donangelo (2014), and Favilukis and Lin (2015), among others.

analysis reveals that the enhanced resilience of high-labor-share firms stems from their ability to increase effort to boost sales and to reduce wages.

These results point to important but potentially neglected consequences of technological progress. Metaphorically and somewhat speculatively, replacing a worker with a robot may save labor costs. But it also reduces the ability of the work to rely on enhanced worker effort in crisis times (as the robot's "motivation" is arguably independent of the current economic circumstances). Thus, such technological advances may lead to greater exposure of firms to macroeconomic shocks.

The paper is organized as follows. Section 2 describes the data. Section 3 reports the results. Section 4 concludes.

2 Data

2.1 Sample and data source

This paper uses the Basic Survey of Japanese Business Structure and Activities (BSJBSA) provided by the Ministry of Economy, Industry and Trade of Japan (METI). The data contain a wide variety of variables of accounting and non-financial information such as number of employees, ownership information such as foreign ownership. The survey covers all firms with more than 50 employees and with more than 30 million yen of capital asset with approximately 85% of reply rate. Our sample period in general is between 1995 and 2017; in the regressions, we use lagged explanatory variables, so most regressions involve dependent variables starting in 1996. GDP (national as well as prefectural GDPs) is obtained from the Cabinet Office, Government of Japan.

2.2 Variable definitions

Table 1 contains an overview of all variable definitions.

Table 1 about here

2.2.1 Shares

Our main interest is in how the overall value created by a company in a given year is distributed among human capital, financial capital, and the government. We define OIBDW as Operating Income Before Depreciation and Wages.[6] Thus,

OIBDW =Operating Profit + Depreciation + Wages.

OIBDW effectively captures the overall "pie" that can distributed among (a) labor,[7] (b) providers of interest-bearing debt (debtholders), (c) tax recipients, that is, society/the government, and (d) residual claimants of what is left after all those priority groups have been paid, namely, shareholders. Note that the residual share is not necessarily paid out in a given year, but may be retained inside the company as retained earnings, which may be reinvested or paid out in future years. Thus, at the time of when profits are made, it does not actually know what shareholders ultimately receive. Conversely, the labor share is what the analysis reveals to have been actually paid; as such it is a lower bound of what might be paid in total when considering possible future payments out of the earnings that are retained now. We restrict the sample to firms where OIBDW is positive because we focus on the distribution of profit among stakeholders.[8]

Consequently, the four shares of interest are, with slight abuse of notation,

[6] Depreciation includes amortization.
[7] Wages does not include welfare costs because the company survey asked about these costs only from 2005 onwards. Furthermore, the dataset does not distinguish between wages for regular and non-regular workers.
[8] Our results are overall robust to relaxing this restriction.

Labor share = Wages / OIBDW

Debt share = Interest / OIBDW

Tax share = Taxes / OIBDW

Residual share = (OIBDW – Wages – Interest – Taxes) / OIBDW

2.2.2 Firm-level variables

Our main proxy for the success of firms is $Growth_{it}$, the log growth of operating profit of firm *i* from *t-1* to *t*.[9] Because of extreme values, we winsorize at the 5th and 95th percentiles. As an alternative proxy, we use sales growth, with very similar results.

We use the following firm-level control variables. Firm size is *ln(Total Assets)*. *Financial Leverage* is defined as total debt divided by total assets.[10] *ROA* is defined as operating profit before depreciations divided by total assets. *R&D/Sales* is defined as research and development expenditures divided by total assets. *ln(Firm Age)* is the natural logarithm of firm age.

We also control for the ownership structure. *Subsidiary* takes the value of one for firms that are subsidiaries of other companies. *Listed* is equal to one for listed firms. *Foreign Ownership > 0* takes the value of one for firms with some foreign investor ownership.

[9] Alternatively, we use percentage growth of operating profit without observations that have an enormous negative growth ratio.

[10] The data do not contain the detail of the components of debt. Therefore, debt contains not only loans and bonds, but also other debt items such as accounts payable and accrued items.

2.2.3 Economic shocks

Economic Growth is GDP growth. We primarily use prefecture-level GDP growth because Artis and Okubo (2011) show that business cycles across Japan exhibit substantial idiosyncracies. We obtain similar results with national GDP-shocks, however.

3 Results

This section reports the results for the three main research questions. First, we examine the distribution of profits among various stakeholders. Second, we analyze the sensitivity of firm profit growth to macroeconomic growth and whether this sensitivity depends on the labor share.

3.1 How is the success of a company shared among the stakeholders of the company?

We begin with a descriptive analysis of the shares received by the main stakeholders of interest in this paper. Table 2 shows that examining all firms in the whole sample period, the average labor wages, tax, interest, and residual shares are 70.5%, 2.7%, 3.0%, and 23.7%, respectively. The median numbers are quite similar.

There is substantial variation in each of these numbers. The interdecile range for the labor share is almost 50 percentage points, for example. Tax shares also vary widely, with the standard deviation almost as large as the mean.

Table 2 about here

3.2 How is the allocation to stakeholders changing over time and what are its determinants across firms?

Figure 1 displays the time-series trend of four share variables in our sample. Between 1996 and 2017, the average shares of labor, government, and debtholders in OIBDW have declined from

72% to 67%, from 3.4% to 2.5%, and from 4.2% to 1.4%, respectively. In an environment of falling interest rates, the decreasing share going to debtholders is to be expected, but it is striking that this development did not benefit the labor share. Instead, the residual share of OIBDW has increased from 19% to 28.3%.

Figure 2 shows the existence of regional heterogeneity in the labor share and in the change in the labor share in our sample period. Darker colors indicate higher scores. Panel A illustrates that labor shares are larger around the big cities such as Tokyo, Nagoya (Aichi prefecture), Osaka, and Fukuoka. Panel B shows that periphery areas experienced declining labor shares in the sample period.

Table 3 considers what firm-level variables explain the shares. We control for year fixed effects throughout. Panel A includes industry fixed effects. We find that larger firms exhibit a lower labor share but pay a higher fraction of their OIBDW to the government, to debtholders, and to shareholders. Perhaps interestingly, more profitable firms exhibit a lower labor share, a lower tax share, and a lower debt share and, consequently, a much higher residual share. Innovative firms, as proxied by R&D expenses, exhibit higher labor shares suggesting that knowledge-intensive firms pay high wages for employees. Also, innovative firms pay a smaller fraction of their profits in taxes or interest, and a higher residual share remains.

Intuitively, firms with higher financial leverage pay lower taxes (because of the tax shield) but pay a higher share of the OIBDW in interest payments, leaving a smaller residual share. Firm governance features also correlate with the four shares. Subsidiaries exhibit higher labor shares but lower tax and debt shares. Listed firms also pay a lower OIBDW fraction in taxes and interest. Interestingly, listed firms show a lower fraction for residual shares. Lastly, firms with foreign ownership exhibit lower labor shares, lower tax shares, and higher residual shares.

Table 3 about here

Panel B reports the results with prefecture fixed effects. The results remain very similar. Panel C includes firm fixed effects, thus considering within-firm changes over time. While by and large again the same coefficient signs emerge, a few explanatory variables exhibit different signs. In particular, in this analysis financial leverage is negatively associated with labor shares and positively associated with taxes and residual shares, the subsidiary dummy is negatively associated with labor shares, and the foreign ownership dummy is negatively associated with debt shares. However, the result that larger firms, more profitable, and less innovative firms have higher labor shares remains true in this analysis as well.

3.3 Is the labor share associated with the success of firms?

We now turn to the third research question regarding the consequences of different labor shares. Two effects may be at play. First, a higher labor share may effectively be a version of operating leverage. When a shock hits a firm, a high labor share may mean that the firm cannot save costs easily, and so the shock will strongly affect profits. Donangelo et al. (2019) find evidence of this effect for US firms. Firing workers in recessions is much less accepted in Japan. Therefore, everything else equal, one might expect an even stronger labor leverage effect in Japan.[11]

[11] Models of labor leverage arising from labor market frictions include Danthine and Donaldson (2002), Chen et al. (2012), Donangelo (2014), and Favilukis and Lin (2015), among others.

However, according to Aoki (1984, 1979), Japanese labor is cooperative with capital inside a company. His firm theory has three representative cooporative models with three main players (managers, workers, and shareholders) for decision-making on profit allocation inside the company. In Japan, managers make decisions to induce cooperation among workers and shareholders.[12] A concrete consequence is that Japanese workers have traditionally been willing to accept downward wage adjustments. Therefore, it is possible that the labor leverage effect is not as pronounced in Japan. In fact, some work even suggests a bright side of a high labor share even in other countries. For example, Ouimet and Simintzi (2020) find that in the financial crisis, UK firms with higher wages (driven by wage agreements) also had higher labor productivity. They interpret this result in line with the idea that higher wages induce greater effort by workers precisely in times of crisis.

The impact of labor shares on firms' sensitivity to shocks is, therefore, an empirical question. Table 4 shows the results. As expected, columns 1 through 3 show that higher GDP growth on average results in higher profit-growth.

The main analysis of interest is shown in columns 4 through 6. Here, we add an interaction term between the labor share and GDP growth. The regressions show that profit growth of firms with a higher labor share reacts less strongly to macroeconomic shocks. This finding holds controlling for a range of control variables, as shown in the table. Moreover, it is robust to controlling for industry, prefecture, and firm fixed effects.

Table 4 about here

[12] In the United States, managers on behalf of shareholders make the decision on profit allocation involving negotiation with labor unions. In Germany, shareholders and workers are involved in management and jointly make decisions.

The economic impact is quite large. Note that the labor share is standardized to mean zero and standard deviation of unity. Thus, the coefficients on the macroeconomic shocks show the effects for firms with an average labor share. For example, in column 4, a one percentage point increase of GDP Growth induces a 1.9 percentage point higher profit growth. However, A one-standard-deviation higher labor share offsets this effect by 0.255 percentage points, about 45% of the standard deviation of profit growth (=0.255/0.563).

How does a higher labor share lead to the lower sensitivity of profit growth to macroeconomic shocks? It is possible that the net effect on profit growth combines facets of both theoretical possibilities laid out above. To make progress on this question, we examine the components of profit growth. Table 5 shows in Panel A that sales growth, too, is less sensitive to macroeconomic growth in firms with higher labor shares. Panel B reveals that while non-wage costs generally covary positively with economic growth, they do so less in firms with a higher labor share. Thus, in bad times such firms do not save costs as much.

Panels C and D consider the effects on labor costs and the number of employees. Strikingly, the interaction term in Panel C is positive. This means that firms with a high labor share can downward adjust (at least relative to other firms) wages in a bad times (but also see them increase more in good times). By contrast, the labor share does not moderate the effect of GDP growth in employee growth, as seen in Panel D.

Overall, these results suggest that the profit growth results observed in Table 4 are likely due to the revenue side and the wage cost side, not the non-wage production costs. Thus, these findings support the idea that firms with a higher labor share can count on stronger worker effort to keep sales from falling too much in bad times and on the loyalty of workers being willing to accept a

reduction in wages. Conversely, though, the findings also suggest that such firms do not benefit fully from a macroeconomic boom.

4 Conclusion

This paper provides an analysis of how the profits a company makes are divided up among labor, capital, and society; what determines this distribution; and what the consequences of the labor share are for the resilience of firms. Drawing on detailed data from Japanese manufacturing companies, we find that the share of labor in operating income before wages has fallen over time, and it is bigger in smaller, less profitable, and older firms. The residual share, that is, what remains of operating income after wages, taxes, and interest payments, has increased over time.

What are the consequences of a higher labor share? Two opposing forces may play a role. On the one hand, the labor share may act as a version of operating leverage, amplifying exogenous shocks. On the other hand, it may help mitigate such shocks by inducing higher effort and loyalty by workers. We find that profit growth of firms with a higher labor share is more resilient to macroeconomic shocks, implying that the second channel dominates the first.

Overall, these results have potentially interesting implications for understanding the consequences of technological progress. The findings suggest that the enhanced resilience of high-labor-share firms stems from their ability to increase effort to boost sales and to reduce wages. Both responses to shocks appear, at least at the moment, to be unique to humans. This suggests that the (in many ways arguably value-enhancing) progression towards replacing labor by technological advances (including the use of robots) may lead to a greater exposure of firms to shocks.

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Table 1: Variable Definitions

This table summarizes definitions and sources of the main variables used in the analysis. BSJBSA stands for Basic Survey of Japanese Business Structure and Activities.

Variable name	Definition	Source
Labor Share	Wages divided by OIBDW. OIBDW is defined as the sum of operating profit, depreciation, and wages	BSJBSA
Debt Share	Interest payments divided by OIBDW	BSJBSA
Tax Share	Taxes divided by OIBDW	BSJBSA
Residual Share	(OIBDW - Wages - Interest - Taxes) / OIBDW	BSJBSA
Profit Growth	Natural logarithm growth of operating profit	BSJBSA
Sales Growth	Natural logarithm growth of sales	BSJBSA
Cost Growth	Natural logarithm growth of operating expenses (sum of costs of goods sold, and selling, general and administrative expenses) excluding wages	BSJBSA
Employee Growth	Natural logarithm growth of number of employees	BSJBSA
LS (Standardized)	Standardized value of Labor Share	BSJBSA
Pref. GDP Growth	Annual prefecture GDP growth	Cabinet Office
ln(Total Assets)	Natural logarithm of total assets (million yen).	BSJBSA
Financial Leverage	Total liabilities divided by total assets	BSJBSA
ROA	Operating profits plus depreciations divided by total assets	BSJBSA
R&D/Sales	R&D expenditure divided by total assets	BSJBSA
ln(Firm Age)	Natural logarithm of firm age	BSJBSA
Subsidiary	Take the value of one if the firm reports that it has a parent company	BSJBSA
Listed	Take the value of one if the firm is a listed company	BSJBSA
Foreign Ownership > 0	Take the value of one if the firm reports the foreign ownership is more than zero	BSJBSA

Table 2: Descriptive Statistics

This table shows descriptive statistics for the main variables used in the analysis. The definitions of variables are in Table 1.

	Observations	Mean	St. Dev	Min	10%Tile	25%Tile	Median	75%Tile	90%Tile	Max
Labor Share	198,206	0.705	0.163	0	0.48	0.607	0.728	0.826	0.897	1
Debt Share	198,206	0.0302	0.043	0	0.001	0.005	0.018	0.0406	0.0739	6.14
Tax Share	198,206	0.0278	0.040	-0.307	0.008	0.014	0.022	0.0335	0.0527	9.11
Residual Share	198,206	0.237	0.175	-8.740	0.039	0.113	0.215	0.341	0.471	1.000
Profit Growth	198,206	0.002	0.563	-1.510	-0.652	-0.258	0.009	0.270	0.645	1.480
Sales Growth	198,206	1.020	0.137	0.662	0.865	0.944	1.010	1.080	1.170	1.460
Cost Growth	198,153	0.008	0.146	-0.416	-0.164	-0.065	0.009	0.084	0.180	0.383
Wage Growth	198,196	0.005	0.159	-0.461	-0.157	-0.057	0.005	0.064	0.162	0.518
Emp. Growth	198,206	0.000	0.080	-0.240	-0.086	-0.037	0	0.036	0.091	0.217
LS (Standardized)	198,166	-0.039	0.969	-5.480	-1.360	-0.632	0.075	0.672	1.110	3.370
Pref. GDP Growth	198,206	0.008	0.024	-0.097	-0.022	-0.003	0.010	0.023	0.035	0.095
ln(Total Assets)	198,206	8.540	1.410	3.910	7.040	7.570	8.290	9.240	10.400	16.700
Financial Leverage	198,206	0.621	0.224	0.001	0.293	0.459	0.651	0.805	0.898	1.000
ROA	198,206	0.116	0.073	0	0.040	0.064	0.100	0.150	0.211	0.394
R&D/Sales	198,206	0.010	0.020	0	0	0	0	0.010	0.033	0.107
ln(Firm Age)	198,206	3.740	0.524	0	3.090	3.560	3.870	4.080	4.230	5.160
Subsidiary	198,206	0.308	0.462	0	0	0	0	1	1	1
Listed	198,206	0.123	0.328	0	0	0	0	0	1	1
Foreign Ownership > 0	198,206	0.100	0.300	0	0	0	0	0	0	1

Table 3: Determinants of the Distribution of Profits

This table reports the determinants of four shares in OIBDW (operating income before depreciation and wages). Specifically, the dependent variables are the labor share in column [1], debt share in column [2], tax share in column [3], and residual share in column [4]. The sample includes all manufacturing firms in the Survey from 1996 to 2017. The definitions of variables are in Table 1. Explanatory variables are lagged by one year. Panel A presents regressions with industry fixed effects. Panel B uses prefecture fixed effects. Panel C uses firm fixed effects. *T*-statistics based on standard errors clustered on the industry level are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Panel A: Industry fixed effects

Dependent Variable:	Labor Share	Debt Share	Tax Share	Residual Share
	[1]	[2]	[3]	[4]
ln(Total Assets)	-0.053***	0.004***	0.002***	0.046***
	(-28.55)	(9.28)	(10.25)	(31.52)
Financial Leverage	0.051***	0.081***	-0.002**	-0.130***
	(11.91)	(39.85)	(-2.53)	(-36.35)
Profitability	-0.973***	-0.100***	-0.026***	1.099***
	(-41.18)	(-27.08)	(-10.51)	(41.61)
R&D/Sales	0.348***	-0.031***	-0.076***	-0.241***
	(6.41)	(-3.06)	(-7.46)	(-5.07)
ln(Firm Age)	0.021***	-0.000	0.003***	-0.023***
	(13.27)	(-1.10)	(8.13)	(-16.03)
Subsidiary	0.025***	-0.016***	-0.006***	-0.003
	(13.27)	(-24.00)	(-14.72)	(-1.63)
Listed	0.028***	-0.009***	-0.004***	-0.015***
	(8.53)	(-13.31)	(-3.95)	(-4.53)
Foreign Ownership > 0	-0.004	0.000	-0.003***	0.007**
	(-1.43)	(0.29)	(-3.58)	(2.53)
Industry fixed effects	*yes*	*yes*	*yes*	*yes*
Year Fixed effects	*yes*	*yes*	*yes*	*yes*
Observations	198,206	198,206	198,206	198,206
Adj. R-Squared	0.436	0.300	0.0406	0.461

Panel B: Prefecture fixed effects

Dependent Variable:	Labor Share [1]	Debt Share [2]	Tax Share [3]	Residual Share [4]
ln(Total Assets)	-0.054***	0.004***	0.003***	0.048***
	(-21.57)	(8.56)	(9.27)	(23.74)
Financial Leverage	0.053***	0.081***	-0.002**	-0.131***
	(10.48)	(37.39)	(-2.45)	(-33.86)
Profitability	-0.959***	-0.105***	-0.029***	1.093***
	(-28.35)	(-23.81)	(-10.79)	(32.07)
R&D/Sales	0.236***	-0.055***	-0.112***	-0.068
	(2.73)	(-4.67)	(-8.96)	(-0.93)
ln(Firm Age)	0.019***	-0.000	0.003***	-0.022***
	(9.78)	(-0.11)	(9.39)	(-13.08)
Subsidiary	0.020***	-0.016***	-0.006***	0.001
	(9.03)	(-22.82)	(-13.41)	(0.74)
Listed	0.030***	-0.009***	-0.004***	-0.017***
	(7.51)	(-12.24)	(-4.08)	(-4.42)
Foreign Ownership > 0	-0.006*	-0.000	-0.003***	0.009***
	(-1.79)	(-0.06)	(-3.45)	(2.78)
Prefecture fixed effects	*yes*	*yes*	*yes*	*yes*
Year fixed effects	*yes*	*yes*	*yes*	*yes*
Observations	198,206	198,206	198,206	198,206
Adj. R-Squared	0.402	0.286	0.0298	0.441

Panel C: Firm fixed effects

Dependent Variable:	Labor Share [1]	Debt Share [2]	Tax Share [3]	Residual Share [4]
ln(Total Assets)	-0.050***	0.010***	-0.001	0.041***
	(-20.56)	(16.84)	(-1.37)	(15.81)
Financial Leverage	-0.081***	0.059***	0.008***	0.014*
	(-14.28)	(19.45)	(7.12)	(1.79)
Profitability	-0.768***	-0.065***	-0.008***	0.841***
	(-33.99)	(-15.60)	(-3.76)	(30.79)
R&D/Sales	0.309***	0.023***	0.004	-0.335***
	(8.72)	(3.54)	(0.42)	(-10.34)
ln(Firm Age)	0.002	0.001	0.001	-0.003
	(0.62)	(1.36)	(1.14)	(-1.04)
Subsidiary	-0.006***	-0.003***	-0.001	0.010***
	(-2.72)	(-4.49)	(-1.14)	(4.03)
Listed	0.007*	-0.002***	-0.001	-0.005
	(1.77)	(-2.94)	(-0.79)	(-1.12)
Foreign Ownership > 0	-0.000	-0.001*	0.001***	-0.000
	(-0.05)	(-1.69)	(4.12)	(-0.14)
Firm fixed effects	*yes*	*yes*	*yes*	*yes*
Year fixed effects	*yes*	*yes*	*yes*	*yes*
Observations	198,206	198,206	198,206	198,206
Adj. R-Squared	0.724	0.658	0.296	0.684

Table 4: The Labor Share, Economic Shocks, and Profit Growth

This table summarizes the results of regressions of profit growth on labor shares and macroeconomic shocks. The sample includes Japanese manufacturing firms in the Survey from 1996 to 2017. Macroeconomic shocks are captured by prefecture-level GDP growth. Explanatory variables are lagged by one year. The definitions of variables are in Table 1. *T*-statistics based on standard errors clustered on the industry-year level are reported in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level respectively.

Dependent variable:	Profit Growth					
	[1]	[2]	[3]	[4]	[5]	[6]
LS (Standardized)	0.124***	0.118***	0.258***	0.127***	0.120***	0.260***
	(35.63)	(28.64)	(43.64)	(33.97)	(27.91)	(43.42)
Pref. GDP Growth	1.913***	1.973***	1.972***	1.901***	1.961***	1.955***
	(10.64)	(10.50)	(11.37)	(10.60)	(10.45)	(11.33)
LS (Standardized) x Pref GDP Growth				-0.255**	-0.250**	-0.300***
				(-2.40)	(-2.27)	(-2.96)
ln(Total Assets)	0.035***	0.037***	-0.111***	0.035***	0.037***	-0.111***
	(19.02)	(17.47)	(-13.28)	(19.08)	(17.54)	(-13.32)
Financial Leverage	-0.013*	-0.007	0.430***	-0.013*	-0.007	0.430***
	(-1.68)	(-0.87)	(18.75)	(-1.71)	(-0.89)	(18.79)
ROA	-0.880***	-0.865***	-2.283***	-0.879***	-0.864***	-2.280***
	(-24.06)	(-18.71)	(-37.37)	(-24.13)	(-18.81)	(-37.43)
R&D/Sales	0.278***	0.588***	-0.288*	0.277***	0.587***	-0.290**
	(2.96)	(5.49)	(-1.96)	(2.95)	(5.48)	(-1.97)
ln(Firm Age)	-0.048***	-0.043***	0.016*	-0.048***	-0.043***	0.016*
	(-15.56)	(-12.65)	(1.68)	(-15.57)	(-12.66)	(1.69)
Subsidiary	0.039***	0.047***	0.051***	0.039***	0.047***	0.051***
	(11.00)	(12.33)	(6.86)	(11.00)	(12.35)	(6.86)
Listed	-0.025***	-0.030***	-0.035*	-0.025***	-0.030***	-0.035*
	(-4.34)	(-4.75)	(-1.82)	(-4.33)	(-4.75)	(-1.85)
Foreign Ownership > 0	0.019***	0.030***	0.012	0.019***	0.030***	0.012
	(3.46)	(5.09)	(1.38)	(3.45)	(5.09)	(1.38)
Constant	-0.025	-0.082***	0.871***	-0.025	-0.081***	0.868***
	(-1.31)	(-3.47)	(11.37)	(-1.31)	(-3.48)	(11.38)
Fixed effects	Industry	Prefecture	Firm	Industry	Prefecture	Firm
Observations	198,206	198,206	198,206	198,206	198,206	198,206
Adj. R-Squared	0.0796	0.0752	0.159	0.0797	0.0753	0.159

Table 5: The Labor Share, Economic Shocks, and Various Outcomes

This table summarizes the results of regressions of sales growth (Panel A), cost growth (Panel B), wage growth (Panel C), and employee growth (Panel D) on labor shares and macroeconomic shocks. The sample includes all manufacturing firms in the Survey from 1996 to 2017. Macroeconomic shocks are captured by prefecture-level GDP growth. Explanatory variables are lagged by one year. The definitions of variables are in Table 1. *T*-statistics based on standard errors clustered on the industry-year level are reported in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% level respectively.

Panel A: Sales Growth

	[1]	[2]	[3]	[4]	[5]	[6]
LS (Standardized)	-0.000	-0.000	-0.001	0.001	0.001	-0.000
	(-0.41)	(-0.27)	(-1.13)	(0.83)	(0.64)	(-0.27)
Pref. GDP Growth	1.012***	1.052***	1.031***	1.006***	1.046***	1.023***
	(15.91)	(16.11)	(15.16)	(15.97)	(16.18)	(15.20)
LS (Standardized) x Pref GDP Growth				-0.115***	-0.116***	-0.125***
				(-4.10)	(-3.92)	(-4.14)
Control Variables	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Fixed effects	Industry	Prefecture	Firm	Industry	Prefecture	Firm
Observations	198,206	198,206	198,206	198,206	198,206	198,206
Adj. R-Squared	0.0493	0.0410	0.0916	0.0497	0.0413	0.0920

Panel B: Cost Growth

	[1]	[2]	[3]	[4]	[5]	[6]
LS (Standardized)	0.005***	0.005***	0.013***	0.006***	0.006***	0.014***
	(6.75)	(4.27)	(8.99)	(7.33)	(4.85)	(9.34)
Pref. GDP Growth	1.006***	1.055***	1.040***	1.001***	1.050***	1.033***
	(13.72)	(13.59)	(12.86)	(13.72)	(13.60)	(12.84)
LS (Standardized) x Pref GDP Growth				-0.100***	-0.103***	-0.110***
				(-3.40)	(-3.32)	(-3.44)
Control Variables	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Fixed effects	Industry	Prefecture	Firm	Industry	Prefecture	Firm
Observations	198,153	198,153	198,153	198,153	198,153	198,153
Adj. R-Squared	0.0397	0.0335	0.0536	0.0399	0.0337	0.0539

Panel C: Wage Growth

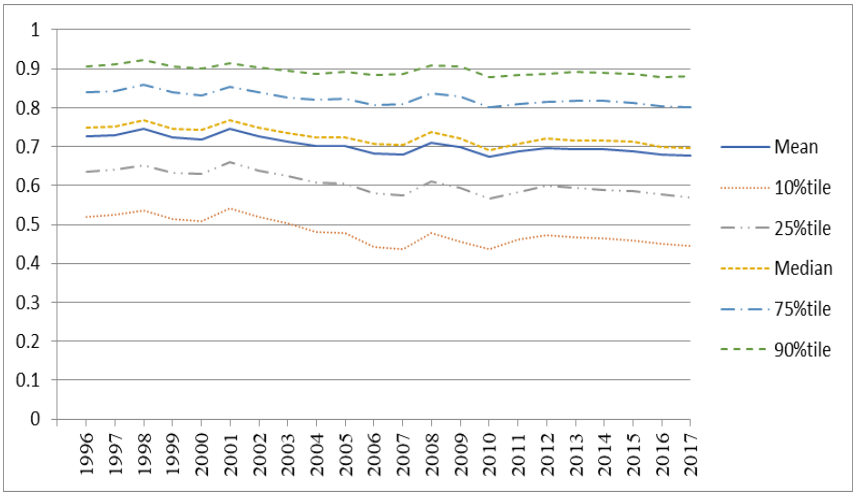
	[1]	[2]	[3]	[4]	[5]	[6]
LS (Standardized)	-0.051***	-0.047***	-0.132***	-0.051***	-0.047***	-0.133***
	(-53.90)	(-45.42)	(-70.67)	(-52.95)	(-44.65)	(-71.24)
Pref. GDP Growth	0.522***	0.503***	0.460***	0.524***	0.505***	0.463***
	(12.55)	(11.22)	(10.34)	(12.55)	(11.26)	(10.37)
LS (Standardized) x Pref GDP Growth				0.045**	0.045*	0.064***
				(1.99)	(1.90)	(2.72)
Control Variables	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Fixed effects	Industry	Prefecture	Firm	Industry	Prefecture	Firm
Observations	198,196	198,196	198,196	198,196	198,196	198,196
Adj. R-Squared	0.0544	0.0469	0.104	0.0545	0.0469	0.104

Panel D: Employee Growth

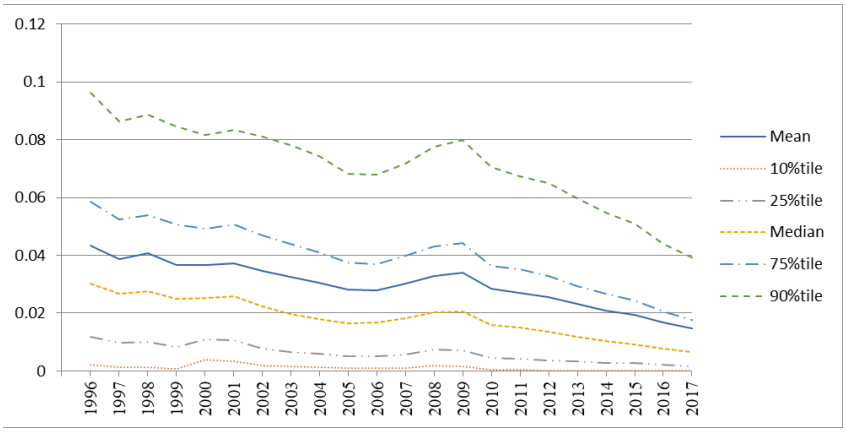
	[1]	[2]	[3]	[4]	[5]	[6]
LS (Standardized)	-0.010***	-0.009***	-0.019***	-0.010***	-0.009***	-0.019***
	(-27.27)	(-21.99)	(-34.17)	(-26.51)	(-21.49)	(-33.76)
Pref. GDP Growth	0.172***	0.167***	0.156***	0.173***	0.167***	0.157***
	(10.17)	(8.99)	(9.45)	(10.17)	(9.00)	(9.49)
LS (Standardized) x Pref GDP Growth				0.012	0.011	0.012
				(1.21)	(1.15)	(1.18)
Control Variables	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Fixed effects	Industry	Prefecture	Firm	Industry	Prefecture	Firm
Observations	198,206	198,206	198,206	198,206	198,206	198,206
Adj. R-Squared	0.0223	0.0166	0.0633	0.0223	0.0166	0.0633

Figure 1: Descriptive Statistics of Profit Shares over Time

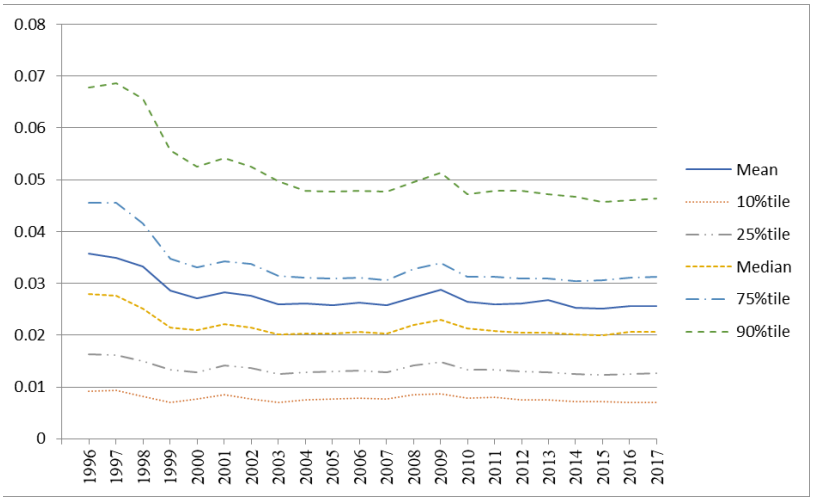
This figure shows the change of the descriptive statistic of the four profit distribution variables defined in Section 2.2. The sample includes all manufacturing firms in the Survey from 1996 to 2017.



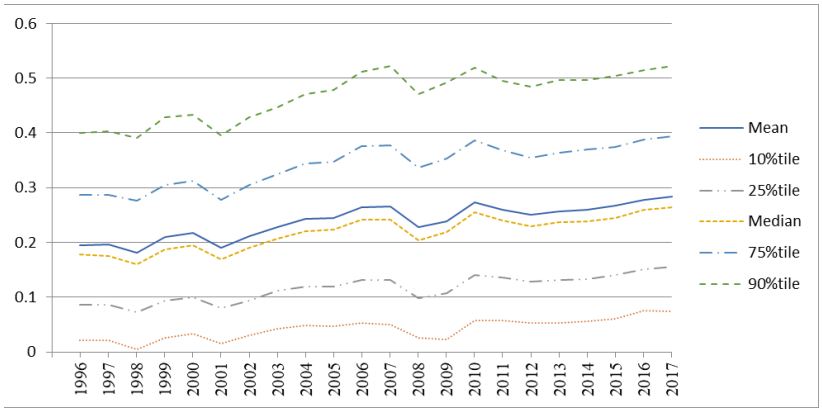
Panel A: Labor Share



Panel B: Debt Share



Panel C: Tax Share

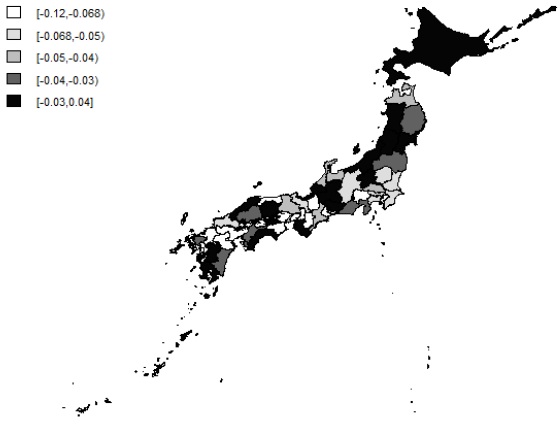


Panel D: Residual Share

Figure 2: Labor Share by Prefecture

Panel A reports the mean labor share by prefecture in 2000. Panel B reports the difference of mean of labor share from 1996 and 2017. Darker areas indicate higher scores. The sample includes all manufacturing firms in the Survey.

Panel A: Labor share in 2000



Panel B: Change in Labor Share from 1996 to 2017