Does Labor Share Affect Cash Holdings?

August 23, 2022

Abstract

High labor compensation increases a firm' s risk because of its large size and inflexibility. Utilizing the confidential Establishment Survey data in Japan, we find that labor is positively associated with cash holdings, *ceteris paribus* especially in the small-size firms subsample. Utilizing the confidential Establishment Survey data in Japan, we find that labor share is positively associated with cash holdings, ceteris paribus especially in the small-size firms subsample. No relationship is observed in the medium- and large-size firm groups. Additional tests show that the positive relationship is pronounced for the subsample of firms with a high labor share. Furthermore, the credit crunch problem strongly affects the relationship between labor share and cash. Next, we reject the alternative explanation that highly profitable firms achieve low labor share and high cash simultaneously, thereby creating a positive relationship. Finally, we find that firms decrease financial leverage in addition to increasing cash holdings against labor cost risk. Overall, our analyses confirm that the increase in risk due to labor share affects corporate finance decision-making, especially for small firms.

Keywords: Cash Holdings; Labor Share; Financial Constraints; SMEs (Small and Medium Enterprises)
JEL Codes: G30

1 Introduction

Labor expenses constitute a significant portion of total costs.[1] Moreover, labor costs are stable over time.[2] The size and stickiness of labor costs amplifies the risk of cash flow sensitivity against sales akin to the operating leverage. Indeed, the impact of labor share on stock prices has been examined in the asset pricing literatureDonangelo, Gourio, Kehrig, and Palacios (2019). However, the impact on corporate financing decision-making is lacking.[3] This study fills this gap and provides empirical evidence that firm-level labor share, defined as labor expenses on value-added, affects cash holding decision making. It is plausible that firms can reduce their risk through financial management decisions. Hoarding cash is a major way to reduce firm risk.

Firms can reduce their own risk by hoarding liquidity assets such as cash. Previous studies on cash holdings have shown that the risk of cash flow is a strong determinant of a firm's cash holdings (Opler, Pinkowitz, Stulz, and Williamson, 1999; Bates, Kahle, and Stulz, 2009). In markets with frictions, investors bear additional costs for investing firms. In such a situation, a firm with high cash flow risk would hoard more cash to protect itself from liquidity shortage, which is called a precautionary motive for cash holdings.[4] If a firm manager is aware that the labor cost is higher than their counterparts and notices the risk exposed by the labor cost, they can reduce the risk by holding more cash. Therefore, we hypothesize that firms with high labor costs reduce their risk by hoarding cash.

[1] In our sample, on average, 70% of the value added by the corporate sector is labor costs, which is similar to the findings in other countries (OECD, 2015).

[2] The stickiness of the labor cost and its implication on the asset pricing is shown in Favilukis and Lin (2015).

[3] Choi, Donangelo, and Kim (2019) is one of the exceptions who argue the negative correlation between labor share and financial leverage. However, their principal motivation is to understand the joint effect of the positive correlation between labor share and cash on stock returns.

[4] Keynes (1936) raised three reasons to hold cash: precautionary, transaction, and speculating motives.

Our hypothesis is based on several assumptions. First, a high labor share can be risky because of financial frictions. Therefore, a positive relationship between labor share and cash holdings should be observed for firms with high financial frictions, such as small firms.[5] Second, the positive relationship should be pronounced when a credit crunch problem happens. Under the credit crunch problem, firms protect themselves by increasing their cash holdings to prepare for future liquidity shocks.

The empirical analysis utilizes Japan's Establishment Survey data, which contains more than 200,000 observations from 2005 and 2017. This confidential establishment survey covers variety types of firms from small self-employed companies to large listed companies. The wide range of the sample enables us to show how heterogeneity among firms affects the relationship between labor share and cash holdings. In particular, including small firms in addition to medium and large firms is beneficial for understanding the behavior of small firms that dominate a large portion of the economy.

Our major empirical finding is that labor share is positively associated with small firm subsample cash holdings. To eliminate industry and year heterogeneity, we conduct specifications with various types of fixed effects and clustering for the standard errors and support the positive relationship. To understand the impact of financial constraints, we estimate the same model for other firm size groups. No statistical significance is observed for medium and large firms, implying that firms with high financial constraints increase the positive relationship between labor share and cash holdings because firm size is frequently considered the source of financial constraints. We must mention that, while the statistical significance is pronounced, the economic significance of labor cost is trivial, implying that the labor share

[5]Throughout this paper, we categorize firms into three groups as (i) small size firms as those with less than JPY 10 million (equivalent to USD 100 thousand) of equity capital, (ii) medium size as those 10 million yen or more of and less than 100 million yen (equivalent to USD 1 million) of equity capital, and (iii) large-size firms as 100 million yen or more of equity capital.

is not the primary determinant of cash holdings. A one percentage point increase in labor share increases the cash ratio by 0.056 percentage points.

Next, we examine whether the credit crunch problem affects firms' cash hoarding behavior. The degree of the credit crunch is measured by the banks' loan lending attitude index (lending DI index) from the Bank of Japan's regular corporate survey. The findings show a positive association between labor share and cash holdings in a small firm subsample when the lending attitude is bad. Importantly, in the small size group, the marginal effect of labor share is negative, even when the diffusion index (DI) value equals zero. Because the DI is calculated as the difference between the percentage of firms that replied the lending condition is 'favorable' and that of firms that replied 'unfavorable,' the zero value of DI indicates the banks' lending condition is neutral. Even in neutral banks' lending attitudes, small firms are exposed to labor cost risks and attempt to increase their cash holdings. In medium and large groups, while the marginal effects of labor share on cash holdings decline are negatively correlated with banks' lending attitude (DI), we do not find a situation where the marginal effect is positive.

Various additional analyses are conducted to confirm the main findings. First, we confirm our findings under various alternative definitions of labor share and firm size. The alternative definitions of labor share include labor cost on operating costs, labor cost on sales, and excess labor share, defined as the difference between the observed labor share and the predicted value of labor share. Alternative definitions of firm size include the number of employees, sales, and total assets. All specifications show a positive relationship between labor costs and cash ratio.

Second, we divide the sample by the degree of labor share. The labor cost risk is high for firms with a high labor share. Hence, high-labor-share firms have a strong incentive to

reduce risk by hoarding cash holdings. In contrast, firms with a low labor share would have less incentive to hoard cash. In this study, we divide the sample by the degree of labor share and find that a positive relationship is observed in the sample of high labor share firms, which confirms the assumption of the hypothesis that the positive correlation comes from the fact that labor share is a fixed cost, which amplifies firm risk.

Third, there could be a concern that the positive relationship in our analysis comes from a specific year. Therefore, we divide the sample by the period. We divide the sample into two groups: 2005 to 2010 and 2011 to 2017. The first half of the period include events like the global financial crisis, and the DI was negative throughout the period. The latter half of the period had a relatively good economic condition, and the DI was constantly positive. Interestingly, a positive relationship is observed in the small-sized group in both sub-periods, implying that it is not a temporal phenomenon. We do not find a positive relationship for medium- and large-sized groups in any sub-period.

Fourth, we conduct an analysis using several alternative definitions of labor share and firm size. Labor share is widely defined as the ratio of labor cost to value-added. Alternatively, we define labor share as (1) labor cost on the operating cost, (2) labor cost on the total revenue, and (3) the residual of the estimation, where the labor cost is a dependent variable and various explanatory variables are used. In any definition, we find positive coefficients for labor share. Firm size is measured by equity capital because it enables us to combine it with DI. We also estimate a model in which firm size is measured by other variables frequently used in the related literature: number of employees, sales, and total assets. In all estimations, a positive correlation between labor share and cash holdings is observed, and importantly, the positive correlation disappears as firm size increases.

Finally, we investigate the relationship between labor share and financial leverage, as

observed by (Choi, Donangelo, and Kim, 2019). We use financial leverage instead of cash holdings as the dependent variable and find a negative correlation between labor share and financial leverage. Interestingly, a negative relationship with financial leverage is observed for all firm size groups. Furthermore, the sensitivity is high for large firms. We also use the net debt ratio as a dependent variable instead of financial leverage to confirm the positive relationship with labor share.

This study contributes to several strands of literature. First, this study contributes to the literature on labor share. The decline in labor share is an international phenomenon, and several studies have revealed the determinants of labor share[6] and risk amplification due to a high labor share.[7] However, little is known about how and why labor share affects financial decision-making. Our analysis differs from previous literature as it examines how firms react to labor share risk by adjusting cash holdings.

Second, this study contributes to the literature on cash holdings. Various studies have pointed out the importance of firm risk as a determinant of corporate liquidity preservation. The risk mentioned in the previous literature includes cash flow risk (Opler, Pinkowitz, Stulz, and Williamson, 1999; Bakke and Gu, 2017; Bates, Kahle, and Stulz, 2009), economy-wide shock (Palazzo, 2012), R&D expenditures (Begenau and Palazzo, 2021; Gao and Zhao, 2022), and supplier stability (Bae and Wang, 2015). In addition, our study reveals that labor contracts are an additional risk that affects financial decision-making for corporate liquidity.

[6]For example, Autor, Dorn, Katz, Patterson, and Van Reenen (2020) focus on the firm heterogeneity and argue that some high profitable firms, called superstar firms, observe a rapid pace of profit growth compared to the labor costs, which shows the low labor share for a short-term. Kehrig and Vincent (2021) analyze the reallocation of companies among- and between industries. They show that a low labor share is caused by high profit rather than low labor costs.

[7]Donangelo, Gourio, Kehrig, and Palacios (2019) show that the high operating leverage caused by the high labor share increases the cost of equity. In addition to it, our findings examine how labor share affects corporate financial decision-making.

2 Literature Review

2.1 Labor share and Operating Leverage

The two typical features of labor costs are size and stickiness. Labor capital is an important input of the production function and dominates a large proportion of the value-added. In our data set, labor cost dominates about 70 Further, stickiness is an important aspect of labor cost because labor contracts are, in many cases, based on a fixed salary. These features make labor costs a large fraction of the fixed costs. It is reasonable to argue that high labor costs amplify the sensitivity of revenue to cash flows. In this sense, labor share can amplify firm risk. Indeed, a positive relationship between labor costs and the cost of equity is observed in a previous study. Donangelo, Gourio, Kehrig, and Palacios (2019) show that firms' labor share is sensitive to aggregate productivity shocks similar to financial leverage. They interpret this finding as indicating the presence of labor leverage. Chino (2021) identifies the decline of the cost of equity after the deregulation that allowed flexible labor contracts using the deregulation of the flexible workforce in Japan.

The impact of labor share on firm risk can be interpreted as the operating leverage analog on firm risk. This is plausible because labor cost is a component of fixed cost and operating leverage, defined as the fixed costs over the total costs, is positively associated with firm risk and equity returns (Lev, 1974; Huffman, 1983; Novy-Marx, 2010; Chen, Kacperczyk, and Ortiz-Molina, 2011). Novy-Marx (2010) examines the relationship between the operating leverage and expected return. Moreover, labor leverage is associated with high equity costs. Indeed, Chen, Kacperczyk, and Ortiz-Molina (2011) find a high equity risk premium for firms with high unionization because labor protection is high in unionized industries.

To reduce labor cost risk, firms can reduce financial risk through corporate decision-

making. Agrawal and Matsa (2013) find that labor unemployment benefit is associated with firms' debt financing decision making. Instead, we focus on cash holdings. Almeida, Campello, and Weisbach (2004) argues that financially constraint firms reduce their own risk by adjusting cash holdings rather than adjusting the debt level. Ghaly, Dang, and Stathopoulos (2015) show that firms preserve more cash when they hire more skilled workers because of the high labor adjustment cost.

2.2 Risk and Cash Holdings

The literature on cash holdings recognizes that firm risk and cash holdings are negatively associated.[8] Several types of risks could relate to firms' cash holdings. The first type is business risk. The idea is that firms with volatile cash flows hoard cash holdings. Using a sample of U.S. publicly traded companies from 1971 to 1991, Opler, Pinkowitz, Stulz, and Williamson (1999) find that firms with riskier cash flows have higher cash-to-assets ratios. The results are updated by Bates, Kahle, and Stulz (2009), who use data on publicly traded U.S. companies from 1980 to 2006. Their motivation is to determine why the cash ratio of US-listed firms increased almost twice in their sample period. They find that the increase in cash holdings is caused by the volatility of cash flow and an increase in R&D intensity in firms. Indeed, R&D intensity affects cash holdings. Falato and Sim (2014); Lyandres and Palazzo (2016); He and Wintoki (2016) find that R&D intensive firms hoard more cash because of their business model risk.

Current studies focus on the degree of tangible assets and argue that firms' cash holdings are negatively associated with the degree of tangible assets because tangible assets are usually

[8]In this subsection, we show the related literature that examines the firm risk and cash holding. Firm risk is not the only determinant of cash holdings. Other explanations include transaction motives Baumol (1952), repatriation taxes (Fritz Foley, Hartzell, Titman, and Twite, 2007), and agency costs Dittmar, Mahrt-Smith, and Servaes (2003); Dittmar and Thakor (2007).

used as collateral when borrowing from banks Falato, Kadyrzhanova, Sim, and Steri (2022); Lim, Macias, and Moeller (2020).

The second type of risk is refinancing risk. It predicts that if a firm anticipates that it is difficult to obtain additional funding or if the cost of financing is high, the firm hoards cash in the case of a failure to refinance. Acharya, Davydenko, and Strebulaev (2012) report a positive relationship between the bond rating and cash holdings, which seems counterintuitive because cash-rich firms seem safer, with low default risk. They theoretically and empirically argue that this counterintuitive finding comes from high-default-risk firms that preserve more cash to avoid default and they are with low bond rating. Harford (1999) points out the increase of cash holding when the refinancing risk is high.

We can further divide the refinancing risk into two categories. The first is the risk of refinancing owing to financial constraints. Asymmetric information between firms and investors, including banks, exposes financial constraints. Under the high information asymmetry, investors incur a high cost of capital. Therefore, firms that face financial constraints hoard more cash (Almeida, Campello, and Weisbach, 2004; Whited and Wu, 2006).

The second is the refinancing risk during credit crunch. In multiple cases, a credit crunch is caused by investors' liquidity shortage due to financial crises. This credit crunch caused by the banking sector leads to declining loans (Khwaja and Mian, 2008; Ivashina and Scharfstein, 2010; Chava and Purnanandam, 2011). Moreover, shocks in the banking sector affect the corporate sector in the form of reduced investment (Acharya, Eisert, Eufinger, and Hirsch, 2018; De Marco, 2019; Balduzzi, Brancati, and Schiantarelli, 2018), innovation (Giebel and Kraft, 2020), and capital structure (Shikimi, 2019), which subsequently has an economy-wide negative impact (Takahashi, 2017; Peek, Rosengren, and Tootell, 2003).

The impact of this credit crunch problem is pronounced for small firms (Chava and Pur-

nanandam, 2011), as they rely primarily on bank lending. Therefore, a banking sector shock is especially pronounced for small firms (Vermoesen, Deloof, and Laveren, 2013; Demirgüç-Kunt, Peria, and Tressel, 2020; Degryse, Matthews, and Zhao, 2018). Demirgüç-Kunt, Peria, and Tressel (2020) find the probability of renewing loans and securing investments decreased during the global financial crisis period, using the data from SMEs in Belgium. They also found that this relationship is pronounced for firms with high financial constraints. Degryse, Matthews, and Zhao (2018) use unique bank branch data set in the U.S. and examine the geographical factor that affects the loan availability during the global crisis period. Using data covering 75 countries, Vermoesen, Deloof, and Laveren (2013) show a decline in financial leverage in both developed and developing countries.

2.3 Hypothesis

As argued, labor share amplifies the cash flow risk of firms. Firms exposed to such labor cost risks can reduce their financial policies, especially liquidity management. Almeida, Campello, and Weisbach (2004) show that firms in financial constraints hoard cash so that they have a buffer against the risk. Therefore, our hypothesis is as follows:

HYPOTHESIS: Labor share and cash holdings are positively associated, especially in the small subgroup, because of their high risk conditions.

Several assumptions underlie this hypothesis: The first assumption is that a positive relationship exists because a high labor share plays a role in operating leverage, which amplifies revenue-cash flow sensitivity. Therefore, the positive sensitivity should be pronounced in the subsample with high labor-share firms.

The second assumption is that positive sensitivity comes from financial constraints. Therefore, a relationship should be observed when a firm faces financial difficulties. In the subsequent empirical analysis, we investigate the validity of these assumptions. In previous studies, the degree of financial constraint was measured by firm size (Hadlock and Pierce, 2010; Vermoesen, Deloof, and Laveren, 2013; Mulier, Schoors, and Merlevede, 2016). Usually, small firms have fewer financing choices (Berger, Saunders, Scalise, and Udell, 1998; Cowling, Liu, and Ledger, 2012; McGuinness and Hogan, 2016). Thus, they have fewer alternative financing sources. Hence, small firms tend to hold more cash than larger ones (Bigelli and Sánchez-Vidal, 2012; Gao, Harford, and Li, 2013). Therefore, we examine whether the relationship between labor share and cash holdings differs according to firm size.

3 Empirical Model and Data

3.1 Empirical model

This study relies on the simple regression model. The specification for testing the hypothesis is:

$$Cash_{ijt} = \alpha + \beta LS_{ijt} + \sum \gamma X_{ijt} + \delta_j + \theta_t + \epsilon_{it}, \tag{1}$$

where $Cash_{ijt}$ is the sum of cash, bank deposits, and tradable securities, divided by total assets of firm i belonging to the industry j at year t. The main variable of interest is $L.S._{ijt}$, which represents labor share. It is defined as the labor cost divided by the sum of operating profit and labor cost. The null hypothesis is that $\beta = 0$.

We estimate Equation 1 using the entire sample and subsamples divided by firm size. Because small firms suffer higher risks, the estimated coefficient of L.S., β should be positive

only for small firms. We divide the sample by the amount of equity capital. This is because, in the additional analysis, we combine banks' lending attitude data. Lending attitude data use equity capital as a proxy for firm size. Therefore, it is convenient to divide the sample by equity capital size. Results with alternative definitions of firm size are also reported as a robustness check. X_{it} contains various control variables frequently used in literature as determinants of cash holdings.

Both the labor share and cash ratio should differ by industry. Moreover, both ratios change throughout the sample period, and we add a set of industry-and year-fixed effects to control for the difference between industry and year. Furthermore, some unobserved components within the industry and year clusters are correlated. To control for such components, we also report standard error clustering at the industry and/or year levels.

3.2 Variable Definitions

3.2.1 Labor Share

Labor share is defined as the fraction of the distribution profit to employees. Then, formally, the labor share of firm$i$ in year t is defined as

$$LS_{it} = \frac{Salary_{it}}{Salary_{it} + OI_{it}} \tag{2}$$

$Salary_{it}$ is the sum of the salary, bonuses, and welfare of firm$i$ in year t. $O.I._{it}$ is the operating income of firm$i$ in year t. We eliminate the sample that reports that Salary is zero, which could occur when a firm does not employ any staff. We also eliminate observations with a negative labor share and whose labor share is greater than one, as in Donangelo, Gourio, Kehrig, and Palacios (2019).

3.2.2 Proxy of Credit Crunch: Banks' Lending Attitude Measurement (DI)

To measure the credit crunch, we use the DI from the Economic Survey of Enterprises (also known as Tankan) survey. Tankan is a survey of corporations conducted by the Bank of Japan. Tankan asks various questions about the expectation of the business and economic forecasts.

One of the segments in Tankan is concerned with the lending attitudes of financial institutions. It contains various questionnaires, including questions about the behavior of financial institutions toward new lending. There are three choices, "[1] favorable," "[2] moderate," and "[3] unfavorable." DI is defined as the difference in the percentage of firms that replied "[1] favorable" and the percentage of firms that replied "[3] unfavorable." Based on this definition, the DI can be interpreted as follows: The DI takes the value of zero if the percentage of firms responding "favorable" and "unfavorable" are identical. It takes a positive (negative) value when the number of firms replying favorable (unfavorable) is greater than those replying as unfavorable (favorable). Therefore, a positive DI value implies that lending by the bank sector works, and a negative DI value implies that friction, such as a liquidity shock, prevents banks' lending.

The Bank of Japan conducts the Tankan survey and reports the results, including the DI, in quarterly frequency by industry/firm size. Firm size is divided by equity capital into three groups: less than 10 million yen, 10 million to 100 million yen, and more than 100 million yen. The industry classification is based on Japan's Standard Industry Classification, but the Bank of Japan' s definition has been slightly modified from the original version. Specifically, Tankan does not cover several industries, mostly the service sector.

Tankan's DI is frequently used in studies of the Japanese economy as a proxy for banks' credit crunch (see, e.g., Takahashi (2017) and others for details).

Figure **??** describes the time-series trend of the DI for three firm size groups (small, medium, and large). While we use the DI for industry/size level in subsequent analysis, we do not divide by the industry in this figure to make the trend clear. Overall, we find a downturn trend at the beginning of our sample period from 2005 to 2009 partly because of the global financial crisis. Subsequently, this trend has increased since 2009. The DI value of the large-size group was positive from 2010, and that of the small-size group became positive from 2011. Note that the positive (negative) value of DI implies that the percentage of the firm that replied that the bank's attitude is favorable (unfavorable) is more than that of unfavorable (favorable)responses. Hense, our sample period contains both good and bad lending conditions of banks.

3.2.3 Control variables

We use the following control variables: $Size$, $Investment$, $NetWorkingCapital$, $Leverage$, and

$Profitability$, and $Standarddeviationofprofit$. The control variables employed in this study are defined as follow. Firm size, $Size$, is controlled for by adding the natural logarithm of sales. Small firms tend to hold more cash than small firms. Therefore, we predict a negative association between cash ratio and firm size. $Investment$ is the first difference between tangible assets and depreciation divided by total assets, capturing physical investment. The net working capital should be correlated with cash holding. Therefore, we add the variable NWC that is defined as the sum of trade receivables inventory substituting the trade payable divided by total assets. $Leverage$ is the financial book leverage, defined as total loans divided by total assets. The literature points to a negative relationship between financial leverage and cash holdings. We also control for a firm's profitability by adding the variable

$Profitability$, defined as net profit divided by total assets. Finally, we add the industry-level operating risk. Firm risk is known to be positively associated with cash holdings. Previous literature has frequently employed the standard deviation of cash flows for several years. The idea is that firms with volatile cash flow are riskier. Unfortunately, in the observation, firms with less than 500 million yen of equity capital are randomly chosen and observed for a maximum of two years, which makes it difficult to compute the standard deviation of cash flow. Alternatively, we computed the cross-sectional variation in profit for each industry/year. Specifically, for each industry, the standard deviation of the profits of all component firms was computed every year. We assume that firms in high-risk industries are risky.

3.3 Descriptive Statistics

3.3.1 Time Series of Labor Share and Cash Ratio

We also describe violin plots to understand the distribution of the two variables, as shown in Figure 2. The dots represent the mean value and show a gradual decline in labor share and an increase in cash holdings.

The cash ratio is concentrated at the bottom of the figure, whereas labor share is concentrated at the top of the figure. Labor share gradually declined in our sample period from 71% in 2005 to 68.5% in 2017. By contrast, the cash ratio increased from 17.9% in 2005 to 22.0% in 2017. The trends were the same in the three subgroups (the results are not reported because of space limitations). The labor share declined during the sample period. Specifically, the decline is tremendous in the small-size group, where the labor share declined by almost six percentage points from 72.5% in 2005 to 66.2% in 2017, whereas the cash ratio increased from 26.1% to 32.5%. The labor share of the median-size group decreased from

77.2% in 2005 to 73.5% in 2017, whereas the cash ratio increased from 26.1% to 32.5%. The labor share of the median-size group slightly decreased from 67.8% in 2005 to 66.3% in 2017, whereas the cash ratio increased from 13.7% to 17.9%.

3.3.2 Summary Statistics

Table 1 reports the descriptive statistics of variables used in this study. The average of $CashRatio$ is 0.195, indicating that 19.5% of assets are cash and cash equivalents. Median of $CashRatio$ is 12.9% lower than the mean value, implying that the distribution of cash ratio is right-skewed distribution. The average labor share is 70.8%, and the median is 77.5%. The average and median of DI are both positive (16 and 19), which implies that in more than half of our sample period, the lending condition is good (more than zero). However, it is not always good because the minimum of DI is negative (–44).

3.4 Data

3.4.1 Surveys for the Financial Statements Statistics of Corporate by Industry

The empirical analysis relies on firm-level data from surveys for the Financial Statements Statistics of Corporate by Industry (Establishment Surveys, hereafter) conducted by the Ministry of Finance. The surveys are conducted annually and quarterly This study uses the data from annual surveys because the quarterly surveys do not cover small firms, less than 10 million yen of equity capital. The establishment surveys ask for fundamental information, such as name, physical address, industry classification, number of employees, and financial information.

Notably, the Establishment Surveys do not cover all corporations. All firms with more than 500 million yen in equity capital are targeted for the survey. On the contrary, for

firms with less than 500 million yen in equity capital, the target firms of the survey are chosen randomly. Firms are divided by equity capital into four groups: less than 10 million, 10 million to 20 million, and 20 million to 50 million yen. The sample firms are chosen randomly from each industry in each equity capital group. Once a firm is chosen as the sample for the survey, it is required to reply to the questionnaires for the subsequent two years. This random sampling policy makes it impossible to make a balanced panel data set.

Throughout our analysis, we divide the observations into three groups by their size measured by equity capital: (i) small size, defined as firms with less than 10 million yen of equity capital; (ii) median size, defined as firms with equal to or more than 10 million and less than 100 million yen of equity capital; and (iii) large size, defined firms with 100 million yen or more of equity capital. The sample period is from 2005 to 2017. Our sample period ends in 2017 because it was the latest version we could obtain at the time of the beginning of this research project.

4 Empirical Results

4.1 Labor Share and Cash Holdings in Small-size Group

Table 2 reports estimated coefficients from equation 1 using small size groups by the various specifications. All estimations are estimated using the small firm group. Column 1 reports the results when the regressors are labor share and control variables, but without any fixed effects and clustering in the residual matrix. The estimated coefficient of labor share is positive and statistically significant. Further, the economic significance is marginal. A one percentage point increase in labor share increases the percentage of cash holdings by 0.056 percentage points. Therefore, labor share is not the primary determinant of cash holdings.

The estimated coefficients of the control variables are as follows. Firm size *Size* is negatively associated with cash holdings, consistent with the findings of Bigelli and Sánchez-Vidal (2012) andGao, Harford, and Li (2013). *Investment* is negatively associated with cash holdings, consistent with Opler, Pinkowitz, Stulz, and Williamson (1999). Financial leverage is negatively associated with cash holdings. High-profitability firms hold more cash, which is consistent with the findings of Opler, Pinkowitz, Stulz, and Williamson (1999). Net working capital is negatively associated with cash holdings. Bates et al. (2009) argue that net working capital substitutes cash holdings. Dividends are positively associated with cash holdings. Finally, the industry-level standard deviation of profitability is positively correlated with cash holdings. This finding implies that firms in high-risk industries hold more cash, which is consistent with the findings of Bates, Kahle, and Stulz (2009). Overall, these signs are consistent with those reported in previous studies.

Next, we report the results by adjusting the standard errors for clustering at the industry level to control for the correlation of the residuals within the industry in Column 2. The coefficients are almost the same as those in Column 1 of Table 2. The standard error of labor share increases from 0.0007 in Column 1 to 0.019 in Column 2. However, the statistical significance level in Column 2 is still at the 1% level, as in Column 1.

Both cash and labor share should differ among industries. We then control for the unobservable factor by adding fixed effects and adjusting clustering in various ways. In Column 3, we control for industry-fixed effects and control residuals within the industry. The estimated coefficient of labor share is positive and statistically significant, as in Columns 1 and 2. We also confirm that the signs of the control variables are the same as those in Columns 1 and 2. Column 4 reports the results with year-fixed effects and year-level clustering of standard errors. The estimated coefficients of labor share are 0.0557, and.

Finally, in Column 5, two-way fixed effects and clustering at the industry and year levels are estimated. The labor share is positively correlated with the cash ratio.

4.2 Various Firm-Size Groups

We hypothesized that a positive correlation between labor share and cash ratio would be observed in the small firm sample. To examine whether size matters, we estimate the same model with subsamples of various sizes. In all estimations, two-way fixed effects at the industry and year levels are controlled. In addition, standard errors are clustered at the industry and year levels.

Table 3 reports estimated coefficients from Equation [1] in various subsamples divided by firm size. Column [1] reports the results with the entire sample. We do not observe the statistical significance for the estimated parameter of $LaborShare$. Next, the sample is divided by firm size in Columns 2, 3, and 4. The result for the small size group reported in Column 2 is the same as that in Column 5 of Table 2 because both use exactly the same specification. The estimated parameter for $LaborShare$ is positive and statistically significant at the 1% level.

Columns 3 and 4 show the results for the medium-and large-sized groups. We find no relationship between labor share and cash holdings in these two groups. The estimated parameters of the $LaborShare$ are statistically insignificant. The signs of the control variables are the same as those in Columns 1 and 2, but that of $Dividends$ in the large group is now statistically insignificant. Overall, these results support the hypothesis that there is a positive association between labor share and the cash ratio in the small firm group.

4.3 Impact of Credit Crunch

Our hypothesis assumes that the positive relationship comes from financial constraints: firms with a high labor share increase cash holdings, especially when they find it difficult to access bank loans. The sensitivity of labor share to cash holdings is affected by bank lending friction. A liquidity shock in the banking sector reduces banks' loan provision, even for firms with positive NPV projects (Khwaja and Mian, 2008; Peek, Rosengren, and Tootell, 2003; Amiti and Weinstein, 2017). The impact of this credit crunch problem is pronounced for small firms (Chava and Purnanandam, 2011). As mentioned, small firms rely especially on bank lending. Therefore, a banking sector shock is pronounced for small firms (Vermoesen, Deloof, and Laveren, 2013; Demirgüç-Kunt, Peria, and Tressel, 2020; Degryse, Matthews, and Zhao, 2018).

To understand the impact of financial difficulty on the sensitivity of labor share to cash holdings, we estimate the following equation:

$$Cash_{ijt} = \alpha + \beta_1 LS_{ijt} + \beta_2 DI_{j,t-1} + \beta_3 LS_{ijt} \times DI_{j,t-1} + \sum \gamma X_{it} + \epsilon_{it}. \tag{3}$$

The $DI_{j,t-1}$ is the lagged value of DI that captures the degree of banks' lending attitude at year t in industry j where the firm i belongs. As explained, the DI is computed by a questionnaire for corporations and reports the attitude of financial intermediates for lending new loans. Therefore, the coefficient of the interaction term captures β_3, the joint effect of labor share, and banks' lending attitude (DI) on corporate cash holdings.

Table 4 reports the joint effect of labor share and the degree of the credit crunch on cash holdings. Column 1 reports the results of a small size group. The variables of interest are $LaborShare$, DI, and their interaction terms. The interaction term between the labor share

and DI is negative and statistically significant among the three variables. This implies that the relationship between labor share and cash holdings is pronounced when banks' lending attitudes are unfavorable for small firms. The estimated parameter of labor share is now statistically insignificant. This could imply that the impact of labor share on cash holdings is on the condition of banks' lending attitudes.

Interpretation of the interaction terms between the two continuous variables is not intuitive. Therefore, we plot the marginal effect of labor share on cash holdings under different DIs in Figure 3. Subfigure A of Figure 3 reports the marginal effects of the small-firm group with a 5% confidence level. We find that the marginal effect of labor share is positive when DI ranges between –50 and +10. It is noteworthy that the marginal effect is positive, even when DI equals zero. A zero DI value indicates that banks' lending attitudes are normal. Even in such an economic situation, small firms increase their cash holdings in response to their labor share.

In the median-size firm group (Subfigure B of Figure 3), the marginal effect of labor share is positive if DI is lower than –20. However, such low DI is rare. Even during the global financial crisis, the DI of medium-sized firms was approximately –40, as shown in Figure 1.[9] We do not find a positive relationship between labor share and cash holdings in the large group. In Subfigure C of Figure 3, we do not find a situation in which the marginal effect is statistically significantly different from zero for any DIs value.

[9]The DI reported in Figure 1 is size-level average values, whereas the DI used in estimations are size/industry level. Therefore, the DI of some industries during the global financial crisis is less than 40.

5 Additional Analysis

5.1 Dividing by Labor Share Intensity

Next, we divide the sample by the degree of labor share. The labor share amplifies firm risk when the labor share is high, akin to operating leverage. Therefore, firms have an incentive to increase their cash holdings when their labor share is sufficiently high. We then divide the sample by the labor share for each size group. Our hypothesis assumes a positive correlation only in the high labor-share subsample.

Table 5 reports the results of the subsample analysis. The labor share is positive and statistically significant only in column 2, which reports the estimated parameters of the subgroup of small-size firms with high labor share. The estimated coefficient is 0.161, implying a one percentage point increase of labor share increases cash holdings by 0.16 percentage point. None of the other five estimations report the statistical significance for the labor share.

5.2 Alternative Definitions of Labor Costs

The main analysis uses labor share, defined as the labor cost divided by value-added, following previous studies. Questions may arise about the validity of some alternative definitions of the labor shares. Labor share is important because it dominates a large portion of a firm's cost; therefore, measuring the labor cost over the total revenue or total costs instead of the profit would be preferable.

Table 6 reports the results using alternative definitions of the labor shares. In Panel A of Table 6, we define to use the fraction of labor costs on operating costs, the sum of the costs of goods sold and selling, general and administrative expenses, is used instead of labor

share. We use the same control variables as in previous estimations, but the results are not reported because of the space limitation. Similar to Table 2, various sets of fixed-effects and clustering are used. The labor cost is constantly and positively correlated with the cash ratio in all specifications at the 1% significance level. The results support our hypothesis that high labor cost leads to high cash holdings. This increase the sample size to 23,240, increased from Table 2. The difference is due to the sample limitation of labor shares.

In Panel B of Table 6, the main variable is the labor cost divided by sales. Here, we eliminate the sample in which the ratio is more than one, reducing the sample size in Panel B (23,188) from Panel A (23,240).

Similar to Panel A, the variable labor cost on sales are positively associated with cash holdings, supporting our hypothesis. Next, we define the excess labor share as the difference between the labor share and the predicted labor share. The idea is that labor share is influenced by various factors, including specific firms and industrial business customers.

Our main analysis extracts the industry-level factors by including industry-fixed effects. Alternatively, we estimate a simple equation in which labor share is the dependent variable and calculate the predicted labor share from the model. The difference between labor share and predicted labor share is defined as the excess labor share. The high (low) excess labor share implies that the firm's labor cost is higher (lower) than that of counterfactual firms in the same industry/year.

Panel C of Table 6 reports the results. Excess labor share is positively correlated with cash holdings. These findings support the view that supports our hypotheses.

5.3 Alternative Definitions of Firm Size

So far, we have used equity capital as the measurement of firm size because that makes it easy to connect with the Bank of Japan's DI data. One may argue for the validity of using equity capital as a proxy for firm size. Therefore, we use an alternative definition of firm size and examine how firm size affects the sensitivity of cash holdings to labor share. Indeed, other variables, such as the number of employees, sales, and total assets, have been used in previous studies. We use these variables as proxies for firm size, and estimate the following equation:

$$Cash_{it} = \alpha + \beta_1 LS_{it} + \beta_2 Size_{it} + \beta_3 LS_{it} \times Size_{it} + \sum \gamma X_{it} + \epsilon_{it}. \tag{4}$$

Now,$Size_{it}$ contains one of the firm size variables: number of employees, sales, and total assets of firm i in year t. If, as the hypothesis predicts, positive sensitivity is pronounced for small firms, we expect a negative value for β_3.

Table 7 reports the estimated coefficients from Eq.4. All estimations use the entire sample. In Column 1, firm size is measured by the natural logarithm of the number of employees. The estimated coefficient of labor share is positive, implying that, in small firms, labor share is positively associated with the cash ratio. Importantly, we find a negative coefficient for the interaction term, which is our variable of interest. The negative coefficient indicates that the positive sensitivity of labor share to the cash ratio is pronounced for small firms, supporting our hypothesis. The estimated coefficient of firm size variable, $N.of Employees$, is negative, indicating that the cash ratio is negatively associated with firm size, consistent with the findings of previous studies (Gao, Harford, and Li, 2013).

In Column 2, firm size is measured using the natural logarithm of sales. The estimated

coefficient of the interaction term is negative and statistically significant at the 5% level. Lastly, in column 3, firm size is measured by the natural logarithm of total assets and also finds a negative coefficient for the interaction term between labor share and size variable.

Overall, these findings support our hypothesis that labor share is positively associated with cash ratio, especially in small firms.

5.4 Sub-period Analysis

Next, we estimate with subsample groups to understand the impact of different economic conditions and examine whether labor share sensitivity on cash holdings is observed under specific economic conditions. Our sample can be divided into two periods. The first half covers the effect of the global financial crisis, and the second covers a stable economic growth period.

Table 8 reports the results of the subsample analysis. Columns 1 and 2 report the results of the small-size group, Columns 3 and 4 report the results of the median-size group, and Columns 5 and 6 report that with a large-size firm group. The sample period for Columns 1, 3, 5 is between 2005 and 2010, and for Columns 2, 4, and 6, it is between 2011 and 2017. We find that the positive sensitivity between labor share and cash holdings is observed in two subperiods for small-size firms. The estimated coefficients of *Labor Share* are positive and statistically significant in Columns 1 and 2. Interestingly, the economic impact is strong in the later period. For example, the estimated coefficient in column 2 is 0.058, larger than in column 1 (0.045).

5.5 Alternative Explanation: Impact of Profitable Firms

An alternative explanation for the positive sensitivity between labor share and cash holdings is possible. Current debates about the decline of labor share in the U.S. point out the existence of superstar firms, defined as firms with high-profit growth. If the labor cost does not increase, rapid profit growth leads to a decline in labor share (Autor, Dorn, Katz, Patterson, and Van Reenen, 2020). If superstar firms archive the decline of cash holdings by aggressive investment and simultaneously decrease their labor share, a positive relationship exists between labor share and cash holdings.

To detect this possibility, we examine the influence of superstar firms by dividing the sample by their profitability. Specifically, we estimate excess profitability as the difference between the realized and estimated profitability—the estimated profitability is the predicted value from a regression model where profitability is the dependent variable. The explanatory variables include $Size$, $Investment$, $Leverage$, NWC, $Dividends$, $St(Profit)$, year dummy variables, and industry dummy variables. High excess profitability indicates that the firm's profit is higher than that predicted by the model. We then divide the sample by whether the firm's excess profit is higher than the median (high excess profitability firms) or not (low excess profitability firms). If a small number of highly profitable companies cause a positive sensitivity of labor share to cash, we predict a positive correlation only in the high excess profitability subsample.

Table 9 reports the results of the subsample analysis. Columns 1 and 2 report the results of the small firm group. The positive sensitivities are observed in both high and low excess profitability groups. The results reject the concern that the high profitable (superstar firms) causes the positive sensitivity.

5.6 Labor share and Financial Leverage

Among the few studies that argue for labor share and corporate financial decision-making, Choi, Donangelo, and Kim (2019) find a positive correlation between financial leverage and labor share.[10] Because their motivation is to understand the joint impact of labor shares and financial leverage on stock returns, they do not dig deeply into the correlation between labor share and financial leverage. To complement their findings and support the assumption of our hypothesis that firms' financial decision-making is affected by labor share, we analyze the impact of labor share on financial leverage using a Japanese data set.

Table 10 reports the estimated coefficients from OLS estimations. In Panel A, book financial leverage, defined as the ratio of the total loan divided by total assets, is used as the dependent variable. In Panel B, net debt, defined as the difference of total loan and cash and cash equivalents divided by total assets, is used as the dependent variable. We find that the labor share is negatively associated with financial leverage and net debt ratio.

In Panel A, where financial leverage is used as the dependent variable, the coefficient of Labor Share is –0.0548 in the small subgroup (Column [2]). Interestingly, the sensitivity of labor share to financial leverage increases as firm size increases. The coefficient in the large-size subgroup (column [3]) is –0.0114. In Panel B, where net debt is the dependent variable, the coefficient is relatively stable. It is –0.012 in the small subgroup (column [2]) and –0.125 in the large subgroup (column [4]). This finding implies that labor cost risk affects financial decision-making.

[10]Yet, the main object of Choi, Donangelo, and Kim (2019) is to understand the joint effect of the labor share and financial leverage excess stock return. However, they show a positive correlation between labor share and capital structure and do not conduct formal empirical tests.

6 Conclusion

This study shows that labor share increases the cash ratio for small firms that suffer high financial friction with financial intermediates while relying on it. Utilizing the Establishment Survey data in Japan, we find a positive relationship between labor share and cash holdings, ceteris paribus, in only small-size firms subsample, firms with less than 10 million yen (equivalent to USD 100 thousand) of equity capital. No relationship between labor share and cash holdings is observed in the subsamples of medium and large firms. Additional tests show that positive sensitivity is pronounced for firms with high labor share. Furthermore, the credit crunch problem, measured by banks' lending attitudes, strongly affects the sensitivity of labor share to cash. We also confirm the positive sensitivity with alternative labor share and cash ratio definitions. Next, we reject the alternative explanation that highly profitable firms simultaneously achieve low labor share and high cash, resulting in positive sensitivity. Finally, we find that firms decrease financial leverage and increase cash holdings against labor cost risk. Overall, our analyses confirm that the increase in risk due to labor share affects the corporate finance decision-making of small firms.

This study contributes to the literature on labor share. The current decline in labor share globally stirs up debates about the mechanism of this decline. However, few studies have been conducted to understand the consequences of the labor share. Our study finds that the risk exposed by a high labor share affects a firm's corporate financial decision-making, especially cash holdings. Our study also contributes to the literature on cash holdings. It is well known that a firm's cash ratio is determined by its degree of risk. Previous studies have raised various concerns. This study addresses additional risks caused by high labor share.

References

Acharya, Viral, Sergei A Davydenko, and Ilya A Strebulaev, 2012, Cash holdings and credit risk, Review of Financial Studies 25, 3572–3609.

Acharya, Viral V, Tim Eisert, Christian Eufinger, and Christian Hirsch, 2018, Real effects of the sovereign debt crisis in Europe: Evidence from syndicated loans, Review of Financial Studies 31, 2855–2896.

Agrawal, Ashwini K, and David A Matsa, 2013, Labor unemployment risk and corporate financing decisions, Journal of Financial Economics 108, 449–470.

Almeida, Heitor, Murillo Campello, and Michael S. Weisbach, 2004, The Cash Flow Sensitivity of Cash, Journal of Finance 59, 1777–1804.

Amiti, Mary, and David E. Weinstein, 2017, How much do idiosyncratic bank shocks affect investment? Evidence from matched bank-firm loan data, Journal of Political Economy 126, 696272.

Autor, David, David Dorn, Lawrence F Katz, Christina Patterson, and John Van Reenen, 2020, The fall of the labor share and the rise of superstar firms, The Quarterly Journal of Economics 135, 645–709.

Bae, Kee Hong, and Jin Wang, 2015, Why Do Firms in Customer Supplier Relationships Hold More Cash ?, International Review of Finance.

Bakke, Tor-Erik, and Tiantian Gu, 2017, Diversification and cash dynamics, Journal of Financial Economics 123, 580–601.

Balduzzi, Pierluigi, Emanuele Brancati, and Fabio Schiantarelli, 2018, Financial markets, banks' cost of funding, and firms' decisions: Lessons from two crises, Journal of Financial Intermediation 36, 1–15.

Bates, Thomas W., Kathleen M. Kahle, and René M. Stulz, 2009, Why Do U.S. Firms Hold So Much More Cash than They Used To?, Journal of Finance 64, 1985–2021.

Baumol, William J, 1952, The transactions demand for cash: An inventory theoretic approach, The Quarterly journal of economics pp. 545–556.

Begenau, Juliane, and Berardino Palazzo, 2021, Firm selection and corporate cash holdings, Journal of Financial Economics 139, 697–718.

Berger, Allen N, Anthony Saunders, Joseph M Scalise, and Gregory F Udell, 1998, The effects of bank mergers and acquisitions on small business lending, Journal of Financial Economics 50, 187–229.

Bigelli, Marco, and Javier Sánchez-Vidal, 2012, Cash holdings in private firms, Journal of Banking & Finance 36, 26–35.

Chava, Sudheer, and Amiyatosh Purnanandam, 2011, The effect of banking crisis on bank-dependent borrowers, Journal of Financial Economics 99, 116–135.

Chen, Huafeng Jason, Marcin Kacperczyk, and Hernan Ortiz-Molina, 2011, Labor unions, operating flexibility, and the cost of equity, Journal of Financial and Quantitative Analysis 46, 25–58.

Chino, Atsushi, 2021, Alternative work arrangements and cost of equity: Evidence from a quasi-natural experiment, Journal of Financial and Quantitative Analysis 56, 569–606.

Choi, Jaewon, Andres Donangelo, and Yongjun Kim, 2019, Labor leverage, financial leverage and the dissection of expected returns, Mimeo.

Cowling, Marc, Weixi Liu, and Andrew Ledger, 2012, Small business financing in the UK before and during the current financial crisis, International Small Business Journal 30, 778–800.

De Marco, Filippo, 2019, Bank lending and the European sovereign debt crisis, Journal of Financial and Quantitative Analysis 54, 155–182.

Degryse, Hans, Kent Matthews, and Tianshu Zhao, 2018, SMEs and access to bank credit: Evidence on the regional propagation of the financial crisis in the UK, Journal of Financial Stability 38, 53–70.

Demirgüç-Kunt, Asli, Maria Soledad Martinez Peria, and Thierry Tressel, 2020, The global financial crisis and the capital structure of firms: Was the impact more severe among SMEs and non-listed firms?, Journal of Corporate Finance 60, 101514.

Dittmar, Amy, Jan Mahrt-Smith, and Henri Servaes, 2003, International corporate governance and corporate cash holdings, Journal of Financial and Quantitative analysis 38, 111–133.

Dittmar, Amy K., and Anjan V. Thakor, 2007, Why do firms issue equity?, Journal of Finance 62, 1–54.

Donangelo, Andres, François Gourio, Matthias Kehrig, and Miguel Palacios, 2019, The cross-section of labor leverage and equity returns, Journal of Financial Economics 132, 497–518.

Falato, Antonio, Dalida Kadyrzhanova, Jae Sim, and Roberto Steri, 2022, Rising intangible capital, shrinking debt capacity, and the US corporate savings glut, Journal of Finance.

Falato, Antonio, and Jae Sim, 2014, Why do innovative firms hold so much cash? Evidence from changes in state R&D tax credits, .

Favilukis, Jack, and Xiaoji Lin, 2015, Wage rigidity: A quantitative solution to several asset pricing puzzles, Review of Financial Studies 29, 148–192.

Fritz Foley, C., Jay C. Hartzell, Sheridan Titman, and Garry Twite, 2007, Why do firms hold so much cash? A tax-based explanation, Journal of Financial Economics 86, 579–607.

Gao, Huasheng, Jarrad Harford, and Kai Li, 2013, Determinants of corporate cash policy: Insights from private firms, Journal of Financial Economics 109, 623–639.

Gao, Xiaodan, and Jake Zhao, 2022, R&D dynamics and corporate cash saving, Review of Economic Dynamics 43, 263–285.

Ghaly, Mohamed, Viet Anh Dang, and Konstantinos Stathopoulos, 2015, Cash holdings and employee welfare, Journal of Corporate Finance 33, 53–70.

Giebel, Marek, and Kornelius Kraft, 2020, Bank credit supply and firm innovation behavior in the financial crisis, Journal of Banking & Finance 121, 105961.

Hadlock, Charles. J., and Joshua. R. Pierce, 2010, New evidence on measuring financial constraints: Moving beyond the KZ index, Review of Financial Studies 23, 1909–1940.

Harford, Jarrad, 1999, Corporate cash reserves and acquisitions, Journal of Finance 55, 1969–1997.

He, Zhaozhao, and M Babajide Wintoki, 2016, The cost of innovation: R&D and high cash holdings in US firms, Journal of Corporate Finance 41, 280–303.

Huffman, Lucy, 1983, Operating leverage, financial leverage, and equity risk, Journal of banking & finance 7, 197–212.

Ivashina, Victoria, and David Scharfstein, 2010, Bank lending during the financial crisis of 2008, Journal of Financial Economics 97, 319–338.

Kehrig, Matthias, and Nicolas Vincent, 2021, The micro-level anatomy of the labor share decline, Quarterly Journal of Economics 136, 1031–1087.

Keynes, John Maynard, 1936, The General Theory of Employment, Interest and Money. (Macmillan London).

Khwaja, Asim Ijaz, and Atif Mian, 2008, Tracing the impact of bank liquidity shocks: Evidence from an emerging market, American Economic Review 98, 1413–1442.

Lev, Baruch, 1974, On the association between operating leverage and risk, Journal of financial and quantitative analysis 9, 627–641.

Lim, Steve C, Antonio J Macias, and Thomas Moeller, 2020, Intangible assets and capital structure, Journal of Banking & Finance 118, 105873.

Lyandres, Evgeny, and Berardino Palazzo, 2016, Cash holdings, competition, and innovation, Journal of Financial and Quantitative Analysis 51, 1823–1861.

McGuinness, Gerard, and Teresa Hogan, 2016, Bank credit and trade credit: Evidence from SMEs over the financial crisis, International Small Business Journal: Researching Entrepreneurship 34, 412–445.

Mulier, Klaas, Koen Schoors, and Bruno Merlevede, 2016, Investment-cash flow sensitivity and financial constraints: Evidence from unquoted European SMEs, Journal of Banking and Finance 73, 182–197.

Novy-Marx, Robert, 2010, Operating leverage, Review of Finance 15, 103–134.

OECD, 2015, The labour share in G20 economies, Report prepared for the G20 Employment Working Group.

Opler, Tim, Lee Pinkowitz, René Stulz, and Rohan Williamson, 1999, The determinants and implications of corporate cash holdings, Journal of Financial Economics 52, 3–46.

Palazzo, Berardino, 2012, Cash holdings, risk, and expected returns, Journal of Financial Economics 104, 162–185.

Peek, Joe, Eric S Rosengren, and Geoffrey M B Tootell, 2003, Identifying the macroeconomic effect of loan supply shocks, Journal of Money, Credit and Banking pp. 931–946.

Shikimi, Masayo, 2019, Bank relationships and corporate cash holdings, Pacific-Basin Finance Journal 57, 101185.

Takahashi, Koji, 2017, Bank loan supply shocks and the real economy: The case of Japan, SSRN Discussion Paper Series 2619874.

Vermoesen, Veronique, Marc Deloof, and Eddy Laveren, 2013, Long-term debt maturity and financing constraints of SMEs during the Global Financial Crisis, Small Business Economics 41, 433–448.

Whited, Toni M., and Guojun Wu, 2006, Financial constraints risk, Review of Financial Studies 19, 531–559.

Figures

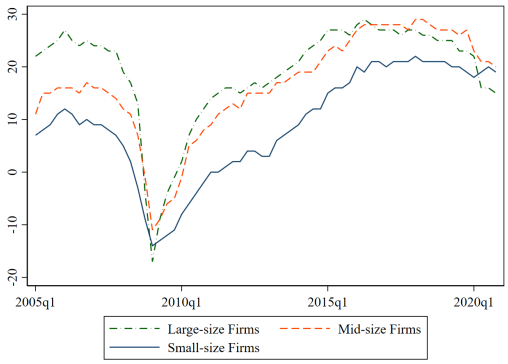


Figure 1: Time-series of Cash and Labor Share

This figure describes the banks' lending attitude (From Tankan DI) for small-, mid-, and large-size firms.

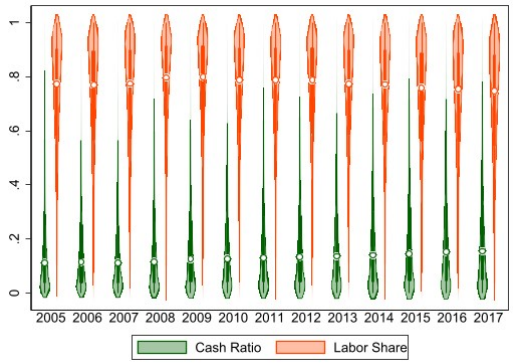
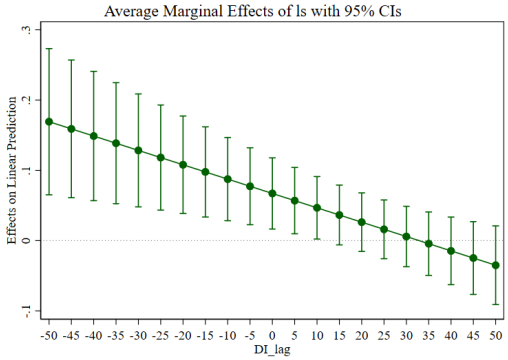
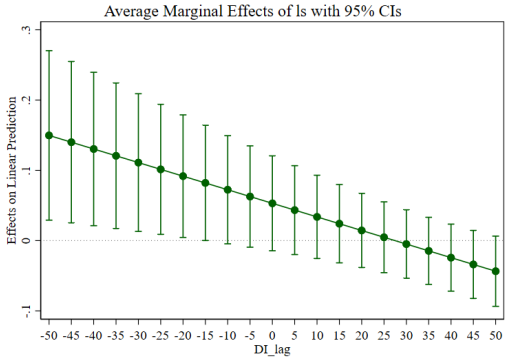


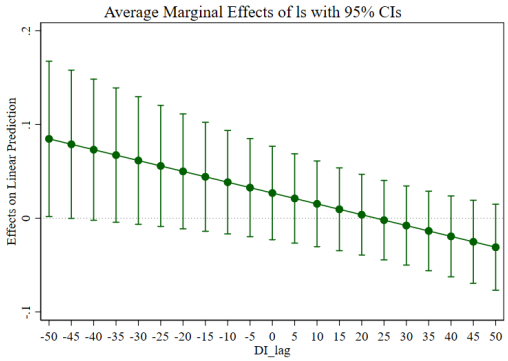
Figure 2: Time-series of Cash and Labor Share
This figure shows the time-series trend of the distributions of cash ratio and labor shares.



Subfigure A Small-Size



Subfigure B Mid-Size



Subfigure C Large-Size

Figure 3: Time-series of Cash and Labor Share

This figure shows the marginal effects of labor share on cash in various firm size groups.

Tables

Table 1: Descriptive Statistics

This table reports the summary statistics of variables used in the empirical analysis.

	mean	sd	p25	p75
Cash Ratio	0.19	0.201	0.042	0.281
Labor Share	0.71	0.242	0.577	0.899
DI	16.36	14.390	7.000	26.500
Size	7.96	2.533	6.100	9.860
Investment	0.03	0.047	0.004	0.042
Leverage	0.29	0.280	0.000	0.497
Profitability	0.01	0.098	0.000	0.044
NWC	0.14	0.176	0.009	0.237
Dividends	0.01	0.016	0.000	0.005
StDev(Profit)	0.10	0.022	0.078	0.107
Observations	285054			

Table 2: Impact of Labor Share on cash holdings of Small-size Firms.

This table reports the association between labor share and the cash-to-assets ratio. In all columns, the dependent variables are cash ratio. OLS estimate is used to obtain the parameters. Column 1 reports the results with the entire sample. Columns 2, 3, and 4 report the results of the small, medium, and large-size firms. Control variables are an investment, networking capital, financial leverage, profitability, the industry-level standard deviation of profit, and firm size. The small-size group covers the observations with less than 10 million yen of equity capital; the median size group covers the observations that equity capital is 10 million or more and less than 100 million yen, and the large-size group covers observations those equity capital is 100 million yen or more. All estimations includes industry-fixed effects and standard errors are clustered at the industry-level. ***, **, and * represents statistical significance at the 1, 5, and 10% level, respectively.

	(1) Small	(2) Small	(3) Small	(4) Small	(5) Small
Labor Share	0.0564***	0.0564**	0.0506**	0.0557***	0.0518**
	(0.00768)	(0.0195)	(0.0144)	(0.0101)	(0.0166)
Size	-0.0242***	-0.0242***	-0.0243***	-0.0241***	-0.0246***
	(0.00172)	(0.00229)	(0.00213)	(0.00267)	(0.00318)
Investment	-0.259***	-0.259***	-0.252***	-0.251***	-0.250***
	(0.0333)	(0.0453)	(0.0434)	(0.0349)	(0.0447)
Leverage	-0.265***	-0.265***	-0.252***	-0.265***	-0.253***
	(0.00635)	(0.0170)	(0.0159)	(0.00664)	(0.0159)
Profitability	0.472***	0.472***	0.437***	0.446***	0.423***
	(0.0265)	(0.0452)	(0.0375)	(0.0317)	(0.0413)
NWC	-0.227***	-0.227***	-0.249***	-0.224***	-0.247***
	(0.00839)	(0.0260)	(0.0256)	(0.00827)	(0.0248)
Dividends	1.196***	1.196**	1.189**	1.214*	1.217*
	(0.340)	(0.378)	(0.382)	(0.466)	(0.504)
StDev(Profit)	0.392***	0.392	-0.412*	0.566***	0.268
	(0.0802)	(0.256)	(0.201)	(0.104)	(0.149)
Constant	0.611***	0.611***	0.697***	0.594***	0.632***
	(0.0222)	(0.0380)	(0.0214)	(0.0329)	(0.0407)
N. Observation	12808	12808	12808	12808	12808
Adjusted R-Squared	0.241	0.241	0.258	0.246	0.261
Clustering		Ind	Ind	Year	Ind × Year
Fixed-effects			Ind	Year	Ind × Year

Table 3: Relationsihp between labor share and cash holdings

This table reports the association between labor share and the cash-to-assets ratio. In all columns, the dependent variables are cash ratio. OLS estimate is used to obtain the parameters. Column 1 reports the results with the entire sample. Columns 2, 3, and 4 reports the results of small, medium, and large-size firms. Control variables are investment, networking capital, financial leverage, profitability, the industry-level standard deviation of profit, and firm size. The small-size group covers the observations with less than 10 million yen of equity capital; the median size group covers the observations that equity capital is 10 million or more and less than 100 million yen, and the large-size group covers observations those equity capital is 100 million yen or more. All estimations includes industry-fixed effects and standard errors are clustered at the industry-level. ***, **, and * represents statistical significance at the 1, 5, and 10% level respectively.

	(1) Entire	(2) Small	(3) Mid	(4) Large
Labor Share	0.0230	0.0518**	0.00740	-0.00783
	(0.0177)	(0.0166)	(0.0174)	(0.0209)
Size	-0.0189***	-0.0246***	-0.0199***	-0.0227***
	(0.00209)	(0.00318)	(0.00214)	(0.00342)
Investment	-0.344***	-0.250***	-0.308***	-0.411***
	(0.0687)	(0.0447)	(0.0365)	(0.0835)
Leverage	-0.159***	-0.253***	-0.242***	-0.165***
	(0.0116)	(0.0159)	(0.0161)	(0.0144)
Profitability	0.565***	0.423***	0.385***	0.312***
	(0.0450)	(0.0413)	(0.0423)	(0.0604)
NWC	-0.157***	-0.247***	-0.177***	-0.140**
	(0.0306)	(0.0248)	(0.0358)	(0.0332)
Dividends	-0.889***	1.217*	-0.165	-0.415***
	(0.103)	(0.504)	(0.101)	(0.0894)
StDev(Profit)	0.234*	0.268	0.228*	0.104
	(0.0822)	(0.149)	(0.104)	(0.0757)
Constant	0.368***	0.632***	0.443***	0.416***
	(0.0362)	(0.0407)	(0.0313)	(0.0557)
N. Observation	206880	12808	62545	131527
Adjusted R-Squared	0.230	0.261	0.261	0.249

Table 4: Impact of Credit Crunch

This table reports the impact of banks' lending attitude on the sensitivity of labor share on the cash ratio. In all columns, an OLS estimate is used to obtain the parameters. Columns 1, 2, and 3 reports the results of small, medium, and large-size firms. Control variables are an investment, networking capital, financial leverage, profitability, industry-level standard deviation of profit, and firm size. ***, **, and * represents statistical significance at the 1, 5, and 10% level, respectively.

	(1) Small	(2) Mid	(3) Large
Labor Share	0.0671*	0.0531	0.0268
	(0.0249)	(0.0332)	(0.0246)
DI_lag	0.00235**	0.00212***	0.00114**
	(0.000661)	(0.000577)	(0.000348)
Labor Share × DI_lag	-0.00204**	-0.00193**	-0.00116*
	(0.000654)	(0.000619)	(0.000440)
Size	-0.0223***	-0.0212***	-0.0244***
	(0.00272)	(0.00393)	(0.00425)
Investment	-0.244***	-0.374***	-0.462***
	(0.0466)	(0.0461)	(0.0642)
Leverage	-0.249***	-0.247***	-0.180***
	(0.0214)	(0.0248)	(0.0195)
Profitability	0.442***	0.425***	0.366***
	(0.0545)	(0.0653)	(0.0702)
NWC	-0.222***	-0.167***	-0.134***
	(0.0279)	(0.0423)	(0.0346)
Dividends	0.807	-0.144	-0.465***
	(0.496)	(0.171)	(0.0787)
StDev(Profit)	0.175	0.636	1.240***
	(0.357)	(0.325)	(0.305)
Constant	0.594***	0.370***	0.299***
	(0.0223)	(0.0742)	(0.0484)
N. Observation	8484	46285	101860
Adjusted R-Squared	0.229	0.232	0.220

Table 5: Subsample by Labor Share

This table reports the influence of the industry characteristics on the relationsihp between labor share and cash holdingss. In all columns, an OLS estimate is used to obtain the parameters. Columns 1 and 2 report the results with small-size group, columns 3 and 4 report that with median size, and columns 5 and 6 report that with large the size group. The sample is divided by the labor share where columns 1, 3, 5 consist of the observation with less than the median of labor share for each size group, and columns 2, 4, 6 consist of that with equal or more than the median of labor share. Control variables are investment, networking capital, financial leverage, profitability, the industry-level standard deviation of profit, and firm size. The small-size group covers the observations with less than 10 million yen of equity capital; the median size group covers the observations that equity capital is 10 million or more and less than 100 million yen, and the large-size group covers observations those equity capital is 100 million yen or more. All estimations includes industry-fixed effects and standard errors are clustered at the industry-level. ***, **, and * represents statistical significance at the 1, 5, and 10% level respectively.

	(1) Small_High	(2) Small_Low	(3) Mid_High	(4) Mid_Low	(5) Large_High	(6) Large_Low
Labor Share	0.162*	0.0289	-0.00940	0.0155	-0.00390	-0.00394
	(0.0559)	(0.0178)	(0.0334)	(0.0200)	(0.0221)	(0.0232)
Size	-0.0267***	-0.0217***	-0.0240***	-0.0168***	-0.0287***	-0.0192***
	(0.00436)	(0.00294)	(0.00158)	(0.00273)	(0.00284)	(0.00339)
Investment	-0.300***	-0.196*	-0.299***	-0.318***	-0.430***	-0.404**
	(0.0380)	(0.0837)	(0.0369)	(0.0459)	(0.0739)	(0.0938)
Leverage	-0.237***	-0.263***	-0.227***	-0.256***	-0.151***	-0.177***
	(0.0123)	(0.0207)	(0.0149)	(0.0193)	(0.0120)	(0.0190)
Profitability	0.479***	0.398***	0.327***	0.405***	0.155**	0.362***
	(0.0618)	(0.0458)	(0.0412)	(0.0429)	(0.0416)	(0.0642)
NWC	-0.228***	-0.273***	-0.174***	-0.181***	-0.165***	-0.121*
	(0.0275)	(0.0293)	(0.0333)	(0.0401)	(0.0271)	(0.0429)
Dividends	0.637	1.554*	-0.179**	-0.190	-0.432**	-0.462***
	(0.406)	(0.687)	(0.0581)	(0.151)	(0.117)	(0.0935)
StDev(Profit)	0.471*	0.0596	0.168	0.246	0.104	0.101
	(0.169)	(0.285)	(0.117)	(0.136)	(0.0626)	(0.105)
Constant	0.524***	0.639***	0.485***	0.420***	0.474***	0.377***
	(0.0526)	(0.0390)	(0.0385)	(0.0365)	(0.0384)	(0.0565)
N. Observation	6404	6404	31264	31281	59505	72022
Adjusted R-Squared	0.251	0.272	0.241	0.282	0.265	0.253

Table 6: Alternative Definition of Labor Share

This table reports the results of the analysis with alternative definitions of labor share. In all columns, the dependent variables are cash ratio. OLS estimate is used to obtain the parameters. The labor cost divided by operating cost is used in Panel A, labor cost divided by sales is used in Panel B, and excess labor share is used in Panel C. In all estimations. The specification is same with previous analysis. ***, **, and * represents statistical significance at the 1, 5, and 10% level respectively.

Panel A Labor Costs / Operating Costs

	(1)	(2)	(3)	(4)	(5)
LS (LC/Costs)	0.0826***	0.0826***	0.0729***	0.0776***	0.0738***
	(0.00879)	(0.0167)	(0.0134)	(0.00938)	(0.0130)
Controls	✓	✓	✓	✓	✓
N. Observation	23188	23188	23188	23188	23188
Adjusted R-Squared	0.188	0.188	0.210	0.196	0.215
Clustering		Ind	Ind	Year	Ind × Year
Fixed-effects			Ind	Year	Ind × Year

Panel B Labor Costs/Total Revenue

	(1)	(2)	(3)	(4)	(5)
LS (LC/Sales)	0.0755***	0.0755***	0.0653***	0.0705***	0.0660***
	(0.00875)	(0.0159)	(0.0126)	(0.00913)	(0.0121)
Controls	✓	✓	✓	✓	✓
N. Observation	23188	23188	23188	23188	23188
Adjusted R-Squared	0.187	0.187	0.209	0.195	0.214
Clustering		Ind	Ind	Year	Ind × Year
Fixed-effects			Ind	Year	Ind × Year

Panel C Abnormal Labor Costs

	(1)	(2)	(3)	(4)	(5)
Residuals	0.0447***	0.0447***	0.0500**	0.0463**	0.0518**
	(0.00826)	(0.0125)	(0.0144)	(0.0120)	(0.0166)
Controls	✓	✓	✓	✓	✓
N. Observation	12808	12808	12808	12808	12808
Adjusted R-Squared	0.239	0.239	0.258	0.245	0.261
Clustering		Ind	Ind	Year	Ind × Year
Fixed-effects			Ind	Year	Ind × Year

Table 7: Alternative Definition of Firm Size

This table reports the impact of firm size on the sensitivity of labor share and the cash-to-assets ratio. In all columns, the dependent variables are cash ratio. Firm size is measured by the natural logarithm of number of employees in column 1, natural logarithm of sales in column 2, and natural logarithm of total assets in column 3. All estimations use the entire sample. OLS estimate is used to obtain the parameters. All estimations includes industry-fixed effects and standard errors are clustered at the industry-level. Control variables are investment, networking capital, financial leverage, profitability, and the industry-level standard deviation of profit. ***, **, and * represents statistical significance at the 1, 5, and 10% level respectively.

	(1)	(2)	(3)
Labor Share	0.153***	0.148*	0.0609
	(0.0243)	(0.0484)	(0.0343)
N. of Employees	-0.0175**		
	(0.00419)		
Labor Share × N. of Employees	-0.0196***		
	(0.00436)		
Sales		-0.00813	
		(0.00439)	
Labor Share × Sales		-0.0152**	
		(0.00447)	
Total Assets			-0.0162***
			(0.00270)
Labor Share × Total Assets			-0.00781*
			(0.00289)
Investment	-0.367***	-0.342***	-0.367***
	(0.0697)	(0.0690)	(0.0666)
Leverage	-0.187***	-0.160***	-0.155***
	(0.0129)	(0.0117)	(0.0120)
Profitability	0.486***	0.564***	0.483***
	(0.0432)	(0.0431)	(0.0429)
NWC	-0.167***	-0.160***	-0.173***
	(0.0294)	(0.0295)	(0.0300)
Dividends	-0.558***	-0.918***	-0.880***
	(0.0928)	(0.103)	(0.102)
StDev(Profit)	0.156	0.238*	0.209*
	(0.0795)	(0.0822)	(0.0740)
Constant	0.274***	0.281***	0.371***
	(0.0306)	(0.0506)	(0.0363)
N. Observation	205449	206880	206880
Adjusted R-Squared	0.272	0.232	0.244

Table 8: Subperiod Analysis

This table reports the association between labor share and cash ratio. In all columns, an OLS estimate is used to obtain the parameters. The column 1 and 2 report the results with small-size group, columns 3 and 4 report that with median size, and columns 5 and 6 report that with large the size group. The sample period for columns 1, 3,5 are between 2005 and 2010, and columns 2, 4, and 6 are between 2011 and 2017. Control variables are investment, networking capital, financial leverage, profitability, the industry-level standard deviation of profit, and firm size. The small-size group covers the observations with less than 10 million yen of equity capital; the median size group covers the observations that equity capital is 10 million or more and less than 100 million yen, and the large-size group covers observations those equity capital is 100 million yen or more. All estimations includes industry-fixed effects and standard errors are clustered at the industry-level. ***, **, and * represents statistical significance at the 1, 5, and 10% level, respectively

	(1) Small 2010	(2) Small 2011	(3) Mid 2010	(4) Mid 2011	(5) Large 2010	(6) Large 2011
Labor Share	0.0456	0.0582*	0.00605	0.00989	-0.0117	-0.00379
	(0.0178)	(0.0223)	(0.0157)	(0.0190)	(0.0183)	(0.0247)
Size	-0.0245**	-0.0246***	-0.0203***	-0.0198***	-0.0215**	-0.0238***
	(0.00463)	(0.00404)	(0.00207)	(0.00232)	(0.00330)	(0.00351)
Investment	-0.270**	-0.226*	-0.326***	-0.300***	-0.355**	-0.473**
	(0.0591)	(0.0717)	(0.0363)	(0.0425)	(0.0683)	(0.0927)
Leverage	-0.247***	-0.260***	-0.231***	-0.252***	-0.164***	-0.165***
	(0.0171)	(0.0211)	(0.0177)	(0.0153)	(0.0170)	(0.0131)
Profitability	0.390***	0.455***	0.350***	0.413***	0.211**	0.424**
	(0.0517)	(0.0561)	(0.0349)	(0.0536)	(0.0454)	(0.0728)
NWC	-0.249***	-0.249***	-0.162**	-0.190**	-0.116*	-0.161**
	(0.0231)	(0.0337)	(0.0326)	(0.0386)	(0.0304)	(0.0348)
Dividends	1.869*	0.407	0.0274	-0.286*	-0.151	-0.606***
	(0.685)	(0.589)	(0.153)	(0.0920)	(0.106)	(0.0774)
StDev(Profit)	0.107	0.472	0.420*	0.0413	0.278**	0.0322
	(0.289)	(0.304)	(0.127)	(0.126)	(0.0668)	(0.0465)
Constant	0.639***	0.625***	0.408***	0.472***	0.376***	0.439***
	(0.0746)	(0.0441)	(0.0279)	(0.0349)	(0.0508)	(0.0525)
N. Observation	7004	5804	27865	34680	59389	72138
Adj. R-Squared	0.258	0.258	0.245	0.265	0.246	0.249

Table 9: Excess Profitability

This table reports the impact of profitability on the relationsihp between labor share and cash holdings. In all columns, an OLS estimate is used to obtain the parameters. Columns 1 and 2 report the results with small-size group, columns 3 and 4 and report that with median size, and columns 5 and 6 report that with large the size group. Columns 1, 3,5 (2,4, and 6) consist of the sample with high (low) excess profitability. Control variables are investment, networking capital, financial leverage, profitability, the industry-level standard deviation of profit, and firm size. The small-size group covers the observations with less than 10 million yen of equity capital; the median size group covers the observations that equity capital is 10 million or more and less than 100 million yen, and the large-size group covers observations those equity capital is 100 million yen or more. All estimations includes industry-fixed effects and standard errors are clustered at the industry-level. ***, **, and * represents statistical significance at the 1, 5, and 10% level, respectively.

	(1) Small High	(2) Small low	(3) Mid High	(4) Mid Low	(5) Large High	(6) Large Low
Labor Share	-0.0116	0.0564**	0.00740	0.00897	-0.0902***	0.000889
	(0.0246)	(0.0164)	(0.0141)	(0.0170)	(0.0170)	(0.0192)
Size	-0.0247**	-0.0249***	-0.0280***	-0.0189***	-0.0318***	-0.0221***
	(0.00660)	(0.00350)	(0.00336)	(0.00209)	(0.00466)	(0.00318)
Investment	-0.356**	-0.241***	-0.567***	-0.271***	-0.588***	-0.382***
	(0.0843)	(0.0512)	(0.0829)	(0.0348)	(0.104)	(0.0807)
Leverage	-0.215***	-0.256***	-0.254***	-0.241***	-0.199***	-0.164***
	(0.0242)	(0.0168)	(0.0118)	(0.0169)	(0.0254)	(0.0147)
Profitability	0.111	0.440***	0.114*	0.294***	0.120*	0.199**
	(0.248)	(0.0591)	(0.0504)	(0.0406)	(0.0523)	(0.0528)
NWC	-0.431***	-0.222***	-0.338***	-0.156**	-0.280***	-0.124**
	(0.0387)	(0.0254)	(0.0340)	(0.0380)	(0.0335)	(0.0331)
Dividends	2.642***	0.835	-0.177	-0.168	-0.453***	-0.428**
	(0.548)	(0.487)	(0.151)	(0.0858)	(0.0930)	(0.114)
StDev(Profit)	-0.917	0.369*	0.179	0.215	0.0925	0.0784
	(0.842)	(0.151)	(0.175)	(0.105)	(0.302)	(0.0764)
Constant	0.911***	0.617***	0.600***	0.431***	0.634***	0.403***
	(0.114)	(0.0416)	(0.0198)	(0.0308)	(0.0691)	(0.0511)
N. Observation	1280	11527	6254	56290	11570	119957
Adjusted R-Squared	0.255	0.247	0.246	0.245	0.281	0.238

Table 10: Labor Share and Financial Leverage

This table reports the association between labor share and the financial leverage measured by book financial leverage (in Panel A) and net debt (in Panel B). In all columns, the dependent variables are cash ratio. OLS estimate is used to obtain the parameters. Column 1 reports the results with the entire sample. Columns 2, 3, and 4 reports the results of small, medium, and large-size firms. Control variables are investment, networking capital, financial leverage, profitability, the industry-level standard deviation of profit, and firm size. The small-size group covers the observations with less than 10 million yen of equity capital; the median size group covers the observations that equity capital is 10 million or more and less than 100 million yen, and the large-size group covers observations those equity capital is 100 million yen or more. All estimations includes industry-fixed effects and standard errors are clustered at the industry-level. ***, **, and * represents statistical significance at the 1, 5, and 10% level respectively.

Panel A Book Leverage

	(1) Entire	(2) Small	(3) Mid	(4) large
Labor Share	-0.0836**	-0.0548*	-0.0823**	-0.114**
	(0.0218)	(0.0211)	(0.0209)	(0.0288)
Size	-0.0144***	0.00425	-0.0181***	-0.00843*
	(0.00268)	(0.00475)	(0.00344)	(0.00378)
Investment	0.496***	0.551***	0.559***	0.374**
	(0.0645)	(0.0894)	(0.0638)	(0.0886)
Profitability	-0.687***	-0.693***	-0.882***	-0.918***
	(0.0643)	(0.0708)	(0.0642)	(0.0764)
NWC	0.238***	0.139***	0.236***	0.220***
	(0.0313)	(0.0265)	(0.0302)	(0.0404)
Dividends	-2.910***	-3.985***	-3.707***	-1.909***
	(0.252)	(0.508)	(0.192)	(0.196)
StDev(Profit)	-0.0143	0.142	-0.196	-0.0216
	(0.136)	(0.253)	(0.187)	(0.162)
Constant	0.444***	0.405***	0.534***	0.378***
	(0.0175)	(0.0489)	(0.0262)	(0.0262)
N. Observation	206880	12808	62545	131527
Adjusted R-Squared	0.175	0.0826	0.147	0.203

Panel B Net Debt

	(1) Entire	(2) Small	(3) Mid	(4) large
Labor Share	-0.120*	-0.120**	-0.110*	-0.125*
	(0.0408)	(0.0381)	(0.0387)	(0.0508)
Size	0.00220	0.0299**	-0.00256	0.0129**
	(0.00208)	(0.00757)	(0.00342)	(0.00353)
Investment	0.919***	0.940***	1.003***	0.846***
	(0.109)	(0.138)	(0.104)	(0.169)
Profitability	-1.361***	-1.291***	-1.481***	-1.382***
	(0.0914)	(0.120)	(0.0890)	(0.116)
NWC	0.433***	0.421***	0.469***	0.397***
	(0.0320)	(0.0363)	(0.0482)	(0.0259)
Dividends	-2.483***	-6.209***	-4.440***	-1.810***
	(0.299)	(0.958)	(0.294)	(0.286)
StDev(Profit)	-0.251	-0.0893	-0.472	-0.129
	(0.172)	(0.460)	(0.244)	(0.231)
Constant	0.147**	-0.124	0.221***	0.0239
	(0.0379)	(0.0782)	(0.0367)	(0.0559)
N. Observation	206880	12808	62545	131527
Adjusted R-Squared	0.191	0.149	0.183	0.232