Supplier Financing Agreements and Cash Flows

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Abstract: Supplier financing is a potential win-win scenario for a firm and its suppliers, providing the option to the supplier of receiving early or on-time payment while also allowing the buyer to potentially extend payment terms and manage working capital. ASU 2022-04 requires that firms disclose details about their supplier financing arrangements, including the amount of payables that have been financed and whether payment terms have been extended. Using 10-Qs from the first five months following this new disclosure requirement, we identify firms with supplier financing arrangements and examine the impact of those arrangements on cash holdings and analysts' cash flow forecasts. We find that firms with supplier financing have lower abnormal cash flows, lower excess cash holdings, and a higher likelihood of analysts forecasting their cash flows. Additionally, we find that cash flow forecasts are revised downwards and have greater forecast dispersion following disclosure of supplier financing arrangements.

Keywords: Supplier Financing, Reverse Factoring, ASU 2022-04, Cash Flows, Cash Flow Forecasts

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1. Introduction

Supplier financing, also known as supply chain financing or reverse factoring, is a financial arrangement in which a financial institution serves as an intermediary between a firm and its suppliers. The financial intermediary acts as the link between a firm (the buyer) and its suppliers, facilitating the financial transaction. It receives payment from the firm based on negotiated terms and remits payment to the supplier on behalf of the firm. However, the timing of these payments is not necessarily sequential. The firm can defer payments to a later date for a financing fee, and suppliers may choose to receive early payment at a discounted amount. In other words, the firm can utilize supplier financing arrangements to extend its payment terms without affecting the supplier's receipt of payment. This extension of payment terms provides the firm with additional time to use its cash for other needs, effectively improving short-term liquidity. Additionally, the firm can offer earlier payment to its suppliers via the financial intermediary without affecting the timing of its own cash flows.

While supplier financing is a source of short-term financing, firms are generally not required to disclose these arrangements prior to 2023. In its recently issued accounting standard update (ASU 2022-04), the FASB notes that for most firms, these arrangements are included within accounts payable with no disclosure regarding the extent of reliance on these financing arrangements nor the payment terms of these arrangements (FASB 2022). With ASU 2022-04, the FASB now requires firms to disclose the magnitude of its supplier financing obligations and the payment terms of these obligations.

We examine the supplier financing disclosures for the first five months following the effective date of this new disclosure requirement. We predict and find that firms utilizing supplier

financing arrangements have lower operating cash flows and have higher analyst coverage of their cash flows. We also find preliminary evidence that the new disclosure requirement does not provide information useful to analysts in forecasting future cash flows.

The use of supplier financing has increased from an estimated $448 million globally in 2016 to $2.2 trillion globally in 2022 (BCR 2023). Through supplier financing arrangements, firms can offer early payment options to their suppliers which can result in an enhanced relationship with suppliers and a reduction in the risk of supply chain disruptions due to suppliers' financial difficulties. Importantly, supplier financing also helps firms optimize their working capital by allowing them to extend their payment terms with suppliers.

An increase in short term liabilities (e.g., accounts payable) increases operating cash flows. Therefore, firms can improve their operating cash flows for a given period by utilizing supplier financing arrangements to extend its payment terms and increase short-term liabilities from the previous period. However, existence of supplier financing arrangements does not necessarily result in extension of payment terms for the purchasing firm or earlier payment for the supplier. Entering the arrangement may merely provide both the purchasing firm and supplier with the option to modify the timing of cash payment or receipt if needed. Without disclosure of these arrangements, the portion of operating cash flows attributable to the use of supplier financing arrangements is unknown.

With the increasing popularity of supplier financing arrangements, investors and analysts requested the FASB to require firms to provide disclosure regarding these arrangements (FASB 2023). The new required disclosure for U.S. firms, effective for fiscal years beginning after December 15, 2022, provides information regarding the magnitude and average payment terms of

supplier finance arrangements. We examine SEC filings for the first five months following this effective date.

Chuk et al. (2022) use a sample of U.K. firms to develop a determinants model regarding the use of supplier financing arrangements. We extend their determinants model to U.S. firms with generally consistent results. Next, we examine the association between supplier financing arrangements and operating cash flows. A key benefit of supplier financing arrangements is the potential to improve operating cash flows. Therefore, we predict that firms with poor operating cash flows and those with lower excess cash holdings have a greater incentive and are more likely to utilize supplier financing. We measure operating cash flows with abnormal cash flows as measured by Roychowdhury (2006), and excess cash as measured by Opler et al (1999). Consistent with our predictions, we find that firms with supplier financing arrangements are more likely to have lower abnormal cash flows and lower amounts of excess cash.

We also examine the association between supplier financing arrangements and analysts' cash flow forecasts. Cash flow forecasts are less common than earnings forecasts (Call et al. 2009). While a great deal of attention exists around a firm's earnings, cash flow forecasts provide additional attention to a firm's operating cash flows. We predict that firms with this additional attention to its cash flows are more likely to utilize supplier financing. Consistent with our predictions, we find that firms with supplier financing arrangements are more likely to have at least one analyst cash flow forecast and have a greater number of analysts providing cash flow forecasts.

Finally, we examine the decision usefulness of the information provided by the new disclosure. While the new disclosure provides information regarding supplier finance programs that was not previously available, critics of the new disclosure requirements suggest that the

disclosure is insufficient to provide decision-useful information. ASU 2022-04 requires that firms participating in supplier financing arrangements disclose the magnitude of their liabilities that are part of the arrangement, where those liabilities are presented on the balance sheet, and the payment terms. While these requirements provide much more information than was previously disclosed, they are not sufficient to determine whether firms are extending payment terms with the use of supplier financing arrangements. For financial statement users that are evaluating firm risk, liquidity and estimating cash flows, it is critical to know if firms are extending payment terms and knowing the mere existence or magnitude of a supplier financing arrangement is insufficient to determine if terms have been extended. This point is made particularly poignant in a comment letter to the FASB from Moody's Investor Service (Gonzales et al, 2021, p. 3):

> The proposed Update only provides information that allows investors to understand if supplier finance programs exist. In our view, it does not provide sufficient information to help users understand the effects of supplier finance programs on an entity's working capital, liquidity, or cash flows.
>
> The most complicated part of supplier finance programs is that the benefits and risks can only be understood relative to the terms of the short-term liability (typically, trade payables) that it replaces. The longer the extent to which the due date of the program is extended beyond the typical payment terms, the greater the cash flow benefit to the entity, but the greater the future risk to its liquidity. Thus, it is not only relevant for investors' analyses that a company uses a supplier finance program, it matters how a company uses it.
>
> The proposed Update does not require any information about how, and by how much, the supplier finance programs alter or extend the timing of payments to settle obligations. Without this relative information, we do not believe it is possible to fully understand the effect a program has on working capital, liquidity, and cash flows. The ability to calculate the impact would allow us to gain more insight from entities and improve the meaningfulness of our analysis. We believe this information is key, should be audited, and available to all investors.

If the new disclosure is useful in developing cash flow forecasts, then we should find more accurate cash flow forecasts and greater consensus among analysts following the disclosure of supplier financing arrangements. However, if, as critics suggest, the disclosure requirement does

not provide sufficient information to assist users with cash flow forecasts, then we should not find these improvements in analysts' forecasts.

We find analysts are less likely to issue a cash flow forecast following disclosure of supplier financing arrangements. For firms with cash flow forecasts following the disclosure, we find that the cash flow forecasts are revised downward. This is perhaps an indication that the disclosure of supplier financing arrangements constrains a firm's ability to improve its operating cash flows with supplier financing arrangements or that use of supplier financing arrangements is indicative of cash flow problems. Further, following the disclosure of supplier financing arrangements, we also find greater forecast dispersion (i.e., uncertainty) of cash flow forecasts, and we find no evidence of a reduction in forecast error. Taken together, these results are consistent with the notion that the new disclosure of supplier financing arrangements does not improve analysts' ability to forecast future cash flows and that additional disclosures regarding the use of supplier financing arrangements are needed to understand how these arrangements affect a firm's cash flows.

We make three unique contributions to the accounting: First, to the best of our knowledge, we are the first to examine the characteristics of supplier financing firms in the U.S. Supplier financing has become popular over the last years in developed financial markets, as Chuk et al. (2023) examine these agreements in a sample of British firms. We extend this inquiry into the U.S. Second, we tie the motivation of supplier financing agreements to cash flow management and examine its association with abnormal cash flows, excess cash holdings and analysts' cash flow forecasts. Third, we provide early evidence on the decision usefulness of ASU 2022-04 disclosures. We fail to find any evidence of these disclosures improving analysts' cash flow forecasts.

The rest of the paper is organized as follows. Section 2 provides hypothesis development and empirical design. In Section 3 we describe our data, and in Section 4 we present our empirical results. Section 5 concludes.

2. Hypothesis Development and Empirical Design

Supplier financing arrangements are financial agreements between a buyer and its suppliers. The buyer pays a financial intermediary for product purchased, and the intermediary remits payment to the supplier. Importantly, the financial intermediary negotiates separate terms with the buyer and the supplier, such that the timing of the receipt of payment from the buyer does not influence the timing of the payout to the supplier. Specifically, the buyer may choose to extend its payment terms beyond what is customary, and the supplier may choose to receive early payment. These arrangements are designed to optimize the working capital and cash flow of both parties involved in the supply chain. Suppliers benefit if the buyer has a stronger credit rating as the supplier finance arrangement is based on the risk assessment of the buyer and could result in more favorable rates than the supplier could get separately (Wuttke et al. 2019; Milne 2009). Buyers may also benefit from suppliers being more willing to carry more inventory and the associated inventory risk, even if payment terms are not extended (Kouvelis and Xu 2021).

There are several reasons why management seeks to improve its cash flows. First, maintaining healthy operating cash flows and cash holdings is crucial for ensuring short-term liquidity and solvency. Second, operating cash flows and cash holdings enable a company to pursue investment opportunities (Kumar and Krishnan 2008; Opler et al. 1999). Third, companies with robust operating cash flows and cash holdings have greater flexibility and adaptability in the face of economic uncertainties, industry changes, or unexpected events. Given these benefits, firms with lower operating cash flows have incentives to improve their cash flows. Our first hypothesis

posits that firms characterized by lower abnormal cash flows and lower cash holdings are more likely to engage in supplier financing arrangements. This expectation is based on the premise that supplier financing arrangements offer a strategic avenue for firms to enhance their cash flows, and, consequently, entities with lower abnormal cash flows and lower cash holdings have a heightened incentive to adopt supplier financing as a means to improve their overall cash flow.

H1: Supplier financing arrangements are negatively associated with abnormal cash flows and excess cash holdings.

Testing of our first hypothesis requires an estimation of abnormal cash flows and excess cash holdings. We refer to the extant literature in these areas and use models developed by Roychowdhury (2006) for abnormal cash flows, and Opler et al. (1999) for excess cash holdings. Specifically, for abnormal cash flows, we estimate the following model from Roychowdhury (2006) for each industry-year[1] in our sample period:

$$CFO_t = \alpha_0 + \alpha_1 1 / Assets_{t-1} + \alpha_2 Sales_t / Assets_{t-1} + \alpha_3 \Delta Sales_t / Assets_{t-1} + \varepsilon_t \quad \text{(A)}$$

Abnormal CFO is calculated as the residual from model (A). We exclude banks, insurance firms and other financial institutions while estimating this model.

For excess cash holdings, we estimate the following model from Opler et al. (1999) for every year in our sample period:

$$Log(Cash_t / Non\text{-}Cash\ Assets_t) = \alpha_0 + \alpha_1 Log(Assets_t) + \alpha_2(Cash\ Flows_t / Non\text{-}Cash\ Assets_t) + \alpha_3(Net\ Working\ Capital_t / Non\text{-}Cash\ Assets_t) + \alpha_4(Capital\ Expenditures_t / Non\text{-}Cash\ Assets_t) + \alpha_5(Total\ Debt_t / Non\text{-}Cash\ Assets_t) + \alpha_6(Industry\ Cash\ Flow\ Volatility_t) + \alpha_7(R\&D\ Expenditures_t / Sales_t) + \alpha_8(Dividend\ Payment\ Indicator_t) + \alpha_9(Regulated\ Industry\ Indicator_t) + \varepsilon_t \quad \text{(B)}$$

[1] We follow Fama-French 48 industry definitions throughout our study.

Excess Cash is calculated as the residual from model (B). In model (B), *Cash Flows* is defined as net operating cash flows less extraordinary items and discontinued operations. *Net Working Capital* is calculated as current assets less current liabilities and cash. *Industry Cash Flow Volatility* is defined as the mean standard deviation of cash flow divided by non-cash assets over 20 years, for firms in the same industry.

After estimating *Abnormal CFO* and *Excess Cash* from models above, we run the following model to test H1:

$$\begin{aligned} \textit{Abnormal CFO}_{i,t} \textit{ or Excess Cash}_{i,t} = {} & \alpha_{i,t} + \gamma_0 \textit{ Supplier Financing}_i + \gamma_1 \textit{ Size}_{i,t-1} \\ & + \gamma_2 \textit{ MTB}_{i,t-1} + \gamma_3 \textit{ Net Income}_{i,t} + \gamma_4 \textit{ Earnings Volatility}_{i,t} + \textit{Year Fixed Effects} + \\ & \textit{Industry Fixed Effects} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Supplier Financing is an indicator variable identifying firms which disclose their supplier financing agreements in 2023. For the control variables, we follow Roychowdhury (2006) where he estimates a model with abnormal cash flows as the dependent variable. Our main coefficient of interest is γ_0 which measures the average abnormal cash flows or excess cash holdings of supplier financing firms, as compared to those with no supplier financing agreements. We expect this coefficient to be negative to provide support for H1.

Earnings are arguably the most visible accounting metric. Earnings are announced quarterly, discussed in the financial press, and forecasted by analysts. Cash flows, however, are much less visible. DeFond and Hung (2003) analyze the emergence of analysts' cash flow forecasts and provide evidence consistent with the notion that analysts provide cash flow forecasts in response to investor demands due to the concerns of earnings manipulation (DeFond and Hung 2003).

Ayers et al (2018) explain that firms with cash flows forecasted by analysts are likely to engage in activities to increase their cash for two reasons. First, analysts provide a monitoring role.

Chen et al. (2015) show that this monitoring role results in shareholders placing a greater value on cash holdings. Second, analyst forecasts provide information regarding expected future performance which reduces information asymmetry (Amiram et al. 2016). Further, a reduction in information asymmetry is associated with an increased value placed on cash holdings (Drobetz et al 2010).

Consistent with these incentives, Ayers et al (2018) find that analyst cash flow forecasts encourage managers to improve their cash flows. Specifically, they predict and find that firms with cash flows forecasted by analysts are more likely to engage in tax avoidance strategies thus reducing their cash tax payments and improving their cash flow health. Similarly, Lee (2012) finds that firms with analyst cash flow forecasts are more likely to delay payments to suppliers and accelerate collections from customers as a means of managing their cash flows from operations.

Our second hypothesis posits that firms with analyst cash flow forecasts are more likely to engage in supplier financing arrangements. This hypothesis is based on the incentives that analyst cash flow forecasts create as well as the findings of previous research consistent with these incentives.

H2: Firms with supplier financing arrangements are more likely to have cash flow forecast coverage by analysts.

In order to test our second hypothesis, we estimate the following model borrowed from DeFond and Hung (2003) for analysts' cash flow coverage:

$$\begin{aligned} &\textit{CF Forecast Indicator}_{i,t} \textit{ or CF Coverage}_{i,t} = \alpha_{i,t} + \gamma_0 \textit{ Supplier Financing}_i \\ &+ \gamma_1 \textit{ Accruals}_{i,t} + \gamma_2 \textit{Earnings Volatility}_{i,t} + \gamma_3 \textit{ Altman's } Z_{i,t} + \gamma_4 \textit{ Capital} \\ &\textit{Intensity}_{i,t} + \gamma_5 \textit{ Size}_{i,t} + \textit{Year Fixed Effects} + \textit{Industry Fixed Effects} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

The dependent variable is either an indicator for firm years with at least one cash flow forecast (*CF Forecast Indicator*) or the number of analysts issuing cash flow forecasts for the firm

(*CF Coverage*). Our main coefficient of interest is γ_0 which measures the average likelihood of cash flow forecast coverage for supplier financing firms, as compared to those with no supplier financing agreements. We expect this coefficient to be positive to provide support for H2.

3. Data

We identify firms that are involved in supplier financing agreements through a keyword search in DirectEDGAR service. Specifically, we filter 10-Q filings during the period between January 1st and May 31st of 2023, and search for the following keywords: "supplier finance", "supply chain finance", "SFP", and "SCF".[2] After identifying these filings, we read the text around keywords to filter out cases where firms do not actually use supplier financing. After the disclosure requirement of ASU 2022-04, it is common for some firms to mention in their SEC filings that they "do not use supplier financing." We also read the text to identify further information such as if there is any increase in the payment terms, or if the firm discloses the amount of payables used in the supplier financing arrangement. This process yields 299 10-Q filings. We notice 67 of these filings mention ASU 2022-04 not having a material impact on their financial statements. It is not clear whether these firms consider the disclosure requirement to be immaterial because they are not involved in supplier financing agreements, or because their supplier financing agreements are not sizeable enough. Therefore, we eliminate those observations from our sample. After these procedures, we identify 211 unique firms that disclose their involvement in supplier financing agreements.

Our identification strategy rests on the assumption that firms that disclose their supplier financing agreements after ASU 2022-04 are likely involved in these agreements during their

[2] We include a wildcard in our search term (i.e., "financ*") to capture variants of the word "finance," so we identify disclosure that use "supplier finance" or "supplier financing" with any of its variation. We do not use "reverse factoring" because we found that all instances of "reverse factoring" also included one of the other search terms.

previous fiscal year. For our main tests, we use annual data for the fiscal years of 2021 and 2022. The 211 firms we identify through the DirectEDGAR search are assumed to be in a supplier financing agreement during the entire sample period. In other words, we use 2023 10Qs to identify firms that use (do not use) supplier financing arrangments. Then, we apply this identification to 2021 and 2022 financial information. We obtain financial information from Compustat and analyst forecast information from the IBES database.

4. Results

4.1. Descriptive Statistics

Table 1, Panel A presents the descriptive statistics of variables we utilize in our analyses. Our sample consists of approximately 7,000 firm-year observations used in several tests, for the fiscal years of 2021 and 2022.[3] The 211 firms we identified as supplier financing firms extrapolates to 5% of the sample size during these two years. Of our sample firms, 34% have their cash flows followed by financial analysts. We winsorize all continuous variables at 1st and 99th percentiles.

Table1, Panel B reports the correlation matrix of the primary test variables we use in the study. Consistent with our expectations and Chuk et al. (2023), supplier financing is positively correlated with the number of days payables are outstanding. While we do not find a significant correlation with abnormal cash flows, excess cash is negatively associated with supplier financing. Moreover, supplier financing firms are more likely to receive cash flow forecasts.

4.2. Determinants of Supplier Financing

We begin our empirical enquiry by validating our identification through the determinants model developed by Chuk et al. (2023), who examine supplier financing firms in the U.K. They develop an empirical profile of supplier financing firms as below:

[3] Our inferences do not change when we extend our sample period until the end of calendar year of 2023.

$$\begin{aligned} \textit{Supplier Financing}_i = {} & \alpha_1 + \alpha_2\, \textit{Trade Credit}_{i,t-1} + \alpha_3\, \textit{Cost of Debt}_{i,t-1} + \alpha_4\, \textit{Sales}_{i,t-1} \\ & + \alpha_5\, \textit{Operating Cycle}_{i,t-1} + \alpha_6\, \textit{Profit Margin}_{i,t-1} + \alpha_7\, \textit{Altman's } Z_{i,t-1} \\ & + \alpha_8\, \textit{External Dependence}_{i,t-1} + \alpha_9\, \textit{Debt to AT}_{i,t-1} + \textit{Year Fixed Effects} \\ & + \textit{Industry Fixed Effects} + \varepsilon_{i,t} \end{aligned} \tag{3}$$

Using this model, Chuk et al. (2023) establish that supplier financing firms in their sample are financially stable and better performing, as compared to other firms. They also experiment with several other debt ratios other than *Debt to AT* in their model, to see the effect of different scalars as well as short term versus long term debt.

Table 2, Panel A presents the estimation results of the determinants model (3). Our results are generally consistent with their sample of British firms.[4] Supplier financing firms are more likely to have higher trade credit and sales. Chuk et al. (2023) report higher profit margins and external dependence for these firms, while our results with these variables are inconclusive for U.S. firms. Consistent with Chuk et al. (2023) we report a negative association between supplier financing and default risk[5] as well as short term debt (column 3). Moreover, we also find long-term debt is positively associated with supplier financing, which is a predicted but inconclusive result in Chuk et al. (2023). These results are consistent with the notion that firms using supplier financing are more reliant on debt financing and that supplier financing is a substitute for other forms of short-term debt financing.

The most notable deviation between our results and Chuk et al.'s (2023) is in cost of debt. Chuk et al. (2023) expect and find a negative relationship between supplier financing and cost of debt, while our statistically significant coefficients on cost of debt are positive. We believe an adverse selection effect from cost of debt might be a dominant factor in the U.S. While firms with

[4] Untabulated results with a quarterly sample also yield similar inferences.
[5] Due to data availability, we proxy default risk with the Altman Z instead of credit ratings.

higher cost of debt and credit risk will face higher costs in the supplier financing market, they might be driven to this market as the only option to manage their cash flows. In other words, firms with lower cost of debt might have cheaper options to manage their operating cash flows.

4.3. Supplier Financing and Operating Cycle Components

As another validation of our sample identification, we follow Chuk et al. (2023) who expect and find a positive association between average time to pay payables and supplier financing. While they use proprietary data to measure time to pay invoices, we use the standard approach to calculate the average number of days payables are outstanding, and replicate Chuk et al.'s (2023) model in our U.S. sample. Our results, reported in Panel B of Table 2, are consistent: We find that supplier financing is associated with a higher days payable ratio. Following Chuk et al. (2023), we estimate the same model for days sales and days inventory variables in columns 2 and 3 as falsification tests, and we find insignificant results as expected.

4.4. Tests of Main Hypotheses

4.4.1. Supplier Financing and Abnormal Cash Flows

We test the association between supplier financing arrangements and abnormal cash flows using the model (1). Abnormal cash flows are estimated using Roychowdhury's (2006) model, and we expect firms with supplier financing arrangements to have lower abnormal cash flows. Results in Table 3, Panel A provide support for our expectation. In column 1, *Supplier Financing* indicator has a significantly negative coefficient (p-value is 0.039). In other words, firms with lower than normal levels of operating cash flows are more likely to engage in supplier financing.

Next, we separately examine the supplier financing firms. Within this sample of firms, we explore the association between *Abnormal CFO* and an indicator variable signifying an extensive use of supplier financing. We proxy the extensive use of supplier financing with three separate indicator variables based on information from the 2023 10Q disclosures. Specifically, we

categorize firms as extensive users of supplier financing arrangements that mention the use of these arrangements to increase their payment terms (column 2), disclose a 2023 quarterly increase in their supplier financing payables (column 3), or disclose a 2023 supplier financing payable balance greater than the median (column 4). If firms with the lowest abnormal cash flows use supplier financing to the greatest extent, then we expect negative coefficients for these indicator variables. If, on the other hand, the most extensive users of supplier financing obtain the greatest cash flow benefit from these arrangements, then we expect positive coefficients for these indicator variables. These estimations do not yield any significant results within the small sample of supplier financing firm-years. These results are consistent with the notion that if firms with the poorest cash flows use supplier financing more extensively, their cash flows improve from the extensive use of these arrangements. In other words, the two countervailing associations offset each other.

To corroborate our findings in Table 3, Panel A and provide support for H1, we also test whether supplier financing firms have lower excess cash holdings, on average. Excess cash holdings are estimated using Opler et al.'s (1999) model, and we expect firms with lower excess cash holdings are more likely to engage in supplier financing arrangements. Results in Table 3, Panel B provide support to our expectation. In column 1, *Supplier Financing* indicator variable has a significantly negative coefficient (p-value < 0.01) suggesting that firms with supplier financing arrangements have lower level of excess cash holdings.

In columns 2 through 4, we estimate cross-sectional regressions within the sample of supplier financing firms, using our identification of extensive use of supplier financing arrangements. In column 2, we find that firms that mention utilizing these arrangements to extend their payment terms have higher excess cash holdings, as compared to other supplier financing firms. This supports the idea that the use of supplier financing arrangements can improve a firm's

cash management on average. Consistent with Panel A, the estimations in columns 3 and 4 do not yield any significant results within the small sample of supplier financing firm-years.

4.4.2. Supplier Financing and Cash Flow Forecasts

We test the association between supplier financing arrangements and analysts' cash flow forecasts using the model (2). Using the IBES database, we identify firms with at least one analyst cash flow forecast (*CF Forecast Indicator*) as well as the number of analysts providing cash flow forecasts (*CF Coverage*) for each firm year in our sample. We expect firms with supplier financing arrangements to be more likely to have cash flow forecasts and to have higher analyst cash flow coverage. Results in Table 4 provide support for our expectations. In column 1, *Supplier Financing* indicator has a significantly positive coefficient (*p-value* is <0.01). That is, firms with analysts' cash flow forecasts are more likely to engage in supplier financing.

In columns 2 through 4, we estimate cross-sectional regressions within the sample of supplier financing firms, using our identification of extensive use of these arrangements. In columns 2 and 4, we find firms with cash flow forecasts are more likely to use supplier financing arrangements extensively as proxied by the mention of extending payment terms or larger supplier financing payables, these results are consistent with the notion that firms with cash flow forecasts are incentivized to use supplier financing arrangements, and to use these arrangements extensively.

In columns 5 through 8 of Table 4, we re-estimate model (2) using the number of analysts providing cash flow forecasts as the dependent variable. Since the number of analysts is a count variable, and no analyst coverage is fundamentally different from positive coverage, we use Tobit estimation. Results are statistically in line with the logit estimation in columns 1-4, discussed above.

4.5. Robustness Tests Using Propensity Score Matching

Supplier financing is not a common arrangement based on disclosure frequency, as it is used by only 5% of our sample firm-years. Comparison between supplier financing firms and others can be problematic due to this imbalance between test and control samples. Therefore, we apply propensity score matching (PSM) to construct a balanced sample and compare against a fair benchmark group, and to check the robustness of our main results.

We first estimate a logit model (3) to calculate the likelihood of supplier financing in our sample. Then, for each supplier financing firm-year observation, we match the nearest neighbor within 0.1 caliper in the same year and industry width with no replacement. The resulting sample includes a balanced number of observations of supplier financing firms and other firms. Finally, using this PSM sample, we re-estimate models (1) and (2) to assess the associations between supplier financing and firm cash flows as well as analysts' cash flow forecasts.

The results, reported in Table 5 support our initial results with the full sample. After estimating our main models on the PSM sample, we find that the *Supplier Financing* indicator is negatively associated with *Abnormal CFO* and *Excess Cash Holdings*, while it is positively associated with analysts' cash flow forecast indicator and cash flow analyst coverage.

4.6. Additional Analyses

To shed more light onto the immediate effects of ASU 2022-04 disclosures about supplier financing agreements on financial analysts, we examine the changes in analysts' cash flow forecast properties following a supplier financing disclosure. We focus on firms that eventually make a supplier financing disclosure in our sample period and investigate changes in cash flow forecast properties before and after the disclosure. We identify cash flow forecast properties immediately after the earnings announcement associated with the 10-Q filing. This first-difference approach allows us to uncover temporal effects of disclosures in treatment firms. Moreover, not all treatment

firms provide supplier finance disclosure during the first quarter of 2023. For some firms the initial disclosure of supplier financing agreements is in the second 10-Q filing after the effective date of ASU 2022-04. This staggered setting, along with firm and quarter fixed effects allows us perform a difference-in-difference analysis. Note that we use quarterly Compustat data to calculate accounting variables for this analysis.

Table 6, Panel A presents the results for this analysis with the sample restricted to supplier financing firms in the quarters before and after the disclosure. In columns 1 and 2, we find that supplier financing firms experience a decline in analysts' cash flow forecast coverage. Column 3 shows that analysts revise their cash flow forecasts downwards after the disclosure of supplier financing agreements. In column 4, cash flow forecast dispersion increases after the disclosure of supplier financing agreements. Column 5 shows no difference in the accuracy of cash flow forecasts. The decrease in cash flow coverage and increase in dispersion can be interpreted as analysts not receiving a precise cash flow signal from the supplier financing disclosure. The downward forecast revision after earnings announcements for supplier financing firms is perhaps due to an increased skepticism about reported cash flows given the existing supplier financing agreements. However, given no change in cash flow forecast accuracy, we fail to find any evidence that the ASU 2022-04 disclosures improves the analysts' ability to forecast cash flows. Overall, these results provide initial evidence that ASU 2022-04 disclosures do not assist financial analysts with their cash flow forecasts.

To complement the results in Panel A, we extend our sample by adding control firms using propensity score matching and performing a difference-in-difference test using an interaction of treatment firm indicator (*Supplier Financing*) and an indicator for after the first ASU 2022-04 disclosure (*Post*). Results are tabulated in Table 6, Panel B. While the coefficient estimates of

*Supplier Financing*Post* interaction are in line with those of *Post* in Panel A, none of them are statistically significant. Overall, we do not find evidence of ASU 2022-04 disclosures improving analysts' ability to forecast future cash flows. These findings are consistent with the criticism that ASU 2022-04 does not provide sufficient information to understand the effect of these arrangements on a firm's future cash flows.

5. Conclusion

Supplier financing agreements provide an option for firms to better manage their cash flows through extending their payment terms. While these agreements have become popular over the recent years, they have also attracted criticism due to lack of disclosure about a firm's use of these arrangements. With ASU 2022-04, FASB aims at increasing transparency regarding firms' supplier financing practices.

By examining supplier financing disclosures during the first five months after ASU 2022-04 became effective, we provide the first evidence on the characteristics of U.S. firms involved in supplier financing arrangements. Specifically, we focus on cash flows related attributes of these firms, as supplier financing arrangements can be utilized to improve cash flows. Consistent with our expectations, we find that firms with supplier financing agreements have lower operating cash flows, lower excess cash holdings, and higher likelihood of cash flow coverage by analysts. This is consistent with the notion that firms with poor cash flows or with analysts forecasting cash flows have a greater incentive to utilize supplier financing arrangements. Our results are robust to propensity score matching to balance the covariates across supplier financing firms and others.

In further tests, we examine how analysts' cash flow forecasts change after firms provide the ASU 2022-04 disclosures. We find analysts are less likely to issue a cash flow forecast

following disclosure of supplier financing arrangements. For firms with cash flow forecasts following the disclosure, we find that the cash flow forecasts are revised downward. Further, we find greater forecast dispersion (i.e., uncertainty) of cash flow forecasts, and we find no evidence of a reduction in forecast error. Taken together, these results are consistent with the notion that the new disclosure of supplier financing arrangements does not improve analysts' ability to forecast future cash flows. Our tests provide the first set of empirical results regarding the effects of ASU 2022-04.

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Appendix
Variable Definitions

Supplier Financing:	An indicator variable that takes to value of one if the firm discloses a material supplier financing agreement in a 10-Q filing during the calendar year 2023, zero otherwise.
Trade Credit	Accounts payable divided by total assets.
Cost of Debt	Total interest expenses during the fiscal period divided by total debt at the beginning of the fiscal period.
Sales	The natural logarithm of sales.
Operating Cycle	The natural logarithm of operating cycle defined as days sales outstanding plus days inventory outstanding.
Profit Margin	Income before extraordinary items divided by sales.
Altman's Z	Altman's (1968) Z score, calculated with Compustat items as following: 1.2*(ACT/AT) +1.4*(RE/AT) + 3.3*(EBIT/AT) + 0.6*((PRCC_F*CSHO)/LT) + 0.99*(SALE/AT).
External Dependence	Capital expenditures minus operating cash flow, divided by capital expenditures.
Debt to AT	Total debt divided by total assets.
LT Debt to AT	Long-term debt divided by total assets.
ST Debt to AT	Short-term debt divided by total assets.
Debt to AP	Total debt divided by accounts payable.
LT Debt to AP	Long-term debt divided by accounts payable.
ST Debt to AP	Short-term debt divided by accounts payable.
Sales Growth	The annual growth rate of sales.
Cash	Cash divided by total assets.
PPE	Total gross property, plant and equipment divided by total assets.
Days Payable	The natural logarithm of days payable outstanding, calculated as average accounts payable divided by cost of goods sold, multiplied by 365.

Days Sales	The natural logarithm of days sales outstanding, calculated as average accounts receivable divided by sales, multiplied by 365.
Days Inventory	The natural logarithm of days inventory outstanding, calculated as average inventory divided by cost of goods sold, multiplied by 365.
Abnormal CFO	Residual from the cash flow from operations model following Roychowdhury (2006).
Excess Cash	Residual from the cash holdings model following Opler et al. (1999).
Size	The natural logarithm of market capitalization, calculated as stock price at the end of the fiscal period multiplied by number of shares outstanding at the end of the fiscal period.
MTB	Market-to-book ratio, calculated as market capitalization (stock price at the end of the fiscal period multiplied by number of shares outstanding at the end of the fiscal period) divided by the book value of equity.
Net Income	Income before extraordinary items divided by total assets at the beginning of the fiscal period.
Earnings Volatility	The standard deviation of earnings before extraordinary items during the previous ten years, requiring at least 5 observations.
CF Forecast Indicator	Indicator variable taking the value of one if the firm is receiving an analyst's cash flow forecast during the period, zero otherwise.
CF Coverage	Number of analysts providing cash flow forecasts for the firm for the fiscal period. It is set to zero when no analysts are providing cash flow forecasts.
Accruals	Total accruals (Income before extraordinary items from cash flow statement plus extraordinary items and discontinued operations from cash flow statement, less net cash flow from operating activities) divided by total assets at the beginning of the fiscal period.
Capital Intensity	Total gross property, plant and equipment divided by sales.

Max Days Indicator	Indicator variable taking the value of one if the firm disclosing a supplier financing agreement also mentions an increase in their maximum days payables outstanding, zero otherwise.
AP Increase Indicator	Indicator variable taking the value of one if the firm disclosing a supplier financing agreement also mentions an increase in their accounts payable amount subject to supplier financing agreements, zero otherwise.
High Supplier Financing Amount	Indicator variable taking the value of one if the disclosing firm has a proportion of accounts payable subject to supplier financing agreements with an amount higher than the median of all other disclosing firms, zero otherwise.

Table 1: Descriptive Statistics
Panel A: Univariate Statistics

VARIABLES	N	Mean	Median	Std. Deviation	Minimum	Maximum	25th Percentile	75th Percentile
Supplier Financing	6,692	0.05	0.00	0.22	0.00	1.00	0.00	0.00
Trade Credit	6,692	0.07	0.04	0.08	0.00	0.50	0.02	0.09
Cost of Debt	6,692	0.03	0.02	0.04	0.00	0.35	0.01	0.04
Sales	6,692	6.06	6.39	2.84	-5.30	13.25	4.29	8.05
Operating Cycle	6,692	4.70	4.72	1.02	-4.29	11.44	4.20	5.22
Profit Margin	6,692	-2.69	0.01	13.89	-120.13	0.62	-0.27	0.09
Altman's Z	6,692	3.85	2.71	9.32	-36.66	55.35	1.14	4.94
External Dependence	6,692	18.03	-0.83	99.45	-137.44	771.39	-4.17	2.76
Debt to AT	6,692	0.59	0.55	0.39	0.05	3.12	0.35	0.73
LT Debt to AT	6,687	0.25	0.22	0.22	0.00	1.16	0.06	0.37
ST Debt to AT	6,691	0.05	0.02	0.10	0.00	0.79	0.01	0.05
Debt to AP	6,654	26.44	10.38	49.63	1.51	375.19	5.27	23.79
LT Debt to AP	6,649	12.50	3.73	26.55	0.00	185.74	1.04	11.02
ST Debt to AP	6,653	1.59	0.46	3.75	0.00	29.94	0.15	1.29
Sales Growth	6,471	0.34	0.14	1.06	-0.99	9.48	0.02	0.34
Cash	6,471	0.17	0.10	0.19	0.00	0.89	0.04	0.22
PPE	6,471	0.48	0.32	0.46	0.01	2.47	0.14	0.72
Days Payable	6,427	3.87	3.88	1.10	0.00	13.17	3.32	4.36
Days Sales	6,415	3.90	4.01	1.02	0.00	13.55	3.54	4.38
Days Inventory	6,419	3.13	3.82	2.03	0.00	11.67	1.26	4.71
Abnormal CFO	7,688	0.08	0.08	0.41	-2.55	2.30	-0.03	0.21
Excess Cash	6,671	-0.09	0.04	1.38	-4.71	2.95	-0.86	0.81
Size	7,694	6.63	6.72	2.64	-4.60	14.66	4.66	8.54
MTB	7,694	4.12	2.28	13.91	-56.56	106.85	1.03	4.87
Net Income	7,694	-0.33	0.01	1.57	-14.96	0.59	-0.21	0.08
Earnings Volatility	7,694	303.38	43.95	822.59	0.43	5736.72	11.21	181.35
CF Forecast Indicator	6,673	0.34	0.00	0.47	0.00	1.00	0.00	1.00
CF Coverage	6,673	1.06	0.00	2.18	0.00	27.00	0.00	1.00
Accruals	6,673	-0.08	-0.04	0.26	-2.20	0.56	-0.10	0.00
Capital Intensity	6,673	1.69	0.50	4.24	0.00	36.71	0.23	1.21

This table presents descriptive statistics for the sample of firm year observations. Variable definitions are provided in the Appendix.

Panel B: Correlation Matrix

	Supplier Financing	*Days Payable*	*Abnormal CFO*	*Excess Cash*	*CF Forecast Indicator*	*CF Coverage*
Supplier Financing		0.11***	-0.01	-0.04***	0.17***	0.19***
Days Payable	-0.01		-0.04***	-0.02	-0.08***	-0.06***
Abnormal CFO	0.00	-0.06***		0.12***	0.13***	0.13***
Excess Cash	-0.04***	-002	0.09***		-0.03**	-0.03**
CF Forecast Indicator	0.17***	-0.03**	0.11***	-0.01		0.97***
CF Coverage	0.17***	-0.02	0.06***	-0.02*	0.67***	

This table presents correlations among main test variables we use in our analyses. Upper (Lower) diagonal presents Spearman (Pearson) correlation coefficients. Variable definitions are provided in the Appendix.

Table 2:
Panel A: Determinants Model

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
			Supplier Financing = 1			
Trade Credit	2.806**	4.386***	3.829***			
	(2.40)	(3.75)	(3.18)			
Cost of Debt	4.013	-0.489	6.585***	5.474**	5.529**	5.269**
	(1.47)	(-0.11)	(2.82)	(2.46)	(2.48)	(2.25)
Sales	0.611***	0.604***	0.635***	0.623***	0.627***	0.631***
	(10.84)	(9.96)	(10.70)	(11.37)	(11.41)	(11.14)
Operating Cycle	0.191	0.229	0.235	0.097	0.103	0.153
	(1.09)	(1.30)	(1.28)	(0.53)	(0.57)	(0.84)
Profit Margin	-0.009	-0.015	-0.017	-0.015	-0.015	-0.016
	(-0.48)	(-1.01)	(-1.52)	(-1.07)	(-1.10)	(-1.21)
Altman's Z	-0.033	-0.025	-0.083**	-0.066**	-0.064**	-0.071**
	(-1.01)	(-0.71)	(-2.51)	(-2.57)	(-2.50)	(-2.50)
External Dependence	-0.003	-0.002	-0.002	-0.003	-0.003	-0.002
	(-1.58)	(-1.17)	(-1.58)	(-1.59)	(-1.61)	(-1.42)
Debt to AT	0.694**					
	(2.04)					
LT Debt to AT		2.487***				
		(5.03)				
ST Debt to AT			-7.514***			
			(-3.60)			
Debt to AP				-0.014*		
				(-1.93)		
LT Debt to AP					-0.013*	
					(-1.70)	
ST Debt to AP						-0.179
						(-1.39)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES	YES	YES
Observations	5,960	5,955	5,959	5,925	5,920	5,924
Pseudo R-Squared	0.315	0.329	0.323	0.310	0.308	0.310

***two-tailed p-value < 0.01; **two-tailed p-value < 0.05; *two-tailed p-value < 0.10

This table presents a determinants model estimated in a logistic regression for firms utilizing supplier financing arrangements. Variable definitions are provided in the Appendix.

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Table 2:
Panel B: Supplier Financing and Operating Cycle Components

VARIABLES	(1) *Days Payable*	(2) *Days Sales*	(3) *Days Inventory*
Supplier Financing	0.171***	0.018	0.007
	(4.00)	(0.48)	(0.15)
Trade Credit	5.133***	0.439***	0.108
	(23.05)	(2.84)	(0.35)
Cost of Debt	2.481***	-0.823**	3.373***
	(4.64)	(-2.45)	(5.14)
Sales	0.008	-0.006	0.085***
	(0.96)	(-1.01)	(7.98)
Operating Cycle	0.434***	0.734***	1.041***
	(16.12)	(41.09)	(27.30)
Profit Margin	0.002	-0.014***	0.027***
	(0.67)	(-7.99)	(7.34)
Altman's Z	-0.007**	-0.002	-0.005
	(-2.50)	(-0.84)	(-1.24)
External Dependence	-0.000	0.000	-0.001**
	(-0.24)	(1.40)	(-1.99)
Debt to AT	-0.053	-0.135***	0.024
	(-0.94)	(-2.91)	(0.31)
Sales Growth	0.008	-0.029**	0.023
	(0.44)	(-2.56)	(0.92)
Cash	0.353***	-0.067	-0.108
	(3.03)	(-0.82)	(-0.68)
PPE	0.048	-0.191***	0.431***
	(1.24)	(-6.88)	(7.05)
Year Fixed Effects	YES	YES	YES
Industry Fixed Effects	YES	YES	YES
Observations	6,144	6,145	6,144
Pseudo R-Squared	0.340	0.645	0.669

***two-tailed p-value < 0.01; **two-tailed p-value < 0.05; *two-tailed p-value < 0.10

This table presents the results of a model estimating the effect of supplier financing arrangements on the components of operating cycle. Variable definitions are provided in the Appendix.

Table 3:
Panel A: Supplier Financing and Abnormal Cash Flows

VARIABLES	(1)	(2)	(3)	(4)
	Abnormal CFO			
Supplier Financing	-0.024**			
	(-2.06)			
Max Days Extension Indicator		0.019		
		(1.10)		
AP Increase Indicator			0.007	
			(0.36)	
High Supplier Financing Amount				0.009
				(0.51)
Size	0.023***	0.019**	0.020**	0.020**
	(7.44)	(2.32)	(2.39)	(2.29)
MTB	-0.000	-0.000	-0.000	-0.000
	(-0.12)	(-0.48)	(-0.48)	(-0.51)
Net Income	0.078***	0.607***	0.603***	0.605***
	(5.67)	(5.19)	(5.15)	(5.18)
Earnings Volatility	0.000	0.000	0.000	0.000
	(0.40)	(0.18)	(0.06)	(0.15)
Year Fixed Effects	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES
Observations	7,521	337	337	337
Adj. R-squared	0.170	0.494	0.493	0.494

***two-tailed p-value < 0.01; **two-tailed p-value < 0.05; *two-tailed p-value < 0.10

This table presents the results of a model estimating the effect of supplier financing arrangements on abnormal cash flows from operations. Variable definitions are provided in the Appendix.

Panel B: Supplier Financing and Excess Cash Holdings

VARIABLES	(1)	(2)	(3)	(4)
	Excess Cash			
Supplier Financing	-0.231***			
	(-2.58)			
Max Days Extension Indicator		0.459**		
		(2.41)		
AP Increase Indicator			-0.036	
			(-0.17)	
High Supplier Financing Amount				-0.136
				(-0.68)
Size	0.030***	0.042	0.063	0.073
	(2.83)	(0.55)	(0.82)	(0.90)
MTB	0.008***	0.004	0.003	0.003
	(5.36)	(0.97)	(0.65)	(0.70)
Net Income	0.065***	0.393	0.328	0.287
	(3.26)	(0.40)	(0.34)	(0.29)
Earnings Volatility	0.000***	0.000	0.000	0.000
	(3.33)	(0.93)	(0.59)	(0.39)
Year Fixed Effects	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES
Observations	6,632	328	328	328
Adj. R-squared	0.0817	0.253	0.236	0.238

***two-tailed p-value < 0.01; **two-tailed p-value < 0.05; *two-tailed p-value < 0.10

This table presents the results of a model estimating the effect of supplier financing arrangements on excess cash holdings. Variable definitions are provided in the Appendix.

Table 4: Supplier Financing and Analysts' Cash Flow Forecasts

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CF Forecast Indicator (Logit Model)				*CF Coverage* (Tobit Model)			
Supplier Financing	0.840***				0.773***			
	(4.37)				(4.75)			
Max Days Extension Indicator		1.740**				0.711**		
		(2.37)				(2.16)		
AP Increase Indicator			-0.722				-0.572	
			(-1.37)				(-1.62)	
High Supplier Financing Amount				1.036**				1.188***
				(2.17)				(3.80)
Accruals	0.179	-2.919	-3.591	-2.865	-0.126**	-2.434	-2.890*	-2.049
	(1.23)	(-1.18)	(-1.57)	(-1.24)	(-2.06)	(-1.42)	(-1.70)	(-1.38)
Earnings Volatility	-0.001***	0.000*	0.000	0.000	0.000**	0.000*	0.000	0.000**
	(-10.60)	(1.79)	(1.23)	(1.64)	(2.06)	(1.85)	(1.60)	(2.11)
Altman's Z	-0.009**	-0.007	-0.014	-0.004	-0.012***	0.004	0.001	0.003
	(-2.15)	(-0.27)	(-0.49)	(-0.14)	(-7.27)	(0.31)	(0.09)	(0.33)
Capital Intensity	-0.013	-0.175	-0.158	-0.142	-0.004	-0.095**	-0.096**	-0.092**
	(-1.16)	(-1.54)	(-1.48)	(-1.48)	(-0.91)	(-2.57)	(-2.57)	(-2.42)
Size	0.638***	0.404**	0.502***	0.389**	0.351***	0.651***	0.694***	0.556***
	(26.11)	(2.57)	(2.93)	(2.41)	(21.58)	(6.79)	(7.22)	(6.60)
Year Fixed Effects	YES	YES	YES	YES	YES	YES		
Industry Fixed Effects	YES	YES	YES	YES	YES	YES		
Observations	6,635	335	335	335	6,635	395	395	395
Pseudo R-Squared	0.255	0.219	0.196	0.208	0.0785	0.128	0.128	0.150

***two-tailed p-value < 0.01; **two-tailed p-value < 0.05; *two-tailed p-value < 0.10

This table presents the results of a model estimating the effect of supplier financing arrangements on analysts' cash flow forecasts. Variable definitions are provided in the Appendix.

Table 5: Results with the Propensity Score Matched (PSM) Sample

	(1)	(2)	(3)	(4)
VARIABLES	*Abnormal CFO*	*Excess Cash*	*CF Forecast Indicator*	*CF Coverage*
Supplier Financing	-0.028**	-0.271***	1.350***	0.729***
	(-2.08)	(-2.64)	(5.84)	(3.12)
Size (t-1)	0.026***	0.068		
	(3.81)	(1.43)		
MTB (t-1)	0.000	0.001		
	(0.63)	(0.26)		
Net Income	0.172***	0.105*		
	(6.49)	(1.92)		
Earnings Volatility	0.000	0.000	-0.000	-0.000
	(0.54)	(0.53)	(-0.98)	(-0.64)
Accruals			1.666	0.344
			(1.30)	(0.65)
Altman's Z			0.022	-0.015
			(0.64)	(-0.79)
Capital Intensity			-0.220*	-0.058
			(-1.82)	(-0.72)
Size			0.297***	0.545***
			(2.86)	(5.76)
Year Fixed Effects	YES	YES	YES	YES
Industry Fixed Effects	YES	YES	YES	YES
Observations	576	554	590	634
Adj./Pseudo R-squared	0.487	0.140	0.160	0.0813

***two-tailed p-value < 0.01; **two-tailed p-value < 0.05; *two-tailed p-value < 0.10

This table presents the results of models estimating the effect of supplier financing arrangements on abnormal cash flows, excess cash holdings and analysts' cash flow forecasts over the propensity score matched sample. Variable definitions are provided in the Appendix.

Table 6: Supplier Financing Disclosures and Analysts' Cash Flow Forecast Properties
Panel A: Pre-Post Analysis within Disclosing Firms

VARIABLES	(1) *CF Forecast Indicator*	(2) *CF Coverage*	(3) *Forecast Revision*	(4) *Forecast Dispersion*	(5) *Forecast Error*
Post	-0.436***	-0.093	-0.648**	0.017**	0.574
	(-7.45)	(-1.64)	(-2.04)	(2.14)	(0.61)
Accrual	-0.286	-0.859**			
	(-1.08)	(-2.23)			
Earnings Volatility	-0.000***	-0.000	0.000	0.000	0.001**
	(-3.25)	(-1.16)	(0.29)	(1.38)	(2.06)
Altman's Z	-0.065***	0.001			
	(-3.68)	(0.02)			
Capital Intensity	-0.000	0.028			
	(-0.15)	(1.24)			
Size	0.095	-0.053	0.095	-0.004***	-0.602***
	(0.82)	(-0.73)	(0.76)	(-2.98)	(-3.22)
Surprise			-0.820	0.015	-39.312**
			(-0.18)	(0.23)	(-2.46)
Net Income			-0.986	-0.115	-22.145*
			(-0.23)	(-0.87)	(-1.80)
Loss			0.083	0.002	-0.148
			(0.16)	(0.50)	(-0.31)
Cash Flow Analyst Coverage			-0.631*	0.005	-0.482
			(-1.69)	(0.58)	(-0.91)
Firm Fixed Effects	YES	YES	YES	YES	YES
Quarter Fixed Effects	YES	YES	YES	YES	YES
Observations	848	311	435	293	462
Pseudo R-Squared	0.676	0.868	0.187	0.294	0.457

***two-tailed p-value < 0.01; **two-tailed p-value < 0.05; *two-tailed p-value < 0.10

This table presents the results of models estimating the effect of supplier financing arrangements on analysts' cash flow forecast properties before and after their disclosures. Variable definitions are provided in the Appendix.

Panel B: Difference in Difference Analysis of Supplier Financing Firms Matched with Control Firms

VARIABLES	(1) *CF Forecast Indicator*	(2) *CF Coverage*	(3) *Forecast Revision*	(4) *Forecast Dispersion*	(5) *Forecast Error*
*Supplier Financing * Post*	-0.068	-0.082	-0.551	0.011	-0.139
	(-1.18)	(-1.39)	(-0.98)	(0.72)	(-0.12)
Accrual	-0.542*	-0.546			
	(-1.96)	(-1.61)			
Earnings Volatility	-0.001	-0.000	0.001	-0.000	0.004
	(-1.35)	(-0.87)	(0.91)	(-0.23)	(0.76)
Altman's Z	-0.009	0.019			
	(-0.38)	(1.11)			
Capital Intensity	-0.001	0.005			
	(-1.41)	(0.15)			
Size	-0.041	-0.054	-0.372	0.001	-0.007
	(-0.40)	(-0.64)	(-0.88)	(0.29)	(-0.01)
Surprise			-0.864	0.004	-31.078**
			(-0.30)	(0.14)	(-2.18)
Net Income			-9.878	0.050	-22.757*
			(-1.49)	(1.17)	(-1.72)
Loss			-0.215	0.003	-0.082
			(-0.43)	(1.07)	(-0.20)
Cash Flow Analyst Coverage			-0.077	0.002**	-0.342*
			(-0.37)	(2.30)	(-1.96)
Firm Fixed Effects	YES	YES	YES	YES	YES
Quarter Fixed Effects	YES	YES	YES	YES	YES
Observations	1,011	317	491	321	510
Pseudo R-Squared	0.634	0.901	0.00163	0.500	0.536

***two-tailed p-value < 0.01; **two-tailed p-value < 0.05; *two-tailed p-value < 0.10

This table presents the results of models estimating the effect of supplier financing arrangements on analysts' cash flow forecast properties before and after their disclosures, in a sample matched with control firms. Variable definitions are provided in the Appendix.