Information Externalities of Corporate Earnings Disclosures:

Evidence from MSME Procurement Decisions*

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Abstract

We examine whether and how micro, small and medium-sized enterprises (MSMEs) adjust their operational decisions in response to the earnings information disclosed by nearby public firms. Using administrative transaction-level value-added tax (VAT) invoice data of MSMEs in China, we conduct a short-window event study around mandatory corporate earnings-forecast (EF) disclosure. We find that a one-standard-deviation increase in earnings surprise leads to a 1.27% increase in daily procurement of MSMEs located in the same city as the forecasting firm, consistent with earnings news serving as a forward-looking demand signal. The effect is strongest when public firms issuing earnings forecast face higher information asymmetry, when MSMEs are larger and have more suppliers, and when they operate in the same industry as the forecasting public firm—settings that facilitate information acquisition and processing. Consistent with the operational relevance of these signals, we document that procurement adjustments are concentrated in production-related inputs: core materials, fixed assets, and raw materials. Further, we show that MSMEs distinguish between genuine and opportunistic disclosures: they do not respond to inflated forecasts, and their procurement adjustments translate into subsequent sales growth. Collectively, our evidence suggests that public firm disclosures generate economically meaningful information externalities that shape real decisions beyond capital markets, extending the scope of financial reporting's real effects to the millions of private firms that underpin local economies.

Keywords: Disclosure externalities; MSMEs; Earnings forecasts; Procurement; Real effects; Information spillovers

JEL codes: D22, D80, G31, M4

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1. Introduction

Corporate disclosures by large public firms often reverberate beyond capital markets, shaping perceptions of industry conditions and influencing the behavior of other firms. Classic evidence from Foster (1981) shows that a firm's earnings announcements can generate significant intra-industry information transfers to competitors' stock prices. Subsequent studies demonstrate that such disclosures also create real economic externalities. For example, Badertscher, Shroff, and White (2013) find that private firms invest more efficiently when they operate in industries with greater public-firm presence, suggesting that corporate disclosures improve peers' information environments and reduce uncertainty. Similarly, Shroff, Verdi, and Yost (2017) document that richer peer disclosure environments lower firms' cost of capital by enhancing information comparability across firms. Collectively, this research highlights the potential for public-firm information to generate positive externalities that extend beyond investors. Yet, despite these advances, prior work largely focuses on publicly traded or financially sophisticated firms, leaving open the question of whether and how micro, small and medium-sized enterprises (MSMEs)—which form the backbone of most economies—respond to such disclosure-driven information.

Understanding whether MSMEs react to corporate earnings information is important for at least two reasons[1]. First, MSMEs account for a large share of employment and output[2] (Alekseev et al. 2023; Bonfim, Custódio, and Raposo 2023) but operate under severe informational and

[1] See Bernard and Sutherland (2025) for a review of literature for private firms.

[2] At the end of 2024, there were 61.22 million registered enterprises in China, of which over 60 million were MSMEs. In 2024, industrial MSMEs above the designated size—referring to those with annual revenue exceeding 20 million RMB—achieved a total operating revenue of 81 trillion RMB and generated profits exceeding 3.8 trillion RMB. Furthermore, independent invention patents held by small and micro enterprises accounted for over 75% of the total. MSMEs above the designated size employed more than 128 million people. https://www.qstheory.cn/20250515/5b057f901d6a44b9b964ea1d62e45fc0/c.html

financing frictions[3] (McKenzie and Woodruff 2017; Bruhn, Karlan, and Schoar 2018; Chen and Lee 2023; Galdon-Sanchez, Gil, and Uriz-Uharte 2025). Second, their procurement and production decisions directly affect regional supply chains and local aggregate demand. Despite these macroeconomic roles, little is known about whether MSMEs use public-firm disclosures to form expectations about future demand or to adjust real operations. The lack of evidence reflects data constraints: MSMEs are not required to publish financial statements, and conventional datasets rarely link public disclosure events to private firms' day-to-day decisions. As a result, it remains unclear whether smaller firms actively process and respond to information released by public companies—or whether such information dissipates before reaching them.

This paper addresses that question by examining whether MSMEs adjust their expectations and procurement behavior in response to the earnings information disclosed by nearby public firms. We focus on corporate earnings-forecast announcements, which communicate management's expectations about firm performance and often serve as salient signals of business conditions and future demand (Baginski and Hassell 1990; Pownall, Wasley and Waymire 1993; Hirst, Koonce, and Venkataraman 2008). Public firms are frequently industry leaders whose forecasts convey information about local demand, input costs, and macroeconomic outlooks (Gipper et al. 2025; Choi, Choi, and Malik 2023). For resource- and scale-constrained MSMEs, such disclosures can provide valuable cues for decision-making (Galdon-Sanchez, Gil, and Uriz-Uharte 2025). Unlike large corporations, MSMEs lack analyst coverage and sophisticated forecasting systems, so information produced by public firms effectively serves as a public good (Leuz and Wysocki 2016).

[3] Prior literature emphasizes that public and private firms exhibit significant heterogeneities in real decisions—such as investment, financing, and product innovation—due to differences in their information environments and agency costs (e.g., Gilje and Taillard, 2016; Phillips and Sertsios, 2017; Sheen, 2020).

From an economic standpoint, reducing uncertainty about future demand should enable firms to allocate resources more efficiently. When investment or procurement decisions are partly irreversible, high uncertainty leads firms to delay action—a pattern highlighted in the real-options literature (Dixit and Pindyck 1994; Bloom, Bond, and Van Reenen 2007). Credible earnings information from public firms can thus reduce uncertainty, increasing MSMEs' responsiveness in adjusting spending, production, or input purchases.

Nevertheless, MSMEs may not always benefit from or correctly interpret such information. Many small businesses lack in-house financial expertise and may struggle to process earnings releases (Anderson and McKenzie 2022; Blankespoor, deHaan, and Marinovic 2020; Moschella, Boulianne and Magnan 2023). Their procurement cycles often depend on long-term supplier relationships that limit short-term flexibility, and persistent financing constraints can prevent rapid adjustments even when managers anticipate demand changes. Whether MSMEs can actually use earnings information to improve operational planning is therefore an empirical question with broad implications. If they do, corporate reporting could influence real economic activity through an unstudied channel; if not, disclosure externalities might be confined to better-informed or financially unconstrained firms.

We investigate this question in China, where listed companies are subject to a mandatory earnings-forecast regulation requiring them to pre-announce expected annual results when performance deviates from prior guidance thresholds[4] (Huang et al. 2018; Lu, Shin, and Zhang

[4] The Chinese earnings-forecast regulation offers several advantages. First, disclosures occur earlier than official earnings announcements, reducing concerns about information leakage (Ball and Shivakumar, 2008). Second, the forecasts are mandatory and triggered by specific thresholds, mitigating the selective disclosure problems common in voluntary reporting. Third, each forecast includes explanatory notes that often reveal information about future investments, demand trends, and operating conditions, enhancing its overall informational value. See section 2.1 for details.

2023; Friedman et al. 2024). This institutional feature creates a series of standardized disclosure events that reveal management expectations about firm performance. We measure earnings surprises as the deviation of the first earnings forecast from analysts' consensus expectations (Kimbrough et al. 2024; Gipper et al. 2025) and examine how local MSMEs respond to this new information[5]. Our analysis uses a proprietary dataset from a leading Chinese fintech company containing detailed administrative VAT invoice records. These data provide near-real-time measures of procurement activity and allow us to conduct a short-window event-study design centered on earnings-forecast release dates.

A key advantage of this empirical design is its ability to address the identification challenges that have constrained prior work. Earlier studies relying on annual or industry-level data—particularly those using U.S. or large-private-firm samples—face potential endogeneity due to the reflection problem described by Manski (1991): common unobserved shocks may simultaneously influence public and private firms, making it difficult to separate causal information transmission from correlated exposure. By exploiting high-frequency transaction data and observing MSMEs' responses within days of earnings-forecast announcements, our setting largely circumvents this issue. It is unlikely that local macroeconomic shocks could both alter public firms' earnings forecasts and trigger immediate changes in MSMEs' daily procurement within such a short horizon, as genuine macro or industry trends typically evolve over longer

[5] Focusing on local MSMEs offers several advantages. First, MSMEs operate on smaller scales and within shorter supply chains, making their procurement decisions highly sensitive to regional demand fluctuations. Second, economic activity within the same city is closely interconnected, so local demand changes quickly influence MSME operations. Third, MSMEs are often embedded in the supply chains or business networks of nearby listed firms, increasing their responsiveness to these firms' information. Lastly, their local market knowledge enables them to interpret and act on regional signals more effectively than distant counterparts.

periods. This timing precision allows us to more cleanly identify the causal effect of earnings disclosures on MSMEs' operational behavior.

Our results show that MSMEs meaningfully adjust their procurement following corporate earnings disclosures. In the 15-day window surrounding the announcement, a one-standard-deviation increase in public firms' earnings surprise leads to an average 1.27 percent increase in daily MSME procurement relative to the pre-announcement period. Although modest at the firm level, this effect is economically significant in aggregate given the vast number of MSMEs in the economy. The pattern is consistent with MSMEs interpreting positive earnings news as a signal of stronger downstream demand. We find that the response is amplified when the forecasting firm exhibits higher ex-ante information asymmetry, indicating that earnings forecasts serve as a credible information signal for local MSMEs and help resolve ex-ante uncertainty about future economic conditions. The observed effect is particularly concentrated among local MSMEs possessing greater operational flexibility. Specifically, firms with a more diversified supplier base demonstrate a superior capacity to recalibrate procurement strategies within a compressed timeframe in response to disclosure signals. Furthermore, the response is stronger when MSMEs operate in the same industry as the announcing firm, suggesting that they use earnings news to infer industry-specific conditions. Collectively, these patterns corroborate the interpretation that corporate earnings disclosures generate informative spillovers that guide MSMEs' operational decisions.

Based on granular procurement invoice data, we further dissect MSME purchasing behavior into three dimensions: the number of invoices, product categories, and average purchase amount per invoice. The results indicate that only average invoice value increases in the short event window, whereas the other two dimensions do not. However, when we extend the

observation window to [-4, +4] weeks, all three measures become significantly positive, reflecting that MSMEs adjust both the intensive and extensive margins of their procurement activities.

Further analysis reveals that these responses are particularly concentrated in core production-related materials such as fixed assets and raw materials whereas purchases of low-value consumables and service-type commodities remain unchanged. This pattern suggests that earnings disclosures convey informative signals about future demand conditions, to which MSMEs respond by actively adjusting their critical operational inputs. These findings reinforce the view that corporate earnings releases serve as valuable information spillovers, guiding MSMEs in reallocating resources toward core production activities in anticipation of shifting demand conditions.

Moreover, relative to local households, MSMEs act as more sophisticated market participants, allowing them to distinguish informative earnings forecasts from those inflated by earnings management. A key reason is their local information advantage: MSMEs often possess direct or indirect knowledge about local announcing firms—e.g., through industry networks or regional ties—to verify the credibility of disclosed earnings signals. Consistent with this intuition, we document that MSMEs' purchasing responses are significantly weaker when the forecasted earnings are positive but actual earnings are negative, or when the forecast errors exceed 20%. This indicates MSMEs can identify misleading signals (Badertscher, Shanthikumar, and Teoh

2019), highlighting that sophisticated participants like MSMEs discern distorted information and enhance market efficiency[6].

Our study contributes to the literature on disclosure externalities and the real effects of financial reporting by showing that public firm disclosures shape the real decisions of non-reporting private firms. Prior research has documented that richer disclosure environments facilitate investment efficiency and capital allocation among public and private firms (Badertscher, Shroff, and White 2013; Bernard, Blackburne, and Thornock 2020) and that peer and industry disclosures improve information environments and lower costs of capital (Shroff, Verdi, and Yost 2017). Chen, Ding, Du, Wang, and Tseng (2025) show that private-firm disclosures can generate real externalities for public firms' investment, yet Kim and Olbert (2022) find that transparency among private firms can reallocate global capital flows away from public firms. We complement and extend this line of work by shifting the focus from capital markets and firm valuation to real economic behavior—specifically, MSMEs' procurement decisions that precede production and sales. In doing so, we link the literature on disclosure externalities with emerging evidence on the real-time economic impact of earnings news on households and local demand (Garmaise, Levi and Lustig 2024; Gipper et al. 2025).

We also investigate a mechanism that has been difficult to observe in prior work: how small, private enterprises interpret and act upon accounting-based information. Prior studies show that disclosure affects various aspects of real behavior, such as employee mobility and

[6] This finding contrasts with Gipper et al. (2025), who document that local households are unresponsive to financial misreporting by nearby public firms until such violations are publicly disclosed. We argue that, relative to local households, local MSMEs possess greater financial sophistication and information-processing capacity. This distinction underscores the unique importance of focusing on private firm stakeholders in evaluating the localized information spillovers of corporate financial reporting.

consumption behaviors (deHaan, Li, and Zhou 2023; Lourie et al. 2025), consumer spending and sentiment (Kimbrough et al. 2024; Noh, So, and Zhu 2025), and potential job seekers (Choi, Choi, and Malik 2023). We show that MSMEs adjust procurement in response to earnings news and can identify inflated earnings, indicating their reactions reflect fundamental information. We further find that such adjustments focus on production-related items such as fixed assets and raw materials. These results illustrate that public accounting disclosures provide valuable demand-related information to small, information-constrained firms—a real-effect channel largely neglected by traditional capital market research.

Empirically, our paper is among the first to use high-frequency, administrative transaction-level data to study how financial reporting affects real operations in near real time (Kang, Stice-Lawrence, and Wong 2021; Li and Venkatachalam 2022; Kim, Parker and Schoar 2025). Drawing on VAT invoice records, we observe procurement adjustments that occur within days of earnings-forecast releases. This fine-grained evidence allows us to isolate the information channel and identify short-horizon operational responses to disclosure events—an approach that overcomes the aggregation and endogeneity limitations of earlier studies. From a policy perspective, the results suggest that improving disclosure credibility and timeliness can enhance decision-making not only for investors but also for the vast number of small firms that collectively drive economic growth and employment (Alekseev et al. 2023; Bonfim, Custódio, and Raposo 2023).

2. Background and Hypothesis Development

2.1 Institutional Background

The Evolution of the Earnings-Forecast System in China

We focus on corporate earnings forecasts as key disclosure events because they provide early, forward-looking information that precedes formal earnings announcements. Prior studies argue that by the time earnings are released, much of the relevant information has already been conveyed through management guidance and analyst forecasts (Ball and Lakshmanan 2008). Forecasts therefore represent the first public signals of firms' expected performance and offer a clean setting to study how such information propagates through the economy.

China provides a particularly rich context for this analysis. Since the early 1990s, when the Shanghai and Shenzhen Stock Exchanges were established, China's listed-firm landscape has evolved from a state-dominated system with limited voluntary disclosure to one emphasizing transparency and standardized reporting (Huang et al. 2018; Lu, Shin, and Zhang 2023). The country's earnings-forecast regulation developed through several major reforms that gradually transformed voluntary profit warnings into a quasi-mandatory, rules-based system. In 1998, the China Securities Regulatory Commission (CSRC) advised firms expecting substantial losses to issue a timely profit warning, although it neither specified an exact deadline nor provided a quantitative definition for the term "substantial"[7]. In 2000, Shanghai and Shenzhen Stock Exchanges further refined this guidance by stipulating that listed companies anticipating losses should release pre-loss announcements within two months after the fiscal year-end[8], which was the first time the timing of profit warning was specified. However, the regulation in its early stage exhibited notable shortcomings. First, disclosures were largely voluntary, limiting the

[7] http://www.law-lib.com/lawhtm/1998/68449.htm
[8] http://www.law-lib.com/lawhtm/2000/73051.htm (Shanghai Stock Exchanges)
http://www.law-lib.com/lawhtm/2000/73068.htm (Shenzhen Stock Exchanges)

effectiveness of regulatory enforcement. Second, the absence of clearly defined quantitative thresholds weakened implementation, thereby reducing firms' incentives for compliance.

A pivotal change occurred in 2001, the year China joined the WTO, when the Shanghai and Shenzhen Stock Exchanges implemented a new mandate. Firms anticipating a profit change of over 50 percent from the prior year were required to issue an earnings warning within 30 working days after the fiscal year-end[9]. Specifically, this marked the first official definition of a "material change" in performance—a swing of 50 percent or more. Furthermore, it accelerated the reporting timeline, moving the deadline from two months to within one month after the fiscal year-end.

In 2006, the Shenzhen Stock Exchange issued further guidance on ongoing earnings forecasts, explicitly incorporating a shift from loss to profit into the category of mandatory preliminary announcements[10]. Since this update, the criteria for mandatory earnings forecasts have remained consistent, comprising three main conditions: (1) the occurrence of a net loss, (2) a shift from loss to profit, and (3) a year-on-year increase or decrease in profit exceeding 50 percent[11].

By the mid-2000s, China had established one of the most comprehensive earnings-forecast regimes among emerging markets. Forecasts became standardized, time-bound, and publicly accessible, with clear penalties for non-compliance. These institutional features make the Chinese setting uniquely suited to study information spillovers: disclosure timing is exogenously regulated,

[9] https://finance.sina.com.cn/y/20011220/156946.html (Shanghai Stock Exchanges)
https://finance.sina.com.cn/y/20011220/156948.html (Shenzhen Stock Exchanges)
[10] https://www.szse.cn/disclosure/notice/general/t20060710_499625.html
[11] We don't include the evolution of earnings forecast requirements for semi-annual or quarterly reports. Focusing solely on annual earnings forecasts for two primary reasons. First, annual earnings forecasts are more consequential and are more closely followed by MSMEs. Second, analyst forecast data is more comprehensive for annual reports, which facilitates the calculation of a reliable earnings surprise measure.

the content is comparable across firms, and the frequency of announcements generates numerous quasi-exogenous information shocks. Together, these features enable us to observe how public firms' forward-looking disclosures affect the expectations and behavior of nearby MSMEs in real time.

Disclosure Format and Content

Specifically, listed firms are required to disclose annual earnings forecasts in a timely manner on websites designated by the CSRC[12]—which are freely accessible to all investors. Additionally, earnings forecasts must be simultaneously released through official announcements on the Shanghai and Shenzhen Stock Exchange. Other common disclosure channels include listed firms' official websites and securities information platforms such as Huashun (Flush) and East Money Information Co., Ltd. (East Money). As a result, earnings forecasts are not only highly timely but also widely accessible to market participants at extremely low acquisition cost.

In terms of content, earnings forecasts contain rich and multi-faceted information (See Appendix B for an example of earnings forecast). First, firms must specify the type of earnings outlook, typically categorized by the year-on-year change in net profit (e.g., expected growth, expected decline, expected loss, return to profitability). Second, and most importantly, they must disclose the earnings range—including the upper and lower bounds of projected net profit and the corresponding year-on-year growth rate. Third, firms are required to provide a textual explanation of the key drivers behind the anticipated performance change, which not only elaborates on the sources of the firm's own performance fluctuations but also conveys implicit information about future demand trends in the relevant industry or region. Finally, earnings forecasts include risk

[12] www.cninfo.com.cn.

warnings, clarifications on data calibers, and disclosures regarding whether the financial data have been audited.

2.2 Hypothesis Development

Public-firm earnings disclosures can shape the expectations and real decisions of smaller, non-reporting firms. Earnings forecasts are particularly salient in this regard because they contain management's forward-looking assessment of business conditions and future profitability. Unlike historical financial statements, forecasts convey timely information about the firm's operating environment, cost structure, and anticipated demand. For nearby MSMEs, these disclosures can serve as credible external signals that help reduce uncertainty about market prospects and guide short-term operational decisions.

This mechanism builds on the notion of information spillovers, in which disclosures by one firm improve the information environment of others (Foster 1981; Badertscher, Shroff, and White 2013). Prior studies show that richer disclosure environments enhance investment efficiency and coordination among public and private firms (Shroff, Verdi, and Yost 2017; Bernard, Blackburne, and Thornock 2020). Relatedly, research on financial reporting comparability demonstrates that consistent disclosure across firms facilitates the diffusion of knowledge and learning (Tseng and Zhong 2024), suggesting that the benefits of transparency extend beyond investors to the real economy. Our analysis focuses on smaller, non-reporting firms that operate without analyst coverage or sophisticated forecasting systems. Because MSMEs face high uncertainty about demand and limited access to forward-looking information, public firms' earnings forecasts may provide valuable insights about near-term market conditions. When a listed company reports earnings above expectations, MSMEs in related industries may interpret this as a signal of expanding demand and increase procurement to prepare for future sales. Conversely,

negative earnings surprises may trigger caution, leading MSMEs to scale back purchases or delay production.

This informational channel operates through uncertainty reduction. As a mandatory disclosure, earnings forecasts serve as a credible information signal for local MSMEs, particularly when the disclosing public firm faces greater ex-ante information asymmetry (Diamond and Verrecchia 1991; Verrecchia 2001). These forecasts help resolve demand uncertainty by providing timely, verifiable benchmarks of near-term market conditions, allowing MSMEs to adjust their operational decisions accordingly. Prior research shows that disclosure-induced spillovers can reduce technological and innovation uncertainty by providing firms with reference points for investment and development decisions (Tseng 2022). From a real-options perspective (Dixit and Pindyck 1994; Bloom, Bond, and Van Reenen 2007), a reduction in uncertainty lowers the option value of waiting and prompts firms to act more decisively. Public-firm earnings forecasts thus function as timely signals that convert uncertainty into actionable expectations, especially for small firms with thin margins and high exposure to local demand cycles. However, several frictions may attenuate these responses. MSMEs often lack financial expertise and may find it difficult to interpret complex disclosures (Anderson and McKenzie 2022; Blankespoor, deHaan, and Marinovic 2020). Long-term supplier relationships and financing constraints may limit their ability to adjust purchases even when they perceive demand changes (Bartlett and Morse 2021). Whether MSMEs meaningfully respond to public-firm earnings disclosures therefore remains an empirical question that depends on the balance between informational benefits and operational constraints.

Hypothesis: *Local MSMEs' procurement decisions exhibit a significant short-term response to public firms' earnings-forecast disclosures, increasing (decreasing) following positive (negative) earnings surprises.*

This hypothesis captures the central prediction that accounting-based information disseminated through corporate earnings forecasts influences MSMEs' real activity through an information–expectation channel rather than through financial-market mechanisms.

3. Data, Variable Measurement, and Research Design

3.1 Data and Sample Construction

We use proprietary administrative transaction-level VAT invoice data provided by a leading Chinese fintech firm that supports MSMEs in obtaining bank financing and establishing creditworthiness. To assess credit risk, MSMEs authorize the firm to access their administrative tax records submitted to the Chinese tax authorities. These records include VAT invoices, which contain granular information such as product descriptions, transaction quantities, tax amounts, total transaction values, and invoice dates. The invoice data are complemented by MSMEs' business registration information—including operational addresses, industry classifications, firm registration dates, and descriptions of main business activities—as well as quarterly corporate income tax filings and financial statements submitted to the tax authorities[13]. Figure 1 plots the geographic distribution of MSMEs across Chinese cities. The sample exhibits broad national coverage and is not concentrated in a limited set of regions. In addition, economically developed areas feature a higher concentration of MSME activity. Panel B of Table 1 further presents the

[13] All data accessed are strictly anonymous, with all identifying information related to MSMEs and individual entities redacted and de-identified. Data processing is conducted in a secure environment that ensures no confidential information is disclosed.

sample's industry composition. Our MSME sample spans nearly all non-primary industries, with manufacturing and retail sectors collectively accounting for over 60 percent of total observations[14].

A key advantage of this dataset is its granularity and identification value. From panel A of Table 1, our sample includes over 66,000 MSMEs across a wide range of industries and regions, capturing day-to-day operational activity that has been largely inaccessible in prior research. Existing studies of private-firm behavior typically rely on survey or annual report data, which lack continuity and suffer from coarse timing. In contrast, our administrative transaction-level VAT data allow us to observe procurement and sales behavior at a daily frequency, enabling us to align firm-level activity precisely with the timing of public firms' earnings disclosures.

This high-frequency design also provides a unique identification advantage by addressing the classic reflection problem (Manski 1991)—the difficulty of distinguishing whether correlated behavior across public and private firms reflects causal influence or common shocks. Because macroeconomic or industry-wide conditions evolve slowly relative to our daily observation window, it is implausible that shared external shocks would drive both public firms' earnings forecasts and MSMEs' procurement within the same few-day interval. Consequently, any systematic change in MSMEs' activity immediately after an earnings disclosure can be interpreted as a direct response to newly released information, rather than a simultaneous reaction to unobserved aggregate factors.

[14] Benchmarked against aggregate figures from the 2023 China Economic Census—presented in the last two columns of Panel B of Table 1—our sample's industrial composition closely mirrors the nationwide distribution of non-agricultural enterprises. The cross-industry alignment is high, with only a modest overrepresentation of manufacturing MSMEs in our dataset. Together with the broad geographic dispersion documented in Figure 1, this consistent industrial structure confirms that our sample is largely representative of the broader population of Chinese MSMEs.

3.2 Variable Measurement

Our primary dependent variable measures MSMEs' daily procurement activity. For each MSME *i* in city *j* on day *t* during the event window surrounding earnings-forecast *s*, we calculate the total value of all purchase invoices issued on that day. Our dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is defined as the natural logarithm of one plus this aggregated daily purchase amount. The key identifying assumption is that the invoice issuance date closely approximates the timing of the underlying economic activity. This measure captures real procurement decisions in near real time[15].

Our main explanatory variable measures unexpected earnings news from public firms' forecasts. We define *Earnings Surprise* as the difference between a firm's management earnings forecast and the analyst consensus forecast, scaled by the consensus forecast[16]. Analyst forecast data are obtained from the CSMAR and WIND databases, including all analyst forecasts issued between 90 days and one day prior to the firm's earnings forecast date. If the management forecast is given as a range, we take the midpoint. For cities with multiple earnings forecast events on the same day, we construct a value-weighted earnings surprise using each firm's market capitalization on the event date as the weight (Gipper et al. 2025). This measure captures the unanticipated component of earnings news—information not yet reflected in market expectations. In robustness analyses, we confirm that our results remain unchanged when using the relative optimism of management earnings forecasts, or when earnings surprises are benchmarked against prior-year realized earnings instead of analyst forecasts.

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[15] We also perform a weekly analysis to ensure that our main results remain robust in a longer observation window.
[16] We use total net income instead of EPS because the mandatory preliminary earnings announcements in our setting primarily disclose aggregate profit figures, which represent the most salient information available to MSMEs at the time of the event.

Table 2 presents summary statistics for all variables used in this study. Panel A reports daily-level descriptive statistics. The mean (median) daily procurement amount for MSMEs in our sample is RMB 91,900 (RMB 4,400)[17], with substantial cross-firm variation, ensuring sufficient power for inference. Panel B provides corresponding summary statistics for variables constructed at the weekly frequency.

3.3 Research Design and Identification Strategy

We employ an event-study-based stacked difference-in-differences (DID) design to estimate how MSMEs' procurement activity responds to public firms' earnings-forecast announcements. Specifically, we estimate the following model:

$$Ln\ (Purchase)_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_2 Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s} \quad (1)$$

where $Ln\ (Purchase)_{i,j,t,s}$ measures the procurement activity of MSME i in city j on day t of earnings forecast s, and $Earnings\ Surprise_{j,t}$ captures the magnitude of unexpected earnings news from public firm(s) in city j on day t. $Post_{t,s}$ is a dummy equal to one for the seven days following the earnings-forecast announcement and 0 otherwise. The coefficient of interest, α_1, measures the change in MSMEs' procurement behavior after earnings disclosures, conditional on the direction and size of the earnings surprise.

We include a rich set of high-dimensional fixed effects to mitigate confounding factors. MSME-by-earnings forecast event fixed effects $\beta_{i,s}$ absorb time-variant characteristics at the MSME level, such as seasonal fluctuations in MSME operating performance, idiosyncratic demand shocks, and local business cycles. Year-month-day fixed effects γ_t control for national shocks, holidays, and reporting cycles. Standard errors are clustered at the MSME level (Giannetti

[17] Equivalent to USD 13,100 (USD 600)

and Wang 2016; Lourie et al. 2025). Our identification strategy rests on two features of the setting. First, the exogenous timing of earnings-forecast disclosures—determined by CSRC regulations and firms' internal thresholds—creates plausibly unanticipated information shocks. Because MSMEs cannot predict exactly when forecasts will be issued, changes in their procurement immediately after the disclosure can be interpreted as responses to new information rather than endogenous timing. Second, the high-frequency nature of the data allows us to measure responses within days of the announcement, thereby alleviating the reflection problem (Manski 1991) that arises when public and private firms are jointly affected by common shocks. It is unlikely that macroeconomic or industry-wide events could simultaneously influence both public firms' forecasts and MSMEs' daily procurement within such short windows. This temporal precision strengthens causal interpretation by isolating the information-transmission channel and identifying the causal impact of public disclosures on MSME behavior.

In summary, this research design leverages the combination of exogenous disclosure timing, transaction-level MSME data, and high-frequency observation windows to provide clean evidence on how public firms' earnings disclosures causally affect the real activity of nearby private firms.

4. Empirical Results: The Impact of Public-Firm Disclosures on MSME Procurement

4.1 Baseline Estimates

To examine whether local MSMEs respond to corporate earnings news, we first classify earnings surprises into positive and negative groups. Intuitively, positive earnings surprises indicate better-than-expected performance, signaling stronger future demand and thereby incentivizing local MSMEs to increase procurement. Consistent with this prediction, we find that

local MSMEs significantly increase procurement over the subsequent seven days following positive earnings surprises issued by public firms in the same city, while reducing procurement in response to negative earnings surprises. These results are presented in Table A1 of Appendix C.

We next estimate Equation (1) to quantify the magnitude of MSMEs' procurement adjustments in response to public firms' earnings surprises. The results, presented in Table 3, lend support to our main hypothesis. Column (1) excludes fixed effects of any form, while Column (2) incorporates MSME and year-month-day fixed effects. In Column (3), we further include MSME–earnings forecast event fixed effects. Across all specifications, the coefficient on *Earnings Surprise* × *Post* is positive and statistically significant. This pattern indicates that local MSMEs expand their procurement activities following the release of more favorable earnings forecast disclosures.

As for economic significance, the estimated coefficient of 0.015 implies that, relative to the pre-event period, a one-standard-deviation increase in earnings surprise (0.84) results in a 1.27 percent rise in local MSMEs' daily purchases (exp (0.015*0.84)-1)[18], suggesting that earnings disclosures by public firms generate real-economic spillovers of a similar order. In actual terms, the 1.27 percent effect corresponds to an increase of roughly RMB 8,170 (USD 1,150) per MSME over the next seven days (1.27 % × 91,900× 7). Given that over 60 million MSMEs operated in China by the end of 2024, the aggregate effect can be approximated as

[18] This magnitude is relatively higher than the 0.42 percent increase in consumption documented by Gipper et al. (2025) and the 0.69 percent increase in employee spending documented by Lourie et al. (2025) in response to earnings announcement news.

60 million ÷ 293 × 1.27 % × 91,000 ≈ RMB 237 million per day [19], highlighting the sizeable real-economic externalities of public-firm earnings disclosures.

Next, we examine dynamic effects to confirm that MSMEs' procurement responds only after earnings forecast disclosures, rather than exhibiting pre-existing trends. As shown in Figure 2, at the 95% confidence level, local MSMEs' procurement exhibits no significant changes during the seven days prior to the event, supporting the validity of the parallel-trends assumption. Following the disclosure, procurement increases proportionally with the magnitude of earnings surprises, indicating that MSMEs adjust their behavior only upon the arrival of new public information. Notably, the increase in procurement becomes statistically significant three days after the event rather than immediately. This delayed response likely reflects the time required for changes in perceived demand to materialize into actual invoice transactions, and the effect remains economically meaningful throughout the subsequent seven days.

Together, these results provide strong baseline evidence that MSMEs react causally and in real time to public-firm earnings-forecast disclosures through an information-expectation channel.

4.2 Cross-Sectional Heterogeneity: Ex-ante Information Asymmetry

In this section, we examine whether the sensitivity of MSME procurement to public firm disclosures is moderated by the disclosing firms' ex-ante information environment. Table 4 presents the results.

Theoretical frameworks in accounting and finance posit that corporate disclosures provide greater incremental information value when the firm operates in a more opaque information environment (e.g., Diamond and Verrecchia 1991; Verrecchia 2001). In such settings, mandatory

[19] As of the end of 2022, China has 293 prefecture-level cities.

or voluntary disclosures serve to resolve significant prior uncertainty and improve the precision of market participants' beliefs. Following this literature, we hypothesize that the operational spillovers to MSMEs will be more pronounced when public firms exhibit higher ex-ante information asymmetry. We operationalize this asymmetry using four proxies categorized into two dimensions: investor attention and information intermediary coverage.

4.2.1 Investor Attention

We first focus on the degree of investor attention directed toward public firms prior to their disclosures. Low levels of pre-announcement attention typically signal a more opaque information environment where firm-specific news has not been fully incorporated into the public domain. Specifically, we employ two proxies: (1) online search volume and (2) media coverage, both measured over a seven-day window preceding the earnings forecast announcement (Bushee et al. 2010). For city-days characterized by multiple disclosure events, we compute market-capitalization-weighted averages of these measures to reflect the aggregate informational importance. We define *Low Online Search* and *Low Media Coverage* as indicator variables equal to one if the respective measure falls below the sample median, and zero otherwise.

Columns (1) and (2) of Table 4 report the results. In Column (1), the coefficient on the triple interaction term *Earnings Surprise* × *POST* × *Low Online* Search is 0.039, positive and statistically significant at the 1% level (t-statistic = 7.34). Notably, the magnitude is approximately double the baseline effect reported in Table 3, indicating economically meaningful heterogeneity: MSMEs' procurement response is substantially stronger for earnings disclosures from firms with low pre-disclosure online attention. In Column (2), the coefficient on *Earnings Surprise* × *POST* × *Low Media Coverage* is 0.009, also positive and statistically significant. These findings confirm that earnings forecasts from public firms with low ex-ante investor attention provide greater

incremental information value to local MSMEs, consistent with the premise that disclosures yield greater external benefits in the presence of higher information frictions.

4.2.2 Information Intermediary Coverage

We further examine the role of the information environment by focusing on coverage by key capital market intermediaries—sell-side analysts and institutional investors. Prior literature posits that these intermediaries facilitate the efficient production and dissemination of financial information, thereby reducing information asymmetry and improving the firm's overall transparency (Bushee 1998; Amiram, Owens, and Rozenbaum 2016; He et al. 2025). In a high-coverage environment, corporate disclosures may convey less incremental information as much of the fundamental news is pre-empted by intermediary research. Conversely, for firms with limited intermediary engagement, mandatory earnings forecasts likely serve as a more critical source of new information for external observers, including MSMEs.

To test this, we construct two inverse proxies for ex-ante information transparency: analyst coverage and institutional ownership. Specifically, *Low Analyst Coverage* is an indicator variable equal to one if the number of analysts issuing earnings forecasts for the firm during the 90-day window ending one day before the management earnings forecast announcement falls below the sample median, and zero otherwise. *Low Institutional Ownership* is a binary indicator set to one if the firm's institutional ownership percentage in the fiscal year covered by the earnings forecast (i.e., the prior fiscal year) falls below the sample median, and zero otherwise. Consistent with our earlier construction, we value-weight these measures by firm market capitalization for cities with multiple daily EF events.

Columns (3) and (4) of Table 4 present the results. The coefficient on *Earnings Surprise* × *POST* × *Low Analyst Coverage* is positive and statistically significant (coefficient = 0.038, t-

statistic = 6.15), as is the coefficient on *Earnings Surprise* × *POST* × *Low Institutional Ownership* (coefficient = 0.029, t-statistic = 5.81). These results demonstrate that local MSMEs' procurement responses are concentrated among disclosing firms with limited analyst coverage and low institutional ownership.

Collectively, the findings in Table 4 reinforce our core inference: public firms' earnings forecasts function as a critical information transmission channel for local MSMEs, and this channel is particularly important when ex ante information asymmetry is high (i.e., low investor attention or limited intermediary coverage). This heterogeneity supports the causal interpretation of our baseline results and highlights the role of information frictions in shaping MSMEs' responses to public earnings disclosures.

4.3 Cross-Sectional Heterogeneity: MSMEs Characteristic

In this section, we explore cross-sectional variation in MSME characteristics to identify which types of MSMEs adjust procurement more nimbly and respond more strongly to public firms' earnings forecast announcements. We focus on two primary dimensions that shape an MSME's capacity to process and act upon informational signals: supply chain flexibility and industry-specific information relevance.

4.3.1 Supplier Network Flexibility

The ability of an MSME to adjust its real operations following an informational shock is potentially constrained by its existing supply chain structure. We hypothesize that MSMEs with broader supplier networks possess greater operational agility, as a diversified supplier base reduces search costs and dependency on specific vendors, thereby lowering the frictions associated with adjusting procurement volumes. To test this, we measure supplier network flexibility as the number of unique suppliers from which an MSME sourced inputs in the month preceding the

earnings forecast disclosure. We define *More Suppliers* as an indicator variable equal to one if the MSME's supplier count is above the sample median, and zero otherwise.

Column (1) of Table 5 presents the results. The coefficient on the triple interaction term *Earnings Surprise* × *POST* × *More Suppliers* is positive and statistically significant (coefficient = 0.036, t-statistic = 7.49), whereas the response for MSMEs with fewer suppliers is economically and statistically insignificant. This result indicates that supplier diversification enhances the agility with which MSMEs translate informational signals into procurement decisions, consistent with the notion that flexible supply chains reduce frictions to responding to external information.

4.3.2 Industry Alignment with Public Firms

We next examine the role of industry alignment between MSMEs and disclosing public firms in moderating the procurement response. Earnings signals from firms within the same industry are expected to possess higher information transferability, as they encapsulate industry-specific demand shocks, common input-cost dynamics, and shared regulatory shifts. Such disclosures provide more granular and actionable benchmarks for MSMEs, which typically lack the resources to produce independent market intelligence. We define *Same Industry MSME* as an indicator variable equal to one if the MSME operates in the same one-digit industry as the disclosing public firm, and zero otherwise.

Column (2) of Table 5 reports the results. The coefficient on the triple interaction term *Earnings Surprise* × *POST* × *Same Industry MSMEs* is positive and statistically significant (coefficient = 0.032, t-statistic = 6.87). Notably, the economic magnitude of this effect is nearly double the baseline estimate reported in Table 3. This evidence suggests that the operational relevance of earnings news—conditioned on industry overlap—is a primary determinant of MSMEs' procurement adjustments. The findings support the inference that same-industry

disclosures mitigate information asymmetry by providing relevant signals for MSMEs' real-side decisions.

Collectively, the results in Table 5 reinforce our core inference: MSMEs' responses to public firms' earnings forecasts are concentrated among firms with (1) lower operational frictions (broader supplier networks) and (2) higher relevance of earnings news (same-industry alignment). This heterogeneity highlights that MSMEs' responsiveness to public earnings news turns on their organizational and operational traits.

4.4 Evidence from VAT Invoice Information

To further investigate how earnings surprises shape local MSMEs' behavior, we turn to detailed VAT purchase-invoice data that capture firms' daily purchasing activities. These data allow us to decompose procurement adjustments into multiple dimensions—invoice frequency, average transaction value, and product category scope. We further classify purchased goods and services into fixed assets, raw materials, low-value consumables, and service inputs, providing a granular perspective on how MSMEs revise their operations following earnings forecast disclosures.

4.4.1 Procurement Responses by Invoice Counts, Values and Product Categories

Building on our baseline finding that MSMEs adjust procurement in response to earnings surprises, we construct three corresponding variables: *Ln (#Purchase Invoice)* and *Ln (#Product Category)* as the log of one plus the number of invoices and distinct product categories, respectively, and *Ln (Average Invoice Value)* as the log of total purchases scaled by the number of invoices. Table 6 presents the daily-level results. The coefficient on *Earnings Surprise* × *POST* is statistically insignificant for invoice count and product category scope, suggesting that MSMEs do not immediately expand the number of transactions or the variety of items purchased. By

contrast, we find a significant increase in the average value per invoice, as shown in Column (3). In Panel A of Table A3 in Appendix C, we extend the analysis to a four-week window around earnings announcements using weekly averages. All three margins become positive and significant, indicating that certain operational adjustments take longer to fully materialize.

4.4.2 Procurement Adjustments by Product Type

Public firms' earnings announcements convey forward-looking information about future demand, which should lead MSMEs to adjust procurement in line with their production and operating needs. We first identify an MSME's top five most frequently purchased products over the sample period as its core production-related inputs. We then construct *Ln (Purchase top5)* as the natural logarithm of daily procurement spending on these five key products. Column (1) of Table 7 shows that the coefficient on *Earnings Surprise* × *POST* is positive and significant, indicating that MSMEs increase spending on their core production inputs following positive earnings news.

We next classify all purchased items into four mutually exclusive categories: fixed assets, raw materials, low-value consumables, and service-type commodities. Fixed asset purchases reflect expansionary investment and scale adjustments, while raw materials represent essential inputs for ongoing production; both reflect forward-looking production decisions. In contrast, low-value consumables are characterized by small transaction sizes and stable demand driven by routine operations rather than new information. Service-type commodities are largely auxiliary and tied to idiosyncratic firm needs. Using standardized keyword lists tailored to each industry (see Appendix D for a full list), we systematically assign each purchased product to one of the four categories, with no overlapping classifications.

Columns (2)-(5) of Table 7 report the category-specific results. The coefficient on *Earnings Surprise* × *POST* is significantly positive for fixed assets and raw materials, but insignificant for low-value consumables and service-type commodities. This pattern confirms that MSMEs increase their forward-looking, production-related procurement in response to positive earnings news, while routine and auxiliary purchases remain unresponsive. In an extended analysis using a four-week window around the forecast announcement (reported in Panel B of Table A3 in Appendix C), we continue to observe significant increases in fixed asset and raw material purchases. Low-value consumables remain unresponsive, while service-type commodities become significantly positive, consistent with rising operational demand accompanying expanded business activity.

Overall, the evidence from invoice-level analyses demonstrates that corporate earnings disclosures influence MSMEs' real operations through targeted, production-oriented adjustments. Earnings forecasts provide credible signals of future demand that prompt MSMEs to increase procurement and capacity in the short term, underscoring the pivotal role of financial disclosure in coordinating business expectations across the public and private sectors.

5. Extensions, Real Effects, and Robustness

5.1 Extensions: Evidence from Earnings Boosting

We next examine whether local MSMEs can distinguish between credible earnings news and inflated forecasts issued by public firms. Corporate managers frequently face incentives to overstate earnings projections—for instance, to temporarily inflate stock prices, reduce financing costs, or enhance personal reputation and career outcomes tied to equity performance. A concurrent literature suggests that individual households often fail to detect such upwardly biased

disclosures (Gipper et al. 2025). Compared with households, however, MSMEs may possess a comparative informational advantage through supply chain linkages, local business networks, or direct trading relationships with public firms. Because their operating performance hinges on real economic demand rather than passive investment returns, MSMEs also have stronger incentives to evaluate the credibility of public earnings signals.

To test this inference, we construct a measure of *Earnings Boost*. We classify an earnings forecast as boosted if: (1) the forecast is positive but subsequent realized earning is negative, or (2) forecasted earnings exceed realized earnings by more than 20%. Column (1) of Table 8 reports the results. The coefficient on the triple interaction *Earnings Surprise* × *POST* × *Earnings Boost* is significantly negative, indicating that MSMEs curtail their procurement response when confronted with inflated earnings disclosures. Moreover, the overall procurement reaction is statistically insignificant for boosted forecasts, as the sum of the relevant coefficients (A+B) is not distinguishable from zero. This pattern reveals that MSMEs do not mechanically respond to the raw magnitude of earnings surprises; instead, they effectively distinguish between credible fundamental news and exaggerated disclosure. To ensure robustness, we redefine the earnings-boosting threshold at a 30% cutoff. As shown in Column (2) of Table 8, the inferences remain unchanged, supporting the view that MSMEs' ability to discern disclosure credibility is not sensitive to alternative classification rules.

5.2 Extension: Annual Report Disclosures

Our main tests use mandatory earnings forecasts, which offer early, low-contamination disclosure to identify MSMEs' responses. We extend this to audited annual report disclosures (due by April 30 post-fiscal year) to examine whether these later, audited filings still convey incremental demand-related information. We employ our baseline specification, redefining the

event date as the annual report release and focusing on MSMEs' seven-day surrounding procurement. Earnings Surprise is actual earnings minus the median 90-day pre-disclosure analyst forecast (value-weighted for multi-firm city-days). Table A4 of Appendix C reports the results: the coefficient on *Earnings Surprise* × *POST* is statistically insignificant, indicating no short-term procurement adjustments by local MSMEs. This null finding reflects limited incremental information in annual reports, as key earnings signals are preempted by earlier disclosures (e.g., mandatory forecasts) or intermediaries.

5.3 Real Effects: MSMEs' Financial Performance

We next examine whether public firms' earnings surprises translate into tangible improvements in the real performance of local MSMEs. Using sales invoice data, we measure MSMEs' weekly sales over the four-week window before and after earnings forecast announcements. We define *Ln (Sale_W)* as the natural logarithm of an MSME's total weekly sales. Column (1) of Table 9 reports the results. The coefficient on *Earnings Surprise* × *POST* is positive and statistically significant, indicating that MSMEs exposed to more positive earnings surprises achieve stronger subsequent sales growth. In terms of economic magnitude, a one-standard-deviation increase in earnings surprises is associated with a 0.59% rise in weekly sales, equivalent to approximately RMB 3,727 (USD 500) per MSME. This pattern supports our core inference that public earnings disclosures convey value-relevant information about future aggregate demand, which MSMEs incorporate into their operating and sales decisions. Notably, these results highlight that public-firm disclosures generate real effects beyond short-term procurement adjustments: they also shape MSMEs' downstream sales performance. In column (2) of table 9, we re-estimate our baseline specification using weekly aggregated procurement *Ln (Purchase_W*) and continue to

find a significant positive relation between earnings surprises and MSME purchasing activity over this longer horizon, consistent with gradual and sustained operational adjustments.

5.4 Robustness Tests

Finally, we conduct a series of robustness checks to rule out alternative explanations and validate the reliability of our core findings.

First, we adopt an alternative benchmark for earnings expectations to address potential concerns about analyst forecast bias. We redefine *Earnings Surprise (Prior Year)* as (forecasted earnings - prior-year realized earnings) divided by the absolute value of prior-year realized earnings, replacing the baseline analyst forecast-based measure. As shown in Table 10, Panel A, the coefficient on *Earnings Surprise (Prior Year)* × *POST* remains positive and statistically significant. This confirms that our findings are not sensitive to the choice of earnings expectation benchmark.

Second, we explore whether MSMEs' responses vary with the optimism embedded in earnings forecasts. We categorize forecasts into distinct types based on their inherent optimism (e.g., positive profit forecasts vs. revenue growth projections) and re-estimate the baseline model. Results reported in Panel B of Table 10 indicate that MSME procurement decisions are positively associated with forecast optimism: more optimistic earnings disclosures are interpreted as stronger signals of future demand growth, prompting MSMEs to adjust their procurement more aggressively in anticipation.

Third, to examine whether the response varies with the magnitude of earnings surprises, we divide the sample into five quintiles based on the size of the surprise. The results, reported in Panel C of Table 10, use the lowest 20 percent (the smallest surprises) as the baseline group. We find that as earnings surprises increase, the positive impact on MSMEs' procurement decisions

becomes stronger, indicating that MSMEs react promptly to public-firm earnings information and that their response scales with the informational content of the surprise rather than arising mechanically.

Fourth, we exclude small-scale taxpayers from the sample. These firms apply a simplified VAT calculation method (a uniform 3% rate with no input tax deduction) and face relatively weaker tax supervision, which may reduce the accuracy of their VAT invoice data in reflecting actual operational activities. Small-scale taxpayers account for only approximately 4% of our sample, and excluding them leaves our core inferences unchanged. Results are reported in Panel D of Table 10.

Fifth, we restrict the sample to mandatory earnings forecasts. Following the definition in Section 2.1, we retain only forecasts disclosed in January and those triggered by mandatory performance thresholds, excluding all voluntary earnings forecasts. Results remain qualitatively unchanged, as documented in Panel E of Table 10.

Lastly, we exclude mega-cities (Beijing, Shanghai, Tianjin, Chongqing, and Shenzhen) from the sample. These cities have a higher concentration of listed firms and more frequent EF events, which may dilute the relative informational value of individual disclosures. After excluding these regions, our core results remain statistically significant (Panel F of Table 10), and the coefficient on *Earnings Surprise* × *POST* is larger in magnitude. This suggests that the informational value of public earnings disclosures is more pronounced in regions with lower marketization levels, where alternative information channels are relatively scarce.

Collectively, the robustness analyses confirm that our main findings are not driven by stock market reactions, benchmark definitions, or forecast types. Instead, MSMEs' procurement decisions are systematically driven by the unexpected component of earnings information,

reinforcing the interpretation that public-firm disclosures function as real-economy information signals that shape the behavior of private firms.

Conclusion

This study provides new evidence that corporate earnings disclosures by public firms generate real information externalities that reach deeply into the small-firm sector. Using a unique high-frequency dataset of administrative transaction-level VAT invoices from Chinese MSMEs, we show that local MSMEs promptly adjust procurement following nearby public firms' earnings forecasts. These adjustments are economically meaningful, scale with the magnitude of earnings surprises, and are concentrated in production-related purchases rather than discretionary spending. Our findings suggest that accounting-based information, long studied for its capital-market relevance, also shapes real decisions among non-reporting private firms that anchor regional economic activity.

Our empirical design exploits the fine temporal resolution of daily transaction data to capture short-run adjustments in MSMEs' behavior around disclosure events. This approach mitigates the reflection problem that has constrained earlier studies: within such a narrow event window, it is unlikely that common local shocks simultaneously drive both public-firm disclosures and MSME procurement. By focusing on these immediate responses, we identify how information transmits through local product-market channels rather than through macroeconomic or financing effects.

We also highlight how the strength of these information spillovers depends on visibility and absorptive capacity. MSMEs respond more strongly when disclosures receive greater media or analyst attention, when they operate in the same industry, and when they possess professional

financial expertise or a more diversified supplier network. However, MSMEs fail to distinguish between genuine and inflated earnings forecasts, indicating that information externalities can transmit both credible and distorted signals. Together, these results expand the scope of research on the real effects of financial reporting, showing that public-firm disclosures influence not only investors and large firms but also the operational decisions of smaller enterprises.

More broadly, this paper contributes to an emerging literature connecting financial reporting with real-time economic activity. Advances in digitalization and access to granular administrative data now enable researchers to observe how accounting information diffuses across economic networks at high frequency. Our analysis illustrates how such data can uncover the micro-dynamics of disclosure spillovers and offers a foundation for future research on how credibility, network structure, and regulatory design shape the transmission of financial information. Understanding these mechanisms is crucial for both accounting scholarship and policy aimed at strengthening transparency and productivity in the MSME sector.

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Figure 1: Geographic Distribution of MSMEs in the Sample

This figure presents the geographic distribution of MSMEs across cities in our sample. MSMEs are geocoded based on their business registration addresses, and cities are shaded according to the number of MSMEs in the sample. Darker colors indicate a higher concentration of MSMEs in a given city.

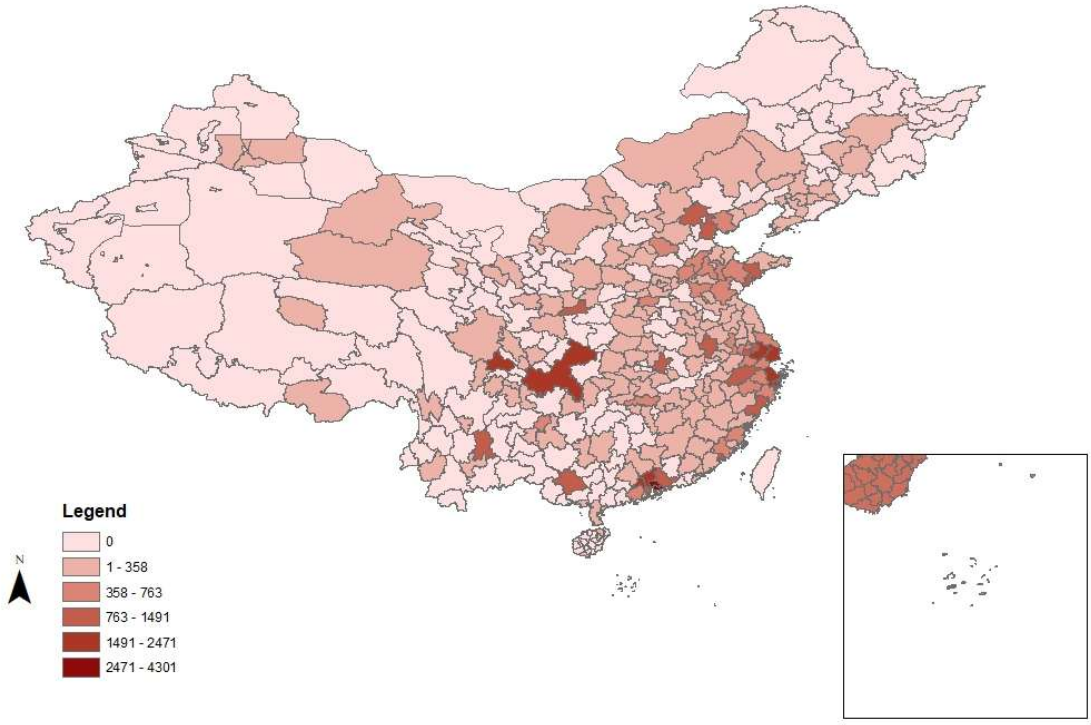

Figure 2: Dynamic Effects

This figure presents the dynamic effects of earnings surprises on MSMEs' procurement decisions over a [-7, +7] calendar-day window centered on EF events. The dependent variable, *Ln (Purchase)*$_{i,j,t,s}$, is the natural logarithm of total daily purchases (aggregated from VAT invoices) for MSME i in city j on day t relative to forecast event s. The plot reports estimated coefficients on the interaction between *Earnings Surprise* and relative time indicators, from the following specification: $Ln\ (Purchase)_{i,j,t,s} = \sum_{j=-7,j\neq-1}^{7} \alpha_j Earnings\ Surprise_{j,t} \times Post_{t,s} + \sum_{j=-7,j\neq-1}^{7} \beta_j Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The gray lines denote the 95% confidence interval. Standard errors are clustered at the MSME level. Variable definitions are provided in Appendix A.

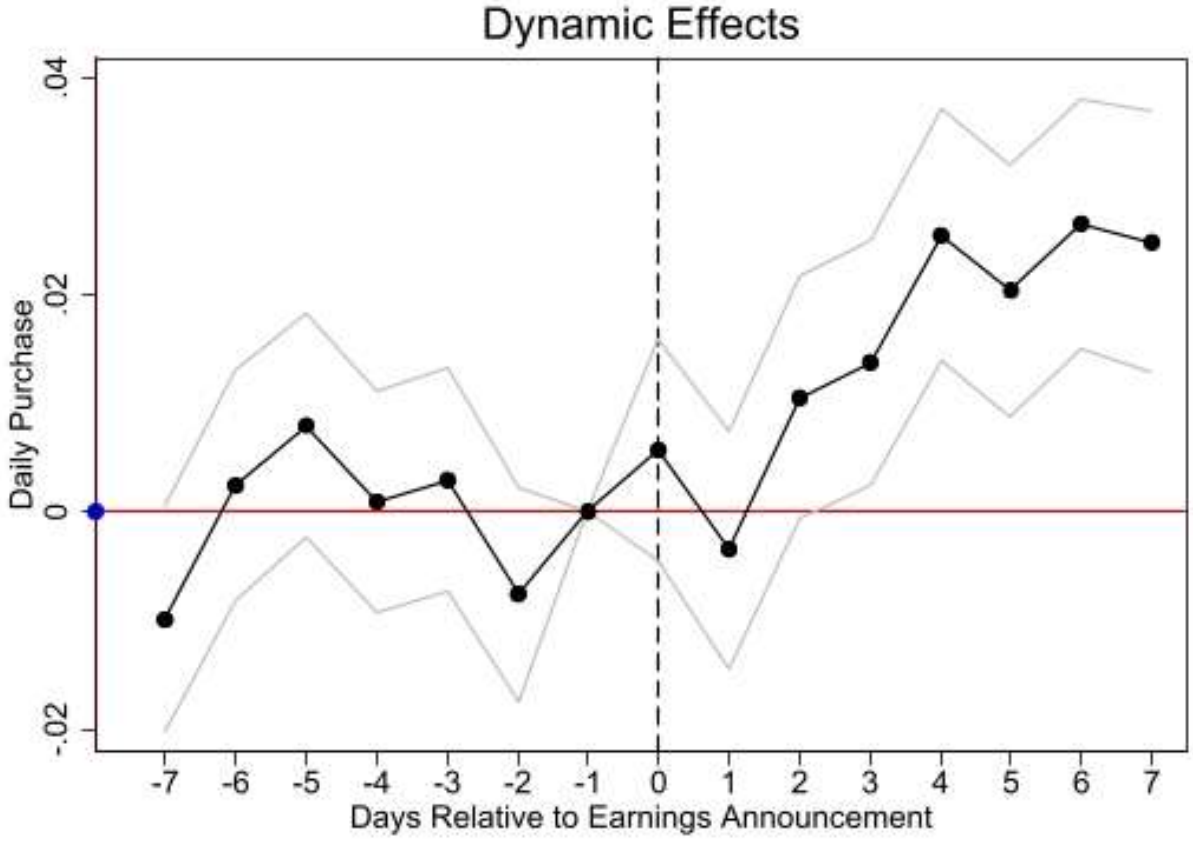

Table1: Sample Construction and Industry Distribution

Panel A presents the number of unique MSMEs and earnings forecast events in our sample, broken down by year. Panel B compares the industry distribution of MSMEs in our sample with that of all secondary and tertiary industry firms in China, using data from the 2023 Economic Census, to assess the representativeness of our sample.

Panel A: Sample Size and Earnings Forecast Events

Number of unique MSMEs:	66,616
Number of EF events:	1,603
-2019	363
-2020	378
-2021	395
-2022	467

Panel B: Industry Distribution

	MSMEs		All firms	
Industry (Industrial Classification for National Economic Activities)	**Frequency**	**Percent (%)**	**Frequency**	**Percent (%)**
Manufacturing	23,643	35.49	4,047,228	12.17
Wholesale and Retail Trade	18,243	27.39	10,197,183	30.65
Construction	7,673	11.52	2,722,407	8.18
Transportation, Storage, and Postal Services	3,531	5.30	939,056	2.82
Leasing and Business Services	3,041	4.56	4,609,109	13.85
Scientific Research and Technical Services	2,793	4.19	2,117,795	6.37
Information Transmission, Software, and IT Services	1,370	2.06	1,695,873	5.10
Resident Services, Repairs, and Other Services	728	1.09	901,638	2.71
Agriculture, Forestry, Animal Husbandry, and Fishery	543	0.82	272,350	0.82
Accommodation and Catering Services	508	0.76	711,948	2.14
Real Estate	330	0.50	1,042,264	3.13

Culture, Sports, and Entertainment	191	0.29	223,244	0.67
Water Conservancy, Environment, and Public Facility Management	99	0.15	223,244	0.67
Electricity, Heat, Gas, and Water Production and Supply	89	0.13	135,796	0.41
Mining	70	0.11	51,605	0.16
Health and Social Work	47	0.07	337,213	1.01
Education	42	0.06	817,923	2.46
Financial Services	29	0.04	107,575	0.32
Public Administration, Social Security, and Social Organizations	1	0.00	1,520,454	4.57
Others	3,645	5.47	0	0.00
Total	**66,616**	**100**	**33,267,885**	**100**

Table 2: Summary Statistics

This table presents summary statistics for the main variables used in the empirical analysis. Panel A reports statistics for daily-level variables. Panel B reports statistics for weekly-level variables. The sample period spans January 1, 2019, to December 31, 2022. Variable definitions are provided in Appendix A.

Panel A: MSME Daily Level

	N	Mean	St.Dev	p25	Median	p75
Ln (Purchase)	7,071,084	8.558	2.694	6.177	8.388	10.723
-Purchase (in thousand RMB)	7,071,084	91.9	272.0	0.5	4.4	45.4
Earnings Surprise	7,071,084	-0.223	0.840	-0.170	-0.037	0.028
POST	7,071,084	0.491	0.500	0	0	1
#Online Search Volume (in thousand times)	7,071,084	6.754	7.689	2.469	4.641	8.191
#Media Coverage	7,071,084	5.520	10.440	0	2	7
#Analyst Coverage	7,071,084	8.984	8.385	3	6	13
Institutional Ownership (%)	7,071,084	42.5	22.9	23.6	42.1	60.0
MSME Age (in years)	6,562,429	7.6	5.2	4	6	11
MSME Size (in millions RMB)	6,149,533	16.618	30.709	2.001	6.057	16.412
#Suppliers	7,071,084	32.782	42.276	7	19	41
Same Industry MSMEs	7,071,084	0.358	0.479	0	0	1
#Purchase Invoices	7,070,951	3.606	5.259	1	2	4
Average Invoice Value (in thousand RMB)	7,070,951	19.455	43.882	0.308	2.123	16.337
#Product Category	6,904,409	3.400	5.132	1	2	3
Ln (Fixed Asset Purchase)	555,636	8.781	2.472	7.115	8.809	10.564
-Fixed Asset Purchase (in thousand RMB)	555,636	72.862	207.679	1.229	6.690	38.708
Ln (Raw Material Purchase)	2,926,171	7.615	2.730	5.545	6.317	9.856
-Raw Material Purchase (in thousand RMB)	2,926,171	67.352	222.263	0.255	0.553	19.076
Ln (Service Purchase)	3,058,570	7.339	2.416	5.713	6.993	8.817
-Service Purchase (in thousand RMB)	3,058,570	28.460	102.656	0.302	1.088	6.750

Ln (Low Value Consumables Purchase)	481,124	7.272	2.759	4.975	7.269	9.388
-Low Value Consumables Purchase (in thousand RMB)	481,124	26.136	77.333	0.144	1.434	11.947
Ln (Purchase top5)	2,896,656	7.401	2.710	5.480	6.531	9.406
-Purchase top5 (in thousand RMB)	2,896,656	47.014	152.091	0.239	0.685	12.165
Earnings Boost	7,071,084	0.114	0.317	0	0	0
Earnings Surprise (Last Year)	7,071,084	0.839	2.404	0.085	0.528	1.097
EF Optimism Score	7,071,084	2.292	1.966	2	3	4

Panel B: MSME Weekly Level

	N	**Mean**	**St.Dev**	**p25**	**Median**	**p75**
Ln (Purchase_W)	7,610,002	9.993	2.696	7.815	10.247	12.118
-Purchase_W (in thousand RMB)	7,610,002	270.912	716.957	2.476	28.189	183.174
Ln (Sales_W)	5,443,744	11.917	1.859	10.764	12.029	13.177
-Sales_W (in thousand RMB)	5,443,744	631.767	1402.315	47.274	167.566	528.035
Ln (Fixed Asset Purchase_W)	1,322,661	9.022	2.447	7.388	9.082	10.891
-Fixed Asset Purchase_W (in thousand RMB)	1,322,661	65.455	125.298	1.615	8.793	53.680
Ln (Low Value Items Purchase_W)	1,213,340	7.561	2.798	5.237	7.586	9.712
-Low Value Items Purchase_W (in thousand RMB)	1,213,340	36.867	112.432	0.187	1.970	16.508
Ln (Service Purchase_W)	4,624,306	8.404	2.408	6.640	8.157	10.058
-Service Purchase_W (in thousand RMB)	4,624,306	64.897	212.187	0.764	3.485	23.352
Ln (Raw Marterial Purchase_W)	4,841,413	8.480	2.816	6.023	7.720	10.884
-Raw Marterial Purchase_W (in thousand RMB)	4,841,413	129.591	412.011	0.412	2.253	53.308

Table 3: Corporate Earnings Disclosure and Local MSME Procurement

This table presents estimates from the baseline specification examining the effect of earnings surprises on MSMEs' procurement activity. The regression is estimated over a [-7, +7] calendar-day window centered on EF events, using the following model: $Ln\ (Purchase)_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_2 Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is the natural logarithm of daily procurement activity for MSME *i* in city *j* on day *t* of earnings forecast *s*. The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city *j* on day *t*. We include MSME-by-earnings forecast (event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)	(2)	(3)
	Ln (Purchase)	*Ln (Purchase)*	*Ln (Purchase)*
Earnings Surprise*POST	**0.131*** **	**0.016*** **	**0.015*** **
	(72.318)	**(8.830)**	**(6.010)**
POST	-0.112***	0.002	-0.001
	(-54.643)	(1.423)	(-0.195)
MSME FE	No	Yes	No
*MSME*EF Event FE*	No	No	Yes
*Year*Month*Day FE*	No	Yes	Yes
N	7,071,084	7,071,084	7,071,084
Adjusted R-Squared	0.001	0.306	0.331

Table 4: Heterogeneity: The Role of Ex-Ante Information Asymmetry

This table reports heterogeneity tests examining how the effect of earnings surprises on MSME procurement varies with the public firm's ex-ante information asymmetry. We estimate the following specification: $Ln\ (Purchase)_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} \times Heterogeneities_{j,t} + \alpha_2 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_3 Post_{t,s} \times Heterogeneities_{j,t} + \alpha_4\ Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is the natural logarithm of daily procurement activity for MSME *i* in city *j* on day *t* of earnings forecast *s*. The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city *j* on day *t*. The key coefficient of interest is α1, which captures the differential effect of earnings surprises across information asymmetry levels. $Heterogeneities_{j,t}$ (*Low Online Search*/ *Low Media Coverage*/ *Low Analyst Coverage*/ *Low Institutional Ownership*) is an indicator variable equal to 1 if the firm is classified as having high information asymmetry (i.e., below the sample median in online search volume, media coverage, analyst coverage, or institutional ownership), and 0 otherwise. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)	(2)	(2)	(2)
	Ln (Purchase)	*Ln (Purchase)*	*Ln (Purchase)*	*Ln (Purchase)*
Earnings Surprise*POST*Low Online Search	**0.039*** **			
	(7.341)			
Earnings Surprise*POST*Low Media Coverage		**0.009***		
		(1.891)		
Earnings Surprise*POST*Low Analyst Coverage			**0.038*** **	
			(6.154)	
Earnings Surprise*POST*Low Institutional Ownership				**0.029*** **
				(5.810)
*Earnings Surprise*POST*	-0.004	0.010***	-0.016***	0.002
	(-1.269)	(2.802)	(-2.841)	(0.703)
*POST*Low Online Search*	0.028***			
	(6.242)			

*POST*Low Media Coverage*		-0.028***		
		(-5.503)		
*POST*Low Analyst Coverage*			0.012***	
			(3.010)	
*POST*Low Institutional Ownership*				-0.050***
				(-11.670)
POST	-0.015***	0.012***	-0.007**	0.025***
	(-4.418)	(3.439)	(-2.169)	(7.360)
*MSME*EF Event FE*	Yes	Yes	Yes	Yes
*Year*Month*Day FE*	Yes	Yes	Yes	Yes
N	7,071,084	7,071,084	7,071,084	7,071,084
Adjusted R-Squared	0.331	0.331	0.331	0.331

Table 5 Heterogeneity: MSME characteristics

This table reports heterogeneity tests examining how the effect of earnings surprises on MSME procurement varies with MSME-level characteristics. We estimate the following triple-difference specification: $Ln\ (Purchase)_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} \times Heterogeneities_{j,t} + \alpha_2 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_3 Post_{t,s} \times Heterogeneities_{j,t} + \alpha_4\ Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is the natural logarithm of daily procurement activity for MSME *i* in city *j* on day *t* of earnings forecast *s*. The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city *j* on day *t*. The key coefficient of interest is α_1, which captures the differential response to earnings surprises across MSMEs with different characteristics. $Heterogeneities_{j,t}$(*More Suppliers* / *Same Industry MSMEs*) is an indicator variable equal to 1 if the MSME falls into the group of interest (firms with more suppliers, or same-industry MSMEs), defined as those above the sample median for the respective characteristic, and 0 otherwise. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)	(2)
	Ln (Purchase)	*Ln (Purchase)*
Earnings Surprise*POST*More Suppliers	**0.036*** **	
	(7.491)	
Earnings Surprise*POST*Same Industry MSMEs		**0.032*** **
		(6.870)
*Earnings Surprise*POST*	-0.004	0.001
	(-1.230)	(0.395)
*POST*More Suppliers*	-0.122***	
	(-22.069)	
*POST*Same Industry MSMEs*		-0.104***
		(-18.645)
POST	0.060***	0.036***
	(15.589)	(10.963)
*MSME*EF Event FE*	Yes	Yes
*Year*Month*Day FE*	Yes	Yes
N	7,071,084	7,071,084
Adjusted R-Squared	0.332	0.331

Table 6: Evidence on VAT Invoice Information

This table presents estimates examining the effect of earnings surprises on multiple margins of MSMEs' procurement activity, using detailed VAT invoice data. The regression is estimated over a [-7, +7] calendar-day window centered on EF events, using the following specification: $Y_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_2 Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. where the dependent variable $Y_{i,j,t,s}$ is one of three procurement margins for MSME i in city j on day t of earnings forecast event s: *Ln (#Purchase Invoices)* (natural logarithm of the number of purchase invoices), *Ln (Average Invoice Value)* (natural logarithm of the average value per purchase invoice), or *Ln (#Product Category)* (natural logarithm of the number of unique product categories purchased). The key independent variable, *Earnings Surprise*$_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city j on day t. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)	(2)	(3)
	Ln (#Purchase Invoices)	*Ln (#Product Category)*	*Ln (Average Invoice Value)*
Earnings Surprise*POST	**0.001**	**0.001**	**0.014*****
	(1.046)	**(1.355)**	**(6.562)**
POST	-0.001*	-0.000	0.001
	(-1.734)	(-0.705)	(0.496)
*MSME*EF Event FE*	Yes	Yes	Yes
*Year*Month*Day FE*	Yes	Yes	Yes
N	7,070,943	6,895,804	7,070,943
Adjusted R-Squared	0.385	0.357	0.327

Table 7: Evidence on Procurement Adjustments by Product Category

This table presents estimates examining how earnings surprises affect MSMEs' procurement activity across different product categories, using detailed VAT invoice data. The regression is estimated over a [-7, +7] calendar-day window centered on EF events, using the following specification: $Y_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_2 Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. where the dependent variable $Y_{i,j,t,s}$ is one of five category-specific procurement measures for MSME *i* in city *j* on day *t* of earnings forecast event *s*: *Ln (Purchase top5)*, the natural logarithm of spending on the MSME's five most frequently purchased core products; *Ln (Fixed Asset Purchase)*, the natural logarithm of fixed-asset procurement; *Ln (Raw Material Purchase)*, the natural logarithm of raw material procurement; *Ln (Low Value Consumables Purchase)*, the natural logarithm of low-value consumable procurement; or *Ln (Service Purchase)*, the natural logarithm of service-related procurement. The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city *j* on day *t*. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1) *Ln (Purchase top5)*	(2) *Ln (Fixed Asset Purchase)*	(3) *Ln (Raw Material Purchase)*	(4) *Ln (Low Value Consumables Purchase)*	(5) *Ln (Service Purchase)*
Earnings Surprise*POST	**0.006***	**0.017***	**0.018*****	**-0.012**	**0.003**
	(1.914)	**(1.879)**	**(5.053)**	**(-1.159)**	**(0.753)**
POST	0.000	-0.004	0.001	-0.009	-0.005
	(0.082)	(-0.406)	(0.138)	(-0.902)	(-1.264)
*MSME*EF Event FE*	Yes	Yes	Yes	Yes	Yes
*Year*Month*Day FE*	Yes	Yes	Yes	Yes	Yes
N	2,896,656	555,636	2,926,171	481,124	3,058,570
Adjusted R-Squared	0.527	0.349	0.450	0.456	0.282

Table 8: Evidence on Earnings Boost

This table examines how the effect of earnings surprises on MSME procurement varies with public firms' earnings-boosting behavior. We estimate the following triple-difference specification: $Ln\ (Purchase)_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} \times Earnings\ Boost_{j,t} + \alpha_2 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_3 Post_{t,s} \times Earnings\ Boost_{j,t} + \alpha_4\ Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is the natural logarithm of daily procurement activity for MSME *i* in city *j* on day *t* of earnings forecast *s*. The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city *j* on day *t*. The key coefficient of interest is α_1, which captures the differential response to earnings surprises across boosted and non-boosted forecasts. $Earnings\ Boost_{j,t}$ is an indicator variable equal to 1 if the forecast is classified as boosted: specifically, if the forecast is positive but realized earnings are negative, or if forecasted earnings exceed realized earnings by at least 20% (Column 1). Column 2 uses a stricter 30% threshold to define boosted forecasts. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)	(1)
	Ln (Purchase)	*Ln (Purchase)*
Earnings Surprise*POST*Earnings Boost (A)	**-0.027*** **	**-0.055*** **
	(-4.452)	**(-4.811)**
*Earnings Surprise*POST (B)*	0.019***	0.017***
	(6.842)	(6.951)
*POST*Earnings Boost*	-0.058***	-0.033***
	(-8.802)	(-3.927)
POST	0.005*	0.001
	(1.937)	(0.345)
P Value: (A)+(B)	**0.141**	**0.001*** **
*MSME*EF Event FE*	Yes	Yes
*Year*Month*Day FE*	Yes	Yes
N	7,071,084	7,071,084
Adjusted R-Squared	0.331	0.331

Table 9: Real Effects on MSMEs' Weekly Sales and Procurement

This table presents estimates examining the real effects of earnings surprises on MSMEs' weekly sales and procurement activity, using a [-4, +4] week event window centered on EF events. The specification is: $Y_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_2 Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. where the dependent variable $Y_{i,j,t,s}$ is either $Ln\ (Sale\_W)_{i,j,t,s}$, the natural logarithm of weekly sales for MSME i in city j in week t of earnings forecast s (Column 1), or $Ln\ (Purchase\_W)_{i,j,t,s}$, the natural logarithm of weekly procurement activity (Column 2). The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city j on day t. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)	(2)
	Ln (Sale_W)	*Ln (Purchase_W)*
Earnings Surprise*POST	**0.007*** **	**0.019*** **
	(4.540)	**(10.433)**
POST	-0.109***	0.061***
	(-42.813)	(18.396)
*MSME*EF Event FE*	Yes	Yes
Week of Year FE	Yes	Yes
N	5,443,744	7,610,002
Adjusted R-Squared	0.455	0.419

Table 10: Robustness Tests

This table presents robustness checks for the baseline specification examining the effect of earnings surprises on MSMEs' procurement activity. The regression is estimated over a [-7, +7] calendar-day window centered on EF events, using the following model: $Ln\ (Purchase)_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_2 Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is the natural logarithm of daily procurement activity for MSME *i* in city *j* on day *t* of earnings forecast *s*. The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city *j* on day *t*. In Panel A, we use prior-year realized earnings instead of analyst consensus forecasts to construct an alternative earnings surprise measure, defined as (forecasted earnings − prior-year earnings) divided by the absolute value of prior-year earnings. In Panel B, we examine variation in procurement responses across forecasts categorized by their optimism level, with higher values assigned to more optimistic disclosures. In Panel C, we replace the continuous earnings surprise measure with five indicator variables based on its quintile rank, using the lowest quintile as the benchmark group. In Panel D, we re-estimate the baseline specification excluding small-scale taxpayers, whose simplified VAT reporting may reduce the reliability of invoice data. In Panel E, we restrict the sample to mandatory EF events by excluding voluntary disclosures. In Panel F, we exclude observations from Beijing, Shanghai, Tianjin, Chongqing, and Shenzhen to address the concentration of public firm disclosures in these cities. All specifications include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

Panel A: Alternative Earnings Surprise Benchmark

	(1)
	Ln (Purchase)
Earnings Surprise (Last Year) * POST	**0.008*** **
	(9.664)
POST	-0.011***
	(-3.944)
*MSME*EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	7,071,084
Adjusted R-Squared	0.331

Panel B: Earnings Forecast Optimism

	(1)
	Ln (Purchase)
EF Optimism Score *POST	**0.006*** **
	(5.711)

POST	-0.017***
	(-4.964)
*MSME*EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	7,071,084
Adjusted R-Squared	0.331

Panel C: Quintiles of Earnings Surprise

	(1)
	Ln (Purchase)
*2nd Earnings Surprise*POST*	0.018***
	(2.806)
*3rd Earnings Surprise*POST*	0.024***
	(3.687)
*4th Earnings Surprise*POST*	0.037***
	(5.761)
*5th Earnings Surprise*POST*	0.055***
	(8.710)
POST	-0.031***
	(-6.376)
*MSME *EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	7,071,084
Adjusted R-Squared	0.331

Panel D: Excluding Small-Scale Taxpayers

	(1)
	Ln (Purchase)
Earnings Surprise*POST	**0.016*** **
	(6.229)
POST	-0.000
	(-0.155)
*MSME*EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	6,912,955
Adjusted R-Squared	0.327

Panel E: Mandatory Earnings Forecasts Only

	(1)

	Ln (Purchase)
Earnings Surprise*POST	**0.018***** **(7.162)**
POST	0.004 (1.371)
*MSME*EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	6,233,270
Adjusted R-Squared	0.331

Panel F: Excluding Mega-Cities

	(1) *Ln (Purchase)*
Earnings Surprise*POST	**0.023***** **(7.398)**
POST	0.008** (2.158)
*MSME*EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	4,420,921
Adjusted R-Squared	0.334

Appendix A. Variable Definition

Variable	Data Source	Definition
Ln (Purchase)	State Taxation Administration	The natural logarithm of one plus the total daily procurement amount of MSME *i* in day *t* in city *j* of earnings forecast *s*, aggregated across all purchase transactions occurring on that day.
Earnings Surprise	CSMAR	The earnings surprise for city *j* on day *t*. For each firm-level earnings forecast event, earnings surprise is calculated as the difference between the firm's forecasted earnings and the median analyst consensus forecast, scaled by the absolute value of the median analyst forecast. Analyst forecasts are drawn from the 90-day window prior to the earnings forecast date, and only firms with at least one analyst forecast are included. When multiple EF events occur in the same city on the same day, we compute a value-weighted earnings surprise using the market capitalization of each forecasting firm as weights.
POST	CSMAR	An indicator variable equal to 1 if day *t* falls in the post-event window, i.e., the seven days following the earnings forecast event *s*, and 0 if it falls in the pre-event window, i.e., the seven days prior to the event date.
Low Online Search	CNRDS	An indicator variable equal to 1 if the average online search volume for the forecasting firm during the seven-day window [-7, -1] prior to the earnings forecast announcement is below the sample median, and 0 otherwise.
Low Media Coverage	CNRDS	An indicator variable equals 1 if the media news coverage for the forecasting firm during the seven-day window [-7, -1] prior to the forecast announcement is below the sample median, and 0 otherwise.
Low Analyst Coverage	CSMAR	An indicator variable equal to 1 if the number of analyst forecasts issued for the forecasting firm during the 90-day window [-90, -1] prior to the earnings announcement date is below the sample median, and 0 otherwise.
Low Institutional Ownership	CSMAR	An indicator variable equal to 1 if the institutional ownership ratio of the forecasting firm, for the year covered by the earnings forecast, is below the sample median, and 0 otherwise.

Older MSMEs	State Taxation Administration	An indicator variable equal to 1 if the age of the MSME *i* —calculated as the current year minus the year of registration—is above the sample mean, and 0 otherwise.
Large MSMEs	State Taxation Administration	An indicator variable equal to 1 if the total assets of MSME *i* on quarter *t*—with the MSME's asset data sourced from its quarterly balance sheet—is above the sample median, and 0 otherwise.
More Suppliers	State Taxation Administration	An indicator variable equal to 1 if the number of unique suppliers for MSME *i* in the month preceding the earnings forecast date—with supplier identification sourced from purchase invoice data—is above the sample median, and 0 otherwise.
Same Industry MSMEs	State Taxation Administration	An indicator variable equal to 1 if the MSME *i* and the listed firm issuing the earnings forecast belong to the same industry, and 0 otherwise.
Ln (#Purchase Invoices)	State Taxation Administration	The natural logarithm of one plus the number of purchase invoices issued by MSME *i* on day *t*.
Ln (#Invoices_W)	State Taxation Administration	The natural logarithm of one plus the average number of purchase invoices issued by MSME *i* on week *t*.
Ln (Average Invoice Value)	State Taxation Administration	The natural logarithm of the average value per purchase invoice for MSME *i* on day *t*, calculated as the total purchase invoice amount on day *t* divided by the total number of purchase invoices on that day.
Ln (Average Invoice Value_W)	State Taxation Administration	The natural logarithm of the average value per purchase invoice for MSME *i* on week *t*.
Ln (#Product Category)	State Taxation Administration	The natural logarithm of the number of unique product categories purchased by MSME *i* on day *t*.
Ln (#Product Category_W)	State Taxation Administration	The natural logarithm of the average number of unique product categories purchased by MSME *i* on week *t*.
Ln (Purchase top5)	State Taxation Administration	The natural logarithm of the purchase of core products for MSME *i* on day *t*, where core products are defined as the top 5 most frequently purchased product categories by MSME *i* throughout the entire sample period.
Ln (Purchase top5_W)	State Taxation Administration	The natural logarithm of the purchase of core products for MSME *i* on week *t*, where core products are defined as the top 5 most frequently purchased product categories by MSME *i* throughout the entire sample period.

Ln (Raw Marterial Purchase)	State Taxation Administration	The natural logarithm of the purchase of raw materials for MSME *i* on day *t*. Raw materials are identified based on product names, following a two-step screening and verification process: first, high-frequency appearing products are initially selected from the full sample; second, an AI-powered text recognition algorithm is employed to further validate raw materials by extracting critical semantic information from product names. Notably, the algorithm explicitly excludes items categorized as low-value consumables, fixed assets, or service-type commodities to ensure the exclusivity and accuracy of the variable. Detailed technical specifications of the recognition methodology are provided in the Appendix.
Ln (Raw Marterial Purchase_W)	State Taxation Administration	The natural logarithm of the purchase of raw materials for MSME *i* on week *t*.
Ln (Low-Value Consumables Purchase)	State Taxation Administration	The natural logarithm of the purchase of low-value consumables for MSME *i* on day *t*. Low-value consumables are identified based on product names through a two-stage screening and verification process: first, high-frequency appearing products are initially filtered from the full sample; second, an AI-powered text recognition algorithm is employed to further confirm low-value consumables by extracting critical semantic information from product names. Notably, the algorithm explicitly excludes items categorized as raw materials, fixed assets, or service-type commodities to ensure the exclusivity and accuracy of the variable. Detailed technical specifications of the recognition methodology are provided in the Appendix.
Ln (Low-Value Consumables Purchase_W)	State Taxation Administration	The natural logarithm of the purchase of low-value consumables for MSME *i* on week *t*.
Ln (Service Purchase)	State Taxation Administration	The natural logarithm of the purchase of service-type commodities for for MSME *i* on day *t*. Service-type commodities are identified based on product names through a two-stage screening and verification process: first, high-frequency appearing products are initially filtered from the full sample; second, an AI-powered text recognition algorithm is employed to further confirm service-type commodities by extracting

		critical semantic information from product names. Notably, the algorithm explicitly excludes items categorized as raw materials, fixed assets, or low-value consumables to ensure the exclusivity and accuracy of the variable. Detailed technical specifications of the recognition methodology are provided in the Appendix.
Ln (Service Purchase_W)	State Taxation Administration	The natural logarithm of the purchase of service-type commodities for MSME *i* on week *t*.
Earnings Boost	CSMAR	An indicator variable equal to 1 if the difference between forecast earnings and post-audit realized earnings, scaled by the absolute value of post-audit realized earnings, exceeds 20%, or if forecast earnings are positive but realized earnings are negative; 0 otherwise.
Ln (Purchase_W)	State Taxation Administration	The natural logarithm of one plus the total purchases by MSME *i* in week *t*, aggregated across all purchase transactions on that week.
Ln (Sale_W)	State Taxation Administration	The natural logarithm of one plus the total sales by MSME *i* in week *t*, aggregated across all sale transactions on that week.
EF Optimism Score	CSMAR	EF forecast in city *j* on day *t* is assigned an optimism score (forecast type) based on its announcement type: 4 = "Substantial increase", 3 = "Continuous profit", 2 = "Slight increase", 1 = "Turnaround from loss to profit", 0 = "Uncertain", -1 = "Slight decrease", -2 = "Substantial decrease", -3 = "Turnaround from profit to loss", -4 = "Continuous loss". If multiple EF events exist in city *j* on day *t*, the variable is calculated as the market capitalization-weighted average of the forecast_type values of all relevant EF events on that day.
#EF	CSMAR	The total number of EF events in city *j* on day *t*.

Appendix B. An Example of Corporate Earnings Forecast Document

This is an example of a mandatory earnings forecast, with the company reporting a turnaround from loss to profit. As shown, the company discloses its projected earnings for the current year, along with a comparison to the same period last year. Furthermore, the company provides an explanation for the earnings growth, identifying the sources of business expansion. These disclosures typically include information on firm-specific demand shifts, as well as broader industry and regional demand conditions.

Stock Code: 688766 Stock Abbreviation: Puran Co., Ltd. Announcement No.: 2025-010

Puran Semiconductor (Shanghai) Co., Ltd.

2024 Annual Earnings Forecast

1. Earnings Forecast for the Current Period

(1) Earnings Forecast Period: From January 1, 2024, to December 31, 2024 (hereinafter referred to as the "reporting period").

(2) Earnings Forecast

According to the preliminary calculations by the company's finance department, the net profit attributable to the parent company's shareholders for the year 2024 is expected to be approximately CNY 270 million, representing an increase of approximately CNY 318.27 million compared to the same period last year (based on statutory disclosure data), resulting in a turnaround from loss to profit.

The company expects the net profit attributable to the parent company's shareholders, excluding non-recurring gains and losses, to be approximately CNY 246 million for the year 2024, an increase of approximately CNY 310.88 million compared to the same period last year (based on statutory disclosure data).

The company expects its operating revenue for the year 2024 to be approximately CNY 1,780 million, an increase of approximately CNY 652.96 million compared to the same period last year (based on statutory disclosure data), reflecting an approximate year-on-year growth of 57.94%.

(3) The earnings forecast has not been audited by a certified public accountant.

2. Performance for the Same Period Last Year

For the year 2023, the company reported a net loss attributable to the parent company's shareholders of CNY -48.27 million, a net loss attributable to the parent company, excluding non-recurring gains and losses, of CNY -64.88 million, and operating revenue of CNY 1,127.04 million.

3. Key Factors Contributing to the Change in Performance

(1) Impact of Core Business Operations

In 2024, the semiconductor design industry experienced a recovery, driven by increased demand from downstream markets such as consumer electronics. The company seized this opportunity to continuously expand and optimize its product portfolio, while exploring new market segments and customer bases. The company also responded to customer demands through timely technological and product innovations. As a result of significant investments in research and development in recent years, the company successfully captured opportunities in emerging

markets, increasing market penetration of new products. Moreover, the company continued to improve operational efficiency, achieving notable results in both operational and financial performance. For 2024, the company achieved a record high in annual revenue, with total revenue reaching approximately CNY 1.78 billion, a year-on-year increase of about 57.94%.

Regarding product lines, the company continued to enhance its "Storage" and "Storage+" strategy. The existing storage product line expanded its full product range and maintained a leading position in terms of technology and performance. The company also focused on expanding opportunities in the mid-to-high-end industrial control and automotive sectors, as well as in emerging markets, thereby laying a solid foundation for market share growth. Under the "Storage+" product line, the MCU and VCM Driver products rapidly gained brand recognition and achieved continuous, rapid growth.

(2) Impact of Operating Expenses

The company has adopted multiple measures to maintain a high level of R&D investment, emphasizing product innovation and process improvements. In the existing storage chip sector, the company continued to expand its product categories, accelerate product iterations, and optimize product performance and costs, while increasing investments in the industrial and automotive sectors. By leveraging its specialized process advantages, the company extended its "Storage+" strategy, further strengthening its R&D capabilities, promoting new product technologies, and enhancing application development. In 2024, the company increased its workforce compared to the previous year, with R&D expenses and other operating expenses rising by more than 30% year-on-year.

(3) Impact of Asset Impairment Provision

In 2024, with the improvement in downstream market conditions, the supply-demand dynamics in the industry became more favorable. As a result, the provision for asset impairment losses saw a significant decrease compared to the previous year.

(4) Other Impacts

During the reporting period, the company experienced a substantial year-on-year increase in government subsidies received, as well as other income generated due to the implementation of the VAT credit policy, compared to 2023. These changes were largely due to differences in the government subsidy policies applied each year.

4. Risk Warning

The earnings forecast provided is based on the preliminary calculations made by the company’s finance department using professional judgment and has not yet been audited by a certified public accountant. The company does not anticipate any significant uncertainties that could affect the accuracy of this earnings forecast.

5. Other Explanatory Matters

The data presented above is based on preliminary calculations and has not been audited by a certified public accountant. The final, accurate financial data will be disclosed in the company's official audited 2024 annual report. Investors are advised to be aware of the potential investment risks.

This announcement is made by the Board of Directors of Puran Semiconductor (Shanghai) Co., Ltd.

January 27, 2025

Appendix C: Additional Tests

Table A1: Positive vs. Negative Earnings Surprises

This table presents estimates from the baseline specification examining the effect of earnings surprises on MSMEs' procurement activity. The regression is estimated over a [-7, +7] calendar-day window centered on EF events, using the following model: $Ln\ (Purchase)_{i,j,t,s} = \alpha_1\ Positive\ Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_2 Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is the natural logarithm of daily procurement activity for MSME *i* in city *j* on day *t* of earnings forecast *s*. The key independent variable, $Positive\ Earnings\ Surprise_{j,t}$, is an indicator variable equal to 1 if the continuous earnings surprise measure is positive, and 0 otherwise. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)
	Ln (Purchase)
Positive Earnings Surprise*POST (A)	**0.042*** **
	(9.929)
POST (B)	-0.017***
	(-6.080)
P Value: (A)+(B)	**<0.000*** **
*MSME*EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	7,071,084
Adjusted R-Squared	0.331

Table A2: The Number of Earnings Forecast Events (EF)

This table presents estimates examining how the effect of earnings surprises on MSME procurement varies with the number of concurrent EF events in a city. The regression is estimated over a [-7, +7] calendar-day window centered on EF events, using the following triple-difference specification: $Ln\ (Purchase)_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} \times Single\ EF\ Event_{j,t} + \alpha_2 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_3 Post_{t,s} \times Single\ EF\ Event_{j,t} + \alpha_4\ Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is the natural logarithm of daily procurement activity for MSME i in city j on day t of earnings forecast s. The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city j on day t. The key coefficient of interest is α_1, which captures the differential response to earnings surprises between days with a single EF event and days with multiple concurrent events. $Single\ EF\ Event_{j,t}$ is an indicator variable equal to 1 if city j has only one earnings forecast event on day t, and 0 otherwise. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)
	Ln (Purchase)
Earnings Surprise*POST*Single EF Event	**0.026*** **
	(5.179)
*Earnings Surprise*POST*	-0.001
	(-0.294)
*POST*Single EF Event*	0.049***
	(10.220)
POST	-0.033***
	(-8.502)
*MSME*EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	7,071,084
Adjusted R-Squared	0.331

Table A3: Weekly-Level Analyses

This table presents estimates from weekly-level specifications, aggregating the procurement measures used in prior daily-level tests to the weekly frequency. Panel A replicates the specification of Table 6, examining the effect of earnings surprises on weekly averages of VAT invoice margins, including the number of invoices, average invoice value, and the number of product categories. Panel B replicates the specification of Table 7, examining weekly-level procurement adjustments across product categories, including core products, fixed assets, raw materials, low-value Consumables, and services. All specifications include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and week of year fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

Panel A: Weekly-Level VAT Invoice Margins

	(1)	(2)	(3)
	Ln (#Purchase Invoices_W)	*Ln (#Product Category_W)*	*Ln (Average Invoice Value_W)*
Earnings Surprise*POST	**0.002*** **	**0.001** **	**0.012*** **
	(4.368)	**(2.304)**	**(8.739)**
POST	0.000	0.000	0.008***
	(0.760)	(0.329)	(3.149)
*MSME*EF Event FE*	Yes	Yes	Yes
Week of Year FE	Yes	Yes	Yes
N	7,610,002	7,610,002	7,610,002
Adjusted R-Squared	0.442	0.470	0.384

Panel B: Weekly-Level Procurement by Product Category

(1)	(2)	(3)	(4)	(5)
Ln (Purchase_top 5_W)	*Ln (Fixed Asset Purchase_W)*	*Ln (Raw Marterial Purchase_W)*	*Ln (Low Value Consumables Purchase_W)*	*Ln (Service Purchase_W)*

Earnings Surprise*POST	**0.007*** **	**0.012** **	**0.020*** **	**0.008**	**0.010*** **
	(3.706)	**(2.509)**	**(8.639)**	**(1.602)**	**(4.668)**
POST	-0.002	-0.025***	-0.031***	-0.051***	0.007*
	(-0.407)	(-3.536)	(-7.738)	(-6.513)	(1.853)
*MSME*EF Event FE*	Yes	Yes	Yes	Yes	Yes
Week of Year FE	Yes	Yes	Yes	Yes	Yes
N	4,993,504	1,322,661	4,698,017	1,213,340	4,624,306
r2_a	0.493	0.389	0.494	0.484	0.379

Table A4: Procurement Responses to Annual Report Disclosures

This table presents estimates examining how MSMEs' procurement activity responds to earnings surprises around audited annual financial report disclosures, using a [-7, +7] calendar-day window centered on the annual report release date. The specification is: $Ln\ (Purchase)_{i,j,t,s} = \alpha_1 Earnings\ Surprise_{j,t} \times Post_{t,s} + \alpha_2 Post_{t,s} + \beta_{i,s} + \gamma_t + \varepsilon_{i,j,t,s}$. The dependent variable, $Ln\ (Purchase)_{i,j,t,s}$, is the natural logarithm of daily procurement activity for MSME i in city j on day t of annual report disclosure event s. The key independent variable, $Earnings\ Surprise_{j,t}$, captures the magnitude of unexpected earnings news from public firms in city j on day t, measured as the difference between actual annual earnings and the median analyst forecast in the 90 days prior to the report release, scaled by the absolute value of that median forecast. We include MSME-by-earnings forecast event fixed effects ($\beta_{i,s}$) and year-month-day fixed effects (γ_t). Standard errors are clustered at the MSME level. All continuous variables are winsorized at 1% and 99% levels. *, ** and *** indicate statistical significance at 10%, 5% and 1%, respectively. Variable definitions are provided in Appendix A.

	(1)
	Ln (Purchase)
Earnings Surprise*POST	**0.002**
	(0.204)
POST	-0.004**
	(-2.157)
*MSME*EF Event FE*	Yes
*Year*Month*Day FE*	Yes
N	13,190,596
Adjusted R-Squared	0.331

Appendix D: Key Words to Measure Different Product Category

This appendix presents the complete set of keywords employed to identify various commodity categories in our study.

Keywords for Fixed Asset Identification

1. Electronic Office Equipment

Computer, Laptop / Notebook computer, Desktop computer, All-in-one computer, Server, Workstation, Industrial control computer (IPC), Printer, Copier, Scanner, Projector, Fax machine, Multifunction all-in-one device, Shredder, Binding machine, Monitor / Display, Keyboard, Mouse, USB flash drive, Mobile hard disk, Disk array, Network switch, Router, Firewall, Surveillance equipment, Security equipment, Camera, Surveillance host, Access control system, Attendance machine, Card puncher, Cash register, Electronic equipment, Office electronic equipment, Computer equipment, Network equipment, Communication equipment, Intelligent equipment, Automation equipment

2. Production / Industrial Equipment

Machine, Mechanical equipment, Industrial equipment, Production equipment, Processing equipment, Manufacturing equipment, Machine tool, Lathe, Milling machine, Planer, Grinder, Drilling machine, Boring machine, CNC machine tool, Machining center, Robot, Robotic arm, Production line, Assembly line, Conveyor line, Packaging line, Sorting line, Testing line, Production line equipment, Special equipment, General equipment, Specialized equipment, Heavy equipment, Light industrial equipment, Chemical equipment, Textile equipment, Printing equipment, Compressor, Pump, Fan / Blower, Motor / Electric machine, Reducer / Gearbox, Frequency converter, Sensor, Controller, Instrument, Apparatus / Instrumentation

3. Transportation Equipment

Automobile / Car, Sedan / Car, Off-road vehicle, SUV, Van / Minibus, Commercial vehicle, Bus / Passenger car, Truck / Lorry, Truck, Pickup truck, Forklift, Loader / Shovel loader, Loader, Excavator, Crane / Hoist, Lifting vehicle, Road roller, Bulldozer, Transport vehicle, Transportation equipment, Vehicle, Motor vehicle, New energy vehicle, Fuel vehicle / Gasoline vehicle, Electric vehicle, Hybrid electric vehicle, Ship / Vessel, Yacht / Cruise ship, Motorcycle, Storage vehicle, Stacker / Forklift truck

4. Office Furniture / Warehousing Equipment

Furniture, Office furniture, Office desk, Office chair, Conference table, Conference chair, Sofa, Coffee table, Filing cabinet, Archive cabinet, Bookcase, Wardrobe, Storage cabinet, Confidential cabinet, Safe / Safety cabinet, Compact shelving / Mobile shelving, Shelf, Warehouse rack, Pallet rack, Beam rack, Attic rack / Mezzanine rack, Flow rack / Sliding rack, Workbench, Operating table, Laboratory bench, Laboratory table, Electric fan, Broom / Mop, Office broom, Carpet / Floor mat, Central air conditioner

5. Fiscal / Tax Control Equipment

Golden Tax Disk, Tax control disk / Tax disk, Anti-counterfeit tax control device, Tax control system, Invoicing system, Invoice printer, Special tax control equipment, Cash register system, POS machine / POS terminal, Cash register, Receipt printer, Check printer, Safe / Safety box, Safe cabinet, Cash counting machine, Banknote verifying machine, Bundling machine / Strapping machine, Financial equipment

6. Other Fixed Assets

Air conditioner, Central air conditioner, Cabinet air conditioner, Wall-mounted air conditioner, Cassette air conditioner, Air conditioning equipment, Refrigeration equipment, Heating equipment, Boiler, Water heater, Generator, Backup power supply, UPS (Uninterruptible Power Supply), Storage battery / Battery, Transformer, Elevator / Lift, Escalator, Freight elevator / Cargo lift, Passenger elevator, Sightseeing elevator, Lifting platform, Boarding bridge, Stereo garage, Medical equipment, Fitness equipment, Training equipment, Audio equipment.

Keywords for Low-Value Consumables Identification

1. Office Consumables

Toner cartridge, ink cartridge, toner, ink, ribbon, carbon ribbon, toner cartridge chip, doctor blade, developer, printing paper, copy paper, A4 paper, A3 paper, thermal paper, label paper, self-adhesive paper, receipt paper, voucher paper, fax paper, toner cartridge chip, ink cartridge chip, continuous ink supply system, ink cartridge, toner bottle, ribbon core, ribbon spool, print head, nozzle, ink cartridge holder, toner cartridge unit, waste toner box, waste toner container

2. Office Stationery

Stationery, folder, document bag, file folder, data folder, loose-leaf, lever arch file, long tail clip, paper clip, stapler pin, stapler, hole puncher, paper knife, solid glue, liquid glue, double-sided tape, clear tape, tape dispenser, sticky note, neutral pen, gel pen, ballpoint pen, signature pen, marker, whiteboard marker, highlighter, pencil, eraser, ruler, protractor, notebook, notepad, diary, exercise book, draft paper, letter paper, envelope, stamp, stamp pad ink, stamp pad ink paste

3. Labor Protection Supplies

Labor protection, gloves, cotton gloves, rubber gloves, latex gloves, nitrile gloves, canvas gloves, leather gloves, anti-cut gloves, anti-slip gloves, face mask, medical mask, N95 mask, KN95 mask, dust mask, gas mask, mask filter cotton, mask ear loop, safety helmet, work cap, protective cap, labor protection shoes, safety shoes, anti-slip shoes, puncture-resistant shoes, anti-static shoes, rain shoes, rubber shoes, work clothes, labor protection suit, anti-static clothes, chemical protective clothing, raincoat, goggles, protective glasses, earmuffs, earplugs, safety belt, safety harness, neck guard, protective gear, protective mask, dust mask, first-aid kit, band-aid, disinfectant, disinfectant liquid, hand sanitizer

4. Hardware Tools

Tools, hand tools, power tool accessories, pneumatic tool accessories, cutting tools, blades, utility knife, wallpaper knife, scalpel, cutter, circular blade, square blade, serrated blade, drill bit, twist drill, impact drill, alloy drill bit, glass drill bit, woodworking drill bit, tile drill bit, drill chuck, tap, die, tap wrench, milling cutter, end mill, ball nose end mill, saw blade, hand saw blade, hacksaw blade, reciprocating saw blade, jigsaw blade, wrench, open-end wrench, box-end wrench, socket wrench, adjustable wrench, Allen wrench, torque wrench, pipe wrench, pliers, needle-nose pliers, diagonal pliers, circlip pliers, water pump pliers, locking pliers, screwdriver, flathead screwdriver, Phillips screwdriver, Torx screwdriver, socket screwdriver, magnetic screwdriver, tape measure, steel tape measure, leather tape measure, fiber tape measure, vernier caliper, micrometer, dial indicator, depth gauge, hammer, claw hammer, ball-peen hammer, rubber mallet, iron hammer, wooden mallet

5. Fasteners / Connectors

Screw, bolt, screw pin, screw rod, stud, nut, screw cap, washer, flat washer, spring washer, lock washer, rivet, blind rivet, semi-tubular rivet, countersunk rivet, bolt and nut set, screw set,

expansion screw, expansion bolt, plastic expansion plug, metal expansion pipe, self-tapping screw, self-drilling screw, drill tail screw, pin, spring pin, split pin, elastic pin, cylindrical pin, taper pin, key, flat key, woodruff key, spline, pipe fitting, water pipe fitting, air pipe fitting, cable fitting, quick coupling, threaded fitting, flange fitting, pipe fitting, elbow, tee, cross, straight coupling, reducer, pipe cap, pipe plug, valve, ball valve, gate valve, globe valve, check valve

6. Equipment Consumables / Accessories

Filter element, air filter element, oil filter element, diesel filter element, gasoline filter element, hydraulic filter element, water filter element, dust filter element, filter, air filter, oil filter, fuel filter, hydraulic filter, air conditioner filter, brake pad, brake lining, brake shoe, brake disc, brake pad accessories, brake fluid, wiper blade, front wiper, rear wiper, wiper rubber, wiper motor, wiper arm, belt, V-belt, timing belt, triangle belt, flat belt, conveyor belt, pulley, belt tensioner, tire, bicycle tire, electric vehicle tire, motorcycle tire, forklift tire (small), wheelchair tire, lamp, LED lamp, fluorescent lamp, energy-saving lamp, ultraviolet lamp, infrared lamp, LED bulb, incandescent bulb, energy-saving bulb, halogen bulb, high-pressure sodium lamp, metal halide lamp, battery, dry battery, lithium battery, lead-acid battery (small), button battery, rechargeable battery, battery charger, wire, cable, network cable, telephone line, video cable, audio cable, power cord, data cable, welding rod, welding wire, soldering tin, soldering tin wire, soldering strip, soldering paste, welding accessories, soldering iron tip, cutting disc, grinding wheel disc, sandpaper, emery cloth, grinding wheel, grinding head, grinding disc, polishing disc, abrasive cloth, cable tie, nylon cable tie, plastic cable tie, metal cable tie, wire clip, cable clamp, wire buckle, wire ferrule, copper ferrule, terminal block, terminal connector, connector, plug, socket, switch, bearing, rolling bearing, deep groove ball bearing, ball bearing, needle bearing, thrust bearing, bearing seat, bearing seal, caster, universal caster, directional caster, brake caster, heavy-duty caster, light-duty caster, rubber caster, nylon caster, sealing gasket, sealing ring, O-ring, flat washer, combined gasket, oil seal, water seal, air seal, sealant, glass glue, silicone

7. Cleaning / Daily Supplies

Mop, cotton mop, rubber mop, flat mop, spin mop, mop handle, mop head, broom, broomstick, dustpan, garbage shovel, garbage bag, trash can, classified trash can, garbage bin, laundry detergent, dish soap, laundry liquid, soap, toilet soap, hand soap, disinfectant, alcohol, toilet cleaner, descaling agent, rag, towel, tissue paper, toilet paper, roll paper, facial tissue, toilet paper, wet wipe, wet tissue, bucket, washbasin, cleaning brush, water bucket, mop bucket, toilet brush, steel wool brush, sponge brush, magic eraser

8. Packaging / Auxiliary Supplies

Strapping tape, plastic strapping tape, paper strapping tape, strapping buckle, strapping machine accessories, stretch film, cling film, plastic film, bubble film, pearl cotton, foam board, tape, clear tape, sealing tape, printed tape, cloth-based tape, aluminum foil tape, electrical tape, label, self-adhesive label, paper label, plastic label, label printer consumables, rope, hemp rope, nylon rope, cotton rope, packing rope, strapping rope

Keywords for Raw Material Commodity Identification

1. Agriculture / Fresh Produce / Grain

Wheat, rice, corn, soybean, sorghum, rice (polished), flour, millet, glutinous rice, soybean meal, peanut, rapeseed, straw, corn cob, sweet potato, purple sweet potato, ginger, green onion, shallot, garlic sprout, garlic scape, carrot, white radish, broccoli, cauliflower, celery, spinach, lettuce, romaine lettuce, chives, green pepper, chili pepper, red pepper, winter melon, pumpkin, bitter

melon, loofah, green bean, cowpea, lotus root, taro, Chinese yam, vegetables, Chinese cabbage, radish, potato, tomato, cucumber, eggplant, chili, scallion, ginger, garlic, fruits, apple, pear, banana, watermelon, grape, strawberry, blueberry, orange, mandarin orange, kiwifruit, mango, pitaya, pork, beef, mutton, chicken, duck meat, egg, fresh egg, duck egg, goose egg, livestock and poultry products, live pig, live cattle, live chicken, live duck, fresh pork, fresh beef, fresh mutton, fresh chicken, fresh duck, shiitake mushroom, wood ear mushroom, enoki mushroom, pleurotus eryngii, oyster mushroom

2. Aquatic Products / Seafood

Aquatic products, seafood, freshwater products, seawater products, hairtail, squid, crayfish, grass carp, crucian carp, bass, prawn, white shrimp, freshwater fish, seawater fish, yellow croaker, large yellow croaker, Spanish mackerel, pomfret, tilapia, loach, eel, shellfish, clams, hard clams, oyster, scallop, razor clam, conch, crab, mud crab, flower crab, Chinese mitten crab

3. Forestry / Timber / Wood-Based Panels

Log, poplar wood, eucalyptus wood, pine wood, fir wood, miscellaneous wood, wood-based panel, lumber, plywood, construction formwork, blockboard, ecological board, fiberboard, particleboard, multi-layer board, wooden pallet, packaging box

4. Textiles / Cotton / Fabrics

Cotton, lint cotton, seed cotton, cotton yarn, cotton fabric, knitted fabric, polyester fabric, non-woven fabric, canvas, yarn, grey fabric, knitted grey fabric, polyester filament, polyester staple fiber, viscose yarn, polyester-cotton yarn, denim, oxford fabric, fabric, lining, interlining, sewing thread, zipper, button, elastic band, webbing, rope and belt

5. Ferrous Metals / Steel Products

Deformed steel, wire rod, steel plate, steel pipe, seamless steel pipe, angle steel, channel steel, H-beam, I-beam, round steel, wire rod, hot-rolled coil, cold-rolled plate, galvanized plate, color-coated plate, stainless steel plate, stainless steel pipe, flat steel plate, medium plate, strip steel, flat steel, square pipe, rectangular pipe, welded pipe, spiral pipe, galvanized pipe, steel bar, steel product, steel billet, pig iron, cast iron, iron ore concentrate, iron ore, manganese ore, chromium ore, ferrosilicon, ferromanganese, hot-rolled plate, cold-rolled plate, patterned plate, plain carbon plate, low alloy plate, HRB400 deformed steel, HRB400E deformed steel, HRB400E wire rod, round bar, round pipe, steel strip

6. Non-Ferrous Metals

Aluminum material, aluminum ingot, aluminum profile, aluminum plate, aluminum bar, copper rod, copper busbar, copper pipe, copper wire, copper filament, red copper busbar, brass strip, electrolytic copper, zinc ingot, tin ingot, aluminum coil, aluminum strip, aluminum foil, copper strip, copper foil, copper profile, zinc alloy, tin alloy, aluminum alloy ingot

7. Chemicals / Plastics / Rubber

Polyethylene, polypropylene, polyvinyl chloride, ABS resin, plastic pellets, plastic granules, rubber, natural rubber, synthetic rubber, resin, ethylene glycol, methanol, ethanol, toluene, xylene, styrene, asphalt, petroleum asphalt, modified asphalt, liquid caustic soda, caustic soda flakes, hydrochloric acid, sulfuric acid, hydrogen peroxide, soda ash, calcium carbonate, PVC, PP, PE, PU, PS, PC, EVA, hot melt adhesive, glass adhesive, ink, paint, coating, thinner, curing agent, auxiliary agent, solvent

8. Paper Products / Packaging Materials

Carton, paperboard, corrugated board, corrugated paper, white cardboard, coated paper, kraft paper, kraft cardboard, pulp, base paper, tube paper, fluting paper, color box, paper box, self-adhesive

paper, label paper, thermal paper, paper corner protector, white board paper, gray board paper, self-adhesive label, coated paper, offset paper, writing paper, newsprint, paper tube, strapping tape, stretch film, adhesive tape, woven bag, plastic bag, packaging bag, pearl cotton, foam

9. Building Materials / Non-Metallic Minerals

Cement, ready-mixed concrete, concrete, commercial concrete, sand and gravel, crushed stone, yellow sand, river sand, gravel, manufactured sand, stone powder, water slag, fly ash, mineral powder, glass, tempered glass, flat glass, ceramic tile, ceramics, floor tile, stone material, marble, granite, gypsum board, cement brick, red brick, sand and gravel aggregate, limestone, concrete block, sand, rock wool board, extruded polystyrene board, polystyrene board, refractory brick

10. Coal / Fuel / Energy

Coal, raw coal, clean coal, blended coal, lump coal, slack coal, washed coal, coal slime, coke, semi-coke, biomass pellet, natural gas, liquefied natural gas, liquefied petroleum gas, liquefied gas, steam, hot water, diesel, gasoline, kerosene, fuel oil, lubricating oil, engine oil, hydraulic oil, antifreeze

11. Grain & Oil / Food / Non-Staple Food Ingredients

Soybean oil, rapeseed oil, peanut oil, edible oil, white granulated sugar, sugar, brown sugar, corn starch, cassava starch, starch, tea, raw tea, fresh tea leaf, nuts, walnut, chestnut, edible fungi, rock sugar, corn oil

12. Livestock and Poultry By-Products / Hides & Skins / Casings

Cowhide, sheepskin, pig small intestine, sheep small intestine, cocoon, fresh cocoon, pig hair, wool, goose feather, duck feather, cashmere, leather, fur, pigskin, rabbit skin, casing

Keywords for Service Category Identification

1. Logistics & Transportation Services

Freight fee, freight transport, passenger transport, logistics, express delivery, distribution, loading and unloading, warehousing, toll, road toll, transportation service, freight service, passenger service, logistics service, express service, warehousing service, parking fee, parking space fee, vehicle charter fee, car rental fee, valet driving fee, escort transportation fee, ticket agency service, air ticket agency, train ticket agency

2. Business Services

Consulting, auditing, accounting, taxation, inspection, certification, evaluation, agency, legal service, lawyer service, legal consulting, customs declaration service, inspection service, customs clearance service, freight forwarding service, supervision service, cost consulting, engineering consulting, trademark agency, patent agency, copyright agency, agency service fee, consulting service fee, auditing service fee

3. Information Technology Services

Technology service, software development, cloud service, broadband, telecommunications, operation and maintenance, information technology service, IT service, software service, system service, network service, internet service, data service, storage service, telecommunications service, mobile communication service, broadband service, operation and maintenance service, technical support service, after-sales technical service

4. Lifestyle Services

Catering fee, catering, accommodation, hotel, fitness, tourism, training, catering service, accommodation service, hotel service, tourism service, training fee, training service, education consulting, vocational training, medical service, physical examination service, health management

service, meeting service, exhibition service, event planning service, cleaning service, housekeeping service, greening service

5. Maintenance & Installation Services

Maintenance, installation, commissioning, decoration, cleaning, maintenance service, installation service, commissioning service, decoration service, cleaning service, equipment maintenance, home appliance maintenance, automobile maintenance, mechanical maintenance, decoration service, renovation service, engineering installation service, cleaning service, disinfection service, pest control service

6. Financial Services

Handling fee, insurance fee, interest, bank handling fee, financial service fee, insurance service fee, property insurance, life insurance, employer liability insurance, loan interest, borrowing interest, financing service fee, exchange rate handling fee, settlement handling fee

7. Advertising & Media Services

Advertising, promotion, marketing, advertising service, promotion service, marketing service, new media advertising, online advertising, short video promotion, design service, graphic design, video production service, media service, public relations service, brand promotion service

8. Other Operational Services

Leasing, labor service, property management, security, leasing service, house leasing, equipment leasing, car leasing, labor service, labor dispatch, human resource service, recruitment service, property management service, security service, safety and defense service, fire protection service, water and electricity fee, gas fee, property fee, heating fee, membership fee, subscription fee, service fee