The check is in the mail:
Can disclosure reduce late payments to suppliers?*

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We examine whether buyers reduce their late payments in response to a regulatory change in the United Kingdom that mandates the public disclosure of their payment practices. We find that UK buyers subject to this regulation reduce their late payments. In cross-sectional tests, we find that this reduction in late payments is more pronounced for buyers with a greater extent of late payments, buyers facing a more concentrated supplier base, and buyer-supplier relationships in which a supplier is more important to a buyer than other suppliers. In additional tests, we document evidence consistent with increases in contracting costs for late payers after the disclosure of late payments. Specifically, we find that late-paying buyers experience (i) a loss of suppliers and (ii) a negative stock market reaction. Finally, for buyers subject to the regulation, we document a decrease in operating cash flows, increase in debt, decrease in investment, and decrease in future profitability. Our findings that the disclosure of late payments contains decision-useful information can inform standard-setters, as the FASB and IASB recently mandated new disclosures related to trade credit but omitted mandates for disclosures related to late payments.

1. INTRODUCTION

We examine whether the mandated disclosure of late payments for supplier invoices affects firms' payment behavior. Firms frequently purchase goods and services without paying cash upfront to their suppliers. This practice, known as trade credit, is an important source of external financing that allows firms to manage their cash flows (Li, Ng, and Safar 2021).[1] It is common for firms to strategically delay trade credit payments to suppliers in order to boost cash flows, which can then be used for alternative investment opportunities before eventually paying off their obligations to suppliers (Monga and Trentmann 2020; Emery 1984). As a result, trade credit can become past due (i.e., firms make late payments to suppliers), thereby potentially leaving suppliers in a cash-strapped position.

In recent years, late payments to suppliers have increasingly become common on a global scale. For example, the largest 1,000 public firms in the US increased their payment delays from 40 days in 2008 to 56.7 days in 2017 (Shumsky and Trentmann 2018). In Australia, a survey found that 14% of businesses are owed more than AUD 100,000 in late payments, and about half of small businesses reported receiving late payments for 40% of their invoices (Waters 2017). In the UK, the construction giant Carillion typically paid its subcontractors with a 120-day delay. At the time of Carillion's bankruptcy filing in 2018, it was revealed that Carillion owed GBP 2 billion to 30,000 suppliers (Torrance 2019). Late payments impose financial burdens on suppliers by restricting cash flows, thereby hampering investment and economic growth (Department of Business, Energy & Industrial Strategy 2016; Barrot and Nanda 2020). Specifically, due to late

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[1] For example, in the United States, about one quarter of corporate debt is trade credit, and the aggregate amount of trade credit is roughly three times as large as the aggregate amount of bank loans (Rajan and Zingales 1995; Barrot 2016; Ivashina, Iverson, and Smith 2016). Trade credit is especially crucial for firms that cannot raise capital through more traditional channels such as bank credit (Petersen and Rajan 1997; Giannetti, Burkart, and Ellingsen 2011). Thus, firms dedicate significant time and resources to manage working capital and trade credit (Long, Malitz, and Ravid 1993).

payments, suppliers with cash constraints cannot invest in positive-NPV projects, and this leads to impaired growth and inefficient resource allocation in an economy.

We examine the economic consequences of the provision in the Small Business, Enterprise and Employment Act 2015 (SBEEA) titled "Companies: duty to publish report on payment practices and performance", which was implemented in the United Kingdom in April 2017. This provision requires large UK firms to self-report their payment practices, including information about the payment period and late payments made to suppliers.[2, 3] Specifically, we investigate whether these firms alter their behavior by reducing late payments in response to the regulatory change that requires them to publicly disclose their payment practices, even though the regulation mandates only *disclosure*. By requiring the disclosure of late payments, we expect that the new regulation creates incentives for firms to adjust their behavior, potentially reducing the incidence of late payments. Our study seeks to understand if such a disclosure requirement indeed motivates firms to fulfill their payment obligations on time, thus alleviating the financial strain on suppliers. Additionally, we explore how suppliers and investors incorporate disclosed information about late payments into their decision-making.[4]

We posit that SBEEA's required disclosure for payment practices provides new, decision-useful information for external stakeholders (e.g., suppliers, investors). Prior to the disclosure requirement, stakeholders could use financial statement information to evaluate the payment period by computing the days payable outstanding ratio. However, if an unusually long days

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[2] SBEEA defines *large firms* as those that exceed at least two of the following three size thresholds on both of their last two balance sheet dates: (i) £36 million in annual sales, (ii) £18 million in total assets, and (iii) 250 employees.
[3] Appendix A provides a detailed summary of the mandated disclosures.
[4] We recognize that a firm can be both a buyer and supplier, depending on the transaction. However, most of the predictions and analyses in our paper focus on the perspective of the buyer, as the required disclosure of payment practices under SBEEA impacts firms when they are on the buyer side of the transaction. Unless otherwise specified, hereafter all references to the "firm" pertain to the firm on the buyer side of transactions. Whenever appropriate, we also use the term "buyer" to avoid ambiguity.

payable outstanding is observed for a given buyer, it would not be possible to discern between two potential explanations: (1) the buyer is paying its suppliers late—i.e., later than the agreed-upon terms versus (2) the buyer is paying on time, but the buyer and supplier have agreed to a lengthy payment period.

The new disclosure of late payments under the disclosure requirement enables stakeholders to discern between these two explanations and identify buyers who are paying their suppliers late. We predict that the required disclosure of this new information creates incentives for buyers to reduce late payments in order to avoid increases in contracting costs with their stakeholders (Watts and Zimmerman 1990). For example, the information about late payments disclosed under the disclosure requirement allows suppliers to assess a given buyer by enabling a comparison of late payments of one buyer relative to those of its peer buyers. Moreover, investors can also use information about late payments to assess a buyer's ability to pay on time and incorporate it into their valuation of the firm. Accordingly, we expect late payments to suppliers to decrease after the disclosure requirement.

There is empirical tension regarding the effectiveness of the disclosure requirement. Buyers might not reduce late payments after the disclosure requirement for several reasons. First, they may perceive the costs of reducing late payments as outweighing the benefits. Second, they might believe that the new disclosures do not offer any information beyond what was already available to stakeholders. Finally, the disclosure requirement may fail to provide sufficient incentives for them to change their behavior.

To test our prediction, we obtain data on late payments using a proprietary database from CreditRiskMonitor. This database allows us to examine late payments for both the pre- and post-periods and for firms both subject to and not subject to the payment practices disclosure

requirement under SBEEA.[5] Using a difference-in-differences design, we find that UK buyers subject to the disclosure requirement reduce their late payments by 14.6% after its implementation, compared to a control sample of comparable firms from France and Germany. Since the implementation date of the disclosure requirement differs from other regulatory provisions of SBEEA, our results are unlikely to be driven by any provision of SBEEA other than the requirement to disclose payment practices.[6] In addition, our test to validate the parallel trend assumption suggests that our results are unlikely to be influenced by differential trends of late payments between treated and control groups before the implementation of the disclosure requirement.

Furthermore, we document that the reduction in late payments is more pronounced for buyers that have greater incentives to reduce late payments after the disclosure requirement. Specifically, in cross-sectional tests, we find that the reduction in late payments is more pronounced for (i) buyers with a greater extent of late payments prior to the disclosure requirement, presumably to avoid the disclosure of unfavorable information, and (ii) buyers with a more concentrated supplier base, as reliance on fewer suppliers makes it more difficult to replace suppliers if they discontinue relationships after the buyers disclose unfavorable information. In additional cross-sectional tests using buyer-supplier relationship characteristics, we find that late payments decline more for important suppliers, reflecting the higher cost of jeopardizing these key relationships.

Importantly, we also document that late-paying buyers experience increased contracting costs after they disclose their late payments. First, we find that after the required disclosure of

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[5] In contrast, the disclosures for late payments under the SBEEA's payment practices disclosure requirement are only available for UK firms subject to the disclosure requirement and only in the post-period.
[6] In Appendix C, we discuss the other provisions of SBEEA in more detail.

payment practices under SBEEA, buyers with more late payments lose more of their suppliers relative to buyers with less late payments. This suggests that after the disclosure requirement, contracting costs with suppliers increase for late-paying buyers. Second, we find that late-paying buyers experience negative stock market reactions in response to the disclosure of their late payments. This suggests that investors penalize buyers for paying late, as late payments can signal an inability to pay or deteriorating relationships with suppliers—leading to a higher cost of capital to compensate for these perceived risks. These additional findings support our argument that the required disclosure of payment practices imposes meaningful costs on late-paying buyers.

In additional tests, we find that after UK buyers are subject to the required disclosure of payment practices, they experience a decrease in operating cash flows, increase in debt, decrease in investment, and decrease in future profitability. Collectively, these results suggest that the disclosure requirement leads to a deterioration in firm fundamentals as buyers prioritize reducing late payments.

We also show that UK buyers with longer operating cycles and greater reliance on trade credit are less able to reduce late payments following the required disclosure of payment practices. These results suggest that operational and financial constraints may prevent buyers from reducing late payments after the disclosure requirement, even if they wish to do so.

Finally, we choose an alternative control group of small UK buyers, which are not subject to the disclosure requirement because they do not meet the firm size thresholds specified by SBEEA. We find that UK buyers subject to the disclosure requirement reduce late payments after the implementation, compared to a control group of small UK buyers not subject to the disclosure requirement. This result mitigates concerns that the results of our main test (which uses large French and German buyers as the control group) are driven by differences in country

characteristics across the treatment and control groups. Moreover, this result is robust when analyzing a subsample comprising UK buyers immediately around the size thresholds for the disclosure requirement.

Our study makes several contributions. First, we contribute to the literature on trade credit by documenting how mandated disclosure of payment practices can compel buyers to alter these practices. Prior studies have documented various determinants of the amount and extent of the trade credit used by buyers (Petersen and Rajan 1997; Fisman and Love 2003; Giannetti, Burkart, and Ellingsen 2011; Costello 2013; Costello 2019). In the context of these documented determinants, buyers weigh the costs against the benefits of paying their suppliers late. Our results suggest that mandated public disclosure imposes an additional cost for making late payments to suppliers, and this additional cost leads managers to reduce late payments after the regulatory change.

Second, our study, which uses a setting outside of the financial reporting process, can offer potential insights for accounting standard-setters. Both the FASB and IASB recently implemented new disclosure standards pertaining to trade credit and supply chain finance, but neither regime has mandated disclosures on late payments (FASB 2022; IASB 2022).[7] However, our results show that the disclosure of late payments contains new material information for suppliers and investors. Hence, our findings are likely to be of interest to accounting standard-setters, whose stated goal is to promote high-quality financial reports that provide material, decision-useful information.

Third, we contribute to the literature on the real effects of disclosure regulations. This body of work shows that firms are willing to undertake actions with cash flow consequences in order to

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[7] On September 29, 2022, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update No. 2022-04, Liabilities—Supplier Finance Programs (Subtopic 405-50): Disclosure of Supplier Finance Program Obligations. In May 2023, the International Accounting Standards Board (IASB) issued Supplier Finance Arrangements, which amended IAS 7 Statement of Cash Flows and IFRS 7 Financial Instruments: Disclosures.

report favorable financial figures (Imhoff and Thomas 1988; Graham, Hanlon, and Shevlin 2011; Chuk 2013). Our paper answers the call by Leuz and Wysocki (2016) for research in non-traditional disclosure settings and regimes outside of the United States to better understand the real effects of disclosure mandates.[8] Our research setting, which is in the UK, is nontraditional in the sense that it involves a government-mandated disclosure outside of accounting reports, and the novel effect that we document is a reduction in late payments. Also, our research setting offers a distinctive feature in contrast to prior studies, which tend to assume, either explicitly or implicitly, that investors are the main stakeholder group that incentivizes managers to alter firm transactions in order to report favorable financial numbers. Financial regulators have long expressed the view that investors are not the only users of financial reporting (e.g., the FASB mission statement). Our study contributes to the real effects literature by documenting that suppliers represent an additional key stakeholder group that incentivizes managers to make operational changes with real cash flow consequences in order to report favorable financial numbers.

2. INSTITUTIONAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Regulation in the UK

The payment practices disclosure requirement under SBEEA was enacted in the UK to (i) increase the transparency and public scrutiny of large businesses' payment practices and performance and (ii) give small business suppliers better information so they can make more informed decisions about who they trade with, negotiate fairer terms, and challenge late payments (Department of Business, Energy & Industrial Strategy 2016).

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[8] Specifically, Leuz and Wysocki (2016) "encourage researchers to seek settings outside the United States, be it for better identification or for documenting novel effects. We also encourage researchers to examine nontraditional disclosure and reporting settings, especially to learn about the *real effects* of disclosure mandates" (italicized emphasis in original quotation).

The required disclosure of payment practices under SBEEA was passed into law on March 26, 2015, and implemented on April 6, 2017, and it applies to large companies and large limited liability partnerships (LLPs) in the UK that exceed at least two of the following three size thresholds on both of their last two balance sheet dates: (i) GBP 36 million in annual sales, (ii) GBP 18 million in total assets, and (iii) 250 employees. Under SBEEA, qualifying UK buyers must disclose information about their payment practices, policies, and performance twice per fiscal year by publishing their disclosures on a government website, which is open to the public.[9] Of particular importance, buyers must disclose: (i) the average time they take to pay invoices (from the date of receipt of the invoice); (ii) the percentage of payments not paid within the agreed-upon payment period; (iii) the percentage breakdown of invoices paid within 30 days, between 31 and 60 days, and over 60 days. Appendix A describes the disclosures mandated by the regulatory change.

While the SBEEA specifies criminal penalties for failure to disclose and the disclosure of misleading information, it is important to note that SBEEA is agnostic about the content of the disclosures. That is, SBEEA does not specify any maximum number of days by which a buyer should pay its supplier invoices and does not impose any sanctions for late payments. In summary, the SBEEA's payment practices disclosure requirement is a regulatory mandate that only impacts the amount of disclosure.

We also note that the disclosures under SBEEA are not audited. It is possible that firms do not comply with the regulation if the disclosures are not audited. For example, Bailey, Glaeser, Omartian, and Raghunandan (2022) document that the compliance rate for the UK gender pay gap disclosure is very low, likely due to the lack of audit. To examine whether firms comply with the

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[9] The website is https://check-payment-practices.service.gov.uk/search.

disclosure requirement for payment practices under SBEEA, we manually search for the reports

containing the disclosure of payment practices for the 100 firms in the FTSE 100. We are able to

find the reports under the disclosure requirement for 98 of the 100 firms. Thus, it appears that the

compliance rate for the disclosure requirement is reasonably high (98% for the FTSE 100).

Potential managerial responses to the regulatory change

We posit that the disclosure of late payments contains new information that was previously

not available from other sources, including financial reports. We predict that the disclosure of new

information creates managerial incentives for buyers to pay suppliers more on time to avoid

increases in contracting costs. There are several stakeholder groups that can impose higher costs

on buyers if the SBEEA-mandated disclosures reveal that they pay their suppliers late.

For instance, suppliers can impose costs on a late-paying buyer by terminating the business

relationship or demanding changes in contractual terms that are less favorable to the buyer. Also,

investors can impose costs on a late-paying buyer by requiring a higher cost of capital, as late

payments can signal the buyer's inability to pay on time or indicate deteriorating relationships with

suppliers. Furthermore, a late-paying buyer can incur reputational costs if stakeholders perceive

late payments as unfair treatment of suppliers. For example, in a recent survey, 58% of adults

stated they would boycott a business if they knew the business was a late payment offender

(Barclays 2022).

For these reasons, we predict that buyers respond to the SBEEA's payment practices

disclosure requirement by reducing their late payments in order to avoid disclosure of unfavorable

information that could increase their contracting costs with various stakeholders. Accordingly, our

main hypothesis is as follows.

> H1: After the implementation of the SBEEA's payment practices disclosure
> requirement, buyers subject to the disclosure requirement reduce late payments to

suppliers, compared to a control group of buyers not subject to the disclosure requirement.

Cross-sectional predictions

We expect this change in behavior to be stronger for buyers that have greater incentives to reduce late payments after the SBEEA's payment practices disclosure requirement. As such, we identify buyer characteristics (H2A and H2B, discussed below) and buyer-supplier characteristics (H2C, discussed below) that would differentially affect the impact of the disclosure requirement on late payments.

First, we expect that the requirement to disclose late payments is more costly for buyers with a greater extent of late payments prior to the disclosure requirement, as the disclosure would reveal presumably unfavorable information. That is, the disclosure requirement incentivizes these buyers to take action to avoid disclosing unfavorable information. Hence, we predict a greater reduction in late payments for buyers with a greater extent of late payments prior to the disclosure requirement. Our first cross-sectional prediction is as follows.

> H2A: The reduction in late payments is more pronounced for buyers with a greater extent of late payments prior to the SBEEA's payment practices disclosure requirement.

Second, we expect that the disclosure of late payments is more costly for buyers facing a more concentrated supplier base. The disclosure requirement creates incentives for such buyers to take action to avoid disclosing unfavorable information, as dependence on a limited number of suppliers makes it more difficult to replace a lost supplier. Hence, we predict a greater reduction in late payments for buyers facing a more concentrated supplier base. Our second cross-sectional prediction is as follows.

> H2B: The reduction in late payments is more pronounced for buyers with a more concentrated supplier base.

Third, we expect that characteristics specific to each buyer-supplier pair (in addition to characteristics of the buyer alone) can impact the extent of the effects predicted in H1. In particular, we expect that jeopardizing relationships with a supplier due to the requirement to disclose late payments is more costly when a particular supplier is more important to the buyer. That is, buyers have an incentive to reduce late payments under the disclosure requirement in a way that better satisfies their more important suppliers (e.g., when these suppliers assess whether they are paid more favorably than other suppliers). Hence, we predict a greater reduction in late payments to more important suppliers. Our third cross-sectional prediction is as follows.

H2C: The reduction in late payments is more pronounced when a supplier is more important to a given buyer.

There are reasons to believe that we might not observe the predicted changes in firm behavior in response to the SBEEA's payment practices disclosure requirement. First, it might be less costly for buyers to be revealed as late payers in the disclosures (thereby incurring increased contracting costs with stakeholders, as previously discussed) than to actually pay suppliers on time. In order to pay suppliers more quickly, a buyer might need to sacrifice cash flows, incur more debt, or forego other investments, all potentially determinantal to firm performance. Thus, it may be too costly for buyers to reduce late payments to suppliers after the disclosure requirement.

Second, stakeholders, such as suppliers and investors, use accounting information to assess whether a firm can meet its short-term trading obligations (Hui, Klasa, and Yeung 2012). Suppliers also have access to private information about buyers (Petersen and Rajan 1997; Cen, Maydew, Zhang, and Zuo 2017). Overall, the required disclosures might not provide incrementally useful information to stakeholders. If buyers believe these disclosures do not provide additional information beyond what was already available to stakeholders, then they would have no reason to alter their behavior after the disclosure requirement.

Third, the disclosure requirement might not provide strong enough incentives for buyers to alter their behavior, because the regulatory change mandates disclosure but does not impose any sanctions for late payments; sanctions are imposed only for failure to disclose. That is, there are no direct, explicit costs paid to the regulator, since late-paying buyers are not required to pay any regulatory fees or fines for the late payments. Hence, it is possible that the regulation does not alter buyers' late-paying behavior.

For these reasons, we might not observe the predicted managerial responses. Thus, whether buyers reduce late payments in response to the SBEEA's payment practices disclosure requirement remains an empirical question.

3. DATA AND EMPIRICAL DESIGN

Sample and data

As the SBEEA's payment practices disclosure requirement became effective for fiscal years beginning on or after April 6, 2017, we define our pre-period (post-period) as buyer-years whose fiscal years begin before (after) April 2017 (UK Government 2017). Our pre- and post-periods include two years before and after the implementation of the disclosure mandate. For a buyer with a December 31 fiscal year-end, the pre-period includes years 2016 and 2017, and the post-period includes years 2018 and 2019. We end our sample period at the end of 2019, because our proprietary dataset (discussed in more detail below) ends its coverage at the end of 2019. Ending our sample period in 2019 has the added advantage of excluding the potential effects of the COVID-19 pandemic on payment practices.

Our treatment (control) group includes buyers from the UK (France and Germany) that meet the size thresholds. These French and German buyers can serve as an effective control group

as (i) they satisfy the definition of large buyers under the size thresholds specified by SBEEA but (ii) they are not subject to SBEEA.

We obtain data on late payments from CreditRiskMonitor, which compiles trade credit information for 56,000 public companies and 325,000 private companies worldwide, encompassing over USD 2.5 trillion in annual trade credit transactions. The trade credit information is collected from the accounts receivable files shared with the data provider by various companies, who are usually clients for their credit solutions. This proprietary dataset provides information for each buyer-supplier pair on a monthly basis. The dataset contains identifiable information for buyers, while keeping suppliers' identities anonymous. However, a unique identifier is provided for each buyer-supplier pairing, enabling thorough analysis while still maintaining the anonymity of the suppliers.

The CreditRiskMonitor dataset includes the amount owed by the buyer that is not past due (i.e., non-late payables) and the amount owed by the buyer that is past due (i.e., late payables), allowing us to investigate late payments. To validate the information in this dataset, we compute the correlation between payables in this dataset and Compustat Global, and the correlation is 0.61 and significantly positive (p-value < 0.01). This finding gives us more confidence that payables as measured by CreditRiskMonitor contain similar information to payables reported in firms' financial statements.

Given that the CreditRiskMonitor dataset provides the identities of the buyers, we are able to merge this proprietary data with Compustat Global to obtain a sample of our treatment and control groups of buyers. Table 1 outlines our sample selection process. We begin with the 378,215 buyer-supplier-months observed from the CreditRiskMonitor data. Then, we delete buyers that are not available in Compustat Global, buyers that do not meet the size criteria for the disclosure

requirement[10], and observations that have missing values for necessary variables. Our final sample consists of 251,440 buyer-supplier-month observations, including 625 buyers and 13,208 buyer-supplier pairs. Of these, 75,442 observations are included in the treatment group and 175,998 observations are included in the control group. The number of months per buyer-supplier pair varies, with an average of 21 months.[11]

Furthermore, we explore the characteristics of buyers covered by the proprietary CreditRiskMonitor database. Approximately 68% of buyers in the UK, France, and Germany in CreditRiskMonitor are also available in Compustat Global. About 36% of buyers in the UK, France, and Germany in Compustat Global are covered by CreditRiskMonitor. To examine the characteristics of buyers covered by both CreditRiskMonitor and Compustat Global, which we use in our study, relative to the entire Compustat Global sample, we compare key firm characteristics between the two groups during our sample period. We find that buyers covered by both CreditRiskMonitor and Compustat Global tend to be larger, perform better, have more debt, and are more capital-intensive compared to the entire Compustat Global sample (untabulated). Additionally, it is possible that suppliers covered by CreditRiskMonitor may also differ in certain characteristics from those not covered, but we are unable to explore this because the identities of suppliers are anonymous.

Due to data limitations, we are only able to examine late payment behavior for the buyer-supplier pairs whose buyers are available in both CreditRiskMoniotor and Compustat Global. We acknowledge that differences in firm characteristics between the buyers and suppliers included in our sample and those not included may potentially affect the generalizability of our results. For

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[10] Although we exclude buyers that do not meet the size criteria from our main sample, we reintroduce them as an alternative control group in Table 9 to provide an additional robustness check.
[11] The maximum number of months used is 48 months, as our sample period spans four years (two year pre- and two year post-periods).

example, buyers in our sample might behave differently from those not in our sample, given the differences in firm characteristics between the two groups. Additionally, the same buyer could behave differently with suppliers covered by CreditRiskMonitor compared to those not covered, due to the potential differences in firm characteristics between the two groups of suppliers. Nonetheless, we believe our sample represents a substantial and important segment of firms.

Empirical model

To test our H1, we estimate the following model:

$$Late\ Payable_{it} = \beta_0 + \beta_1 Post_t \times UK_i + \sum \beta_k\ Controls_{it} + Buyer\text{-}Supplier\ FE +$$

$$Year\ FE + \varepsilon_{it} \qquad \text{(Equation 1)}$$

To examine whether UK buyers subject to the SBEEA's payment practices disclosure requirement reduce late payments in response to the disclosure requirement, we use the natural log of the amount of late payables (*Late Payable*) for each buyer-supplier-month as our dependent variable.

Post is an indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise. *UK* is an indicator variable that equals 1 for UK buyers, and 0 for French and German buyers. Our main variable of interest is *Post × UK*, which we predict to be negative under H1. We cluster standard errors by buyer-supplier pair, and we include buyer-supplier pair fixed effects and year fixed effects (e.g., Liu et al. 2021; Chen et al. 2023). Accordingly, we do not report results for the main effects for *Post* and *UK* because they are subsumed by year fixed effects and buyer-supplier fixed effects.

In Equation (1), we include several control variables to control for buyer-supplier-specific and buyer-specific factors. The control variables are measured as follows. First, we include the following variables constructed using CreditRiskMonitor: the amount of all payables for the buyer-supplier pair, measured at the buyer-supplier-month level (*All Payable*), as a buyer with a greater

overall amount of payables may tend to have more late payables; the number of years the buyer-supplier pair has transacted with each other, measured at the buyer-supplier-year level (*Relationship Age*), as a longer relationship between a buyer and a supplier may influence payment timeliness either positively or negatively, depending on the characteristics of their relationship; and the extent to which the buyer's supplier base is concentrated, measured at the buyer-month level (*Supplier Concentration*), as buyers with a more concentrated supplier base are likely less able to replace a lost supplier and therefore have stronger incentives to avoid late payments.

Second, we also control for other buyer-specific variables, which are all measured at the buyer-year level using Compustat Global: We include the buyer's firm size (*Firm Size*) and market share (*Market Share*), as these factors reflect the buyer's ability to pay on time or market power to negotiate for late payments. We also control for the buyer's operational efficiency and performance (*Operating Cycle*, *ROA*, and *Loss*), as we expect that buyers with better operational efficiency and performance likely have greater ability to pay on time. Additionally, we consider the buyer's financing needs (*Debt* and *PP&E*), since buyers with higher financing needs are more likely to pay late. Finally, we include the buyer's cash level (*Cash*), with the expectation that buyers with less cash are less able to pay suppliers on time. For these buyer-specific control variables, we match each buyer-supplier-month observation to the buyer-specific control variables in the corresponding fiscal year. For example, for a buyer with a December 31 fiscal year-end, the months from January to December 2018 use the buyer-specific control variables measured in that fiscal year, 2018. All variables are described in detail in Appendix B.

We expect differences in buyer characteristics between the treatment buyers in the UK and control buyers in France and Germany, although they all meet the size thresholds. To mitigate concerns that differences in buyer characteristics between the treatment and control groups may

influence our results, we use entropy balanced samples throughout the paper (McMullin and Schonberger 2020). We conduct entropy balancing using all covariates in our model.

We acknowledge that late payments are not the only item that SBEEA requires to be disclosed. The other disclosed items (e.g., the average time taken to pay invoices and the percentage of invoices paid within 30 days, between 31 and 60 days, and later than 60 days) likely provide information to stakeholders as well. Our paper specifically focuses on late payments, because it could be argued that prior to the disclosure requirement, stakeholders could already compute the average length of the payment period and infer other items related to the payment period length (e.g., the percentage of invoices paid within 30 days, between 31 and 60 days, and later than 60 days) using financial statement data, such as days payable outstanding. While we do not argue that late payments is the most important item disclosed under the disclosure requirement, we focus on late payments because it contains new information that likely cannot be inferred from financial statement data.[12]

Also, our focus on late payments is motivated by press articles and concerns from practitioners and regulators that late payments can disrupt the supply chain and hamper economic growth (Department of Business, Energy and Industrial Strategy 2016; Barrot and Nanda 2020).

Descriptive statistics

Table 2 provides descriptive statistics for the variables used in our tests. In Panel A that presents the information for our full sample, the mean of *UK* indicates that 30% of our observations belong to the treatment group. In Panel B, we separately tabulate the mean and median of the

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[12] We also acknowledge that other negotiated contract terms between the buyer and supplier may have substitution effects with late payments. For example, late payments incur financing charges, which generate revenues for suppliers. To the extent that some suppliers prefer to accept late payments in exchange for earning financing revenue or other contractual benefits, such as more favorable pricing (as opposed to collecting payment on time and foregoing these benefits), it is possible that buyers and suppliers alter other contract terms as compensation for late payments following the disclosure requirement, rather than reducing late payments. In this case, we would be less likely to observe a change in late payments to suppliers after the disclosure requirement.

variables for the treatment and control groups. The UK buyers in the treatment group tend to be smaller, have shorter operating cycles, exhibit better firm performance, are more likely to have negative profits, have higher debt, and possess less tangibility and cash holdings, compared to the French and German buyers in the control group. We generally observe statistically significant differences in these relationship- or buyer-specific variables between the UK buyers and French/German buyers in our sample. Throughout all tests, we expect to achieve covariate balance across treatment and control groups as we use entropy balanced samples.

4. EMPIRICAL RESULTS

Difference-in-differences estimates

Before estimating our tests of H1, we first explore the validity of the parallel trends assumption. This assumption requires treatment and control groups to follow parallel trends over time, in the absence of the treatment (i.e., the SBEEA's payment practices disclosure requirement). To evaluate the validity of this assumption, we obtain coefficients from a regression of *Late Payable* on treatment indicators for each year (year t-2 to year t+1): *Late Payable* = β1 *t-2 × UK* + β2 *t × UK* + β3 *t+1 × UK* + Controls + Buyer-Supplier FE + Year FE. We use year t-1 as the benchmark year. Figure 1 plots the coefficients, along with the standard errors. Consistent with parallel trends in the pre-treatment period, we find that these coefficients are not increasing or decreasing in years t-2 and t-1 before the disclosure requirement is implemented. Overall, this finding suggests that our results are unlikely to be influenced by differential trends of late payments between treated and control groups before the implementation of the disclosure requirement.

We present the difference-in-differences results for Equation (1) in Table 3. Columns 1 and 2 report the results from the model without and with control variables. Consistent with H1, the coefficients on *Post × UK* are significantly negative, with p-values of < 0.01 and < 0.05 in

Columns 1 and 2, respectively. Specifically, our results suggest that after the SBEEA's payment practices disclosure requirement became effective, treated buyers (i.e., UK firms subject to the disclosure requirement) reduced their late payments by 14.6% (exp (0.136) − 1 in Column 2) relative to the control buyers (i.e., French and German firms not subject to the disclosure requirement). Overall, these results support H1.[13]

Among the control variables, the coefficient on *All Payables* is significantly positive, suggesting that buyers with a greater amount of overall payables are more likely to make late payments. The coefficient on *Supplier Concentration* is significantly negative, suggesting that buyers with a more concentrated supplier base are less likely to make late payments. Finally, the coefficient on *Cash* is significantly negative, consistent with cash-constrained buyers being more likely to make late payments.

Cross-sectional tests using subsamples

Table 4 presents the results of four cross-sectional tests. First, Panel A presents the results of estimating Equation (1) separately for each of two approximately equal-sized subsamples, partitioned based on the ratio of a buyer's late payables to its non-late payables in the period before the implementation of the disclosure requirement. For the subsample with above-median values of this ratio (i.e., high late payments in the pre-period), Column 1 shows that the coefficient on *Post × UK* is significantly negative (p-value < 0.01). In contrast, for the below-median subsample (i.e., low late payments in the pre-period), Column 2 shows that the coefficient on *Post × UK* is not significantly different from zero. The coefficients are significantly different across Columns 1 and

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[13] In an untabulated test, we also examine the effect of the disclosure requirement on non-late payments, which are not expected to be impacted by the disclosure requirements. To do so, we construct *Non-Late Payable*, defined as the natural log of the amount of non-late payables for each buyer-supplier-month. We replace *Late Payable* with *Non-Late Payable* in Equation (1) as an alternative dependent variable. In this test, regardless of including control variables, the coefficients on *Post × UK* are not significantly different from zero. Together with the results in Table 3, these results indicate that changes in firms' payment behavior following the implementation of the disclosure requirement are mainly observed from late payments.

2 (p-value < 0.10).[14] These results suggest that the required disclosure of payment practices has a greater impact on buyers with a higher proportion of late payments prior to the disclosure requirement, since such buyers have greater incentives to take action to avoid disclosing presumably unfavorable information after the disclosure requirement. These results support H2A.

Second, Panel B in Table 4 reports the results of estimating Equation (1) separately for each of two approximately equal-sized subsamples, partitioned based on the supplier Herfindahl-Hischman Index (HHI) for a given buyer, which measures the concentration of a buyer's suppliers. Higher values of HHI indicate a more concentrated supplier base, which indicates greater difficulty for the buyer to replace a supplier. For the subsample with above-median values of supplier HHI (i.e., high supplier concentration in the pre-period), Column 1 shows that the coefficient for *Post × UK* is significantly negative (p-value < 0.01). In contrast, for the below-median subsample (i.e., lower supplier concentration in the pre-period), Column 2 shows that the coefficient for *Post × UK* is not significantly different from zero. The coefficients are significantly different across Columns 1 and 2 (p-value < 0.05). These results suggest that the required disclosure of payment practices has a greater impact on buyers with higher supplier concentration, as it is likely more difficult for them to replace suppliers that terminate relationships after the disclosure of unfavorable information. These results support H2B.

Third, Panel C of Table 4 presents the results of estimating Equation (1) separately for each of two approximately equal-sized subsamples, partitioned based on relative transaction volume, which is defined as the ratio of payables amount for the buyer-supplier pair to the sum of payables amounts across all suppliers for the buyer. For the subsample with above-median values of this

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[14] To obtain the t-statistic for the difference in the coefficients between two groups throughout the paper, we run a pooled regression with all observations from the two subsamples and interact all independent variables, including control variables and fixed effects, with the cross-sectional variables (i.e., fully interacted models).

ratio (i.e., high transaction volume between the buyer and the supplier relative to that between the same buyer and other suppliers), Column 1 shows that the coefficient on *Post × UK* is significantly negative (p-value < 0.05). In contrast, for the below-median subsample (i.e., low transaction volume between the buyer and the supplier relative to that between the same buyer and other suppliers), Column 2 shows that the coefficient on *Post × UK* is not significantly different from zero. The coefficients are significantly different across Columns 1 and 2 (p-value < 0.10).

In addition, Panel D of Table 4 presents the results of estimating Equation (1) separately for each of two approximately equal-sized subsamples, partitioned based on the relative relationship length, which is defined as the ratio of relationship age for the buyer-supplier pair to the sum of relationship age across all suppliers for the buyer. For the subsample with above-median values of this ratio (i.e., long relationship between the buyer and the supplier relative to that between the same buyer and other suppliers), Column 1 shows that the coefficient on *Post × UK* is significantly negative (p-value < 0.01). In contrast, for the below-median subsample (i.e., short relationship between the buyer and the supplier relative to that between the same buyer and other suppliers), Column 2 shows that the coefficient on *Post × UK* is not significantly different from zero. The coefficients are significantly different across Columns 1 and 2 (p-value < 0.05). Overall, our findings in Table 4, Panels C and D, suggest that the reductions in late payments are concentrated among more important suppliers, indicating differential effects across suppliers for a given buyer. These results support H2C.[15]

In this section, the results support our prediction that buyers reduce late payments after the payment practices disclosure requirement under SBEEA. Moreover, the results for our theoretically motivated cross-sectional tests further indicate that this effect is attributable to the

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[15] In addition, it does not appear that buyers further delay payments to other less important suppliers, given the insignificant changes observed for less important suppliers in Column 2 of both panels.

disclosure requirement. In Appendix C, we investigate several alternative explanations and we find that the disclosure requirement remains the most plausible explanation of the reduction in late payments we observe.

5. SUPPLIER AND INVESTOR REACTIONS

Supplier reactions to late payment disclosures

We examine the effect of SBEEA's payment practice disclosure requirement on buyer-supplier relationships. To do so, we use buyer-year level observations and construct a dependent variable, *# Suppliers*, which is defined as the number of suppliers that transact with the buyer in the year within our data from CreditRiskMonitor. We then estimate the effect of the disclosure requirement on the number of suppliers for each of two approximately equal-sized subsamples, partitioned based on the ratio of a buyer's late payables to its non-late payables in the current year. We use the same control variables as in Equation (1). As the unit of analysis is at the buyer-year level, we use the average at the buyer level for pair-level relationship-specific control variables (*All Payable* and *Relationship Age*). In addition, we cluster standard errors by buyer, and we use buyer fixed effects and year fixed effects.

This analysis allows us to examine whether late-paying buyers, as compared to on-time paying buyers, lose their suppliers due to the information about late payments being available to suppliers following the disclosure requirement. For example, after the disclosure requirement, suppliers can obtain information about the extent of late payments and compare it across all large buyers. Based on this comparison, suppliers can make informed decisions about whether to start or continue doing business with a certain buyer.

We present the results in Table 5. For the subsample with above-median ratios of late to non-late payables, Column 1 shows that the coefficient on *Post × UK* is significantly negative (p-

value < 0.05). In contrast, for the subsample with below-median ratios of late to non-late payables, Column 2 shows that the coefficient on *Post × UK* is not significantly different from zero. The coefficients are significantly different across Columns 1 and 2 (p-value < 0.05). These results indicate that, after SBEEA's payment practice disclosure requirement, buyers with more late payments lose more suppliers than buyers with less late payments. Overall, this analysis suggests that for late-paying buyers, contracting costs with suppliers increase after the required disclosure of payment practices.

Investor reactions to late payment disclosures

Next, we examine whether and how investors react to the disclosures of late payments under SBEEA's payment practices disclosure requirement. To do so, we conduct an event study using actual disclosures of buyers' late payments in our post-period, following the implementation of the disclosure requirement. We match buyers in the disclosure data with stock price data by buyer names, resulting in 2,186 buyer-disclosure dates in our sample. We measure investor reactions using cumulative market-adjusted returns (CAR) for the two days beginning on the day on which buyers publicly disclose their payment practices on the UK website as required by the disclosure requirement.

Table 6 reports the average CAR immediately after buyers' disclosures of payment practices for various subsample groups. Panel A partitions the sample based on the length of the payment period (in days) disclosed by buyers. Column 1 shows that the average CAR for buyers with above-median payment period length is not significantly different from zero, and Column 2 shows that the average CAR for buyers with below-median payment period length is also not significantly different from zero. Column 3 shows the market reactions for the two groups are not significantly different from each other.

Panel B partitions the sample based on the extent of late payments disclosed by buyers. Column 1 shows that the average CAR for buyers with above-median late payments is significantly negative (p-value < 0.05), whereas Column 2 shows that the average CAR for buyers with below-median late payments is significantly positive (p-value < 0.10). Column 3 shows that the difference between the two groups is significantly different from zero (p-value < 0.01). Investors appear to penalize buyers that pay suppliers late, as this information could signal an inability to pay on time or an impending deterioration in supplier relationships. As a result, investors demand higher compensation for these perceived risks, leading to a higher cost of capital for late-paying buyers. In contrast, investors respond positively to buyers that pay suppliers on time, as this information could signal a strong financial condition and more stable supplier relationships.

Together, the results in Panels A and B suggest that investors do not appear to react to the disclosure of the length of the payment period since this information could already be computed using financial statement data prior to the disclosure requirement, but the disclosure of late payments under the disclosure requirement contains new information. That is, there is no significant market reaction to whether the payment period is long (Panel A), but there is a significant market reaction to whether the payment is late (Panel B).

Other potential sources of information about late payments

It is possible that stakeholders can assess a buyer's default risk for supplier invoices using other sources of information besides the disclosures of late payments under the disclosure requirement. For instance, stakeholders could evaluate the terms in the buyer's loan agreements and financing contracts. It is also possible that stakeholders can assess a buyer's default risk from the buyer's own voluntary disclosures about payment practices. Naturally, buyers were permitted to voluntarily disclose information about their payment practices even prior to the disclosure

requirement. If stakeholders indeed can access alternative sources of information about a buyer's default risk for supplier invoices, then the disclosures of late payments under the disclosure requirement might not provide new information to stakeholders. However, we find that suppliers and investors respond to the disclosures of late payments (Tables 5 and 6, respectively)—which is consistent with the idea that the required disclosure of late payments provides new information that was previously not available in alternative information sources. Otherwise, we would not observe significant reactions in Tables 5 and 6.

Furthermore, we assume that buyers do not have strong incentives to provide voluntary disclosure of payment practices, especially, late payments, prior to the disclosure requirement. To validate our assumptions, we manually review the annual reports for the 30 largest UK buyers before the disclosure requirement, and we find two buyers that voluntarily provide a brief discussion of their payment practices in generic terms, but we do not find any buyers that voluntarily disclose information about their late payments to suppliers. Hence, we believe that the required disclosures of late payments under SBEEA provide new information that was not previously disclosed on a voluntary basis.[16]

6. ADDITIONAL ANALYSES AND DISCUSSION

Impact on firm fundamentals

We examine the effects on firm fundamentals after the SBEEA's payment practices disclosure requirement. As reducing late payments after the disclosure requirement is expected to negatively affect cash management, it is possible that various firm fundamentals could also be

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[16] For example, Vodafone Group states in an annual report that "trade payables at 31 March 2017 were equivalent to 45 days (2016 restated: 42 days) outstanding, calculated by reference to the amount owed to suppliers as a proportion of the amounts invoiced by suppliers during the year. It is our policy to agree terms of transactions, including payment terms, with suppliers and it is our normal practice that payment is made accordingly". Tesco states in an annual report that "in the UK, we were the first retailer to publish our payment terms in October 2015. In Central Europe this year, we simplified trade terms and took steps to ensure that we are paying our smallest suppliers quicker".

affected. In this analysis, the unit of analysis is at the buyer-year level, as our dependent variables are measured at the yearly level. We use four different types of firm fundamentals as the dependent variables: (i) *Operating Cash Flow*, defined as the ratio of operating cash flows to current liabilities, (ii) *Debt*, defined as the ratio of debt to total assets, (iii) *Investment*, defined as the ratio of capital expenditure and R&D expense to total assets, and (iv) *Future Profitability*, defined as the ratio of income before extraordinary items to sales in the following year. We use the same control variables and fixed effects as those used in Table 5, where the unit of analysis is also at the buyer-year level.

Table 7 reports difference-in-differences tests of the effect of SBEEA's required disclosures of payment practices on firm fundamentals. We find that after the mandated disclosure of payment practices, (i) treated UK buyers experience greater reductions in operating cash flows (Column 1), likely due to buyers spending more cash to reduce late payments; (ii) treated UK buyers experience greater increases in debt balances (Column 2), likely to compensate for the loss of financing opportunities via trade payables from suppliers, whereby buyers could delay payments of supplier invoices; (iii) treated UK buyers experience greater reductions in investments (Column 3), likely due to the lower availability of cash for investment activities after they reduce late payments; and (iv) treated UK buyers experience greater reductions in future profitability (Column 4), likely due to firm performance being negatively affected by the reduced availability of cash and lower investment activity after they reduce late payments.

Mitigating firm-specific factors

We also explore potential firm-specific factors that may mitigate the effects of the disclosure requirement on late payments. Operational or financial constraints may prevent buyers from reducing late payments, even if they wish to do so. The first factor we examine is the operating cycle, defined as the period from the purchase of raw materials to the receipt of cash

from sales. Buyers with longer operating cycles may struggle to quickly convert raw materials into cash, making it difficult for them to accelerate payments after the disclosure requirement.

The second factor we consider is dependence on supplier trade credit. Buyers less dependent on trade credit often have access to alternative financing sources, such as borrowing from financial institutions (Fisman and Love 2003). In contrast, buyers heavily dependent on trade credit may struggle to find alternative financing to offset reductions in short-term funding when they need to pay suppliers more quickly. Consequently, these buyers may be less able to accelerate payments following the disclosure requirement.

To examine these two mitigating factors, we use *Operating Cycle*, defined as the natural log of operating cycle (i.e., days sales outstanding plus days inventory outstanding) in the year, and *Trade Credit Dependence*, defined as the industry-adjusted ratio of accounts payable to costs of goods sold in the year. We interact these variables with *Post × UK*, control variables, and fixed effects in Equation (1) (i.e., fully interacted models). We expect *Post × UK × Operating Cycle* and *Post × UK × Trade Credit Dependence* to be positive, as longer operating cycle and higher trade credit dependence are expected to serve as mitigating factors.

Table 8, Panels A and B show the results from *Operating Cycle* and *Trade Credit Dependence*, respectively. We find that the coefficients on *Post × UK × Operating Cycle* and *Post × UK × Trade Credit Dependence* are significantly positive, consistent with our expectations. Overall, these results suggest that treated buyers with longer operating cycle and higher trade credit dependence are less able to reduce late payments following the disclosure requirement.

Using small UK firms as an alternate control sample

In our difference-in-differences tests throughout the paper, we assign large UK buyers (i.e., UK buyers that meet the size thresholds defined by SBEEA's disclosure requirement) to the

treatment group and large French and German buyers (i.e., French and German buyers that meet the same size thresholds) to the control group. To mitigate potential concerns that the observed results are driven by differences in institutional and economic characteristics across countries, we perform robustness tests using small UK buyers that do not meet the size thresholds as an alternative control sample of buyers. Specifically, we retain the same treatment group as in the original estimation of Equation (1) (namely, large UK buyers), but we remove large French/German buyers from the control sample and substitute small UK buyers as the control group. The treatment variable is *Large*, defined as an indicator variable that equals 1 for buyers that meet the size criteria under the SBEEA's disclosure requirement, and 0 otherwise. We use the same control variables and fixed effects as in Equation (1). Table 9 Column 1 reports the result of estimating Equation (1) using small UK buyers as an alternative control sample. The coefficient on *Post* × *Large* is significantly negative, with a p-value <.01. This is consistent with our main results that UK buyers subject to the SBEEA's disclosure requirement reduce late payments.

Also, we conduct a sensitivity analysis on UK buyers around the size thresholds. This analysis distinguishes between buyers that just meet or exceed the size thresholds ('just meet/exceed') and those that just miss them ('just missed').[17] Consistent with the size thresholds under SBEEA, we use two-year pre-period averages across three categories: annual sales, total assets, and employee counts. Specifically, we consider buyers with annual sales from £0 to £72 million, centered around the threshold of £36 million (±£36 million); total assets from £0 to £36 million, centered around the threshold of £18 million (±£18 million); or employee counts from 0 to 500, centered around the threshold of 250 (±250 employees). In Column 2 of Table 9, the

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[17] Recall that the requirement to disclose payment practices under SBEEA applies to UK firms that exceed at least two of the following three size thresholds on both of their last two balance sheet dates: (i) GBP 36 million in annual sales, (ii) GBP 18 million in total assets, and (iii) 250 employees.

coefficient on *Post × Large* is significantly negative (p-value < 0.05). This suggests that buyers slightly above the size thresholds significantly reduce their late payments compared to those slightly below, highlighting the regulatory impact on late payments.

To further refine our analysis, we narrow the sample of UK buyers by tightening the two-year pre-period average ranges. We focus on buyers with annual sales between £21 million and £51 million, around the threshold of £36 million (±£15 million); total assets between £3 million and £33 million, around the threshold of £18 million (±£15 million); or employee counts between 100 and 400, around the threshold of 250 employees (±150 employees). In Column 3 of Table 9, the coefficient on *Post × Large* is also significantly negative (p-value < 0.1).

In Table 9, the magnitudes of the *Post × Large* coefficient across the three columns are not significantly different from one another (p-values of 0.55 between Columns 1 and 2 and 0.89 between Columns 2 and 3), indicating that the magnitude of the effect remains stable and robust as we successively narrow the bin thresholds.

Robustness test: changing the unit of observation

As a robustness test, we aggregate all variables to the buyer-year level.[18] In Table 10 Panel A, we present the result of estimating Equation (1) using the buyer-year as the unit of observation. The coefficient on *Post × UK* is negative and significant (p-value < 0.05), consistent with our main tests in Table 3, which use the buyer-supplier-month as the unit of observation.

Robustness test: requiring a minimum number of months in sample period

The number of months per buyer-supplier pair in our final sample varies, ranging from 1 to 48 months (note that our sample period spans four years), with an average of 21 months. While

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[18] The unit of observation in our main analysis is the buyer-supplier-month. For the buyer-year level analysis, we calculate the annual averages of all buyer-supplier-level variables at the buyer level (*Late Payable*, *All Payable*, and *Relationship Age*).

we use all observations from the final sample obtained through the selection process in Table 1, our results remain robust across various sample restrictions regarding the minimum number of months. As a robustness test, we re-estimate Equation (1) by requiring buyer-supplier pairs to have at least 1, 6, and 12 months in both the pre- and post-periods. The results, presented in Table 10 Panel B, show that our main results are consistent and robust across all sample selection criteria.

Robustness test: using the percentage of late payables as the dependent variable

SBEEA requires buyers to disclose late payables as a percentage of total payables. In additional tests, we replicate our main tests using the percentage of late payables as the dependent variable. In Table 10 Panel C, Column 1 (2) reports regression results using the buyer-supplier-month (buyer-year) level as the unit of observation. In both columns, the coefficient for the interaction $Post \times UK$ is significantly negative, consistent with our main results in Table 3. Additionally, in untabulated tests, we reperform all our other tests using the percentage of late payables as the dependent variable and find qualitatively similar results.[19] In our main analysis, we use the natural logarithm of late payables rather than the percentage of late payables. By using the natural logarithm of late payables, our main research design incorporates the economic significance of each pair.

7. CONCLUSION

Buyers' decisions for whether to pay suppliers on time bear economically important consequences for both buyers and suppliers. For buyers, a large portion of corporate debt consists of trade credit, so buyers spend significant firm resources to devise cash management strategies to delay payments to suppliers. For suppliers, receiving late payments can impose a sustained strain on cash flows, thus potentially threatening the financial health and viability of suppliers.

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[19] In these various specifications, all results remain significant. This comprehensive analysis suggests that our findings are robust, even when using the percentage of late payables as the dependent variable.

Besides buyers and suppliers, other stakeholders also are interested in whether a buyer's payments to suppliers are late. First, government regulators as a stakeholder group likely prefer that buyers pay on time because late payments impose financial burdens on suppliers by restricting cash flows, thereby hampering economic growth (Department of Business, Energy and Industrial Strategy 2016; Barrot and Nanda 2020). Second, investors as a stakeholder group likely prefer that buyers pay on time if late payments signal an inability to pay or if the penalties for paying late (e.g., jeopardizing relationships with suppliers) outweigh the benefits of paying late (e.g., boosting cash flows, which can be used to earn returns on alternative investment opportunities before ultimately paying suppliers). Third, some consumers may prefer that buyers pay late if doing so allows the buyers to earn returns on alternative investments and keep costs down, which can translate to lower retail prices in the product market; on the other hand, socially conscious consumers may prefer that buyers pay on time, as the fair treatment of business partners (e.g., suppliers) contributes to the "triple bottom line" (e.g., Barclays 2022). As such, the diverse interests of buyers, suppliers, regulators, investors, and consumers highlight the economic significance of the required disclosure of late payments.

We investigate whether buyers reduce late payments after a regulatory change in the UK. Our study documents that buyers reduce late payments to suppliers in response to a regulatory change that mandates the public disclosure of buyers' payment practices, including information about late payments. Our additional analyses reveal some important insights regarding the consequences of the regulatory change. The results indicate that suppliers and investors respond to information about late payments disclosed under the disclosure regulation, suggesting that these disclosures provide new and decision-useful information. Additionally, for buyers impacted by the disclosure regulation, we find a decrease in operating cash flows, increase in debt, decrease in

investment, and decrease in future profitability—suggesting that the required disclosure of late payments leads to a deterioration of firm fundamentals as buyers prioritize reducing late payments.

The FASB and IASB have recently mandated disclosures about issues related to trade credit and supply chain finance (FASB 2022; IASB 2022). It is the official position of the FASB and IASB that their regulatory goal is to promote high-quality financial reporting to facilitate efficient resource allocation in the economy. Using a setting of required disclosures outside of financial reports, we find that the mandated disclosure about late payments contains decision-useful information. Thus, our findings can be of interest to the FASB and IASB, as neither of them currently requires the disclosure of late payments in financial reports.

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Appendix A
Payment practices disclosure mandated by the Small Business, Enterprise and
Employment Act 2015 in the UK

Description of the disclosure mandate

This appendix describes the required disclosures mandated by the Small Business, Enterprise and

Employment Act 2015, sub-section titled "Companies: duty to publish report on payment practices

and performance". This regulation requires that large companies and large limited liability

partnerships in the UK report the following every six months:

- Statistics on:
    - The average time taken to pay invoices from the date the invoice is received.
    - The percentage of invoices paid within the reporting period that were paid in 30 days or less, between 31 and 60 days, and over 60 days.
    - The proportion of invoices that were due within the reporting period but were not paid within the agreed terms.

- Narrative descriptions of:
    - The organization's payment terms, including the standard contractual length of time taken to pay invoices, the maximum contractual payment period, any changes to standard payment terms, and whether suppliers have been notified or consulted about these changes.
    - The organization's process for the resolution of disputes related to payment.

- Statements (i.e., a tick box) about:
    - Whether the organization offers e-invoicing.
    - Whether the organization offers supply chain finance.
    - Whether the organization's practices and policies cover deducting sums from payments as a charge for remaining on a supplier's list, and whether they have done this during the reporting period.
    - Whether the organization is a member of a payment code. If so, the name of the code.

Correlations

In untabulated analysis, we find that the various items disclosed under the disclosure

requirement are significantly correlated with each other on a univariate basis. We find that late

payments is correlated with a longer average payment period, lower percentage of invoices paid

within 30 days, and higher percentage of invoices paid later than 60 days. It is possible that firms make trade-offs among the various dimensions when formulating their overall corporate strategy related to payment practices. We acknowledge that we can perform univariate correlations only for large UK firms meeting the size thresholds and only for the post-period after the disclosure requirement became effective.

Disclosures on dispute resolution process

For the narrative descriptions of the organization's process for the resolution of disputes related to payment, we note that most firms provide generic and boilerplate narrative descriptions. Unfortunately, we are unable to use these boilerplate descriptions for any meaningful analysis. Below we provide some examples of firms' descriptions of their dispute resolution process:

- Example #1:

  "If suppliers have any queries related to invoices and payments they can contact fsd_uk@bat.com, which acts as an information centre. FSD UK will provide details such as status of invoices, date of payments and statement of account reconciliations. For any dispute related to the terms and conditions agreed, FSD UK will direct the suppliers to the relevant BAT personnel to obtain information about their query."- British American Tobacco

- Example #2:

  "https://groupextranet.bt.com/selling2bt/accounts_payable.html (Link to BT Payment Practices). BT Group have standard dispute resolution process across all suppliers payments. First point of contact is Accounts Payable, through contact points on website see link."- BT Group

- Example #3:

  "Invoices are matched on receipt and disputed invoices are notified to the supplier. Disputes are managed directly with the supplier and resolved items are reprocessed."- Astrazeneca

Variable	Description
# Suppliers	The number of suppliers that transact with the buyer in the year.
All Payable	The natural log of all payables.
CAR [0,1]	Cumulative market-adjusted returns for the two days following buyers' payment practices disclosures.
Cash	The ratio of cash to total assets.
Debt	The ratio of total debt to total assets.
Firm Size	The natural log of total assets.
Future Profitability	The ratio of income before extraordinary items to sales in the following year.
Investment	The ratio of capital expenditure plus R&D expense to total assets.
Large	An indicator variable that equals 1 for UK buyers that meet the size criteria under the disclosure requirement, and 0 for UK buyers that do not meet the size criteria.
Late Payable	The natural log of late payables.
Loss	An indicator variable that equals 1 if the firm's income before extraordinary items is negative, and 0 otherwise.
Market Share	The percentage of market share in the industry (i.e., the firm's sales divided by the total sales of all firms in the industry).
Non-Late Payable	The natural log of non-late payables.
Operating Cash Flow	The ratio of cash flows from operations to current liabilities.
Operating Cycle	The natural log of days sales outstanding (the average accounts receivable ÷ sales × 365) plus days inventory outstanding (the average inventory ÷ COGS × 365).
Post	An indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise.
PP&E	The ratio of PP&E to total assets.
Relationship Age	The natural log of the number of years the buyer-supplier pair has appeared in CreditRiskMonitor.
ROA	The ratio of income before extraordinary items to total assets.
Supplier Concentration	The supplier Herfindahl-Hirschman Index (HHI). $HHI = \sum_{j}^{J} \left(\frac{Purchase_{ijt}}{Purchase_{it}}\right)^{2}$ where purchase is inferred from the total amount of payables.
Trade Credit Dependence	The industry-adjusted ratio of accounts payable to COGS (i.e., the firm's ratio minus the industry average).
UK	An indicator variable that equals 1 for UK buyers, and 0 for French and German buyers.

Appendix C
Discussion of Alternative Explanations

In this appendix, we discuss several alternative explanations for our results.

Alternative explanation #1: other regulatory provisions under SBEEA

In addition to mandating the disclosure of payment practices, "Part 1 – Access to Finance" of SBEEA contains several other regulatory changes. For example, some other provisions improve small businesses' access to finance by removing legal barriers to invoice finance and invalidating restrictive terms in business contracts (implemented in November 2018); speed up check-clearing times by creating a check imaging system with electronic images of checks to facilitate check payments (implemented in 2019); and strengthen the powers of the Payment Systems Regulator, which is the regulatory body in the UK that oversees payment systems and payment infrastructure providers, such as banks and companies that provide credit and debit cards (implemented in April 2015).[20]

These other provisions in "Part 1 – Access to Finance" of SBEEA were concurrently passed with the requirement to disclose payment practices in April 2015, but each one was implemented in different years. To the best of our knowledge, the required disclosure of payment practices was the only regulatory change under SBEEA Part 1 that took effect in April 2017. To more reliably attribute the observed results to the disclosure requirement (as opposed to other provisions in SBEEA), we define event time based on the implementation date when the disclosure requirement becomes effective (April 2017), as opposed to the passage date for SBEEA (April 2015).

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[20] Parts 2 through 11 do not appear to be closely related to payment practices. Specifically, other parts include regulatory reform, such as streamlined company registration (Part 2), public sector procurement (Part 3), pubs code and adjudicator (Part 4), childcare and schools (Part 5), education evaluation (Part 6), transparency (Part 7), company filing requirements (Part 8), directors' disqualification (Part 9), insolvency (Part 10), and employment (Part 11). See https://www.legislation.gov.uk/ukpga/2015/26/notes

Given that the other provisions of SBEEA were not implemented simultaneously with the disclosure requirement, we believe that the observed results in our study are attributable to the distinct implementation date of the disclosure requirement. Empirically, our coefficient plots in Figure 1 indicate that late payments begin to decrease immediately following the implementation of the disclosure requirement (April 2017) for the treatment group relative to the control group.

Nonetheless, we examine the possibility that other provisions of SBEEA lead to improved financing or mitigated cash constraints for buyers, which, in turn, might enable more prompt payments. In untabulated tests, we estimate Equation (1) separately for each of two approximately equal-sized subsamples, partitioned based on changes in debt, liquidity, and interest coverage from the pre- to the post-periods, which we use as proxies for changes in financial conditions. Using these proxies, we do not find statistically significant differences across the two subsamples for the coefficients on $Post \times UK$, indicating that our results are less likely to be driven by other provisions that might improve buyers' financial conditions.

Alternative explanation #2: other regulatory changes in the European Union

It is possible that other regulatory changes could affect late payments in the UK. For instance, S.I. No 580/2012 - European Committee (Late Payment in Commercial Transactions) Regulation 2012 became effective in March 2013, simplifying the process for collecting payments from late-paying debtors for all European Union (EU) firms. However, it is unlikely that our observed results are explained by S.I. No 580/2012, since it became effective in 2013, whereas the required disclosures of payment practices under SBEEA became effective four years later in 2017. Also, our research design uses a narrow window, using two years before and two years after the effective date of the disclosure requirement.

Another regulatory change is EU Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 (hereafter, "CSR Directive"), which became effective in 2017, mandating "large" publicly traded firms in the EU to prepare annual non-financial reports on their social responsibility (CSR) activities.

The CSR directive (which became effective in 2017, the same year as the required disclosures for payment practices under SBEEA) poses a greater threat to validity with respect to timing than S.I. No 580/2012 (which became effective in 2013). However, both of these regulatory changes affected all firms in the EU, including firms in the UK, France, and Germany. In order for either of these alternative regulatory changes in the EU to explain observed results, the regulatory change would have to affect large UK firms (our treatment group) differentially than large firms from France and Germany (our control group). Otherwise, these alternative regulatory changes could explain a pre-post change in the outcome variable for both the treatment and control groups, but would not be able to explain why the pre-post change for the treatment group is systematically different from the pre-post change for the control group.

Alternative explanation #3: negotiating longer payment periods

It is possible that after SBEEA's requirement to disclose payment practices, buyers negotiate with their suppliers to extend payment terms in order to avoid reporting late payments. Although specific payment terms are not directly available in our proprietary CreditRiskMonitor dataset, we undertake three analyses to investigate this possibility.

First, if buyers negotiate longer payment periods, we would expect an increase in non-late payables and a decrease in late payables after the disclosure requirement. We re-estimate Equation (1) using the natural logarithm of non-late payables as the dependent variable. The untabulated analysis shows a negative and insignificant coefficient on *Post* × *UK*, suggesting that non-late

payables did not increase. This finding is inconsistent with the alternative explanation of extending payment terms.

Second, we examine trends in standard or contractual payment terms using disclosed information under the disclosure requirement in the post-implementation period. Specifically, we analyze disclosure of: "shortest standard payment period", "longest standard payment period", and "maximum contractual payment period".[21] In untabulated analyses, we do not observe noticeable changes in these payment terms over time. However, we acknowledge a limitation: this information is available only for the post-period and the treated group, preventing a comparison with the pre-period or the control group.

Third, to address the limitation above, we estimate payment terms by calculating the average number of months it takes for non-late payables to become overdue, using our CreditRiskMonitor dataset. Specifically, we identify instances where non-late payables appear between a buyer and a supplier and these same payables become overdue subsequently, calculating the number of months it takes for this transition. Since we only include such instances, our analysis is based on a subset of observations. After estimating payment terms for each instance, we aggregate these estimates at the buyer-supplier-year level and restrict the sample to buyer-supplier pairs that have observations in both the pre- and post-periods. Consequently, the number of observations is much smaller than in our main sample, which uses the buyer-supplier-month level and includes all buyer-supplier-months. We then perform a difference-in-differences regression (untabulated), which shows no significant changes in estimated payment terms from the pre- to post-periods for the treated group relative to the control group.

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[21] For example, see https://check-payment-practices.service.gov.uk/report/34045/

Figure 1. Coefficient plots
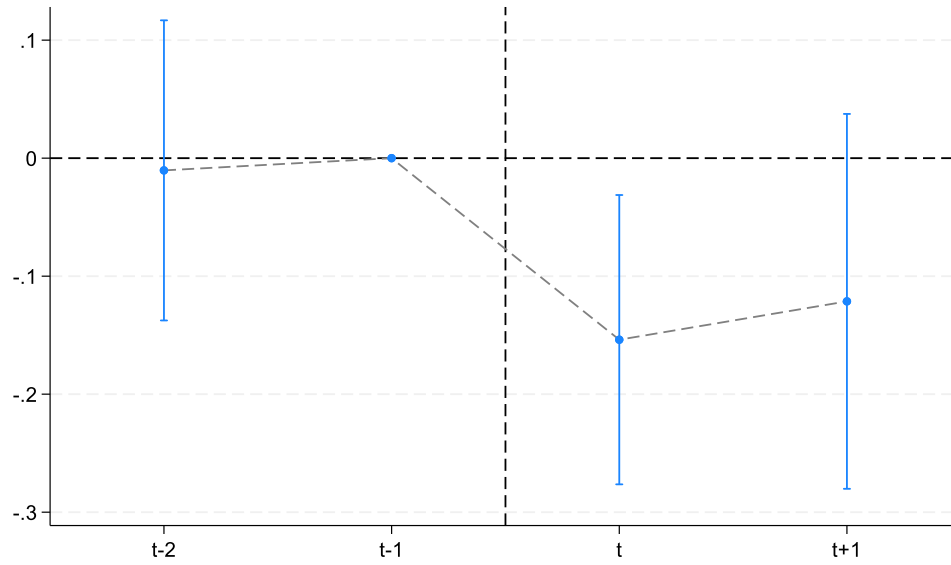
The dots and bars in the figure are the coefficients and standard errors obtained from a regression of late payments on treatment indicators for each year (year t-2 to year t+1): *Late Payable* = β1 *t-2* ×*UK* + β2 *t* × *UK* + β3 *t+1* × *UK* + Controls + Buyer-Supplier FE + Year FE. t-1 is a benchmark year. The sample includes large UK, French, and German buyers. Event year t is defined as the first fiscal year beginning after April 2017. The dependent variable is the natural log of late payables (*Late Payable*).

Table 1. Sample selection

Beginning buyer-supplier-month observations after merging the proprietary data and Compustat Global	378,215
Less: Buyers that are not available in Compustat Global	(80,352)
Less: Buyers that are below the size criteria for regulation	(6,727)
Less: Observations that have missing values for necessary variables	(39,696)
Final Sample	**251,440 obs**
Treated Group: UK buyers above the size criteria for regulation	**75,442 obs**
Control Group: French and German buyers above the size criteria for regulation	**175,998 obs**

This table summarizes the sample selection process.

Table 2. Descriptive statistics
Panel A. Full sample

VARIABLES	Mean	SD	p25	Median	p75
Post	0.509	0.500	0.000	1.000	1.000
UK	0.300	0.458	0.000	0.000	1.000
Late Payable	6.046	4.595	0.000	7.322	9.730
All Payable	9.263	3.260	7.540	9.484	11.434
Relationship Age	1.567	0.768	1.099	1.609	2.197
Supplier Concentration	0.318	0.237	0.135	0.246	0.429
Firm Size	8.821	1.807	7.513	8.885	10.353
Market Share	0.365	0.309	0.101	0.288	0.538
Operating Cycle	5.054	0.483	4.801	5.047	5.363
ROA	0.044	0.047	0.025	0.043	0.066
Loss	0.078	0.268	0.000	0.000	0.000
Debt	0.235	0.120	0.155	0.233	0.316
PP&E	0.215	0.130	0.102	0.207	0.287
Cash	0.099	0.067	0.055	0.084	0.124

Panel B. Treated v. Control groups

	UK=1		*UK*=0		
					Difference in
Variables	Mean	Median	Mean	Median	Mean
Late Payable	5.813	7.024	6.146	7.462	-0.333***
All Payable	8.897	9.114	9.420	9.656	-0.523***
Relationship Age	1.556	1.609	1.571	1.609	-0.015***
Supplier Concentration	0.332	0.270	0.312	0.236	0.020***
Firm Size	7.907	7.927	9.212	9.371	-1.305***
Market Share	0.273	0.211	0.405	0.334	-0.132***
Operating Cycle	4.973	4.958	5.089	5.072	-0.116***
ROA	0.050	0.054	0.042	0.041	0.009***
Loss	0.089	0.000	0.073	0.000	0.016***
Debt	0.240	0.248	0.233	0.230	0.007***
PP&E	0.198	0.155	0.222	0.223	-0.024***
Cash	0.083	0.073	0.106	0.088	-0.023***

This table presents descriptive statistics. Panel A reports the descriptive statistics for the full sample. Panel B reports variable means and medians for the treatment group and the control group. All continuous variables are winsorized at 1 and 99%. All variables are defined in Appendix B.

Table 3. The effect of the payment practices disclosure requirement on late payments

VARIABLES	(1) Late Payable	(2) Late Payable
Post × UK	-0.182*** (-2.58)	-0.136** (-2.27)
All Payable		0.720*** (43.02)
Relationship Age		0.035 (0.38)
Supplier Concentration		-0.251** (-2.01)
Firm Size		-0.154 (-0.93)
Market Share		0.125 (0.30)
Operating Cycle		-0.079 (-0.46)
ROA		-0.578 (-0.99)
Loss		-0.071 (-0.88)
Debt		0.573 (1.39)
PP&E		-0.230 (-0.34)
Cash		-1.509*** (-3.17)
Observations	251,440	251,440
Fixed effects	Buyer-Supplier, Year	Buyer-Supplier, Year
Adjusted R-squared	0.572	0.621

This table presents the results from Equation (1) that tests the effect of the payment practices disclosure requirement on late payments using a difference-in-differences approach. The sample includes large UK, French, and German buyers that meet the size criteria under the requirement, and the observations are at the buyer-supplier-month level. *UK* is an indicator variable that equals 1 for UK buyers, and 0 for French and German buyers. *Post* is an indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise. The dependent variable is the natural log of late payables (*Late Payable*). All control variables are defined in Appendix B. Standard errors are clustered at the buyer-supplier level. *, **, and *** denote two-tailed p-values significant at 10%, 5%, and 1%, respectively.

Table 4. Subsample tests
Panel A. Pre-period late payments

VARIABLES	(1) **High Ratio of Late to Non-Late Payable in the Pre-Period**	(2) **Low Ratio of Late to Non-Late Payable in the Pre-Period**
	Late Payable	*Late Payable*
Post × UK	**-0.225*****	**-0.023**
	(-2.59)	**(-0.28)**
	Difference (t-stat) = -1.69*	
Observations	125,008	126,432
Controls	Yes	Yes
Fixed effects	Buyer-Supplier, Year	Buyer-Supplier, Year
Adjusted R-squared	0.623	0.617

Panel B. Pre-period supplier concentration

VARIABLES	(1) **High Supplier Concentration in the Pre-Period**	(2) **Low Supplier Concentration in the Pre-Period**
	Late Payable	*Late Payable*
Post × UK	**-0.266*****	**0.008**
	(-2.83)	**(0.11)**
	Difference (t-stat) = -2.31**	
Observations	125,498	125,942
Controls	Yes	Yes
Fixed effects	Buyer-Supplier, Year	Buyer-Supplier, Year
Adjusted R-squared	0.605	0.627

Table 4. Subsample tests (continued)
Panel C. Supplier transaction volume

	(1) High Relative Supplier Transaction Volume (More Important Suppliers)	(2) Low Relative Supplier Transaction Volume (Less Important Suppliers)
VARIABLES	*Late Payable*	*Late Payable*
Post × UK	-0.207** (-2.41)	-0.017 (-0.24)
	Difference (t-stat) = -1.76*	
Observations	125,720	125,720
Controls	Yes	Yes
Fixed effects	Buyer-Supplier, Year	Buyer-Supplier, Year
Adjusted R-squared	0.613	0.574

Panel D. Supplier relationship age

	(1) High Relative Supplier Relationship Age (More Important Suppliers)	(2) Low Relative Supplier Relationship Age (Less Important Suppliers)
VARIABLES	*Late Payable*	*Late Payable*
Post × UK	-0.267*** (-3.10)	-0.032 (-0.42)
	Difference (t-stat) = -2.03**	
Observations	125,683	125,757
Controls	Yes	Yes
Fixed effects	Buyer-Supplier, Year	Buyer-Supplier, Year
Adjusted R-squared	0.610	0.636

This table presents the results from subsample tests for the effect of the payment practices disclosure requirement on late payments. The sample includes large UK, French, and German buyers that meet the size criteria under the requirement, and the observations are at the buyer-supplier-month level. We divide the sample into two groups based on the following criteria: (i) the ratio of late payables to non-late payables during the pre-period (Panel A), (ii) the supplier Herfindahl-Hirschman Index (HHI) during the pre-period (Panel B), (iii) the ratio of payables amounts for the buyer-supplier pair to the sum of payables amounts across all suppliers for the buyer in the month (Panel C), and (iv) the ratio of relationship age for the buyer-supplier pair to the sum of relationship age across all suppliers for the buyer in the month (Panel D). *UK* is an indicator variable that equals 1 for UK buyers, and 0 for French and German buyers. *Post* is an indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise. The dependent variable is the natural log of late payables (*Late Payable*). Standard errors are clustered at the buyer-supplier level. *, **, and *** denote two-tailed p-values significant at 10%, 5%, and 1%, respectively.

Table 5. Supplier reactions to disclosures of late payments

VARIABLES	(1) High Ratio of Late to Non-Late Payable in the Current Year	(2) Low Ratio of Late to Non-Late Payable in the Current Year
	# Suppliers	*# Suppliers*
Post × UK	-0.846**	0.524
	(-2.18)	(1.01)
	Difference (t-stat) = -2.02**	
Observations	1,045	1,047
Controls	Yes	Yes
Fixed effects	Buyer, Year	Buyer, Year
Adjusted R-squared	0.992	0.990

This table presents the results from the analysis examining the effect of late payments on buyer-supplier relationships after the payment practices disclosure requirement. The sample includes large UK, French, and German buyers that meet the size criteria under the requirement, and the observations are at the buyer-year level. We divide the sample into two groups based on the ratio of late payables to non-late payables in the current year. *UK* is an indicator variable that equals 1 for UK buyers, and 0 for French and German buyers. *Post* is an indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise. The dependent variable is the number of suppliers that transact with the buyer in the year (*# Suppliers*). Standard errors are clustered at the buyer level. *, **, and *** denote two-tailed p-values significant at 10%, 5%, and 1%, respectively.

Table 6. Investor reactions to disclosures of late payments

Panel A. Stock returns for longer vs shorter payment period groups

VARIABLES	(1) *Longer Payment Period =1 (obs=1072)*	(2) *Longer Payment Period =0 (obs=1114)*	(3) *Difference Between Columns (1) and (2)*
CAR [0,1]	**0.000**	**-0.001**	**0.001**

Panel B. Stock returns for late vs non-late payer groups

VARIABLES	(1) *Higher Late Payment =1 (obs=1083)*	(2) *Higher Late Payment =0 (obs=1103)*	(3) *Difference Between Columns (1) and (2)*
CAR [0,1]	**-0.003****	**0.002***	**-0.005*****

This table presents cumulative market-adjusted returns for the two days following buyers' payment practices disclosures. The sample includes buyer-days where a buyer discloses its payment practices. Panel A reports cumulative market-adjusted returns for longer and shorter payment period groups where *Longer Payment Period* is an indicator variable that equals 1 if the average payment period in the disclosure is above the median, and 0 otherwise. Panel B reports cumulative market-adjusted returns for late and non-late payer groups where *Higher Late Payment* is an indicator variable that equals 1 if the percentage of invoices not paid within agreed terms in the disclosure is above the median, and 0 otherwise. *, **, and *** denote two-tailed p-values significant at 10%, 5%, and 1%, respectively.

Table 7. The effect of the payment practices disclosure requirement on firm fundamentals

VARIABLES	(1) *Operating Cash Flow*	(2) *Debt*	(3) *Investment*	(4) *Future Profitability*
Post × UK	**-0.040****	**0.014****	**-0.005****	**-0.018***
	(-2.17)	**(1.97)**	**(-2.21)**	**(-1.81)**
Observations	2,059	2,059	2,059	2,059
Controls	Yes	Yes	Yes	Yes
Fixed effects	Buyer, Year	Buyer, Year	Buyer, Year	Buyer, Year
Adjusted R-squared	0.808	0.873	0.846	0.494

This table presents the results from the analysis that tests the effect of the payment practices disclosure requirement on firm fundamentals using a difference-in-differences approach. The sample includes large UK, French, and German buyers that meet the size criteria under the requirement, and the observations are at the buyer-year level. *UK* is an indicator variable that equals 1 for UK buyers, and 0 for French and German buyers. *Post* is an indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise. The dependent variables are the ratio of operating cash flows to current liabilities (*Operating Cash Flow*), the ratio of debt to total assets (*Debt*), the ratio of capital expenditure and R&D expense to total assets (*Investment*), and the ratio of income before extraordinary items to sales in the following year (*Future Profitability*). Standard errors are clustered at the buyer level. *, **, and *** denote two-tailed p-values significant at 10%, 5%, and 1%, respectively.

Table 8. Mitigating firm-specific factors
Panel A. Operating cycle

VARIABLES	(1) Late Payable
Post × UK	-1.832**
	(-2.12)
Post × UK × Operating Cycle	**0.326***
	(1.92)
Observations	251,440
Controls	Yes
Fixed effects	Buyer-Supplier, Year
Controls and Fixed effects × Operating Cycle	Yes
Adjusted R-squared	0.639

Panel B. Trade credit dependence

VARIABLES	(1) Late Payable
Post × UK	-0.210**
	(-2.42)
Post × UK × Trade Credit Dependence	**1.017****
	(2.14)
Observations	251,440
Controls	Yes
Fixed effects	Buyer-Supplier, Year
Controls and Fixed effects × Trade Credit Dependence	Yes
Adjusted R-squared	0.638

This table presents the results from cross-sectional tests for the effect of the payment practices disclosure requirement on late payments. The sample includes large UK, French, and German buyers that meet the size criteria under the requirement, and the observations are at the buyer-supplier-month level. In Panels A and B, the cross-sectional variables are *Operating Cycle*, defined as the natural log of operating cycle in the year, and *Trade Credit Dependence*, defined as the industry-adjusted ratio of accounts payable to costs of goods sold in the year. *UK* is an indicator variable that equals 1 for UK buyers, and 0 for French and German buyers. *Post* is an indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise. The dependent variable is the natural log of late payables (*Late Payable*). Standard errors are clustered at the buyer-supplier level. *, **, and *** denote two-tailed p-values significant at 10%, 5%, and 1%, respectively.

Table 9. Using small UK buyers as the control group

VARIABLES	(1) **Full sample**	(2) **Just above thresholds vs Just below thresholds (wider)**	(3) **Just above thresholds vs Just below thresholds (narrower)**
	Late Payable	*Late Payable*	*Late Payable*
Post × Large	-0.980***	-0.816**	-0.855*
	(-3.19)	(-2.12)	(-1.71)
Observations	77,605	3,795	2,485
Controls	Yes	Yes	Yes
Fixed effects	Buyer-Supplier, Year	Buyer-Supplier, Year	Buyer-Supplier, Year
Adjusted R-squared	0.613	0.533	0.473

This table presents the results from using small UK buyers as the control group. Column (1) presents the result from the difference-in-differences model that tests the effect of the payment practices disclosure requirement on late payments using small UK buyers as the control group. The sample includes all buyers in the UK, and the observations are at the buyer-supplier-month level. In Column (2), the sample is limited to UK buyers with two-year pre-period average annual sales between £0 and £72million (£36million ± £36million), two-year pre-period average total assets between £0 and £36million (£18million ± £18million), or two-year pre-period average number of employees between 0 and 500 (250 ± 250). In Column (3), the sample is limited to UK buyers with two-year pre-period average annual sales between £21 million and £51million (£36million ± £15million), two-year pre-period average total assets between £3 million and £33million (£18million ± £15million), or two-year pre-period average number of employees between 100 and 400 (250 ± 150). *Large* is an indicator variable that equals 1 for UK buyers that meet the size criteria under the requirement, and 0 for UK buyers that do not meet the size criteria. *Post* is an indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise. The dependent variable is the natural log of late payables (*Late Payable*). Standard errors are clustered at the buyer-supplier level. *, **, and *** denote two-tailed p-values significant at 10%, 5%, and 1%, respectively.

Table 10. Robustness tests
Panel A. Using buyer-year level observations

VARIABLES	(1) *Late Payable*
Post × UK	**-0.407****
	(-2.00)
Observations	2,092
Controls	Yes
Fixed effects	Buyer, Year
Adjusted R-squared	0.645

Panel B. Using buyer-supplier pairs with at least 1, 6, and 12 months in the pre- and post-periods

	(1) **Buyer-supplier pairs with at least 1 month in the pre- and post-periods**	(2) **Buyer-supplier pairs with at least 6 months in the pre- and post-periods**	(3) **Buyer-supplier pairs with at least 12 months in the pre- and post-periods**
VARIABLES	*Late Payable*	*Late Payable*	*Late Payable*
Post × UK	**-0.131****	**-0.137****	**-0.158****
	(-2.18)	**(-2.14)**	**(-2.08)**
Observations	218,160	193,005	157,387
Controls	Yes	Yes	Yes
Fixed Effects	Buyer-Supplier, Year	Buyer-Supplier, Year	Buyer-Supplier, Year
Adjusted R-squared	0.627	0.636	0.648

Panel C. Using the percentage of late payables as the dependent variable

	(1) **Buyer-Supplier-Month Level**	(2) **Buyer-Year Level**
VARIABLES	*% Late Payable*	*% Late Payable*
Post × UK	**-0.012****	**-0.047****
	(-2.14)	**(-2.20)**
Observations	240,242	2,092
Controls	Yes	Yes
Fixed effects	Buyer-Supplier, Year	Buyer, Year
Adjusted R-squared	0.418	0.499

This table presents the results from various robustness tests. The sample includes large UK, French, and German buyers that meet the size criteria under the requirement. *UK* is an indicator variable that equals 1 for UK buyers, and 0 for French and German buyers. *Post* is an indicator variable that equals 1 for observations whose fiscal years begin after April 2017, and 0 otherwise. Panels A, B, and C estimate Equation (1) at the buyer-year level, using alternative sample selection criteria, and with the percentage of late payables as the dependent variable, respectively. Standard errors are clustered at the buyer-supplier level for the buyer-supplier-month level analysis and at the buyer level for the buyer-year level analysis, respectively. *, **, and *** denote two-tailed p-values significant at 10%, 5%, and 1%, respectively.