Singapore Management University

Institutional Knowledge at Singapore Management University

Research Collection School Of Accountancy | School of Accountancy

4-2022

Regulatory interventions in response to noncompliance with mandatory derivatives disclosure rules

Neil BHATTACHARYA
Southern Methodist University

Hye Sun CHANG
Singapore Management University, hschang@smu.edu.sg

Raluca CHIOREAN
Lehigh University

Follow this and additional works at: https://ink.library.smu.edu.sg/soa_research

 Part of the Accounting Commons

Citation

BHATTACHARYA, Neil; CHANG, Hye Sun; and CHIOREAN, Raluca. Regulatory interventions in response to noncompliance with mandatory derivatives disclosure rules. (2022). *Review of Accounting Studies*. 28, 2196-2232.

Available at: https://ink.library.smu.edu.sg/soa_research/1969

This Journal Article is brought to you for free and open access by the School of Accountancy at Institutional Knowledge at Singapore Management University. It has been accepted for inclusion in Research Collection School Of Accountancy by an authorized administrator of Institutional Knowledge at Singapore Management University. For more information, please email cherylds@smu.edu.sg.

Regulatory Interventions in Response to Non-Compliance with Mandatory Derivatives Disclosure Rules

Neil Bhattacharya‡
Cox School of Business
Southern Methodist University
neilb@cox.smu.edu

Hye Sun Chang
School of Accountancy
Singapore Management University
hschang@smu.edu.sg

Raluca Chiorean
College of Business
Lehigh University
rac516@lehigh.edu

December 2021

We are especially grateful to Lakshmanan Shivakumar (Editor), Thomas Linsmeier and an anonymous reviewer for many helpful suggestions. In addition, we would like to thank Sean Cao, Qiang Cheng, Daniel Cohen (SMU Accounting Research Summer Camp discussant), Jenna D'Adduzio (AAA discussant), Russ Hamilton, Doug Hanna, Xiumin Martin, Susan Riffe, Srini Sankaraguruswamy, Samuel Tan, Yuan Zhang, Youli Zou, participants at the 2019 SMU Accounting Research Summer Camp, 2019 European Accounting Association annual meeting, 2019 American Accounting Association annual meeting, and seminar participants at the Lehigh University, Seoul National University, Southern Methodist University and Yonsei University for numerous constructive comments. Hye Sun Chang gratefully acknowledges the research grant under Singapore Ministry of Education (MOE) academic research Tier 1.

‡Corresponding author: Cox School of Business, Southern Methodist University, 6212 Bishop Blvd., Dallas, Texas 75275.

Electronic copy available at: https://ssrn.com/abstract=3979231

Abstract

We investigate regulatory actions in response to violations of mandatory derivatives disclosure rules (*SFAS 161*) and the outcomes of such regulatory interventions using a hand-collected sample of derivatives disclosures. Derivatives are used by nearly two-thirds of U.S. non-financial firms, and they are one of the most complex types of financial contracts. Consequently, inadequate derivatives disclosures could pose significant challenges to financial statement users in assessing the risk and financial health of enterprises. First, we document that firms with high proprietary costs and agency costs are less likely to comply with *SFAS 161*. Next, by examining derivatives-related SEC comment letters (CLs), we further show that such non-compliance significantly increases the likelihood of receiving a CL. We also find that the CL resolution process is longer for firms with strong proprietary motivations than for those with strong agency incentives. Finally, we find that compliance with regard to derivatives disclosures following the CL resolution improves for firms with high agency costs, but *not* for firms with high proprietary costs. Collectively, our results imply that when derivatives-related proprietary costs are high, benefits of non-compliance likely outweigh the costs. Moreover, the SEC's review effectiveness depends crucially on whether firms' initial motivation for non-compliance is proprietary versus agency.

Keywords: Mandatory disclosures; derivatives; proprietary costs; agency costs; SEC comment letters

JEL Classification: G32; G38; M41

Electronic copy available at: https://ssrn.com/abstract=3979231

1 Introduction

Although there are costs to violating mandatory disclosure rules, firms do not always comply with obligatory reporting requirements.[1] Extant research reveals proprietary and agency motivations behind non-compliance with mandatory disclosures.[2] In this study, we investigate regulatory actions in response to violations of mandatory disclosure rules and the outcomes of such regulatory interventions. Specifically, we investigate the consequences of not complying with disclosures mandated by *SFAS 161* (*Disclosures about Derivatives Instruments and Hedging Activities*) by examining derivatives-related SEC comment letters (CLs).

We choose the derivatives setting for our inquiry for the following reasons. First, the increasingly pervasive influence of derivatives instruments and the sheer size of these contracts make the derivatives setting as important and relevant as any other financial disclosure settings.[3] Second, derivatives disclosures reveal sensitive information that can jeopardize a company's competitive position (e.g., Zou 2016; Hoang and Ruckes 2017). Therefore, there must be strong incentives to withhold certain derivatives information. Third, derivatives are highly complex financial contracts, and even experts, such as sell-side analysts, struggle to fully comprehend the earnings implications of derivatives (Chang et al. 2016). If managers feel that the complexity of *SFAS 161* disclosures and their inside knowledge lower the odds of detection and sanction, they may be inclined to withhold information when the benefits of omission are high.

[1] For example, *Regulation S-K* (*Reg S-K*), mandated by the Securities and Exchange Commission (SEC), requires firms to report the identities of major customers, but Ellis et al. (2012) find that only 45% of their sample firms fully comply. *SFAS 133* requires companies to disclose the amount of AOCI from cash flow hedges expected to be reclassified into net income in the next year. However, Zou (2016) finds that such information is disclosed in only 44% of her sample observations from the U.S. airline industry.

[2] Robinson et al. (2011) report that non-compliance with the SEC's mandatory executive compensation disclosures is positively associated with excess CEO compensation (a proxy for agency cost). Ellis et al. (2012) observe proprietary motives behind non-compliance with *Reg S-K*.

[3] Derivatives affect major components of accounting earnings, such as sales, cost of goods sold, interest expense, research and development (R&D) expenditure, unrealized holding gains/losses, among others. Estimates of notional market size of derivatives exceed $640 trillion (BIS 2019).

Electronic copy available at: https://ssrn.com/abstract=3979231

Proprietary and agency motives for non-compliance arise in the derivatives disclosure setting as well. Hedge disclosures could be used by potential entrants to learn about firm/industry profitability (Hoang and Ruckes 2017), giving rise to proprietary concerns. Further, potential predators could use financial information in derivatives in predatory pricing and non-price competitions (Bernard 2016). Agency cost is relevant because derivatives disclosures may signal that managers are not managing risks efficiently or engaging in excessive risk taking and speculative activities, prompting managers to withhold certain derivatives disclosures.

Given that the *SFAS 161* setting creates powerful incentives for non-compliance, it is important to investigate the consequences of violating this mandate and the ultimate effectiveness of regulatory interventions. First, we examine to what extent violations lead to regulatory scrutiny. The Sarbanes-Oxley Act of 2002 (SOX) requires the SEC to undertake a review of every registrant at least once every three years. Thus, withholding required disclosures should increase the odds of regulatory intervention in the post-SOX period. Prior research also suggests that signs of irregularity (restatements, amendments, high return volatility) and non-compliance invite regulatory attention (e.g., Ettredge et al. 2011; Cassell et al. 2013; Johnston and Petacchi 2017). Therefore, we expect that a failure to comply with the requirements of *SFAS 161* will increase the likelihood of receiving a CL from the SEC.

Next, we turn our attention to the effectiveness of SEC interventions. We submit that there could be asymmetric responses to SEC reviews depending on firms' initial incentive for non-compliance—proprietary vis-à-vis agency. There is evidence that firms with higher proprietary cost generally enjoy support from the stakeholders (e.g., investors, board, auditor) to limit disclosures to safeguard proprietary secrets (e.g., Grewal et al. 2018; Enache et al. 2020). Armed with such support, these firms may negotiate more aggressively with the SEC and likely be more successful in containing their disclosures. In contrast, for firms with higher agency costs, the SEC review may actually shine a spotlight on the prevailing agency problems, and may invite greater

Electronic copy available at: https://ssrn.com/abstract=3979231

scrutiny from the stakeholders. Hence, firms with higher agency cost are more likely to accede to regulators' demand and expand disclosures to a greater extent.

We analyze a hand-collected sample of 2,393 firm-year observations from 2009 through 2014. We start from 2009 because *SFAS 161* became effective for fiscal years beginning after November 15, 2008. We carefully go through the *SFAS 161* disclosures and manually assign a score ranging from 0 through 10 to ascertain the degree of conformity, with higher scores indicating greater compliance with the standard. We are also careful to note when a firm states immateriality as a reason for non-disclosure because *SFAS 161* does not mandate disclosure if a firm's derivatives use is immaterial. Hence, we do not penalize firms for non-disclosure due to immateriality.

We observe that only 49% of derivatives users during our sample period fully comply with the disclosure requirements of *SFAS 161*. As predicted, we find that firms with high proprietary cost and high agency cost are less likely to comply with mandated derivatives disclosures. We go on to investigate the regulatory responses to non-compliance with *SFAS 161*. We observe that a failure to conform significantly increases the likelihood of receiving a SEC CL. We further find that the CL resolution takes significantly longer for the proprietary motivation relative to the agency motivation. In addition, we notice that the *SFAS 161* disclosure scores increase significantly after the resolution of a CL for firms that exhibit higher agency cost, while the scores do not change significantly for firms associated with higher proprietary cost. Consistent with our expectation, these results imply that firms with higher proprietary cost are successful in negotiating with the regulators about limiting derivatives-related disclosures, while those with higher agency cost are not.

Finally, we investigate the capital market effects of non-compliance and regulatory interventions. Prior research (Campbell 2015; Campbell et al. 2021b) documents that investors fail to incorporate into their expectations the negative association between unrealized gains/losses on

Electronic copy available at: https://ssrn.com/abstract=3979231

cash flow hedges and future earnings, but this mispricing disappears after *SFAS 161* as enhanced disclosures improve investors' understanding of hedging activities. Although we find no evidence of mispricing in our full sample (consistent with prior work), we do find that mispricing persists in a sample of firms that do not fully comply with *SFAS 161*. Digging deeper, we observe this mispricing disappears in a subset of CL firms with high agency cost after the CL resolution as these firms significantly expand their derivatives disclosures in response to the regulatory scrutiny. In contrast, mispricing continues to linger in other CL firms that do not improve derivatives disclosures even after the CL resolution. Collectively, these results suggest that the regulatory review process is only modestly effective in improving the informativeness of derivatives disclosures.

Our investigation yields several important insights. First, the evidence that firms with higher proprietary cost take longer to resolve a CL and do not appreciably improve their disclosure scores even after the resolution of a CL implies that when proprietary cost stemming from derivatives use is high, the benefit of non-compliance (i.e., safeguarding proprietary secrets) may outweigh the costs of insufficient disclosures (e.g., higher information asymmetry, regulatory sanctions). The same cannot be said about firms with higher agency cost. These firms quickly come to a resolution and improve conformity with *SFAS 161* following the regulatory scrutiny.

Second, our study provides insight into the efficacy of regulatory actions in response to violations of obligatory disclosure rules. Prior research finds that firms are sensitive to regulatory scrutiny, and the SEC's review process is generally effective.[4] In contrast, our results imply that the SEC's review effectiveness depends crucially on firms' intention for non-compliance—the

[4] For example, Bozanic et al. (2017) find that firms enhance their disclosures following a CL, but these modifications are attenuated for firms that "push back" on regulator's demands for expanded disclosures by submitting *Rule 406, Confidential Treatment Requests*. Johnston and Petacchi (2017) find that CL resolution is associated with reduced information asymmetry (adverse selection components of the bid-ask spread) and higher earnings response coefficients (ERCs). Duro et al. (2019) document a 10% increase in ERCs following public CL reviews, and find that the average increase in ERCs persists for the next two years.

Electronic copy available at: https://ssrn.com/abstract=3979231

regulatory scrutiny is effective in improving disclosures if the initial motive for non-compliance is agency, but *not* if the motivation for non-compliance is proprietary.

Third, we contribute to the literature that examines the relation between proprietary cost and corporate disclosures. Extant evidence on the relation between proprietary cost and disclosures (both voluntary and mandatory) is mixed (e.g., Bamber and Cheon 1998; Botosan and Stanford 2005; Verrecchia and Weber 2006; Robinson et al. 2011). Beyer et al. (2010) and Lang and Sul (2014) contend that an important reason for the conflicting results is that existing proxies are too broad and generic, and not sufficiently economically connected to the specific disclosures examined. Consequently, we do not use generic proxies of proprietary cost (such as, intangible intensity or product market competition). Instead, using proprietary cost proxies that are directly and economically connected to derivatives use, we document a clear negative relation between proprietary cost and the degree of non-compliance with mandatory derivatives disclosures.

2 Background and hypothesis development

2.1 Evolution of derivative accounting and reporting standards

Before *SFAS 161* was promulgated, derivatives accounting and disclosures were guided by *SFAS 133*. The standard requires that all derivatives be reported as assets or liabilities on the balance sheet at fair value with unrealized gains/losses due to changes in fair value recognized in the income statement (FASB 1998). Under certain conditions, *SFAS 133* permits hedge accounting to be applied to a derivative and the exposure it hedges, and the treatment primarily affects the income statement.[5] However, there is limited evidence that *SFAS 133* provides incremental value-

[5] The standard permits hedge accounting whereby a derivative can hedge exposures to: (i) changes in the fair value of a recognized asset/liability or a firm commitment; (ii) variability in cash flows of a recognized asset/liability or a forecasted transaction; or (iii) currency risk related to foreign activities (Chang et al. 2016). Under the standard, hedge accounting enables gains/losses on hedging instruments to be recognized in earnings in the same period as offsetting losses/gains on hedged items (Ramirez 2015). Unrealized gains/losses that result from transactions not qualifying for hedge accounting or from hedge ineffectiveness are recognized in earnings as they occur (i.e., no offset).

Electronic copy available at: https://ssrn.com/abstract=3979231

relevant information to the market (e.g., Ahmed et al. 2011). Over time, concerns mounted that *SFAS 133* disclosures may not be sufficient for an adequate understanding of the impact of derivatives on the financial statements.

Recognizing these concerns, the Financial Accounting Standards Board (FASB) issued *SFAS 161*, effective for fiscal years beginning after November 15, 2008. The standard does not change the accounting for derivatives, but significantly expands the disclosure requirements (FASB 2008). The standard requires the following disclosures: (i) level of derivative activities; (ii) fair value amounts of derivatives, hedged items and related gains/losses; (iii) and the effects of derivatives on financial position, operations, and cash flows. Further, entities are required to report fair values and gains and losses in a tabular format and disaggregate them further by underlying risk (foreign exchange, interest rate, commodity price, equity price, or credit risk), accounting designation (as cash flow, fair value, net investment hedges, or non-designated derivatives), and income statement and balance sheet line items affected by derivatives use. In addition, firms are encouraged to provide qualitative disclosures about the purpose for using derivatives.

2.2 Testable hypotheses

Drawing on prior research (e.g., Wagenhofer 1990; Cao et al. 2018a), it appears that two motivations for guarding proprietary secrets arise in the derivatives disclosure setting: (i) fear of potential entrants and (ii) fear of predation. Fear of potential entrants is a concern because aspiring entrants could learn about firm/industry profitability from derivatives disclosures (Zou 2016; Hoang and Ruckes 2017).[6] Predation risk is also a concern because financial information revealed

[6] In a comment to the *SFAS 161* exposure draft, Edison Electric expressed concern that disclosing information about forecasted purchases of oil when the forecasted purchase is hedged may divulge sensitive information to current and future competitors about the company's cost structure and hence profitability.

Electronic copy available at: https://ssrn.com/abstract=3979231

via derivatives disclosures can be used by potential predators to lower prices or increase expenditures on non-price competition with the goal of forcing a rival to exit.[7]

Agency considerations also explain non-compliance with respect to derivatives disclosures. Managers may withhold required derivatives disclosures if they feel that these disclosures could reveal that they are hedging risks ineffectively, or engaging in risky, speculative activities. These agency issues arise because the stringent criteria to qualify for hedge accounting ensure that only the most effective hedges meet those requirements. Thus, ineffective hedges or derivatives used allegedly for purely speculative purposes do not qualify for hedge accounting treatment and hence, could expose managerial inefficiency or excessive risk-taking by managers. The above arguments motivate the following two directional hypotheses:

H1a: The degree of non-compliance with derivatives disclosures mandated by SFAS 161 is greater for firms with higher proprietary costs.

H1b: The degree of non-compliance with derivatives disclosures mandated by SFAS 161 is greater for firms with higher agency costs.

We next examine the regulatory response to non-compliance with the provisions of *SFAS 161*. Specifically, we investigate the extent to which non-compliance triggers a CL from the SEC. As required by SOX, the SEC undertakes a review of every registrant at least once every three years. The SEC staff examines whether the financial statements and related disclosures comply with the applicable accounting standards and reporting guidelines. Thus, not fully conforming to reporting guidelines is likely to attract regulatory attention in the post-SOX period. Prior research also suggests that the Commission is generally vigilant and signs of irregularity and non-conformity increase the likelihood of regulatory scrutiny. Johnston and Petacchi (2017) find that

[7] The following anecdotal example supports this concern. Hershey's CEO expresses concern, in a testimony to the Senate Banking, Housing and Urban Affairs Committee, that if Hershey suffers losses on cocoa derivatives and discloses these losses, competitors would know that the firm's cost is higher than the market cost and can use that information to price products and gain market share (Wolfe 1997).

Electronic copy available at: https://ssrn.com/abstract=3979231

the receipt of a CL is more likely among companies making restatements or amendments, or engaging non-Big 4 auditors. Cassell et al. (2013) document that high return volatility increases the probability of receiving a CL. Ettredge et al. (2011) examine compliance with item 4 of 8-K filings, and report that firms making the required disclosures did not receive a SEC CL. They conclude that the SEC review process is generally efficient in identifying non-disclosing firms. Hence, we propose the following directional hypothesis:

H2: The degree of non-compliance with the provisions of SFAS 161 is positively associated with the likelihood of receiving a CL from the SEC.

We next examine the effectiveness of SEC reviews and whether it varies systematically for firms with higher proprietary cost vis-à-vis those with higher agency cost. Limited budgetary and staffing resources constrain the SEC's monitoring and enforcement capabilities (e.g., Cox et al. 2003; Kedia and Rajgopal 2011). Bozanic et al. (2017) find that firms often resist regulators' demand for expanded disclosures by negotiating or by submitting *Rule 406*, *Confidential Treatment Request*. Negotiations can be particularly effective in the derivatives setting due to the inherent complexity and information asymmetry associated with derivatives.[8] If managers feel that the complexity of derivatives disclosures and their inside knowledge increase the odds of successful negotiations, they may be inclined to curtail disclosures when the benefits of omissions (e.g., safeguarding proprietary information) are high. Our reading of the CLs affords us some qualitative insights into the negotiation process. One type of negotiations takes the form of appealing to the subjectivity and lack of guidance in the GAAP rules and arguing that the alleged non-disclosure does not violate any mandate.[9] Also, firms often negotiate with the SEC staff that

[8] Derivatives are one of the most complex types of financial contracts and even experts struggle to understand the full implications of these instruments (Chang et al. 2016). Consequently, ascertaining the degree of non-compliance requires expert knowledge, and many SEC reviews do not involve specialists (e.g., Robinson et al. 2011). Moreover, financial engineering has led to the development of new and innovative derivatives, and it is often difficult to determine how the current standard applies to these new and novel instruments.

[9] For example, consider the following excerpt from *Cumulus Media Inc*.'s response (dated May 21, 2010) to the SEC comment letter issued on May 12, 2010: We have determined the put option with Clear Channel requires physical

Electronic copy available at: https://ssrn.com/abstract=3979231

the information requested could compromise their competitive positions, and the Commission is sometimes sympathetic to such concerns and suggests alternative disclosure approaches.[10]

We expect firms with higher proprietary costs to negotiate harder with the regulators to contain proprietary secrets because these firms likely enjoy greater support from the stakeholders (e.g., investors, board, auditor). Using a sample of biotechnology firms, Enache et al. (2020) document that firms with experts serving on the board are less likely to disclose information about early stages of research efforts. Also, events that tend to compromise proprietary information are met with investors' disapproval. Grewal et al. (2018) find a negative market reaction to the adoption of a European Union directive that increases mandatory non-financial disclosures about environmental matters, and the effect is further accentuated in firms with higher proprietary costs. Armed with support from the stakeholders, firms with higher proprietary cost may hire consultants and lawyers to be more effective at deflecting regulator's attempts to expand disclosures (Bozanic et al. 2017). Protracted negotiations likely prolong the resolution process. Thus, we predict that firms with higher proprietary cost have a longer resolution process to resolve a CL. In contrast, firms with higher agency cost do not enjoy such support from investors and the board. On the contrary, the regulatory attention may actually alert stakeholders about the prevailing agency conflicts and attract further scrutiny. Hence, we propose the following directional hypothesis:

H3a: Firms with higher proprietary costs experience a longer CL resolution process relative to firms with higher agency costs.

settlement (*i.e.*, transfer of stations for cash), and therefore does not meet the provision for net settlement as defined in ASC 815-10-15. However, S99-4 of ASC 815-10 provides guidance for the accounting treatment for written options and states, "The SEC Observer noted that the SEC staff's longstanding position that written options initially should be reported at fair value and subsequently marked to fair value through earnings." As a result, we concluded the put option should be bifurcated from the Transaction and treated as a separate freestanding liability (*i.e.*, a freestanding derivative) and marked to market in accordance with this accounting guidance.

[10] Consider the following excerpt from the SEC's response to *Keurig Green Mountain Inc.*'s explanation for non-disclosure, dated April 23, 2009: We understand from your response to prior comment 3 that you would prefer not disclosing to investors the percentage of your expected annual green coffee requirements covered by futures contracts because coffee purchases represent a significant cost. We [however] believe that you should quantify and separately tabulate pounds of coffee covered by both fixed price and variable price purchase commitments and futures contracts, to allow readers to understand your exposure to changes in the market price of this commodity.

Electronic copy available at: https://ssrn.com/abstract=3979231

Since firms with higher proprietary cost are expected to negotiate more aggressively with the regulators, they are likely more successful in thrashing out better terms and limiting disclosures. Whereas, firms with higher agency cost not only face greater regulatory scrutiny, but also likely face greater pressure from their stakeholder to be more transparent. These firms, therefore, are likely to be more compliant with *SFAS 161* requirements and expand their disclosures to a greater extent.[11] Thus, our next directional prediction is as follows:

H3b: Firms with higher agency costs improve their derivatives disclosure scores after the resolution of SEC CLs, while firms with higher proprietary costs do not.

Since firms with higher agency cost are expected to improve their disclosures after the CL resolution, while firms with higher proprietary cost are unlikely to do so, we next investigate whether the asymmetric response to the regulatory intervention leads to differential informativeness with respect to derivatives disclosures for these two groups of firms in the post-CL resolution period. Higher quality disclosures and regulations designed to enrich firms' information environments (e.g., Regulation Fair Disclosure and SOX) tend to mitigate mispricing (Hope et al. 2008; Drake et al. 2009; Lee et al. 2014). Related to the derivatives setting, Makar et al. (2013) find that *SFAS 133* disclosures are inadequate as investors underestimate the future cash flow implications of hedge adjustments reported in Other Comprehensive Income (OCI). Likewise, Campbell (2015) documents that unrealized gains/losses on cash flow hedges are negatively associated with future earnings, but investors fail to incorporate this association into their expectation during the *SFAS 133* disclosure regime. However, Campbell et al. (2021b) report that this mispricing does not persist after *SFAS 161* as enhanced disclosures set forth in the standard improve investors' understanding of firms' hedging activities. Since our sample period starts after *SFAS 161* became effective, we do not expect mispricing to persist in our full sample. However,

[11] Descriptive evidence from our CL sample provides preliminary support for this notion. We find that firms characterized by high proprietary costs amend their financial statements 23% of the time after a derivatives-related CL resolution. The corresponding percentage for firms with high agency costs is nearly double (about 45%).

Electronic copy available at: https://ssrn.com/abstract=3979231

mispricing could linger in non-compliance firms, especially those who do not appreciably improve their derivatives disclosures after the CL resolution. Thus, mispricing is unlikely to persist in firms with high agency cost because these firms are expected to expand their disclosures after the CL resolution, while prices could be less than efficient in other sub-samples. These expectations are formalized in our last hypothesis:

H4: Mispricing with regard to derivatives information does not persist in firms with higher agency cost, while it persists in sub-samples that do not improve derivatives disclosures after the CL resolution.

3 Data and sample selection

We collect our data from Compustat, CRSP, I/B/E/S and the Seek Edgar database. Panels A and B of Table 1 outline our sample selection procedure. We start with 1,000 largest firms based on market capitalization in 2001. We focus on larger firms because derivatives use is less frequent in small and mid-size firms. Although our primary sample period covers 2009 through 2014 as *SFAS 161* became effective from 2009, we select firms based on 2001 market cap to check whether these firms were derivatives users prior to 2009. Non-compliance by prior derivatives users is more likely to be driven by strategic reasons (e.g., proprietary or agency considerations) as opposed to inadvertent omissions and mistakes. We confirm that our sample firms reported derivatives disclosures at least once prior to 2009 following the *SFAS 133* guidelines. We collect data for the initial sample of 1,000 firms over the period of 2001 to 2014 based on the following four criteria: (i) it is a publicly traded domestic company, (ii) it is a non-financial firm, (iii) it is not a subsidiary of another company, and (iv) the company has more than three years of consecutive financial information. These filters result in a sample of 10,904 firm-years. Out of this panel, 6,911 firm-years fall before the adoption of *SFAS 161*, resulting in a sample of 3,993 firm-years in the post-*SFAS 161* period. We next eliminate 958 firm-years because these firms did not report derivatives

Electronic copy available at: https://ssrn.com/abstract=3979231

during our 2009 to 2014 sample period.[12] Finally, we delete 642 firm-years due to insufficient data for calculating the various explanatory and control variables. Hence, our main sample contains 2,393 firm-years.

We test our hypotheses related to SEC CLs on a smaller sub-sample (Panel B of Table 1). From our main sample, we delete 1,522 firm-years because these firms did not receive derivatives-related CLs. Thus, tests of hypotheses related to SEC CLs are based on a sample of 871 firm-years.

4 Definition of key variables

4.1 Measurement of the degree of non-compliance with *SFAS 161*

We observe wide variations with respect to compliance with the requirements of *SFAS 161*. We find that only 49% of our hand-collected sample firms fully comply with the regulation requirements. Among those who do not fully comply, some firms disclose extensively, while others disclose only a modest amount. Curiously, 8% of our sample firms do not provide any derivatives-related disclosures even though they mention in their 10-Ks that they use derivatives, nor do they specify anything about their materiality thresholds. In order to quantify the degree of non-compliance, we construct a disclosure score (*SCORE*) for each firm-year observation. We comb through 10-K footnotes labeled as "derivatives and hedging activities," "financial instruments and derivatives" or "derivatives and fair value" to collect derivatives disclosure items. We classify each item as a balance sheet disclosure or an income statement disclosure.

Appendix A outlines the steps we follow to construct the disclosure score. For balance sheet disclosures, we assign a score ranging from 0 (fair value is not disclosed) to 5 (fair value is disclosed and disaggregated by type of derivatives, type of hedge, and balance sheet line item affected). Likewise, an income statement disclosure takes values from 0 (gain/losses not disclosed)

[12] We use an extensive set of keywords related to derivatives use to search each 10-K to ascertain whether a firm is using derivatives. Note that we retain firms in our sample even if they do not provide any derivative disclosures but mention in their 10-Ks that they are using derivatives. We assume that these firms (about 8% of our sample) are using derivatives but not providing any disclosure required by *SFAS 161*.

Electronic copy available at: https://ssrn.com/abstract=3979231

to 5 (gain/losses are disclosed and disaggregated by type of derivative, type of hedge, and income statement line item affected). Consequently, the comprehensive disclosure score assigned to a firm-year observation can range from 0 to 10.[13]

It is, however, important to note that non-disclosure does not necessarily signal non-compliance. We ensure that our scoring mechanism captures non-compliance in the following ways. First, we carefully determine the various disclosure categories that are applicable to a firm. If a particular disclosure classification does not apply to a firm, we code as if the firm makes *full* disclosure with respect to that classification in order to provide full credit to the firm. That way, a lower score will result *only* if a firm is disclosing less than what it is required to disclose, i.e., our scoring scheme is designed to capture non-compliance and not merely less disclosure.[14]

Furthermore, we are also careful to note whether a firm states that its derivatives use does not pass the materiality threshold.[15] This is important because we should not penalize firms that do not disclose due to immateriality. We accommodate non-disclosure or partial disclosure due to immateriality in two different ways. First, using the materiality information disclosed in 10-Ks, we construct a control variable called *IMMATERIAL*, and include this variable in all of our

[13] We exclude disclosures of derivatives gains and losses in OCI for cash flow hedges from the computation of *SCORE* due to the following reason. *SFAS 161*, effective from 2009, requires firms to disclose cash flow hedge gain/loss amounts deferred to OCI and transferred from OCI to earnings in a footnote accompanying the financial statements. In addition, *ASU 2011-05*, effective for fiscal periods beginning after Dec 15, 2011, requires firms to separately report each component of OCI and to report the gain/loss amounts transferred from OCI to earnings (including those related to cash flow hedges) in the financial statements (FASB 2011). Since we cannot disentangle the effect of one from the other, we decide to exclude disclosures of derivatives gains and losses in OCI from our scoring scheme. However, in untabulated analyses, we repeat all of our tests including these OCI disclosures, and our inferences are unchanged.

[14] We empirically check whether our scoring mechanism is able to distinguish non-compliance from less disclosure. Firms with higher (lower) levels of derivatives use likely have higher (lower) levels of derivatives disclosures. If our scoring mechanism is simply capturing derivatives usage, we would expect a significantly positive correlation between derivatives usage and *SCORE*. We measure derivatives usage by the magnitude of fair value of derivatives. Fair value of derivatives is computed as the sum total of derivatives assets (*derac* + *deralt*) and derivatives liabilities (*derlc* + *derllt*). We find that the correlation between derivatives usage and *SCORE* is negative (–0.122) and insignificant, suggesting that *SCORE* quantifies non-compliance and *not* merely less disclosure.

[15] For example, a firm provides the following description, "the approximate fair values of these foreign currency derivative contracts were insignificant." The statement infers that the impact of derivatives on the balance sheet is immaterial. Similarly, another firm reports, "the related impact on the consolidated statements of operations was not material." A sentence such as this suggests immaterial impact on the income statement.

Electronic copy available at: https://ssrn.com/abstract=3979231

tabulated analyses.[16] Alternatively, if a firm does not comply with the requirements of *SFAS 161*, but mentions immateriality as the reason for non-disclosure, we code as if the firm makes full disclosures with respect to the applicable categories. Our untabulated analyses using this alternative scoring scheme yield identical inferences.

4.2 Empirical proxies of proprietary cost and agency cost

As mentioned before, extant research contends that the inconclusive evidence on the relation between proprietary costs and voluntary corporate disclosures is largely attributable to the use of generic proxies that are not related to the specific disclosures examined (Beyer et al. 2010; Lang and Sul 2014). In light of these concerns, we develop two proprietary cost proxies and two agency cost proxies that are directly connected to derivatives functions, and our main analyses are based on these four proxies. We test our hypotheses using all pairwise combinations among these four proxies of proprietary and agency costs and obtain entirely consistent results.

4.2.1 Proprietary cost measures

As explained in Sec 2.2, proprietary costs may arise in our setting from fear of potential entrants and predation risk from existing competitors. We employ proxies that likely capture these aspects of proprietary concerns arising out of mandatory derivatives disclosures. Our first proxy (labeled as *HEDGE_SALES*) is an indicator variable that equals 1 if the firm is a foreign exchange (FX) risk-hedger or a commodity price (CP) risk-hedger, and *not* an interest rate (IR) risk-hedger. Thus, this variable takes the value of 1 if the firm hedges against an adverse movement in inventory or sales price, and it is 0 otherwise. The intuition behind this proxy is that firms use FX or CP derivatives to hedge future sales price or inventory cost risk exposures, while IR derivatives hedge

[16] Definition of *IMMATERIAL* is provided in Appendix B.

Electronic copy available at: https://ssrn.com/abstract=3979231

variability in interest payment streams or changes in the fair value of debt.[17] Thus, firms using FX or CP derivatives run the risk of divulging sensitive information about future revenue and cost structures that can be exploited by potential entrants and predators. In contrast, firms use IR derivatives to hedge future debt-related costs. For non-financial firms (our sample includes *only* non-financial companies), debt-related disclosures provide no information about future revenue, cost or profitability, and hence, do not divulge information of proprietary nature.

Our second proxy of proprietary cost related to derivatives use is the level of hedging within an industry, called *IND_HEDGE*. First, we rank industries, from highest to lowest, based on the number of derivatives users within each industry. *IND_HEDGE* is an indicator variable that takes the value of 1 for firms in the lowest quartile of this distribution, and it takes the value of 0 for firms in the top three quartiles.[18] Firms where *IND_HEDGE* is 1 (i.e., firms in industries with fewer derivatives users) are assumed to have higher proprietary costs, while firms where *IND_HEDGE* is 0 (i.e., firms in industries with frequent derivatives use) are considered to have lower proprietary costs. The rationale behind this measure is as follows. Disclosures of one firm often have spillover effects onto peer firms' information environments (e.g., Baginski and Hinson 2016; Brown et al. 2018). Derivatives disclosures could also provide future profitability information to potential entrants (Zou 2016), and even have a spillover effect across the supply chain (Chen et al. 2021). Therefore, if many firms within an industry use derivatives and make relevant disclosures, the industry information environment will be rich. In such an industry, the proprietary cost of a firm making a derivatives-related disclosure is relatively lower. In contrast, if fewer firms within an industry use derivatives and make the required disclosures, the industry

[17] The assumption has empirical support. Giambona et al. (2018) report that 76% of FX users hedge anticipated transactions/investments, and 63% of FX users hedge contractual (unbooked) commitments. In contrast, 54% of IR users use derivatives to swap from a floating to a fixed rate, while 39% use them to fix the rate/spread of new debt.

[18] We redo this ranking on an annual basis, and there is variation in *IND_HEDGE* values from year to year. As a result, when we introduce industry fixed effects based on 2-digit SIC code in our regression models, *IND_HEDGE* is not perfectly subsumed by industry fixed effects. However, we re-estimate our models without industry fixed effects when *IND_HEDGE* is included as an explanatory variable and our inferences are unchanged.

Electronic copy available at: https://ssrn.com/abstract=3979231

environment with respect to derivatives information will be relatively impoverished. The costs of derivatives disclosures will be higher in such an industry because potential entrants and predators would likely seize upon the information as soon as it is revealed.

4.2.2 Agency cost measures

Our first measure of agency cost is called *NON_HEDGE*. It is an indicator variable that equals 1 if a firm *does not* use hedge accounting in the current year, and it is 0 otherwise. Following is the rationale behind this proxy. The criteria to qualify for hedge accounting are quite stringent, and only the most effective hedges tend to meet these requirements (Pierce 2020). Therefore, by definition, firms that are willing to apply hedge accounting have a relatively smaller proportion of low-quality hedges (i.e., ineffective and/or speculative hedges). Consequently, by default, non-hedge accounting users have a larger proportion of low-quality hedges. Note that this assumption does not preclude the possibility that many non-hedge accounting users contain high quality hedges. We simply posit that a natural corollary of stricter hedge accounting requirements is that hedge accounting users (non-hedge accounting users) have a relatively smaller (larger) proportion of low-quality hedges.[19] Since non-hedge accounting users contain proportionally more ineffective and/or speculative hedges, agency considerations are likely to be stronger for this group.

Our second proxy of agency cost is labeled as *RISK_EXP*. It is an indicator variable that is coded 1 if a firm's change in risk exposure (the difference between risk exposure in the current year and that in the previous year) is in the highest quartile for at least one of the following three categories of risk: interest rate, foreign exchange and commodity price. Thus, *RISK_EXP* is coded 0 if a firm's change in risk is in the lower three quartiles for all three risk exposure categories. The

[19] We run the following sensitivity test using a sub-sample of new derivatives users to validate our assumption. We follow the three-step approach outlined in Zhang (2009) to classify new users into two groups: effective/efficient hedgers (*EH*) and speculative/ineffective hedgers (*SPIN*). The classification is based on a comparison of new users' actual risk exposure with their expected risk exposure in the post-initiation period. See Zhang (2009) for more details. We observe that the percentage of non-hedge accounting users in the *SPIN* category is 58.1, while non-hedge accounting user percentage in the *EH* group is 38.5, and the difference is significant at the 1% level.

Electronic copy available at: https://ssrn.com/abstract=3979231

assumption is that the higher the change in risk exposure, the greater the agency incentive to withhold derivatives-related information. We are using the change in exposure to market risks to control for the underlying level of risk of a company. When used judiciously, derivatives are supposed to reduce exposure to market risks. Firms that use derivatives routinely (as mentioned before, our sample firms are all derivatives users), but still experience a large change in risk exposure, are more likely to be ineffective or speculative users of these instruments. Managers of these firms may have strong incentives to withhold certain derivatives disclosures because these could cast them in a bad light.

4.3 Measures for evaluating regulatory response

We define the following measures to test our hypotheses related to SEC CLs. To examine the extent to which non-compliance triggers a SEC CL, we define a variable called *COMM_LETTER*. It is an indicator variable that equals 1 if a firm receives a derivatives-related SEC staff CL in the current year, and 0 otherwise. Back and forth negotiations with the SEC following the receipt of a derivatives-related CL likely prolong the resolution process. We define a variable called *NO_OF_DAYS* to quantify the length of a CL resolution. It is defined as the number of days from the date the first CL is issued to the date the derivatives issue raised in the CL is successfully resolved.[20] All the study's variables are defined in Appendix B.

5 Research design and empirical results

5.1 Descriptive statistics

Table 2 reports descriptive statistics for our sample. To mitigate the influence of data errors and outliers, we winsorize all continuous variables at the 1% and 99% levels. The mean value of *SCORE* is 7.46. Although some firms do not disclose due to immaterial derivatives use (about

[20] In untabulated analysis, we use an alternative measure for the length of the CL resolution—number of rounds a firm goes through till the resolution of the issues cited in the CL. Our inferences are identical using this alternative measure.

Electronic copy available at: https://ssrn.com/abstract=3979231

3.3%), a mean score of 7.46 implies that a non-trivial proportion does not fully comply with the *SFAS 161* mandates.[21] Table 2 also reports the summary statistics for the outcome variables used in testing our hypotheses related to the SEC CLs. About 22% of our sample firms receive derivatives-related CLs (*COMM_LETTER*), on average. The table also reports that derivatives-related issues in the CLs are resolved in 45.84 days (*NO OF DAYS*), on average. Cassell et al. (2013) report a longer response time. One likely reason for the differences is that we examine the time to resolve just the derivatives-related issues, not the entire CL. Descriptive statistics reported for the other variables are comparable to those shown in prior studies (e.g., Campbell et al. 2021a).

5.2 Motivations for non-compliance with the provisions of *SFAS 161*

5.2.1 Proprietary incentive

We first test whether proprietary cost explains the motivation for withholding mandatory derivatives disclosures. We estimate the following ordered logistic regression:[22]

$$SCORE_{it} = \varphi_0 + \varphi_1 PTY_{it} + \sum_{\rho} \varphi_\rho \, CTRL^{\rho}_{it} + \sum_{k} \varphi_k \, IND^{k}_{it} + \sum_{t} \varphi_t YR^{t}_{it} + \varepsilon_{it} \quad (1)$$

The variable *PTY* assumes two proxies of proprietary cost: *HEDGE_SALES* and *IND_HEDGE*. A significantly negative coefficient (φ_1) on *HEDGE_SALES* and *IND_HEDGE* will indicate that higher proprietary cost is associated with lower *SCORE*.

CTRL denotes the set of control variables included in the model. As mentioned earlier, *IMMATERIAL* controls for the immateriality of derivatives use. We include return on assets (*ROA*) to account for managers' propensity to preemptively disclose bad news (Skinner 1994, 1997). Firms generally increase their disclosures when facing higher litigation risks (e.g., Skinner 1994;

[21] Appendix C shows an example of full derivatives disclosures under *SFAS 161*. In its10-K, *Nike Inc.* discloses fair value (and gains/losses) of derivatives by types of derivatives, types of hedge, balance sheet line items and income statement line items affected.

[22] Since all of our dependent variables are discrete, we use discrete modelling choices (e.g., ordered logit, probit and negative binomial models). However, our inferences are unchanged using ordinary least square estimations.

Electronic copy available at: https://ssrn.com/abstract=3979231

Healy and Palepu 2001). Thus, we include an indicator variable that takes the value of 1 for high litigation risk industries, and 0 otherwise (*LITIGATION*). We include measures of debt (*DEBT*) and stock issuance (*STOCK*) to control for capital market incentives for disclosures (Verrecchia 1983; Jung and Kwon 1988). We include audit fees (*AUDIT_FEE*) to capture whether a firm's disclosure policy is influenced by audit quality (Dunn and Mayhew 2004). Finally, following prior studies (Ali et al. 2014; Cao et al. 2018b), we include market value of equity (*SIZE*), book-to-market ratio (*BM*), analyst following (*FOL*) and institutional ownership (*INST*) to control for other motivations for derivatives disclosures. We cluster standard errors by firm and include industry (*IND*) and year fixed effects (*YR*) in our models.[23]

Table 3 reports the results of estimating Equation (1). The coefficients on *HEDGE_SALES* and *IND_HEDGE* are highly significantly negative, suggesting that the degree of non-compliance with respect to derivatives disclosures is greater for firms with higher proprietary cost after controlling for known factors affecting derivatives disclosure choices. These results support our first directional hypothesis (*H1a*). Hence, unlike prior research, we document a strong negative association between proprietary cost and the extent of derivatives-related disclosures using proprietary cost proxies that are directly tied to derivatives use.[24] To gauge the overall economic effects, we estimate the odds ratio of the coefficients for *HEDGE_SALES* (0.379) and

[23] Although *LITIGATION* is an indicator variable identifying litigious industries, it is not fully subsumed by the industry fixed effects. We follow the classification outlined in Francis et al. (1994) to identify industries with high litigation risk using 4-digit SIC codes. While industry fixed effects are based on 2-digit SIC codes, and these broader categorizations cannot accurately capture the significantly more granular classification of litigious industries. As a result, industry fixed effects do not fully subsume litigation risk classification. For example, household appliances (SIC code 3630) and magnetic and optical recording media (SIC code 3695) have the same industry fixed effect based on the 2-digit SIC code, but the *LITIGATION* variable is set to 1 for the former and 0 for the latter.

[24] One potential validity concern is that *HEDGE_SALES* could represent firms' operating risk as those with higher operating risk are more likely to hedge their sales price or inventory cost using foreign exchange or commodity price derivatives. However, there is no theoretical argument or empirical evidence that would suggest that higher operating risk leads to lower levels of disclosure. Nevertheless, we run the following test to rule out the alternative explanation. We use sales volatility as a proxy for operating risk. It is measured as the standard deviation of quarterly sales for the last two years. We classify a firm into high (low) operating risk category if the firm is above (below) the median value of the sample sales volatility. If *HEDGE_SALES* simply proxies for operating risk, the negative association between *HEDGE_SALES* and *SCORE* should be significantly stronger for the high operating risk category. We, however, find no difference between the two groups with regard to the association between *HEDGE_SALES* and *SCORE*.

Electronic copy available at: https://ssrn.com/abstract=3979231

IND_HEDGE (0.184). These figures indicate that for firms with high proprietary costs, the odds of fully complying with *SFAS 161* are 2.6 (1/0.379) to 5.4 (1/0.184) lower compared to firms with low proprietary costs.

Turning to the control variables, as expected, the variable *IMMATERIAL* is highly significantly negative, suggesting that firms do not have to comply with the *SFAS 161* guidelines if derivatives use is immaterial. In addition, firms with higher litigation risk are less likely to make mandatory disclosures, while firms issuing equity during the year are more likely to comply with mandatory disclosure requirements. We also find that the extent of disclosures is positively associated with market capitalization (*SIZE)* and profitability (*ROA*), as larger and more profitable firms deploy greater resources for the preparation of complex derivatives disclosures. Finally, greater monitoring, proxied by higher institutional ownership (*INST*) and better audit quality (*AUDIT_FEE*), is positively associated with the degree of mandated derivatives disclosures.

5.2.2 Agency incentive

Our next test explores the relation between agency cost and firms' decision to not fully comply with the guidelines of *SFAS 161*. We use the following ordered logistic regression model to examine this relationship:

$$SCORE_{it} = \theta_0 + \theta_1 AGY_{it} + \sum_{\rho} \theta_\rho CTRL_{it}^{\rho} + \sum_{k} \theta_k IND_{it}^{k} + \sum_{t} \theta_t YR_{it}^{t} + \varepsilon_{it} \qquad (2)$$

The variable *AGY* assumes two alternative measures of agency cost: *NON_HEDGE* and *RISK_EXP*. If non-compliance is attributable to agency issues, we expect θ_1 to be significantly negative. All other variables are unchanged from Equation (1).

Table 4 reports the results of estimating Equation (2). Both of our agency cost measures, *NON_HEDGE* and *RISK_EXP*, are significantly negatively associated with *SCORE* after controlling for known determinants of disclosure choices. Based on the odds ratios for the

Electronic copy available at: https://ssrn.com/abstract=3979231

coefficients on *NON_HEDGE* (0.106) and *RISK_EXP* (0.678), firms with high agency costs are 1.5 (1/0.678) to 9.4 (1/0.106) times less likely to fully comply with *SFAS 161* than those with low agency costs. Thus, agency consideration is indeed a motivation for non-compliance with mandatory requirements of *SFAS 161*, providing support for *H1b*. The coefficients on the control variables are generally similar to those in Equation (1).

5.3 Consequences of non-compliance with the disclosure requirements of *SFAS 161*

5.3.1 Likelihood of receiving a comment letter (CL) from the SEC

We now turn to investigating regulatory scrutiny as a result of violations of mandatory disclosure rules, and firms' responses to regulatory interventions. We first examine to what extent violations increase the likelihood of receiving a SEC CL by estimating the following probit model.

$$COMM\_LETTER_{it} = \omega_0 + \omega_1\ SCORE_{it} + \sum_{\rho} \omega_\rho\, CTRL^{\rho}_{it} + \sum_{k} \omega_k\, IND^{k}_{it} + \sum_{t} \omega_t\, YR^{t}_{it} + \varepsilon_{it} \quad (3)$$

where the dependent variable is the indicator variable *COMM_LETTER*, the probability of receiving a derivatives-related CL. A significantly negative coefficient on *SCORE*, ω_1, would indicate that a lower disclosure score increases the likelihood of getting a CL from the SEC. *CTRL* denotes the control variables defined earlier, and we again include industry and year fixed effects.

Table 5 reports the results of estimating Equation (3). We find that ω_1 is significantly negative (p-value<0.01), indicating that lower compliance significantly increases the likelihood of regulatory scrutiny in terms of being targeted for a CL.[25] The evidence provides support for *H2*. As expected, the coefficient on *IMMATERIAL* is negative and significant, implying that immateriality of derivatives use reduces the probability of getting a CL. Also, greater institutional holdings (i.e., greater external monitoring) reduce the likelihood of receiving a CL.

[25] We calculate the marginal effect of *SCORE* on the likelihood of receiving a SEC CL. We find that the probability of receiving a CL decreases by approximately 1.5% when *SCORE* increases by 1.

Electronic copy available at: https://ssrn.com/abstract=3979231

5.3.2 Resolution of comment letters (CLs)

Next, we examine how the CL resolution process varies across the two different incentives for non-compliance. We focus on the length of the resolution process for derivatives-related CLs as it noisily captures the intensity of negotiations with the SEC, i.e., more protracted negotiations likely prolong the resolution process. We estimate the following negative binomial model:

$$NO\_OF\_DAYS_{it} = \Psi_0 + \Psi_1\ PTY_{it} + \Psi_2\ AGY_{it} + \Psi_3\ SCORE_{it} + \Psi_4\ NO\_NOTES_{it} + \sum_{\rho} \Psi_\rho\ CTRL^{\rho}_{it} + \sum_{k} \Psi_k\ IND^{k}_{it} + \sum_{t} \Psi_t\ YR^{t}_{it} + \varepsilon_{it} \quad (4)$$

where the dependent variable (*NO_OF_DAYS*) captures the length of the CL resolution process. We only tabulate the results of estimating Equation (4) based on the following pairwise comparisons between proprietary cost and agency cost: (i) *HEDGE_SALES* and *NON_HEDGE*; (ii) *IND_HEDGE* and *RISK_EXP*. The results are qualitatively similar using the other two pairwise comparisons and are not tabulated. We include a variable called *NO_NOTES*. It is defined as the number of derivatives-related comments that appear in a SEC staff CL. We introduce *SCORE* and *NO_NOTES* to control for the severity of the issues cited in the CL.[26] The control variables included in the *CTRL* vector are defined before.

We estimate Equation (4) using our CL sample, and the results are displayed in Table 6. Column (1) shows that the coefficient on *HEDGE_SALES* is significantly positive while the coefficient on *NON_HEDGE* is insignificant. Column (2) reports that the coefficient on *IND_HEDGE* is significantly positive, but the coefficient on *RISK_EXP* is insignificant.[27] Wald

[26] We do not interact *SCORE* with the disclosure cost proxies because such interactions are designed to capture the extent to which the negotiation process varies with the motivation for non-compliance, and we do not expect that the SEC will be able to determine the motivation for non-compliance based just on their initial review. Theoretical arguments and empirical evidence suggest that proprietary and agency motivations can coexist in a long-run equilibrium as long as outsiders *cannot* fully unravel these incentives from publicly available disclosures (e.g., Grossman 1981; Milgrom 1981; Bens et al. 2011). Thus, withholding is futile if users can see through these motivations from public announcements. Further, given the complexity of derivatives disclosures, it is unlikely that the SEC will be able to make a reliable determination from its initial review about the motives for non-compliance.

[27] We calculate the predicted counts at each level of *HEDGE_SALES* (0 and 1) and *IND_HEDGE* (0 and 1), holding

Electronic copy available at: https://ssrn.com/abstract=3979231

χ^2-tests confirm that the coefficient on *HEDGE_SALES* (*IND_HEDGE*) is significantly greater than the coefficient on *NON_HEDGE* (*RISK_EXP*). *NO_NOTES* is significantly positive, implying that the higher the number of derivatives-related issues raised in a CL, the longer the resolution process. Thus, firms with higher proprietary cost experience a longer CL resolution process relative to firms with higher agency cost, and the results support *H3a*. The results also imply that firms with higher proprietary cost likely negotiate harder with the SEC relative to firms with higher agency cost as back and forth negotiations prolong the resolution process.

5.3.3 Changes in derivatives-related disclosures after the regulatory action

In this section, we investigate to what extent CL firms expand their disclosures subsequent to the regulatory scrutiny, and whether such responses vary predictably with the two incentives for non-compliance. We implement a strict difference-in-differences (DiD) analysis using matched firms to control for variations in the outcome metric (*SCORE*) unrelated to the treatment exposure (i.e., resolution of the SEC CL). For each firm in our SEC CL sample (treatment group), we find an analogous pair matched on size (based on the nearest market value of equity) and industry (based on the same two-digit SIC code) that did not receive a SEC CL during our sample period (control group).The purpose of this DiD design is to ensure that events concurrent but unrelated to the CL resolution are *not* driving our results (e.g., Roberts and Whited 2013). We use the following specifications with three-way interactions to facilitate a direct comparison between high proprietary (agency) cost firms with low proprietary (agency) cost firms within a DiD framework:

$$\begin{aligned} SCORE_{it} = {} & \varphi_0 + \varphi_1 TREAT_i + \varphi_2 POST_{it} + \varphi_3 PTY_{it} + \varphi_4 TREAT_i \times POST_{it} + \varphi_5 TREAT_i \times PTY_{it} \\ & + \varphi_6 POST_{it} \times PTY_{it} + \varphi_7 TREAT_i \times POST_{it} \times PTY_{it} \\ & + \sum_{\rho} \varphi_\rho \, CTRL_{it}^{\rho} + \sum_{k} \varphi_k \, IND_{it}^{k} + \sum_{t} \varphi_t YR_{it}^{t} + \varepsilon_{it}. \end{aligned} \quad (5),$$

all other variables in the model at their means. When *HEDGE_SALES* (*IND_HEDGE*) changes from 0 to 1, the predicted number of days to the CL resolution increases by 8 days (10 days). This increase appears to be economically significant given that the mean *NO_OF_DAYS* is 46 days.

Electronic copy available at: https://ssrn.com/abstract=3979231

$$SCORE_{it} = \theta_0 + \theta_1 TREAT_i + \theta_2 POST_{it} + \theta_3 AGY_{it} + \theta_4 TREAT_i \times POST_{it} + \theta_5 TREAT_i \times AGY_{it} + \theta_6 POST_{it} \times AGY_{it} + \theta_7 TREAT_i \times POST_{it} \times AGY_{it} + \sum_{\rho} \theta_\rho CTRL_{it}^{\rho} + \sum_{k} \theta_k IND_{it}^{k} + \sum_{t} \theta_t YR_{it}^{t} + \varepsilon_{it}. \quad (6).$$

The results of estimating the above two equations are reported in Table 7. The dependent variable in both equations is disclosure score (*SCORE*). *TREAT* is an indicator variable in both equations that takes the value of 1 for firms in the treatment group (CL firms), and 0 for firms in the control group (matched firms that did not receive a CL). In both equations, *POST* is coded 1 in the post-CL resolution period for all firms, and 0 otherwise. Since control firms do not receive SEC CLs, we construct *pseudo* CL resolution events for controls firms based on the timing of the CL resolution of the corresponding treatment firms. We define an indicator variable called *PTY* in Equation (5) to represent high versus low proprietary cost firms. In Column (1) of Panel A, *PTY* takes the value of 1 (0) when *HEDGE_SALES* is 1 (0). In Column (2), *PTY* takes the value of 1 (0) when *IND_HEDGE* is 1 (0). Likewise, we define an indicator variable called *AGY* in Equation (6) to represent high versus low agency cost firms. In Column (1) of Panel B, *AGY* takes the value of 1 (0) when *NON_HEDGE* is 1 (0). In Column (2), *AGY* takes the value of 1 (0) when *RISK_EXP* is 1 (0). Our main variable of interest is the three-way interaction term in both equations. A positive and significant coefficient on the three-way interaction in Equation 5 (Equation 6) would indicate that firms with high proprietary (agency) cost improve their disclosure scores to a greater extent relative to firms with low proprietary (agency) cost in the post-CL resolution period when benchmarked against a control sample of matched firms that did not receive a CL.

The results in Panel A of Table 7 show that the three-way interaction in both Columns (1) and (2) is not significant, suggesting that firms with high proprietary cost do not appreciably improve their disclosures compared to firms with low proprietary cost even after the CL resolution when benchmarked against a matched control sample. Although firms with high proprietary cost

Electronic copy available at: https://ssrn.com/abstract=3979231

tend to withhold derivatives disclosures to a greater extent, these firms likely negotiate successfully and do not accede to regulators' demand for greater disclosures. In contrast, the three-way interaction in both Columns (1) and (2) in Panel B of Table 7 is significantly positive, indicating that firms with high agency cost submit to regulatory demand and significantly expand their disclosures compared to firms with low agency cost relative to a matched control group.[28,29] Collectively, these results provide support for *H3b*.

5.3.4 Effectiveness of regulatory interventions and informativeness with respect to derivatives disclosures

Since firms with higher agency cost improve their disclosures after the CL resolution, while firms with higher proprietary cost do not, we next investigate whether the derivatives disclosures of the latter become less informative than those of the former, as a result. Campbell (2015) documents that unrealized gains/losses on cash flow hedges are negatively associated with future earnings and that investors fail to incorporate this association into their expectation. However, Campbell et al. (2021b) report that this mispricing does not persist after *SFAS 161*. We first establish these baseline results. In Panel A of Table 8, we tabulate the results of regressing the change in future gross profit from year *t* to year *t*+2 (*ΔGP*) on the level of unrealized gains/losses on cash flow hedges reported in AOCI, scaled by the contemporaneous year's net sales (*AOCI_HEDGE*). We find that the coefficient on *AOCI_HEDGE* is significantly negative, consistent with prior research. We next investigate to what extent the market incorporates this information. Analogous to prior research, we form portfolios by deciles of *AOCI_HEDGE* and

[28] Interestingly, the coefficient on the *TREAT*×*POST* interaction term is insignificant in both columns in Panel B, suggesting that firms with low agency cost tend *not* to improve their disclosures even after the regulatory scrutiny.

[29] The odds ratio of the coefficient on the three-way interaction (*TREAT*×*POST*×*PTY)* is 0.994 in Column (1) and 1.040 in Column (2) in Panel A. That is, for CL firms with high proprietary costs, the odds of improving their derivatives disclosures after the CL resolution are 0.994 to 1.040 times the benchmark (*TREAT*×*POST*×*PTY* = 0). On the other hand, the odds ratio of the interaction coefficient for *TREAT*×*POST*×*AGY* is 5.569 in Column (1) and 1.563 in Column (2) in Panel B. These odds ratios indicate that CL firms with high agency costs are 1.6 to 5.7 times more likely to enhance derivatives disclosures than the benchmark (*TREAT*×*POST*×*AGY* = 0).

Electronic copy available at: https://ssrn.com/abstract=3979231

implement a zero net-investment strategy that buys (sells) firms in the bottom (top) decile. We compute two alternative measurements of return generated from the strategy. One metric computes the two-year buy-and-hold return (*BHRet*) from the fourth month of year *t*+1 (the first month in which year *t* cash flow hedge gains/losses are disclosed) through the third month of year *t*+3 (prior to the release of year *t*+2 10-K). The second metric estimates the monthly abnormal return (*Alpha*) for firms in each AOCI decile after controlling for common risk factors using Fama-French regressions. We implement this strategy for the full sample of cash flow hedgers and report the results in Panel B of Table 8. We find that the strategy yields no significant hedge return in the full sample (net return of portfolio 1 minus portfolio 10) for both return metrics, consistent with Campbell et al. (2021b).

After establishing the baseline results, we focus on firms in the non-compliance sub-sample whose disclosure score ranges from 0 to 9 (Panel B of Table 8). We find that hedge returns are significantly positive for both return measures, *BHRet* and *Alpha*. Thus, mispricing persists in the non-compliance sub-sample even in the post-*SFAS 161* disclosure regime. Finally, we compare hedge returns between high proprietary (agency) cost firms and low proprietary (agency) cost firms following the resolution of CLs. We use *IND_HEDGE* and *RISK_EXP* as proxies of proprietary cost and agency cost.[30] Figures for the low proprietary/agency cost sub-samples are reported in parentheses. We now observe that both return measures are significant for the following sub-samples in the post-CL period: high proprietary cost, low proprietary cost and low agency cost. Hedge returns, however, are insignificant in the high agency cost firms.[31] Thus, mispricing

[30] We do not use the pair of *HEDGE_SALES* and *NON_HEDGE* in this mispricing test because the test requires non-missing, non-zero values of unrealized gains/losses on cash flow hedges. That is, the test focuses only on cash flow hedgers (firms that elect to apply hedge accounting). Since *NON_HEDGE* takes the value of 1 if a firm *does not* use hedge accounting, it is not possible to construct a non-compliance sample of cash flow hedgers with high agency cost measured by *NON_HEDGE*.

[31] We also perform a similar analysis of comparing hedge returns for high/low proprietary costs firms and high/low agency cost firms in the pre-CL period. We note that mispricing exists in all four sub-samples prior to receiving a SEC CL.

Electronic copy available at: https://ssrn.com/abstract=3979231

disappears in high agency cost firms, while mispricing still lingers in the other three sub-samples even after the CL resolution.

Collectively, Table 8 results are consistent with those reported in Table 7. Firms with high agency cost significantly improve their derivatives disclosure scores. As a result, investors likely get a better understanding of these firms' hedging activities, and prices of these firms become efficient. In contrast, firms in the other three sub-samples do not appreciably improve their disclosures, and mispricing remains in these sub-samples. These results support *H4*.

5.4 Sensitivity analyses and validation checks

5.4.1 Validation tests of proprietary cost and agency cost proxies

In this section, we report a series of tests to evaluate the construct validity of our proprietary and agency cost proxies. If our two proprietary (agency) cost proxies embody similar elements of proprietary (agency) cost, we would expect that they will be significantly correlated with each other. There is, however, no reason to believe large commonality between the proprietary incentive and the agency incentive. Therefore, there should not be a significant correlation between a proprietary cost proxy and an agency cost proxy. These correlations are reported in Panel A of Table 9. We find that *HEDGE_SALES* and *IND_HEDGE* are significantly positively correlated. Likewise, the correlation between *NON_HEDGE* and *RISK_EXP* is also positive and significant. However, *no* pairwise correlation between a proprietary cost measure and an agency cost measure is significant. Thus, it is unlikely that these proxies are merely picking up noise.

Second, we use the arguments presented in Bens et al. (2011) to assess whether our proxies are capturing elements of proprietary and agency costs related to derivatives use. Similar to Guay (1999) and Donohoe (2015), we label a firm as a "new user" if it does not report a derivatives position when it first appears in the sample but reports a position in a later year (between 2009 and 2014). Assuming that these new users start to use derivatives when the need arises to effectively manage risks, we follow them from the time of the derivatives initiation. If we observe that they

Electronic copy available at: https://ssrn.com/abstract=3979231

experienced increases (decreases) in firm value (measured by Tobin's Q) after derivatives initiation, we classify them into the value enhancing (value reducing) derivatives-user group. The premise is that, all else equal, if derivatives are used judiciously, firm value will increase following the initiation. Whereas, if derivatives are used inefficiently, or for speculation, firm value will decrease after the initiation. Following the line of reasoning in Bens et al. (2011), we expect that the value enhancing sub-sample is more likely to contain firms with proprietary incentive, while the value reducing sub-sample is likely to contain firms with primarily agency motive.

We estimate Equations (1) and (2) separately for each of these sub-samples. Panel B of Table 9 reports the results for the value-enhancing sub-group. We find that *HEDGE_SALES* and *IND_HEDGE* are significantly negative, while *NON_HEDGE* and *RISK_EXP* are insignificant. Thus, the negative association between proprietary cost and disclosure score (documented in Table 3) persists in the value enhancing sub-sample, while the negative relation between agency cost and disclosure score (reported in Table 4) is absent in this sub-group. Panel C displays the results for the value reducing sub-sample. Now, we observe that *HEDGE_SALES* and *IND_HEDGE* become insignificant, while *NON_HEDGE* and *RISK_EXP* are negatively associated with disclosure scores. For the results reported in Panels B and C of Table 9 to manifest, our proprietary (agency) cost proxies have to reliably capture proprietary (agency) intents.

As a third validation test, we compare the magnitudes of proprietary and agency cost proxies in the two sub-groups. If these proxies are well specified, we would expect that the magnitudes of the proprietary (agency) cost proxies are greater in the value enhancing (reducing) sub-sample. Column (3) in Panel D of Table 9 shows the difference in average magnitude between the two groups. The results are consistent with our expectation except for *RISK_EXP*, where the sign of the difference is in the predicted direction, but not insignificant. Collectively, these series of validation tests provide further comfort that our proxies are capturing what they purport to capture.

Electronic copy available at: https://ssrn.com/abstract=3979231

5.4.2 Additional tests on the relation between proprietary/agency incentives and the degree of non-compliance with SFAS 161 using generic proxies

To further substantiate the inferences obtained from the four derivatives-related proxies, we replicate our main analyses using four generic, but well-tested proxies of proprietary and agency costs that have been used in the prior literature. The first measure of proprietary cost is fluidity (*FLUIDITY*) developed by Hoberg et al. (2014). *FLUIDITY* focuses on rivals by assessing the change in a firm's product space due to moves made by competitors in the firm's product markets. Even if a company's current product mix is stable, entry by rivals can pose competitive threats to a firm. The second measure of proprietary cost is R&D expenditure (*R&D*). Property rights associated with innovations are difficult to enforce, giving rise to proprietary concerns (King et al. 1990; Ellis et al. 2012). Thus, firms with greater R&D expenditures face higher proprietary costs. We replicate Equation (1) using these two generic measures of proprietary cost, and untabulated analyses show that both measures are significantly negatively associated with *SCORE*.

Similarly, we use two broad but widely-used measures of agency cost. Drawing on prior research (Ang et al. 2000; Garanina and Kaikova 2016), our first generic measure of agency cost is the inverse of sales-to-asset ratio (*SALEtoASSET*). The sales-to-asset ratio measures how effectively managers deploy firms' assets. Companies with an asset utilization rate lower than the base case may experience greater agency cost because mangers may act in some or all of the following ways: make poor operating decisions, exert insufficient effort, consume excessive perks, or indulge in empire building. Thus, agency cost is *inversely* related to *SALEtoASSET*. Our second broad measure of agency cost is excess cash (*XSCASH*). *XSCASH* is defined as the difference between the actual cash holding and the predicted level of cash. This measure captures agency incentive in the sense that the propensity of managerial expropriation is higher in cash-rich firms (Lee and Powell 2011; Huang and Zhang 2012). We estimate Equation (2) using these two broad proxies of agency cost, and untabulated results show that both have a significantly negative

Electronic copy available at: https://ssrn.com/abstract=3979231

correlation with *SCORE*. Thus, our four cost proxies do capture broader elements of proprietary and agency incentives.[32]

5.4.3 Additional falsification tests based on non-compliances and SEC comment letters unrelated to derivatives disclosures

One potential validity threat is that the actions we relate to the derivatives disclosure mandate, *per se*, could be driven by other firm attributes beyond proprietary and agency costs related to *SFAS 161* disclosures. We conduct a series of untabulated falsification tests based on non-compliances and SEC CLs unrelated to derivatives use to rule out this validity threat. We first move to rule out the alternative explanation that the results are simply attributable to overall poor corporate governance and internal controls that lead to inadequate disclosures, in general. We focus on broader incentives for non-compliance unrelated to derivatives use captured via the likelihood of financial statement restatements and internal control weaknesses.[33] We regress the likelihood of financial statement restatements on our four proprietary and agency cost proxies and controls. We find that none of our cost measures are associated with the probability of restatements. Likewise, we find no association between our cost proxies and internal control weaknesses. These falsification tests help rule out the alternative explanation that our results are driven by overall deficiencies in governance and internal controls leading to insufficient disclosures.

In our next set of placebo tests, we replicate our SEC CL analyses using CLs that are unrelated to derivatives issues. First, we redo the analysis reported in Table 5 except that the

[32] As prior research contends, these generic proxies are less powerful as they try to capture overall proprietary and agency costs using a broad brush instead of quantifying specific costs arising out of derivatives use. Predictably, the results are somewhat weaker, but our main results still flow through at conventional levels of significance.

[33] Following Lisic et al. (2019), we define financial statement restatement as an indicator variable set equal to 1 if the annual financial statements were misstated (as revealed through a subsequent restatement), and 0 otherwise. As outlined in Cheng et al. (2018), internal control weaknesses are coded as an indicator variable that takes a value of 1 if a firm reports material internal control weaknesses in its internal control over financial reporting (ICFR) document, and 0 otherwise.

Electronic copy available at: https://ssrn.com/abstract=3979231

dependent variable is the likelihood of getting a *non-derivatives* related SEC CL (*NONDERCL*).[34] We find that *SCORE* is unrelated to *NONDERCL*. Our next placebo test replicates Table 6 except we only consider the length of the resolution process for CLs that are *not* derivatives related. As before, we use the number of days from the date the first CL is issued to the date the issue is resolved as a measure of the length of the CL resolution process. Again, we focus on the following pairwise comparisons between proprietary cost and agency cost: (i) *HEDGE_SALES* and *NON_HEDGE*; (ii) *IND_HEDGE* and *RISK_EXP*. We find neither of the pairwise comparisons to be significant. Thus, the results reported in Table 6 do not hold for non-derivatives related CLs. These additional placebo tests further affirm that our proxies are capturing proprietary and agency costs directly tied to derivatives use.

6 Conclusion

In this study, we investigate regulatory actions in response to violations of derivatives disclosure rules mandated by *SFAS 161* and the effectiveness of such regulatory interventions by analyzing a hand-collected sample of 2,393 firm-year observations from 2009 through 2014. We first hypothesize and find that firms with high proprietary cost and high agency cost are less likely to comply with mandated derivatives disclosures. We next investigate the regulatory responses to non-compliance. We show that the degree of non-compliance is significantly associated with the likelihood of receiving a derivatives-related CL from the SEC. We further document that the CL resolution process takes longer for non-compliance motivated by proprietary incentives than that motivated by agency considerations. Moreover, compliance with *SFAS 161* increases significantly following the resolution of a CL for firms having higher agency cost, but not for firms with higher proprietary cost. Our results are robust to a battery of sensitivity checks and falsification tests.

[34] *NONDERCL* is an indicator variable that equals 1 if a firm receives a CL where the issues raised are not derivatives-related in the current year, and 0 otherwise.

Electronic copy available at: https://ssrn.com/abstract=3979231

Our study makes several contributions to the literature. First, the fact that firms with higher proprietary costs take longer to resolve a CL and do not significantly improve their disclosures afterwards suggests that these firms likely enjoy greater support from their stakeholders to negotiate better disclosure terms with the regulators. An important implication of our finding is that when proprietary considerations arising out of derivatives use are high, the benefits of non-compliance likely outweigh the costs. Second, prior research contends that the SEC's review process is generally effective as firms usually submit to regulators' demand for additional disclosures. We, however, show that review effectiveness depends on firms' initial motivation for non-compliance. Regulatory interventions in response to violations of derivatives disclosure rules improve compliance *only* for firms with high agency issues, and *not* for firms with high proprietary cost. Finally, the relation between proprietary costs and corporate disclosures has been mixed, and extant research attributes the conflicting results to generic proprietary cost proxies that are not economically connected to the disclosures examined. Using proprietary cost measures that are directly related to derivatives use, we document a clear negative relation between proprietary cost and the degree of compliance with *SFAS 161*.

It is, however, important to note that our study investigates a unique disclosure mandate and not non-compliance, in general. Therefore, caution should be exercised while generalizing our inferences to other obligatory financial disclosure settings.

Electronic copy available at: https://ssrn.com/abstract=3979231

References

Ahmed, A.S., Kilic, E., & Lobo, G.J. (2011). Effects of SFAS 133 on the risk relevance of accounting measures of banks' derivative exposures. *The Accounting Review*, *86*(3), 769–804.

Ali, A., Klasa, S., & Yeung, E. (2014). Industry concentration and corporate disclosure policy. *Journal of Accounting and Economics*, *58*(2–3), 240–264.

Ang, J.S., Cole, R.A., & Lin, J.W. (2000). Agency costs and ownership structure. *The Journal of Finance*, 55(1), 81–106.

Baginski, S., & Hinson, L.A. (2016). Cost of capital free-riders. *The Accounting Review*, *91*(5), 1291–1313.

Bamber, L., & Cheon, Y. (1998). Discretionary management earnings forecast disclosures: Antecedents and outcomes associated with forecast venue and forecast specificity choices. *Journal of Accounting Research*, *36*(2), 167–190.

Bens, D., Berger, P., & Monahan, S. (2011). Discretionary disclosure in financial reporting: An examination comparing internal firm data to externally reported segment data. *The Accounting Review*, *86*(2), 417–449.

Bernard, D. (2016). Is the risk of product market predation a cost of disclosure? *Journal of Accounting and Economics*, *62*(2–3), 305–325.

Beyer, A., Cohen, D.A., Lys, T.Z., & Walther, B.R. (2010). The financial reporting environment: Review of the recent literature. *Journal of Accounting and Economics*, *50*(2–3), 296–343.

BIS (Bank for International Settlements). (2019). OTC derivatives statistics at end-June 2019. Monetary and Economic Department, Basel, Switzerland.

Botosan, C. A., & Stanford, M. (2005). Managers' motives to withhold segment disclosures and the effect of SFAS No. 131 on analysts' information environment. *The Accounting Review*, *80*(3), 751–771.

Bozanic, Z., Dietrich, J.R., & Johnson, B.A. (2017). SEC comment letters and firm disclosure. *Journal of Accounting and Public Policy*, *36*(5), 337–357.

Brown, S., Tian, X., & Tucker, J.W. (2018). The spillover effects of SEC comment letters on qualitative corporate disclosure: Evidence from the risk factor disclosure. *Contemporary Accounting Research*, *35*(2), 622–656.

Campbell, J.L. (2015). The fair value of cash flow hedges, future profitability, and stock returns. *Contemporary Accounting Research*, *32*(1), 243–279.

Campbell, J.L., Cao, S., Chang, H.S., & Chiorean, R. (2021a). *The implications of firms' derivatives use on the frequency and usefulness of management earnings forecasts.* Working Paper.

Campbell, J.L., Khan, U., & Pierce, S. (2021b). The effect of mandatory disclosure on market inefficiencies: Evidence from FASB Statement No. 161. *The Accounting Review*, *96*(2), 153–176.

Cao, S., Du, K., Yang, B., & Zhang, L. (2018a). *Proprietary cost of disclosure: Evidence from tracking copycats' digital footprints*. Working Paper: Georgia State University.

Cao, S., Ma, G., Tucker, J.W., & Wan, C. (2018b). Technological peer pressure and product disclosure. *The Accounting Review*, *93*(6), 95–126.

Carhart, M. (1997). On persistence in mutual fund performance. *Journal of Finance*, *52*(1), 57–82.

Cassell, C.A., Dreher, L.M., & Myers, L. (2013). Reviewing the SEC's review process: 10-K comment letters and the cost of remediation. *The Accounting Review*, *88*(6), 1875–1908.

Electronic copy available at: https://ssrn.com/abstract=3979231

Chang, H.S., Donohoe, M., & Sougiannis, T. (2016). Do analysts understand the economic and reporting complexities of derivatives? *Journal of Accounting and Economics*, *61*(2-3), 584–604.

Chen, J., Dou, Y., & Zou, Y. (2021). Information externalities of SFAS 161: Evidence from supply chains. *The Accounting Review*, *96*(4), 179–202.

Cheng, Q., Goh, B.W., & Kim, J.B. (2018). Internal control and operational efficiency. *Contemporary Accounting Research*, *35*(2), 1102–1139.

Cox, J.D., Thomas, R.S., & Kiku, D. (2003). SEC enforcement heuristics: An empirical inquiry. *Duke Law Journal*, *53*(2), 737–779.

Donohoe, M. (2015). The economic effects of financial derivatives on corporate tax avoidance. *Journal of Accounting and Economics*, *59*(1), 1–24.

Drake, M., Myers, J., & Myers, L. (2009). Disclosure quality and the mispricing of accruals and cash flows. *Journal of Accounting, Auditing & Finance*, *24*(3), 357–384.

Dunn, K.A., & Mayhew, B.W. (2004). Audit firm industry specialization and client disclosure quality. *Review of Accounting Studies*, *9*(1), 35–58.

Duro, M., Heese, J., & Ormazabal, G. (2019). The effect of enforcement transparency: Evidence from SEC comment-letter reviews. *Review of Accounting Studies*, *24*(3), 780–823.

Ellis, J.A., Fee, C.E., & Thomas, S.E. (2012). Proprietary costs and the disclosure of information about customers. *Journal of Accounting Research*, *50*(3), 685–727.

Enache, L., Parbonetti, A., & Srivastava, A. (2020). Are all outside directors created equal with respect to firm disclosure policy? *Review of Quantitative Finance and Accounting*, *55*(2), 541–577.

Ettredge, M., Johnstone, K., Stone, M., & Wang, Q. (2011). The effects of firm size, corporate governance quality, and bad news on disclosure compliance. *Review of Accounting Studies*, *16*(4), 866–889.

Fama, E.F., & French, K.R. (2015). A five-factor asset pricing model. *Journal of Financial Economics*, *116*(1), 1–22.

Fama, E.F., & French, K.R. (2016). Dissecting anomalies with a five-factor model. *Review of Financial Studies*, *29*(1), 69–103.

FASB (Financial Accounting Standards Board). (1998). Statement of Financial Accounting Standard No. 133: Accounting for derivative instruments and hedging activities.

FASB (Financial Accounting Standards Board). (2008). Statement of Financial Accounting Standard No. 161: Disclosures about derivative instruments and hedging activities.

FASB (Financial Accounting Standards Board). (2011). Accounting Standards Update 2011-05: Comprehensive income (Topic 220).

Francis, J., Philbrick, D., & Schipper, K. (1994). Shareholder litigation and corporate disclosures. *Journal of Accounting Research*, *32*(2), 137–164.

Garanina, T., & Kaikova, E. (2016). Corporate governance mechanisms and agency costs: cross-country analysis. *Corporate Governance*, *16*(2), 347–360.

Giambona, E., Graham, J.R., Harvey, C.R., & Bodnar, G.M. (2018). The theory and practice of corporate risk management: Evidence from the field. *Financial Management*, *47*(4), 783–832.

Grewal, J., Riedl, E., & Serafeim, G. (2018). Market reaction to mandatory nonfinancial disclosure. *Management Science*, *65*(7), 2947–3448.

Grossman, S. (1981). The informational role of warranties and private disclosure about product quality. *Journal of Law and Economics*, *24*(3), 461–483.

Guay, W. (1999). The impact of derivatives on firm risk: An empirical examination of new derivative users. *Journal of Accounting and Economics*, *26*(1–3), 319–351.

Electronic copy available at: https://ssrn.com/abstract=3979231

Healy, P.M., & Palepu, K.G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*(1–3), 405–440.

Hoang, D., & Ruckes, M. (2017). Corporate risk management, product market competition, and disclosure. *Journal of Financial Intermediation*, *30*, 107–121.

Hoberg, G., Phillips, G., & Prabhala, N. (2014). Product market threats, payouts, and financial flexibility. *The Journal of Finance*, *69*(1), 293–324.

Hope, O., Kang, T., Thomas, W.B., & Vasvari, F. (2008). Pricing and mispricing effects of SFAS 131. *Journal of Business Finance & Accounting*, *35*, 281–306.

Huang, P., & Zhang, Y. (2012). Does enhanced disclosure really reduce agency costs? Evidence from the diversion of corporate resources. *The Accounting Review*, *87*(1), 199–229.

Johnston, R., & Petacchi, R. (2017). Regulatory oversight of financial reporting: Securities and Exchange Commission comment letters. *Contemporary Accounting Research*, *34*(2), 1128–1155.

Jung, W., & Kwon. Y. (1988). Disclosures when the market is unsure of information endowment of managers. *Journal of Accounting Research*, *26*(1), 146–153.

Kedia, S., & Rajgopal, S. (2011). Do the SEC's enforcement preferences affect corporate misconduct? *Journal of Accounting and Economics*, *51*(3), 259–278.

King, R., Pownall, G., & Waymire, G. (1990). Expectations adjustment via timely management forecasts: Review, synthesis, and suggestions for future research. *Journal of Accounting Literature*, *9*(1), 113–144.

Lang, M., & Sul, E. (2014). Linking industry concentration to proprietary costs and disclosure: Challenge and opportunities. *Journal of Accounting and Economics*, *58*(2–3), 265–274.

Lee, E., & Powell, R. (2011). Excess cash holdings and shareholder value. *Accounting and Finance*, *51*(2), 549–574.

Lee, E., Strong, N., & Zhu, Z.J. (2014). Did Regulation Fair Disclosure, SOX, and other analyst regulations reduce security mispricing? *Journal of Accounting Research*, *52*(3), 733–774.

Lisic, L.L., Myers, L., Pawlewicz, R., & Seidel, T. (2019). Do accounting firm consulting revenues affect audit quality? Evidence from the pre- and post-SOX eras. *Contemporary Accounting Research*, *36*(2), 1028–1054.

Makar, S., Wang, L., & Alam, P. (2013). The mixed attribute model in SFAS 133 cash flow hedge accounting: Implication for market pricing. *Review of Accounting Studies*, *18*, 66–94.

Milgrom, P.R. (1981). Good news and bad news: Representation theorems and applications. *The Bell Journal of Economics*, *12*(2), 380–391.

Pierce, S. (2020). Determinants and consequences of firms' derivative accounting decisions. *Journal of Financial Reporting, 5*(1), 81–114.

Ramirez, J. (2015). *Accounting for derivatives: Advanced hedging under IFRS 9*. Wiley.

Roberts, M., & Whited, T. (2013). Endogeneity in empirical corporate finance. *Handbook of the Economics of Finance*, *2*, 493–572.

Robinson, J. R., Xue, Y., & Yu, Y. (2011). Determinants of disclosure noncompliance and the effect of the SEC review: Evidence from the 2006 mandated compensation disclosure regulations. *The Accounting Review*, *86*(4), 1415–1444.

Shumway, T. (1997). The delisting bias in CRSP data. *Journal of Finance*, *52*(1), 327–340.

Skinner, D.J. (1994). Why firms voluntarily disclose bad news. *Journal of Accounting Research 32*(1), 38–60.

Skinner, D.J. (1997). Earnings disclosures and stockholder lawsuits. *Journal of Accounting Economics*, *23*(3), 249–282.

Electronic copy available at: https://ssrn.com/abstract=3979231

Verrecchia, R. (1983). Discretionary disclosure. *Journal of Accounting and Economics*, *5*, 179–194.
Verrecchia, R., & Weber, J. (2006). Redacted disclosure. *Journal of Accounting Research*, *44*(4), 791–814.
Wagenhofer, A. (1990). Voluntary disclosure with a strategic opponent. *Journal of Accounting and Economics*, *12*(4), 341–363.
Wolfe, K.L. (1997). Testimony before the subcommittee on securities of the senate banking, housing, and urban affairs committee. http://www.banking.senate.gov /97_10hrg/100997/index.htm.
Zhang, H. (2009). Effect of derivative accounting rules on corporate risk management behavior. *Journal of Accounting and Economics*, *47*(3), 244–264.
Zou, Y. (2016). *Strategic entry decisions, accounting signals, and risk management disclosure*. Working Paper: University of Toronto.

Electronic copy available at: https://ssrn.com/abstract=3979231

Appendix A

Disclosure score

Disclosure on fair value of derivatives	
Score	Degree of disaggregation
0	if fair value is not disclosed
1	if only total fair value is disclosed
2	if total fair value is disaggregated by derivatives type (i.e., fair value of interest rate/foreign exchange/commodity price derivatives) or hedge type (i.e., fair value of derivatives designated/not-designated as accounting hedges)
3	if fair value is disaggregated by derivatives type and hedge type

Score	Balance sheet line item disclosure
0	if fair value is not disclosed or only total fair value is disclosed
1	if fair value amounts are presented as separate asset and liability values
2	if the balance sheet line item in which derivatives instruments are included is disclosed as: current asset, non-current asset, current liability, and non-current liability

Disclosure on gain/loss of derivatives	
Score	Degree of disaggregation
0	if gain/loss is not disclosed
1	if only total gain/loss is disclosed
2	if total gain/loss is disaggregated by derivatives type or hedge type
3	if gain/loss is disaggregated by derivatives type and hedge type

Score	Income statement line item disclosure
0	if gain/loss is not disclosed or only net gain/loss is disclosed
1	if both gain and loss on derivatives are disclosed
2	if the income statement line item in which derivatives instruments are included is disclosed as: revenue, COGS, interest income/expense, SG&A, R&D, other income/expense

Disclosure score ranges from 0 to 10

Electronic copy available at: https://ssrn.com/abstract=3979231

Appendix B

Variable definitions[a]

Dependent variables

SCORE	Derivatives disclosure score, defined as the number of mandatory disclosure items disclosed in a firm's 10-K. The value of this measure ranges from 0 to 10. Appendix A describes the steps followed to construct the derivatives disclosure score.
COMM_LETTER	Indicator variable equal to 1 if a firm receives a derivatives-related SEC staff comment letter (CL) in the current year, and 0 otherwise.
NO_OF_DAYS	Number of calendar days from the date the first CL is issued to the date the derivatives-related issue in the CL is successfully resolved.
ΔGP	Change in gross profit (GP) scaled by net sales (SALE) from year *t* to year *t*+2.

Explanatory and Treatment variables

HEDGE_SALES	Indicator variable equal to 1 if a firm hedges against an adverse movement in inventory or sales price (i.e., if the firm is a foreign exchange or commodity price risk-hedger, and *not* an interest rate risk-hedger), and 0 otherwise. Firms that hedge foreign exchange or commodity price risk are assumed to have high proprietary costs, while those that hedge interest rate risk only are considered to have low proprietary costs.
IND_HEDGE	Industries (classified using 3-digit SIC code) are ranked, from highest to lowest, based on the number of derivatives users within each industry. We redo this ranking on an annual basis and define *IND_HEDGE* each year. *IND_HEDGE* is an indicator variable that takes the value of 1 for firms in the lowest quartile of this distribution, and it takes the value of 0 for firms in the top three quartiles. Firms in the lowest quartile (higher three quartiles) are classified as those with high (low) proprietary costs.
NON_HEDGE	Indicator variable that takes the value of 1 if a firm does not use hedge accounting in the current year, and 0 otherwise. Non-hedge accounting users (hedge accounting users) are assumed to have high (low) agency costs.
RISK_EXP	Indicator variable that is coded as 1 if a firm's change in risk (the difference between risk exposure in the current year and that in the previous year) is in the highest quartile for at least one of the following three categories of risk: interest rate risk, foreign exchange risk and commodity price risk. It is coded as 0 if a firm's change in risk is in the lower three quartiles for all three risk exposure categories.[b]
TREAT	Indicator variable that equals 1 for firm observations that received a SEC CL and 0 for match control firm observations.

[a] Compustat mnemonics are in parentheses.

[b] Following Guay (1999), Zhang (2009) and Donohoe (2015), we measure risk exposure as the sensitivity of each of the three aforementioned macro variables to a firm's stock returns. Interest rate risk exposure is defined as the absolute value of the estimated coefficient from a regression of firms' monthly holding period stock returns on the monthly percentage change in the London Interbank Offered Rate (LIBOR) for 36 months prior to the current fiscal-year end. Foreign exchange rate risk exposure is defined as the absolute value of the estimated coefficient from a regression of firms' monthly holding period stock returns on the monthly percentage change in the Federal Reserve Board trade-weighted U.S. dollar index for 36 months prior to the current fiscal-year end. Commodity price risk exposures is defined as the absolute value of the estimated coefficient from a regression of firms' monthly holding period stock returns on the monthly percentage change in the Producer Price Index for 36 months prior to the current fiscal-year end.

Electronic copy available at: https://ssrn.com/abstract=3979231

POST	Indicator variable that is equal to 1 for firm-years after the resolution of a SEC CL issued to that firm, and it is 0 otherwise.
AOCI_HEDGE	Unrealized cash flow hedge gains/losses reported in AOCI (AOCIDERGL) at the end of year *t*, scaled by sales (SALE) for year *t*.
BHRet	Two-year buy-and-hold return from the fourth month of year *t*+1 (the first month in which year *t* cash flow hedge gains/losses are reported to investors) through the third month of year *t*+3 (prior to the year *t*+2 10-K release). Delisting return is included and if it is missing, we assume a –30 percent delisting return in the delisting month and the portfolio return thereafter (Shumway 1997).
Alpha	Monthly abnormal return for firms in each AOCI decile after controlling for common risk factors. Following Campbell et al. (2021b), we include beta (*MKT_RF*), size (*SMB*), growth (*HML*), profitability (*RMW*), investment (*CMA*), and momentum (UMD) as common risk factors when estimating Alpha (Carhart 1997; Fama and French 2015, 2016).
Control variables	
IMMATERIAL	We consider three dimensions of immateriality: notional amount, fair value of derivatives, and derivatives gains/losses. *IMMATERIAL* is an indicator variable that takes the value of 1 if any one of the above three dimensions is reported to be immaterial, and it is 0 otherwise.
ROA	Return on assets, defined as net income (NI) divided by total assets (AT) at end of the current year.
LITIGATION	Indicator variable that is equal to 1 if a firm belongs to an industry with a high incidence of litigation, and it is 0 otherwise. We follow Francis et al. (1994) to classify an industry with a high/low incidence of litigation.
DEBT	Indicator variable that is equal to 1 if a firm issues debt (DLTIS) in the current year, and it is 0 otherwise.
STOCK	Indicator variable that equals 1 if a firm issues stock (SSTK) in the current year, and 0 otherwise.
SIZE	Log of equity market value (PRCC_F × CSHO) at the end of the current year.
BM	Book to market ratio, defined as the book value of equity (CEQ) divided by equity market value (PRCC_F × CSHO) at the end of the current year.
FOL	Number of analysts following the firm in the current year.
INST	Institutional ownership percentage of the firm at the end of the current year.
AUDIT_FEE	Log of audit fees (AUDIT_FEES) paid by the firm in the current year.
NO_NOTES	Indicator variable that takes the value of 1 in firm-years with more than two derivatives-related comments appearing in a SEC staff CL, and it is 0 otherwise.
Log(ASSETS)	Natural log of total assets (AT).
LEVERAGE	Total liabilities (LT) at the end of year *t* scaled by total assets (AT) at the end of year *t*.
GROWTH	Ratio of market value of assets (AT + MKVALT – CEQ – TXDB) to book value of assets (AT).

Electronic copy available at: https://ssrn.com/abstract=3979231

Appendix C

Disclosure example (FY 2010 10-K for NIKE, Inc)

	Asset Derivatives			Liability Derivatives		
	Balance Sheet Location	May 31, 2011	May 31, 2010	Balance Sheet Location	May 31, 2011	May 31, 2010
Derivatives designated as hedging instruments:						
Foreign exchange forwards and options	Prepaid expenses and other current assets	$ 22	$ 316	Accrued liabilities	$ 170	$ 25
Foreign exchange forwards and options	Deferred income taxes and other long-term assets	7		Deferred income taxes and other long-term liabilities	10	
Interest rate swap contracts	Deferred income taxes and other long-term assets	15	15			
Total derivatives designated as hedging instruments		44	331		180	25
Derivatives not designated as hedging instruments:						
Foreign exchange forwards and options	Prepaid expenses and other current assets	$ 9	$ 104	Accrued liabilities	$ 16	$ 139
Foreign exchange forwards and options	Deferred income taxes and other long-term assets			Deferred income taxes and other long-term liabilities	1	1
Total derivatives not designated as hedging instruments		9	104		17	140
Total derivatives		$ 53	$ 435		$ 197	$ 165

	Amount of Gain (Loss) recognized in Income on Derivatives			Location of Gain (Loss) Recognized in Income on Derivatives
	Year Ended May 31,			
	2011	2010	2009	
Derivatives designated as fair value hedges:				
Interest rate swaps	$ 6	$ 7	$ 2	Interest expense (income), net
Derivatives not designated as hedging instruments:				Other (income), net
Foreign exchange forwards and options	$ (30)	$ (91)	$ (83)	

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 1
Sample selection

Panel A: Main sample of derivatives users

	Firm-years
Largest 1,000 firms by market capitalization in 2001 that meet our five sample selection criteria	10,904
Less:	
Observations before the adoption of *SFAS 161*	(6,911)
SFAS 161 sample	3,993
Less:	
Observations with no derivatives use	(958)
Insufficient data to calculate necessary variables	(642)
Final sample of derivatives users	2,393

Panel B: SEC comment letter (CL) sample

	Firm-years
Final sample of derivatives users	2,393
Less:	
Firms without a derivatives-related CL	(1,522)
Firms with at least one derivatives-related CL	871

This table outlines the sample selection procedures for our main sample of derivatives users (Panel A), and the sub-sample of firms that receive derivatives-related SEC CLs (Panel B).

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 2
Descriptive statistics

	Mean	Std. Dev	Q1	Median	Q3
Dependent variables					
SCORE	7.463	3.365	5.000	9.000	10.000
COMM_LETTER	0.217	0.299	0.000	0.000	0.000
NO_OF_DAYS	45.844	59.320	14.000	27.000	50.000
Explanatory Variables					
HEDGE_SALES	0.606	0.489	0.000	1.000	1.000
IND_HEDGE	0.298	0.457	0.000	0.000	1.000
NON_HEDGE	0.476	0.500	0.000	0.000	1.000
RISK_EXP	0.464	0.499	0.000	0.000	1.000
Control variables					
IMMATERIAL	0.033	0.214	0.000	0.000	0.000
ROA	0.016	0.247	0.000	0.055	0.093
LITIGATION	0.325	0.469	0.000	0.000	1.000
DEBT	0.641	0.480	0.000	1.000	1.000
STOCK	0.833	0.373	1.000	1.000	1.000
SIZE	8.011	1.995	7.020	8.156	9.296
BM	0.449	0.331	0.224	0.387	0.599
FOL	14.511	10.887	6.000	13.000	22.000
INST	60.815	36.960	27.288	76.853	89.794
AUDIT_FEE	14.699	1.234	14.068	14.801	15.491
NO_NOTES	0.078	0.379	0.000	0.000	0.000

The table reports the descriptive statistics for the study's dependent variables, key explanatory variables and various control variables. All the variables are defined in Appendix B.

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 3
Tests of the relation between the level of proprietary costs and the degree of non-compliance with the provisions of *SFAS 161*

	(1)			(2)		
	SCORE			*SCORE*		
	Coef.		RSE	Coef.		RSE
HEDGE_SALES	−0.970	***	0.135			
IND_HEDGE				−1.698	***	0.199
IMMATERIAL	−1.201	***	0.194	−1.137	***	0.199
ROA	1.940	***	0.380	1.803	***	0.345
LITIGATION	−0.351	***	0.114	–0.327	***	0.113
DEBT	−0.187	*	0.101	–0.128		0.098
STOCK	0.328	***	0.120	0.391	***	0.119
SIZE	0.273	***	0.056	0.290	***	0.055
BM	0.376	***	0.140	0.336	**	0.138
FOL	0.020	***	0.007	0.018	**	0.007
INST	0.005	***	0.001	0.005	***	0.001
AUDIT_FEE	0.506	***	0.068	0.441	***	0.065
Industry FE	Yes			Yes		
Year FE	Yes			Yes		
Pseudo R^2	0.15			0.14		
Observations	2,393			2,393		

This table reports the results of the tests examining the relation between the level of proprietary costs and the degree of non-compliance with the disclosure requirements of *SFAS 161* (estimation of Equation [1]). The dependent variable is the disclosure score (*SCORE*). Column (1) reports results where proprietary cost is proxied by *HEDGE_SALES*, while Column (2) presents results where proprietary cost proxy is *IND_HEDGE*. The dependent, explanatory and control variables are defined in Appendix B. ***, **, and * denote statistical significance (two-tailed) at the 1%, 5% and 10% levels, respectively.

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 4
Tests of the relation between the level of agency costs and the degree of non-compliance with the provisions of *SFAS 161*

	(1)			(2)		
	SCORE			*SCORE*		
	Coef.		RSE	Coef.		RSE
NON_HEDGE	−2.454	***	0.108			
RISK_EXP				–0.203	**	0.095
IMMATERIAL	−0.668	***	0.177	–1.147	***	0.198
ROA	1.763	***	0.416	1.785	***	0.345
LITIGATION	–0.237	*	0.124	–0.308	***	0.113
DEBT	–0.183	*	0.101	–0.125		0.098
STOCK	0.420	***	0.123	0.392	***	0.119
SIZE	0.000		0.057	0.271	***	0.056
BM	0.168		0.148	0.319	**	0.138
FOL	0.023	***	0.007	0.019	***	0.007
INST	0.006	***	0.001	0.005	***	0.001
AUDIT_FEE	0.548	***	0.071	0.447	***	0.065
Industry FE	Yes			Yes		
Year FE	Yes			Yes		
Pseudo R^2	0.23			0.15		
Observations	2,393			2,393		

The table displays the results of the tests examining the relation between the level of agency costs and the degree of non-compliance with the disclosure requirements of *SFAS 161* (estimation of Equation [2]). The dependent variable is the disclosure score (*SCORE*). Column (1) reports results where agency cost is proxied by *NON_HEDGE*, while Column (2) presents results where agency cost proxy is *RISK_EXP*. The dependent, explanatory and control variables are defined in Appendix B. ***, **, and * denote statistical significance (two-tailed) at the 1%, 5% and 10% levels, respectively.

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 5
Tests of regulatory actions in response to non-compliance with the provisions of *SFAS 161*

	Pr(COMM_LETTER)		
	Coef.		RSE
SCORE	–0.118	***	0.012
IMMATERIAL	–0.616	**	0.284
ROA	0.147		0.145
LITIGATION	0.127		0.101
DEBT	0.195	**	0.091
STOCK	0.080		0.113
SIZE	–0.068		0.045
BM	0.025		0.119
FOL	–0.002		0.006
INST	–0.003	**	0.001
AUDIT_FEE	–0.029		0.061
Industry FE	Yes		
Year FE	Yes		
Pseudo R^2	0.25		
Observations	2,393		

This table reports the likelihood of receiving a SEC CL in response to violations of the provisions of *SFAS 161*. Specifically, the table reports the association between the probability of receiving a derivatives-related SEC CL (*COMM_LETTER*) and *SCORE* (i.e., estimation of Equation [3]). All the variables are defined in Appendix B. ***, **, and * denote statistical significance (two-tailed) at the 1%, 5% and 10% levels, respectively.

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 6
Relations between the length of the CL resolution process and the two motivations for non-compliance with *SFAS 161*

		(1)			(2)		
		NO_OF_DAYS			*NO_OF_DAYS*		
		Coef.		RSE	Coef.		RSE
HEDGE_SALES	Ψ_1	0.439	***	0.169			
NON_HEDGE	Ψ_2	−0.100		0.205			
IND_HEDGE	Ψ_1				0.333	**	0.160
RISK_EXP	Ψ_2				0.072		0.080
SCORE		−0.003		0.023	0.001		0.011
NO_NOTES		0.818	***	0.240	0.307	***	0.057
IMMATERIAL		−0.060		0.237	–0.172		0.143
ROA		0.156		0.188	0.099		0.150
LITIGATION		0.292	*	0.158	0.216	*	0.124
DEBT		−0.082		0.123	–0.122		0.095
STOCK		−0.038		0.116	–0.038		0.085
SIZE		0.004		0.049	–0.038		0.029
BM		−0.182		0.116	–0.176	*	0.094
FOL		−0.010		0.008	–0.006		0.005
INST		−0.000		0.002	–0.000		0.002
AUDIT_FEE		−0.123	*	0.071	0.011		0.008
Industry FE		Yes			Yes		
Year FE		Yes			Yes		
Pseudo R^2		0.04			0.05		
Observations		519			519		
Wald χ^2: $\Psi_1 > \Psi_2$		4.04**			1.83*		

This table displays the associations between the length of the CL resolution process and the two motivations for non-compliance: proprietary vis-à-vis agency. The dependent variable is the length of the CL resolution process measured by number of days (*NO_OF_DAYS*), and it is regressed on proxies of proprietary and agency costs and control variables (estimation of Equation [4]). Column (1) shows the results of the pairwise comparison between proprietary and agency motivations proxied by *HEDGE_SALES* and *NON_HEDGE*. Column (2) shows the results of the pairwise comparison between proprietary and agency incentives proxied by *IND_HEDGE* and *RISK_EXP*. All the variables are defined in Appendix B. ***, **, and * denote statistical significance (two-tailed) at the 1%, 5% and 10% levels, respectively.

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 7
Difference-in-differences tests of changes in disclosure scores after the CL resolution

Panel A: Changes in disclosure scores and the level of proprietary costs

	(1) When *PTY* = *HEDGE_SALES SCORE*			(2) When *PTY* = *IND_HEDGE SCORE*		
	Coef.		RSE	Coef.		RSE
TREAT	–0.659		0.687	–2.717	***	0.481
POST	–0.960		0.609	–0.372		0.434
PTY	0.266		0.665	0.590		0.674
TREAT×POST	0.785		0.834	0.689		0.494
TREAT×PTY	–2.915	***	0.855	–0.738		0.863
POST×PTY	0.792		0.728	–0.044		0.684
TREAT×POST×PTY	–0.006		0.954	0.092		0.867
IMMATERIAL	–1.243		0.800	–1.064	*	0.637
ROA	0.490		0.786	1.157		0.798
LITIGATION	–0.381		0.515	–0.123		0.436
DEBT	–0.015		0.244	–0.042		0.246
STOCK	0.513		0.343	0.475		0.349
SIZE	0.387	**	0.194	0.368	**	0.185
BM	0.043		0.466	0.182		0.400
FOL	0.029		0.022	0.023		0.023
INST	0.001		0.004	0.000		0.004
AUDIT_FEE	0.487	**	0.222	0.446	**	0.219
NO_NOTES	–13.331	***	0.567	–12.796	***	0.515
Industry FE	Yes			Yes		
Year FE	Yes			Yes		
Pseudo R^2	0.31			0.29		
Observations	1,243			1,243		

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 7 (Cont'd)

Panel B: Changes in disclosure scores and the level of agency costs

	(1) When *AGY = NON_HEDGE SCORE*			(2) When *AGY = RISK_EXP SCORE*		
	Coef.		RSE	Coef.		RSE
TREAT	–2.640	***	0.437	–1.380	***	0.469
POST	0.702		0.735	0.576		0.508
AGY	–0.479		0.582	–0.559		0.585
TREAT×POST	0.865		0.530	–0.251		0.364
TREAT×AGY	–1.423	*	0.766	–2.067	***	0.281
POST×AGY	–0.252		0.359	–0.379		0.276
TREAT×POST×AGY	1.697	**	0.825	1.333	***	0.328
IMMATERIAL	–1.187	*	0.649	–1.044	***	0.375
ROA	0.069		0.087	1.031		0.938
LITIGATION	–0.347		0.533	–0.025		0.442
DEBT	–0.145		0.243	–0.037		0.247
STOCK	0.453		0.320	0.561		0.469
SIZE	0.311		0.204	0.292	***	0.093
BM	–0.148		0.412	–0.145		0.353
FOL	0.031		0.020	0.039		0.029
INST	0.003		0.004	0.003		0.005
AUDIT_FEE	0.377	*	0.228	0.513	***	0.112
NO_NOTES	–11.067	***	0.378	–15.131	***	0.694
Industry FE	Yes			Yes		
Year FE	Yes			Yes		
Pseudo R^2	0.34			0.27		
Observations	1,243			1,243		

Panel A (B) of this table reports the results of difference-in-differences tests of changes in disclosure scores for firms that receive a SEC CL and the corresponding matched sample (estimation of Equations [5] & [6]). For each CL firm, we identify an analogous control firm matched on size (based on the nearest market value of equity) and industry (based on the same two-digit SIC code) that did not receive a SEC CL during our sample period. The dependent variable is *SCORE*. *TREAT* is an indicator variable that takes the value of 1 for firms in the high proprietary/agency cost sub-sample (treatment group), and 0 for firms in the matched-control sample (control group). *POST* is coded 1 in the post-CL resolution period for both treatment and control firms, and 0 otherwise. Since control firms do not receive SEC CLs, we construct *pseudo CL resolution* events for controls firms based on the timing of the CL resolution of the corresponding treatment firms. *PTY* (*AGY*) is an indicator variable to represent high versus low proprietary (agency) cost firms. In Panel A, *PTY* takes the value of 1 (0) when *HEDGE_SALES* is 1 (0) in Column (1) and when *IND_HEDGE* is 1 (0) in Column (2). In Panel B, *AGY* takes the value of 1 (0) when *NON_HEDGE* is 1 (0) in Column (1) and when *RISK_EXP* is 1 (0) in Column (2). All control variables are defined in Appendix B. ***, **, and * denote statistical significance (two-tailed) at the 1%, 5% and 10% levels, respectively.

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 8
Testing the relations between the two motivations for non-compliance and mispricing using a sample of cash flow hedgers

Panel A: Cash flow hedges and changes in future gross profit

	(1)			(2)		
	ΔGP			*ΔGP*		
	Coeff.		RSE	Coeff.		RSE
AOCI_HEDGE	–0.373	**	0.178	–0.312	*	0.182
Log(ASSETS)				–0.002	***	0.001
LEVERAGE				−0.001		0.001
GROWTH				−0.001		0.001
Industry FE, Year FE	Yes			Yes		
Adjusted R^2	0.29			0.29		
Observations	1,273			1,273		

Panel B: Buy-and-hold return (BHRet) and Fama-French risk-adjusted return (Alpha) by cash flow hedge deciles

							Post-CL resolution					
							High (Low) Proprietary Cost Sub-sample			High (Low) Agency Cost Sub-sample		
AOCI Hedge Decile	Full Sample			Non-compliance Sub-sample								
	BHRet	Alpha	Obs.	BHRet	Alpha	Obs.	BHRet	Alpha	Obs.	BHRet	Alpha	Obs.
1	0.579	–0.001	178	1.029	0.000	100	0.618	0.000	44	0.456	0.001	39
							(1.184)	(0.001)	(24)	(0.789)	(0.001)	(20)
10	0.518	–0.001	190	0.450	–0.001	140	0.413	–0.002	62	0.431	0.001	51
							(0.521)	(–0.001)	(35)	(0.442)	(0.000)	(23)
Return of [1–10]	0.061	0.000		0.579***	0.001***		0.205***	0.002***		0.025	0.000	
							(0.798***)	(0.002***)		(0.347***)	(0.001**)	
p-value	0.28	0.77		0.00	0.01		0.01	0.00		0.61	0.91	
							(0.00)	(0.00)		(0.00)	(0.04)	

Panel A reports the results of regressing change in future gross profit from year *t* to year *t*+2 (*ΔGP*) on the level of unrealized gains/losses on cash flow hedges reported in AOCI, scaled by the contemporaneous net sales (*AOCI_HEDGE*). Panel B reports mispricing tests for six groups of cash flow hedgers (*AOCI_HEDGE*): (1) full sample; (2) non-compliance sub-sample (i.e., firm-years whose *SCORE* is not equal to 10); (3) Intersection of *AOCI_HEDGE* with CL sample having high (low) proprietary cost (*IND_HEDGE*=1 or 0); (4) Intersection of *AOCI_HEDGE* with CL sample having high (low) agency cost (*RISK_EXP*=1 or 0). We compute two measures of abnormal return: (i) two-year buy-and-hold return (*BHRet*) from the fourth month of year *t*+1 (the first month in which year *t* cash flow hedge gains/losses are disclosed) through the third month of year *t*+3 (prior to the year *t*+2 10-K release); (ii) monthly abnormal return (*Alpha*) for firms in each *AOCI_HEDGE* decile after controlling for the Fama-French risk factors. All other variables are defined in Appendix B. ***, **, and * denote statistical significance (two-tailed) at the 1%, 5% and 10% levels, respectively.

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 9
Validations tests for proprietary and agency cost proxies

Panel A: Correlations among proprietary and agency cost proxies

	HEDGE_SALES	*IND_HEDGE*	*NON_HEDGE*	*RISK_EXP*
HEDGE_SALES	1.000			
IND_HEDGE	0.273 ***	1.000		
NON_HEDGE	0.022	0.023	1.000	
RISK_EXP	–0.032	0.001	0.076 **	1.000

Panel B: Relations between proprietary vis-à-vis agency costs and the degree of non-compliance with *SFAS 161* in the value-enhancing sub-sample

	SCORE			
	Coef. (RSE)	Coef. (RSE)	Coef. (RSE)	Coef. (RSE)
HEDGE_SALES	–1.241 ** (0.489)			
IND_HEDGE		–18.093 *** (0.847)		
NON_HEDGE			2.050 (1.351)	
RISK_EXP				0.018 (0.518)
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Pseudo R^2	0.24	0.39	0.36	0.22
Observations	148	148	148	148

Electronic copy available at: https://ssrn.com/abstract=3979231

Table 9 (Cont'd)

Panel C: Relations between proprietary vis-à-vis agency costs and the degree of non-compliance with *SFAS 161* in the value-reducing sub-sample

	SCORE			
	Coef. (RSE)	Coef. (RSE)	Coef. (RSE)	Coef. (RSE)
HEDGE_SALES	–0.074 (0.211)			
IND_HEDGE		–0.881 (0.579)		
NON_HEDGE			–0.986 ** (0.429)	
RISK_EXP				–0.359 * (0.212)
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Pseudo R^2	0.08	0.08	0.06	0.08
Observations	591	591	591	591

Panel D: Comparisons of the magnitudes of proprietary/agency costs between the value-enhancing and value-reducing sub-samples

	(1) Value-enhancing (N = 148) Mean	(2) Value-reducing (N = 591) Mean	Difference [(1)−(2)]
HEDGE_SALES	0.723	0.455	0.268 ***
IND_HEDGE	0.378	0.259	0.119 **
NON_HEDGE	0.345	0.442	–0.097 ***
RISK_EXP	0.344	0.393	–0.049

This table reports several validation tests for our proprietary cost proxies (*HEDGE_SALES* and *IND_HEDGE*) and agency cost proxies (*NON_HEDGE* and *RISK_EXP*). Panel A reports the correlations among these various proxies. We follow an approach outlined in Bens et al. (2011) to identify a sub-sample where the use of derivatives is assumed to have enhanced value, and another sub-sample where derivatives use is assumed to have reduced value. We first identify a subset of firms that used derivatives for the first time. If we observe that they experienced increases (decreases) in firm values (measured by Tobin's Q) after derivatives initiation, we classify them into the value-enhancing (value-reducing) derivatives-user group. Panel B reports the results of regressing *SCORE* on our various proxies of proprietary and agency costs and control variables (i.e., re-estimating Equations [1] and [2]) for the value-enhancing group. Panel C reports the results of re-estimating Equations (1) and (2) for the value-reducing group. Coefficients of the control variables are suppressed in Panels B and C to conserve space. Finally, Panel D provides comparisons of the magnitudes of proprietary/agency costs between the value-enhancing and value-reducing sub-samples. All the variables are defined in Appendix B. ***, **, and * denote statistical significance (two-tailed) at the 1%, 5% and 10% levels, respectively.

Electronic copy available at: https://ssrn.com/abstract=3979231