Knightian Uncertainty and Fair Value Estimation

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Abstract

We examine whether managers' fair value estimates are affected by Knightian uncertainty, which arises when the probability distribution governing future outcomes is unknown or not uniquely specified. Theory predicts two countervailing effects of Knightian uncertainty on fair value estimates. First, managers wait and see, delaying quasi-irreversible write-downs. Second, when forming fair value estimates, they place greater weight on probability models that imply adverse outcomes, producing more pessimistic estimates. Consistent with these predictions, greater Knightian uncertainty is associated with a lower likelihood of recognizing goodwill impairments and with larger impairments conditional on recognition. Our findings also suggest that mutual fund managers report lower corporate bond valuations when Knightian uncertainty is greater. Finally, we find weaker investor responses to goodwill impairment amounts under greater Knightian uncertainty and lower subsequent net flows and inflows when fund markdowns are concentrated in higher-uncertainty holdings. Taken together, our findings suggest that Knightian uncertainty affects when managers recognize changes in fair value estimates, the level of those estimates, and how investors respond to them.

1. Introduction

Fair value estimation requires managers to exercise discretion when forecasting cash flows, selecting discount rates, and determining other valuation inputs. Prior research provides evidence that some managers use this discretion opportunistically to bias their fair value estimates (Hanley et al., 2018). Other research suggests that behavioral biases, such as cost anchoring, affect how managers exercise this discretion and, in turn, the fair value estimates they produce (Anderson et al., 2025). We examine whether Knightian uncertainty affects managers' fair value estimates.

Economists distinguish between two forms of uncertainty: risk and Knightian uncertainty. Risk is uncertainty about the eventual outcome when the probability distribution over possible outcomes is known. Knightian uncertainty is uncertainty about the probability distribution itself, which is unknown or not uniquely specified (Knight, 1921). This distinction matters because agents respond differently to Knightian uncertainty than to risk. Agents averse to Knightian uncertainty consider multiple probability models consistent with the available information and place greater weight on models that imply adverse outcomes (Ellsberg, 1961; Gilboa and Schmeidler, 1989; Halevy, 2007). We build on this theory and predict that Knightian uncertainty affects fair value estimates in two countervailing ways. First, when managers can delay a quasi-irreversible decision, greater Knightian uncertainty increases the value of waiting. Second, when forming fair value estimates, managers averse to Knightian uncertainty place greater weight on probability models that imply adverse outcomes, producing more pessimistic estimates.

The FASB's conceptual framework identifies neutrality as a component of faithful representation and describes neutral information as information that is not slanted, weighted, emphasized, or otherwise presented to influence how users receive it (FASB, 2018). Knightian uncertainty can challenge neutrality if it systematically affects when managers recognize write-downs or how they weight possible outcomes when forming estimates. This concern is particularly salient when fair value estimates require managers to exercise greater discretion.

ASC 820 classifies fair value inputs into a three-level hierarchy based on their observability (FASB, 2006). Level 1 inputs are quoted prices in active markets and leave little room for managerial judgment. Level 2 inputs are observable only indirectly and require managers to select and weight comparable market information. Level 3 inputs are unobservable and require model-based assumptions and estimates. Thus, for Level 2 and Level 3 estimates, managers must select and weight valuation inputs, assumptions, and scenarios. Under Knightian uncertainty, disproportionate weight on adverse scenarios can result in more pessimistic reported fair values.

In this paper, we investigate whether and how Knightian uncertainty affects managers' fair value estimates. We focus on Level 2 and Level 3 fair value estimates. For the Level 3 setting, we examine goodwill impairment testing, which requires managers to project cash flows under alternative business conditions, select discount rates, estimate the reporting unit's fair value, and determine whether and by how much goodwill is impaired. For the Level 2 setting, we study mutual funds' valuations of corporate bonds. Because many corporate bonds held by mutual funds do not trade actively, they are valued using observable but indirect inputs, such as yield curves, credit spreads, and evaluated prices. These estimates require substantial judgment in selecting comparable securities and adjusting for uncertainty.

A central empirical challenge is separating Knightian uncertainty from risk and from widely used proxies for general uncertainty (e.g., the VIX, policy uncertainty, macro-uncertainty, and disagreement). These proxies are useful for many questions, but they do not isolate the Knightian uncertainty faced by a representative agent, as described by Knight (1921), Ellsberg (1961), and Halevy (2007). We follow recent developments in the expected utility with uncertain probabilities (EUUP) literature, which links Knightian uncertainty to uncertainty about probabilities rather than the volatility of outcomes (Izhakian, 2017, 2020). Specifically, we use firm-level Knightian uncertainty estimates constructed from intraday TAQ returns following Izhakian (2017, 2020). This measure is outcome-independent, risk-independent, and preference-independent.

Our first test examines the relation between Knightian uncertainty and managers' goodwill impairment decisions. The goodwill impairment process yields two economically distinct outcomes: (1) whether managers recognize an impairment and (2) conditional on recognition, the amount recognized (Glaum et al., 2018). Because write-downs are quasi-irreversible, real options theory predicts that managers facing greater Knightian uncertainty will delay impairment recognition to preserve the option to wait (Roychowdhury and Martin, 2013). Conditional on recognition, however, theory further predicts that Knightian-uncertainty-averse managers will place greater weight on adverse valuation outcomes and therefore record larger impairments (Epstein and Schneider, 2003; Hansen and Sargent, 2008). Together, these forces imply that Knightian uncertainty lowers the likelihood of recognizing an impairment (the extensive margin) but raises its magnitude once recognized (the intensive margin).

We model the impairment decision using a two-stage hurdle model, controlling for expected risk and other firm characteristics (Cragg, 1971; Nessa, 2017). The first stage estimates whether Knightian uncertainty is associated with the likelihood of recognizing a goodwill impairment. Conditional on recognizing an impairment, the second stage estimates whether Knightian uncertainty is associated with the magnitude of the impairment. We find that greater Knightian uncertainty is associated with a lower likelihood of recognizing a goodwill impairment. This evidence is consistent with managers delaying impairment recognition until uncertainty resolves. However, conditional on recognition, greater Knightian uncertainty is associated with larger impairments. This finding is consistent with managers forming more pessimistic fair value estimates when measuring goodwill impairments. Economically, a one-standard-deviation increase in Knightian uncertainty is associated with a decline in the likelihood of recognizing an impairment from 11.4% to 10.6%. Among firm-years in which managers recognize an impairment, a one-standard-deviation increase in Knightian uncertainty is associated with an impairment amount approximately $7.1 million larger for a firm with the median beginning assets in the conditional sample. Taken together, the results suggest managers delay goodwill impairment recognition but record larger impairments when

Knightian uncertainty is greater.

We use ASU 2011-08 to examine whether greater managerial discretion strengthens the negative association between Knightian uncertainty and impairment recognition. The standard gave managers greater discretion in deciding whether to proceed to quantitative goodwill impairment testing (FASB, 2011). The optional qualitative assessment is commonly referred to as "Step 0." Managers who elect Step 0 proceed to quantitative testing only when they conclude that a reporting unit's fair value is more likely than not below its carrying amount. Step 0 allows managers to weigh adverse evidence against the reporting unit's prior fair value cushion and other mitigating factors before deciding whether to proceed to quantitative testing.

We therefore expect the negative association between Knightian uncertainty and impairment recognition to become stronger after ASU 2011-08, particularly among firms with greater pre-adoption goodwill exposure. We find that, following adoption, greater Knightian uncertainty is associated with a lower likelihood of impairment recognition among firms with greater predetermined goodwill exposure. Because all firms adopted ASU 2011-08 at the same time, we do not interpret this pattern as causal. Rather, this test provides corroborating evidence consistent with Knightian uncertainty affecting managers' decisions to recognize goodwill impairments rather than merely capturing firm fundamentals.

Our second set of tests focuses on Level 2 fair value estimation by studying mutual fund managers' valuations of corporate bond holdings reported quarterly on Form N-PORT (SEC, 2016). Corporate bonds are periodically valued by mutual fund managers using observable but indirect inputs, including yield curves, credit spreads, evaluated pricing, and matrix pricing, leaving substantial scope for judgment in selecting comparables and adjusting inputs to reported values (Cici et al., 2011). We focus on infrequently traded corporate bonds and examine the extent to which fund managers mark down their valuations of these bonds relative to benchmark prices. Using a within-fund-time design, we find that mutual fund managers report lower valuations relative to market-based benchmark prices for bonds issued by firms with greater Knightian uncertainty. These results suggest that Knightian uncertainty affects managers' Level 2 fair value estimates, resulting in more pessimistic reported values.

Finally, we investigate the economic consequences of fair value estimates formed under Knightian uncertainty. In the Level 3 setting, we examine whether investors react less to goodwill impairment amounts when Knightian uncertainty is greater. We find a weaker market response to a given impairment amount under greater Knightian uncertainty, consistent with investors placing less weight on impairment estimates that may reflect both underlying fundamentals and pessimistic valuation judgments. In the Level 2 setting, we test whether subsequent fund flows vary when reported bond markdowns are concentrated in holdings with greater Knightian uncertainty. We find that such funds receive lower subsequent net flows and inflows, consistent with investors responding less favorably to markdowns concentrated in holdings with greater Knightian uncertainty. Overall, our evidence suggests that investors place less weight on, and respond less favorably to, fair value estimates formed when there is greater Knightian uncertainty.

The effects of Knightian uncertainty on impairment recognition and measurement are conceptually distinct from conditional conservatism. Conditional conservatism is typically framed as an asymmetric recognition rule that produces timelier recognition of losses than gains when bad news is more verifiable or litigation and contracting incentives are stronger. Knightian uncertainty, in contrast, generates two distinct predictions. The option value of waiting leads managers to delay quasi-irreversible write-downs, reducing the likelihood of impairment recognition. Conditional on recognition, aversion to Knightian uncertainty leads managers to place greater weight on adverse states, resulting in more pessimistic valuations and larger impairments. Our corporate bond tests provide complementary evidence from a Level 2 setting in which no discrete loss-recognition decision analogous to conditional conservatism exists. Taken together, the findings support the distinct recognition and measurement predictions of Knightian uncertainty.

We contribute to the extensive literature on fair value estimation and managerial discretion.

Prior research primarily examines fair value discretion through the lens of agency theory, asking whether managers use judgment to convey private information or to opportunistically manage earnings (e.g., Ramanna and Watts, 2012; Hanley et al., 2018; Chung and Hribar, 2021). We introduce managers' aversion to Knightian uncertainty as a distinct influence on fair value estimates that operates alongside these incentives.

Second, we extend the emerging literature on the economic consequences of Knightian uncertainty. While recent studies in finance have shown that Knightian uncertainty influences real corporate decisions such as investment timing and capital structure (e.g., Izhakian and Yermack, 2017; Izhakian et al., 2022), limited evidence exists regarding its relation to financial reporting activities. We bridge this gap by providing evidence that suggests Knightian uncertainty affects whether managers recognize goodwill impairments, the amounts they recognize, and reported corporate bond values.

Third, we provide evidence on the interplay between real options theory and accounting recognition. Prior research links uncertainty-driven delays in recognition to discretionary conservatism (e.g., Roychowdhury and Martin, 2013). By separating the goodwill impairment decision into recognition and measurement stages, we distinguish between two theoretical mechanisms: the "option to wait," which delays recognition, and aversion to Knightian uncertainty, which produces more pessimistic estimates conditional on recognition. This distinction clarifies why greater Knightian uncertainty can reduce the likelihood of recognition while increasing the magnitude of recognized impairments.

Finally, our findings are informative to standard setters and regulators. The FASB's conceptual framework emphasizes neutrality as a core attribute of faithful representation. Our results suggest that neutrality may be more difficult to achieve when fair value estimates are formed under greater Knightian uncertainty. Neutrality may therefore depend in part on the information environment and verification infrastructure surrounding fair value estimates. Greater transparency around valuation inputs and assumptions, stronger external benchmarking, and enhanced verifiability may help users evaluate how managers arrive at reported values.

2. Theory and hypothesis development

2.1. Knightian uncertainty and aversion to Knightian uncertainty

Standard economic theory distinguishes between risk, where the probability distribution of future outcomes is known, and Knightian uncertainty (or ambiguity), where the distribution itself is unknown or non-unique (Knight, 1921; Ellsberg, 1961). Thus, risk concerns which outcome will occur, whereas Knightian uncertainty also concerns which probability distribution governs those outcomes (Klibanoff et al., 2005).

The existence of Knightian uncertainty suggests that agents cannot identify a single objective prior. Instead, they entertain a set of plausible probability measures consistent with the available information (Gilboa and Schmeidler, 1989). A large literature documents that individuals exhibit a distinct aversion to Knightian uncertainty, preferring settings in which probabilities are objectively known to those in which they are vague (Epstein and Schneider, 2010). Under Knightian uncertainty aversion, agents place relatively more weight on probability density functions that predict unfavorable outcomes and less weight on those that predict favorable outcomes (Gilboa and Schmeidler, 1989). Effectively, the agent acts as if the likelihood of adverse states is higher than a neutral Bayesian update would suggest (Epstein and Schneider, 2003).

The literature suggests that corporate managers exhibit a significant aversion to Knightian uncertainty in their decisions. Unlike diversified investors, managers have undiversified human capital tied to the firm's performance. Therefore, they are particularly sensitive to uncertainty (Panousi and Papanikolaou, 2012). Izhakian and Yermack (2017) find that executives exercise their stock options significantly earlier and accept a significantly lower monetary payout when the firm experiences high Knightian uncertainty. Izhakian et al. (2022) document that managers actively shift financing toward debt and away from equity as Knightian uncertainty rises, consistent with a preference for fixed claims over the valuation of residual equity under

Knightian uncertainty.

When forming fair value estimates, preparers averse to Knightian uncertainty place greater weight on probability models that imply adverse outcomes, producing more pessimistic estimates (Hansen and Sargent, 2008).

From a utility perspective, Knightian uncertainty aversion can be fully rational once probabilities are ill-defined (Gilboa and Schmeidler, 1989). Smooth ambiguity preferences capture a distinct attitude toward Knightian uncertainty that is separate from risk (Klibanoff et al., 2005). Under these preferences, pessimism can be interpreted as an optimal response to potential model misspecification (Hansen and Sargent, 2001).

2.2. Knightian uncertainty and fair value estimation

ASC 820 establishes a fair value hierarchy that prioritizes inputs based on their observability (FASB, 2006; Landsman, 2007). Level 1 measurements leave little room for managerial discretion because they are based on quoted prices in active markets. Level 2 and Level 3 measurements require managers to exercise judgment, opening the door for Knightian uncertainty aversion to affect reported values (Barth, 1994; Penman, 2007). For Level 3 items, such as goodwill, indefinite-lived intangibles, and complex derivatives, inputs are unobservable, requiring managers to internally construct the probability distribution of future cash flows and uncertainty premiums (Song et al., 2010; Ramanna and Watts, 2012). Similarly, Level 2 measurements often rely on evaluated pricing services or matrix pricing, which require judgment in selecting and adjusting comparable benchmarks (Cici et al., 2011).

When the probability distribution is unknown, managers must select and weight plausible inputs and scenarios. Theory suggests that preparers who are averse to Knightian uncertainty place greater weight on adverse scenarios and less weight on favorable ones, effectively embedding a precautionary discount into the reported number (Epstein and Schneider, 2003; Hansen and Sargent, 2008).

Real options theory provides a countervailing prediction when managers can delay a quasi-irreversible decision. The value of the option to wait increases with uncertainty because managers can obtain new information before committing to the decision (Bernanke, 1983; Bloom, 2009; Arif et al., 2016). Although existing studies mainly focus on investment decisions, this logic also applies to accounting recognition when a write-down cannot be reversed. Recognizing a write-down is a quasi-irreversible accounting decision that normally signals a permanent decline in value. Greater Knightian uncertainty makes waiting for new information more valuable, leading managers to delay recognition (Roychowdhury and Martin, 2013). Yet when managers form fair value estimates, aversion to Knightian uncertainty leads them to place greater weight on probability models that imply adverse outcomes, resulting in more pessimistic valuations. Because these forces operate differently in recognition and measurement, we consider the two decisions separately.

2.3. Hypotheses development

We apply these predictions in two settings: goodwill impairments and mutual funds' valuations of corporate bonds. Goodwill allows us to examine recognition and measurement separately, while bond valuations provide a Level 2 setting in which managers form estimates using indirectly observable inputs.

2.3.1. Level 3 fair value: goodwill impairment

Under ASC 350 (formerly SFAS 142), firms must test goodwill for impairment annually, but the annual test does not always require managers to calculate a current fair value for each reporting unit. When quantitative testing is required, managers estimate the reporting unit's fair value using unobservable Level 3 inputs, such as projected future cash flows and discount rates, which gives them substantial discretion over the valuation (Ramanna and Watts, 2012). Although the assessment and valuation steps are procedurally linked, the goodwill impairment process yields two economically distinct outcomes: whether the firm recognizes a write-down and, conditional on recognition, its magnitude (Glaum et al., 2018). We posit that the two theoretical forces discussed in Section 2.2 map differently to these two outcomes.

The recognition decision determines whether a firm records an impairment. Because U.S.

GAAP prohibits reversing a recognized goodwill impairment, managers may use the discretion available in the assessment process to wait for additional information before recording a write-down (Roychowdhury and Martin, 2013). Greater Knightian uncertainty increases the value of waiting for new information and therefore reduces the likelihood of recognition.

However, once managers recognize an impairment and forgo the option to wait, they must determine the magnitude of the write-down. Measuring the impairment requires managers to estimate future cash flows and incorporate risk into the valuation, opening the door for Knightian uncertainty aversion to influence both inputs. Theory posits that such agents systematically overweight adverse probability distributions and underweight favorable ones to insulate themselves against model misspecification (Epstein and Schneider, 2003; Hansen and Sargent, 2008). Therefore, conditional on an impairment being recognized, we expect Knightian uncertainty to result in more pessimistic valuations (i.e., larger impairment charges).

Based on the discussion above, we propose the following hypotheses:

> **H1a:** *Higher Knightian uncertainty is associated with a lower likelihood of recognizing a goodwill impairment.*
>
> ***H1b:*** *Conditional on recognition, higher Knightian uncertainty is associated with a larger magnitude of goodwill impairment.*

2.3.2. Level 2 fair value: mutual fund bond valuation

To examine Level 2 fair value estimates, we focus on mutual fund managers' valuations of corporate bonds. Corporate bonds without active quoted prices are generally classified as Level 2 when their valuations rely principally on observable market inputs (FASB, 2006). These valuations rely on indirectly observable inputs, such as matrix pricing and evaluated pricing services, and require managers to exercise judgment in selecting and adjusting comparable benchmarks (Cici et al., 2011).

Mutual funds report a fair value for each bond at each reporting date, so this setting does not involve a separate impairment-recognition decision.

When the probability distribution is unknown, managers averse to Knightian uncertainty place greater weight on probability models that imply adverse outcomes when selecting valuation inputs (e.g., comparable trades and matrix adjustments) (Gilboa and Schmeidler, 1989). This weighting leads to more pessimistic estimates and lower reported values relative to market benchmarks. Accordingly, we propose the following hypothesis:

> **H2:** *Higher Knightian uncertainty is associated with lower reported fair values for corporate bonds held by mutual funds.*

3. Data and sample

3.1. Data

3.1.1. Estimating Knightian uncertainty

Prior literature uses several empirical proxies for uncertainty. Return-based measures, including conditional volatility and realized volatility, capture variation in realized outcomes (Andersen et al., 2001; Arif et al., 2016). Implied-volatility indices such as the VIX reflect risk-neutral expected variance and incorporate risk premia and investor risk aversion (Bloom, 2009; Bekaert et al., 2013). Newspaper-based policy uncertainty measures capture uncertainty about regulatory and fiscal frameworks (Baker et al., 2016), while macro-uncertainty measures capture common volatility in the unforecastable components of large panels of indicators (Jurado et al., 2015). Disagreement proxies, such as analyst-forecast dispersion, capture heterogeneity in beliefs across agents (Miller, 1977; Diether et al., 2002). Although informative for many questions, these proxies do not directly measure uncertainty about the probability distribution itself—that is, uncertainty over the probabilities assigned to states (Knight, 1921; Ellsberg, 1961; Halevy, 2007).

To address this limitation, we follow the expected utility with uncertain probabilities (EUUP) framework and the empirical implementation developed by Izhakian (2017, 2020).[1] We use firm-level monthly Knightian uncertainty estimates constructed from intraday TAQ returns following Izhakian (2017, 2020). The measure captures variation in the probabilities

[1]Knightian uncertainty is defined as $\mho^2\left[r_i\right] \equiv \frac{1}{\sqrt{\omega(1-\omega)}} \sum_{j=1}^{n} E\left[P_i\left(B_j\right)\right] Var\left[P_i\left(B_j\right)\right]$. Appendix A and Izhakian (2020) provide additional details.

assigned to a firm's future payoffs rather than variation in the payoffs themselves. For each firm-year, we calculate Knightian uncertainty as the mean of the firm's monthly estimates during that fiscal year.[2]

3.1.2. Measuring fair value estimates

We construct two sets of dependent variables to examine the relation between Knightian uncertainty and Level 3 and Level 2 fair value estimates. For Level 3 estimates, we examine both the recognition and measurement of goodwill impairments. We measure recognition using a goodwill impairment indicator that equals one if the firm recognizes a goodwill impairment in year t and zero otherwise. We measure the magnitude of goodwill impairment using the goodwill impairment charge recognized in year t, scaled by total assets at the beginning of the fiscal year. We scale by beginning-of-period total assets because the impairment charge mechanically reduces end-of-period total assets. The resulting measure captures the magnitude of the recognized goodwill write-down relative to firm size.

For Level 2 estimates, we examine mutual fund managers' valuations of inactively traded corporate bonds. When active market quotes are unavailable, managers typically rely on matrix pricing or analyses of comparable securities (Cici et al., 2011). Specifically, we measure the log difference between the fund-reported valuation and a benchmark price. For bond j held by fund k at time t, the markdown is

$$Markdown_{j,k,t} = \ln\left(Price_{j,k,t}^{\text{Fund}}\right) - \ln\left(Price_{j,t}^{\text{Market Benchmark}}\right),$$

where $Price_{j,t}^{\text{Market Benchmark}}$ is either (a) the evaluated price supplied by Bloomberg's evaluated pricing service (BVAL) for bond j on reporting date t or (b) the midpoint of the buy-side and sell-side volume-weighted average prices on the bond's last trading day in the reporting

[2] Our Knightian uncertainty measure is estimated using the firm's equity-market data, capturing firm-level Knightian uncertainty salient to both investors and managers. One potential explanation for differential sensitivity to this uncertainty is that corporate managers' wealth and human capital are concentrated in their firms, which may make them more sensitive to uncertainty than fully diversified investors.

month.

3.1.3. Control variables

For the Level 3 tests, we control for fundamental economic deterioration and investment opportunities. These controls include firm size (*Size*), return on assets (*ROA*), annual stock returns (*Return*), leverage (*Leverage*), Altman Z-score (*AltmanZ*), book-to-market ratio (*Book-to-Market*), and sales growth (*Sales Growth*). We also control for capital expenditures (*CAPX*) to account for a real-options channel through which uncertainty may affect the asset base. To control for strategic reporting incentives, we include a loss indicator variable (*Loss*). We use institutional ownership (*Institutional Holding*) as a proxy for external monitoring pressure.

In addition, greater outcome risk can increase discount rates and thereby reduce fair values independently of Knightian uncertainty aversion. We control for risk using two proxies: the fiscal-year average of the firm's monthly estimates of average daily return variance (*Risk*) and operating cash flow volatility (*CFO Volatility*). We also control for analyst coverage (*Analyst Forecasts*) and forecast dispersion (*Forecast Dispersion*) to mitigate the concern that our results are driven by information asymmetry or disagreement among market participants rather than Knightian uncertainty.

For the mutual fund analysis, we control for bond-specific characteristics associated with valuation complexity and market liquidity. We include bond age (*Bond Age*), time to maturity (*Maturity*), coupon rate (*Coupon*), and high-yield status (*High Yield*). We also include restricted-security status (*Restricted*), Amihud illiquidity (*Amihud*), *Order Imbalance*, *Days since Last Trade*, and *Days with Trades* to control for liquidity premiums and market microstructure frictions. We include accrued interest (*Interest Accruals*) to control for its potential effect on bond valuations. We also include issuer-level characteristics to control for fundamentals, such as firm size (*Size*), leverage (*Leverage*), financial distress (*AltmanZ*), and stock performance (*Return*). Finally, we include fund-quarter fixed effects to absorb fund-level factors common to the valuation of all holdings in a quarter, including valuation policies and potential strategic incentives, and control for each position's relative importance in the fund's portfolio (*Portfolio Weight*).

3.2. Sample descriptives

We construct two samples to test our hypotheses: a firm-year panel of goodwill impairments for the Level 3 tests (Level 3 sample) and a mutual-fund–bond–quarter panel of mutual funds' corporate bond valuations for the Level 2 tests (Level 2 sample).

Our Level 3 sample begins with all U.S. public firms covered by Compustat and CRSP with available data to calculate Knightian uncertainty using intraday TAQ data. We include firms with a positive goodwill balance or a goodwill acquisition in at least one fiscal year. Because SFAS 142 introduced the annual impairment-only model for goodwill for fiscal years beginning after December 15, 2001, our primary goodwill-estimation sample includes annual fiscal periods ending after December 15, 2002. This conservative observable cutoff ensures that the included fiscal periods began after mandatory adoption. We also require firms to have non-missing control variables. To mitigate the influence of outliers, we winsorize all continuous variables at the 1st and 99th percentiles. The resulting sample used in Tables 2 and 3 contains 42,645 firm-year observations from 2002 to 2024. The separate market-reaction test in Table 7 contains 38,422 firm-years under its return-data and common-support requirements.

For the Level 2 sample, we obtain all quarterly Form N-PORT filings from the SEC covering 2019 Q4 through 2024 Q4. We identify all corporate bond holdings that mutual funds classify as Level 2. We use Form N-PORT rather than Morningstar or CRSP Mutual Fund data because the commercial databases combine mandated and voluntary disclosures and provide holdings at inconsistent frequencies (Elton et al., 2010; Schwarz and Potter, 2016). We then merge the holdings and valuation data with bond characteristics from Mergent FISD and transaction data from TRACE. We focus on infrequently traded corporate bonds, for which managers rely more heavily on indirectly observable inputs and judgment. Specifically, we require that a bond did not trade on the reporting date and that its most recent institutional trade occurred more than five calendar days earlier. We obtain quarterly financial data for the bond issuers from Compustat. All continuous variables are winsorized at the 1st and 99th percentiles. Our final Level 2 sample includes 142,508 fund–bond–quarter observations.

Table 1 reports the descriptive statistics for the variables used in our analysis. For the primary Level 3 sample, our key independent variable, *Knightian Uncertainty*, has a mean of 0.054 and a median of 0.036. The standard deviation of 0.051 indicates substantial cross-sectional variation. For the dependent variable, the mean *Gw_Imp_Amt* is 0.005, indicating an average annual goodwill impairment of 0.5% of total assets. The *Gw_Imp_Ind* has a mean of 0.114, indicating that approximately 11.4% of the firm-year observations include a recognized goodwill impairment.

For bond issuers in the Level 2 sample, the mean of *Knightian Uncertainty* is 0.105. The means of *Markdown_Evaluated Price* and *Markdown_Recent Price* are both −0.003, and their medians are −0.002 and −0.001, respectively. This evidence suggests that, on average, fund-reported valuations are slightly below benchmark prices. In terms of issuer characteristics, firms in the bond sample are generally larger (mean *Size* of 10.348) than those in the Level 3 sample. The sample's high-yield share, time to maturity, and time since the last trade are consistent with those reported by Cici et al. (2011).

3.3. Inference

The annual goodwill analyses in Tables 2, 3, and 7 are based on firm-year observations, with each firm appearing repeatedly over time. We therefore cluster standard errors by firm to account for correlation in regression residuals within firms over time.[3] All specifications in these tables include year fixed effects to control for shocks common to firms in a given year.

[3]We do not add calendar year as a second clustering dimension because the sample spans only 23 years, and conventional cluster-robust inference can be unreliable when the number of clusters is small (Petersen, 2009; MacKinnon et al., 2023).

4. Knightian uncertainty and Level 3 fair value estimates

4.1. Recognition versus measurement: a two-stage hurdle model

As discussed in Section 2.3.1, goodwill impairment yields two economically distinct outcomes: (1) whether managers recognize an impairment (recognition, the extensive margin), and (2) conditional on recognition, how large the impairment is (measurement, the intensive margin). Knightian uncertainty has two countervailing effects on these outcomes. Greater Knightian uncertainty increases the value of waiting before recognizing a quasi-irreversible impairment. Conditional on recognition, however, managers averse to Knightian uncertainty place greater weight on adverse states when measuring the impairment.

Table 2 first reports unconditional regressions of impairment magnitude on Knightian uncertainty and the control variables. The coefficient on *Knightian Uncertainty* is positive and statistically significant in all three specifications. In Column (2), which includes industry and year fixed effects, the coefficient is 0.0082 ($t = 2.47$). Although this unconditional association summarizes the overall relation between Knightian uncertainty and impairment amounts, it does not distinguish between the likelihood of recognizing an impairment and its magnitude conditional on recognition. Because theory predicts opposing associations across these two margins, we examine them separately.

To estimate the association between Knightian uncertainty and each margin separately, we follow the existing literature (e.g., Cragg, 1971; Beatty and Weber, 2006; Nessa, 2017) and use a two-stage hurdle model. Table 3 reports the results. In the first stage, we examine the probability of recording any impairment (*Gw_Imp_Ind*) using a linear probability model with fixed effects. In the second stage, we use OLS to examine the association between Knightian uncertainty and the magnitude of goodwill impairments among firm-years with a positive impairment. We measure the magnitude of the impairment (*Gw_Imp_Amt*) as the recognized charge divided by total assets at the beginning of the fiscal year.

In the first-stage specifications, higher Knightian uncertainty is associated with a lower likelihood of impairment recognition. The coefficient on *Knightian Uncertainty* is -0.1592

($t = -2.94$) with industry and year fixed effects (Column (2)) and -0.1441 ($t = -2.20$) with firm and year fixed effects (Column (3)). Thus, the negative association is significant at the 1% level in Column (2) and at the 5% level in Column (3). In contrast, the second-stage results indicate that, conditional on recognizing an impairment, Knightian uncertainty is associated with larger impairment magnitudes. The coefficient on *Knightian Uncertainty* is 0.0609 ($t = 3.67$) with industry and year fixed effects (Column (5)) and 0.0587 ($t = 2.43$) with firm and year fixed effects (Column (6)). The positive association is significant at the 1% level in Column (5) and at the 5% level in Column (6).

To assess economic magnitude, we use the estimates from Columns (2) and (5). A one-standard-deviation increase in Knightian uncertainty is associated with a 0.8-percentage-point decrease in the likelihood of recognizing an impairment. Relative to the sample-average recognition rate, this corresponds to a decline from 11.4% to 10.6%. Among firm-years in which managers recognize an impairment, a one-standard-deviation increase in Knightian uncertainty is associated with impairment amounts that are 0.30% of beginning assets larger. For a firm with the median beginning assets in the conditional sample ($2.38 billion), the estimate corresponds to an impairment amount approximately $7.1 million larger.

Taken together, the results in Table 3 indicate that greater Knightian uncertainty is associated with a lower likelihood of impairment recognition but larger impairment amounts conditional on recognition. This pattern is consistent with managers preserving the option to wait by delaying recognition and forming more pessimistic fair value estimates once they recognize an impairment.

4.2. A shock to managerial discretion

ASU 2011-08 gave managers more discretion over whether to perform quantitative goodwill impairment testing but did not change how they measured an impairment (FASB, 2011). We use this externally imposed change to provide corroborating evidence on the option-to-wait mechanism. Before ASU 2011-08, managers could carry forward a prior-year fair value calculation only if the reporting unit had not changed significantly, the prior fair value exceeded carrying amount by a substantial margin, and the likelihood that current fair value was below carrying amount was remote. ASU 2011-08 eliminated the carryforward provision but introduced an optional qualitative assessment ("Step 0"). Managers electing Step 0 proceed to quantitative testing only when they conclude that the reporting unit's fair value is more likely than not below its carrying amount. Compared with the prior carryforward criteria, Step 0 gives managers greater discretion because they weigh the totality of adverse, positive, and mitigating evidence, and no individual event or circumstance necessarily requires quantitative testing. For example, suppose a reporting unit had a substantial fair value cushion in the prior year but its industry subsequently deteriorated. Before ASU 2011-08, managers had to perform a current quantitative valuation unless they could conclude that the likelihood of fair value falling below carrying amount remained remote. Under Step 0, managers may weigh the same downturn against the prior fair value cushion and other mitigating evidence and stop without performing a quantitative test unless they conclude that fair value is more likely than not below carrying amount. Thus, the same adverse evidence could require quantitative testing under the prior standard but not under Step 0. Managers may instead bypass Step 0 and proceed directly to quantitative testing.[4] We therefore expect the additional discretion provided by ASU 2011-08 to make managers facing greater Knightian uncertainty less likely to recognize a goodwill impairment, particularly when more goodwill is at stake. We do not expect the standard to change the amount managers record when they

[4]We considered ASU 2017-04 as an additional setting in which managers' discretion over goodwill impairment changed. Before ASU 2017-04, a reporting unit that failed Step 1 proceeded to Step 2, but failing Step 1 did not itself require a goodwill impairment. In Step 2, managers hypothetically assigned the reporting unit's fair value to its identifiable assets and liabilities and treated the residual as the implied fair value of goodwill. This allocation did not change the recorded amounts of the individual assets and liabilities. Knightian uncertainty aversion could have opposing effects within this calculation: a lower reporting-unit fair value would reduce implied goodwill, whereas lower values assigned to identifiable net assets would increase the residual attributed to goodwill. ASU 2017-04 eliminated Step 2 and instead measures impairment directly as the amount by which the reporting unit's carrying amount exceeds its fair value, limited to recorded goodwill (FASB, 2017). Because the standard both removed the allocation judgment and changed how reporting-unit fair value maps into the impairment charge, we cannot form an unambiguous prediction about its effect on the relation between Knightian uncertainty and goodwill impairments. We therefore do not use ASU 2017-04 as a corroborating test. Its effective date for SEC filers also substantially overlaps the COVID-19 pandemic and related economic shocks.

recognize an impairment.

Table 4 presents the results. Column (1) reports a linear-probability model of goodwill impairment recognition estimated for firm-years with positive beginning goodwill. We interact Knightian uncertainty with an indicator for the post-adoption period and with each firm's predetermined goodwill exposure. We measure predetermined goodwill exposure as the standardized average ratio of beginning goodwill to beginning assets over the two fiscal years before adoption. We include firm and decision-month fixed effects and estimate the model using the two fiscal-year observations immediately before adoption and the two immediately after adoption.

In Column (1), the coefficient on *Knightian Uncertainty* $\times$ *Post* $\times$ *Pre_Gw_Exp* is -0.4699 (two-way clustered $t = -3.84$). At the 25th percentile of goodwill exposure, a one-standard-deviation increase in Knightian uncertainty is associated with a 2.84-percentage-point increase in impairment recognition after adoption relative to before adoption. At the 90th percentile, it is associated with a 3.50-percentage-point decrease. This evidence is consistent with the additional discretion provided by ASU 2011-08 allowing managers facing greater Knightian uncertainty to preserve the option to wait, particularly when more goodwill is at stake. Because all firms adopted ASU 2011-08 at the same time, we interpret this pattern as corroborating evidence on the option-to-wait mechanism rather than as a causal effect of the standard.

To assess whether the post-adoption result reflects a pattern that was already developing before ASU 2011-08, we test whether the relation between Knightian uncertainty and impairment recognition changed differently across goodwill exposure before adoption. We find no evidence that it did (joint $p = 0.67$). The coefficient is similar when we include all available firm-years rather than require observations in every year around adoption (-0.4795; $t = -4.02$), and the primary estimate is significant at the 1 percent level using wild cluster bootstraps with either Webb or Rademacher weights ($p = 0.007$ and 0.006, respectively) (MacKinnon et al., 2021; Roodman et al., 2019).

Column (2) examines impairment amounts among firm-years in which managers recognize an impairment. We measure the impairment amount as the recognized charge divided by beginning assets and otherwise use the same model as in Column (1). The coefficient on *Knightian Uncertainty* × *Post* × *Pre_Gw_Exp* is 0.0488 (two-way clustered $t = 0.53$). We find no evidence that the relation between Knightian uncertainty and impairment amounts changed after adoption among firms with greater pre-adoption goodwill exposure.

We repeat both analyses using one, three, and four fiscal years before and after adoption to assess whether the results are sensitive to the length of the period examined (Appendix C). Across the four windows, the coefficient on *Knightian Uncertainty* × *Post* × *Pre_Gw_Exp* ranges from −0.3940 to −0.4946 and is significant at the 5 percent level or better. Furthermore, across the alternative windows, we continue to find no evidence that the relation between Knightian uncertainty and impairment amounts changed after adoption among firms with greater pre-adoption goodwill exposure.

5. Knightian uncertainty and Level 2 fair value estimates

We next test H2 using mutual fund managers' valuations of corporate bond holdings reported quarterly on Form N-PORT. Many corporate bonds do not trade actively. For these bonds, fair value inputs are only indirectly observable on the reporting date. Managers must therefore exercise judgment when using pricing models and observable inputs from comparable securities to estimate fair value (Cici et al., 2011; Choi et al., 2022). We focus on bonds that did not trade on the quarterly reporting date and whose most recent trade occurred more than five calendar days earlier.

We construct two markdown measures that compare the fund-reported valuation with a market benchmark. *Markdown_Evaluated Price* is the log difference between the fund-reported valuation and Bloomberg's evaluated price (BVAL)[5] for the same bond on the reporting date. *Markdown_Recent Price* is the log difference between the fund-reported

[5] Bloomberg evaluated prices are widely used as pricing references in fixed-income markets. Other service providers include Refinitiv (LSEG) and ICE Data Services.

valuation and a recent-price benchmark. We measure the recent-price benchmark as the midpoint of the buy-side and sell-side volume-weighted average prices on the bond's last trading day in the reporting month. A lower value indicates a valuation that is more pessimistic relative to the benchmark market price. We include fund-quarter fixed effects to absorb fund-level factors common to the valuation of all holdings in a quarter, including valuation policies and potential strategic incentives.

Table 5 presents the OLS estimates. The results are consistent across specifications that use different fixed-effect structures. Across these specifications, greater issuer-level Knightian uncertainty is associated with lower fund-reported fair values relative to benchmark prices. Specifically, the estimated coefficients in Columns (2) and (5) indicate that a one-standard-deviation increase in Knightian uncertainty is associated with additional markdowns of approximately 0.023% relative to Bloomberg's evaluated price and 0.031% relative to the recent-price benchmark, respectively.

A potential concern is that recent transaction prices may reflect liquidity conditions associated with Knightian uncertainty, making it difficult to distinguish fund managers' valuations from movements in the benchmark. To mitigate this concern, we estimate a latent-price benchmark using the prices, coupon rates, high-yield status, maturities, and ages of liquid bonds from the same issuer-month.[6] The resulting synthetic benchmark relies on observable inputs from liquid bonds issued by the same firm rather than on the potentially illiquid transaction price of the bond being valued (Choi et al., 2022).

Table 6 reports the estimates using *Markdown_Latent Price* as the dependent variable.[7] The negative association between Knightian uncertainty and valuation markdown persists

[6]We classify a bond as liquid if it trades on the reporting date or its most recent trade occurred no more than five calendar days earlier. We estimate the latent-price model only for issuer-months with at least 20 liquid bonds and apply it only within the maturity range represented by those bonds.

[7]As a robustness check on inference in the two-step latent-price design, we use a nonparametric issuer-cluster bootstrap that resamples the 47 issuers and re-estimates both the latent-price first stage and the second-stage regression in each of 5,000 replications. We find consistent evidence using bootstrap inference. The estimated coefficient on Knightian uncertainty is -0.070 ($p = 0.085$) in Column (1) and -0.068 ($p = 0.103$) in Column (2).

and strengthens under the latent benchmark. The coefficient in Column (1) indicates that a one-standard-deviation increase in Knightian uncertainty is associated with an additional markdown of approximately 0.48% relative to the latent benchmark, using the Level 2 sample standard deviation of Knightian uncertainty (0.068; Table 1).

6. Economic consequences

Our results are consistent with Knightian uncertainty affecting managers' fair value estimates. An important remaining question is whether investors respond differently to the more pessimistic estimates associated with Knightian uncertainty. We therefore examine two economic consequences. First, we examine whether stock-market reactions to goodwill impairments vary with Knightian uncertainty. Second, we examine whether subsequent mutual fund flows vary when bond markdowns are more strongly associated with Knightian uncertainty.

6.1. Market reaction to goodwill impairments

We first examine whether the market response to goodwill impairments varies with Knightian uncertainty. If managers' goodwill estimates are more pessimistic when Knightian uncertainty is greater, a given impairment amount may convey less incremental information about underlying cash flows. We therefore predict a weaker market response to a given goodwill impairment amount when Knightian uncertainty is greater.

Table 7 reports the results. The dependent variable is the absolute cumulative abnormal return around the earnings announcement, *abs(CAR(−2,+2))*, which captures the magnitude of the market's response to the information released at the announcement. We use the earnings announcement as the event date and assume that this window captures the principal public disclosure of the impairment-related information. Panel A focuses on the impairment recognition decision, while Panel B focuses on the impairment magnitude decision. In both panels, we interact the impairment variable with Knightian uncertainty to test whether the market reaction to impairment-related news differs when the firm faces greater Knightian uncertainty.

Panel A provides some evidence on the recognition margin. Although the interaction between *Gw_Imp_Ind* and *Knightian Uncertainty* is negative and statistically significant at the 1% level in the baseline specification, the estimate becomes statistically insignificant once additional controls and interaction terms are introduced. We therefore do not view the recognition margin evidence as robust.

Among firm-years in which a goodwill impairment is recognized, the interaction between *Gw_Imp_Amt* and *Knightian Uncertainty* is negative in all three specifications. The association is significant at the 5% level in Columns (1) and (3) and marginally significant in Column (2). The negative interaction indicates that impairment amounts are associated with smaller absolute announcement returns when Knightian uncertainty is greater, consistent with investors placing less weight on these estimates.

6.2. Fund flow response to corporate bond markdowns

We next examine whether the bond-level markdown pattern documented in Section 5 is associated with subsequent fund flows. In those tests, mutual fund managers report lower valuations relative to benchmark prices for bonds issued by firms with greater Knightian uncertainty. We predict weaker subsequent flows when a fund's markdowns are concentrated in these bonds.

Fund flows need not adjust within a short event window because investors face search costs, update fund information intermittently, and respond more strongly to salient portfolio information (Sirri and Tufano, 1998; Goriaev et al., 2008; Solomon et al., 2014). We therefore examine flows over both the first subsequent month and the full subsequent quarter. Table 8 reports the results. The dependent variables are subsequent net flows (*Future Net Flow*), inflows (*Future Inflow*), and outflows (*Future Outflow*). The main independent variable pairs each bond's markdown with its issuer's Knightian uncertainty and then aggregates these products using portfolio weights (*Agg_Md* × *Knightian Uncertainty*).[8] Panel A reports fund

[8] We construct the interaction term at the individual bond level before aggregating it to the fund-quarter

flows for the first month reported in the fund's next Form N-PORT filing, while Panel B reports flows for all three months reported in that filing. Fund flows are scaled by the fund's current net assets, taken from the most recent amended Form N-PORT filing. The Panel B flow measures are winsorized at the 1st and 99th percentiles, and the Panel B sample comprises the 17,214 fund-quarters with an adjacent next-quarter filing. Across the one-month and one-quarter horizons, the estimated coefficient on *Agg_Md* × *Knightian Uncertainty* is negative and statistically significant for *Future Net Flow* and *Future Inflow*, but not for *Future Outflow*. Thus, funds whose markdowns are concentrated among issuers with greater Knightian uncertainty subsequently receive lower net flows and inflows.

Our primary specifications compare subsequent flows across funds within the same year-month, with the fund-family fixed-effect specifications also absorbing persistent differences across fund families. Because persistent fund characteristics could be associated with both the concentration of markdowns among higher-uncertainty issuers and subsequent flows, we repeat the analysis with fund and year-month fixed effects. The fund fixed effects identify the association from changes within the same fund over time. The coefficient on *Agg_Md* × *Knightian Uncertainty* remains negative and is statistically significant at the 5 percent level for next-month inflows and marginally significant at the 10 percent level for next-quarter inflows. For net flows, the coefficient remains negative and marginally significant at the 10 percent level over the next month but is not statistically significant over the next quarter. Finally, consistent with our primary results, we find no evidence of an association between *Agg_Md* × *Knightian Uncertainty* and subsequent outflows.

Across the two settings, greater Knightian uncertainty is associated with a weaker market response to a given goodwill impairment amount and with lower subsequent net flows and inflows when fund markdowns are concentrated in higher-uncertainty holdings. Taken

level so that each bond's markdown remains paired with its issuer's Knightian uncertainty. Specifically, before scaling, we calculate $\sum_b \omega_{bft}(Markdown_{bft} \times Knightian\ Uncertainty_{bft})$, where ω_{bft} is the bond's portfolio weight. We multiply this portfolio-weighted sum by $-1{,}000$ for ease of interpretation. This construction distinguishes between funds with the same average markdown and average Knightian uncertainty but different concentrations of larger markdowns among bonds issued by firms with greater Knightian uncertainty.

together, these results are consistent with investors placing less weight on goodwill impairment estimates formed under greater Knightian uncertainty and allocating less capital to funds whose markdowns are concentrated among higher-uncertainty issuers.[9]

7. Conclusion

Fair value estimates play a central role in financial reporting (Barth, 2006), yet little is known about how managers form these estimates when the probability distribution governing future outcomes is unknown. This question is important because fair value estimation often requires managers to assign weights to alternative scenarios even when their probabilities are not uniquely specified. We examine this question using a recently developed measure of Knightian uncertainty derived from intraday TAQ data in two settings that require substantial judgment: goodwill impairments and mutual funds' valuations of corporate bonds.

We provide evidence that Knightian uncertainty is associated with both Level 3 goodwill impairments and Level 2 corporate bond valuations. In the goodwill setting, greater Knightian uncertainty is associated with a lower likelihood of recognizing an impairment and with larger impairment charges conditional on recognition. These results are consistent with managers preserving the option to wait before recognizing a quasi-irreversible impairment and forming more pessimistic fair value estimates once they recognize one. Following the adoption of ASU 2011-08, greater Knightian uncertainty is associated with a lower likelihood of recognizing a goodwill impairment among firms with greater pre-adoption goodwill exposure, providing corroborating evidence consistent with the option-to-wait mechanism. In the bond setting, mutual fund managers report lower valuations relative to benchmark prices for bonds issued by firms with greater Knightian uncertainty.

We also provide evidence that investor responses vary with Knightian uncertainty. The

[9] Managers' more pessimistic estimates and investors' weaker responses can coexist without implying that either group behaves irrationally. When probabilities are ill-defined, aversion to Knightian uncertainty can be rational (Klibanoff et al., 2005; Epstein and Schneider, 2010). Managers may therefore form more pessimistic estimates while investors place less weight on those estimates. We do not test the mechanisms underlying either response.

stock market reacts less strongly to a given goodwill impairment amount when Knightian uncertainty is greater, and funds receive lower subsequent net flows and inflows when their markdowns are concentrated in bonds issued by firms with greater Knightian uncertainty. Taken together, these findings suggest that Knightian uncertainty affects both managers' fair value estimates and how investors respond to them.

Overall, our findings suggest that managers delay goodwill impairment recognition but make more pessimistic fair value estimates when Knightian uncertainty is greater. Taken together, our evidence is relevant to standard setters and regulators because it suggests that neutrality may depend on the information and verification environment surrounding fair value estimates.

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Table 1: Summary Statistics

Panel A: Level 3 Sample

Variable	N	Mean	P25	P50	P75	SD	Min	Max
Knightian Uncertainty	42,645	0.054	0.017	0.036	0.073	0.051	0.001	0.227
Risk	42,645	0.036	0.007	0.013	0.031	0.078	0.002	1.318
Gw_Imp_Amt	42,645	0.005	0.000	0.000	0.000	0.024	0.000	0.192
Gw_Imp_Ind	42,645	0.114	0.000	0.000	0.000	0.318	0.000	1.000
Size	42,645	7.618	6.316	7.572	8.851	1.867	2.338	12.302
Leverage	42,645	0.574	0.391	0.567	0.754	0.255	0.066	1.377
Book-to-Market	42,645	0.558	0.259	0.465	0.759	0.485	−0.810	3.146
AltmanZ	42,645	3.860	1.299	2.945	4.924	5.086	−13.713	37.156
ROA	42,645	0.017	0.003	0.036	0.080	0.146	−1.017	0.300
Return	42,645	0.138	−0.155	0.086	0.342	0.496	−0.809	2.408
Sales Growth	42,645	0.116	−0.014	0.072	0.182	0.324	−0.664	2.692
Loss	42,645	0.235	0.000	0.000	0.000	0.424	0.000	1.000
CAPX	42,645	3.720	2.217	3.622	5.087	2.030	0.000	8.530
Goodwill Acquisition	42,645	0.171	0.000	0.000	0.000	0.377	0.000	1.000
CFO Volatility	42,645	0.049	0.017	0.034	0.060	0.053	0.002	0.376
Analyst Forecasts	42,645	3.623	2.996	3.584	4.220	0.806	1.386	5.293
Forecast Dispersion	42,645	0.589	0.034	0.089	0.249	2.830	0.002	28.435
Institutional Holding	42,645	0.714	0.570	0.785	0.914	0.272	0.002	1.126
Big 4	42,645	0.809	1.000	1.000	1.000	0.393	0.000	1.000
Going Concern	42,645	0.010	0.000	0.000	0.000	0.100	0.000	1.000
abs(CAR(−2,+2))	38,422	0.067	0.021	0.048	0.091	0.064	0.000	0.297
abs(UE)	38,422	0.009	0.001	0.002	0.006	0.027	0.000	0.216

Table 1: Summary Statistics (Cont.)

Panel B: Level 2 Sample

Variable	N	Mean	P25	P50	P75	SD	Min	Max
Knightian Uncertainty	142,508	0.105	0.056	0.093	0.141	0.068	0.007	0.347
Risk	142,508	0.007	0.003	0.004	0.007	0.012	0.001	0.081
Markdown_Evaluated Price	141,195	−0.003	−0.005	−0.002	0.000	0.004	−0.015	0.006
Markdown_Recent Price	142,508	−0.003	−0.007	−0.001	0.003	0.009	−0.021	0.013
Markdown_Latent Price	20,622	−0.007	−0.034	0.000	0.027	0.065	−0.870	0.239
Size	142,508	10.348	9.423	10.326	11.118	1.243	7.763	14.714
Leverage	142,508	0.709	0.598	0.702	0.805	0.168	0.309	1.290
AltmanZ	142,508	2.785	1.164	2.611	3.928	1.825	0.109	10.584
Return	142,508	0.037	−0.049	0.032	0.119	0.150	−0.469	0.576
Portfolio Weight	142,508	0.062	0.003	0.011	0.042	0.151	0.001	1.125
Restricted	142,508	0.003	0.000	0.000	0.000	0.054	0.000	1.000
Amihud	142,508	0.025	0.005	0.014	0.034	0.028	0.000	0.096
Order Imbalance	142,508	0.002	−0.186	0.000	0.187	0.305	−0.567	0.600
Days since Last Trade	142,508	2.495	2.079	2.398	2.708	0.489	1.946	4.511
Days with Trades	142,508	1.817	1.386	1.792	2.197	0.514	1.099	2.996
Coupon	142,508	4.287	3.375	4.125	4.950	1.396	0.250	13.000
High Yield	142,508	0.377	0.000	0.000	1.000	0.485	0.000	1.000
Bond Age	142,508	5.907	2.658	4.928	8.030	4.272	0.047	16.964
Maturity	142,508	12.042	3.786	8.167	20.832	9.575	0.457	38.954
Interest Accruals	142,508	1.067	0.482	0.983	1.520	0.713	0.024	2.975
Future Net Flow_next month	16,487	0.007	−0.008	0.000	0.014	0.045	−0.135	0.252
Future Inflow_next month	16,487	0.031	0.005	0.017	0.036	0.048	0.000	0.328
Future Outflow_next month	16,487	0.024	0.006	0.015	0.028	0.033	0.000	0.220
Future Net Flow_next quarter	17,214	0.022	−0.026	0.000	0.043	0.121	−0.287	0.693
Future Inflow_next quarter	17,214	0.099	0.025	0.061	0.115	0.137	0.000	0.923
Future Outflow_next quarter	17,214	0.076	0.028	0.053	0.093	0.086	0.000	0.548
Agg_Md	16,487	0.011	0.000	0.003	0.012	0.024	−0.029	0.136

Table 1: Summary Statistics (Cont.)

Panel B: Level 2 Sample

Variable	N	Mean	P25	P50	P75	SD	Min	Max
Agg_Md × Knightian Uncertainty	16,487	0.001	0.000	0.000	0.001	0.002	−0.002	0.013
Agg_Knightian_Uncertainty	16,487	0.000	0.000	0.000	0.000	0.001	0.000	0.004
Agg_Md × Risk	16,487	0.000	0.000	0.000	0.000	0.000	0.000	0.003
Agg_Risk	16,487	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fund Performance	16,487	0.003	−0.015	0.001	0.024	0.043	−0.130	0.127
Fund Size	16,487	20.447	19.156	20.428	21.672	1.885	15.956	24.974
Short-Term Leverage	16,487	0.009	0.000	0.000	0.000	0.050	0.000	0.382
Long-Term Leverage	16,487	0.001	0.000	0.000	0.000	0.011	0.000	0.108

Notes: This table reports summary statistics for the variables used in the analyses. In Panel A, the primary Level 3 rows describe the 42,645 firm-years used in Tables 2 and 3; this sample contains annual fiscal periods ending after December 15, 2002. The market-reaction variables describe the 38,422 firm-years meeting Table 7's required-adoption, corrected-return, and common-support requirements before that table excludes singleton firms from fixed-effect estimation. Panel B includes the issuer-, bond-, holding-, liquidity-, and fund-level variables used in the corporate bond valuation and fund-flow analyses. Observation counts vary across variables because the analyses use different samples and require different data. Appendix B contains all variable definitions and measurement details.

Table 2: Knightian Uncertainty and Goodwill Impairments

	Dependent Variable: Gw_Imp_Amt		
	(1)	(2)	(3)
Knightian Uncertainty	**0.0101*****	**0.0082****	**0.0197*****
	(3.35)	**(2.47)**	**(5.02)**
Risk	0.0001	−0.0001	0.0013
	(0.02)	(−0.03)	(0.35)
Size	−0.0009***	−0.0001	−0.0003
	(−5.60)	(−0.49)	(−0.77)
Leverage	0.0046***	0.0060***	0.0053***
	(5.07)	(6.04)	(3.31)
Book-to-Market	0.0049***	0.0056***	0.0054***
	(9.58)	(10.56)	(7.62)
AltmanZ	0.0005***	0.0006***	0.0007***
	(11.15)	(11.67)	(11.41)
ROA	−0.0525***	−0.0570***	−0.0928***
	(−14.63)	(−15.83)	(−18.45)
Return	−0.0037***	−0.0035***	−0.0023***
	(−12.97)	(−12.34)	(−7.50)
Sales Growth	−0.0022***	−0.0015***	0.0015***
	(−4.90)	(−3.46)	(2.79)
Loss	0.0082***	0.0074***	0.0072***
	(13.70)	(12.29)	(10.18)
CAPX	0.0010***	0.0006***	0.0016***
	(12.43)	(4.63)	(6.14)
Goodwill Acquisition	0.0013***	0.0005*	−0.0007**
	(4.69)	(1.72)	(−2.40)
CFO Volatility	−0.0362***	−0.0312***	−0.0035
	(−8.93)	(−7.64)	(−0.62)
Analyst Forecasts	0.0001	0.0001	0.0008**
	(0.62)	(0.56)	(2.28)
Forecast Dispersion	−0.0001	−0.0001	0.0007***
	(−1.00)	(−0.77)	(4.13)
Institutional Holding	0.0034***	0.0031***	0.0008
	(5.84)	(5.30)	(0.72)
Big 4	0.0008**	0.0000	0.0016**
	(2.07)	(−0.04)	(2.34)
Going Concern	−0.0075***	−0.0074***	−0.0041
	(−2.83)	(−2.81)	(−1.40)

Table 2: Knightian Uncertainty and Goodwill Impairments (CONT.)

	Dependent Variable: Gw_Imp_Amt		
	(1)	(2)	(3)
Year FE	Yes	Yes	Yes
Industry FE	No	Yes	No
Firm FE	No	No	Yes
Obs.	42,645	42,645	41,972
Adj. R^2	0.188	0.202	0.317

Notes: This table reports coefficient estimates from OLS regressions examining the relation between Knightian uncertainty and Level 3 fair value estimates, using goodwill impairments as the setting. The sample contains annual fiscal periods ending after December 15, 2002, a conservative observable rule ensuring that the fiscal period began after SFAS 142 became mandatory for fiscal years beginning after December 15, 2001. The dependent variable (*Gw_Imp_Amt*) equals the goodwill impairment charge recognized during the fiscal year divided by lagged total assets. The main independent variable of interest is *Knightian Uncertainty*. Control variables include *Risk, Size, Leverage, Book-to-Market, AltmanZ, ROA, Return, Sales Growth, Loss, CAPX, Goodwill Acquisition, CFO Volatility, Analyst Forecasts, Forecast Dispersion, Institutional Holding, Big 4*, and *Going Concern*. Appendix B contains all variable definitions. All specifications include year fixed effects; Column (2) also includes industry fixed effects, and Column (3) also includes firm fixed effects. Singleton firms are excluded from Column (3) because they do not contribute to within-firm estimation. All reported t-statistics and significance stars are based on standard errors clustered by firm; t-statistics are presented in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 3: Knightian Uncertainty in Goodwill Impairment Recognition and Measurement

	1^{st} *Stage: Gw_Imp_Ind*			2^{nd} *Stage: Gw_Imp_Amt*		
	(1)	(2)	(3)	(4)	(5)	(6)
Knightian Uncertainty	**−0.0365**	**−0.1592*****	**−0.1441****	**0.0706*****	**0.0609*****	**0.0587****
	(−0.69)	**(−2.94)**	**(−2.20)**	**(4.69)**	**(3.67)**	**(2.43)**
Risk	−0.0480*	−0.0304	0.0053	−0.0215*	−0.0218*	−0.0378**
	(−1.79)	(−1.16)	(0.15)	(−1.92)	(−1.94)	(−2.07)
Size	0.0040*	0.0193***	0.0202***	−0.0037***	−0.0020**	−0.0014
	(1.67)	(6.38)	(3.58)	(−4.66)	(−2.03)	(−0.45)
Leverage	0.0483***	0.0643***	0.0272	0.0026	0.0047	0.0075
	(4.04)	(5.15)	(1.55)	(0.65)	(1.11)	(0.80)
Book-to-Market	0.0766***	0.0861***	0.0861***	0.0004	0.0018	0.0036*
	(13.18)	(14.92)	(11.95)	(0.28)	(1.35)	(1.73)
AltmanZ	0.0038***	0.0040***	0.0047***	0.0029***	0.0027***	0.0048***
	(8.32)	(8.86)	(8.00)	(7.83)	(7.37)	(5.34)
ROA	−0.2037***	−0.2573***	−0.5201***	−0.2162***	−0.2123***	−0.2614***
	(−8.65)	(−10.94)	(−16.36)	(−25.92)	(−25.27)	(−15.89)
Return	−0.0450***	−0.0426***	−0.0279***	−0.0089***	−0.0085***	−0.0049**
	(−13.40)	(−12.97)	(−8.11)	(−4.93)	(−4.80)	(−2.49)
Sales Growth	−0.0513***	−0.0424***	−0.0118**	0.0126***	0.0133***	0.0169***
	(−10.40)	(−8.64)	(−2.28)	(4.30)	(4.49)	(4.36)
Loss	0.1652***	0.1530***	0.1663***	0.0218***	0.0218***	0.0199***
	(23.36)	(21.61)	(21.15)	(13.38)	(13.21)	(7.84)
CAPX	0.0192***	0.0082***	0.0114***	0.0010**	0.0001	0.0033*
	(13.31)	(4.02)	(3.15)	(2.10)	(0.20)	(1.84)
Goodwill Acquisition	0.0215***	0.0122***	−0.0082	0.0024	0.0011	0.0014
	(4.48)	(2.60)	(−1.64)	(1.58)	(0.74)	(0.77)
CFO Volatility	−0.1941***	−0.1873***	0.0497	−0.1074***	−0.1062***	−0.0957**
	(−4.65)	(−4.31)	(0.87)	(−5.33)	(−5.28)	(−2.46)

Table 3: Knightian Uncertainty in Goodwill Impairment Recognition and Measurement (CONT.)

	1^{st} *Stage: Gw_Imp_Ind*			2^{nd} *Stage: Gw_Imp_Amt*		
	(1)	(2)	(3)	(4)	(5)	(6)
Analyst Forecasts	−0.0125***	−0.0084**	0.0114**	0.0000	0.0008	0.0048**
	(−3.27)	(−2.22)	(2.34)	(0.04)	(0.71)	(2.29)
Forecast Dispersion	0.0007	0.0010	0.0081***	−0.0007***	−0.0006***	−0.0007
	(0.80)	(1.19)	(5.74)	(−2.98)	(−2.91)	(−1.13)
Institutional Holding	0.0273***	0.0244***	−0.0008	0.0080***	0.0079***	0.0080
	(2.98)	(2.65)	(−0.06)	(2.99)	(2.90)	(1.35)
Big 4	0.0148***	0.0004	0.0170**	0.0031	0.0028	0.0007
	(2.75)	(0.07)	(1.99)	(1.50)	(1.36)	(0.17)
Going Concern	−0.0073	−0.0100	0.0134	−0.0236***	−0.0215***	−0.0171**
	(−0.34)	(−0.47)	(0.54)	(−3.86)	(−3.56)	(−2.01)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	No	Yes	No
Firm FE	No	No	Yes	No	No	Yes
Obs.	42,645	42,645	41,972	4,874	4,874	3,693
Adj. R^2	0.127	0.147	0.250	0.540	0.552	0.663

Notes: This table reports estimates from a two-stage hurdle model examining the relation between Knightian uncertainty and Level 3 fair value estimates, using goodwill impairments as the setting. The sample contains annual fiscal periods ending after December 15, 2002, a conservative observable rule ensuring that the fiscal period began after SFAS 142 became mandatory for fiscal years beginning after December 15, 2001. In the first stage (Columns (1)–(3)), the dependent variable is goodwill impairment recognition (*Gw_Imp_Ind*), equal to one if a firm recognizes a goodwill impairment in fiscal year t and zero otherwise. In the second stage (Columns (4)–(6)), the sample is restricted to firm-years in which a firm recognizes a goodwill impairment. The dependent variable is impairment magnitude (*Gw_Imp_Amt*), measured as the goodwill impairment charge recognized during the fiscal year divided by lagged total assets. The main independent variable of interest is *Knightian Uncertainty*. Control variables include *Risk, Size, Leverage, Book-to-Market, AltmanZ, ROA, Return, Sales Growth, Loss, CAPX, Goodwill Acquisition, CFO Volatility, Analyst Forecasts, Forecast Dispersion, Institutional Holding, Big 4*, and *Going Concern*. Appendix B contains all variable definitions. All specifications include year fixed effects; Columns (2) and (5) additionally include industry fixed effects, and Columns (3) and (6) include firm fixed effects. Singleton firms are excluded from Columns (3) and (6) because they do not contribute to within-firm estimation. All reported t-statistics and significance stars are based on standard errors clustered by firm; t-statistics are presented in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 4: Discretion, Knightian Uncertainty, and Goodwill Impairment

	Recognition	*Impairment Amount*
	(1)	(2)
Knightian Uncertainty × Post × Pre_Gw_Exp	−0.4699***	0.0488
	(−3.84)	(0.53)
Knightian Uncertainty	−1.0023***	−0.2993**
	(−4.16)	(−2.13)
Knightian Uncertainty × Post	0.1275	0.1839**
	(0.91)	(2.32)
Knightian Uncertainty × Pre_Gw_Exp	0.4961**	−0.0175
	(2.20)	(−0.13)
Post × Pre_Gw_Exp	−0.0120	0.0091
	(−1.26)	(1.06)
Risk	0.2347*	0.1964*
	(1.95)	(2.00)
Risk × Post	−0.0559	0.0986
	(−0.83)	(1.11)
Risk × Pre_Gw_Exp	0.3652***	−0.0029
	(2.87)	(−0.04)
Risk × Post × Pre_Gw_Exp	−0.3197***	0.2598
	(−3.17)	(1.55)
Size (lagged)	0.1056***	0.0540**
	(4.24)	(2.57)
Leverage (lagged)	−0.0996**	−0.1615***
	(−2.42)	(−3.04)
ROA (lagged)	−0.0199	0.0649
	(−0.41)	(1.15)
Capital Expenditures (lagged)	0.0024	0.0149*
	(0.32)	(1.80)
Loss (lagged)	−0.0128	−0.0095
	(−0.44)	(−1.20)
Constant	−0.6362***	−0.3831**
	(−3.51)	(−2.29)

Table 4: Discretion, Knightian Uncertainty, and Goodwill Impairment (Cont.)

	Recognition	*Impairment Amount*
	(1)	(2)
Post	Absorbed	Absorbed
Pre_Gw_Exp	Absorbed	Absorbed
Window (fiscal years around adoption)	±2	±2
Firm FE	Yes	Yes
Decision-Month FE	Yes	Yes
Observations	7,492	489
Firms	1,873	197
Decision-Month Clusters	48	29
Adjusted R^2	0.253	0.464

Notes: Column (1) reports a linear-probability model of goodwill impairment recognition. Column (2) reports an OLS model of impairment charges scaled by beginning assets, retaining only firm-years with a recognized impairment. Both use the primary window of two fiscal years before and two fiscal years after ASU 2011-08 adoption. The underlying recognition panel is balanced within the window and requires positive beginning goodwill and assets; the conditional-magnitude sample is not balanced. Singleton observations are excluded during fixed-effect estimation. *Post* equals one for fiscal years beginning on or after the standard's effective date. *Pre_Gw_Exp* is the standardized average ratio of beginning goodwill to beginning assets over the two pre-adoption fiscal years and is fixed within firm. *Knightian Uncertainty* is measured over the preceding twelve months. The table displays all estimated coefficients. The stand-alone *Post* and *Pre_Gw_Exp* terms are absorbed by the fixed effects. Firm-level controls are lagged one fiscal year. Standard errors are two-way clustered by firm and decision month; *t*-statistics appear in parentheses. ***, **, and * denote two-sided significance at the 1%, 5%, and 10% levels.

Table 5: Knightian Uncertainty and Bond Valuations: Observed-Price Benchmarks

	Dependent Variable: Markdown_Evaluated Price			*Dependent Variable: Markdown_Recent Price*		
	(1)	(2)	(3)	(4)	(5)	(6)
Knightian Uncertainty	**−0.0023****	**−0.0034****	**−0.0030***	**−0.0048****	**−0.0046*****	**−0.0040***
	(**−2.25**)	(**−2.06**)	(**−1.97**)	(**−2.62**)	(**−2.96**)	(**−1.99**)
Risk	−0.0301***	−0.0259**	−0.0287**	−0.0401	−0.0544*	−0.0707**
	(−4.29)	(−2.64)	(−2.27)	(−1.54)	(−1.81)	(−2.10)
Size	0.0002***	−0.0001	0.0001	0.0002**	−0.0002	−0.0007
	(3.51)	(−0.24)	(0.25)	(2.39)	(−0.31)	(−1.17)
Leverage	−0.0003	−0.0010	−0.0007	0.0005	0.0000	−0.0002
	(−1.39)	(−1.25)	(−0.71)	(0.84)	(0.03)	(−0.12)
AltmanZ	0.0001***	0.0000	0.0000	0.0000	−0.0003**	−0.0003*
	(3.92)	(−0.28)	(0.19)	(−0.10)	(−2.31)	(−1.82)
Return	0.0000	0.0000	0.0001	0.0004	0.0000	0.0007
	(−0.04)	(−0.06)	(0.32)	(0.48)	(0.06)	(1.09)
Portfolio Weight	−0.0001	0.0000	0.0003**	0.0008**	0.0004	0.0006*
	(−0.29)	(−0.20)	(2.64)	(2.03)	(1.18)	(1.71)
Restricted	0.0022***	0.0007	0.0005	0.0046**	0.0017	0.0000
	(4.13)	(1.47)	(1.13)	(2.26)	(1.43)	(−0.02)
Amihud	−0.0059***	−0.0053***	−0.0046***	0.0056	0.0074	0.0087
	(−3.64)	(−3.44)	(−2.68)	(0.71)	(0.93)	(1.12)
Order Imbalance	0.0001	0.0002*	0.0001	0.0012***	0.0014***	0.0015***
	(1.66)	(1.99)	(1.44)	(3.78)	(4.13)	(4.12)
Days since Last Trade	−0.0004***	−0.0004***	−0.0004***	−0.0020**	−0.0021***	−0.0022***
	(−3.73)	(−4.14)	(−3.87)	(−2.61)	(−2.79)	(−2.99)
Days with Trades	0.0005***	0.0005***	0.0004***	0.0007***	0.0006**	0.0004
	(6.20)	(5.52)	(5.27)	(2.77)	(2.35)	(1.60)

Table 5: Knightian Uncertainty and Bond Valuations: Observed-Price Benchmarks (CONT.)

	Dependent Variable: Markdown_Evaluated Price			*Dependent Variable: Markdown_Recent Price*		
	(1)	(2)	(3)	(4)	(5)	(6)
Coupon	−0.0001*	−0.0001		−0.0002***	−0.0002***	
	(−1.86)	(−1.58)		(−2.75)	(−2.99)	
High Yield	−0.0001	0.0002	−0.0003***	−0.0001	0.0002	0.0005
	(−1.08)	(1.67)	(−2.66)	(−0.33)	(0.49)	(0.76)
Bond Age	0.0000	0.0000	0.0001	0.0000*	−0.0001**	0.0007**
	(−0.39)	(−0.21)	(0.88)	(−1.88)	(−2.13)	(2.12)
Maturity	−0.0001***	−0.0001***	−0.0001	−0.0001	−0.0001	−0.0003
	(−19.86)	(−18.61)	(−0.50)	(−1.15)	(−1.13)	(−0.49)
Interest Accruals	−0.0001	−0.0001	0.0000	0.0000	0.0000	0.0000
	(−0.99)	(−1.24)	(−0.82)	(−0.51)	(−0.49)	(−0.34)
Fund-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	No	No	Yes	No	No
Firm FE	No	Yes	No	No	Yes	No
Bond FE	No	No	Yes	No	No	Yes
Obs.	141,195	141,195	141,195	142,508	142,508	142,508
Adj. R^2	0.294	0.313	0.375	0.428	0.449	0.516

Notes: This table reports OLS estimates examining the relation between issuer-level Knightian uncertainty and mutual funds' reported corporate bond valuations relative to observed market benchmarks. *Markdown_Evaluated Price* equals the log of the fund-reported valuation minus the log of Bloomberg's evaluated price on the reporting date. *Markdown_Recent Price* equals the log of the fund-reported valuation minus the log of the recent-price benchmark, measured as the midpoint of the buy-side and sell-side volume-weighted average prices on the bond's last trading day in the reporting month. The regressions include the issuer-, holding-, liquidity-, and bond-level controls defined in Appendix B. All specifications include fund-quarter fixed effects. Columns (1) and (4) also include industry fixed effects, Columns (2) and (5) include firm fixed effects, and Columns (3) and (6) include bond fixed effects. Standard errors are two-way clustered by firm and year-month, and t-statistics are presented in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 6: Knightian Uncertainty and Bond Valuations: Latent-Price Benchmark

	Dependent Variable: Markdown_Latent Price	
	(1)	(2)
Knightian Uncertainty	**−0.0700****	**−0.0677****
	(−2.40)	**(−2.18)**
Risk	0.9345**	0.9320***
	(2.36)	(2.87)
Size	−0.0134	−0.0056
	(−0.52)	(−0.21)
Leverage	−0.0878	−0.0865
	(−1.28)	(−1.34)
AltmanZ	−0.0022	−0.0016
	(−0.59)	(−0.39)
Return	0.0156	0.0146
	(1.44)	(1.35)
Portfolio Weight	0.0325*	0.0333*
	(1.73)	(1.86)
Restricted	−0.0280	−0.0298
	(−1.21)	(−1.45)
Amihud	0.0605	−0.0254
	(1.03)	(−0.57)
Order Imbalance	0.0039	0.0039
	(1.11)	(1.06)
Days since Last Trade	−0.0046	−0.0035
	(−1.64)	(−1.50)
Days with Trades	0.0017	−0.0001
	(0.57)	(−0.02)
Coupon		−0.0061**
		(−2.01)
High Yield		0.0143
		(1.06)
Bond Age		0.0011
		(0.99)
Maturity		0.0011**
		(2.27)
Interest Accruals	−0.0024	−0.0006
	(−0.92)	(−0.30)
Fund-Quarter FE	Yes	Yes
Firm FE	Yes	Yes
Obs.	17,330	17,330
Adj. R^2	0.192	0.211

Table 6: Knightian Uncertainty and Bond Valuations (Cont.)

Notes: This table reports OLS estimates examining the relation between issuer-level Knightian uncertainty and mutual funds' reported corporate bond valuations relative to an estimated latent-price benchmark. *Markdown_Latent Price* equals the log of the fund-reported valuation minus the log of the estimated latent price. The regressions include the issuer-, holding-, liquidity-, and bond-level controls defined in Appendix B. Column (2) additionally includes *Coupon, High Yield, Bond Age*, and *Maturity.* Both specifications include fund-quarter and firm fixed effects. Singleton fund-quarters are excluded because they do not contribute to within-fund-quarter estimation. Standard errors are two-way clustered by firm and year-month, and *t*-statistics are presented in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 7: Knightian Uncertainty and Market Reactions to Impairments

Panel A: Market Reaction to Goodwill Impairment Recognition

	Dependent Variable: abs(CAR(−2,+2))		
	(1)	(2)	(3)
Gw_Imp_Ind	0.0110***	0.0043**	−0.0095
	(5.28)	(2.01)	(−1.35)
Gw_Imp_Ind × Knightian Uncertainty	**−0.0571*** **	**−0.0117**	**0.0206**
	(−2.93)	**(−0.60)**	**(0.84)**
Gw_Imp_Ind × Risk	0.0030	−0.0152	0.0069
	(0.14)	(−0.72)	(0.31)
Knightian Uncertainty	−0.1626***	−0.1320***	−0.1161***
	(−13.16)	(−11.16)	(−9.94)
Risk	0.0520***	0.0199**	0.0383***
	(5.48)	(2.09)	(3.79)
abs(UE)		0.1551***	−0.1344
		(6.44)	(−1.29)
abs(UE) × Knightian Uncertainty			−2.3911***
			(−3.34)
abs(UE) × Risk			−0.5394***
			(−3.56)
Controls	No	Yes	Yes
Gw_Imp_Ind × Controls	No	No	Yes
abs(UE) × Controls	No	No	Yes
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Obs.	37,803	37,803	37,803
Adj. R^2	0.198	0.208	0.212

Table 7: Knightian Uncertainty and Market Reactions to Impairments (CONT.)

Panel B: Market Reaction to Goodwill Impairment Magnitude

	Dependent Variable: abs(CAR(−2,+2))		
	(1)	(2)	(3)
Gw_Imp_Amt	0.1666***	0.1104*	0.1681
	(3.04)	(1.84)	(0.78)
Gw_Imp_Amt* × *Knightian Uncertainty	**−2.0092****	**−1.5269***	**−2.5045****
	(−2.28)	**(−1.69)**	**(−2.56)**
Gw_Imp_Amt × *Risk*	−0.7166	−0.6198	0.2940
	(−1.54)	(−1.19)	(0.74)
Knightian Uncertainty	−0.1203**	−0.0791*	−0.0151
	(−2.54)	(−1.66)	(−0.31)
Risk	0.0968	0.0465	0.0728
	(1.64)	(0.77)	(1.21)
abs(UE)		0.1747***	0.4060
		(2.95)	(1.23)
abs(UE) × *Knightian Uncertainty*			−1.1983
			(−0.91)
abs(UE) × *Risk*			−1.7290***
			(−3.51)
Controls	No	Yes	Yes
Gw_Imp_Amt × Controls	No	No	Yes
abs(UE) × Controls	No	No	Yes
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Obs.	3,197	3,197	3,197
Adj. R^2	0.221	0.237	0.251

Notes: This table reports OLS estimates examining whether the magnitude of the stock-market response to goodwill impairments varies with Knightian uncertainty. Panel A examines impairment recognition, and Panel B examines impairment magnitude among firm-years with a positive impairment. The dependent variable, *abs(CAR(−2,+2))*, is the absolute value of the firm's compounded return relative to the CRSP value-weighted market return from two trading days before through two trading days after the earnings announcement. The sample contains annual fiscal periods ending after December 15, 2002. The regressions include *Size, Book-to-Market, Leverage*, and *Loss* as controls where indicated. Appendix B defines all variables. All specifications include firm and year fixed effects and exclude singleton firms because they do not contribute to within-firm estimation. Panel A contains 37,803 firm-years from 4,328 firms, and Panel B contains 3,197 firm-years from 985 firms. The corrected total shareholder return affects only sample eligibility and does not enter the estimated equations. Standard errors are clustered by firm, and *t*-statistics are presented in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 8: Knightian Uncertainty, Corporate Bond Markdowns, and Fund Flows

Panel A: Next-Month Fund Flows

	Future Net Flow		*Future Inflow*		*Future Outflow*	
	(1)	(2)	(3)	(4)	(5)	(6)
Agg_Md	0.1062**	0.1130**	0.1455***	0.1567***	0.0259	0.0290
	(2.49)	(2.58)	(2.76)	(2.91)	(0.53)	(0.58)
Agg_Md* × *Knightian Uncertainty	**−1.3499*** **	**−1.4109*** **	**−1.8009*** **	**−1.8603*** **	**−0.2769**	**−0.2764**
	(−2.89)	**(−2.96)**	**(−4.23)**	**(−4.40)**	**(−0.67)**	**(−0.66)**
Agg_Knightian_Uncertainty	3.1532**	3.0803**	4.2234**	4.2462**	0.3449	0.4620
	(2.19)	(2.09)	(2.43)	(2.39)	(0.35)	(0.46)
Agg_Md × Risk	−2.3525	−2.5666	−4.0998*	−4.1525*	−1.4389	−1.2237
	(−1.21)	(−1.28)	(−1.73)	(−1.77)	(−1.09)	(−0.89)
Agg_Risk	−18.4128*	−17.6188*	−2.4649	−0.2294	18.3543**	19.7273**
	(−1.97)	(−1.90)	(−0.21)	(−0.02)	(2.45)	(2.58)
Fund Performance	−0.0671***	−0.0635***	−0.1065***	−0.0983***	−0.0351	−0.0309
	(−3.08)	(−2.96)	(−3.50)	(−3.60)	(−1.34)	(−1.24)
Fund Size	−0.0012***	−0.0012***	0.0004	0.0000	0.0015***	0.0012***
	(−3.85)	(−4.02)	(0.83)	(0.10)	(4.15)	(3.54)
Short-Term Leverage	−0.0086	−0.0156**	−0.0394***	−0.0737***	−0.0294***	−0.0543***
	(−1.22)	(−2.32)	(−3.07)	(−5.79)	(−2.80)	(−5.94)
Long-Term Leverage	−0.0393*	−0.0400*	−0.2190***	−0.2072***	−0.1790***	−0.1679***
	(−1.97)	(−1.93)	(−10.63)	(−8.93)	(−14.81)	(−13.01)
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Fund Family FE	No	Yes	No	Yes	No	Yes
Obs.	16,487	16,487	16,487	16,487	16,487	16,487
Adj. R^2	0.028	0.032	0.028	0.040	0.050	0.062

Table 8: Knightian Uncertainty, Corporate Bond Markdowns, and Fund Flows (Cont.)

Panel B: Next-Quarter Fund Flows

	Future Net Flow		*Future Inflow*		*Future Outflow*	
	(1)	(2)	(3)	(4)	(5)	(6)
Agg_Md	0.2722**	0.2866**	0.4273***	0.4563***	0.0978	0.1082
	(2.29)	(2.30)	(2.72)	(2.87)	(0.76)	(0.84)
***Agg_Md* ×**	**−3.0116*****	**−3.1267*****	**−5.0419*****	**−5.1247*****	**−1.7707**	**−1.7424**
Knightian Uncertainty	(**−2.81**)	(**−2.77**)	(**−3.69**)	(**−3.87**)	(**−1.33**)	(**−1.31**)
Agg_Knightian_Uncertainty	6.4326**	6.1856*	11.0073**	11.0298**	3.4885	3.7632
	(2.06)	(1.98)	(2.33)	(2.32)	(1.16)	(1.25)
Agg_Md × *Risk*	−6.3973	−6.4238	−12.8260*	−12.8306*	−4.4050	−4.2433
	(−1.03)	(−1.04)	(−1.81)	(−1.86)	(−0.98)	(−0.97)
Agg_Risk	−36.0134*	−35.7955*	8.1443	15.3275	41.0709**	46.8868**
	(−1.72)	(−1.70)	(0.32)	(0.60)	(2.34)	(2.60)
Fund Performance	−0.1600**	−0.1472**	−0.3162***	−0.2841***	−0.1403**	−0.1242*
	(−2.35)	(−2.30)	(−2.89)	(−2.94)	(−2.07)	(−1.99)
Fund Size	−0.0059***	−0.0062***	−0.0017	−0.0028**	0.0036***	0.0029***
	(−6.22)	(−6.49)	(−1.20)	(−2.07)	(3.74)	(3.05)
Short-Term Leverage	−0.0341*	−0.0576***	−0.1375***	−0.2489***	−0.0973***	−0.1703***
	(−1.68)	(−3.07)	(−3.48)	(−7.22)	(−3.25)	(−7.55)
Long-Term Leverage	−0.1232**	−0.1195*	−0.7439***	−0.7129***	−0.6159***	−0.5929***
	(−2.01)	(−1.86)	(−11.10)	(−9.65)	(−15.69)	(−14.81)
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Fund Family FE	No	Yes	No	Yes	No	Yes
Obs.	17,214	17,214	17,214	17,214	17,214	17,214
Adj. R^2	0.041	0.047	0.032	0.049	0.053	0.069

Table 8: Knightian Uncertainty, Corporate Bond Markdowns, and Fund Flows (Cont.)

Notes: This table reports OLS estimates examining how subsequent fund flows vary when a fund's corporate bond markdowns are concentrated in issuers with greater Knightian uncertainty. Panel A examines fund flows during the first month reported in the fund's next available Form N-PORT filing, and Panel B examines fund flows during all three months reported in that filing. The dependent variables are net flows, inflows, and outflows, each divided by the fund's net assets reported in the current filing, where net assets are taken from the most recent amended Form N-PORT filing for each fund-quarter. Net flows equal subscriptions plus reinvestment flows minus redemptions, inflows equal subscriptions plus reinvestment flows, and outflows equal redemptions. In Panel B, the flow measures use the fund's next calendar-quarter filing, are winsorized at the 1st and 99th percentiles of their pooled distributions, and the sample comprises the 17,214 fund-quarters with an adjacent next-quarter filing. *Agg_Md* $\times$ *Knightian Uncertainty* measures the extent to which a fund's corporate bond markdowns are concentrated in issuers with greater Knightian uncertainty. The regressions include the fund-level controls defined in Appendix B. All specifications include year-month fixed effects, and Columns (2), (4), and (6) also include fund-family fixed effects. Standard errors are two-way clustered by fund and year-month, and t-statistics are presented in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Appendix A: Knightian uncertainty and aversion to Knightian uncertainty

Risk and Knightian uncertainty both concern uncertain future outcomes, but they differ in what is known about the probabilities governing those outcomes. Under risk, uncertainty is represented by a single probability distribution, even though the realized outcome remains unknown. Under Knightian uncertainty, the available information does not identify a unique probability distribution, so multiple distributions remain plausible.

Suppose a firm's future payoff is high ($H = \$100$) or low ($L = \$0$). Under risk, each outcome has a 50% probability. Under Knightian uncertainty, the information may support multiple probability distributions, such as $[70\%, 30\%]$ or $[30\%, 70\%]$.

A decision-maker who is averse to Knightian uncertainty places greater weight on plausible probability distributions that imply unfavorable outcomes and less weight on those that imply favorable outcomes (Gilboa and Schmeidler, 1989; Epstein and Schneider, 2003). The following examples compare how Knightian-uncertainty-neutral and Knightian-uncertainty-averse decision-makers evaluate the same two plausible probability distributions.

A.1. Knightian-uncertainty-neutral decision-maker

A Knightian-uncertainty-neutral decision-maker assigns equal weight to the two plausible probability distributions. The mean and variance of the probability assigned to each outcome, and the resulting measure of Knightian uncertainty ($\mho^2$), are

$$\mathrm{E}[\varphi(H)] = \mathrm{E}[\varphi(L)] = 0.5(0.7) + 0.5(0.3) = 0.5. \tag{A1}$$

$$\mathrm{Var}[\varphi(H)] = \mathrm{Var}[\varphi(L)] = 0.5(0.7 - 0.5)^2 + 0.5(0.3 - 0.5)^2 = 0.04. \tag{A2}$$

$$\mho^2 = 0.5(0.04) + 0.5(0.04) = 0.04. \tag{A3}$$

A.2. Knightian-uncertainty-averse decision-maker

In the expected utility with uncertain probabilities (EUUP) framework, attitudes toward Knightian uncertainty are applied to uncertain probabilities to form certainty-equivalent perceived probabilities (Izhakian, 2017). The perceived probability assigned to the favorable outcome is approximated by

$$\mathrm{E}[\varphi(H)]\left(1+\frac{\Upsilon''(\cdot)}{\Upsilon'(\cdot)}\,\mathrm{Var}[\varphi(H)]\right). \tag{A4}$$

Here, Υ is the outlook function applied to probabilities, and

$$\eta=-\frac{\Upsilon''(\cdot)}{\Upsilon'(\cdot)} \tag{A5}$$

denotes the coefficient of absolute Knightian uncertainty aversion.

With constant absolute Knightian uncertainty aversion and $\eta = 4$, the perceived probability of H is approximated by

$$\mathrm{E}[\varphi(H)]\,(1-\eta\,\mathrm{Var}[\varphi(H)]) = 0.5\,[1-4(0.04)] = 0.42. \tag{A6}$$

Holding $\mathrm{E}[\varphi(H)]$ constant, the perceived probability of H decreases as η or $\mathrm{Var}[\varphi(H)]$ increases. Because $\mho^2 = \mathrm{Var}[\varphi(H)]$ in this symmetric binary example, it also decreases with Knightian uncertainty (Izhakian, 2017, 2020).

Appendix B: Variable definitions

Variables	Definition
Knightian Uncertainty	For the annual goodwill analyses, *Knightian Uncertainty* is the mean of the monthly firm-level ambiguity estimates provided by Izhakian during the firm's fiscal year, divided by 1,000. For the bond analyses, we use the issuer's monthly Knightian uncertainty estimate matched to the fund's reporting month. The monthly estimates are constructed from five-minute TAQ returns and capture variation in the probabilities assigned to return outcomes. See Izhakian (2017, 2020) for the theoretical foundation.
Risk	For the annual goodwill analyses, *Risk* is the firm's average daily return variance during a month, averaged across the months in its fiscal year. For the bond analyses, we use the issuer's monthly return variance matched to the fund's reporting month. The monthly estimates are provided by Izhakian and constructed from the same five-minute TAQ returns used to estimate Knightian uncertainty.
Gw_Imp_Amt	The goodwill impairment charge recognized during the fiscal year divided by lagged total assets.
Gw_Imp_Ind	Indicator equal to 1 if the firm recognizes a goodwill impairment during the fiscal year and 0 otherwise.
Post	Indicator variable equal to 1 for fiscal years beginning on or after the effective date of ASU 2011-08, and 0 otherwise.
Pre_Gw_Exp	The within-firm-fixed, standardized average ratio of beginning goodwill to beginning assets over the two pre-adoption fiscal years.
Markdown_Evaluated Price	The markdown relative to the Bloomberg evaluated price, calculated as ln(fund-reported valuation) − ln(BVAL).
Markdown_Recent Price	The markdown relative to a recent-price benchmark, calculated as ln(fund-reported valuation) − ln(recent-price benchmark). The benchmark is the midpoint of the buy-side and sell-side volume-weighted average prices on the bond's last trading day in the reporting month.

Appendix B: Variable definitions (Cont.)

Variables	Definition
Markdown_Latent Price	The markdown relative to the estimated latent price, calculated as ln(fund-reported valuation) − ln(latent price). The latent price is estimated separately within each issuer-month using the prices, coupon rates, high-yield status, maturities, and ages of liquid bonds. A bond is classified as liquid if it trades on the report date or its most recent trade occurred no more than five calendar days earlier. We estimate the model only for issuer-months with at least 20 liquid bonds and apply it only within the maturity range represented by those bonds.
Size	The natural logarithm of the firm's total assets in a given quarter or year.
Leverage	The leverage of the firm in a given quarter or year, defined as total liabilities divided by total assets.
Book-to-Market	The firm's book equity, measured as common equity plus deferred taxes (CEQ + TXDB), divided by fiscal-year-end market value of equity (PRCC_F × CSHO).
AltmanZ	The modified Altman Z-score, calculated as $1.2(CA/TA) + 1.4(RE/TA) + 3.3(EBIT/TA) + 0.6(MVE/TL) + 0.99(Sales/TA)$. Missing values of current assets and retained earnings are set to zero. The quarterly analyses use the prior fiscal year's annual score.
ROA	The firm's net income divided by average total assets, measured using total assets at the beginning and end of the fiscal period.
Return	The firm's total shareholder return over the fiscal period, constructed from CRSP monthly returns. Using the dated CRSP–Compustat link, we compound the dividend-inclusive, delisting-adjusted monthly total returns over the twelve months (annual analyses) or three months (quarterly analyses) ending in the month of the fiscal-period end.
Sales Growth	The change in the firm's annual sales, calculated as current sales divided by sales in the firm's previous available Compustat observation, minus one.
Loss	Indicator variable equal to 1 if the net income is negative in a given year, and 0 otherwise.

Appendix B: Variable definitions (Cont.)

Variables	**Definition**
CAPX	The natural logarithm of one plus the firm's capital expenditure during the fiscal year.
Goodwill Acquisition	Indicator variable equal to 1 if the firm records an increase in goodwill due to M&A in a given year, and 0 otherwise.
CFO Volatility	For each observation, we first divide operating cash flow by average total assets, measured using total assets from the current and previous available Compustat observations. *CFO Volatility* is the standard deviation of this scaled measure across the current and four previous available observations and requires at least three nonmissing observations.
Analyst Forecasts	The natural logarithm of one plus the number of analyst earnings forecasts for the firm's fiscal year.
Forecast Dispersion	The standard deviation of analysts' most recent annual EPS forecasts for the firm's fiscal year, requiring forecasts from at least three analysts.
Institutional Holding	Institutional ownership at fiscal year-end, calculated as aggregate shares reported by institutional investors in the most recent Form 13F quarter divided by shares outstanding. Holdings are carried forward for no more than two months.
Big 4	Indicator variable equal to 1 if the financial statements are audited by a big four auditor in a given year, and 0 otherwise.
Going Concern	Indicator variable equal to 1 if the auditor issues the going concern opinion in a given year, and 0 otherwise.
Portfolio Weight	The percentage of the fund's net assets invested in the bond on the reporting date.
Restricted	Indicator variable equal to 1 if the holding bond is a restricted security, and 0 otherwise.
Amihud	The mean daily absolute bond return divided by trading volume in millions during the most recent month with trades before the reporting date.

Appendix B: Variable definitions (Cont.)

Variables	Definition
Order Imbalance	Total buy volume minus total sell volume, divided by their sum, during the most recent month with trades before the reporting date.
Days since Last Trade	The natural logarithm of one plus the number of calendar days between the bond's last trade and the quarterly reporting date.
Days with Trades	We measure bond trading frequency (*Days with Trades*) using the number of trading days in the bond's most recent month with trades before the reporting date. The measure is the natural logarithm of one plus this count.
Coupon	Coupon rate of a given bond.
High Yield	Indicator variable equal to 1 if the rating of a holding bond is non-investment grade in a given month, and 0 otherwise.
Bond Age	The number of years between the bond's offering date and the beginning of the reporting month.

Appendix B: Variable definitions (Cont.)

Variables	**Definition**
Maturity	The number of years between the beginning of the reporting month and the bond's maturity date.
Interest Accruals	We measure accrued interest (*Interest Accruals*) as the bond's annual coupon rate multiplied by the number of days between its most recent coupon payment and the reporting date, divided by 360.
Agg_Md	We measure a fund's exposure to bond markdowns (*Agg_Md*) as the sum, across its stale bond holdings, of each bond's evaluated-price markdown multiplied by the bond's share of fund net assets. We multiply this sum by −1,000 for ease of interpretation.
Agg_Md × *Knightian Uncertainty*	We measure the extent to which a fund's bond markdowns are concentrated in issuers with greater Knightian uncertainty (*Agg_Md* × *Knightian Uncertainty*) as follows. For each stale bond holding, we multiply the evaluated-price markdown by the issuer's Knightian uncertainty and the bond's share of fund net assets, and then sum these products across the fund. We multiply this sum by −1,000 for ease of interpretation.
Agg_Knightian_Uncertainty	We measure a fund's exposure to issuers' Knightian uncertainty (*Agg_Knightian_Uncertainty*) as the sum, across its stale bond holdings, of each issuer's Knightian uncertainty multiplied by the bond's share of fund net assets.
Agg_Md × *Risk*	We measure the extent to which a fund's bond markdowns are concentrated in issuers with greater risk (*Agg_Md* × *Risk*) as follows. For each stale bond holding, we multiply the evaluated-price markdown by the issuer's risk and the bond's share of fund net assets, and then sum these products across the fund. We multiply this sum by −1,000 for ease of interpretation.
Agg_Risk	We calculate portfolio exposure to issuer risk (*Agg_Risk*) by multiplying the issuer's *Risk* measure for each stale bond holding by that bond's share of fund net assets and summing across the fund.
Fund Performance	We measure fund performance (*Fund Performance*) as the fund's net realized gains plus net unrealized appreciation on nonderivative investments during the quarter, divided by net assets in the previous available fund report.

Appendix B: Variable definitions (Cont.)

Variables	**Definition**
Fund Size	The natural logarithm of fund net assets, taken from Form N-PORT. When a fund files an amended report that corrects a previously reported net-asset value, we use the amendment-resolved value.
Short-Term Leverage	We measure the fund's short-term leverage (*Short-Term Leverage*) as borrowings payable within one year divided by net assets.
Long-Term Leverage	We measure the fund's long-term leverage (*Long-Term Leverage*) as borrowings payable after one year divided by net assets.
Future Net Flow	We measure subsequent net fund flows (*Future Net Flow*) as investor subscriptions plus reinvestment flows minus redemptions, divided by net assets in the current filing. Panel A uses flows during the first month reported in the fund's next available Form N-PORT filing, whereas Panel B sums flows during all three months reported in that filing.
Future Inflow	We measure subsequent fund inflows (*Future Inflow*) as investor subscriptions plus reinvestment flows, divided by net assets in the current filing. Panel A uses flows during the first month reported in the fund's next available Form N-PORT filing, whereas Panel B sums flows during all three months reported in that filing.
Future Outflow	We measure subsequent fund outflows (*Future Outflow*) as redemptions divided by net assets in the current filing. Panel A uses flows during the first month reported in the fund's next available Form N-PORT filing, whereas Panel B sums flows during all three months reported in that filing.

Appendix B: Variable definitions (Cont.)

Variables	**Definition**
abs(CAR(−2,+2))	We measure the magnitude of the stock-market response (*abs(CAR(−2,+2))*) as the absolute value of the firm's compounded return relative to the CRSP value-weighted market return from two trading days before to two trading days after the earnings announcement. Announcements made at or after 4:00 p.m. are assigned to the next trading day.
abs(UE)	We measure the magnitude of the earnings surprise (*abs(UE)*) as the absolute value of unexpected earnings. Unexpected earnings equals actual EPS minus the most recent preannouncement I/B/E/S median forecast, divided by the split-adjusted stock price at the fiscal-period end. If the fiscal-period end is not a trading day, we use the most recent prior trading day.

Appendix C: Sensitivity to the adoption window

Table A1: Recognition and Impairment Amounts across Adoption Windows

Panel A: Impairment Recognition

	±1 Years	*±2 Years*	*±3 Years*	*±4 Years*
	(1)	(2)	(3)	(4)
Knightian Uncertainty × *Post* × *Pre_Gw_Exp*	−0.3940**	−0.4699***	−0.4288***	−0.4946***
	(−2.68)	(−3.84)	(−4.63)	(−5.36)
Window (fiscal years around adoption)	±1	±2	±3	±4
Lower-order and other interactions	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Decision-Month FE	Yes	Yes	Yes	Yes
Observations	4,056	7,492	9,852	9,712
Firms	2,028	1,873	1,642	1,214
Decision-Month Clusters	24	48	72	96

Panel B: Impairment Amount Conditional on Recognition

	±1 Years	*±2 Years*	*±3 Years*	*±4 Years*
	(1)	(2)	(3)	(4)
Knightian Uncertainty × *Post* × *Pre_Gw_Exp*	−0.0259	0.0488	−0.0122	−0.0956
	(−0.38)	(0.53)	(−0.22)	(−1.59)
Window (fiscal years around adoption)	±1	±2	±3	±4
Lower-order and other interactions	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Decision-Month FE	Yes	Yes	Yes	Yes
Observations	196	489	810	968
Firms	98	197	295	336
Decision-Month Clusters	14	29	56	73

Notes: This table reports the focal interaction from the Table 4 specifications using one to four fiscal years on each side of ASU 2011-08 adoption. Panel A reports recognition estimates; Panel B reports impairment-amount estimates conditional on recognition. The recognition panel is balanced separately within each window, so the eligible firms can differ across columns. Panel B retains impairment firm-years from each underlying panel; fixed-effect estimation excludes singletons. The exposure definition, controls, fixed effects, and inference follow Table 4. Column (2) reproduces the primary estimates. Standard errors are two-way clustered by firm and decision month; t-statistics appear in parentheses. ***, **, and * denote two-sided significance at the 1%, 5%, and 10% levels.