An Evaluation of the Informativeness of the Dual-Classification System for Leases

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October 2023

Abstract: In 2016, the International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB) updated their accounting rules for lease transactions. In their updates, the IASB removed the dual-classification system that requires lessees to distinguish between finance leases and operating leases, while the FASB did not. In this study, I investigate whether the dual-classification system is informative to equity investors. Using a cross-country design, I find the dual-classification system is informative when bankruptcy and tax laws distinguish between leases in a manner that mirrors accounting. However, I do not find the dual-classification system is informative in the absence of these legal distinctions. These findings provide useful information for the IASB and FASB as they continue to evaluate the merits of dual-classification. They also highlight the intricate relationship between accounting rules and countries' legal environments.

Keywords: Dual-classification, lease accounting, IFRS 16, ASU 2016-02, ASC 842, information asymmetry, bid-ask spread, bankruptcy, taxes

JEL Classification: D82, G14, M41

I appreciate the thoughtful guidance from my dissertation committee members Tom Linsmeier (co-chair), Dan Wangerin (co-chair), Oliver Levine, Dan Lynch, and Andrew Stevens. I am thankful for helpful comments from Katie Boylen, Sandra Chamberlin, Willie Choi, Mike Durney, Ivy Feng, Ewelina Forker, Dave Godsell, Emily Griffith, Michelle Hanlon, Matt Holt, McKay Jones, Stacie Kelley, MJ Kim, Lisa Koonce, Kin Lo, Brian Mayhew, Devan Mescall, Brian Monsen (discussant), Max Pflitsch, Jessica Nylen, Clay Partridge, David Swanson, Andrea Tillet, Terry Warfield, Jenny Zhang, and workshop participants at the University of British Colombia, the University of Wisconsin – Madison, and participants at the AAA Annual Meeting. I also gratefully acknowledge the financial support from the Financial Accounting Standards Board (FASB) and the Wisconsin School of Business at the University of Wisconsin – Madison. Lastly, I am thankful for encouragement from Nicole Christensen.

1. Introduction

In 2005, the SEC estimated United States (US) issuers had $1.25 trillion committed to non-cancelable, off-balance-sheet operating leases, causing the regulator to call for lease accounting reform (SEC 2005). A decade later, the IASB and FASB issued IFRS 16 and ASU 2016-02 (the new lease accounting standards) effective for fiscal years beginning after December 15, 2018. Prior to the new lease accounting standards, both IFRS and US GAAP required firms to distinguish between finance leases that transferred substantially all the risks and rewards of ownership to the lessee and operating leases that did not (FASB 1976; IASC 1997). In this environment, firms would report assets and liabilities for finance leases on the balance sheet, but only disclose future commitments towards operating leases in the notes to the financial statements. Following the updates, firms reporting under IFRS or US GAAP report assets and liabilities on the balance sheet for all lease transactions. However, only firms reporting under US GAAP continue to apply the dual-classification system that distinguishes between finance and operating leases (FASB 2016). Firms reporting under IFRS make no distinction and treat all lease transactions the same (IASB 2016a).

Although the boards intended to create a single, converged standard for lease accounting, the IASB and FASB ultimately diverged in their approaches to lease classification, in part, because of differing conclusions about the informativeness of dual-classification (Tysiac 2015). Based on feedback from its constituents, the IASB concluded the benefits of dual-classification were negligible and did not outweigh the costs of separately accounting for finance and operating leases (para. BC 52, IASB 2016b). In contrast, the FASB determined the economic differences between finance and operating leases in terms of ownership risk, bankruptcy treatment, and tax treatment justified the costs of dual-classification (para. BC 50 and 72, FASB 2016). In this study, I investigate whether the dual-classification system that distinguishes between finance and operating

leases is informative to equity investors. If informative, the IASB may have degraded the usefulness of financial reporting by removing the system. If uninformative, the FASB may impose unnecessary compliance costs on preparers by requiring firms to separately account for finance and operating leases.

There are two competing perspectives as to the informativeness of the dual-classification system. The favorable perspective suggests the system can provide informative signals about (1) the underlying risk of firms' leased assets (the risk signal), (2) firms' expected financial distress costs (the bankruptcy signal), and (3) firms' taxable income (the tax signal). The risk signal arises because the dual-classification system distinguishes between finance and operating leases based on the ownership risk borne by the lessee. Research suggests this distinction can reflect differences in firms' future cash flows in two ways. First, bearing the risks of ownership, lessees have greater exposure to changes in the value of the underlying asset for finance leases (Smith and Wakeman 1985). Second, the cost of adjusting capacity in response to economic shocks is higher for assets held under finance leases because the acquisition or disposal of these assets constitutes an in-substance transfer of ownership (Gavazza 2011; Caskey and Ozel 2019).

The bankruptcy and tax signals arise in certain countries because their bankruptcy and tax law distinguish between finance and operating leases in a manner that aligns with accounting (Miller and Upton 1976; Lewis and Schallheim 1992; Graham, Lemmon, and Schallheim 1998; Eisfeldt and Rampini 2009; Caskey and Ozel 2019). For the bankruptcy signal, this alignment can reveal meaningful differences in bankruptcy treatment between finance and operating leases that affect firms' future cash flows during periods of financial distress. For the tax signal, the alignment between accounting and tax classifications generally increases book-tax conformity for leases. Research suggests this conformity can be informative to investors because it simplifies the process

of estimating taxable income – an alternative performance measure that contains incremental information about firms' future profitability (Lev and Nissim 2004; Hanlon 2005; Weber 2009; Thomas and Zhang 2011; Graham, Raedy, and Shackelford 2012; Chi, Pincus, and Teoh 2014).

The unfavorable perspective of the dual-classification system suggests the risk, bankruptcy, or tax signals are uninformative for one or more reasons. First, under the dual-classification system, many firms structured their lease transactions to narrowly achieve a desired accounting classification and the resulting accounting treatment (e.g., El-Gazzar, Lilien, and Pastena 1986; Imhoff and Thomas 1988; Lim, Man, and Mihov 2017; Christensen, Linsmeier, and Wangerin 2023). For these firms, the dual-classification system may not reliably signal differences in ownership risk because their finance and operating leases are contractually similar. The contractual similarities from structuring also hinders the bankruptcy and tax signals. For the bankruptcy or tax signal to arise, the classification of leases for bankruptcy or tax purposes must align with the accounting classification. However, the alignment is not always perfect in practice. Consequently, the accounting classification for a lease can signal the bankruptcy or tax classification with noise when leases are clustered around accounting thresholds.

Second, and specific to the risk signal, operating leases may not decrease the overall risk related to firms' leased assets. Although operating leases insulate lessees from ownership risk, operating leases create other risks. For example, firms must re-contract for assets held under operating leases more frequently because operating leases are generally short-term, which creates additional re-contracting risks. Thus, operating leases are not less risky than finance leases in all respects, hindering the risk signal.

Third, and specific to the tax signal, certain studies argue full book-tax conformity (i.e., using financial reporting income for taxes) conceals information from the market by eliminating

an informative performance measure – taxable income (e.g., Hanlon and Heitzman 2010; Graham et al. 2012). Under this premise, book-tax conformity for lease accounting potentially conceals information by moving financial reporting income closer to taxable income.

To evaluate the competing perspectives of the dual-classification system and the informativeness of each signal, I compare changes in firm-level information asymmetry upon adoption of the new lease accounting standards. If informative, the removal of the dual-classification system under IFRS 16 will increase the information asymmetry between firm insiders and outsiders. Insiders continue to observe the risk profile and classification of leased assets for bankruptcy and tax purposes, while outsiders do not. However, identifying the informativeness of each signal poses two empirical challenges.

The first challenge is investors can only infer the bankruptcy and tax treatment of leased assets if firms distinguish between finance and operating leases for accounting purposes. Therefore, the bankruptcy and tax signals are always accompanied by the risk signal. To separate the effects of each signal, I make three cross-country comparisons that exploit variation in the bankruptcy and tax laws between Australia, Canada, and the United Kingdom (UK). The second challenge is IFRS 16 also changed the capitalization rules for leases by requiring lessees to present assets and liabilities for all lease transactions – a change that may affect firm-level information asymmetry. To control for changes in capitalization rules, I benchmark all comparisons of firm-level information asymmetry to the change in firm-level information asymmetry in the US before and after the adoption of ASU 2016-02. Because the IASB and FASB developed the accounting standards jointly, the changes related to lease capitalization are nearly identical (Grotto 2014; Tysiac 2016).

To perform the cross-country comparisons empirically, I use the average relative bid-ask

spread in the five-day window surrounding the release of firms' annual reports as a proxy for firm-level information asymmetry (e.g., Christensen, Hail, and Luez 2013; Blankespoor, Miller, and White 2014; Nagar, Schoenfeld, Wellman 2019; Gee, Nielson, Schmidt, and Xie 2022; Verrecchia and Zhu 2022). In my analyses, I include variables that are proxies for the known determinants of bid-ask spread to control for factors unrelated to financial reporting (e.g., Glosten and Milgrom 1985; Glosten and Harris 1988; Bollen, Smith, and Whaley 2004). I also use multiple fixed effect structures to control for static unobservable differences between exchanges, countries, or firms. Consistent with the informativeness of the dual-classification system, I find the loss of the bankruptcy and tax signal under IFRS 16 are associated with an increase in relative bid-ask spreads by 0.11 and 0.15 standard deviations, respectively. However, I do not find the loss of the risk signal is associated with a meaningful change in relative bid-ask spreads.

In cross-sectional analyses, I find the increases in relative bid-ask spreads associated with the loss of the bankruptcy and tax signals are increasing in firms' lease intensities and concentrated among firms with a history of using both finance and operating leases. Further, the increase in relative bid-ask spreads due to the loss of the bankruptcy signal is attributable to firms with an above-median bankruptcy probability, while the increase due to the loss of the tax signal is attributable to firms with large changes in temporary book-tax differences upon IFRS 16 adoption. Importantly, these cross-sectional results attribute my primary findings to the removal of the dual-classification system under IFRS 16 while also highlighting variation in the informativeness of the bankruptcy and tax signals.

My study contributes to the literature and practice in four ways. First, I provide evidence consistent with the FASB and IASB's controversial decision to ultimately diverge in their approaches to lease classification under IFRS 16 and ASU 2016-02. While the FASB creates

accounting standards for the US where bankruptcy and tax law distinguish between finance and operating leases, the IASB creates standards for multiple countries where bankruptcy and tax law treat all leases the same. My results suggest the dual-classification system is likely to be informative in the US because of the different treatment of finance and operating leases under US bankruptcy and tax law. However, my results also suggest the dual-classification system is unlikely to be informative in IFRS countries that lack the same differences in legal treatment.

Second, my study provides useful insights to other countries like the US that distinguish between finance and operating leases for bankruptcy and/or tax purposes. For those that apply IFRS, my results suggest the removal of dual-classification under IFRS 16 may increase firm-level information asymmetry for firms incorporated in their country. For those that do not apply IFRS, I highlight an informational benefit of employing the dual-classification system for leases in their country.

Third, my study extends the leasing literature. A variety of research demonstrates firms' leasing decisions depend on bankruptcy and tax law (e.g., Miller and Upton 1976; Lewis and Schallheim 1992; Graham et al. 1998; Eisfeldt and Rampini 2009; Caskey and Ozel 2019). However, studies on the informativeness of lease reporting for equity investors find mixed results (e.g., Imhoff, Lipe, and Wright 1993; Ely 1995; Dhaliwal, Lee, and Neamtiu 2011; Bratten, Choudhary, and Schipper 2013). For example, Dhaliwal et al. (2011) finds cost-of-equity is less sensitive to operating leases compared to finance leases, on average. However, Bratten et al. (2013) fails to find differences in the association between cost-of-equity and each lease type when lease disclosures are reliable. My cross-sectional results suggest the informativeness of the distinction between finance and operating leases partially depends on how sensitive a firm is to the treatment of leases in bankruptcy or the level of book-tax conformity for leases.

Fourth, my study contributes to the literature that examines how accounting rules interact with countries' legal environments. Despite applying similar or identical accounting standards, capital market consequences and properties of financial reporting vary across countries because of institutional differences (e.g., Ball, Kothari, and Robin 2000; Burgstahler, Hail, and Luez 2006; Daske, Hail, Luez, and Verdi 2008, 2013; Christensen et al. 2013; Barth, Landsman, Lang, and Williams 2016; Isidro, Nanda, and Wysocki 2020). However, the literature generally focuses on broad differences (such as legal origin or accounting enforcement) and only considers an entire set of financial reporting standards (such as IFRS), making it difficult to conclude why institutional differences matter. In contrast, I use a more focused approach and examine the interaction between the accounting for a single transaction (i.e., leasing) and the unique characteristics of countries' legal environments that directly relate to that transaction. By doing so, I provide new evidence that capital market consequences of lease accounting vary across countries because of differences in the bankruptcy and tax treatment of leases.

2. Theoretical Development

2.1 Accounting for Leases under IFRS and US GAAP

Prior to the new lease accounting standards, both IFRS and US GAAP required firms to distinguish between finance leases that transferred substantially all the risks and rewards of ownership from the lessor to the lessee and operating leases that did not (FASB 1976; IASC 1997). In this reporting environment, firms recorded a straight-line rental expense for operating leases without recognizing an asset or liability on the balance sheet. For finance leases, firms recorded an asset and liability on the balance sheet while also recording periodic depreciation and interest expense. However, in 2005 the SEC raised concerns about the disparity in balance sheet treatment given the magnitude of operating lease financing. In a special report to the President and members

of Congress, the regulator estimated US issuers had $1.25 trillion committed to non-cancelable operating leases (SEC 2005).

In response to the SEC's concerns, the IASB and FASB added leases to their technical agendas with the intention to create a single, converged standard under IFRS and US GAAP that required firms to recognize assets and liabilities for all leases (Tysiac 2015). Over the next decade, the boards issued two joint exposure drafts on the topic. Both required firms to report assets and liabilities for all lease transactions, but the initial draft (issued in 2010) proposed to eliminate dual-classification while the subsequent draft (issued in 2013) did not (FASB 2010; IASB 2010; FASB 2013; IASB 2013). In 2016, the IASB and FASB officially updated their lease accounting rules by issuing IFRS 16 and ASU 2016-02, effective for fiscal years beginning after December 15, 2018. Consistent with the boards' primary goal, both standards require firms to report assets and liabilities for all leases. However, the boards ultimately diverged in their approach to lease classification, despite their initial intentions.

Under ASU 2016-02, firms continue to classify leases as finance or operating and record depreciation and interest expense for finance leases but rental expense for operating leases (FASB 2016). In contrast, IFRS eliminated the dual-classification system entirely. Firms applying IFRS record periodic depreciation and interest expense for all leases and do not disclose the proportion of their leased assets that are operating or finance (IASB 2016a). Although US and international stakeholders voiced concern that single-classification ignored meaningful differences in the underlying economics of lease transactions, the criticism from US stakeholders was more pronounced, particularly with respect to the tax and bankruptcy treatment of leases (Tysiac 2013; para. BC 54b(2), 57, and 72, FASB 2016; Comiran and Graham 2016). International users generally did not comment on differences due to tax or bankruptcy "because [they] understood

that IFRS is applied in numerous jurisdictions with different tax and regulatory reporting requirements such that it would be impossible to align IFRS with those disparate requirements," (para. BC 421, FASB 2016).

These differences in feedback about the informativeness of dual-classification led, in part, to the divergence between the IASB and FASB on dual-classification. Specifically, the IASB concluded the benefits of dual-classification were negligible and did not justify the cost of maintaining systems to separately classify and account for the two different types of leases (para. BC 52, IASB 2016b). In contrast, the FASB determined the economic differences between leases in terms of ownership risk, bankruptcy treatment, and tax treatment justified retaining the dual-classification system (para. BC 50 and 72, FASB 2016).

2.2 Literature Supporting the Informativeness of the Dual-Classification System

The IASB's and FASB's differing conclusions reflect the two competing perspectives towards dual-classification. The favorable perspective suggests the system provides three, potentially informative signals about (1) the underlying risk of firms' leased assets (the risk signal), (2) firms' expected financial distress costs (the bankruptcy signal), and (3) firms' taxable income (the tax signal).

The risk signal arises because accounting rules distinguish between finance and operating leases based on the ownership risk borne by the lessee. Research suggests this distinction can reflect differences in firms' future cash flows related to leased assets in two ways. First, being in-substance owners, lessees are more exposed to changes in the value of the underlying asset for finance leases compared to operating leases (Smith and Wakeman 1985).[1] The additional exposure

[1] The most obvious example is when a finance lease transfers ownership of the asset to the lessee at the end of the lease term. In this situation, the lessee internalizes all changes in the value of the underlying asset because the lessee bears the costs and/or benefits of using or disposing of the asset after the lease ends.

to changes in the value of the underlying asset associated with finance leases can increase the uncertainty of lessees' future cash flows because the future value of the underlying asset depends on uncertain future economic events (e.g., wear and tear, technological advancement and obsolescence). It also can alter the amount and timing of future cash flows depending on the magnitude and timing of the changes in the underlying asset's value. Second, the cost of adjusting capacity is higher for assets held under finance leases because the acquisition or disposal of assets held under finance leases constitute an in-substance transfer of ownership (Gavazza 2011; Caskey and Ozel 2019). Relative to operating leases, the additional costs of adjusting capacity associated with finance leases change the amount of lessees' future cash flows arising from economic shocks that require restructuring. Drawing on these underlying differences between finance and operating leases, Caskey and Ozel (2019) show that firms with volatile operations finance relatively more of their assets using operating leases.

The bankruptcy signal arises in certain countries because their bankruptcy law distinguishes between finance and operating leases in a manner similar to accounting. In these countries, the dual-classification system can reflect meaningful differences in firms' future cash flows related to leased assets during periods of financial distress (Eisfeldt and Rampini 2009; Caskey and Ozel 2019). In the US for example, bankruptcy law treats operating leases as true rental agreements. The lessee is given the option to retain the asset under lease and continue making rental payments, or return the asset to the lessor. However, bankruptcy law in the US treats finance leases as secured borrowings which are subject to renegotiation (Chapter 11 U.S. Code §361-363; U.C.C. §1–201 (35)). The amount and schedule of payments the lessee makes to the lessor depend on the joint decisions of the lessee, the lessee's creditors, and the court.

Relative to operating leases, the uncertainty of lessees' future cash flows in bankruptcy is

higher for finance leases because the cash flows depend on the uncertain future decisions of multiple parties. Dependence on the future decisions of multiple parties also can change the amount and timing of future cash flows related to finance leases in bankruptcy. Consequently, the classification of leases as finance or operating for accounting purposes can inform investors about firms' cash flows related to leased assets in bankruptcy. Consistent with the dual-classification system reflecting meaningful differences in firms' future cash flows during bankruptcy, research finds the differences in bankruptcy treatment influence firms' financing decisions in the US (Eisfeldt and Rampini 2009; Caskey and Ozel 2019). Further, Lim et al. (2017) find borrowing costs are less sensitive to operating leases than finance leases for firms more likely to default.

The tax signal arises in certain countries because their tax law also distinguishes between finance and operating leases in a manner similar to accounting, which increases book-tax conformity under the dual-classification system (Miller and Upton 1976; Lewis and Schallheim 1992; Graham et al. 1998; Eisfeldt and Rampini 2009; Caskey and Ozel 2019). For example, US tax law attributes ownership of leased assets to the lessee for finance leases, but the lessor for operating leases. As a result, the lessee deducts the interest portion of their lease payments for finance leases and claims any depreciation deductions associated with assets held under finance leases. For operating leases, the lessee deducts rental payments on a straight-line basis throughout the lease term (Revenue Procedure 2001-28). Excluding differences due to accelerated depreciation, the tax accounting for leases in the US generally conforms with the income statement accounting under the dual-classification system.

Research suggests the book-tax conformity that arises under dual-classification can be informative to investors because it simplifies the process of estimating taxable income. Book income and taxable income provide two alternative measures of firm performance because the

treatment of revenue and expenses for financial reporting and tax purposes can differ. As a result, taxable income contains information about firms' future profitability and cash flows, that is incremental to book income alone (e.g., Lev and Nissim 2004; Hanlon 2005; Hanlon, LaPlante, Shevlin 2005). However, firms do not disclose their taxable income. Instead, investors can only estimate taxable income from firms' financial reports (Graham et al. 2012). A robust literature demonstrates investors struggle to estimate taxable income and understand its implications for future profitability in the presence of large book-tax differences (Lev and Nissim 2004; Hanlon 2005; Weber 2009; Thomas and Zhang 2011; Graham et al. 2012; Chi et al. 2014). Importantly, the book-tax conformity under the dual-classification system reduces book-tax differences. In turn, the process of estimating taxable income is simpler, making it easier for investors to uncover incremental information about future performance.

2.3 Literature Opposing the Informativeness of the Dual-Classification System

The unfavorable perspective of dual-classification suggests the system is not informative for multiple reasons. First, the differences between finance and operating leases may be negligible in practice, hindering the risk, bankruptcy, and tax signals. Prior to the new lease accounting standards, IFRS and US GAAP required firms to use economic criteria to distinguish between finance and operating leases (FASB 1976; IASC 1997). In this environment, many firms structured their lease transactions to narrowly achieve a desired accounting classification (e.g., El-Gazzar et al. 1986; Imhoff and Thomas 1988; FASB 2016; IASB 2016b; Christensen et al. 2023). For these transactions, the economic differences between finance and operating leases are small and the dual-classification system may not reliably signal differences in ownership risk.

Further, in the presence of structuring, the dual-classification system provides the bankruptcy and tax signals with noise. While the classification of leases for bankruptcy or tax

purposes is aligned with the accounting classification in certain countries, the alignment is not always perfect. For example, IFRS uses a principles-based approach and broadly requires firms to classify leases that transfer the risks of ownership to the lessee as finance. Canadian bankruptcy law also distinguishes between finance and operating leases based on ownership risk, but does so using a rules-based approach that considers 15 lease characteristics, creating discrepancies between the two classification criteria. When discrepancies exist and firms structure their lease transactions based on accounting criteria, the accounting classification may not reliably reflect the bankruptcy or tax classification of leases.

Second, and specific to the risk signal, operating leases are not less risky than finance leases in all respects. Despite insulating firms from ownership risk, operating leases create unique risks of their own. For example, firms must re-contract for assets held under operating leases more frequently because operating leases are generally short term (Caskey and Ozel 2019). Because of the higher re-contracting frequency, operating leases increase lessees' exposure to fluctuations in the market for leased assets, creating re-contracting risks. As a result, the overall risk lessees bear for operating leases may not differ materially from finance leases, hindering the risk signal.

Third, and specific to the tax signal, book-tax conformity for leases may conceal information from investors despite simplifying the process of estimating taxable income. As discussed, income for financial reporting and income for tax purposes provide alternative measures of financial performance. Using this line of reasoning, multiple studies assert full book-tax conformity (i.e., financial reporting and taxable income are equal) creates a loss of information to the market (e.g., Hanlon 2005; Hanlon and Heitzman 2010; Graham et al. 2012; Dhaliwal, Lee, Pincus, and Steele 2017). Under this premise, book-tax conformity for lease accounting may potentially conceal information by moving financial reporting income closer to taxable income.

Corroborating the arguments underlying the unfavorable perspective, some studies find capital markets treat finance and operating leases similarly. For example, Bratten et al. (2013) demonstrates equity markets do not perceive finance and operating leases differently when financial statement reliability is high. Imhoff et al. (1993) finds leverage ratios under the prior lease reporting rules explain more variation in stock returns if operating leases are treated as if they were finance leases. Similarly, Altumaro, Johnston, Pandit, and Zhang (2014) and Kraft (2015) provide evidence credit rating agencies and banks use an "as-if-capitalized" approach to treat operating leases like other forms of asset financing.

3. Analysis of the Informativeness of the Dual-Classification System

3.1 Australia, Canada, United Kingdom, and United States Institutional Background

To investigate the informativeness of each signal the dual-classification system can provide, I exploit variation in the accounting, bankruptcy, and tax classification of leases across Australia, Canada, the UK, and the US. All four countries speak English, apply the principles of common law, have Anglo-Saxon origins, and rank highly in accounting enforcement, suggesting cross-country comparisons on the basis of accounting are suitable (La Porta, Lopez de Silanes, Shleifer, and Vishny 1998; Ball et al. 2000; Hope 2003; Khurana and Raman 2004; La Porta, Lopez-De-Silanes, and Shleifer 2006; Jackson and Roe 2009; Brown, Preiato, and Tarca 2014).[2] Table 1 provides a detailed description of the classification criteria and treatment of finance and operating leases in all four countries. Panel A, B, and C of Table 1 focus on the accounting, bankruptcy, and tax classification/treatment, respectively. Australia, Canada, and the UK apply

[2] Among 22 countries, Hope's (2003) enforcement measure ranks all four countries in the top half of accounting enforcement. Among 51 countries, Brown et al.'s (2014) enforcement measure ranks the four countries in the top 12 percent. Among 49 countries, La Porta et al.'s (2006) enforcement measure ranks the four countries in the top 22 percent. However, La Porta et al.'s (2006) measure has a stronger focus towards securities law enforcement. Also taking a securities law focus, Jackson and Roe (2009) create two measures of enforcement based on security regulators staff and budget. Among 55 countries, each ranks the four countries in the top 22 percent.

IFRS, while the US applies US GAAP (IFRS Foundation 2016, 2017, 2022).[3]

For all four countries, the dual-classification system provides the risk signal because IFRS and US GAAP distinguish between finance and operating leases based on ownership risk borne by the lessee. In Australia, the dual-classification system only provides this signal. Australia makes no distinction between the different types of leases for bankruptcy purposes. For tax purposes Australia distinguishes between leases, but in dimensions that do not align with accounting.

In Canada, the dual-classification system also provides the bankruptcy signal, but not the tax signal. Canadian bankruptcy law distinguishes between finance and operating leases along dimensions that mirror accounting. Finance leases are treated as secured borrowings and subject to renegotiation in bankruptcy, while operating leases are not. Lessees can retain assets held under operating leases and continue making payments, or return the assets to extinguish any financial obligations. For tax purposes however, Canadian firms treat all leases the same.

In the UK, the dual-classification system provides the tax signal in addition to the risk signal, but does not provide the bankruptcy signal. For bankruptcy purposes, all leases are treated as a financing arrangement and subject to renegotiation. However, UK tax law relies on lease classification for accounting purposes to distinguish between finance and operating leases, which leads to tax treatment that generally conforms with financial reporting. For finance leases, the lessee deducts the interest portion of their payments and any depreciation related to the underlying asset. For operating leases, the lessee deducts their rental payments on a straight-line basis.

In the US, the dual-classification system provides all three signals. Both bankruptcy and tax law make distinctions between leases along dimensions similar to accounting. Like Canada, US bankruptcy law only treats finance leases as secured borrowings subject to renegotiation. For

[3] On December 31, 2020, the UK transitioned to IFRS as adopted by the UK. However, the transition occurs after the end of my sample period.

operating leases, lessees can retain the underlying assets and continue making payments, or return the assets to the lessor. Like the UK, US tax law only allows lessees to deduct interest and depreciation for finance leases. For operating leases, lessees deduct their rental payments on a straight-line basis.

3.2 Research Design that Isolates the Risk, Bankruptcy, and Tax Signals

Isolating the informativeness of the risk, bankruptcy, and tax signals poses two empirical challenges. First, no country can have the bankruptcy or tax signals without the risk signal. The former rely on a distinction being drawn for accounting purposes between finance and operating leases, which by definition creates the risk signal. To decouple the bankruptcy and tax signals from the risk signal, I make three cross-country comparisons that exploit the institutional differences between Australia, Canada, and the UK.

Second, IFRS 16 did more than remove the dual-classification system. By requiring firms to capitalize operating leases, it provided investors new information about the precise values of operating lease assets and liabilities that investors commonly estimated in the past (Imhoff, Lipe, and Wright 1991; Imhoff, Lipe, and Wright 1997; IASB 2016a; FASB 2016; Hill 2022). To control for potential effects from changes in capitalization rules on firm-level information asymmetry, I benchmark within-country changes in information asymmetry upon IFRS 16 adoption to changes in information asymmetry in the US upon ASU 2016-02 adoption. Because the accounting standards were developed and implemented in unison (except for the removal of the dual-classification system under IFRS 16) benchmarking to the US controls for changes in information asymmetry arising from the capitalization of operating leases (Grotto 2014; Tysiac 2016).

Figure 1 provides an overview of my research design. Panel A provides a pictorial representation of the within-country differences before and after adoption of the new lease

accounting standards. Panel B details the within-country differences after benchmarking to the US. Panel C finishes with comparisons of the differences before and after adoption of the new lease accounting standards (relative to the US) between countries.

As the bottom row in Panel B of Figure 1 highlights, changes in information asymmetry for Australian firms relative to US firms upon adoption of the new lease accounting standards isolates the risk signal. Because the dual-classification system in Australia only provides the risk signal, changes in information asymmetry for Australian firms after adoption of IFRS 16 relate to this signal. Further, benchmarking to the US controls for changes in information asymmetry arising from capitalization of operating leases.

As the top row of Panel C demonstrates, comparing (1) changes in information asymmetry for Canadian firms (relative to US firms) to (2) changes in information asymmetry for Australian firms (relative to US firms) upon adoption of the new lease accounting standards isolates the bankruptcy signal. As Panel B of Figure 1 highlights, the comparison between Canadian and US firms isolates two signals. Because the dual-classification system in Canada provides all but the tax signal, changes in information asymmetry relative to the US may be due to the risk signal and/or the bankruptcy signal. However, benchmarking changes in information asymmetry for Canadian firms (relative to US firms) to changes in information asymmetry for Australian firms (relative to US firms) parses out the risk signal.

As the bottom row of Panel C highlights, comparing (1) changes in information asymmetry for UK firms (relative to US firms) to (2) changes in information asymmetry for Australian firms (relative to US firms) upon adoption of the new lease accounting standards isolates the tax signal. Similar to the comparison between Canadian and US firms, the comparison between UK and US firms also isolates two signals (see Panel B of Figure 1). Because the dual-classification system in

the UK provides all but the bankruptcy signal, changes in information asymmetry relative to the US may be due to the risk signal and/or the tax signal. However, as before, benchmarking changes in information asymmetry for UK firms (relative to US firms) to changes in information asymmetry for Australian firms (relative to US firms) parses out the risk signal.

3.3 Regression Model Specifications that Isolate Risk, Bankruptcy, and Tax Signals

Empirically, I make the two comparisons that isolate the risk and bankruptcy signal by estimating equation (1) in a sample of firms incorporated in Canada, Australia, and the US:

$$InfoAsymmetry_{it} = \beta_0 + \beta_1 CAN_i * Post_t + \beta_2 NonUS_i * Post_t + \beta_3 CAN_i + \beta_4 NonUs_i + \beta_5 Post_t + \sum_k \delta_k X_{kit} + \sigma_x|\rho_c|\delta_i + \varepsilon_{it} \quad (1)$$

Appendix 1 provides definitions for all the variables in my analyses. $Post_t$ is an indicator variable that distinguishes between fiscal years reported under the previous versus new lease accounting standards. $NonUS_i$ is an indicator for firms incorporated outside of the US. CAN_i is an indicator for firms incorporated in Canada. X_{kit} is a vector of k control variables. σ_x, ρ_c, and δ_i are exchange, country, and firm fixed effects, respectively, that control for static unobservable differences between exchanges, countries, and firms.

In equation (1), β_2 captures changes in information asymmetry related to the risk signal. Specifically, β_2 measures changes in $InfoAsymmetry_{it}$ for Australian firms relative to US firms, upon adoption of the new lease accounting standards (see Panel B of Figure 1). If the risk signal is informative, I expect β_2 to be positive consistent with an increase in information asymmetry due to loss of the risk signal under IFRS 16.

β_1 captures changes in information asymmetry related to the bankruptcy signal. Specifically, β_1 measures the difference between (1) changes in $InfoAsymmetry_{it}$ for Canadian firms (relative to US firms) and (2) changes in $InfoAsymmetry_{it}$ for Australian firms (relative to US firms), upon adoption of the new lease accounting standards (see Panel C of Figure 1). If the

bankruptcy signal is informative, I also expect β_1 to be positive consistent with an increase in information asymmetry due to the loss of the bankruptcy signal under IFRS 16.

To make the comparison that isolates the tax signal, I estimate equation (2) in a sample of firms incorporated in the UK, Australia, and the US:

$$InfoAsymmetry_{it} = \beta_0 + \beta_1 UK_i * Post_t + \beta_2 NonUS_i * Post_t + \beta_3 UK_i + \beta_4 NonUs_i + \beta_5 Post_t + \sum_k \delta_k X_{kit} + \sigma_x|\rho_c|\delta_i + \varepsilon_{it} \quad (2)$$

UK_i is an indicator for firms incorporated in the UK. $NonUS_i$, $Post_t$, the vector of control variables X_{kit}, and fixed effects σ_x, ρ_c, and δ_i are the same as defined previously.

In equation (2), β_1 captures changes in information asymmetry related to the tax signal. Specifically, β_1 measures the difference between (1) changes in $InfoAsymmetry_{it}$ for UK firms (relative to US firms) and (2) changes in $InfoAsymmetry_{it}$ for Australian firms (relative to US firms), upon adoption of the new lease accounting standards (see Panel C of Figure 1). If the tax signal is informative, I expect β_1 to be positive, consistent with an increase in information asymmetry due to the loss of the tax signal under IFRS 16. Appendix 2 provides formal proofs using the expectation operator that each coefficient captures what I purport it to capture.[4]

3.4 Measuring Information Asymmetry

I use bid-ask spread to measure information asymmetry between the firm and equity investors. To smooth differences in supply and demand for a particular stock, market makers fulfill investors' buy and sell orders immediately. Consequently, market makers temporarily hold shares of stock until the number of buy and sell orders reach an equilibrium. To cover the costs of operations and compensate for the risk of price changes, the market maker establishes a competitive bid-ask spread in which the buy (bid) price is lower than the sell (ask) price.

[4] As is the case in equation (1), β_2 also captures changes in information asymmetry due to the risk signal in equation (2). For simplicity, I limit my discussion of results arising from the risk signal to the β_2 coefficient in equation (1). However, the direction and statistical significance of β_2 are the same for both equations in all my analyses.

Prior research demonstrates order processing costs, inventory holding costs, market maker competition, and adverse selection risk determine the size of market makers' bid-ask spreads for a particular security (Glosten and Milgrom 1985; Glosten and Harris 1988; George, Kaul, and Nimalendran 1991; Kim and Verrecchia 1994; Bollen et al. 2004). I focus on the connection to adverse selection risk arising from information asymmetry. As information asymmetry increases, so does the risk that a trader's decision to buy or sell a stock is based on private information not currently incorporated in price. For this informed trader, the decision to sell a stock indicates a future decrease in price, while a decision to buy indicates an increase. To protect against/recoup the losses from holding over-valued stock or selling under-valued stock, the market maker must widen the bid ask-spread. Because of this positive relationship, multiple studies in finance and accounting use bid-ask spread to evaluate changes in information asymmetry (e.g., Luez and Verrecchia 2000; Eleswarapu, Thompson, and Venkataraman 2004; Sidhu, Smith, Whaley, and Willis 2008; Blankespoor et al. 2014; Balakrishnan, Blouin, and Guay 2019; Nagar et al. 2019; Gee et al. 2022; Verrecchia and Zhu 2022).

To measure $InfoAsymmetry_{it}$ in my study, I rely on the average closing bid-ask spread as a percentage of stock price (i.e., relative bid-ask spread) for each firm during the 5-day window surrounding the release of its annual report ($RelBAFS_{it}$).[5] Kim and Verrecchia (1994) demonstrate adverse selection risk is greatest in the days surrounding firm disclosures. Further, it is during firms' disclosures of financial statements that investors became aware of the proportion of finance versus operating leases. Therefore, the power to detect increases in information asymmetry from the removal of the dual-classification system should be the greatest during this short-window.

[5] All my analyses are at the security-level because $RelBAFS_{it}$ is a security-level variable. However, for simplicity, I discuss my research design, sample reconciliation, descriptive statistics, and analyses at the firm-level because so few firms in my sample (2 percent) issue multiple securities (i.e., list securities on different exchanges, or list multiple securities on the same exchange). All results are robust to dropping these firms.

3.5 Control Variables

I include multiple variables to control for the determinants of bid-ask spread. $lnSizeFS_{it}$ is a measure of firm size during the 5-day window surrounding the firm's release of its annual report (annual report window). For larger firms there is more market maker competition leading to smaller bid-ask spreads. *lnVlm* is a measure of trading volume during the firm's annual report window. Trading volume increases market makers' processing costs but also shortens the length of time market makers hold securities in inventory reducing their inventory holding costs (e.g., Glosten and Milgrom 1985; Glosten and Harris 1988; Bollen et al. 2004).

$lnVlty_{it}$ is a measure of stock return volatility during the 60 days preceding the firm's annual report window. $Analysts_{it}$ is the number of analysts issuing an EPS forecast for the firm. $MGFS_{it}$ is an indicator for firms that provide a management forecast during the annual report window. $EAFS_{it}$ is an indicator for firms that make an earnings announcement during the annual report window. To compensate for the cost of holding a stock in inventory during a price change, market makers increase bid-ask spreads (e.g., Bollen et al. 2004; Sidhu et al. 2008; Verrecchia and Zhu 2022). Prior stock return volatility reflects the expected frequency and magnitude of price changes. Voluntary and future oriented disclosures exacerbate differences in opinion among traders, heightening the risk of a price change (Kim and Verrecchia 1994; Eleswarapu et al. 2004).

lnFFFS is a measure of free float on the date the firm releases its annual report. The risk of informed trading is lower for firms with fewer shares held by insiders. Consequently, market makers set lower bid-ask spreads for firms with large free floats (Leuz and Verrecchia 2000).

In addition to including these control variables in isolation, I interact each with CAN_i and $NonUS_i$ in equation (1). In equation (2), I interact each control variable with UK_i and $NonUS_i$. Doing so allows each control variable to have a unique relationship with the average relative bid-

ask spread during the annual report window ($RelBAFS_{it}$) for each country-grouping of firms.

3.6 Sample Selection and Descriptive Statistics

I begin with the universe of FactSet firms incorporated in Australia, Canada, the UK, and the US for fiscal years 2017 through 2019. I use a short, three-year sample window to limit the influence of updates to IFRS and US GAAP unrelated to lease accounting. From this universe, I focus on firms that trade on the Australian, Toronto, London, New York, or NASDAQ stock exchanges to minimize differences in the quality of capital markets. All are premier exchanges for their respective countries and rely on hybrid trading mechanisms. Next, I remove Australian, Canadian, and UK firms that do not apply IFRS and US firms that do not apply US GAAP. I also drop firms that have no leases in the fiscal year immediately preceding the adoption of the new lease accounting standards.

After these initial screens, I remove firms affected by six material standard updates effective between fiscal years 2017 and 2019 that resulted in differences in accounting between IFRS and US GAAP. IFRS 9 updated the accounting for financial instruments under IFRS. ASU 2017-12 and ASU 2016-01 also altered the accounting for financial instruments under US GAAP, but in a manner inconsistent with IFRS. Therefore, I exclude firms in the financial services industry from my sample. ASU 2017-04 altered the accounting for goodwill impairments under US GAAP without a corresponding change in IFRS. Consequently, I exclude firms that had goodwill impairments during my sample window. Similarly, ASU 2016-10 and ASU 2016-20 amended the accounting for licensing revenue without a corresponding change in IFRS. Thus, I remove firms with intangible asset balances (excluding goodwill) greater than 50 percent of total assets because these firms are more likely to earn most of their income via licensing arrangements.[6]

[6] IFRS 15 and ASU 2014-09 both updated the accounting for revenue and became effective during my sample period. Except for the amendments made by ASU 2016-10 and ASU 2016-20, the standards are identical in their application

Last, I remove firms from my sample missing the data necessary to calculate the dependent, independent, and control variables for each year in the sample period. These screening procedures result in a final sample of 7,194 observations from 2,398 unique firms. Of the 2,398 unique firms, 1,601 are incorporated in the US, 381 in Australia, 165 in Canada, and 251 in the UK. Table 2 provides a summary of my sample selection procedures (Panel A), country composition (Panel B), and industry composition (Panel C). I use the Fama French 12 industry classification to define industries. The Spearman rank correlation between the number of observations for each industry in my sample and the number of observations for the same industries in FactSet is 0.895 (untabulated).[7] However, the "Other" industry appears to be over-represented among Australian and Canadian firms in my sample. Yet, there is no obvious industry that is under-represented among Australian or Canadian firms.

Panel A of Table 3 presents descriptive statistics for the dependent, independent, and control variables I use in my analyses. I winsorize each continuous variable at the 1st and 99th percentiles by fiscal year. The mean $RelBAFS_{it}$ of 2.653 indicates the average relative bid ask spread during firms' annual report windows is 2.7 percent of stock price.[8] Panel B of Table 3 presents the mean and median for each dependent, independent, and control variable by country. Consistent with the US having the most robust financial markets, bid-ask spreads are smallest for US firms, followed by Canadian firms, UK firms, and then Australian firms. Similarly, US firms have the largest analyst following, the most free-float, and are more likely to provide management

and therefore do not result in different accounting or disclosure practices between firms applying US GAAP and firms applying IFRS.

[7] To ensure comparability of the FactSet sample, I remove firms that are missing stock prices, have goodwill impairments, have intangible assets (excluding goodwill) greater than 50% of their total assets, do not lease, or are in the financial services industry.

[8] The mean of 2.653 is comparable to other studies using international data. Christensen et al. (2013) use relative bid-ask spreads to evaluate the effect of IFRS adoption on capital market liquidity. In their sample that includes 50 countries, the mean bid-ask spread is also 2.6 percent of stock price (see panel A of Table 1).

guidance during the annual report window. US firms also have the most trading volume during the annual report window, and the least return volatility preceding the annual report window. However, trading volume and return volatility are very comparable across countries. In my sample, UK firms are the largest on-average, and Canadian firms are the most likely to issue an earnings announcement during the annual report window.

Table 4 presents the Pearson correlations between all the variables. Consistent with Panel B of Table 3, the correlation between many control variables and indicators for firms incorporated in the US (US_i), Australia (AUS_i), Canada (CAN_i), and the UK (UK_i) are statistically significant ($p < 0.05$). This highlights the need to control for these determinants of bid-ask spread.

3.7 Results of Primary Analyses

Panel A of Table 5 presents the results from estimating equation (1) in the sample of firms incorporated in Canada, Australia, and the US. Columns 1, 2, and 3, present the specifications with exchange, country, and firm fixed effects, respectively. For all analyses, I cluster standard errors by firm.[9] I include a predictions column in Table 5 indicating the direction of the relationship I expect each variable to exhibit with $RelBAFS_{it}$. I also include a theoretical construct column to indicate the construct that each variable in equation (1) captures. Consistent with the bankruptcy signal being informative to equity investors, β_1 is positive and statistically significant ($p < 0.10$) in all four specifications. The most conservative estimate of β_1 suggests the loss of the bankruptcy signal under IFRS 16 is associated with an increase in relative bid-ask spreads during the annual

[9] Fixed effect groups that cross the boundaries of cluster groups can induce correlation in the error term which biases standard errors. However, bias is generally not a concern when the number of observations supporting each fixed effect group is large (Conley, Goncalves, and Hansen 2018). In my setting, the only fixed effect groups that cross the boundaries of cluster groups are exchange and country (i.e., each exchange or country contains multiple firms). Yet, the potential standard error bias is small because the number of observations belonging to each exchange or country group in my sample is large (87 and 495 observations at the minimum for exchange and country fixed effects, respectively). Further, for all analyses, my results that include an exchange or country fixed effect are consistent with my results that include firm fixed effects.

report window by 0.11 standard deviations for Canadian firms.[10] Inconsistent with the risk signal being informative to equity investors, β_2 is close to zero and statistically insignificant ($p > 0.10$) in all four specifications. Therefore, I do not find evidence the loss of the risk signal under IFRS 16 is associated with an increase in information asymmetry.

Panel B of Table 5 presents the results from estimating equation (2) in the sample of firms incorporated in the UK, Australia, and the US. The column structure is identical to Panel A. Consistent with the tax signal being informative to equity investors, β_1 is positive and statistically significant ($p < 0.05$) in all four specifications. The most conservative estimate of β_1 suggests the loss of the tax signal under IFRS 16 is associated with an increase in relative bid-ask spreads during the annual report window by 0.15 standard deviations for UK firms.[11,12]

4. Cross-Sectional Variation in the Informativeness of the Dual-Classification System

In an international setting, the risk that differences between countries bias empirical results is high (Isidro et al. 2020). I use a pre versus post design that compares changes in information asymmetry within one country to changes in information asymmetry within another (see Figure 1). I also incorporate exchange, country, or firm fixed effects. Both design choices ensure that

[10] The standard deviation of $RelBAFS_{it}$ in my sample for Canadian firms during the IFRS 16 period is 8.200. The most conservative coefficient of 0.931 divided by 8.200 is 0.11. I do not assess economic significance by comparing coefficient estimates to the mean $RelBAFS_{it}$ because the mean is small compared to its standard deviation. Among all observations in my sample, the mean $RelBAFS_{it}$ is 2.653 and its standard deviation is 4.907 (see Panel A of Table 3). Thus, comparing the coefficient of interest to the mean $RelBAFS_{it}$ would imply the removal of the dual-classification system is associated with a larger shift in the distribution of bid-ask spreads than is the case.

[11] The standard deviation of $RelBAFS_{it}$ in my sample for UK firms during the IFRS 16 period is 6.221. The most conservative coefficient of 0.947 divided by 6.221 is 0.15.

[12] To assess the reasonableness of the coefficient estimates in my primary analysis, I compare my results to two studies that relate bid-ask spreads to firms' financial reporting environments. Blankespoor et al. (2014) estimates that tweeting a link to a press-release is associated with a decrease in abnormal bid-ask spreads of 0.01 percentage points on the day of the press release (see column 1 of Panel A in Table 5). Using the standard deviation of abnormal bid-ask spread in the authors' sample of 0.117, their estimate corresponds to a decrease by 0.09 standard deviations. Gee et al. (2022) estimate that relative bid-ask spreads increase 0.7 percentage points less during the onset of COVID-19 for banks that disclose expected credit loss information (see column 2 in Table 6). At the standard deviation of relative bid-ask spreads of 0.9 in their sample, 0.7 corresponds to a difference of 0.77 standard deviations. In both cases, the authors' estimates are comparable in economic magnitude to the estimates in my primary analyses.

static differences between countries do not affect my results (e.g., differences in language, cultural diversity, political systems, healthcare systems, education systems).[13] However, it is possible that *changes* in differences between countries explain my results if the *changes* (1) align with IFRS 16 and ASU 2016-02 adoption, and (2) affect relative bid-ask spreads independently of the control variables I include my analyses. To demonstrate my results relate to the removal of the dual-classification system under IFRS 16, and not other changes between countries, I perform four cross-sectional analyses.

4.1 Partitioning by Lease Intensity

First, I re-estimate equation (1) and equation (2) after excluding firms from my sample with leased assets in the year of IFRS 16 and ASU 2016-02 adoption that are less than 0.5 percent of total assets, 1.0 percent of total assets, 1.5 percent of total assets, and so forth ($LeaseIntensity_i$). I continue this successive sample screening process until firms with leased assets less than 3.0 percent of total assets are excluded.[14] If my results are driven by the adoption of the new lease accounting standards, I expect the coefficient estimates of interest to steadily increase as I exclude firms based on $LeaseIntensity_i$. The informational effect of the change in lease accounting should be larger for firms that finance a greater proportion of their assets using leases.

Table 6 presents the results from this additional analysis. Panel A presents the estimates of β_1 in equation (1) that relate to the bankruptcy signal. Panel B presents the estimates of β_2 in equation (1) that relate to the risk signal. Panel C presents the estimates of β_1 in equation (2) that relate to the tax signal. For brevity, I exclude the coefficient estimates related to the main effects

[13] My cross-country design also controls for the average effect of global events common to Australia, Canada, the United Kingdom, and the United States.

[14] I conclude the successive screening process at 3.0 percent of total assets because the pool of observations is too small to reliably estimate equation (1) and (2) for larger percentages. For example, there fewer than 35 Canadian firms in my sample with leased assets greater than 3.5 percent of total assets.

and control variables. Consistent with the new lease accounting standards driving my results, the estimates of β_1 related to the bankruptcy and tax signals steadily increase as I successively exclude firms with low values of $LeaseIntensity_{it}$ from my sample. The graphs in Panel A and C depict this trend. Further, compared to my analysis in the full sample, the estimates of β_1 related to the bankruptcy and tax signals are roughly 3.1 and 2.6 times larger for firms with leased assets greater than 3.0 percent of total assets, respectively.[15] Corroborating the results of my primary analysis, the estimates of β_2 related to the risk signal are statistically insignificant ($p > 0.10$) for all four specifications in seven of eight samples. In the eighth sample, the estimate is statistically significant ($p < 0.10$) in two of the four specifications, but negative.

4.2 Partitioning by Mix of Finance and Operating Leases

Second, I re-estimate equation (1) and (2) in samples of firms based on their use of finance and operating leases before IFRS 16 and ASU 2016-02 adoption ($DualLease_i$). If my results are due to the removal of the dual-classification system, I expect the increase in information asymmetry to be concentrated among firms with a history of using finance and operating leases. For firms with no history of using both types of leases, investors may reasonably assume most of their leases are one type even in the absence of dual-classification.

Table 7 presents the results from this cross-sectional analysis. The Panel structure is identical to the structure in Table 6. The estimates of β_1 related to the bankruptcy and tax signals are statistically insignificant ($p > 0.10$) for all four specifications in the sample of firms with a history of using only one type of lease. However, consistent with my expectations, the estimates

[15] Using the specification of equation (1) with firm fixed effects, the estimate of β_1 related to the bankruptcy signal is 0.931 in the full sample. The same coefficient is 2.884 among firms with leased assets greater than 3.0 percent of total assets. 2.884 divided by 0.931 is 3.098 (roughly 3.1). Using the specification of equation (2) with firm fixed effects, the estimate of β_1 related to the tax signal is 0.947 in the full sample. The same coefficient is 2.447 among firms with leased assets greater than 3.0 percent of total assets. 2.447 divided by 0.947 is 2.584 (roughly 2.6).

of β_1 are positive and statistically significant ($p < 0.05$) in the sample of firms with a history of using both types of leases. Again, corroborating the results of my primary analysis, the estimates of β_2 related to the risk signal are statistically insignificant ($p > 0.10$) in both samples for all four specifications with one exception. In the specification with firm fixed effects, the estimate is positive and statistically significant ($p < 0.10$) in the sample of firms with a history of using one type of lease. A possible interpretation is investors perceive the likelihood of structuring as low for firms with a history of using only one type of lease, making the risk signal more reliable. However, I am cautious about drawing conclusions from this particular result given the lack of consistency across other fixed effect structures.

4.3 Partitioning by Bankruptcy Probability

Third, I re-estimate equation (1) in samples of firms with below versus above median bankruptcy probability. If my results related to the bankruptcy signal are due to the loss of this signal under IFRS 16, I expect the increase in information asymmetry to be concentrated among firms with a higher probability of bankruptcy. To measure bankruptcy probability, I apply the Bharath and Shumway (2008) method in the year of IFRS 16 and ASU 2016-02 adoption ($BankruptcyProb_i$). I continue to estimate equation (1) using Canadian, Australian, and US firms, but lose 306 observations that are missing the data necessary to calculate $BankruptcyProb_i$.

Table 8 presents the results from this additional analysis. The estimates of β_1 related to the bankruptcy signal are statistically insignificant ($p > 0.10$) in the sample of firms with a below median bankruptcy probability. In the sample of firms with an above median bankruptcy probability the coefficient estimates are positive and statistically significant ($p < 0.10$), consistent with my expectations.

4.4 Partitioning by Changes in Temporary Book-Tax Differences

Fourth, I re-estimate equation (2) in samples of firms with below versus above median changes in temporary book-tax differences upon adoption of the new lease accounting standards. If my results related to the tax signal are due to the loss of this signal under IFRS 16, I expect the increase in information asymmetry to be concentrated among firms with large changes in temporary book-tax differences. The tax signal arises because book-tax conformity for leases under the dual-classification system simplifies the process for investors to estimate taxable income. For firms that recognize large book-tax differences related to their leases upon IFRS 16 adoption, the decrease in book-tax conformity from removing the dual-classification system is the largest. To measure changes in temporary book-tax differences, I use the sum of the absolute change in deferred tax assets and deferred tax liabilities, scaled by lagged total assets, in the year of IFRS 16 and ASU 2016-02 adoption ($\Delta TempBTD_i$).[16] I continue to estimate equation (2) using UK, Australian, and US firms, but lose 2,100 observations missing data necessary to calculate $\Delta TempBTD_i$.

Table 9 presents the results from this additional analysis. The estimates of β_1 related to the tax signal are statistically insignificant ($p > 0.10$) in the sample of firms with a below median change in temporary book-tax differences upon adoption of the new lease accounting standards. In the sample of firms with an above median change, the coefficient estimates are positive and statistically significant ($p < 0.10$), consistent with my expectations.

5. Robustness and Falsification Analyses

5.1 Placebo Adoption Period

Underlying my research design is the assumption that trends in $RelBAFS_{it}$ for each country

[16] Ideally, I would measure the change in temporary book-tax differences directly attributable to the adoption of IFRS 16. However, firms do not report the source of their deferred taxes at this level of granularity. Of 251 UK firms, only two disclosed the change in their deferred taxes due to IFRS 16 adoption. Therefore, my measure is not a perfect proxy for the change in temporary book-tax differences directly attributable to IFRS 16, but should be positively correlated.

in my sample are parallel in the absence of the new lease accounting standards (i.e., the parallel trends assumption). To assess the validity of this assumption, I re-estimate equation (1) and (2) using only observations from fiscal years 2017 and 2018 (before adoption of the new lease accounting standards) and replace $Post_t$ with an indicator variable equal to one for fiscal year 2018 ($Placebo_t$). Panel A and B of Table 10 present the results from estimating equation (1) and (2), respectively. For brevity, I omit estimates of the control variables and main effects. Consistent with parallel trends in $RelBAFS_{it}$, the estimates of β_1 and β_2 in equation (1) are statistically insignificant ($p > 0.10$) in all four specifications. Similarly, the estimates of β_1 in equation (2) also are statistically insignificant ($p > 0.10$) in all four specifications.[17]

5.2 Partitioning Bankruptcy Signal by $\Delta TempBTD_i$ and Tax Signal by $BankruptcyProb_i$

To demonstrate my results related to the bankruptcy and tax signals are attributable to the legal treatment of leases in Canada and the UK, I perform two falsification analyses. First, I re-estimate equation (1) in samples of firms with below- versus above-median $\Delta TempBTD_i$. If my results related to the bankruptcy signal are due to Canadian law distinguishing between finance and operating leases for bankruptcy but not tax purposes, I expect the change in information asymmetry for Canadian firms to be independent of the change in their temporary book-tax differences upon adoption of IFRS 16 and ASU 2016-02. Panel A of Table 11 presents the results from this analysis. The estimates of β_1 related to bankruptcy signal are not statistically significant in either sample ($p > 0.10$).

Second, I re-estimate equation (2) in samples of firms with above- versus below-median

[17] To assess whether the trends in $RelBAFS_{it}$ are parallel for a longer period, I re-estimate equation (1) and (2) in a sample of observations from fiscal year 2015 through 2018 and replace post with indicators for fiscal year 2015, 2016, and 2017 making fiscal year 2018 the comparison year. I lose 530 firms without data for the additional fiscal years. Using the longer sample, there are no statistically significant divergences in trends in $RelBAFS_{it}$ between countries ($p > 0.10$). Further, the results of my primary analyses are robust using this longer sample period, suggesting the lack of statistically significant divergences in trends is not due to a loss of power from losing 530 firms.

bankruptcy probability (*BankruptcyProb*$_i$). If my results related to the tax signal are due to UK law distinguishing between finance and operating leases for tax purposes but not bankruptcy, I expect the change in information asymmetry among UK firms to be independent of their bankruptcy probability. Panel B of Table 11 presents the results from re-estimating equation (2). The estimates of β_1 related to the tax signal are not statistically significant in either sample ($p > 0.10$).

6. Conclusion

This study investigates whether the dual-classification system for leases is informative for equity investors. Consistent with dual-classification being informative, I provide evidence the loss of the bankruptcy and tax signals under IFRS 16 are associated with increases in relative bid-ask spreads. However, I fail to find evidence of increases in relative bid-ask spreads due to the loss of the risk signal. Attributing my findings to the removal of the dual-classification system under IFRS 16, I find my results are stronger for lease intensive firms and firms with a history of using both finance and operating leases. I also find the increases in relative bid-ask spreads related to the bankruptcy and tax signals are concentrated among firms with above-median bankruptcy probability and above-median changes in temporary book-tax differences, respectively.

My results are subject to four caveats worth noting. First, I do not provide any evidence on the costs associated with the dual-classification system. Therefore, my study cannot draw conclusions about the overall change in welfare from removing the system. Second, I focus on the adoption of IFRS 16 for a subset of firms incorporated in Australia, Canada, and the UK. Therefore, my inferences speak specifically to the informativeness of the dual-classification system in these three countries for these firms. I cannot conclusively determine whether my results generalize to other settings. Third, the removal of the dual-classification system occurs for all firms in my sample incorporated in Australia, Canada, and the UK. If investors benefit from peer firms

applying the dual-classification system, my results may not generalize to a setting where only a portion of firms lose the dual-classification system. Fourth, as with any empirical study, I cannot completely rule out that confounding events affect my estimates. However, my cross-sectional analyses provide comfort by demonstrating my estimates vary in dimensions I would expect if they are driven by the new lease accounting standards.

Despite these caveats, my study makes multiple contributions to practice. I provide evidence that the dual-classification system is informative when bankruptcy and tax laws distinguish between leases in a manner similar to accounting. By doing so, my study speaks to the standard setting debate about the merits of dual-classification that ultimately led to the divergence between IFRS and US GAAP. It also speaks to the potential costs of applying IFRS 16 in countries that distinguish between finance and operating leases for bankruptcy or tax purposes.

In addition to contributing to practice, my study also extends the academic literature. Conditional on bankruptcy and tax law distinguishing between leases in a manner similar to accounting, my cross-sectional analyses suggest the informativeness of the dual-classification system depends on how sensitive a firm is to the treatment of leases in bankruptcy or the level of book-tax conformity for leases. This finding helps shed light on the mixed results from prior research on the informativeness of lease reporting. Finally, my study is the first to examine the interaction between the accounting for a single transaction (i.e., leasing) and the characteristics of countries' legal environments that directly relate to that transaction. Doing so adds depth to the existing literature that only considers broad differences between countries and entire sets of accounting standards.

Appendix 1 – Variable Definitions

Variable	*Definition*
Dependent Variable	
$RelBAFS_{it}$	The average closing bid-ask spread divided by price for firm i's common stock during the five day trading window centered on the release date of firm i's annual report for fiscal year t. I construct this variable using historical data from Refinitiv Workspace's equities platform.
Key Independent Variables	
US_i	Indicator equal to one if firm i is incorporated in the United States and applies US GAAP, zero otherwise. I construct this variable using data from FactSet Fundamentals - North America.
AUS_i	Indicator equal to one if firm i is incorporated in Australia and applies IFRS, zero otherwise. I construct this variable using data from FactSet Fundamentals - International.
CAN_i	Indicator equal to one if firm i is incorporated in Canada and applies IFRS, zero otherwise. I construct this variable using data from FactSet Fundamentals - International.
UK_i	Indicator equal to one if firm i is incorporated in the United Kingdom and applies IFRS, zero otherwise. I construct this variable using data from FactSet Fundamentals - International.
$NonUS_i$	Indicator equal to one if firm i is incorporated outside of the United States, zero otherwise. In the sample of firms incorporated in Canada, Australia, or the United States, this variable is equal to one for firms incorporated in Canada or Australia. In the sample of firms incorporated in the United Kingdom, Australia, or the United States, this variable is equal to one for firms incorporated in the United Kingdom or Australia. I construct this variable using data from FactSet Fundamentals - North America, and FactSet Fundamentals - International.
$Post_t$	Indicator equal to one if the beginning of fiscal year t occurs after December 15, 2018. The FASB issued ASU 2016-02 in February of 2016 effective for fiscal years beginning after December 15, 2018. The IASB issued IFRS 16 in February of 2016 effective for fiscal years beginning after December 31, 2018. Importantly, there are no firms in my sample with fiscal year ends between December 15 and December 31 that apply IFRS. Therefore, using December 15, 2018 is sufficient to distinguish between fiscal years reported under IFRS 16 versus IAS 17. I construct this variable using data from FactSet Fundamentals - North America, and FactSet Fundamentals - International.
$Placebo_t$	Indicator equal to one if the beginning of fiscal year t occurs after December 15, 2017. The FASB issued ASU 2016-02 in February of 2016 effective for fiscal years beginning after December 15, 2018. The IASB issued IFRS 16 in February of 2016 effective for fiscal years beginning after December 31, 2018. Importantly, there are no firms in my sample with fiscal year ends between December 15 and December 31 that apply IFRS. Therefore, using December 15, 2017 is sufficient to identify the fiscal year before IFRS 16 and ASU 2016-02 adoption for all firms in my sample. I construct this variable using data from FactSet Fundamentals - North America, and FactSet Fundamentals - International.

Variable	*Definition*
Control Variables	
$lnSizeFS_{it}$	The natural log of the average market value of equity for firm i during the five day trading window centered on the release of the firm's financial statements for fiscal year t. I construct this variable using historical data from Refinitiv Workspace's equities platform.
$lnVlmFS_{it}$	The natural log of the average daily turnover ratio for firm i's stock during the five day trading window centered on the release of the firm's financial statements for fiscal year t. I calculate the daily turnover ratio as the monetary value of all the shares traded for the day, divided by the end of day market value of equity for firm i. I construct this variable using historical data from Refinitiv Workspace's equities platform.
$lnVlty_{it}$	The natural log of the standard deviation of daily returns for firm i during the 60-day trading window immediately preceding the five day trading window centered on the release of the firm's financial statements for fiscal year t. I construct this variable using historical data from Refinitiv Workspace's equities platform.
$Analysts_{it}$	The number of analysts issuing an EPS estimate for firm i during fiscal year t. I construct this variable using data from IBES Academic's summary data.
$MGFS_{it}$	An indicator variable equal to one if firm i provides management guidance during the five day trading window centered on the release of the firm's financial statements for fiscal year t. I construct this variable using data from IBES Guidance's detail history.
$EAFS_{it}$	An indicator variable equal to one if firm i makes an earnings announcement during the five day trading window centered on the release of the firm's financial statements for fiscal year t. I construct this variable using data from FactSet Fundamentals - North America and FactSet Fundamentals - International.
$lnFFFS_{it}$	The natural log of the percentage of firm i shares that are not closely held or restricted at the time of the release of the firm's supporting financial statements for fiscal year t. I construct this variable using historical data from Refinitiv Workspace's equities platform.
Partitioning Variables	
$LeaseIntensity_{i}$	The ratio of lease assets to total assets for firm i fixed to the fiscal year of IFRS 16 and ASU 2016-02 adoption. I construct this variable using data from FactSet Fundamentals - North America and FactSet Fundamentals - International. However, given the recency of the change in accounting for leases, the FactSet variables with lease data can differ across firms in the IFRS 16 and ASU 2016-02 environment. Therefore, I use one of two methods to calculate this ratio. If reported in FactSet, I use lease obligations reported on the balance sheet as a proxy for the value of leased assets. If this data is missing, I use firms' minimum lease payments disclosed in the notes to the financial statements, as reported in FactSet, to calculate the value of firms' leased assets. Following Imhoff et al. (1993), Graham et al. (1998), Dhaliwal et al. (2011), etc. I use a 10% discount rate.

Variable	*Definition*
Partitioning Variables	
$DualLease_i$	An indicator variable equal to one if firm i has a non-zero balance of minimum lease payments relating to finance leases AND a non-zero balance of minimum lease payments for operating leases in the fiscal year immediately before adoption of IFRS 16 and ASU 2016-02, and zero otherwise. I construct this variable using data from FactSet Fundamentals - North America and FactSet Fundamentals - International.
$BankruptcyProb_i$	Expected bankruptcy probability for firm i fixed to the fiscal year of IFRS 16 and ASU 2016-02 adoption. I follow Bharath and Shumway (2008) method to calculate expected bankruptcy probability. I construct this variable using historical data from Refinitiv Workspace's equities platform and using data from FactSet Fundamentals - North America and FactSet Fundamentals - International.
$\Delta TempBTD_i$	The absolute change in deferred tax assets plus the absolute change in deferred tax liabilities scaled by lagged total assets for firm i in the year of IFRS 16 and ASU 2016-02 adoption. I construct this variable using data from FactSet Fundamentals - North America and FactSet Fundamentals - International.

Appendix 2 – Equation (1) and (2) Coefficient Interpretations

A2.1 Equation (1)

Equation (1), without fixed effects, is:

$$InfoAsymmetry_{it} = \beta_0 + \beta_1 CAN_i * Post_t + \beta_2 NonUS_i * Post_t + \beta_3 CAN_i + \beta_4 NonUs_i + \beta_5 Post_t + \sum_k \delta_k X_{kit} + \varepsilon_{it} \quad (1)$$

I exclude fixed effects for simplicity, but the intuition I demonstrate in this appendix applies to any of the fixed effect structures I use to estimate equation (1).

Using the expectation operator, I calculate the expected value of $InfoAsymmetry_{it}$ for each country and reporting standard combination below (i.e., pre versus post IFRS 16/ASU 2016-02). I assume the error term ε_{it} has an expected value of zero and calculate all expectations conditional on the values l_k for the control variables X_{kit}.

US firms ($CAN_i = 0$ and $NonUS_i = 0$) pre IFRS 16/ASU2016-02 ($Post_t = 0$):

$$E[InfoAsymmetry_{it}|CAN_i;\ NonUS_i;\ Post_t;\ X_{kit}] = \beta_0 + \sum_k \delta_k l_k \quad (E1.1)$$

US firms ($CAN_i = 0$ and $NonUS_i = 0$) post IFRS 16/ASU 2016-02 ($Post_t = 1$):

$$E[InfoAsymmetry_{it}|CAN_i;\ NonUS_i;\ Post_t;\ X_{kit}] = \beta_0 + \beta_5 + \sum_k \delta_k l_k \quad (E1.2)$$

Australian firms ($CAN_i = 0$ and $NonUS_i = 1$) pre IFRS 16/ASU2016-02 ($Post_t = 0$):

$$E[InfoAsymmetry_{it}|CAN_i;\ NonUS_i;\ Post_t;\ X_{kit}] = \beta_0 + \beta_4 + \sum_k \delta_k l_k \quad (E1.3)$$

Australian firms ($CAN_i = 0$ and $NonUS_i = 1$) post IFRS 16/ASU 2016-02 ($Post_t = 1$):

$$E[InfoAsymmetry_{it}|CAN_i;\ NonUS_i;\ Post_t;\ X_{kit}] = \beta_0 + \beta_2 + \beta_4 + \beta_5 + \sum_k \delta_k l_k \quad (E1.4)$$

Canadian firms ($CAN_i = 1$ and $NonUS_i = 1$) pre IFRS 16/ASU2016-02 ($Post_t = 0$):

$$E[InfoAsymmetry_{it}|CAN_i;\ NonUS_i;\ Post_t;\ X_{kit}] = \beta_0 + \beta_3 + \beta_4 + \sum_k \delta_k l_k \quad (E1.5)$$

Canadian firms ($CAN_i = 1$ and $NonUS_i = 1$) post IFRS 16/ASU 2016-02 ($Post_t = 1$):

$$E[InfoAsymmetry_{it}|CAN_i;\ NonUS_i;\ Post_t;\ X_{kit}] = \beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \sum_k \delta_k l_k \quad (E1.6)$$

In my analyses, I assert β_2 in equation (1) captures changes in information asymmetry related to the risk signal by comparing changes in $InfoAsymmetry_{it}$ for Australian firms relative to US firms, upon adoption of the new lease accounting standards (see Panel B of Figure 1). Using the expected values above, the expected change in $InfoAsymmetry_{it}$ for US firms upon adoption of IFRS 16/ASU 2016-02 is the difference between expression (E1.2) and (E1.1):

$$(\beta_0 + \beta_5 + \sum_k \delta_k l_k) - (\beta_0 + \sum_k \delta_k l_k) = \beta_5 \quad (E1.7)$$

For Australian firms, the expected change in $InfoAsymmetry_{it}$ is the difference between expression (E1.4) and (E1.3):

$$(\beta_0 + \beta_2 + \beta_4 + \beta_5 + \sum_k \delta_k l_k) - (\beta_0 + \beta_4 + \sum_k \delta_k l_k) = \beta_2 + \beta_5 \quad \text{(E1.8)}$$

Therefore, the expected change in *InfoAsymmetry*$_{it}$ for Australian firms relative to US firms, upon adoption of the new lease accounting standards, is equal to expression (E1.8) minus expression (E1.7):

$$(\beta_2 + \beta_5) - \beta_5 = \beta_2 \quad \text{(E1.9)}$$

In my analyses, I also assert β_1 in equation (1) captures changes in information asymmetry related to the bankruptcy signal by comparing (1) changes in *InfoAsymmetry*$_{it}$ for Canadian firms (relative to US firms) to (2) Australian firms (relative to US firms), upon adoption of the new lease accounting standards (see Panel C of Figure 1). Using the expected values for each country-reporting standard combination, the expected change in *InfoAsymmetry*$_{it}$ for Canadian firms upon adoption of the new lease accounting standards is expression (E1.6) minus expression (E1.5):

$$(\beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \sum_k \delta_k l_k) - (\beta_0 + \beta_3 + \beta_4 + \sum_k \delta_k l_k) = \beta_1 + \beta_2 + \beta_5 \quad \text{(E1.10)}$$

As demonstrated by expression (E1.7), the expected change in *InfoAsymmetry*$_{it}$ for US firms is β_5. Therefore, the expected change in *InfoAsymmetry*$_{it}$ for Canadian firms relative to US firms upon adoption of IFRS 16/ASU 2016-02 is expression (E1.10) minus β_5:

$$(\beta_1 + \beta_2 + \beta_5) - \beta_5 = \beta_1 + \beta_2 \quad \text{(E1.11)}$$

Thus, the expected change in *InfoAsymmetry*$_{it}$ for (1) Canadian firms relative to US firms (expression (E1.11)) compared to (2) Australian firms relative to US firms (expression (E1.9)), upon adoption of the new accounting standards, is:

$$(\beta_1 + \beta_2) - \beta_2 = \beta_1 \quad \text{(E1.12)}$$

A2.2 Equation (2)

Equation (2), without fixed effects, is:

$$InfoAsymmetry_{it} = \beta_0 + \beta_1 UK_i * Post_t + \beta_2 NonUS_i * Post_t + \beta_3 UK_i + \beta_4 NonUs_i + \beta_5 Post_t + \sum_k \delta_k X_{kit} + \varepsilon_{it} \quad \text{(2)}$$

Again, I exclude fixed effects for simplicity, but the intuition I demonstrate in this appendix applies to any of the fixed effect structures I use to estimate equation (2).

Using the expectation operator, I calculate the expected *InfoAsymmetry*$_{it}$ for UK firms under each reporting standard below (i.e., pre versus post IFRS 16/ASU 2016-02). The expected *InfoAsymmetry*$_{it}$ for US and Australian firms under each reporting standard for equation (1) and equation (2) are identical because only the indicator for Canadian firms (CAN_i) differs between the two equations. As before, I assume the error term ε_{it} has an expected value of zero and calculate all expectations conditional on the values l_k for the control variables X_{kit}.

UK firms ($UK_i = 1$ and $NonUS_i = 1$) pre IFRS 16/ASU2016-02 ($Post_t = 0$):

$$E[InfoAsymmetry_{it} | UK_i;\ NonUS_i;\ Post_t;\ X_{kit}] = \beta_0 + \beta_3 + \beta_4 + \sum_k \delta_k l_k \quad \text{(E2.1)}$$

UK firms (UK_i = 1 and $NonUS_i$ = 1) post IFRS 16/ASU 2016-02 ($Post_t$ = 1):

$$E[InfoAsymmetry_{it}|UK_i;\ NonUS_i;\ Post_t;\ X_{kit}] = \beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \sum_k \delta_k l_k \quad \text{(E2.2)}$$

In my analyses, I assert β_1 in equation (2) captures changes in information asymmetry related to the tax signal by comparing (1) changes in $InfoAsymmetry_{it}$ for UK firms (relative to US firms) to (2) Australian firms (relative to US firms), upon adoption of the new lease accounting standards (see Panel C of Figure 1). Using expression (E2.2) and (E2.1), the expected change in $InfoAsymmetry_{it}$ for UK firms upon adoption of the new lease accounting standards is:

$$(\beta_0 + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \sum_k \delta_k l_k) - (\beta_0 + \beta_3 + \beta_4 + \sum_k \delta_k l_k) = \beta_1 + \beta_2 + \beta_5 \quad \text{(E2.3)}$$

As I demonstrate in relation to equation (1), the expected change in $InfoAsymmetry_{it}$ for US firms is β_5 (see expression (E1.7)). Therefore, the expected change in $InfoAsymmetry_{it}$ for UK firms relative to US firms upon adoption of IFRS 16/ASU 2016-02 is:

$$(\beta_1 + \beta_2 + \beta_5) - \beta_5 = \beta_1 + \beta_2 \quad \text{(E2.4)}$$

I also demonstrate in relation to equation (1), the expected change in $InfoAsymmetry_{it}$ for Australian firms relative to US firms, upon adoption of the new lease accounting standards is β_2 (see expression (E1.9)). Integrating this conclusion with expression (E2.4), the expected change in $InfoAsymmetry_{it}$ for (1) UK firms relative to US firms compared to (2) Australian firms relative to US firms, upon adoption of the new lease accounting standards is:

$$(\beta_1 + \beta_2) - \beta_2 = \beta_1 \quad \text{(E2.5)}$$

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Figure 1 - Empirical Design

Panel A: Within Country Differences

Figure 1 - Empirical Design (Continued)

Panel B: Benchmarking within country differences to the United States

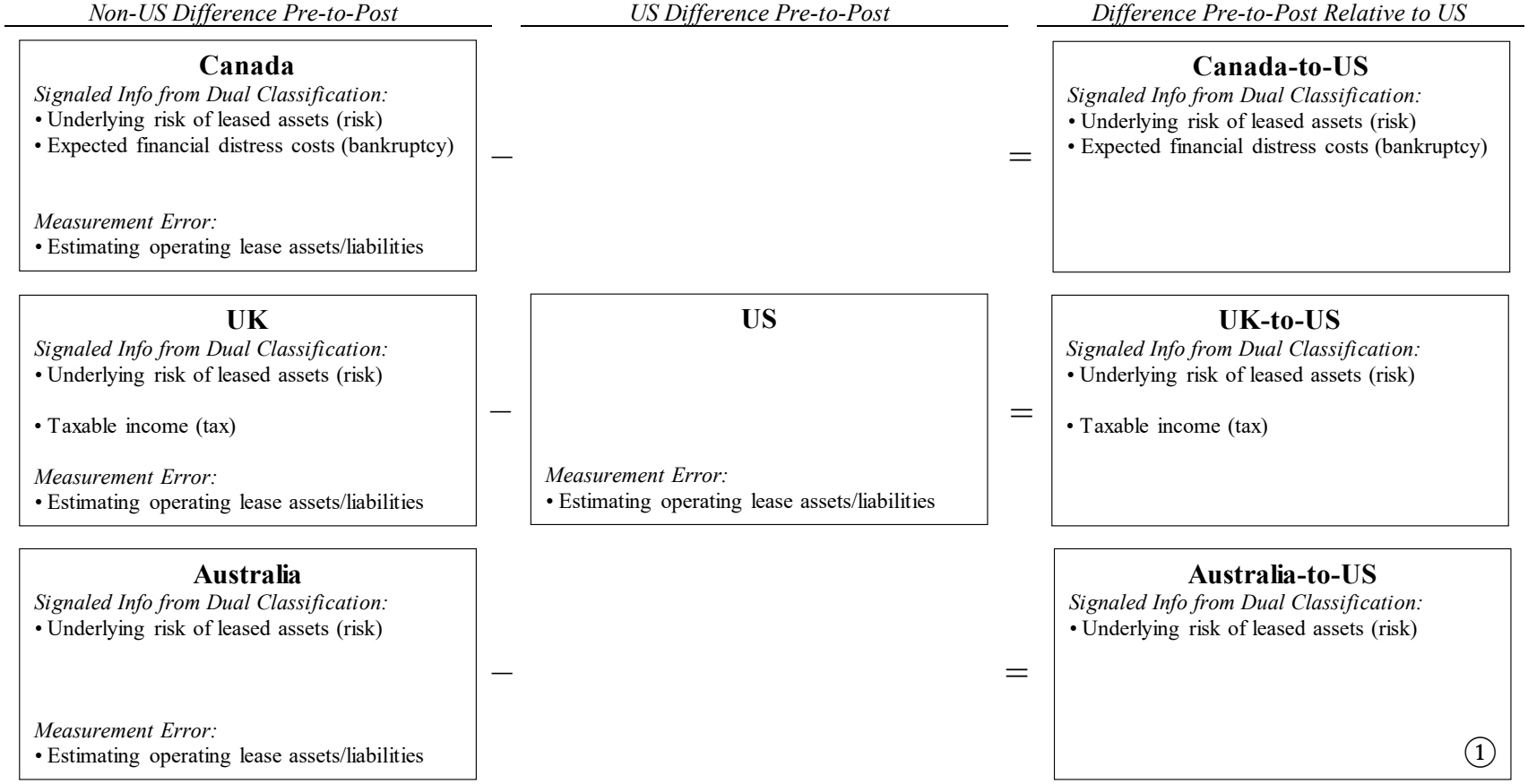
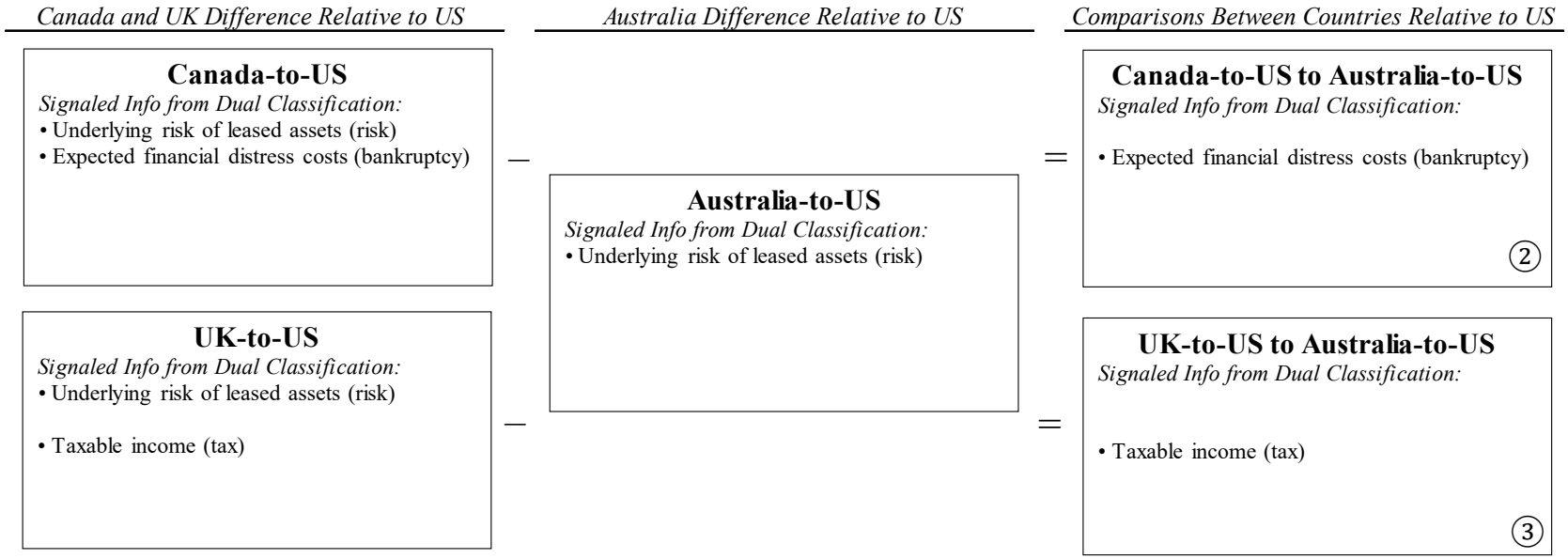


Figure 1 - Empirical Design (Continued)

Panel C: Between country comparisons of within country differences (benchmarked to the United States)



① The within country difference for Australia upon adoption of IFRS 16/ASU 2016-02 relative to the United States is the first comparison I make in my analyses. As the figure aids in explaining, this comparison isolates the signal from the dual-classification system that relates to the underlying risk of leased assets (the risk signal).

② The comparison of (1) the within country difference for Canada (relative to the United States) to (2) the within country difference for Australia (relative to the United States) upon adoption of IFRS 16/ASU 2016-02 is the second comparison I make in my analyses. As the figure aids in explaining, this comparison isolates the signal from the dual-classification system that relates to expected financial distress costs (the bankruptcy signal).

③ The comparison of (1) the within country difference for the United Kingdom (relative to the United States) to (2) the within country difference for Australia (relative to the United States) upon adoption of IFRS 16/ASU 2016-02 is the third comparison I make in my analyses. As the figure aids in explaining, this comparison isolates the signal from the dual-classification system that relates to taxable income (the tax signal).

Note: This figure depicts the empirical design I employ. Panel A provides a pictorial representation of changes in the information content of lease accounting within each country upon adoption of IFRS 16/ASU 2016-02 (i.e., the United States, Canada, the United Kingdom, and Australia). Column 1 provides the information content before the standards change for each country. Column 2 provides the information content lost after the standards change for each country. Column 3 provides the within country difference in the information content of lease accounting before and after the standards change. Panel B provides a pictorial representation of the within country difference in the information content of lease accounting for each country (i.e., Canada, the United Kingdom, and Australia) relative to the United States. Column 1 provides the within country difference in the information content of lease accounting for Canada, the United Kingdom, and Australia. Column 2 provides the same for the United States. Column 3 provides the comparison of the within country difference in the information content of lease accounting for Canada, the United Kingdom, and Australia relative to the within country difference in the information content of lease accounting for the United States. Panel C provides a pictorial representation of the comparison between the within country differences in the information content of lease accounting for each country (i.e., Canada and the United Kingdom) and Australia after benchmarking to the United States. Column 1 provides the within country difference in the information content of lease accounting for Canada and the United Kingdom (relative to the United States). Column 2 provides the within country difference in the information content of lease accounting for Australia (relative to the United States). Column 3 provides the comparison between (1) the within country difference in the information content of lease accounting for Canada and the United Kingdom (relative to the United States) and (2) the within country difference in the information content of lease accounting for Australia (relative to the United States).

Table 1: Accounting, Bankruptcy, and Tax Background by Country

Panel A: Accounting

	Australia (IAS 17 & IFRS 16)	Canada (IAS 17 & IFRS 16)	United Kingdom (IAS 17 & IFRS 16)	United States (SFAS 13 & ASU 2016-02)
Pre - IFRS 16/ASU 2016-02				
Lease Type:	***Classification Criteria:***			
Finance Lease	• Transfers substantially all the risks and rewards of ownership to the lessee.	• Transfers substantially all the risks and rewards of ownership to the lessee.	• Transfers substantially all the risks and rewards of ownership to the lessee.	If any of the following criteria is met: • Lessor transfers ownership to lessee • Lessor provides bargain purchase option • Present value of minimum lease payments exceeds 90% of asset's value • Term is greater than 75% of assets useful life
Operating Lease	• Any lease that is not a finance lease.	• Any lease that is not a finance lease.	• Any lease that is not a finance lease.	• Any lease that is not a finance lease.
Lease Type:	***Treatment:***			
Finance Lease	• Interest and depreciation expense on the income statement. Finance lease asset and liability on the balance sheet	• Interest and depreciation expense on the income statement. Finance lease asset and liability on the balance sheet	• Interest and depreciation expense on the income statement. Finance lease asset and liability on the balance sheet	• Interest and depreciation expense on the income statement. Finance lease asset and liability on the balance sheet
Operating Lease	• Rent expense on the income statement.	• Rent expense on the income statement.	• Rent expense on the income statement.	• Rent expense on the income statement.

Table 1: Accounting, Bankruptcy, and Tax Background by Country (Continued)

Panel A: Accounting (Continued)

	Australia (IAS 17 & IFRS 16)	Canada (IAS 17 & IFRS 16)	United Kingdom (IAS 17 & IFRS 16)	United States (SFAS 13 & ASU 2016-02)
Post IFRS 16/ASU 2016-02				
Lease Type:	***Classification Criteria:***			
Finance Lease	• N/A - All leases are treated the same for accounting purposes.	• N/A - All leases are treated the same for accounting purposes.	• N/A - All leases are treated the same for accounting purposes.	If any of the following criteria is met: • Lessor transfers ownership to lessee • Lessee is reasonably certain to exercise purchase option • Present value of minimum lease payments is substantial portion of asset's fair value • Lease term is substantial portion of asset's useful life • Asset is specific to lessee's business
Operating Lease				• Any lease that is not a finance lease.
Lease Type:	***Treatment:***			
Finance Lease	• Interest and depreciation expense on the income statement. Lease asset and liability on the balance sheet.	• Interest and depreciation expense on the income statement. Lease asset and liability on the balance sheet.	• Interest and depreciation expense on the income statement. Lease asset and liability on the balance sheet.	• Interest and depreciation expense on the income statement. Finance lease asset and liability on the balance sheet.
Operating Lease				• Lease expense on the income statement. Right-of-use asset and operating lease liability on the balance sheet.

Table 1: Accounting, Bankruptcy, and Tax Background by Country (Continued)

Panel B: Bankruptcy

	Australia (CA 2001 §§51-51E, §§441AA-441B, and §444D; PPSA 2009 §12)	Canada (BIA §65.1(4)(a); CCAA §11.01(a); DaimlerChrysler Services Canada Inc. v. Cameron, 2007 BCCA 144)	United Kingdom (IA 1986 Schedule A1 §1, §12, and §20; Schedule B1 §43, §71, and §111)	United States (Chapter 11 U.S. Code §§361-363; U.C.C. §§1–201 (35))
Lease Type:		***Classification Criteria:***		
Finance Lease	• N/A - All leases are treated the same for bankruptcy purposes.	Court considers 15 factors: • Purchase option for nominal sum • Lessee has equity in asset • Lessor is a financing agency • Lessee paid sales tax in lease • Lessee pays property taxes on asset • Lessee insures the asset • Lessee pays any license fees • Lessee assumes the risk of loss • Lessor can increase payments in default • Lessee selected asset for lessor to buy • Lessee pays large security deposit • Default provision heavily favors lessor • Provision for liquidated damages • Provision disclaiming lessor warranties • Total rentals approximate asset value	• N/A - All leases are treated the same for bankruptcy purposes.	Court considers 4 factors: • Lease duration exceeds the asset's useful life • Lessee is bound to renew lease for all of the asset's useful life or become owner of asset • Lessee has option to renew lease for all of asset's useful life for nominal consideration • Lessee has option to become owner for nominal consideration
Operating Lease		• Any lease that is not a finance lease.		• Any lease that is not a finance lease.
Lease Type:		***Treatment:***		
Finance Lease	• Treated as secured borrowing and subject to enforcement of the security interest by the lessor in bankruptcy	• Treated as a secured borrowing and subject to renegotiation during bankruptcy proceedings	• Treated as a hire-purchase agreement and subjected to renegotiation during bankruptcy proceedings	• Treated as a secured borrowing and subject to renegotiation during bankruptcy proceedings
Operating Lease		• Treated as a true lease and the lessee must continue making payments to the lessor while using the asset under lease.		• Treated as a true lease and the lessee can elect to retain the asset and continue making payments to the lessor, or return the asset to the lessor

Table 1: Accounting, Bankruptcy, and Tax Background by Country (Continued)

Panel C: Tax

	Australia (ITAA 1997 §240 and §995-1)	Canada (ITA 1985 §12(1)(g), §18(1)(d), and §20(1)(a); Income Tax Folio S3-F4-C1; Interpretation Bulletin IT-464R)	United Kingdom (BLM 00325, 00505, 00510, 33015, 33201, 39015, and 50010; CAA01 §67 and §70)	United States (Revenue Procedure 2001-28)
Lease Type:	***Classification Criteria:***			
Finance Lease	• N/A - Australia distinguishes between true leases and hire-purchase agreements for tax purposes. However, the distinguishing criteria is such that the vast majority of finance and operating leases from an accounting perspective are treated as a true lease on the lessee and lessors' tax returns.[a]	• N/A - All leases are treated the same for tax purposes.	• Transfers substantially all the risks and rewards of ownership to the lessee.[b]	• Any lease that is not an operating lease
Operating Lease			• Any lease that is not a finance lease.[b]	All of the following criteria are met: • Lessor's investment exceeds 20% at all times • Remaining life of asset after lease exceeds 20% of economic life • Residual value of asset after lease exceeds 20% of original value • Lessee does not have a bargain purchase option • Lessor limits investments in leasehold improvements by lessee • No lessee loans or guarantees to lessor • Lessor expects a profit
Lease Type:	***Treatment:***			
Finance Lease	• Rental payments by the lessee are fully deductible on the lessee's tax return and treated as income on the lessor's tax return.[a] • The lessor has the right to all depreciation deductions/capital allowance deductions.[a]	• Rental payments by the lessee are fully deductible on the lessee's tax return and treated as income on the lessor's tax return. • The lessor has the right to depreciation/capital cost allowance deductions.	• Only interest portion of rental payments made by the lessee are deductible on the lessee's tax return. However, the full amount of the payments are treated as income on the lessor's tax return. • The lessee has the right to depreciation/capital allowance deductions.[b]	• Only interest portion of rental payments made by the lessee are deductible on the lessee's tax return and treated as income on the lessor's tax return. • The lessee has the right to depreciation deductions.
Operating Lease			• Rental payments by the lessee are fully deductible on the lessee's tax return and treated as income on the lessor's tax return. • The lessor has the right to depreciation/capital allowance deductions.[b]	• Rental payments by the lessee are fully deductible on the lessee's tax return and treated as income on the lessor's tax return. • The lessor has the right to depreciation deductions

Table 1: Accounting, Bankruptcy, and Tax Background by Country (Continued)

[a] Australia treats the majority of leases for tax purposes as true leases. For a true lease, the rental payments made by the lessee are fully deductible on the lessee's tax return and treated as income on the lessor's tax return. The lessor is also considered the owner of the property and has the right to all depreciation deductions and/or capital allowances related to the asset. However, if the lease (which Australian tax law describes as a contract for the hire of goods) meets the three following criteria it is treated as a hire-purchase agreement for tax purposes: (1) the lessee has the right, obligation or contingent obligation to buy the goods, (2) the charge made for hire of the goods, together with any other amount payable under the contract, exceeds the price of the goods, and (3) title in the goods does not pass to the lessee until the right, obligation, or contingent obligation to buy the goods is made. For a hire-purchase agreement, only the interest portion of rental payments made by the lessee are deductible on the lessee's tax return and treated as income for the lessor. The lessee is also considered the owner of the asset and has the right to all depreciation deductions and/or capital allowances.

[b] The United Kingdom also carves out a definition for long funding leases (LFLs) for tax purposes. A lease is considered an LFL for tax purposes if the lease is longer than 5 years (7 in some special cases) and (1) it is accounted for as a finance lease, or (2) the present value of the MLP is equal to or greater than 80% of the assets fair value, or (3) the lease term is 65% or more of the assets economic life. Notably, this criteria predominately aligns with leases that are treated as finance leases for accounting purposes. For an LFL, only the interest portion of rental payments made by the lessee are deductible on the lessee's tax return and treated as income on the lessor's tax return. Also, the lessee has the right to all depreciation deductions and/or capital allowances related to the asset.

Note: This table provides a detailed description of the accounting (panel A), bankruptcy (panel B), and tax (panel C) rules related to leases in Australia, Canada, the United Kingdom, and the United States. In each panel, I provide the classification criteria for a finance lease and operating lease based on the respective rule set (e.g., accounting, bankruptcy, or tax) under the "Classification Criteria" heading. I also provide the respective treatment for finance and operating leases as required by the respective rule set (e.g., accounting, bankruptcy, or tax) under the "Treatment" heading. For purposes of continuity, I use the naming structure of finance lease and operating lease in each panel of the table despite certain countries using different names for accounting, bankruptcy, or tax purposes. For example, the bankruptcy guidance in Canada and the United States calls a finance lease a secured borrowing and an operating lease a true lease.

Table 2: Sample Selection

Panel A: Sample screening

	Sample Size
FactSet universe of US, Australian, Canadian, and UK firms that apply accounting standards consistent with their country of incorporation and trade on their country's premeir stock exchange (e.g., Australian firms that apply IFRS and trade on the Australian Stock Exchange) for fiscal years 2017 to 2019	24,415
Less: Firm-years that do not lease any assets	(6,107)
Less: Firm-years in the financial services industry, with goodwill impairments or substantial intangible assets	(4,944)
Less: Firm-years missing financial statement data necessary to create dependent, independent, or control variables	(1,494)
Less: Firm-years missing pricing/trading data necessary to create dependent, indpendent, or control variables	(1,547)
Less: Firms without dependent, independent, or control variables in each year of the sample period	(3,129)
Sample	7,194

Panel B: Sample by country

	Firms	Observation
Australia	381	1,143
Canada	165	495
United Kingdom	251	753
United States	1,601	4,803
Sample	2,398	7,194

Panel C: Industry composition

	Sample	*Australia*	*Canada*	*UK*	*US*	*FactSet*
Telephone, TV Transmission	2%	3%	1%	2%	2%	3%
Finance	2%	2%	0%	5%	2%	4%
Consumer Durables	2%	2%	2%	3%	3%	4%
Chemicals, Allied Products	3%	2%	1%	2%	3%	4%
Utilities	3%	0%	2%	3%	4%	4%
Consumer Nondurables	5%	3%	4%	7%	5%	9%
Oil, Gas, Extraction	5%	8%	7%	6%	4%	4%
Wholesale, Retail, Services	9%	6%	4%	10%	10%	9%
Manufacturing	9%	3%	5%	11%	11%	14%
Healthcare, Medical, Drug	19%	10%	10%	6%	23%	8%
Business Equipment	19%	13%	7%	23%	21%	15%
Other	24%	48%	55%	23%	15%	22%
	100%	100%	100%	100%	100%	100%

Note: This table details the sample selection process. Panel A provides the reconciliation between (1) the universe of observations on FactSet belonging to US, Australian, Canadian, and UK that apply accounting standards consistent with their country of incorporation and trade on theri country's premeier stock exchange, and (2) the observatiosn in the sample I use for my analyses. Panel B provides the number of firms and observations that relate to Australia, Canada, the United Kingdom, and the United States. Panel C presents the percentage of observations that belong to each Fama French 12 industry in (1) the sample I use for my analyses, (2) firms incorporated in Australia in the sample, (3) firms incorporated in Canada in the sample, (4) firms incorporated in the United Kingdom in the sample, (5) firms incorporated in the United States in the sample, and (6) firms incorporated in all four countries in Factset. However, for the FactSet industry composition, I remove firms that have missing stock prices, goodwill impairments, intangible assets (excluding goodwill) that are greater than 50% of their total assets, do not lease assets, or are in the financial services industry. Doing so ensures the industry composition of FactSet is comparable to the industry composition of the sample I use for my analyses.

Table 3: Descriptive Statistics

Panel A: Full sample

	N	Mean	S.D.	Q1	Median	Q3
$RelBAFS_{it}$	7,194	2.653	4.907	0.075	0.431	3.142
AUS_i	7,194	0.159	0.366	0	0	0
CAN_i	7,194	0.069	0.253	0	0	0
UK_i	7,194	0.105	0.306	0	0	0
US_i	7,194	0.668	0.471	0	1	1
$lnSizeFS_{it}$	7,194	20.212	2.325	18.606	20.445	21.924
$lnVlmFS_i$	7,194	-6.427	1.520	-7.188	-6.133	-5.447
$lnVlty_i$	7,194	-3.551	0.594	-3.979	-3.590	-3.165
$Analysts_{it}$	7,194	5.750	6.541	1	4	8
$MGFS_{it}$	7,194	0.168	0.373	0	0	0
$EAFS_{it}$	7,194	0.617	0.486	0	1	1
$lnFFFS_{it}$	7,194	-0.339	0.436	-0.485	-0.157	-0.029

Panel B: Mean and median by country

	AUS (N = 1,143)		*CAN (N = 495)*		*UK (N = 753)*		*US (N = 4,803)*	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
$RelBAFS_{it}$	7.536	5.030	4.594	1.629	6.325	4.967	0.716	0.124
AUS_i	1	1	0	0	0	0	0	0
CAN_i	0	0	1	1	0	0	0	0
UK_i	0	0	0	0	1	1	0	0
US_i	0	0	0	0	0	0	1	1
$lnSizeFS_{it}$	17.349	17.235	19.550	19.712	22.511	22.553	20.601	20.735
$lnVlmFS_i$	-7.204	-7.066	-6.986	-6.648	-7.082	-6.936	-6.082	-5.918
$lnVlty_i$	-3.220	-3.216	-3.434	-3.460	-3.598	-3.648	-3.634	-3.690
$Analysts_{it}$	0.884	0	5.378	4	1.960	1	7.541	6
$MGFS_{it}$	0.005	0	0.139	0	0.004	0	0.235	0
$EAFS_{it}$	0.871	1	0.921	1	0.308	0	0.574	1
$lnFFFS_{it}$	-0.676	-0.557	-0.274	-0.110	-0.588	-0.462	-0.227	-0.078

Note: This table presents descriptive and distributional statistics for the variables I use in my primary analyses. Panel A presents the mean, standard deviation, 25th percentile, median, and 75th percentile for each variable in the full sample. Panel B presents the mean and median for each variable by country of incorporation where AUS, CAN, UK, and US indicate Australia, Canada, the United Kingdom, and the United States.

Table 4: Sample Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) $RelBAFS_{it}$	1.00											
(2) US_i	-0.56 *	1.00										
(3) AUS_i	0.43 *	-0.62 *	1.00									
(4) CAN_i	0.11 *	-0.39 *	-0.12 *	1.00								
(5) UK_i	0.26 *	-0.48 *	-0.15 *	-0.09 *	1.00							
(6) $lnSizeFS_{it}$	-0.45 *	0.24 *	-0.54 *	-0.08 *	0.34 *	1.00						
(7) $lnVlmFS_i$	-0.45 *	0.32 *	-0.22 *	-0.10 *	-0.15 *	0.21 *	1.00					
(8) $lnVlty_i$	0.34 *	-0.20 *	0.24 *	0.05 *	-0.03 *	-0.50 *	-0.06 *	1.00				
(9) $Analysts_{it}$	-0.38 *	0.39 *	-0.32 *	-0.02	-0.20 *	0.57 *	0.36 *	-0.30 *	1.00			
(10) $MGFS_{it}$	-0.21 *	0.25 *	-0.19 *	-0.02	-0.15 *	0.21 *	0.23 *	-0.24 *	0.27 *	1.00		
(11) $EAFS_{it}$	0.15 *	-0.13 *	0.23 *	0.17 *	-0.22 *	-0.35 *	-0.04 *	0.19 *	-0.21 *	0.31 *	1.00	
(12) $lnFFFS_{it}$	-0.40 *	0.37 *	-0.34 *	0.04 *	-0.19 *	0.26 *	0.42 *	-0.15 *	0.32 *	0.16 *	-0.07 *	1.00

Note: This table presents the Pearson correlation between all the variables I use in my primary analyses, excluding any interactions. I indicate significance at the 5 percent level or lower with an * (two-tailed).

Table 5: Primary Analyses

Panel A: Bankruptcy and risk signals (Canadian, Australian, and US firms)

Empirical Variable	Theoretical Construct	Prediction	(1)	(2) *RelBAFS*	(3)
***CAN*$_i$**Post*$_t$**	Loss of Bankruptcy Signal ②	(+, Null)	**1.470*** **	**1.531*** **	**0.931***
			(0.560)	**(0.571)**	**(0.523)**
***NonUS*$_i$**Post*$_t$**	Loss of Risk Signal ①	(+, Null)	**-0.083**	**-0.125**	**0.411**
			(0.317)	**(0.325)**	**(0.291)**
CAN$_i$	N/A	*?*	-22.618***		
			(5.476)		
NonUS$_i$	N/A	*?*	30.659***		
			(3.678)		
Post$_t$	N/A	*?*	0.318***	0.322***	0.238***
			(0.047)	(0.048)	(0.046)
CAN$_i$**lnSizeFS*$_{it}$	Market Maker Comp.	*?*	1.012***	0.434	0.814*
			(0.281)	(0.289)	(0.489)
NonUS$_i$**lnSizeFS*$_{it}$	Market Maker Comp.	*?*	-1.639***	-1.580***	-1.944***
			(0.193)	(0.206)	(0.353)
lnSizeFS$_{it}$	Market Maker Comp.	-	-0.392***	-0.407***	-0.417***
			(0.031)	(0.031)	(0.087)
CAN$_i$**lnVlmFS*$_{it}$	Processing/Inventory Costs	*?*	0.437*	0.274	0.126
			(0.256)	(0.269)	(0.281)
NonUS$_i$**lnVlmFS*$_{it}$	Processing/Inventory Costs	*?*	-1.363***	-1.319***	-1.105***
			(0.159)	(0.164)	(0.172)
lnVlmFS$_{it}$	Processing/Inventory Costs	*?*	-0.496***	-0.518***	-0.378***
			(0.040)	(0.042)	(0.058)
CAN$_i$**lnVlty*$_{it}$	Inventory Costs	*?*	-2.106***	-2.299***	0.350
			(0.736)	(0.781)	(0.818)
NonUS$_i$**lnVlty*$_{it}$	Inventory Costs	*?*	3.170***	3.221***	0.762
			(0.490)	(0.503)	(0.500)
lnVlty$_{it}$	Inventory Costs	+	0.120**	0.123**	0.425***
			(0.057)	(0.061)	(0.092)
CAN$_i$**Analysts*$_{it}$	Inventory Costs	*?*	-0.579***	-0.554***	-0.358*
			(0.112)	(0.121)	(0.207)
NonUS$_i$**Analysts*$_{it}$	Inventory Costs	*?*	0.722***	0.701***	0.194
			(0.101)	(0.108)	(0.167)
Analysts$_{it}$	Inventory Costs	+	0.042***	0.041***	-0.000
			(0.006)	(0.006)	(0.010)
CAN$_i$**MGFS*$_{it}$	Inventory Costs	*?*	-1.808	-1.633	0.642
			(1.243)	(1.292)	(0.794)
NonUS$_i$**MGFS*$_{it}$	Inventory Costs	*?*	2.213*	2.246*	0.560
			(1.181)	(1.169)	(0.609)

$MGFS_{it}$	Inventory Costs	+	-0.057	-0.120**	-0.019
			(0.044)	(0.047)	(0.076)
$CAN_i * EAFS_{it}$	Inventory Costs	?	-0.285	-0.313	-0.579
			(0.876)	(1.106)	(1.311)
$NonUS_i * EAFS_{it}$	Inventory Costs	?	1.021**	1.010**	-0.862
			(0.486)	(0.485)	(0.655)
$EAFS_{it}$	Inventory Costs	+	0.221***	0.288***	0.121
			(0.050)	(0.053)	(0.081)
$CAN_i * lnFFFS_{it}$	Adverse Selection Risk	?	-1.506	-1.871*	-1.676
			(1.071)	(1.115)	(1.901)
$NonUS_i * lnFFFS_{it}$	Adverse Selection Risk	?	0.792	0.776	-1.535*
			(0.540)	(0.539)	(0.881)
$lnFFFS_{it}$	Adverse Selection Risk	-	-0.448***	-0.444***	0.056
			(0.158)	(0.158)	(0.384)
Constant	N/A	?	6.122***	12.906***	15.946***
			(0.646)	(0.738)	(1.872)
Exchange FE			YES	NO	NO
Country FE			NO	YES	NO
Firm FE			NO	NO	YES
Observations			6,441	6,441	6,441
Adjusted R-squared			0.649	0.639	0.761

Table 5: Primary Analyses (Continued)

Panel B: Tax signal (UK, Australian, and US Firms)

Empirical Variable	Theoretical Construct	Prediction	(1)	(2) *RelBAFS*	(3)
UK $_i$ ****Post*** $_t$	Loss of Tax Signal ③	(+, Null)	**0.928****	**1.060****	**0.947****
			(0.468)	**(0.479)**	**(0.470)**
NonUS $_i$ **Post* $_t$	Loss of Risk Signal ①	(+, Null)	-0.078	-0.125	0.411
			(0.316)	(0.325)	(0.291)
UK $_i$	N/A	*?*	2.444		
			(5.534)		
NonUS $_i$	N/A	*?*	30.577***		
			(3.688)		
Post $_t$	N/A	*?*	0.314***	0.322***	0.238***
			(0.047)	(0.048)	(0.046)
UK $_i$ **lnSizeFS* $_{it}$	Market Maker Comp.	*?*	0.006	0.080	1.028**
			(0.258)	(0.268)	(0.477)
NonUS $_i$ **lnSizeFS* $_{it}$	Market Maker Comp.	*?*	-1.644***	-1.580***	-1.944***
			(0.193)	(0.206)	(0.353)
lnSizeFS $_{it}$	Market Maker Comp.	-	-0.389***	-0.407***	-0.417***
			(0.032)	(0.031)	(0.087)
UK $_i$ **lnVlmFS* $_{it}$	Processing/Inventory Costs	*?*	0.922***	0.965***	0.992***
			(0.197)	(0.212)	(0.212)
NonUS $_i$ **lnVlmFS* $_{it}$	Processing/Inventory Costs	*?*	-1.375***	-1.319***	-1.105***
			(0.159)	(0.164)	(0.172)
lnVlmFS $_{it}$	Processing/Inventory Costs	*?*	-0.485***	-0.518***	-0.378***
			(0.040)	(0.042)	(0.058)
UK $_i$ **lnVlty* $_{it}$	Inventory Costs	*?*	-2.331***	-2.555***	-1.082
			(0.645)	(0.688)	(0.676)
NonUS $_i$ **lnVlty* $_{it}$	Inventory Costs	*?*	3.163***	3.221***	0.762
			(0.489)	(0.503)	(0.500)
lnVlty $_{it}$	Inventory Costs	+	0.126**	0.123**	0.425***
			(0.057)	(0.061)	(0.092)
UK $_i$ **Analysts* $_{it}$	Inventory Costs	*?*	-0.816***	-0.834***	-0.435*
			(0.124)	(0.131)	(0.229)
NonUS $_i$ **Analysts* $_{it}$	Inventory Costs	*?*	0.724***	0.701***	0.194
			(0.101)	(0.108)	(0.167)
Analysts $_{it}$	Inventory Costs	+	0.041***	0.041***	-0.000
			(0.006)	(0.006)	(0.010)
UK $_i$ **MGFS* $_{it}$	Inventory Costs	*?*	-2.187*	-2.165*	-0.622
			(1.276)	(1.255)	(0.845)
NonUS $_i$ **MGFS* $_{it}$	Inventory Costs	*?*	2.203*	2.246*	0.560
			(1.181)	(1.169)	(0.609)

$MGFS_{it}$	Inventory Costs	+	-0.046	-0.120**	-0.019
			(0.044)	(0.047)	(0.076)
$UK_i * EAFS_{it}$	Inventory Costs	?	-0.066	-0.218	1.073
			(0.624)	(0.634)	(0.770)
$NonUS_i * EAFS_{it}$	Inventory Costs	?	1.030**	1.010**	-0.862
			(0.486)	(0.485)	(0.655)
$EAFS_{it}$	Inventory Costs	+	0.211***	0.288***	0.121
			(0.049)	(0.053)	(0.081)
$UK_i * lnFFFS_{it}$	Adverse Selection Risk	?	-1.387**	-1.436**	2.110
			(0.663)	(0.660)	(1.356)
$NonUS_i * lnFFFS_{it}$	Adverse Selection Risk	?	0.806	0.776	-1.535*
			(0.540)	(0.539)	(0.881)
$lnFFFS_{it}$	Adverse Selection Risk	-	-0.462***	-0.444***	0.056
			(0.158)	(0.158)	(0.384)
Constant	N/A	?	6.972***	15.612***	16.789***
			(0.753)	(0.771)	(1.933)
Exchange FE			YES	NO	NO
Country FE			NO	YES	NO
Firm FE			NO	NO	YES
Observations			6,699	6,699	6,699
Adjusted R-squared			0.667	0.659	0.773

Note: This table presents the results from estimating equation (1) and (2). Panel A presents the results related to equation (1) while Panel B presents the results related to equation (2). I provide the point estimate for each coefficient and its associated standard errors in parentheses. Column 1, 2, and 3 include exchange, country, and firm fixed effects, respectively. For all specifications, I cluster standard errors by firm. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent level, respectively (two-tailed).

Table 6: Lease Intensity Partition

Panel A: Bankruptcy signal (Canadian, Australian, and US Firms)

	N				β_1		
LeaseIntensity >	*Total*	*CAN*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
0.00%	6,441	495	1,143	4,803	1.470 ***	1.531 ***	0.931 *
0.50%	5,493	315	681	4,497	1.871 ***	1.870 ***	1.456 **
1.00%	4,953	228	525	4,200	2.277 ***	2.284 ***	1.996 **
1.50%	4,461	201	420	3,840	2.303 ***	2.362 ***	2.109 **
2.00%	4,038	174	363	3,501	2.539 ***	2.489 **	2.396 **
2.50%	3,630	156	312	3,162	2.706 **	2.705 **	2.650 **
3.00%	3,231	117	255	2,859	2.820 **	2.834 **	2.884 **

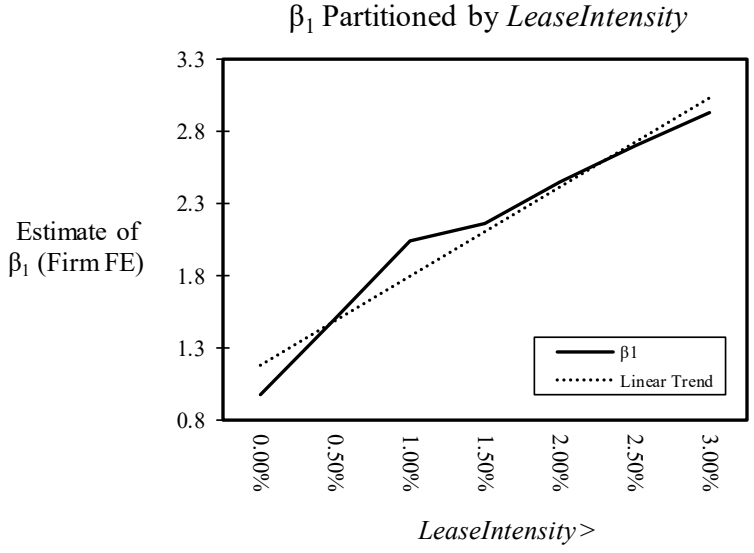


Table 6: Lease Intensity Partition (Continued)

Panel B: Risk signal (Canadian, Australian, and US Firms)

	N				β_2		
LeaseIntensity >	*Total*	*CAN*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
0.00%	6,441	495	1,143	4,803	-0.083	-0.125	0.411
0.50%	5,493	315	681	4,497	-0.190	-0.184	0.113
1.00%	4,953	228	525	4,200	-0.585	-0.584	-0.264
1.50%	4,461	201	420	3,840	-0.445	-0.445	-0.124
2.00%	4,038	174	363	3,501	-0.636	-0.638	-0.223
2.50%	3,630	156	312	3,162	-0.738	-0.740	-0.194
3.00%	3,231	117	255	2,859	-0.814	-0.816 *	-0.364

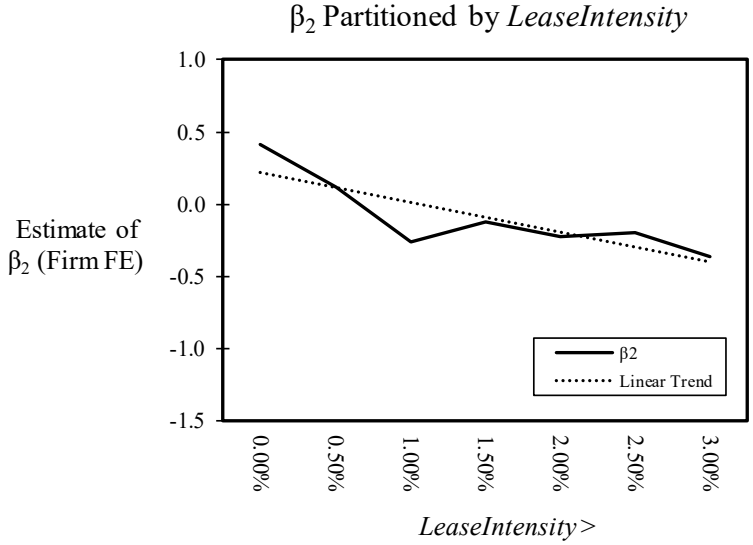
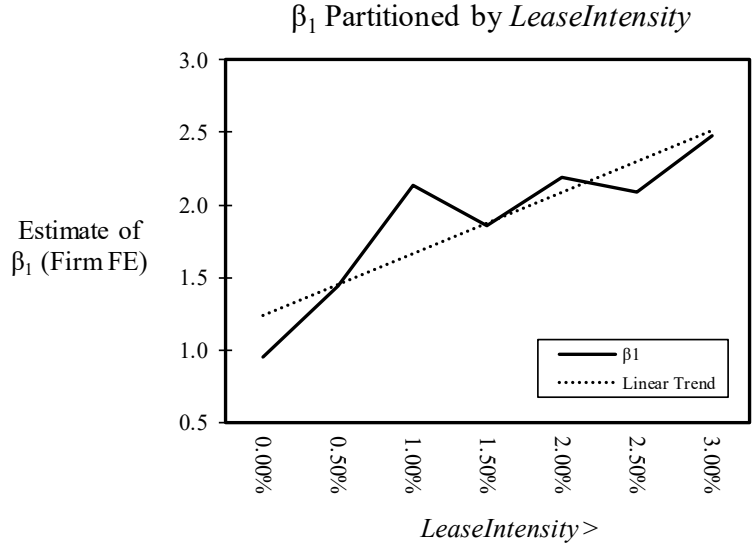


Table 6: Lease Intensity Partition (Continued)

Panel C: Tax signal (UK, Australian, and US Firms)

	N				β_1		
LeaseIntensity >	*Total*	*UK*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
0.00%	6,699	753	1,143	4,803	0.928 **	1.060 **	0.947 **
0.50%	5,670	492	681	4,497	1.269 **	1.355 **	1.438 **
1.00%	5,142	417	525	4,200	1.955 ***	2.062 ***	2.132 ***
1.50%	4,608	348	420	3,840	1.715 **	1.833 ***	1.859 ***
2.00%	4,170	306	363	3,501	2.134 ***	2.25 ***	2.191 ***
2.50%	3,729	255	312	3,162	2.292 ***	2.45 ***	2.085 **
3.00%	3,327	213	255	2,859	2.578 ***	2.578 ***	2.477 ***



Note: This table presents the coefficients of interest from estimating equation (1) and (2) in samples that exclude firms with *LeaseIntensity* less than 0.5 percent, 1 percent, 1.5 percent and so forth. I continue this successive screening until the final sample that excludes firms with *LeaseIntensity* less than 3.0 percent. For brevity I omit estimates for the control variables, main effects, and standard errors. Panel A presents the estimates of β_1 in equation (1) related to the bankruptcy signal. Panel B presents the estimates of β_2 in equation (1) related to the risk signal. Panel C presents the estimates of β_1 in equation (2) related to the tax signal. Each panel provides the number of observations in each sample by country. I also present a graphical depiction of the coefficient estimates in each sample to help visualize the relationship between each coefficient and *LeaseIntensity*. For all graphical depictions, I present the coefficients from estimating equation (1) and (2) using firm fixed effects. I continue to estimate equation (1) using Canadian, Australian, and US firms and equation (2) using UK, Australian, and US firms. ***, **, and * denote statistical significance of the coefficient estimate at the 1 percent, 5 percent, and 10 percent level, respectively (two-tailed).

Table 7: Mix of Finance and Operating Lease Partition

Panel A: Bankruptcy signal (Canadian, Australian, and US Firms)

	N				β_1		
DualLease	*Total*	*CAN*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
One Type	4,932	354	918	3,660	0.946	1.049	0.441
Both Types	1,509	141	225	1,143	2.442 **	2.358 **	2.173 **

Panel B: Risk signal (Canadian, Australian, and US Firms)

	N				β_2		
DualLease	*Total*	*CAN*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
One Type	4,932	354	918	3,660	0.186	0.126	0.678 **
Both Types	1,509	141	225	1,143	-0.453	-0.456	-0.067

Panel C: Tax signal (UK, Australian, and US Firms)

	N				β_1		
DualLease	*Total*	*UK*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
OneType	5,067	489	918	3,660	0.437	0.494	0.654
Both Types	1,632	264	225	1,143	1.645 **	2.042 **	1.565 **

Note: This table presents the coefficients of interest from estimating equation (1) and (2) in a sample of firms with a history of using both finance and operating leases and a sample of firms with a history of using only one type of lease. For brevity I omit estimates for the control variables, main effects, and standard errors. Panel A presents the estimates of β_1 in equation (1) related to the bankruptcy signal. Panel B presents the estimates of β_2 in equation (1) related to the risk signal. Panel C presents the estimates of β_1 in equation (2) related to the tax signal. Each panel also provides the number of observations in each sample by country. I continue to estimate equation (1) using Canadian, Australian, and US firms and equation (2) using UK, Australian, and US firms. ***, **, and * denote statistical significance of the coefficient estimate at the 1 percent, 5 percent, and 10 percent level, respectively (two-tailed).

Table 8: Bankruptcy Probability Partition

	N				β_1		
BankruptcyProb	*Total*	*CAN*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
Below Median	3,120	255	342	2,523	0.533	0.651	0.163
Above Median	3,015	216	591	2,208	1.988 **	1.939 **	1.366 *

Note: This table presents the estimates of β_1 related to the bankruptcy signal from estimating equation (1) in samples of firms with above- versus below-median *BankruptcyProb*. For brevity I omit estimates for the control variables, main effects, and standard errors. I also provide the number of observations in each sample by country. I continue to estimate equation (1) using Canadian, Australian, and US firms. ***, **, and * denote statistical significance of the coefficient estimate at the 1 percent, 5 percent, and 10 percent level, respectively (two-tailed).

Table 9: Changes in Temporary Book-Tax-Differences Partition

	N				β_1		
ΔTempBTD	*Total*	*UK*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
Below Median	2,346	357	168	1,821	0.650	0.650	0.285
Above Median	2,253	231	315	1,707	1.039 *	1.039 *	1.339 **

Note: This table presents the estimates of β_1 related to the tax signal from estimating equation (2) in samples of firms with above- versus below-median *ΔTempBTD*. For brevity I omit estimates for the control variables, main effects, and standard errors. I also provide the number of observations in each sample by country. I continue to estimate equation (2) using UK, Australian, and US firms. ***, **, and * denote statistical significance of the coefficient estimate at the 1 percent, 5 percent, and 10 percent level, respectively (two-tailed).

Table 10: Placebo Adoption Period

Panel A: Bankruptcy and risk signals (Canadian, Australian, and American Firms)

Empirical Variable	Theoretical Construct	Prediction	(1)	(2) *RelBAFS*	(3)
***CAN*$_i$**Placebo*$_t$**	No Change in Lease Accounting	Null	**-0.353**	**-0.421**	**-0.119**
			(0.479)	**(0.480)**	**(0.501)**
***NonUS*$_i$**Placebo*$_t$**	No Change in Lease Accounting	Null	**0.412**	**0.404**	**0.168**
			(0.312)	**(0.313)**	**(0.275)**
Main Effects			YES	YES	YES
Control Variables			YES	YES	YES
Exchange FE			YES	NO	NO
Country FE			NO	YES	NO
Firm FE			NO	NO	YES
Observations			4,294	4,294	4,294
Adjusted R-squared			0.673	0.662	0.794

Panel B: Tax signal (British, Australian, and American Firms)

Empirical Variable	Theoretical Construct	Prediction	(1)	(2) *RelBAFS*	(3)
***UK*$_i$**Placebo*$_t$**	No Change in Lease Accounting	Null	**-0.263**	**-0.241**	**0.123**
			(0.391)	**(0.391)**	**(0.364)**
NonUS$_i$**Placebo*$_t$	No Change in Lease Accounting	Null	0.414	0.404	0.168
			(0.312)	(0.313)	(0.274)
Main Effects			YES	YES	YES
Control Variables			YES	YES	YES
Exchange FE			YES	NO	NO
Country FE			NO	YES	NO
Firm FE			NO	NO	YES
Observations			4,466	4,466	4,466
Adjusted R-squared			0.686	0.680	0.798

Note: This table presents the results from estimating equation (1) and (2) in the sample of observations from fiscal years 2017 and 2018 after replacing *Post* with *Placebo*. Panel A presents the results related to equation (1) while Panel B presents the results related to equation (2). I provide the point estimate for each coefficient and its associated standard errors in parentheses. For brevity, I omit the point estimates and associated standard errors for main effects and control variables. Column 1, 2, and 3 include exchange, country, and firm fixed effects, respectively. For all specifications, I cluster standard errors by firm. ***, **, and * denote statistical significance at the 1 percent, 5 percent, and 10 percent level, respectively (two-tailed).

Table 11: Bankruptcy and Tax Signal Falsification

Panel A: Bankrutpcy signal split by ΔTempBTD (Canadian, Australian, and US Firms)

	N				β_1		
ΔTempBTD	*Total*	*CAN*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
Below Median	2,106	117	168	1,821	0.813	0.955	1.070
Above Median	2,232	210	315	1,707	0.511	0.362	0.343

Panel B: Tax signal split by BankruptcyProb (UK, Australian, and US Firms)

	N				β_1		
BankruptcyProb	*Total*	*UK*	*AUS*	*US*	*Exchange FE*	*Country FE*	*Firm FE*
Below Median	3,165	300	342	2,523	1.192	1.192	1.094
Above Median	3,201	402	591	2,208	0.489	0.843	0.755

Note: Panel A of this table presents the estimates of β_1 from equation (1) (related to the bankruptcy signal) in a sample of firms with above- versus below-median *ΔTempBTD*. Panel B presents the estimates of β_1 from equation (2) (related to the tax signal) in a sample of firms with above- versus below-median *BankruptcyProb*. For brevity I omit estimates for the control variables, main effects, and standard errors. I also provide the number of observations in each sample by country. I continue to estimate equation (1) using Canadian, Australian, and US firms and equation (2) using UK, Australian, and US firms. ***, **, and * denote statistical significance of the coefficient estimate at the 1 percent, 5 percent, and 10 percent level, respectively (two-tailed).