Spend Money to Make Money? Voluntary Audit Reviews and Firms' Cost of Debt

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ABSTRACT: In this paper, we analyze whether the voluntary purchase of audit reviews lowers firms' cost of debt. An audit review is a tool through which boards assess interim financial reports' quality on a timely basis throughout the year. The voluntary purchase of an audit review is therefore likely to reduce the monitoring costs of lenders and correspondingly, borrowers' cost of debt. We draw on 8,088 firm-year observations from 1,686 public firms in Canada over the 2004-2015 period to test our contentions. Results suggest that firms with voluntary audit reviews have a lower cost of debt relative to firms with no-audit review and that this effect is stronger for larger borrowers. Additional tests show that the benefits of the review, regarding lower cost of debt, outweigh the costs, regarding higher audit fees. We are the first to document that purchasing an audit review caters to lenders' asymmetrical need for negative information and brings benefits to borrowers through a lower cost of debt financing.

Keywords: audit review, quarterly reports, cost of debt, banks, public firms

I. INTRODUCTION

Auditing provides an essential verification of the information disclosed in financial statements (Jensen and Meckling 1976; Fama 1980; Watts and Zimmerman 1986) and is important for lenders in both mandated and voluntary forms (Minnis 2011). In this paper, we aim to assess whether, additionally to the year-end statutory auditing, the debt-market prices auditors' inspection of financial reports during the fiscal-year. Specifically, we focus on the audit review of quarterly reports (review) and analyze if its voluntary purchase is associated with a lower cost of debt financing. Previous research documents that the choice to voluntarily review of quarterly reports entails significant costs, in the form of higher audit fees (Bédard and Courteau 2015), yet it also brings significant benefits. The review decreases fourth-quarter adjustments (Ettredge, Simon, Smith, and Stone 2000), strengthens the association between returns and earnings (Manry, Tiras, and Wheatley 2003) and reduces abnormal accruals in the fourth quarter (Bédard and Courteau 2015). While these findings are insightful regarding the importance and effects of the review, they mainly focus on its costs and benefits from an investor perspective. However, the literature is yet to thoroughly explore the benefits of purchasing a review from the perspective of lenders, and our paper comes to fill this gap.[1]

The current empirical evidence on the debt market impact of the review has received criticism for being scarce, inconclusive, and based mainly on data from small, privately held firms (Defond and Zhang 2014). This literature stream is limited by the scarcity of *unaudited*

[1] Extant literature assessing the debt market benefits of auditing concludes that *annual* financial statements' verification is important for the cost of debt. For example, Blackwell (1998) suggests that financial statement audits reduce creditors' information gathering cost and result in reduced interest rates on loans. In similar vein, Kim, Simunic, Stein, and Yi (2011a) and Lennox and Pittman (2011) indicate that firms with voluntary audits are perceived as less risky and are compensated by banks with lower interest rates. Finally, Robin, Wu, and Zhang (2016) find that individual auditor quality and financial covenants in debt contracts are negatively associated. While we build on this emerging stream of literature, our paper differentiates from previous studies by focusing on the impact of the audit review of *quarterly* financial statements from both private and public debt market perspective.

publicly available data, since in the United States (US) the reviews are mandatory, while in other jurisdictions the identification of public firms with voluntary reviews is cumbersome due to the lack of uniform disclosure requirements. This limitation led extant research to focus on private firms in order to assess the effects of voluntary review purchases.[2] These settings are nonetheless affected by the endogeneity of firms' decision to remain private and also lack generalizability (Defond and Zhang 2014).

In this paper, we complete the literature by using data from publicly held firms in Canada, where publicly listed firms can *voluntarily* choose to purchase a review. Under Canadian law, the requirements for mandatory auditing do not extend over the review of quarterly financial statements (Ontario Securities Commission (OSC) 2000). Moreover, Canadian firms need to disclose in their financial reports if their interim reports have not been reviewed by an external auditor (OSC 2004). This allows us to identify the firms with voluntary reviews. Relative to previous studies using data from private firms with heterogeneous characteristics, we are able to isolate better the effect of purchasing the review, since public firms need to comply with standardized rules and disclosure requirements, which make them more homogenous.

According to theory, between lenders and borrowers, there is significant information asymmetry that can be reduced through the external monitoring of auditors (Watts and Zimmerman 1983; Balsam, Krishnan, and Yang 2003), which provides reliable and useful information for lending decisions (Minnis 2011). Specifically, auditing brings generic benefits through its "information" and "insurance" roles and reduces lenders' information acquisition costs regarding the riskiness of borrowers. This, in turn, translates into a lower cost of debt

[2] For example, Allee and Yohn (2009) find that, for small privately held businesses, the voluntary review of financial statements provides higher access to credit but has an insignificant impact in loan rates. Moreover, Minnis (2011) uses a similar sample and finds that the audit review is not associated with reduced risk for creditors.

contracting. Nonetheless, given the specificities of the review, we consider multiple channels through which it can bring benefits for lenders.

First, the review aims to enhance the quality of financial information provided in quarterly financial statements (Bédard and Courteau 2015), as it represents a monitoring tool used by audit committees to control the activity of the management frequently.[3] If quarterly reports are reviewed, auditors assess internal controls and accounts throughout the fiscal year and can detect and signal to the audit committees in a timely manner potential financial reporting misstatements that can be addressed by the management (Ettredge, Simon, Smith, and Stone 1994). This likely lowers the monitoring efforts of lenders in assessing the riskiness of borrowers. Therefore, in accordance with the information role of auditing, the review is expected to reduce lenders' information acquisition costs, which should translate into a lower cost of debt contracting.

Second, the review represents a signal that borrowing to firms with audited financial statements is less risky. This effect is due to auditing's insurance role, since auditors are liable in case of financial problems due to inaccurate financial reporting (Mansi, Maxwell, and Miller 2004). Lenders are therefore likely to price the insurance obtained through auditors' legal liability and decrease the cost of debt for borrowers with the review. Nonetheless, the regulators' requirements in the Canadian setting weaken the ability of the review to benefit through its insurance role. In Canada, the public disclosure of the review's outcome is not allowed, so its content is not accessed by external users of financial reports (CICA, section 7050.08). In turn, this reduces the liability of auditors and the potential insurance benefit of the review.

[3] According to Section 7060 "Auditor Review of Interim Financial Statements" prepared by the Auditing and Assurance Standards Board (AASB) in 2014, "*members of audit committees have indicated that the guidance on interim review procedures is particularly useful. Similarly, many practitioners have commented that carrying out interim review procedures has assisted them in identifying financial reporting matters to management and audit committees on a timely basis.*"

Third, since the review is voluntary in our setting, we consider an additional channel through which it benefits lenders. According to Kausar, Shroff, and White (2016), independent of the information provided by the audit, the choice to voluntary purchase external assurance represents a signal for lenders regarding borrowers' ability to repay debt, which reduces financing frictions. Specifically, when a borrower uses resources to acquire a voluntary audit, it provides information regarding its investment prospects and future cash-flows: the expected profits from its investment opportunities are likely to cover the cost of additional auditing services. The signal sent by borrowers that commit to external auditor verification by purchasing a review is likely priced by lenders since it is associated with firms' investment prospects and their ability to repay their loans. Taken together, the overall effect of purchasing the review on the cost of lending is attributable in a large extent to its information relative to insurance role and the signal provided by its voluntary purchase.

Drawing on hand-collected data for a sample of 1,686 non-financial Canadian firms with across 2004 to 2015,[4] we use a propensity-score-matching (PSM) approach to test if the voluntary purchase of reviews is associated with lower cost of debt after controlling for the observable determinants to purchase a review. In addition, we control for potential bias due to *unobserved* characteristics by using an endogenous switching model (ESM). In line with our expectations, the results of our tests indicate that firms which purchase a review obtain debt capital at a lower cost relative to no-review firms.

Furthermore, we are interested in analyzing if the association between the voluntary purchase of the review and debt financing is affected by firm size. According to the expectations of the regulators, smaller firms are likely to incur higher relative costs of purchasing the review,

[4] We use 2004 as starting point since the disclosure of whether firms review their quarterly financial statements becomes mandatory for Canadian public firms since January 2004 (National Instrument 51-102, 2004).

without corresponding benefits (OSC 2002; Crawford Committee 2003). Previous studies find that the acquisition of the review is positively associated with firm size (Ettredge et al. 1994), and they document a significant difference in size between the review and no-review firms in their sample (Bédard and Courteau 2015). Our tests mostly support that size is indeed an important determinant of the benefit brought by the purchase of a review. Specifically, we find that larger firms with a review have an incrementally *lower* cost of debt.

Finally, to reconcile our findings with Bédard and Courteau (2015), we conduct an audit fee analysis and find that the incremental auditing cost associated with the review is material for all firms, independent of size. We further compare the benefit - in terms of lower cost of debt, with the cost - resulting from increased audit fees, and determine that review firms have a *net* benefit from purchasing the additional verification. Overall, according to our findings, the net benefit is likely to accrue for larger firms, since they have an incrementally lower cost of debt relative to smaller firms.

We also conduct several additional tests. First, we exploit the fact that in our sample there are firms that (1) switch from a no-review to a review status (positive-switchers) and (2) switch from a review to a no-review status (negative-switchers). We test if there are significant differences between the pre-switching and post-switching cost of debt for both positive and negative switchers. We find that for positive (negative) switchers, the cost of debt is lower (higher) in the post-switching period and that the effect increases when we consider a smaller window around the switch. All our results are robust to an extensive series of sensitivity tests.

Second, while the purchase of the review is likely to be priced by all lenders, in an additional test we account for the differences in information access between bond-holders and banks. Specifically, we re-run our tests for a reduced sample of firms with available information

on bond issues (from SDC Platinum) and syndicated loans (from Dealscan). We draw on a sample of 610 straight bond issuances from 174 firms and 389 syndicated loan facilities from 135 firms in the 2005-2015 period. The public debt tests show a negative association between the purchase of the review and the bond yield spread: the yield spread of the reviewers is on average lower than that of the non-reviewers by 90 basis points after controlling the issue and issuer-level characteristics and the fact that the review decision is not randomly determined. Therefore, our findings are not only statistically but also economically significant. The private debt tests show that the review is not significantly associated with the cost of bank debt. Our results are consistent with the review providing increased monitoring of borrowers, which is mostly rewarded by bond-holders through a lower cost of debt. Nonetheless, in both bond and loan samples, we do not find a significant size effect, which can be explained by the presence of mainly large borrowers in both samples.

This paper contributes to the emerging literature analyzing the benefits of auditing for firms' cost of debt (Blackwell 1998; Allee and Yohn 2009; Minnis 2011; Kim et al. 2011a; Lennox and Pittman 2011; Robin et al. 2016). Mansi et al. (2004) first examine the effect of auditing quality on the cost of public debt financing. While they focus on the big N auditor and the audit tenure, we benefit from a novel setting in Canada to examine whether the audit review of the interim financial statements adds value to the lenders. We are the first to analyze the impact of voluntarily purchasing a review on public firms' cost of debt financing. The literature on this topic provides contradictory predictions, and all empirical endeavors are based on limited data on privately held firms. Our study comes to fill the gap in the literature by analyzing if the review lowers the monitoring efforts of lenders and consequently improves the cost of debt financing for publicly held firms. We further contribute to the Canadian debate on making the

audit review mandatory (Crawford Committee 2003; Auditing and Assurance Standards Board of Canada (AASBC) 2014). Past studies have shown that the review is associated with better disclosure quality of the interim financial statements (Bédard and Courteau, 2015), but they do not further examine the real economic benefits of the review. We unravel it by confirming that the issuers benefit from the review via reduced cost of public debt financing. Critics of this regulatory development highlighted the lack of empirical evidence regarding the benefits of review, especially for small firms. Our findings confirm that the purchase of the review reduces the cost of debt for large firms, while for small firms this debt market effect is negligible.

II. REGULATORY BACKGROUND

The characteristics of the review in Canada

The Canadian setting presents a series of characteristics which makes it appropriate for an analysis of reporting and auditing practices. For example, the review of quarterly reports is done on a voluntary basis. This is different from other settings, such as US and Australia, where firms are mandated to have a review. The main reason for this difference in policy is an ongoing debate regarding the asymmetry between the costs incurred through the purchase of a review and the benefits that such verification would bring (OSC 2000; TSX Venture Exchange 2002). On the costs side, the review represents additional work for auditors, which is transferred to the audited firms through increased audit fees. According to Bédard and Courteau (2015), review firms pay higher audit fees relative to no-review firms.

Moreover, critics of the review argue that mandating it would most likely be disadvantageous for small firms since they bear the additional costs and not benefit from the

additional verification. Despite this criticism, in 2014 the AASBC put into discussion the potential modification of the current standard on Auditor Review and Interim Financial Statements and making the review mandatory (AASBC 2014). The discussion did not end-up modifying the previous requirements, as the debate regarding the outcome of such an endeavor did not produce definitive conclusions. Consequently, Canadian firms maintain the right to voluntarily purchase the review, even when they are publicly listed in the US, given the exemption granted for "foreign private issuers" (SEC 1999a).

In addition to allowing the purchase of the review on a voluntary basis, Canadian law has clear requirements regarding the way firms should disclose the purchase of the review to its stakeholders. According to the National Instrument 51-102 "Continuous Disclosure Obligations", firms need to disclose in their financial reports if their interim reports *have not* been reviewed by an auditor (OSC 2004). Moreover, firms are not allowed to disclose the outcome of the review to external parties. The use of the review is restricted to internal use and therefore serves as a monitoring tool for potential accounting distortions in the quarterly financial statements. Even if the review is not mandatory, its purchase is highly recommended by the Canadian Securities Administrators (CSA) as it aims to address in a timely fashion potential accounting misstatements in annual reports (OSC 2004).

III. HYPOTHESES DEVELOPMENT

Review and debt financing

The dynamic of the debt market is important for global financial stability, and it draws increasing attention from the academic literature. As such, a significant body of work

investigates the role of auditing in assisting lending decisions. In the context of the quarterly reviews, previous evidence has linked their use to improvements in the quality of financial statements in North America (Ettredge, Simon, Smith, and Stone, 1994, 2000; Bédard and Courteau, 2015). Specifically, external auditors are able to detect potential financial misstatements during the interim periods rather than until the end of the year, which also reduces the fourth-quarter adjustments. In this paper, we assess the debt market benefits of the review, as we draw on a sample of listed Canadian firms to analyze if the voluntary purchase of review is negatively associated with the cost of debt.

Compared to a statutory audit of year-end financial statements, the assurance level and the number of auditing work procedures are reduced in a review of quarterly financial statements.[5] Despite having a reduced scope and providing a reasonable assurance relative to a statutory audit, the review aims to improve the reliability of financial information reported in quarterly financial statements by performing a timely verification of accounting misstatements.[6] The verification of the interim reports is important, as managers have incentives to use their discretion in preparing quarterly reports. According to Myers, Myers, and Skinner (2007), the main incentives for manipulating interim reports are reporting flows of increasing earnings, and beating analyst (Manry et al. 2003) and budget targets. The review, therefore, represents a tool through which the actions of the management are assessed on a continuing basis.

[5] According to Kajüter, Klassmann, and Nienhaus (2016), the review verifies whether the reported numbers in financial statements are plausible or not.

[6] While an audit provides a positive assurance – an indication that the financial statements are prepared, in all material aspects, in accordance with the applicable Generally Accepted Accounting Principles (GAAP), the review provides a negative assurance – an indication of *no evidence* to assume that the financial statements are *not* presented in accordance with the applicable GAAP (Gay, Schelluch, and Baines 1998). For example, Barton, Hodder, and Shepardson (2014) finds for a sample of firms in the financial industry, the audit review is associated with reduced likelihood of bank failure.

External auditing generically adds value to the capital market in two ways: by providing "verification" to the disclosure quality of financial statements (information role) and by providing "insurance" to the investors through auditors' legal liability (insurance role). An important feature of the review in the Canadian setting, however, is that its use is limited to internal parties within the firm (CICA, section 7050.08). Since external parties are not able to access the outcome of the review, the insurance role of auditing is constrained, and the benefit of purchasing the review mainly consists of the verification that it provides. Albeit this limitation, we expect that it would cater to the informational needs of lenders. The verification provided by the review is likely to signal increased borrower quality, which translates into reduced monitoring costs.[7] The review lowers the information asymmetry between lenders and borrowers, so its purchase is bound to be associated with the cost of debt financing (Minnis 2011). Specifically, lenders may require a lower risk premium due to the improvement in reporting quality (Graham et al. 2005).

Further, the review is likely to priced by lenders, given that its purchase is voluntary. In the absence of an imposing regulation, the choice to be audited provides a signal of reduced riskiness to lenders (Chow 1982; Melumad and Thorman 1992; Lennox and Pittman 2011). According to Kausar et al. (2016), borrowers that voluntarily commit to external audit verification send lenders a signal regarding their future investment opportunities. Specifically, the voluntary purchase implies that the firm will generate sufficient future cash-flows to cover for the costs of auditing. More importantly, the signal transmitted when committing to external auditor verification implies that the borrower's investment opportunities allow the repayment of its loans.

[7] This is consistent with Bharath et al. (2008) as they find a negative association between the quality of accounting information and the cost of debt.

In summary, the voluntary purchase of the review is likely to reduce lenders' monitoring costs and result into lower cost of debt for review firms relative to no-review firms. We, therefore, formulate the following hypothesis:

> ***H1:*** *The cost of public and private debt is lower for review firms relative to no-review firms.*

Review, firm size, and debt financing

Previous literature contends that due to a disproportionate distribution of costs and benefits of the review between large and small firms, the former would be mostly interested in purchasing the additional verification of their quarterly financial statements. The voluntary nature of the decision to purchase a review would thus result in a non-random selection of the review and no-review samples, based on size (Ettredge et al. 1994; Bédard and Courteau 2015). While this asymmetry is acknowledged by regulators (OSC 2002; Crawford Committee 2003) and it remains at the center of a debate regarding the universal desirability of the review, our interest lies in determining if the size of the firm has an impact on the association between the purchase of the review and its effect on the cost of debt. In this context, the impact of firm size depends on how lenders differentiate the value of monitoring provided by the review for large relative to small firms. Given this, two contrasting effects of firm size are likely in our setting. On the one hand, larger firms have higher incentives to manipulate the financial information in their quarterly financial statements. In contrast to annual reports, quarterly financial statements provide reduced benefits for managers' use of discretion in reporting. Specifically, the major motivation for manipulating financial statements is to reach financial analysts' targets (Manry et al. 2003). Small firms, however, have a very low analyst following and they would consequently

benefit less from manipulating quarterly reports. In contrast, the extant literature shows that large firms are monitored by a greater number of financial analysts and they face increased pressure from capital markets to meet analysts' expectations (Hong et al. 2000; Richardson et al. 2002). As the incentive to manipulate quarterly financial numbers increases in firm size, so should the value of assurance brought by the review.

Moreover, according to the Crawford Committee (2003), large firms are likely to have difficulties in preparing timely financial reports, since they often have complex international operations. As a result of this complexity and of the time pressure for reporting, their quarterly financial statements are likely to incorporate more misstatements relative to smaller firms. Thus, the purchase of the review by larger firms would mitigate this type of bias and would likely be rewarded by banks through a reduced cost of capital.

On the other hand, the literature has found that lenders incur lower costs for monitoring for large firms relative to small firms. Specifically, large firms require less monitoring resources to determine their creditworthiness (Graham et al. 2008). Additionally, relative to large firms, small firms have generally accounting systems of lower sophistication, and they hire less qualified accounting personnel. Given this, smaller firms' quarterly financial statements are likely to be of lower quality (Bédard and Courteau 2015) and the verification provided by the review would bring lenders valuable information regarding financial misstatements. Purchasing a review would, therefore, result in less financial misstatements for smaller firms, relative to larger ones. Under this scenario, purchasing a review would be associated with a lower cost of debt as the size of the firm decreases. While it is not clear which of the contradicting explanations prevails in our setting, we expect that given the additional incentives for manipulating quarterly financial statements, larger firms would be rewarded with a lower cost of debt for the additional

verification provided by the purchase of the review. We, therefore, formulate the following hypothesis:

> ***H2:*** *The cost of public and private debt is lower for large review firms relative to no-review firms.*

IV. DATA

In Canada, the review of quarterly financial statement is voluntary. However, starting from fiscal years on or after January 1, 2004, listed Canadian firms are required to disclose if their interim financial statements have not been reviewed by an auditor (OSC 2004). With this new regulation, Canada provides an exceptional institutional setting to examine the benefit of audit review since (1) the purchase of the review is voluntary and (2) the disclosure of notice while not having a review is mandatory. Therefore, we begin our sample by selecting all Canadian listed firms included in Compustat database between the fiscal years 2004 and 2015. We use SEDAR, the official website that provides access to public security documents filed by Canadian firms, to hand-collect the information on the purchase of the review and the name of the auditor from firms' quarterly reports.[8] All firm-specific controls are collected from Compustat. This process results in an initial sample of 22,026 observations from 3,575 firms. We exclude (7,283) firm-year observations pertaining to financial firms (SIC codes 6000-6799) and (5,903) firm-year observations without available interest expense, short-term and long-term debt data in Compustat to compute interest rate spread. Further, we eliminate from our sample firm-year observations with missing review information due to the unavailability of the annual reports

[8] According to the National Instrument 51-102 "Continuous Disclosure Obligations", Canadian firms are mandated to disclose in their quarterly reports if their auditors *do not* perform an audit review (OSC 2004).

(276), with missing firm-specific financial controls and firms with non-listed status (476). After discarding observations of firms with missing financial information and without available review information, we are left with a sample of 8,088 observations from 1,686 listed firms for our main analysis. Out of the 8,088 observations, 5,024 pertain to firms with voluntary reviews (review sample), and 3,064 observations pertain to firms without review (no-review sample).[9]

V. METHODOLOGY

We first assess the predictions of Hypotheses 1, that the purchase of a review has a negative impact on firms' cost of debt. In Model (1) we test this contention by using the empirical approach based on the determinants of debt financing specified by Kim et al. (2011a) and Minnis (2011). In Model (2) we add the interaction between *Review* and *Size* to test the prediction of Hypothesis 2, that firm size strengthens the negative association between the review and the cost of debt.

$$Spread = \alpha + \beta_1 Review + \beta_2 Size + \beta_3 ROA + \beta_4 TANG + \beta_5 CR + \beta_6 LEV + \beta_7 MB + \beta_8 NegE + \beta_9 INVEST + \beta_{10} Cross\ Listed + \beta_{11} Bond\ Dummy + \beta_{12} Loan\ Dummy + Accounting\ Standard,\ Industry\ and\ Year\ dummies + \varepsilon \quad (1)$$

$$Spread = \alpha + \beta_1 Review + \beta_2 Size + \beta_3 Review\ x\ Size + \beta_4 ROA + \beta_5 TANG + \beta_6 CR + \beta_7 LEV + \beta_8 MB + \beta_9 NegE + \beta_{10} INVEST + \beta_{11} Cross\ Listed + \beta_{12} Bond\ Dummy + \beta_{13} Loan\ Dummy + Accounting\ Standard,\ Industry\ and\ Year\ dummies + \varepsilon \quad (2)$$

[9] Our sample composition is consistent with previous literature, as no-review observations make up 38 percent of the overall sample, compared with 41 percent for Bedard and Courteau (2015).

Following Kim et al. (2011a) and Minnis (2011), we use interest rate spread (*Spread*) as our dependent variable in the main sample.[10] This variable measures the difference between the interest rate on the firm's debt and the weighted average annual benchmark rate for the year. In line with previous studies (Kim et al. 2011a; Minnis 2011; Blackwell, Noland, and Winters 1998; Pittman and Fortin 2004; Francis, Khurana, and Pereira 2005a; Francis, LaFond, Olsson, and Schipper 2005b), the interest rate in year *t* is measured as contemporaneous interest expenses divided by the average of total short-term and long-term debt during the year. To construct the weighted average benchmark interest rate, we select four Canadian government marketable bonds with various maturities: one year, three years, five years, and ten years, and calculate each annual bond yield based on monthly observations. Then we determine each weight by accounting for firms' debt maturity structure. The weight of the one-year benchmark equals the percentage of the short-term debts scaled by total debts. The weight of the three-year benchmark equals the percentage of the debts which are due between one and three years scaled by total debts. The weight of the five-year benchmark equals the percentage of the debts which are due between three and five years scaled by the total debts. Finally, the weight of the ten-year benchmark equals the percentage of debts which are due after five years, scaled by the total debts.[11]

[10] The use of an interest rate spread as a proxy to capture the real interest rate on loan facilities may cause a potential measurement error (Kim et al. 2011a, Pittman and Fortin 2004; Francis et al. 2005a; Francis et al. 2005b). If the dependent variable and independent variables are systematically correlated, a measurement error may result in biased coefficients and inflated significance levels (Greene 2003). As we use econometric models addressing the selection bias of our test variable, *Review*, in our analysis it is unlikely to have a systematic correlation between the interest rate spread and the review.

[11] We acknowledge that our composite benchmark rate cannot perfectly capture the exact debt maturity structure of each firm. In untabulated tests we replace the 10-year Canadian government marketable bond with the 30-year one, and use the latter as the benchmark for the portion of corporate debts with longer time to maturity than 5 years. We also use single benchmark (e.g. LIBOR) rather than compositing multiple benchmarks. Our results are not affected by the choice of benchmark interest rates.

In Model (1), our main variable of interest is *Review*, which is an indicator variable that equals 1 if a firm has a voluntary review and 0 otherwise.[12] We expect a negative and significant coefficient estimate for *Review*, suggesting that the voluntary purchase of a review reduces monitoring costs for lenders and results in a lower cost of debt.

In Model (2), our main variable of interest is the interaction term *Review x Size*. We expect a negative and significant coefficient estimate for *Review x Size*, indicating that larger review firms have an incrementally lower cost of debt relative to smaller review firms.

To examine the impact of review on the spread, we control for firm-specific determinants of the cost of debt in both models. We use *Firm Size (Size)*, as previous literature on debt financing suggest that firm size is negatively associated with the cost of borrowing (e.g., Blackwell et al. 1998). Further, we include *Return on Asset (ROA)* in our models, because lenders tend to offer lower cost of borrowing to firms with high profitability (Kim et al. 2011a). Firms' ability to meet their short-term obligations is negatively associated with the cost of borrowing. Thus, we add *Current Ratio (CR)* in our models. As indicated by Jensen and Meckling (1976), agency costs increase with the level of debt. In order to control for the risk of distress and agency costs, we use *Leverage (LEV)* and *Negative Equity (NegE)*. Previous literature on loan contracting suggests that the cost of borrowing is expected to be negatively associated with tangible assets, as their use as collateral represents an additional assurance for lenders (e.g. Kim et al. 2011b, and Florou and Kosi, 2015). Thus, we include *Tangibility (TANG)* in our models. Following Denis and Mihov (2003), Bharath et al. (2008) and Florou and Kosi

[12] Under National Instrument 51-102 "Continuous Disclosure Obligations", starting from the fiscal years on or after January 1, 2004, no-review firms need to disclose a notice in their quarterly financial statements indicating that they have not been reviewed by an auditor (OSC 2004). Thus, if the firm does not disclose a notice indicating that "the interim financial statements have not been reviewed by an auditor", we assume that the firm's interim financial statements are reviewed by an external auditor.

(2015), to control for the impact of forward-looking growth opportunities, which is expected to decrease firms' spread, we include *Market-to-Book ratio (MB)* in our models. Further, we consider that firms with a higher credit rating have a lower cost of borrowing. Therefore, we use *Investment grade (INVEST)* to control for the impact of firms' credit ratings on the cost of debt. Finally, to control for the impact of cross listing, bond issuance and borrowing, we include *Cross Listed* dummy, *Bond dummy* and *Loan dummy* into our models. We further add industry and year dummies to control for the potential effect of unobserved heterogeneity on our estimations. Furthermore, to control for the potential impact of accounting standards (US GAAP, Canadian GAAP and IFRS) on the quality of financial reporting, we include accounting standard dummies. Table 1 defines all variables used in our analyses.

[Insert Table 1 Here]

In all our estimations, we consider that the quality of the auditing is likely different among individual auditors (Francis et al. 2016). Therefore, in line with Francis et al. (2016), we use standard errors clustered by auditor to correct for unobserved within-auditor correlations.

To examine the association between the purchase of the review and firms' cost of debt, we use yearly, not quarterly data, because the measurement of quarterly *Spread* will be biased since the actual amount of certain expenses or costs cannot be determined until the year-end. The quarterly accounting information requires estimation of such expenses (deferrals and accruals) (Manry et al. 2003), and the management may use these estimations opportunistically in interim periods.

Propensity Score Matching

The voluntary nature of the review in Canada leads to the concern that firms are not randomly assigned to the review and no-review groups,[13] which may affect our analyses. To address this issue, we follow Shipman, Swanquist and Whited (2016) and Bédard and Courteau (2015) and use a PSM approach to match firms from the review and no-review groups.[14] Specifically, we use a logit regression – *audit choice model* –, to estimate propensity score for each firm, and match firms from the review sample (treatment sample) with firms from the no-review sample (control sample) based on their propensity scores:

$$\begin{aligned} Review = {} & \alpha + \beta_1 Dec\_FYEnd + \beta_2 Big4 + \beta_3 Size + \beta_4 ROA + \beta_5 TANG + \beta_6 CR + \beta_7 LEV + \beta_8 MB \\ & + \beta_9 NegE + \beta_{10} INVEST + \beta_{11} Cross\ Listed + \beta_{12} Bond\ Dummy + \beta_{13} Loan\ Dummy \\ & + Accounting\ Standard,\ Industry\ and\ Year\ dummies + \varepsilon \end{aligned} \quad (3)$$

We use *Big-4* to control for the auditor type of firms. Bédard and Courteau (2015) show that a Big 4 auditor increases the likelihood of interim review. *Dec_FYEnd* indicates whether a firm has a regular fiscal year-end in December. According to López and Peters (2012), the audit staff's working pressures, which are proxied by the audit busy season (fiscal year-end in December), are negatively associated with the audit quality of annual reports. To deal with this issue, auditors may shift some procedures earlier to interim periods and encourage clients to use their idle capacity during less busy seasons (Hay et al., 2006; López and Peters, 2012). Since interim reviews are conducted during less busy seasons, we posit that firms with regular fiscal year end in December are positively associated with the likelihood of subscribing to interim reviews. Further, in line with Ettredge et al. (1994), we consider that firms' choice of review is

[13] As argued in previous studies, the voluntary purchase of reviews is associated with firm-specific determinants. Specifically, firms tend to purchase a review if the induced benefit is higher than the implied cost (e.g. Bédard and Courteau 2015; Kajüter et al. 2016).

[14] We also use Heckman (1979) approach and used two-stage estimation procedure by using the inverse mills ratio. Untabulated regression results show that the direction and significance of our variable of interest remain the same. The selection model in the Heckman procedure is the one used as audit choice model in the PSM in Table 4.

positively associated with their size, complexity, and growth opportunities. Thus, to control for these characteristics, we use *Firm Size (Size)*, *Tangibility (TANG)* and *Market-to-Book ratio (MB)* in our estimation. To control for agency cost and firms' financial strength, we use *Current Ratio (CR)*, *Leverage (LEV)* and *Negative Equity (NegE)*. We expect that *Review* will be positively associated with *CE*, *LEV*, and *NegE*. Moreover, we control for *Return on Asset (ROA)*, *Investment grade (INVEST)*, *Cross Listed* dummy, *Bond dummy*, and *Loan dummy*. We expect that firms with higher profitability, investment grade, cross-listed and with syndicated loans or bond issues would have a higher propensity to purchase a review.

VI. RESULTS

Descriptive statistics and univariate analysis

Table 2 presents the descriptive statistics for our sample, which is also separated by review and no-review firms. Additionally, univariate test statistics for the mean differences between review and no-review groups are also presented. The average spread over the full sample is 7 percent, with review firms having a lower spread (on average, 6.3 percent) and no-review firms having a higher spread (on average, 8.1 percent). Specifically, review firms are associated with significantly larger size, higher ROA, higher tangible assets, higher leverage, higher market-to-book, lower negative equity, and higher credit rating. We also document that 31.6% of the review firms are cross-listed, which is 9% higher than the no-review firms. Last but not least, while 5.6% (17.3%) of the review firms have issued public bonds or syndicate loans, only 0.8% (4%) of the no-review firms have done so. Table 2, therefore, indicates the necessity to apply PSM to our sample.

[Insert Table 2 Here]

Table 3 presents Pearson correlations. Our variable of interest, *Review*, is negatively and significantly correlated with *Spread* (Pearson correlation = -0.150). In line with previous studies, *Size* is positively and significantly correlated with *Review* (Pearson correlation = 0.400). This indicates that firms' voluntary review purchase decision is correlated with firm size.

[Insert Table 3 Here]

Matched sample

We match the review firms with the no-review firms based on propensity scores derived from Model (3). We employ nearest neighbor matching approach with no replacement, within a caliper of 0.01. Our matching yields a sample of 4,608 firm-year observations (2,304 matched pairs) for the test of Hypothesis 1 and 2.

Table 4, Panel A, reports the coefficient of the *audit choice model*. Overall, the pseudo-R^2 of 0.17 suggests that the voluntary review is not random, warranting the application of PSM. In line with our expectations, the review firms tend to have regular fiscal year-end in December and are more likely audited by Big 4 auditors. Firm size, market-to-book ratio, and tangibility are positively related to the review decision. Consistent with the signaling theory, a firm with negative equity is more likely to purchase a review. Firms with high ROA tend to have a lower tendency to purchase a review. Furthermore, the probability of purchasing a review increases if the firm has a bond issuance and syndicated loan borrowing. Table 4, Panel B, documents the univariate test statistics after matching, which shows that the differences between review and no-review firms are no more significant.

[Insert Table 4 Here]

Main Findings

Table 5, Model 1 presents the regression results for the effect of review on the spread, estimated on the matched sample. In line with Hypothesis 1, the coefficient of *Review* is negative and significant (β=-0.003; p<0.01). This suggests that if firms' quarterly financial statements are reviewed, their cost of debt is lower relative to the no-review firms.[15] Accordingly, audit review is associated with a 30 basis points decrease in the spread.

[Insert Table 5 Here]

Model 2 presents the regression results of the incremental effect of review on the spread in larger firms, estimated on the matched sample. The interaction term, *Review x Size*, captures the incremental effect of firm size on the association between the voluntary review and firm's cost of debt. In line with Hypothesis 2, the coefficient of *Review x Size* is negative and significant (β=-0.002; p<0.05). This result indicates that firm size strengthens the negative association between audit review and spread. Further, to increase the robustness of our results, in Models 3 to 5 we re-estimate Model 1 by splitting the sample into small, medium, and large firms.[16] While the coefficient of *Review* is insignificant for the small firms in Model 3, it increases in magnitude and significance level for both medium (β=-0.003; p<0.1) and large firms (β=-0.007; p<0.01). Overall, our results in Models 2 to 5 suggest that the debt market benefit of purchasing a review is increasing with firm size.

Audit Fees and the Net Benefit of the Review

Bédard and Courteau (2015) find that voluntary audit reviews increase firms' overall auditing fees, which can be interpreted as the cost of the review. To verify whether the ***net***

[15] Our results are qualitatively similar if we cluster standard errors by firm.
[16] The size portfolios are constructed yearly to control for the effect of inflation.

benefits of the review, which is the difference between (1) the benefits in terms of lower cost of debt capital and (2) the costs in terms of incremental audit fees, are positive for the review firms, we follow Bédard and Courteau (2015) to conduct an audit fee analysis in the Appendix Table A1.[17] In line with Bédard and Courteau (2015), we find a positive and significant effect of the review on audit fees (β=0.109; $p<0.01$) and an insignificant coefficient for the interaction term *Review x Size*, suggesting that audit fees do not increase with the size of the voluntary review firms. Overall, we find that audit reviews on average increase total audit fees by around 13.54 percent.[18]

To indicate the ***net*** benefit of the review, the decrease in the cost of debt (annual interest savings) is approximately $1.5 million, which is equal to approximately 3 percent of the average firm's net income after tax.[19] The average increase in the external cost of review - *audit fees*, is approximately $100,000. Therefore, the benefit of purchasing the audit review outweighs the external cost of review by $1.4 million. When we look at large firms, while the increase in the cost of the review is approximately $200,000, the decrease in the cost of debt is approximately $3 million, indicating a significant ***net*** benefit by 2.8 million US dollars. Similarly, for medium-sized firms, while the average increase in the cost of the review is approximately $31,000, the decrease in the average cost of debt is approximately $61,000, indicating a marginally significant net benefit of purchasing the review by $30,000. On the other hand, for small firms, on average, the decrease in the cost of debt and the increase in the cost of the review are approximately $ 7,700 and $ 7,500, respectively, where the difference is negligible.

[17] We collect audit fee data from AuditAnalytics. Due to the data limitation regarding the total audit fees, we conduct our analysis on a smaller matched sample.
[18] A change in review from 0 to 1 changes spread by a multiplicative factor, which is translated into percent change with $(e^{\beta}-1)$, where β is the estimated coefficient of review.
[19] The annual interest savings is calculated by multiplying the average debt by 0.30 percent.

Therefore, we document net economic benefits from the voluntary review, which are manifested in large firms. Small firms, by contrast, cannot benefit from the voluntary review since their cost of debt is not reduced by the review. Our findings are consistent with Bédard and Courteau (2015) which show that for small firms, while they suffer from the incremental audit fees brought by the review, they may not benefit from it. Our findings echo the argument to remain the voluntary status of interim review in Canadian publicly firms.

VII. ADDITIONAL TESTS

Switchers

Within our sample, we observe firms that switch their review status from no-review (review) to review (no-review), and we consider them as positive-switchers (negative-switchers). Depending on the nature of the switch, the decision to purchase (withdraw) the review provides a positive (negative) signal towards creditors. Specifically, relative to no-review firms, the positive-switchers are more likely to be rewarded by lenders with a lower cost of debt, given their commitment to increase verification of quarterly financial statements. In a similar vein, relative to review firms, the negative-switchers are likely to experience an increase in their cost of debt, given the dismissal of the review, and consequently, of the commitment to increase verification of quarterly financial statements. This effect is attributable to creditors reducing (increasing) their monitoring costs and transferring them to borrowers through a lower (higher) cost of debt financing.

Among the 1,686 sample firms there are 1,454 which have not experienced any change throughout the sample period i.e. they are consistently classified as review or no-review firms.

On the other hand, while 101 firms have experienced only a positive switch, 91 firms have experienced only a negative switch, and 40 firms have experienced both positive and negative switches. We exclude the 40 firms with multiple switches from our sample and focus only on the "pure" positive and negative switchers. This provides us with a sharp setting to distill the impact of the review on the cost of debt.

To examine the effect of a positive-switch (from no-review to review) and a negative-switch (from review to no-review) on the spread, we start with the audit choice model and match the positive (negative) switchers to a control sample of no-review (review) firms. The control sample is restricted to non-switchers i.e. those who keep the status of review unchanged during our sample period. Propensity scores are calculated based on the nearest neighbor matching approach with no replacement, within a caliper of 0.01. We construct 82 matched pairs for positive switchers and their controlling firms with no-review, and 68 matched pairs for negative switchers and their controlling firms with review.

Then we use a difference-to-difference (DID) analysis and replace our variable of interest, *Review,* with *Switch,* in the following equation:

$$\begin{aligned} Spread = {} & \alpha + \beta_1 Switch + \beta_2 Post + \beta_3 Switch \times Post + \beta_4 Size + \beta_5 ROA + \beta_6 TANG + \beta_7 CR \\ & + \beta_8 LEV + \beta_9 MB + \beta_{10} NegE + \beta_{11} INVEST + \beta_{10} Cross\ Listed + \beta_{11} Bond\ Dummy \\ & + \beta_{12} Loan\ Dummy + Accounting\ Standard,\ Industry\ and\ Year\ dummies + \varepsilon \end{aligned} \quad (4)$$

Switch is an indicator variable that equals 1 if a firm has voluntarily switched its review status from no-review to review (review to no-review), and 0 for a non-switching no-review (review) firm. *Post* is an indicator variable that equals 1 for the years after the change of audit

review status from no-review to review (review to no-review).[20] Our variable of interest is *Switch x Post*, capturing the impact of audit review on the spread in the post-switching period for positive switchers (negative switchers) relative to no-review (review) firms in the control sample. We use standard errors clustered by matched pairs.[21] We add accounting standards, industry and year dummies in both our models to control for the potential effect of time-invariant unobserved heterogeneity which could cause endogeneity in our estimations.

Table 6, Panel A presents the regression results of the positive-switch (from no-review to review) on the spread. Finally, there are 1,040 firm-year observations from the 82 matched pairs for us to test the impact of purchasing audit review on the spread in the post-switching period. Models 1 to 3 report the results for the impact of the review on the spread in the one-year, two-year, and the whole sample windows centered on the event of positive switching. The coefficient of *Switch x Post* in Model 1, which is based on annual spreads in the (t-1, t+1) window of positive switching event, is negative and significant (β=-0.013, $p<0.05$). Similarly, the coefficients of *Switch x Post* in Model 2 and 3 are also negative and significant (β=-0.009, $p<0.1$ and β=-0.008; $p<0.1$, respectively), indicating that in the post-switching period the cost of debt of firms changing their review status from no-review to review is lower relative to no-review firms. The magnitude and the significance of the coefficient are increasing as we consider a shorter window surrounding the switch, which further indicates that the effect on cost of debt is more likely due to the switchers' commitment to more extensive audit verification.

Table 6, Panel B presents our estimation results for the negative switchers (from review to no-review). Finally, there are 1,012 firm-year observations from the 68 matched pairs for us to

[20] Controlling firms do not experience any switch. Following Francis et al. (2016), the virtual switching year for a controlling firm is defined as the switch year of the matched switching firm.
[21] Untabulated results using standard errors clustered by auditors are qualitatively similar.

test the impact of withdrawing audit review on the spread in the post-switching period. Model 4 to 6 report the results for the impact of the review on the spread in the one-year, two-year, and the whole sample windows centered on the event of negative switching. Models 4 and 5 show that the coefficients of *Switch x Post* are positive and significant (β=0.016, $p<0.1$ and β=0.014; $p<0.1$), while the interaction term is insignificant in Model 6. These results suggest that if firms switch from review to no-review, then their cost of debt increases. Similar to Panel A, the magnitude of the effect increases when we focus on a shorter window surrounding the switch.

[Insert Table 6 Here]

We further develop our analysis to determine to what extent the positive and negative switches deliver a signal to lenders regarding borrowers' ability to improve their future cash-flows (Kausar et al. 2016), or to improve their earnings quality. Specifically, if such signaling effects exist, then we should observe them in the post-switching period. In Table 7 we provide a DID analysis of how the cash-flows from operations, abnormal accruals and audit fees change after the positive and negative switch. As depicted in Panel A of Table 7, subsequent the positive-switch, borrowers have higher cash-flows, lower abnormal accruals and pay higher fees. In contrast, in panel B we do not find a statistically significant difference for negative-switchers. Overall, the findings in Table 7 indicates that by purchasing interim audit reviews, borrowers deliver a signal to their lenders regarding their ability to repay debts and their commitment to improving earnings quality. In turn, this signal is priced by creditors.

[Insert Table 7 Here]

Subsample Tests for Public Bonds and Syndicated Loans

Banks have access to the *private* information of the issuers (Fama 1985; Bharath et al. 2008). This additional channel can potentially give banks a complete image over the borrowers' riskiness, and therefore they would rely less on the information provided by the review (or other public sources of information) as a major input for lending decisions (Florou and Kosi 2015). In contrast, the access to private information could also render the review important for banks' lending. Specifically, the additional access could mean that banks access details of the review output. Besides, banks may better understand the efforts that the internal users (e.g., audit committees) have exerted to improve the quality of interim financial statements. Therefore, through its information role, the review may reduce banks' information acquisition and monitoring costs. In return, banks would be more willing to offer lower interest rates. Taken together, given the contrasting effects of banks' access to private information, the importance of the review for banks' lending is not obvious a priori.

The public bond-holders of Canadian firms face a different scenario: they have no access to the details of the quarterly review but only know whether the issuer's interim financial statements have been reviewed by an external auditor.[22] Therefore, the public debt holders are less informed relative to the private debt holders. Since bond-holders cannot execute ex-post monitoring (e.g., renegotiation on the terms of the public debts based on the issuer's performance), they rely more on ex-ante monitoring and the quality of the issuers' financial statements. We argue that the public bond-holders will treat issuers differently based on the review status of their interim financial statements and grant the reviewers a lower interest rate. The rationale is that they will regard the quarterly review as a credible signal indicating that the quality of the issuer's financial reports is convincible and that it has profitable investment

[22] This is due to the Canadian regulators requiring that public firms would disclose the status of review on their interim financial statements since January 2004.

opportunities. This signal is valid since external auditing is particularly trustworthy for the users of publicly available information (Kellogg, 1984; Wallace, 1987; Dye, 1993; Mansi et al., 2004). Concurrently, banks have the possibility to renegotiate loans ex-post to granting them, which determines lower importance of the review relative to bond-holders.

Therefore, we consider the differences in information access between lenders and we formulate expectations separately for bond-holders (public lenders) and banks (private lenders). We expect that the parties which are likely to benefit more from the review rely mostly on public firm information and do not have access to alternative private information channels. This would be the case of bond-holders since they purely depend on the publicly available audited financial statements to make investing decision (Mansi et al. 2004; Bédard and Courteau, 2015). We propose that the review provides a credible signal to investors that bond issuer's disclosure quality is high and the chance of financial misstatements is low.[23] In contrast, additional to their expertise in the collection and assessment of disclosed public information (Bharath, Sunder, and Sunder 2008), banks also have the ability to obtain *private* firm information from non-public sources (Fama and Jensen 1983; Fama 1985; Sharpe 1990; Rajan 1992; Denis and Mihov 2003; Bharath et al. 2008; Kim et al. 2011c).[24] Specifically, bank monitoring can partially substitute the quality of financial reporting in decreasing information asymmetry (Biddle and Hilary 2006).[25] Since banks are able to access private firm information, they will likely benefit less from the

[23] Mansi et al. (2004) examines the U.S. public debt market and find that both the information and the insurance role of auditing are associated with a lower cost of public debt financing. This supports that external auditing adds value to the public debt financing.

[24] Rajan (1992) states that banks' capacity to use firms' private information determines if they will profit from extracting monopoly information rents.

[25] The collection and use of private information about borrowers are nonetheless costly (Diamond 1991), especially in cases of high information asymmetries, as banks need to allocate resources to verify the information provided by managers. We therefore still expect that these monitoring costs would be lowered by the purchase of the voluntary review.

verification provided by the voluntary purchase of the review.[26] Additionally, bond-holders are unable to renegotiate the terms of the loan after its initiation and incur high ex-ante (pre-issue) monitoring costs as they are likely to be reduced by the review. Concurrently, banks have this ability, which renders the review less important in reducing ex-ante monitoring costs.

We test Hypothesis 1 and Hypothesis 2 for public debt – *bond sample*, and private debt – *loan sample*, separately. For the public debt analysis or *bond analysis*, we use a sample of 610 straight bond issuances from 174 non-financial Canadian listed firms in the 2004-2015 period, where 64 bonds pertain to firms with no-review and 546 bonds to firms with audit-review. The bond-level data is collected from SDC Platinum. Furthermore, for the private debt analysis, or *loan analysis*, we use a sample of 389 loan facilities from 135 non-financial Canadian listed firms in the 2005-2015 periods, where 34 facilities are pertaining to firms with no-review and 355 facilities to firms with audit-review.[27] The loan data is obtained from the Dealscan database. Table A2 in the Appendix presents the summary statistics both for the bond and loan analyses.

In the bond analysis, we replace the dependent variable in Equation 1 and 2 with Bond Spread (*BondSpread*), which is the difference of the yield-to-maturity (YTM) between the public bonds and the maturity-matched Canadian government marketable bonds. Similarly, in the loan analysis, we replace the dependent variable with *Spread All-in-Drawn*, as the interest rate on loan facility that a borrower pays in basis points over LIBOR or LIBOR equivalents for each

[26] We also consider an alternative implication of banks' access to private information. Specifically, it is possible that banks directly access the content of the review. While this cannot be inferred through specifications in official documents, we cannot completely rule it out. A series of informal telephone interviews with representatives of Canadian banks and managers of Canadian firms confirmed that in some cases the firms are likely to provide such information for internal use. This claim would increase the relevance of the review for banks, yet it would not change our expectations regarding the impact of the review relative to bond-holders.

[27] Over the period 2004-2015, there are 2,170 loan facilities from 345 Canadian firms available on Dealscan. However, spread all-in-drawn information is only available for 431 loan facilities and 148 firms. Out of 431 loan facilities, we exclude facilities pertaining to firms with missing review, firm characteristics and auditor information (42).

dollar drawn down as provided in DealScan database.[28] Both in bond and loan analyses, in addition to the firm-specific control variables given in Model (1) and (2), we include bond-specific controls (Bond Amount, Bond Maturity, Foreign Currency, and Senior Bond dummy) and loan-specific controls (Loan Amount, Loan Maturity, and Number of Lenders) into the models, respectively.

Table 8, Panel A, Model 1 presents the impact of audit review on bond spread. In Model 1, the coefficient of *Review* is negative and significant (β=-0.009; $p<0.05$), indicating that firms with a voluntary review have a 90-basis-point lower bond spread compared to no-review firms.[29] In Model 2, we show the incremental effect of review on the bond spread in larger firms. The coefficient of *Review x Size* is insignificant, which can be explained by the presence of mainly large borrowers in both samples. Our findings are consistent with the review providing increased monitoring of borrowers, which is rewarded by bond-holders through a lower cost of debt.

Table 8, Panel B documents the impact of the review on private loan-pricing and the incremental effect of review on spread-all-in-drawn in larger firms, respectively. Models 3 and 4 present the regression results of the loan sample, estimated on the unmatched and matched samples, respectively. The coefficients of *Review* and *Review x Size* are insignificant in both estimations.

[Insert Table 8 Here]

To summarize, Table 8 indicates that the effect of the review on the cost of debt is asymmetric between private and public debt market, and voluntary audit review does not bring

[28] Kim et al. (2011a) and Bharath et al. (2008) indicate that spread all-in-drawn on a loan facility captures the lenders' perceived level of risk on a specific loan in all aspects and a more comprehensive measure to capture the loan pricing.

[29] We also use the S&P's issue rating as the proxy of the cost of public debt financing (untabulated results). The voluntary review is significantly associated with better credit ratings.

any reduction on the cost of syndicated loans. We contend that this is due to banks have alternative channels to access the borrower's private information, which lowers their reliance on publicly available information.

Robustness Test

Endogenous Switching Model

As an additional robustness test, following Minnis (2011), we use an endogenous switching model to address the endogenous nature of the decision to purchase audit review by controlling for potential bias due to *unobserved* firm characteristics. To estimate the predicted spread using endogenous switching model, we identify *Dec_FYEnd* as an exogenous instrument, which is directly associated with firms' choice of audit review and but not directed related to the cost of debt. First, auditors will be extremely busy in auditing annual reports when their clients' fiscal year ends are mostly clustered in December, leading to constraints in the supply of audit work. In turn, this results in lower levels of audit quality (López and Peters 2012). To deal with this issue, auditors may shift some procedures earlier to interim periods and encourage clients to use their idle capacity during less busy seasons (Hay et al., 2006; López and Peters, 2012). Since interim reviews are conducted during less busy seasons, we posit that firms with regular fiscal year-end in December are positively associated with the likelihood of interim review.[30] Table 4 shows that the audit review is positively and significantly related to *Dec_FYEnd*, which is in line with our expectation. Second, the choice of firms' fiscal year-end is mainly determined by

[30] Interim reviews are voluntary and not costless. That said, interim reviews can be beneficial to firms with regular fiscal year-end in December. Since the audit quality of their annual reports may be threatened by the supply constraint of the auditor's worktime in busy season, clients may find the quality of interim reports more important in that case.

country-level legislation and industry-level seasonality, which is not directly related to firm's cost of debt (Kamp, 2002).

Following Power (2007), we used a two-stage Heckman procedure. In the first stage, we use the audit choice model presented in Table 4 (Model (3)) including the exogenous instrument *Dec_FYEnd*. In the second stage, we estimate Model (1) including the inversed Mills ratio from the first stage. To capture the endogenous switching effect, we separately estimate Model (1) for review and no-review firms in the second stage. Table 9, Panel A, presents the determinants of spread in the second-stage estimation. The coefficient estimates are significantly different for review and no-review firms. The coefficients of the inversed Mills ratio are both significant for review and no review firms, which confirms the existence of selection bias.

Next, we predict the spread for each review and no-review firm in our main sample using the coefficients of simultaneous regressions presented in Table 9 Panel A. We do this as per the following equation:

$$ATE = \frac{1}{N}\sum_{i=1}^{N}(X_i \hat{\beta}_1) - \frac{1}{N}\sum_{i=1}^{N}(X_i \hat{\beta}_0) \quad (5)$$

Table 9, Panel B, presents the results of the Average Treatment Effect (ATE) of review on the spread and the Average Treatment Effect on the Treated (ATT), by considering only the firms with a review in the main sample both for unmatched and matched samples.

For the unmatched sample, predicted average spread of all firms in case of review and no-review differs from each other significantly ($p<0.01$). If all firms purchase a review in their financial reports, the average spread is relatively lower than in the absence of a review. On average, in our unmatched sample, the review causes a decline of 0.14 percent in the spread. If

we consider the impact of such a switch only on review firms, ATT is 0.16 percent difference in the spread if firms switch their status to no-review.

For our matched sample, the average spread-all-in-drawn will decrease by 0.23 percent between the review and no-review forms. Similarly, if we consider the impact only on review firms, ATT is 0.24 percent different in the spread. In summary, the results of our endogenous switching model approach confirm the predictions of our main test.

[Insert Table 9 Here]

VIII. CONCLUSION

In this study, we examine the impact of voluntary interim reviews on firms' cost of debt by drawing on 8,088 firm-year observations from 1,686 public firms in Canada over the 2004-2015 period. Our results suggest that review firms have a lower cost of debt relative to no-review firms, which is mostly driven by public debts. We also find that this effect is stronger for big firms relative to small firms. We compare the benefit of the review, which is proxied by the decrease of the cost of debt, and the cost of the review, which is proxied by the incremental audit fees, and confirm that the net benefit of the review is positive. While the net benefit of the review is manifested in large firms rather than small firms, our findings support Bédard and Courteau (2015), which argue that the benefit of voluntary interim review may not cover the cost for small firms.

We extend extant literature by being the first to document that the voluntary purchase of a review is associated with debt market benefits for public firms. Relative to previous literature that mostly highlights that the review is associated with additional costs for firms, we focus on

the benefits associated with its voluntary purchase. Our findings are consistent with the review being relevant for debt holders, as it provides a signal of borrower quality which is associated with a lower cost of debt (that outlays the additional costs of the review, in terms of audit fees). Our findings have strong policy implications and contribute to the debate on the appropriateness of making the audit review mandatory (Crawford Committee 2003; Auditing and Assurance Standards Board of Canada (AASBC) 2014). Critics of the mandatory review highlight the paucity of empirical evidence regarding the benefits of the review, especially for small firms. Our findings confirm the existence of debt market benefits, especially for large firms. In line with the regulators' expectations, small firms are likely to incur higher costs of purchasing the review, without benefitting from additional assurance (OSC 2002; Crawford Committee 2003).

Finally, we refer to the potential limitations and avenues for future research that our study entails. As the external monitoring from auditors mitigates the information asymmetry between banks and borrowers (Watts and Zimmerman 1983; Balsam, Krishnan, and Yang 2003), private information obtained via a review is likely to influence banks' lending decisions. However, Biddle and Hilary (2006) and Beatty, Liao, and Weber (2010) state that the quality of accounting information might not be a relevant factor for lending decisions if the lenders have alternative ways of reducing agency costs. Future research could, therefore, examine if the association between the purchase of a review and the cost of debt persists in the presence of additional agency costs reducing channels. Furthermore, this study does not consider the effect of the outcome of the review, as we cannot access the details of the review. Future research could thus examine if the output of the review has a significant effect on banks' lending decisions, particularly on the cost of debt.

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Table 1
Variable Definition

Interest Rate Spread *(Spread)*	The difference between the firm's interest rate and the weighted average annual benchmark rate for the year t. The interest rate of year t is measured as the interest expenses in year t scaled by the average of total short-term and long-term debt at the beginning and the end of t. To construct the weighted average benchmark interest rate, we select four Canadian government marketable bonds with various maturities: one year, three years, five years, and ten years, and calculate each annual bond yield based on monthly observations. Then we determine the weight of each benchmark accounting for firms' debt maturity structure. The weight of the one-year benchmark equals to the percentage of the short-term debts scaled by total debts. The weight of the three-year benchmark equals to the percentage of the debts which are due between one and three years scaled by total debts. The weight of the five-year benchmark equals to the percentage of the debts which are due between three and five years scaled by the total debts. Finally, the weight of the ten-year benchmark equals to the percentage of debts which are due after five years, scaled by the total debts.
Audit Review *(Review)*	An indicator variable that equals 1 if a firm's interim reports were reviewed in year t-1.
Firm Size *(Size)*	The natural log of Total Assets in year t-1.
Return on Asset *(ROA)*	Net income divided by total assets in year t-1.
Tangibility *(TANG)*	Net property, plant, and equipment divided by total assets in year t-1.
Current Ratio *(CR)*	Current assets divided by current liabilities in year t-1.
Leverage *(LEV)*	Total liabilities divided by total assets in year t-1.
Market-to-Book ratio *(MB)*	A firm's market value divided by its book value in year t-1.
Negative Equity *(NegE)*	An indicator variable that equals 1 if total year-end liabilities are greater than total year-end assets in year t-1; 0 otherwise.
Investment grade *(INVEST)*	An indicator variable that equals 1 if a firm's Standard & Poor's or Predicted credit rating is at investment grade (i.e., BBB- or higher).[31]
Cross Listed	An indicator variable that equals 1 if a firm is cross listed.
Bond Dummy	An indicator variable that equals 1 if a firm has issued a new bond for year t.
Loan Dummy	An indicator variable that equals 1 if a firm has a new loan for year t.
Big 4 Auditor (*Big4*)	An indicator variable that equals 1 if a firm is audited by big 4 auditors.
Regular Fiscal Year End (*Dec_FYEnd*)	An indicator variable that equals 1 if a firm's fiscal year end is in December.

[31] Following Florou and Kosi (2015) and (Barth et al. 1998), we estimate the following equation in each year. Rating = $ß_0$ + $ß_1$ Total Assets+ $ß_2$ Return on Assets+ $ß_3$ (long term Debt/Total Assets) + $ß_4$ (1 if a firm paid dividends in the current year) + ε. Based on the Predicted coefficients, a rating is generated for all firms to capture an Standard & Poor's credit rating equivalent on a scale of 2–27 (AAA to D).

Table 2
Sample Description

	Full Sample (N=8,088)				Audit Review (N=5,024)		No Audit Review (N=3,064)		Univariate test (t-test statistics to test mean difference) Ha: A ≠ B		
Variable	Mean	Std. Dev.	Min	Max	(A) Mean	Std. Dev.	(B) Mean	Std. Dev.	(A – B) Difference		s.e
Interest Rate Spread *(Spread)*	0.070	0.060	0.008	0.202	0.063	0.055	0.081	0.066	-0.019	***	0.001
Audit Review *(Review)*	0.621	0.485	0.000	1.000							
Firm Size *(Size)*	4.803	2.138	1.202	8.084	5.469	2.026	3.710	1.848	1.760	***	0.044
Return on Asset *(ROA)*	-0.090	0.266	-0.774	0.131	-0.044	0.230	-0.164	0.302	0.120	***	0.006
Tangibility *(TANG)*	0.462	0.309	0.032	0.899	0.483	0.301	0.426	0.318	0.058	***	0.007
Current Ratio *(CR)*	1.723	1.264	0.250	4.361	1.718	1.220	1.731	1.333	-0.012		0.030
Leverage *(LEV)*	0.142	0.148	0.000	0.426	0.160	0.149	0.112	0.142	0.048	***	0.003
Market-to-Book ratio *(MB)*	1.721	1.442	0.000	4.667	1.812	1.384	1.572	1.519	0.240	***	0.034
Negative Equity *(NegE)*	0.094	0.292	0.000	1.000	0.066	0.248	0.140	0.347	-0.074	***	0.007
Investment grade *(INVEST)*	0.393	0.488	0.000	1.000	0.445	0.497	0.306	0.461	0.139	***	0.011
Cross Listed	0.282	0.450	0.000	1.000	0.316	0.465	0.227	0.419	0.088	***	0.010
Bond Dummy	0.038	0.190	0.000	1.000	0.056	0.229	0.008	0.088	0.048	***	0.004
Loan Dummy	0.123	0.328	0.000	1.000	0.173	0.378	0.040	0.196	0.133	***	0.006

This table presents the summary statistics for the full sample, review sample and no-review sample. The mean difference test is conducted between the review and no-review firms for each variable. All variables are described in Table 1. ***, **, and * denote the significant level of 1%, 5%, and 10%.

Table 3
Correlation Matrix

Variable		1	2	3	4	5	6	7	8	9	10	11	12
Spread	1	1.000											
Audit Review *(Review)*	2	-0.150	1.000										
Firm Size *(Size)*	3	-0.334	0.399	1.000									
Return on Asset *(ROA)*	4	-0.350	0.219	0.650	1.000								
Tangibility *(TANG)*	5	-0.067	0.090	0.193	0.121	1.000							
Current Ratio *(CR)*	6	0.032	-0.005	0.021	0.088	-0.215	1.000						
Leverage *(LEV)*	7	-0.113	0.157	0.340	0.150	0.006	-0.122	1.000					
Market-to-Book ratio *(MB)*	8	-0.033	0.081	0.066	0.051	-0.074	0.173	-0.001	1.000				
Negative Equity *(NegE)*	9	0.187	-0.123	-0.393	-0.493	-0.204	-0.261	0.106	-0.384	1.000			
Investment grade *(INVEST)*	10	-0.226	0.138	0.423	0.307	-0.077	-0.025	0.159	0.087	-0.116	1.000		
Cross Listed	11	-0.130	0.095	0.310	0.188	0.016	0.025	0.111	0.039	-0.059	0.203	1.000	
Bond Dummy	12	-0.090	0.122	0.270	0.113	0.078	-0.037	0.183	0.060	-0.050	0.161	0.166	1.000
Loan Dummy	13	-0.170	0.197	0.435	0.206	0.117	-0.094	0.228	0.047	-0.106	0.266	0.192	0.229

This table presents the Pearson correlation matrix. All variables are described in Table 1.

TABLE 4
Selection of the Matched Sample

Panel A: Logit Analysis of the Choice of Purchasing Interim Review

$$Review = \alpha + \beta_1 Dec\_FYEnd + \beta_2 Big4 + \beta_3 Size + \beta_4 ROA + \beta_5 TANG + \beta_6 CR + \beta_7 LEV + \beta_8 MB + \beta_9 NegE + \beta_{10} INVEST + \beta_{11} Cross\ Listed + \beta_{12} Bond\ Dummy + \beta_{13} Loan\ Dummy + Accounting\ Standard,\ Industry\ and\ Year\ dummies + \varepsilon$$

Dependent Variable: Review	Coef.	s.e.
Dec_FYEnd	0.165***	(0.059)
Big-4 auditor *(Big4)*	0.262***	(0.071)
Firm Size *(Size)*	0.454***	(0.022)
Return on Asset *(ROA)*	-0.477***	(0.139)
Tangibility *(TANG)*	0.226*	(0.118)
Current Ratio *(CR)*	0.002	(0.023)
Leverage *(LEV)*	0.187	(0.202)
Market-to-Book ratio *(MB)*	0.106***	(0.021)
Negative Equity *(NegE)*	0.520***	(0.121)
Investment grade *(INVEST)*	-0.025	(0.063)
Cross Listed	-0.153**	(0.064)
Bond Dummy	0.505**	(0.229)
Loan Dummy	0.405***	(0.114)
Constant	-1.770***	(0.325)
Accounting Standard dummies	Yes	
Industry dummies	Yes	
Year dummies	Yes	
Pseudo R2	0.1705	
LR chi2 (p-value)	1829.75 (0.000)	
Observations	8,088	

Panel B: Descriptive Statistics for the Matched Sample

Determinants of Review	(A) Audit Review	(B) No-Audit Review	%bias	Univariate test (Mean difference) Ha: A ≠ B	p>t
Dec_FYEnd	0.670	0.663	1.50	0.50	0.62
Big-4 auditor *(Big4)*	0.747	0.747	0.10	0.03	0.97
Firm Size *(Size)*	4.164	4.208	-2.30	-0.82	0.41
Return on Asset *(ROA)*	-0.119	-0.115	-1.30	-0.41	0.68
Tangibility *(TANG)*	0.428	0.431	-0.80	-0.29	0.77
Current Ratio *(CR)*	1.759	1.785	-2.00	-0.67	0.50
Leverage *(LEV)*	0.123	0.122	0.60	0.20	0.84
Market-to-Book ratio *(MB)*	1.644	1.671	-1.90	-0.64	0.53
Negative Equity *(NegE)*	0.110	0.100	3.20	1.06	0.29
Investment grade *(INVEST)*	0.331	0.330	0.30	0.09	0.93
Cross listed	0.237	0.233	0.90	0.31	0.76
Bond Dummy	0.004	0.010	-3.20	-2.34	0.02
Loan Dummy	0.043	0.053	-3.50	-1.66	0.10
Observations	4,608				

This table presents the coefficients of the audit-choice model (Panel A) and the univariate tests post-matching (Panel B). All variables are described in Table 1. ***, **, and * denote the significant level of 1%, 5%, and 10%.

TABLE 5

Main Results (H1 and H2) – *Matched Sample*

Dependent Variable: Spread	H1	H2	Small Firms	Medium Firms	Big Firms
	Model 1	Model 2	Model 3	Model 4	Model 5
Audit Review *(Review)*	**-0.003*** **	**-0.004** **	0.000	**-0.003***	**-0.007*** **
	(0.001)	**(0.001)**	(0.002)	**(0.001)**	**(0.002)**
Firm Size *(Size)*	-0.002*	-0.000	0.001	-0.000	-0.004
	(0.001)	(0.001)	(0.002)	(0.003)	(0.004)
Review x Size		**-0.002** **			
		(0.001)			
Return on Asset *(ROA)*	-0.047***	-0.047***	-0.045***	-0.067***	-0.099***
	(0.005)	(0.005)	(0.005)	(0.008)	(0.019)
Tangibility *(TANG)*	0.001	0.001	-0.005	0.005	-0.004
	(0.006)	(0.006)	(0.006)	(0.009)	(0.012)
Current Ratio *(CR)*	0.000	0.000	-0.002	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)
Leverage *(LEV)*	-0.000	-0.000	0.041***	-0.029*	-0.047*
	(0.008)	(0.008)	(0.012)	(0.013)	(0.021)
Market-to-Book ratio *(MB)*	0.000	0.001	0.002	0.000	-0.000
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Negative Equity *(NegE)*	0.002	0.003	-0.003	0.005	0.043***
	(0.007)	(0.007)	(0.006)	(0.008)	(0.007)
Investment grade *(INVEST)*	-0.015***	-0.015***	-0.014**	-0.008**	-0.012**
	(0.002)	(0.002)	(0.005)	(0.002)	(0.003)
Cross listed	-0.004	-0.004	-0.005	-0.009	0.008**
	(0.002)	(0.002)	(0.005)	(0.005)	(0.003)
Bond Dummy	0.000	-0.000	0.046***	-0.014	0.002
	(0.004)	(0.004)	(0.013)	(0.015)	(0.004)
Loan Dummy	-0.011***	-0.011***	-0.040*	-0.003	-0.008**
	(0.003)	(0.003)	(0.018)	(0.004)	(0.002)
Constant	0.093***	0.072***	0.102***	0.030	0.075*
	(0.016)	(0.012)	(0.018)	(0.036)	(0.036)
F-test (*Review + Review x Size ≠ 0*)	-	7.65	-	-	-
Prob > F		(0.018)			
Accounting Standard dummies	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes

Year dummies	Yes	Yes	Yes	Yes	Yes
Observations	4,608	4,608	1,818	2,001	789
R-squared	0.164	0.166	0.119	0.181	0.253

This table presents the impact of audit review on the cost of debt and the incremental impact of audit review for larger firms. Estimation 1 and 2 are used to test Hypothesis 1 and 2. Estimation 3 to 5 present the impact of the audit review on cost of debt for small, medium and large firms, respectively. We construct three tercile portfolios based on the firm's total assets every year, which controls for the inflation bias across time. Robust standard errors clustered by auditors are presented in parentheses. All variables are described in Table 1. ***, **, and * denote the significant level of 1%, 5%, and 10%.

TABLE 6

The Impact of Review Switching on Cost of Debt: Difference-in-Difference Test

Dependent Variable: Spread	Panel A: Positive Switchers			Panel B: Negative Switchers		
	Model 1 (t-1, t+1)	Model 2 (t-2, t+2)	Model 3 Whole Period	Model 4 (t-1, t+1)	Model 5 (t-2, t+2)	Model 6 Whole Period
Switch	0.003	-0.000	0.000	0.005	0.004	0.006
	(0.005)	(0.004)	(0.005)	(0.015)	(0.011)	(0.011)
Post	0.016**	0.014*	0.013	-0.009	-0.004	-0.004
	(0.005)	(0.007)	(0.008)	(0.006)	(0.005)	(0.005)
Switch x Post	**-0.013****	**-0.009***	**-0.008***	**0.016***	**0.014***	0.006
	(0.004)	**(0.004)**	**(0.004)**	**(0.007)**	**(0.007)**	(0.008)
Firm Size *(Size)*	-0.006*	-0.005	-0.004*	0.005	0.003	-0.000
	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)
Return on Asset *(ROA)*	-0.049***	-0.053***	-0.066***	-0.067**	-0.075***	-0.051***
	(0.012)	(0.011)	(0.007)	(0.022)	(0.020)	(0.014)
Tangibility *(TANG)*	-0.015	-0.014	-0.007	0.025	0.016	0.012
	(0.017)	(0.017)	(0.016)	(0.029)	(0.019)	(0.010)
Current Ratio *(CR)*	-0.001	-0.001	0.003	0.008***	0.009***	0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Leverage *(LEV)*	0.053**	0.044***	0.029**	-0.001	0.009	0.025
	(0.023)	(0.010)	(0.010)	(0.006)	(0.016)	(0.015)
Market-to-Book ratio *(MB)*	0.000	0.001	-0.001	0.007*	0.004	0.002
	(0.002)	(0.002)	(0.001)	(0.004)	(0.002)	(0.003)
Negative Equity *(NegE)*	-0.038***	-0.027**	-0.021**	0.045**	0.035*	0.024
	(0.007)	(0.010)	(0.007)	(0.018)	(0.019)	(0.015)
Investment grade *(INVEST)*	-0.013***	-0.016***	-0.011***	-0.023***	-0.021***	-0.018***
	(0.004)	(0.004)	(0.002)	(0.005)	(0.004)	(0.002)
Cross listed	0.008	0.006	0.001	-0.012**	-0.016***	-0.010**
	(0.007)	(0.006)	(0.005)	(0.005)	(0.004)	(0.003)
Bond Dummy	0.015	0.007	0.007	0.013	0.003	-0.002
	(0.009)	(0.005)	(0.005)	(0.024)	(0.014)	(0.006)
Loan Dummy	-0.010	-0.012	-0.006	-0.003	-0.003	-0.001
	(0.009)	(0.010)	(0.004)	(0.009)	(0.006)	(0.007)
Constant	0.058**	0.070*	0.073*	-0.036	-0.020	-0.002
	(0.024)	(0.033)	(0.033)	(0.043)	(0.032)	(0.020)
Accounting Standard dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	439	628	1040	420	603	1012
R-squared	0.181	0.184	0.223	0.257	0.273	0.253

This table presents the difference-in-difference results for firms which have switched from the status of no-review to review (positive switcher) in Panel A, and firms which have withdrawn the review during our sample period (negative switchers) in Panel B. We follow Francis et al. (2016) to match each switcher with a controlling firm within the year of switch i.e. our PSM is running annually without replacement. Controlling firms are selected from those which have not switched during our sample period. Finally, we identify 82 matched pairs of positive switchers and 68 matched pairs of negative switchers. A difference-in-difference test is then conducted to examine whether the change of the cost of debt due to switching is further different between switchers and non-switchers. *Switch* is an indicator variable that equals 1 if a firm has voluntary switched its interim review status from non-review to review (review to non-review) in positive (negative) switch sample in year t-1 and 0 otherwise. *Post* is a dummy variable that equals 1 for all years after the switch of the firm's interim review status from non-review to review (review to non-review) in positive (negative) switch sample and 0 otherwise. All other variables are described in Table 1. Robust standard errors clustered by auditors are presented in parentheses. ***, **, and * denote the significant level of 1%, 5%, and 10%.

TABLE 7

Difference-in-Difference Tests of the Characteristics of the Switchers

Panel A: Positive Switchers			
Dependent Variable:	*CFO*	*Abs(ABN_ACC)*	*Audit Fee*
Positive Switcher_Pre (1)	0.031	0.148***	11.622***
	(0.020)	(0.011)	(0.122）
Positive Switcher_Post (2)	0.082***	0.111***	12.802***
	(0.010)	(0.007)	(0.084)
Post - Pre_Positive Switcher (3)	0.051***	-0.037***	-1.180***
	(0.019)	(0.013)	(0.150)
Control_Pre (4)	0.004	0.132***	11.884***
	(0.017)	(0.009)	(0.119)
Control_Post (5)	0.003	0.134***	12.352***
	(0.014)	(0.007)	(0.105)
Post - Pre_Control (6)	-0.001	0.002	0.469***
	(-0.022)	(0.114)	(0.159)
Difference-in-Difference (3) - (6)	**0.052***	**-0.039****	**0.711*****
	(0.030)	**(0.017)**	**(0.219)**

Panel B: Negative Switchers			
	CFO	*Abs(ABN_ACC)*	*Audit Fee*
Negative Switcher_Pre (1)	-0.055***	0.156***	11.925***
	(0.021)	(0.010)	(0.153)
Negative Switcher_Post (2)	-0.087***	0.153***	11.960***
	(0.015)	(0.007)	(0.112)
Post - Pre_Negative Switcher (3)	-0.032	-0.003	0.035
	(0.025)	(0.012)	(0.186)
Control_Pre (4)	0.032**	0.121***	11.935***
	(0.014)	(0.008)	(0.161)
Control_Post (5)	0.018	0.134***	12.035***
	(-.013)	(0.007)	(0.010)
Post - Pre_Control (6)	-0.014	0.013	0.100
	(-0.750)	(0.011)	(0.176)
Difference-in-Difference (3) - (6)	-0.018	-0.016	-0.065
	(.019)	(0.016)	(-0.260)

This table presents the average value of firm characteristics. *CFO* is the operating cashflow scaled by total assets, which follows Caton et al. (2011); *Abs(ABN_ACC)* is a proxy to capture earnings management. Following Dechow and Dichew (2002) and Peek, Meuwissen, Moers, and Vanstraelen (2013), we estimate abnormal accruals by regressing working capital accruals on current cash flow, previous year's cash flow, and next year's cash flow for each country, industry, and year group, and *Audit fee* is the natural log of firm total audit fees paid for year t. Within our sample there are 82 firms which have started purchasing external audit review throughout the sample period (positive switchers), and 68 firms which have withdrawn their external audit reviews (negative switchers). Following Francis et al. (2016) we conduct a propensity score matching to select 82 controlling firms from the non-reviewers and 68 controlling firms from the reviewers. We then present difference-in-difference tests based on the switchers and their controlling firms. ***, **, and * denote the significant level of 1%, 5%, and 10%.

TABLE 8

Subsample Tests for Public Bonds and Syndicated Loans

Dependent Variable:	Panel A: Bond Analysis *BondSpread*		Panel B: Loan Analysis *Spread-All-in-Drawn*	
	Model 1	Model 2	Model 3	Model 4
Audit Review *(Review)*	**-0.009****	-0.004	-0.004	0.161
	(0.003)	(0.005)	(0.243)	(0.124)
Firm Size *(Size)*	-0.003	-0.007	-0.205**	-0.410**
	(0.002)	(0.004)	(0.067)	(0.118)
Review x Size		0.004		0.235
		(0.004)		(0.156)
Bond Amount *(BondAMT)*	-0.003*	-0.003*		
	(0.001)	(0.001)		
Bond Maturity *(Maturity)*	0.003**	0.003**		
	(0.001)	(0.001)		
Foreign Currency *(DForCurr)*	0.006***	0.006***		
	(0.001)	(0.001)		
Senior Bond (*SENIORITY*)	0.001	0.001		
	(0.003)	(0.003)		
Loan Amount *(LoanAMT)*			-0.120	-0.135
			(0.095)	(0.092)
Loan Maturity *(Maturity)*			0.076	0.080
			(0.056)	(0.055)
Number of Lenders *(NLender)*			-0.138***	-0.151***
			(0.034)	(0.036)
Return on Asset *(ROA)*	-0.085**	-0.086***	-0.096	-0.091
	(0.028)	(0.026)	(0.063)	(0.061)
Tangibility *(TANG)*	0.004	0.005	-0.127	-0.111
	(0.006)	(0.006)	(0.110)	(0.110)
Current Ratio *(CR)*	0.002	0.002	-0.013	-0.006
	(0.002)	(0.002)	(0.063)	(0.061)
Leverage *(LEV)*	0.025***	0.026***	0.101*	0.104*
	(0.004)	(0.004)	(0.044)	(0.046)
Market-to-Book ratio *(MB)*	-0.001*	-0.001*	0.049	0.046
	(0.001)	(0.001)	(0.066)	(0.064)
Negative Equity *(NegE)*	0.002	0.002	-0.032	-0.032
	(0.008)	(0.009)	(0.055)	(0.048)
Investment Grade (*INVEST*)	-0.013***	-0.014***	-0.247***	-0.248***
	(0.002)	(0.002)	(0.032)	(0.036)
Cross listed	-0.003	-0.003	0.073	0.076
	(0.002)	(0.002)	(0.186)	(0.186)
Constant	0.043***	0.070**	1.248*	0.020
	(0.004)	(0.029)	(0.614)	(0.206)
Accounting Standard dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Observations	610	610	389	389
Adj R^2 (Pseudo R^2)	0.608	0.610	0.529	0.532

This table presents the relation between the cost of public bonds (syndicate loans) and the external audit review on quarterly financial statements. Models 1 and 3 test H1, while the rest of the estimations test H2. Specifically, Models 1 and 2 employ the whole bond sample (N = 610) in which the dependent variable is *BondSpread*, measured as the difference of the yield-to-maturity (YTM) between the public bonds and the maturity-matched Canadian government marketable bonds. In Panel A, we use additional bond-specific controls; *BondAMT, t*he log of the proceeds of a public bond; *BondMaturity*, the log of bond maturity measured in months; *DForCurr*, an indicator variable that equals 1 if the public bond is not quoted in Canadian or U.S. dollar, and *BondSeniority*, an indicator variable that equals 1 if the public bond is senior. In Panel B, Models (3 and 4 employ the whole loan sample (N = 389) in which the dependent variable is *Spread All-in-Drawn*, measured as the interest rate on loan contracting that a borrower pays in basis points over LIBOR or LIBOR equivalents for each dollar drawn down as provided in DealScan database. In Panel B, we use additional loan-specific controls; *LoanAMT*, the log of the amount of a loan facility; *Maturity*, the log of maturity measured in months, and *Nlender*, the total number of lenders in each loan facility. All other variables are described in Table 1. Robust standard errors clustered by auditors are presented in parentheses. ***, **, and * denote the significant level of 1%, 5%, and 10%.

TABLE 9

Endogenous Switching Model

Panel A: Determinants of the Spread				
Dependent Variable: Spread	(A) Audit Review=1	(B) Audit Review=0	Difference (B - A)	Ha: A ≠ B
Firm Size *(Size)*	-0.009***	0.015**	0.024	***
	(0.002)	(0.005)		
Return on Asset *(ROA)*	-0.041***	-0.055***	-0.014	
	(0.006)	(0.007)		
Tangibility *(TANG)*	-0.009*	0.021**	0.030	***
	(0.005)	(0.009)		
Current Ratio *(CR)*	0.002	0.001	-0.001	
	(0.001)	(0.001)		
Leverage *(LEV)*	-0.006	0.002	0.008	
	(0.010)	(0.007)		
Market-to-Book ratio *(MB)*	-0.000	0.005**	0.005	***
	(0.001)	(0.002)		
Negative Equity *(NegE)*	0.005	0.025**	0.020	**
	(0.011)	(0.010)		
Investment grade *(INVEST)*	-0.010***	-0.017***	-0.007	*
	(0.001)	(0.001)		
Cross listed	0.003	-0.011***	-0.014	***
	(0.003)	(0.003)		
Bond Dummy	-0.004**	0.023***	0.027	***
	(0.001)	(0.006)		
Loan Dummy	-0.009***	0.006	0.015	**
	(0.001)	(0.011)		
Inverse_Mills	-0.039**	0.094**	0.133	
	(0.013)	(0.031)		
Constant	0.103***	0.248***	0.145	
	(0.021)	(0.041)		
Accounting Standard dummies	Yes	Yes		
Industry dummies	Yes	Yes		
Year Dummies	Yes	Yes		
Observations	5,024	3,064		
R-squared	0.215	0.144		

This table presents the results of the Endogenous Switching Model. Following Power (2007), we used a two-stage Heckman procedure. In the first stage, we use the audit choice model presented in Table 4 (Equation (3) including the exogenous instrument *Dec_FYEnd*. In the second stage, we estimate Equation (1) including the inversed Mills ratio (*Inverse_Mills*) from the first stage. To capture the endogenous switching effects, we separately estimate Model (1) for review and no-review firms in the second stage. Panel A presents the determinants of spread in the second-stage estimation. All other variables are described in Table 1. Robust standard errors clustered by auditors are presented in parentheses. ***, **, and * denote the significant level of 1%, 5%, and 10%.

TABLE 9 (continued)

Panel B: Endogenous Switching Model - Average Treatment Effect (ATE) and Average Treatment Effect on the Treated (ATT)

	Predicted Average Spread for both audit review and no-audit review firms in case of Audit Review $\frac{1}{N}\sum_{i=1}^{N} X_i \hat{\beta}_1$	Predicted Average Spread for both audit review and no-audit review firms in case of no Audit Review $\frac{1}{N}\sum_{i=1}^{N} X_i \hat{\beta}_0$	

Main Sample – ***Unmatched Sample***

	(A) Audit Review	(B) No Audit Review	Univariate test (t-test statistics to test mean difference) $H_0 = A - B = 0$	
ATE (N=8,088)	6.93%	7.07%	**-0.14%**	***
ATT (N=5,027)	6.27%	6.43%	**-0.16%**	***

Main Sample – ***Matched Sample***

	(A) Audit Review	(B) No Audit Review	Univariate test (t-test statistics to test mean difference) $H_0 = A - B = 0$	
ATE (N=4,608)	7.52%	7.75%	**-0.23%**	***
ATT (N=2,304)	7.54%	7.78%	**-0.24%**	***

Panel B presents mean comparison tests (i) Average Treatment Effect (ATE) and (ii) Average Treatment Effect on the Treated (ATT) for the unmatched and matched sample separately. Predicted Average Spread is calculated for each review and no-review firm in our main sample using the coefficients of simultaneous regressions presented in Panel A. ***, **, and * denote the significant level of 1%, 5%, and 10%.

APPENDIX

TABLE A1

Audit Fee Analysis – *Matched Sample*

Dependent Variable: Audit fee	Model 1	Model 2
Audit Review *(Review)*	**0.109*** **	**0.128*** **
	(0.021)	**(0.028)**
Firm Size *(Size)*	0.525***	0.508***
	(0.015)	(0.016)
Review x Size		0.032
		(0.028)
Return on Asset *(ROA)*	-0.275**	-0.276**
	(0.090)	(0.089)
Tangibility *(TANG)*	-0.386***	-0.381***
	(0.109)	(0.114)
Current Ratio *(CR)*	-0.040**	-0.040**
	(0.013)	(0.013)
Leverage *(LEV)*	0.344	0.341
	(0.221)	(0.216)
Market-to-Book ratio *(MB)*	0.018	0.018
	(0.014)	(0.014)
Negative Equity *(NegE)*	0.006	0.003
	(0.104)	(0.105)
Investment grade *(INVEST)*	-0.005	-0.002
	(0.066)	(0.066)
Cross listed	0.153**	0.156**
	(0.052)	(0.053)
Bond Dummy	0.192	0.187*
	(0.107)	(0.101)
Loan Dummy	0.080	0.081
	(0.084)	(0.082)
Constant	10.280***	13.052***
	(0.214)	(0.196)
Accounting Standard dummies	Yes	Yes
Industry dummies	Yes	Yes
Year dummies	Yes	Yes
Observations	1,876	1,876
R-squared	0.734	0.734

This table presents the impact of audit review on the audit fees and the incremental impact of audit review for larger firms. *Audit fee* is the natural log of firm total audit fees paid for year t. All other variables are described in Table 1. Robust standard errors clustered by auditors are presented in parentheses. ***, **, and * denote the significant level of 1%, 5%, and 10%.

TABLE A2

Summary Statistics for Bond and Loan Samples

Panel A: Bond Sample specific variables

	Full Sample (N=610)				Audit Review (N=546)		No Audit Review (N=64)		Univariate test (t-test statistics to test mean difference) $H_0 = A - B = 0$		
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Mean	Std. Dev.	Difference		s.e
Bond Spread (*BondSpread*)	0.028	0.021	-0.006	0.137	0.025	0.019	0.049	0.028	**-0.024**	***	0.004
Bond Amount ($ Million)	618	582	10	4,011	632	575	487	641	**145**		85
Bond Maturity (Years)	11.645	8.887	1	50	12.059	9.151	7.607	3.864	**4.451**	***	0.648
Foreign Currency (*DForCurr*)	0.249	0.433	0	1	0.24	0.427	0.339	0.478	-0.099		0.066
SeniorBond (*SENIORBOND*)	0.49	0.5	0	1	0.452	0.499	0.656	0.426	**-0.204**	***	0.061
S&P Issue Rating (*SPISSUE*)	BBB-	-	CCC+	AAA	BBB-	-	B+	-	**4.000**	***	-

Panel B: Loan Sample specific variables

	Full Sample (N=390)				Audit Review (N=355)		No Audit Review (N=34)		Univariate test (t-test statistics to test mean difference) $H_0 = A - B = 0$		
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Mean	Std. Dev.	Difference		s.e
Spread-All-In-Drawn (basis points)	209.247	108.522	70.000	400.000	204.673	106.233	261.103	119.182	**-56.430**	***	21.202
Loan Amount ($ Million)	683	885	8,2	3,370	737	909	132	132	**605**	***	53
Loan Maturity (Months)	43.715	19.754	5.000	84.000	42.876	19.902	52.500	15.877	**-9.672**	***	2.920
Number of Lenders	7.697	4.659	1.000	21.000	8.017	4.715	4.324	2.114	**3.693**	***	0.440

This table presents the summary statistics for the bond sample and loan sample together with the mean difference test between the no-review and review firms. *BondSpread* is the difference of the yield-to-maturity (YTM) between the public bonds and the maturity-matched Canadian government marketable bonds. In Panel A, we present additional bond-specific controls; *BondAMT*, the log of the proceeds of a public bond; *BondMaturity*, the log of bond maturity measured in months; *DForCurr*, an indicator variable that equals 1 if the public bond is not quoted in Canadian or U.S. dollar, and *BondSeniority*, an indicator variable that equals 1 if the public bond is senior. In Panel B, Models (3) and (4) employ the whole loan sample (N = 389) in which the dependent variable is *Spread All-in-Drawn*, measured as the interest rate on loan contracting that a borrower pays in basis points over LIBOR or LIBOR equivalents for each dollar drawn down as provided in DealScan database. In Panel B, we use additional loan-specific controls; *LoanAMT*, the log of the amount of a loan facility; *Maturity*, the log of maturity measured in months, and *Nlender*, the total number of lenders in each loan facility. ***, **, and * denote the significant level of 1%, 5%, and 10%.