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EFFECT OF BOOK-TAX CONFORMITY ON AUDIT QUALITY: EVIDENCE FROM CANADA

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Abstract *This paper investigates the effect of Book-Tax Conformity (BTC) on audit quality regarding the proxies of audit fees, auditors' industry specialization, and audit report lag. Using a sample of Canadian firms listed on Toronto Stock Exchange spanning the years 2006–2016, we applied a panel data analysis to test hypotheses of this research. The authors find that a higher BTC leads to lower audit fees. They also provide evidence that there is a negative association between BTC and auditors' industry specialization, whereas there is a positive association between BTC and audit report lag. Overall, the findings are prominent to better understanding the effect of BTC on audit quality and are relevant for academic researchers, practitioners, and regulators. This paper contributes to the auditing literature through introducing a different determinant of auditors' industry specialization and audit report lag, highlighting the Canadian setting, to our best knowledge. In addition, the best of our knowledge, this is the first study to investigate the relationship between the BTC and audit quality in Canadian firms.*

Keywords: *Audit Fees, Auditors' Industry Specialization, Audit Report Lag, Book-Tax Conformity*

INTRODUCTION

This paper examines the effect of Book-Tax Conformity (BTC) on audit quality in Canadian firms. We explore if audit quality measured by audit fees, auditors' industry specialization, and audit report lag is better when BTC gets higher. Among policymakers, there is a continuous debate in the literature about two sets of income measures, precisely, book income and tax income, which should conform to one common measure. (Hanlon & Shevlin 2005) (Desai, 2003) (Plesko, 2002) (Mills et al., 2002) show that in the United States, there is more attention and more analysis in the growing divergence between book and taxable incomes. This expanding divergence raises concerns about tax reporting or misleading financial because it signals that firms may increasingly understate tax liability or overstate book income. A way to mitigate these concerns is to increase the required conformity between book and taxable income measures, because BTC increases the cost for firms to simultaneously manage book income upward and taxable income downward (Yin, 2001) (Desai, 2005). Moreover, book income has to be conformed to taxable income in order to guarantee the credibility and the regularity of the financial situation of the company presented to the diverse parts. This conformity can have potential benefits as well as potential costs toward the company. According to proponents (Desai, 2003), (Desai, 2005), (Whitaker, 2005), and (Shaviro, 2009), BTC constitutes an incentive not to manage earnings opportunistically. Indeed, any manipulation in increasing benefits would be counter balanced by higher taxes, whereas investors would disapprove reducing benefits in order to avoid taxes. Thus, increased BTC allows tax authorities to control more reported incomes and thus allows stakeholders to observe tax payments, making the overall economic performance of the companies more transparent and enhancing earnings' quality. Opponents argue that the most notable cost associated with high BTC is information loss in accounting earnings that depend on how conformity between book and tax incomes is accomplished (Ali & Hwang, 2000), (Hanlon & Shevlin, 2005), (Plesko, 2006), (Shackelford, 2006), (Hanlon et al., 2008). Furthermore, (Atwood et al., 2010) finds that earnings have lower persistence and association with future cash flows when conformity is higher. Their evidence suggests that increased BTC may reduce earnings' quality.

We test the association between conformity and audit quality using three separate proxies for audit quality from the prior literature: timelier audit fees, auditors' industry specialization, and audit report lag. Specifically, we expect a negative association between BTC and audit fees as well

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as with audit report lag, since an increased conformity can facilitate audit task by requiring firms to report truthfully and in accordance with generally accepted accounting principles (GAAP). On the other hand, we also expect a negative association between BTC with auditors' industry specialization. In fact, research showed that auditor industry specialization results in improving earnings and audit quality followed with a reduction in opportunistic behavior of earnings' management, thus a higher BTC.

To test our expectations, we follow (Atwood et al., 2010) to measure BTC with the amount of variation in current tax expense that cannot be explained by the variation in pretax earnings.

Our study uses Canadian data since a conceptual framework that favors the interests of investors' marks accounting system of Canada. The accounting values of flexibility and professionalism prevail as in any Anglo-American accounting culture (Gray, 1988). Accounting is independent of tax and the financial market plays a major role in the financing of the economy (Othman & Zéghal, 2006). Moreover, the Canadian market is characterized by a strong presence and credibility, which allows us to insure a certain homogeneity of our sample. Moreover, (Haverals, 2007; Karampinis & Hevas, 2013) indicate that the International Financial Reporting Standards (IFRS) increased effective tax rates and reduced BTC.

This study contributes to the literature by broadening the scope of the conformity debate to provide evidence on an increase in an important, but overlooked audit report lag.

By doing so, we present evidence that although previous researches suggest that BTC will lead to an information loss ((Ali & Hwang, 2000); (Hanlon & Shevlin, 2005); (Hanlon et al., 2008); (Atwood et al., 2010)), the researches connected to the potential advantages of a high BTC are abundant. Therefore, we suggest examining the association between BTC and audit quality to test whether a higher BTC is associated with a better audit quality.

Second, our study is motivated by several characteristics of the Canadian regulatory environment that provide a less litigious legal environment and independence between book and tax systems; the latter plays an important economic role in the world. However, to our knowledge, this work is the first to document the effect of BTC on audit quality in a Canadian context, which may be useful for investors, analysts, tax authorities, auditors, and others in Canada as well as in international scale.

Finally, this study contributes to the auditing literature by introducing a new determinant of auditors' industry specialization and audit report lag since the association between audit fees and BTC has been addressed in previous studies ((Kuo & Lee, 2016); (Bakarich & Kerr, 2016)).

Overall, we provide evidence on the effect that BTC has on the audit function of the firm and provide additional insights into the BTC debate by providing evidence from audit quality, especially the audit fees and auditor industry specialization.

The remainder of the study is organized as follows. Section 2 presents an overview of the relevant literature and develops our initial hypothesis. Section 3 contains details regarding the data sample and the methodological approach. Section 4 discusses the results of all tests and Section 5 concludes.

PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

This study builds upon the prior findings of two unique streams of literature, specifically the BTC and audit quality literatures. The BTC literature investigates the potential effects of conforming taxable income with book income, while the audit literature investigates the determinants and consequences of audit quality.

Among academics and policymakers, there is a long-standing debate about the desirability of conforming book income to taxable income. The debate began in earnest in the late 1990s and early 2000s, when there was considerable growth in the gap between pre-tax book income that firms reported to shareholders and taxable income that firms reported to the Internal Revenue Service (IRS). (Hanlon & Shevlin, 2005) note that the ratio of pre-tax income to taxable income (calculated by the Treasury Department from confidential tax return data) increased from around 1.25 in the early 1990s to over 1.8 in the late 1990s. The reasons for this divergence are not fully known, but some policy makers and academics speculated that the increase in the book-tax gap was largely the result of two forces (Blaylock et al., 2017). First, a greater proportion of manager pay in the late 1990s was equity-based (stock and stock options) and managers responded by managing earnings upward, presumably to increase stock price (Desai, 2003) (Yin, 2003) (Hanlon & Shevlin, 2005). Second, a proliferation of tax shelters reduced taxable income, often with no corresponding decrease in book income ((Wilson, 2009); (Lisowsky, 2010)).

Within the BTC literature, opponents of conformity focus on the potential loss of value-relevant information. For example, (Hanlon & Shevlin, 2005) present evidence for a US-only sample that firm-level changes in taxable income contain value-relevant information incremental to firm-level changes in book income. Additionally, (Hanlon & Shevlin,

2005) say that since taxable income contains value-relevant information, conforming book and tax will result in a loss of the incremental information contained in tax. Even though, the supposition is that as BTC increases, the value relevance of taxes decreases until the point of perfect BTC when taxable income no longer contains any information. In another research, (Hanlon et al., 2008) use a sample of US firms that were required, for tax purposes, to change from the cash method of accounting to the accrual method. They find that firms that experienced this increase in BTC also experienced a decrease in earnings informativeness compared to a sample of control firms. Finally, (Guenther et al., 1997), using the US sample, finds that the increased conformity resulted in an increase in the trade-off between financial reporting and tax objectives.

The role of auditing is essential in the flow of quality information to the market participants (Varma & Patel, 2012). However, regarding audit quality literature, auditing is a systematic process to objectively collect and evaluate evidence about the allegations of economic activities and events. To that extent, auditing determines the degree of conformity of these statements with reporting the results to the beneficiaries. Although many factors affect the audit quality services, few studies have been showed to create a framework for describing the quality of the audit services. (Catanach Jr & Walker, 1999) presented a model in which audit quality depends on to two factors related to the audit function. The first concerning the auditor ability containing knowledge, experience, and technical efficiency. The second factor about professional performance including objectivity, independence, conflict of interests, professional care, and judgment. Additionally, this model include the impact of economic, market structures, and legislative mechanisms and employment status. From the auditors' point of view, audit quality was affected by the auditor's ability and economic incentives. Also, the size of the auditing firm is one of the factors which affects audit quality (Mendiratta, 2019; Hassas Yeganeh & Azinfar, 2010). De Angelo trusts that larger audit firms provide higher-quality audit services because they are interested in gaining a better reputation in the market and are not concerned about losing their auditors as their number is high (Dang, 2004). The level of expertise of an audit firm in a particular industry is also one of the determinants of audit quality (Rani, 2018).

BTC and Audit Fees

(Le, 2018) reveals that audit fees are the equilibrium outcome of the contracting process between the clients and the audit firms. Additionally, higher audit fees can be interpreted as the compensation for the auditor's higher level of efforts and resources in auditing a client. Otherwise, higher fees can be interpreted as a premium for hiring auditors with higher expertise. Consequently, higher audit fees should reflect greater audit quality inputs and then translate into greater audit quality output, since high level of auditor's effort and competence increases the likelihood of detecting material misstatements.

BTC may affect the fees that firms pay to their auditors for audit and tax-related services. In general, audit fees are more likely to reflect the auditor's effort, as the audit market is tightly regulated and opportunities to earn rents are limited (Srinidhi & Gul, 2007). Therefore, high audit fees are expected to represent more efforts in the audit process and higher audit quality.

(Kuo & Lee, 2016) wanted to jointly test whether increased BTC reduces audit effort as well as audit risk and whether auditors charge lower fees accordingly. They expect that increased BTC can reduce audit fees by simplifying tax accruals and increasing tax authority monitoring. Their study was spread over the period between 1996 and 2012 using a panel of 136,209 firm–year observations across 34 countries. They find that increased BTC is associated with lower deferred tax expenses and with a lower likelihood of financial restatements, which suggest that increased BTC can reduce audit effort and audit risk, respectively. Overall, their results suggest that one benefit of increasing BTC is the reduction in audit fees.

Similarly, (Bakarich & Kerr, 2016) focused on compliance costs and BTC, specifically the effect of tax compliance on audit fees and audit quality. According to an international sample of firms covering the period from 1993 to 2011, they find that higher conformity is associated with higher fees paid for auditor-provided tax services. In addition, they show an increase of tax services and a higher audit quality.

(Blaylock et al., 2015) and (Watrin et al., 2014) find that higher BTC is associated with more earnings' management. Their finding suggests a positive relation between BTC and audit fees, since clients' earnings' management results in concerns for auditors, for which auditors may conduct more work and charge higher fees in compensation.

In contrast, (Tang, 2015) and (Sundvik, 2017) supports that higher conformity is associated with less earnings' management. This implies that the slightest manipulation makes the task of audit less complex and more simplified. Thus, their findings suggests a negative association between audit fees and BTC.

In sum, increased BTC can reduce auditing burden and audit risk to auditors through the intervention of the tax authority that controls tax system. Therefore, this rigorous oversight prevents the managerial manipulation of financial reporting. For these reasons, we expect that higher BTC will lead to

lower audit fees. We thus develop our first hypothesis, as follows:

H1: BTC is negatively associated with audit fees.

BTC and Auditors' Industry Specialization

Industry specialists are expected to provide higher audit quality because they have greater knowledge of industry business and accounting practices than nonspecialists (Dopuch & Simunic, 1982). In fact, (Solomon et al., 1999) define industry specialists as auditors whose training and experience are largely concentrated in a particular sector that enables audit firms to improve the efficiency and quality of auditing. They show that industry specialist auditors have more accurate non-error frequency knowledge than non-industry specialists. Moreover, (Sun & Liu, 2011) reveal that industry specialist auditors are auditors who have gained great training and experience concentrated in a specific industry. Similarly, industry specialists can more effectively detect seeded errors in staff work papers during the audit review process (Owhoso et al., 2002a). (Low, 2004) finds that auditors' industry specialization improves their audit risk assessments. Furthermore, specialists working in their industry develop more complete problem representations about the seeded misstatement when they receive partial- or full-cue patterns than when they receive no-cue patterns. However, mismatched specialists are not able to develop more complete problem representations even when they receive full-cue patterns (Hammersley, 2006). Regarding behavioral auditing, these researches suggest that auditor industry specialization can enhance the effectiveness of auditors' work because of their greater industry-specific knowledge. The focus on industrial specialization is motivated by the fact that auditors' industry are likely to have an impact on corporate BTC.

(Owhoso et al., 2002b) suggest that auditors' industry specialization are more likely to detect errors, suggesting that auditors play an important role in improving audit quality. Subsequently, (Balsam et al., 2003) find that clients of industry specialist auditors have lower absolute level of discretionary accruals and higher earnings response coefficients than clients of nonspecialist auditors, assuming that auditors' industrial specialization improves earnings' quality. Moreover, (Krishnan, 2003) finds that clients of industry specialist auditors have lower levels of discretionary accruals, suggesting that industry specialization could mitigate the use of accrual-based earnings' management. (Zhou & Elder, 2004) examine the relationship between audit quality and earnings' management for firms making seasoned equity offerings (SEOs). They find that industry specialization, as a measure of audit quality, constrains earnings' management. Indeed, auditors' industry specialization is more skilled and experienced in the cognition and comprehension of industry accounting practices. In this way, they will be able to reduce earnings' management behavior by improving earnings and audit quality, which could result in a higher BTC.

(Romanus et al., 2008) examine the impact of auditors' industry specialization on a sample of restatement and non-restatement firms and find that auditors' industry specialization is negatively associated with the likelihood of accounting restatement. Besides, changing from a nonspecialist to a specialist auditor increases the likelihood of restatement and vice versa. Their findings are consistent with industry specialization enhancing auditors' role in improving the quality of the financial reporting process. These results suggest that auditors' industry specialization are the most likely to provide better quality of financial reports since they have more expertise and knowledge of financial, accounting, and tax practices. Therefore, less restatements reduce the gap between tax and accounting laws.

(Reichelt & Wang, 2010) provide consistent evidence that audit quality is higher when the auditor is both a national and city-specific industry specialist, suggesting that auditors' national positive network synergies and the individual auditors' deep industry knowledge at the office level are jointly important factors in delivering higher audit quality .

Recently, (Hegazy et al., 2015) have conducted an experiment in an audit firm with international affiliation in Egypt to examine the relation between industry specialization and earnings' quality, financial reporting quality, and audit quality. The research posits that industry specialization constrains earnings' management but there is no significant difference between industry specialist auditors and nonspecialists. Moreover, they have found that financial reporting quality was significantly higher when specialists conducted the audit. They have shown a positive relationship between industry specialization and financial reporting quality. In fact, specialist auditors have stricter rules and more aggressive practices to avoid inaccuracies and to detect fraud or erroneous transactions.

Based on these previous studies, it can be concluded that auditors industry specialization who have better skills and professional experience could avoid any risk of fraud or misleading operation. They can also improve earnings and audit quality while reducing opportunistic behavior of earnings' management and the probability of restatements. Therefore, we expect that increased BTC is due to more

auditors' industry specialization. We develop the following hypothesis:

H2: BTC is negatively associated with auditors' industry specialization.

BTC and Audit Report Lag

Audit report lag or audit delay is the length of time between the fiscal year end date and the audit report date. So, audit report date remains the date that auditors have finalized and completed their audit report, and the Public Compagny Accounting Oversight Board (PCAOB) needs that the auditors should date their report no earlier than the date on which they have obtained sufficient appropriate evidence to support their opinions (PCAOB, 1972). Hence, the audit report lag is roughly the length of the audit engagement and longer lag can be interpreted as more labor hours the auditor spends in the audit engagement. For example, longer lag can be due to the auditors devoting time to more thorough examination of client's systems of internal controls (Le 2018). Moreover, Lee et al. (2007) studying the audit expectation gap in Malaysia found that the users of financial statements expects that the auditor's report, as well as the duties and responsibilities of auditors were higher than what public expect from them. There is, likewise, less of the execution by the auditors in Malaysia (Shah, 2017).

The above discussion evinces that auditors' industry specialization leds to a decrease in restatement of financial reports and reduction in earnings' management, which results in a better audit quality and a higher BTC. These various reasons can lead to changes within the audit report lag, which is defined according to (Bamber et al., 1993) as the number of days between the client's fiscal year-end and the audit report date.

Indeed, (Habib & Bhuiyan, 2011) and (Rusmin et al., 2017) studied the association between auditors' industry specialization and audit report lag. They found that specialist auditors are able to realizing their audit more quickly than their counterpart nonspecialists, because of their significant industrial knowledge and ability to get acquainted quickly with the industries of the clients. Indeed, audit report contains the opinion of the auditor about the credibility of financial statements, the investors prefer generally shorter audit delays, because the sooner they receive audit opinion early, the better they adjust their preferences of investment. Thus, we expect that increased BTC will lead to shorter audit report lag. Hence, we develop the following hypothesis:

H3: BTC is negatively associated with audit report lag.

DATA AND METHODOLOGY

Measure of BTC

Our paper depends heavily on a reliable proxy for BTC. However, prior research (e.g., (Hung, 2000)) measuring BTC typically follows an indicator variable approach based on subjective assessments of each country's BTC. Unfortunately, such a dichotomous indicator is oversimplified and its interpretation is likely to be confounded by the effects of other country-level institutions (Atwood et al., 2010).

To avoid this problem, we track (Atwood et al., 2010) to measure BTC based on the proportion of current tax expense that cannot be explained by pre-tax book income. Similar to the reasoning in (Blaylock et al., 2015), we use (Atwood et al., 2010) measure as it allow us to make more reliable tests of the association between the conformity of accounting income with taxable income and audit quality.

We measure BTC with the conditional variance of current tax expense in Eq. (1):

$$Current\ Tax\ Expense = \boldsymbol{\alpha}_1 Pre\text{-}tax\text{-}Book\ Income + \boldsymbol{\alpha}_2 Foreign\ Pre\text{-}tax\text{-}Book\ Income + \boldsymbol{\alpha}_3 Dividend + \varepsilon \quad \text{Eq. (1)}$$

Where

- CTE is current tax expense, including both domestic and foreign current tax expenses, PTBI is pre-tax book income;
- For PTBI is the estimated foreign pre-tax book income (foreign tax expense/total tax expense * PTBI);
- DIV is total dividends and
- **ε** is the disturbance term.

We scale CTE, PTBI, For PTBI, and DIV by total assets.

We use the above regression and calculate the root mean squared errors (RMSEs) for each year. The RMSE provides an indication of the overall amount of discretion that managers have to report different book income and taxable income. A higher RMSE corresponds to lower BTC and vice versa.

Empirical Specification

To investigate the effect of BTC on audit quality, the following panel data model is used:

$$\text{Audit Quality} = \alpha_0 + \alpha_1\ \text{BTC} + \boldsymbol{\alpha}_2\ \text{CROSS} + \alpha_3\ \text{LOSS} + \boldsymbol{\alpha}_4\ \text{INVREC} + \alpha_5\ \text{ROA} + \alpha_6\ \text{LEV} + \alpha_7\ \text{BIG4} + \text{Industry fixed effects} + \text{Year fixed effects} + \boldsymbol{\varepsilon}$$

Where all variables are defined in Table 1. Audit Quality is measured by three proxies. First, audit fees (AUD_FEES) is calculated which is the natural log of audit fees. Second, auditors' industry specialization (IND_SPEC) is calculated which is calculated using the auditor's within indusrty market share based on total assets as follows:

$$\text{MARKET SHARE}_{ki} = \frac{\sum_{j=1}^{J} S_{kij}}{\sum_{i=1}^{I}\sum_{j=1}^{J} S_{kij}}$$

where MARKET SHARE_{ki} is the market share of auditor i in industry k; Skij represents the total assets of client firm j in industry k audited by auditor I; J represents the number of clients that are served by audit firm i in industry k; and I is the number of audit firms in industry k (MINUTTI-MEZA 2013). When an auditor market share is greater than 15% in a two-digit SIC code industry, the audit firm is classified as an industry specialist (Zhou & Elder, 2004).

Finally, the third measure of audit quality is AUD_LAG which is the natural logarithm of the days from the fiscal year-end to the date of the audit report.

BTC represents the level of BTC estimated from Eq. (1).

We include a cross-listing indicator variable (CROSS) that equals one when a firm is cross-listed in a foreign country and a loss indicator variable (LOSS) that equals one when a firm reports a net loss. We include the sum of inventories and receivables scaled by total assets (INVREC) to proxy for client complexity (Simunic 1980) and firm profitability (ROA) to proxy for client financial distress, where ROA is operating income before depreciation divided by total assets. To capture client-specific litigation risk borne by auditors, we include leverage (LEV) measured as total liabilities over total assets and to capture the fee premiums for using big accounting firms, we include an indicator variable (BIG 4) that equals one when a firm uses one of the BIG 4 (PwC, KPMG, EY et Deloitte) auditors and 0 otherwise. Fixed effects represent industry and year fixed effects.

Our main test variable is BTC. The coefficient of BTC (α_1) captures the impact of BTC on audit quality. Hypothesis H1 predicts a negative coefficient for BTC because it can reduce audit quality measured by audit fees. Hypothesis H2 predicts, also, a negative coefficient for BTC because it provide a high audit quality measured by auditors' industry specialization. Hypothesis H3 predicts a negative coefficient for BTC because it can reduce the number of days of audit report.

Table 1: Variable Definitions and Sources

Variable	Measure	Definition	Source
Dependent Variables			
Audit Quality	AUD_FEES	The natural logarithm of audit fees.	Annual Reports Annual Information Form
	IND_SPEC	A dummy variable equal to one if the audit firm is classified as an industry specialist i.e. when an auditor market share is greater than 15% in a 2-digit SIC code industry, and 0 otherwise.	Annual Reports Datastream (2017)
	AUD_LAG	The natural logarithm of the number of calendar days from fiscal year-end to the auditor signature date.	Annual Reports Annual Information Form
Independent Variables			
Book-Tax Conformity	BTC	Book-Tax Conformity as measured in (Atwood et al., 2010)	Datastream (2017)
Control Variables			
	CROSS	An indicator variable that equals one when the company is cross-listed on a U.S. stock exchange and zero otherwise.	Datastream (2017)
	LOSS	A dummy variable that equals one if the firm incurred a loss in the current year and zero otherwise.	Datastream (2017)
	INVREC	The sum of receivables and inventories scaled by total assets.	Datastream (2017)
	ROA	The return on assets.	Datastream (2017)
	LEV	The ratio of year-end total liabilities to total assets.	Datastream (2017)
	BIG 4	A binary variable equal to one if the firm is audited by a Big 4 auditor (PwC, KPMG, EY and Deloitte) and 0 otherwise.	Annual Reports Annual Information Form
	Industry effects	A vector of dummy variables indicating industry sector membership and based on the two-digit US Standard Industry Classification (SIC).	Datastream (2017)
	Year effects	A vector of dummy variables that reflect the 2006-2016 period.	Datastream (2017)

Sample Selection

All required financial information and audit quality data were collected from the Datastream 2017 database and from the annual reports. Our initial sample involves of 251 firms for all Canadian firms listed on Toronto Stock Exchange following the indication (index) S*P/TSX. Indeed, the choice of this context is motivated by the fact that the Canadian market is characterized by a strong presence and credibility, which allows us to cover a certain homogeneity of our sample. Our sampling period begins in 2006 and ends in 2016. In particular, the financial statements of these institutional firms are prepared according to common set standards because Canada converged to the IFRS since 2006 and it was in 2011 when it announced the mandatory adoption. Therefore, this transition to the IFRS, which was studied on the long term, allows us to examine a country of economic power mattering in the world.

We have deleted 57 firms from our sample firms in the financial sector (SIC 6000-6999) since they are governed by accounting regulations that are very specific and quite different from those applicable to the nonfinancial industry. This practice is also justified by the fact that the restriction to nonfinancial corporations increases the homogeneity of the sample and improves the robustness of the results. We also delete three firms which have missing data. Our final sample consists of 191 Canadian firms. The number of firm-year observations is shown in Table 2.

In order to test our hypothesis, the financial information for the study period was collected from the Datastream (2017) database. Data relating to audit fees, auditors' industry specializations, and audit report lag were collected by hand from the annual company information sheets available at www.sedar.com.

Table 2: Sample Selection Process

S&P/TSX's publicly traded firms	251
Less: Financial institutions	57
Less: Firms with missing data	3
Total sample	
Period of study	11
Total observations	2101

EMPIRICAL RESULTS

Descriptive Statistics

Table 3 provides descriptive statistics of the sample. The average of audit fees (AUD_FEES) is 13.651 and the median is 13.697. We note that there is a significant difference for audit fees paid to auditors, which indicates that Canadian auditors are providing different audit services. BIG 4 auditors are used by 97.8% of the sample firms and around 69.7% of the firms use industry specialist as auditors (IND_SPEC). The mean and median audit report lag (AUD_LAG) are 4.060 and 4.077 days, respectively. This suggests that Canadian auditors take a short time to complete their audits. The mean and median for BTC (BTC) is 1.357 and 0.639, respectively.

The analysis of control variables shows that leverage (LEV) owns on average 47.2% in the capital of Canadian firms. It reveals that most of Canadian firms have a high level of debt. The level of profitability of Canadian firms (ROA) attains an average rate of 4% of total assets. The analysis presents an average of 24% for businesses report losses (LOSS). The proportion of trade receivables and inventories in total assets (INVREC) varies by up to 80%, with an average of 16%. Finally, 27% of Canadian firms are listed in other countries (CROSS).

Table 3: Descriptive Statistics

Variable	Mean	Q1	Median	Q3	Sd
AUD_FEES	13.651	12.929	13.697	14.528	1.281
IND_SPEC	0.697	0.000	1.000	1.000	0.459
AUD_LAG	4.060	3.912	4.077	4.248	0.284
BTC	1.357	0.106	0.639	0.958	2.118
CROSS	0.267	0.000	0.000	1.000	0.442
LOSS	0.244	0.000	0.000	0.000	0.429
INVREC	0.158	0.043	0.094	0.237	0.151
ROA	0.040	0.012	0.050	0.088	0.124
LEV	0.472	0.322	0.479	0.605	0.236
BIG 4	0.978	1.000	1.000	1.000	0.144

Variable definitions: AUD_FEES is audit fees; IND_SPEC is auditor's industry specialization; AUD_LAG is audit report lag; BTC is Book-Tax Conformity; CROSS is cross listed on a US stock exchange; LOSS when a firm reports a net loss; INVREC is the sum of inventories and receivables scaled by total assets; ROA is return on assets; LEV is leverage and BIG 4 when a firm uses one of the BIG 4 auditors.

Correlation Analysis

Table 4 illustrates the Spearman correlation matrix and variance inflation factor (VIF). This summary statistic is to ensure the absence of the problem of correlation between

variables of models. The results of the Spearman correlation matrix demonstrate a no significant correlation problem. The correlation coefficients between variables are less than (0.7). In addition, the VIF test exposes values below 2 for all variables. This finding suggests the absence of multi-collinearity problem.

Table 4 shows, furthermore, that the majority of reported correlations are statistically significant at the 1% level. Most of control variables are significantly related to BTC. Indeed, leverage (LEV), the level of profitability of firms (ROA), and the sum of inventories and receivables scaled by total assets (INVREC) are positively associated with BTC, while loss indicator variable (LOSS) and when a company uses one of the BIG 4 auditors (BIG 4) are negatively associated with BTC.

Table 4: Correlation Matrix

	BTC	CROSS	LOSS	INVREC	ROA	LEV	BIG 4
BTC	1.0000						
CROSS	0.0000	1.0000					
LOSS	-0.0371*	-0.0357	1.0000				
INVREC	0.0190	-0.0517**	-0.1845***	1.0000			
ROA	0.0502**	0.0183	-0.5920***	0.1154***	1.0000		
LEV	0.0117	-0.0065	-0.1141***	0.2300***	-0.0639***	1.0000	
BIG 4	-0.0052	0.0893***	-0.0535**	-0.1598***	0.0347	0.0486**	1.0000

*, **, *** indicate significant at the p < 0.10; 0.05; 0.01 level.

AUD_FEES is audit fees; IND_SPEC is auditor's industry specialization; AUD_LAG is audit report lag; BTC is Book-Tax Conformity; CROSS is cross listed on a US stock exchange; LOSS when a firm reports a net loss; INVREC is the sum of inventories and receivables scaled by total assets; ROA is return on assets; LEV is leverage and BIG 4 when a firm uses one of the BIG 4 auditors.

Regression Analysis

To determine the appropriate econometric estimation method, we conducted some statistical tests. First, the Hausman specification test is carried out to check whether fixed or random effects model should be used for the panel data. The results show that the fixed effects model is more relevant than the random effects model (p < 1%). Second, tests of the heteroskedasticity and autocorrelation of errors are conducted in order to verify the absence of bias, which may affect the significance of the coefficients. Therefore, the Breusch-Pagan Lagrange multiplier test is applied to detect any possible heteroskedasticity. The results indicate that the structure of the errors among the panels is heteroskedastic (p < 1%). Moreover, the Wooldridge test shows the existence of a first-order autocorrelation of the errors. Hence, we use the feasible generalized least-squares (FGLS) method, which ameliorates heteroskedasticity and autocorrelation problems across panels.

In addition, we winsorize continuous variables to reduce the effect of outliers and include fixed effects for each two-digit Industry Classification Benchmark industry as well as year fixed effects to control for otherwise unobserved factors that could potentially confound the regression results.

We begin our analysis on the effect that required BTC has on audit quality by testing the association between BTC and one of three measure of audit quality: audit fees (AUD_FEES); auditors' industry specialization (IND_SPEC) and audit report lag (AUD_LAG). These tests address hypotheses H1, H2, and H3, and the results can be found in Table 5, Panels A, B, and C, respectively.

As seen in Table 5, BTC is statistically significant at the 1% level and negatively associated with both audit quality measures while also controlling for other factors likely to affect audit quality. The association between BTC and audit fees (AUD_FEES) is especially strong with a coefficient of -0.869 and a two-tailed t-stat of -3.93. Consistent with prior audit fees studies, the R-squared is also very high at 955.22, suggesting our model is doing a good job at explaining the variation in audit fees. Although the association between BTC and auditor's industry specialization (IND_SPEC) is so much attenuated for audit fees, it remains statistically significant and negative with a coefficient of -3.796 and a two-tailed t-stat of -2.16. The R-squared of the prediction model in Panel B is 138.49.

The results confirm our predictions and allow us to accept hypothesis H1 and H2. Our findings thus far have shown that BTC of Canadian listed firms is associated with greater fees. However, the effect that BTC has on audit fees is also important consideration as it can have a broad impact on

investors, government regulatory bodies, analysts, and other market participants who rely on audits (Knechel et al., 2012). Moreover, the results can be explained that Canadian context is characterized by the independence between accounting and taxation (Othman & Zéghal, 2006). This independence makes the audit task more complex and demanding, which will result in higher audit fees. Our result contradicts the results found by (Kuo & Lee, 2016) who found that one of the benefits of increasing BTC is the reduction of audit fees.

The result about auditor's industry specialization implies that BTC of Canadian listed firms leads to a higher demand from industry auditors. Consistent with previous work, our findings support and confirm H2. The results can be explained when accounting and taxation are independent, the company needs more specialist auditors in the industry since they are professionals whose training and experience are largely focused on one industry. The presence of industry auditors is necessary and mandatory for the company.

Overall, the results in Table 5 show that BTC is a significant determinant of audit fees and higher BTC leads to lower audit fees. With respect to the coefficients of the firm-specific control variables, Table 5 indicates that a negative and significant relationship between LOSS and audit fees while a positive and significant relationship between CROSS, LEV, BIG 4, INVREC and audit fees ($\alpha_2 = 1.195$; $\alpha_3 = 1.235$; $\alpha_5 = 0.604$; $\alpha_7 = 0.650$) at the level of 1%. In summary, these findings are consistent with previous audit fees (Simunic, 1980; Kuo & Lee, 2016).

Additionally, BTC is a significant determinant of auditor's industry specialization. Table 5 shows that auditor's industry specialization is positively associated and significant at the level of 1% with only two control variables, mainly, CROSS and BIG 4 while LEV, LOSS, ROA and INVREC are statistically insignificant.

Results regarding the effect of BTC on the audit report lag are reported in Panel C. They show that the coefficient of BTC is positive and insignificant ($\alpha_1 = 0.002$). This leads us to reject hypothesis H3 that BTC of Canadian listed firms is positively associated with audit report lag. This result concludes that increased BTC will lead to longer not shorter audit report lag.

Our findings show that there is a negative relationship between LEV, BIG 4, ROA, and audit report lag at the 1% and 5% levels.

Table 5: Results of Multivariate Analysis

	Panel A AUD_FEES	**Panel B IND_SPEC**	**Panel C AUD_LAG**
CONS	12.369***	-20.241***	4.029***
	(31.09)	(-4.92)	(39.48)
BTC	**-0.869*****	-3.796***	0.002
	(-3.93)	(-2.16)	(0.05)
CROSS	**1.195*****	7.272**	-0.006
	(20.98)	(4.02)	(-0.42)
LEV	**1.235*****	0.607	-0.071**
	(9.76)	(0.56)	(-2.08)
LOSS	**-0.285*****	0.190	0.024
	(-3.88)	(0.29)	(1.26)
BIG 4	**0.604*****	13.365***	-0.160***
	(3.10)	(4.50)	(-3.28)
ROA	-0.141	2.760	-0.221***
	(-0.58)	(1.36)	(-3.17)
INVREC	**0.650*****	-2.784	0.127**
	(2.84)	(-0.87)	(2.19)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
OBS	2101	2101	2101
Prob > chi2	0.000	0.000	0.000
Wald chi2	955.22	138.49	189.70
Hausman test (Chi2)	75.51***	64.47***	21.74***

CONCLUSIONS

Our study is motivated by the current debate over Book-Tax Conformity in the Canadian context. Calls to increase BTC are predicted on the perceived benefits of conforming book and taxable incomes. However, recent academic papers focus on the negative effects conformity would have on accounting information. We draw for this literature and examine the relationship between BTC and audit quality in Canadian firms.

To the best of our knowledge, this is the first study examing, in depth, the Canadian context. In addition,the audit quality is mainly measured via audit fees, auditors' industry specialization and audit report lag.

Our empirical results imply that increased BTC will lead to a reduction in audit fees. Furthermore, we find that BTC is negatively associated with auditors' industry specialization. We also find a positive association between BTC and audit report lag.

Our study tests whether increased BTC will lead to better audit quality in Canadian firms. Therefore, our finding about a positive relation between BTC and audit quality is attributed to confounding interpretation.

Our study has some limitations and can be extended in several ways. Indeed, we only focus on one country, mainly, Canada. Though we believe in order to generalize the validity of our study, others countries could be included. Future research could include other variables involved to audit quality and use others measures for both BTC and audit quality.

REFERENCES

Ali, A., & Hwang, L.-S. (2000). Country-specific factors related to financial reporting and the value relevance of accounting data. *Journal of Accounting Research, 38*(1), 1-21.

Atwood, T., Drake, M. S., & Myers, L. A. (2010). Book-tax conformity, earnings persistence and the association between earnings and future cash flows. *Journal of Accounting and Economics*, *50*(1), 111-125.

Bakarich, K. M., & Kerr, J. N. (2016). *Compliance costs and book-tax conformity: Evidence from audit fees and audit quality.*

Balsam, S., Krishnan, J., & Yang, J. S. (2003). Auditor industry specialization and earnings quality. *Auditing: A Journal of Practice & Theory, 22*(2), 71-97.

Bamber, E. M., Bamber, L. S., & Schoderbek, M. P. (1993). Audit structure and other determinants of audit report lag: An empirical analysis. *Auditing, 12*(1), 1-23.

Blaylock, B., Gaertner, F., & Shevlin, T. (2015). The association between book-tax conformity and earnings management. *Review of Accounting Studies, 20*(1), 141-172.

Blaylock, B., Gaertner, F. B., & Shevli, T. (2017). Book-tax conformity and capital structure. *Review of Accounting Studies, 22*(2), 903-932.

Catanach, Jr. A. H., & Walker, P. L. (1999). The international debate over mandatory auditor rotation: A conceptual research framework. *Journal of International Accounting, Auditing and Taxation, 8*(1), 43-66.

Dang, L. (2004). *Assessing actual audit quality* (PhD Thesis). Drexel University.

Desai, M. A. (2003). The divergence between book income and tax income. *Tax Policy and the Economy, 17,* 169-206.

Desai, M. A. (2005). The degradation of reported corporate profits. *The Journal of Economic Perspectives, 19*(4), 171-192.

Dopuch, N., & Simunic, D. (1982). *Competition in auditing: An assessment*. Paper read at Fourth Symposium on Auditing Research.

Fradeani, A., Regoliosi, C., D'Eri, A., & Campanari, F. (2017). Implementation of mandatory IFRS financial disclosures in a voluntary format: Evidence from the Italian XBRL project. In *Reshaping Accounting and Management Control Systems: New Opportunities from Business Information Systems* (pp. 331-347), edited by K. Corsi, N. G. Castellano, R. Lamboglia and D. Mancini. Cham: Springer International Publishing,

Gray, S. J. (1988). Towards a theory of cultural influence on the development of accounting systems internationally. *Abacus, 24*(1), 1-15.

Guenther, D. A., Maydew, E. L., & Nutter, S. E. (1997). Financial reporting, tax costs, and book-tax conformity. *Journal of Accounting and Economics, 23*(3), 225-248.

Habib, A., & Bhuiyan, M. B. U. (2011). Audit firm industry specialization and the audit report lag. *Journal of International Accounting, Auditing and Taxation, 20*(1), 32-44.

Hammersley, J. S. (2006). Pattern identification and industry-specialist auditors. *The Accounting Review, 81*(2), 309-336.

Hanlon, M., Maydew, E. L., & Shevlin, T. (2008). An unintended consequence of book-tax conformity: A loss of earnings informativeness. *Journal of Accounting and Economics*, *46*(2), 294-311.

Hanlon, M., & Shevlin, T. (2005). Book-tax conformity for corporate income: An introduction to the issues. *Tax Policy and the Economy, 19,* 101-134.

Hassas Yeganeh, Y., & Azinfar, K. (2010). The relationship between audit firm size and audit quality. *Journal of Accounting and Auditing, 1*(61), 85-98.

Haverals, J. (2007). IAS/IFRS in Belgium: Quantitative analysis of the impact on the tax burden of companies. *Journal of International Accounting, Auditing and Taxation, 16*(1), 69-89.

Hegazy, M. A., Al Sabagh, A., & Hamdy, R. (2015). The effect of audit firm specialization on earnings management and quality of audit work. *Journal of Accounting & Organizational Change, 14*(3), 338-362.

Hung, M. (2000). Accounting standards and value relevance of financial statements: An international analysis. *Journal of Accounting and Economics, 30*(3), 401-420.

Jahromi, A. A., Mousavifard, F., Mosallanejad, A., & Ayoubi, A. (2017). Auditors tenure and quality of profit

in automotive and food industries. *Journal of Commerce and Accounting Research*, *6*(3), 29-33.

Karampinis, N. I., & Hevas, D. L. (2013). Effects of IFRS adoption on tax-induced incentives for financial earnings management: Evidence from Greece. *The International Journal of Accounting, 48*(2), 218-247.

Knechel, W. R., Krishnan, G. V., Pevzner, M., Shefchik, L. B., & Velury, U. K. (2012). Audit quality: Insights from the academic literature. *Auditing: A Journal of Practice & Theory, 32*(sp1), 385-421.

Krishnan, G. V. (2003). Does big 6 auditor industry expertise constrain earnings management? *Accounting Horizons, 17*, 1-16.

Kuo, N.-T., & Lee, C.-F. (2016). A potential benefit of increasing book-tax conformity: evidence from the reduction in audit fees. *Review of Accounting Studies, 21*(4), 1287-1326.

Le, T. (2018). Audit quality inputs and financial statement reliability.

Lisowsky, P. (2010). Seeking shelter: Empirically modeling tax shelters using financial statement information. *The Accounting Review, 85*(5), 1693-1720.

Low, K.-Y. (2004). The effects of industry specialization on audit risk assessments and audit-planning decisions. *The Accounting Review, 79*(1), 201-219.

Mendiratta, A. (2019). Abnormal audit fees and audit quality post PCAOB. *Journal of Commerce and Accounting Research*, *8*(3).

Mills, L., Newberry, K., & Trautman, W. (2002). Trends in book-tax income and balance sheet differences.

Minutti-Meza, M. (2013). Does auditor industry specialization improve audit quality? *Journal of Accounting Research, 51*(4), 779-817.

Othman, H. B., & Zéghal, D. (2006). Analyse des déterminants de la gestion des résultats: Cas des firmes canadiennes françaises et tunisiennes. Paper read at Comptabilite, Controle, Audit et Institution (S).

Owhoso, V. E., Messier, J., William, F., Lynch, J., & John, G. (2002a). Error detection by industry-specialized teams during sequential audit review. *Journal of Accounting Research, 40*(3), 883-900.

Owhoso, V. E., Messier, Jr. W. F., & Lynch, Jr. J. G. (2002b). Error detection by industry-specialized teams during sequential audit review. *Journal of Accounting Research, 40*(3), 883-900.

Plesko, G. (2002). Reconciling corporation book and tax net income, tax years 1996-1998. *SOI Bulletin, 21*(4), 1-16.

Plesko, G. (2006). Testimony before the Committee on Finance. US Senate (13 June).

Rani, A. (2018). Audit committee effectiveness: Relationship between audit committee characteristics and audit fees and non-audit service fees. *Journal of Commerce and Accounting Research*, *7*(3), 35-44.

Reichelt, K. J., & Wang, D. (2010). National and office-specific measures of auditor industry expertise and effects on audit quality. *Journal of Accounting Research, 48*(3), 647-686.

Romanus, R. N., Maher, J. J., & Fleming, D. M. (2008). Auditor industry specialization, auditor changes, and accounting restatements. *Accounting Horizons, 22*(4), 389-413.

Rusmin, R., Rusmin, R., Evans, J., & Evans, J. (2017). Audit quality and audit report lag: Case of Indonesian listed companies. *Asian Review of Accounting, 25*(2), 191-210.

Shackelford, D. (2006, May 9). Testimony before the subcommittee on select revenue measures of the house committee on ways and means.

Shah, M. K. (2017). The impact of various responsibilities of the auditors in context of independence and impartiality: A perception of accounting professionals. *Journal of Commerce and Accounting Research*, *6*(4), 10-15.

Shaviro, D. (2009). Internationalization of income measures and the US book-tax relationship. *National Tax Journal, 62*(1), 155-167.

Simunic, D. A. (1980). The pricing of audit services: Theory and evidence. *Journal of Accounting Research, 18*(1), 161-190.

Solomon, I., Shields, M. D., & Whittington, O. R. (1999). What do industry-specialist auditors know? *Journal of Accounting Research, 37*(1), 191-208.

Srinidhi, B., & Gul, F. A. (2007). The differential effects of auditors' non-audit and audit fees on accrual quality. *Contemporary Accounting Research, 24*(2), 595-629.

Sun, J., & Liu, G. (2011). Industry specialist auditors, outsider directors, and financial analysts. *Journal of Accounting and Public Policy, 30*(4), 367-382.

Sundvik, D. (2017). Book-tax conformity and earnings management in response to tax rate cuts. *Journal of International Accounting, Auditing and Taxation, 28,* 31-42.

Tang, T. Y. (2015). Does book-tax conformity deter opportunistic book and tax reporting? An international analysis. *European Accounting Review, 24*(3), 441-469.

Varma, V. S., & Patel, A. (2012). The impact of audit committee appointment and reporting arrangements on audit committees' independence. *Journal of Commerce & Accounting Research*, *1*(3), 51-59.

Watrin, C., Ebert, N., & Thomse, M. (2014). Book-tax conformity and earnings management: Insights from European one-and two-book systems. *The Journal of the American Taxation Association, 36*(2), 55-89.

Whitaker, C. (2005). Bridging the book-tax accounting gap. *The Yale Law Journal*, *115*(1), 680-726.

Wilson, R. J. (2009). An examination of corporate tax shelter participants. *The Accounting Review, 84*(3), 969-999.

Yin, G. K. (2001). Getting serious about corporate tax shelters: Taking a lesson from history. *SMUL Rev., 54*(1), 209-238.

Yin, G. K. (2003). How much tax do large public corporations pay?: Estimating the effective tax rates of the S&P 500. *Virginia Law Review*, 1793-1856.

Zhou, J., & Elder, R. (2004). Audit quality and earnings management by seasoned equity offering firms. *Asia-Pacific Journal of Accounting & Economics, 11*(2), 95-120.