The Incremental Informativeness of Canadian GAAP in the Presence of US GAAP

by

Lawrence Derek McDorman

B.B.A., University of New Brunswick 1984

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE in BUSINESS ADMINISTRATION

in

THE FACULTY OF GRADUATE STUDIES

(Faculty of Commerce and Business Administration)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

August 1996

© Lawrence Derek McDorman, 1996
In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Faculty of Commerce & Business Admin.
Department of

The University of British Columbia
Vancouver, Canada

Date August 23, 1996
Abstract

This study examines the incremental information of Canadian accounting principles when financial information according to US GAAP is known. The impact of SEC-required reconciliations of net income and voluntary disclosures of shareholders' equity reconciliations on share returns and prices are analysed. Based on such analysis, inferences are made about the incremental informativeness of Canadian GAAP.

This study follows the concurrent study by Richardson et al. that examines the question of incremental informativeness of Canadian GAAP given the benchmark information provided by US GAAP. This study offers three contributions to this literature. First, it examines the components of reconciliation data and assesses their impact on share returns and prices. Second, it analyzes the effect of exchange rate fluctuations on the relationship between reconciliation data and share returns. Third, it analyzes the impact of the dominant trading market on the relationship between reconciliation data and share returns.

Unlike Richardson et al., the results of this study suggest that Canadian GAAP offers very limited incremental information when US GAAP financial information is known for Canadian firms that crosslist on the Toronto Stock Exchange and on a US exchange. Convergence of Canadian and US GAAP during the 1993-94 sample period used in this study may partially explain why its results are different from the 1983-93 sample period used by Richardson et al.
Some components of the reconciliation data were statistically significant in explaining crosslisted firms' returns (prices). However, exchange rate fluctuations, location of dominant market and reporting currencies were not statistically significant in explaining crosslisted firms' returns (prices).
# Table of Contents

## 1. Introduction

1.1. Overview of Recent Studies ............................................. 3
1.2. Contribution .......................................................... 6
1.3. Outline ................................................................. 8

## 2. Financial Reporting Requirements ........................................... 9

2.1. U.S. Listing Requirements ............................................... 9
2.2. OSC Policy Issue ...................................................... 11
2.3. Arguments to OSC ..................................................... 12
   2.3.1. Cost Disadvantage Arguments ................................ 13
   2.3.2. Cost of "Coping Mechanism" .................................. 14
   2.3.3. Benefit Analysis ................................................. 14

## 3. GAAP Differences ......................................................... 16

3.1. Unrealized Foreign Exchange Gain or Loss .......................... 16
3.2. Accounting for Extraction Industries ............................... 17
3.3. Deferred Taxes ....................................................... 18
3.4. Non-Pension Post Retirement Benefits ............................. 19
3.5. Other GAAP Differences .............................................. 19

## 4. Literature Review ....................................................... 21

4.1. Amir, Harris and Venuti [1993] ..................................... 21
   4.1.1. Motivation ...................................................... 21
   4.1.2. Sample Selection and Data .................................. 22
   4.1.3. Research Design .............................................. 23
   4.1.4. Results/Conclusions ......................................... 25
4.2. Rees [1995] ............................................................ 25
   4.2.1. Motivation ...................................................... 25
   4.2.2. Sample Selection and Data .................................. 25
   4.2.3. Research Design .............................................. 26
   4.2.4. Results/Conclusions ......................................... 27
   4.3.1. Motivation ...................................................... 28
   4.3.2. Sample Selection and Data .................................. 28
   4.3.3. Research Design .............................................. 29
   4.3.4. Results/Conclusions ......................................... 30
List of Tables

Table 1  Summary of Accounting Differences 64
Table 2  Sample Selection Summary 65
Table 3  Descriptive Statistics 66
Table 4  Correlation Matrix 67
Table 5  Returns Analysis: Exchange Rate Constant 68
Table 6  Returns Analysis: Exchange Rate Included 69
Table 7  Returns Analysis: Reporting Currency 70
Table 8  Returns Analysis: Specific Reconciling Amounts 71
Table 9  Market-to-Book Analysis 72
Acknowledgments

I would like to thank my thesis supervisor, Amin Mawani, for his efforts, patience and helpful suggestions that have made this paper possible. I would also like to thank the other members of my thesis committee, Jacob Nelson, Keith Head and Joy Begley, whose timely comments have added to this paper. Finally, I would like to thank Gordon Richardson who originally suggested the broad outline of this thesis. All remaining errors are mine.

I also gratefully acknowledge the financial and emotional support of Carol Foley, without whom this thesis would not be possible.
1. Introduction

In the wake of the North American Free Trade Agreement (NAFTA), the standard-setters in Canada, Mexico and the United States\(^1\) initiated a study (hereafter FASB [1995]) to examine financial reporting practices in North America. Among other things, this study found that there are 30 areas of the Generally Accepted Accounting Principles (GAAP) that differ between Canada and the US. Such differences can be particularly onerous on Canadian companies that list equities both on a Canadian exchange and a US exchange, since such crosslisting firms are required to provide financial reporting in accordance with Canadian as well as US GAAP.

FASB [1995] documents that differences in accounting standards can increase costs for affected companies. In addition, the credibility of the financial reporting process can be questioned when the differences are large. Owen [1994] refers to Mark Walsh of Imperial Oil Ltd., who stated that for Imperial Oil Ltd., Canadian-US GAAP differences were costly and wasteful. Walsh also indicated that the differences struck at the credibility of the Canadian accounting profession.

The percentage of the total traded value of the Canadian crosslisting firms occurring on a US exchange increased from 41.2\% in 1989 to 50.7\% in 1994.\(^2\) During this period, the

\(^1\) The organizations are: Canada, Canadian Institute of Chartered Accountants; Mexico, Instituto Mexicano de Contadores Publicos, A.C.; US, Financial Accounting Standards Board of the United States.

number of Canadian equity issues on a US exchange increased from 148 to 172.\(^3\) This reflects a growing trend among Canadian firms to access the US capital markets to satisfy their capital needs. This trend continued in 1995 as 45 more Canadian companies listed equities in the US capital markets (Siklos [1996]).

The issues described by FASB [1995] resulting from dual reporting are faced by an increasing number of Canadian crosslisting firms. To date, most studies have targeted the US Securities and Exchange Commission (SEC) about the usefulness of the dual reporting. A corresponding policy issue for the Ontario Securities Commission (OSC) is whether the users of financial information published by Canadian crosslisting firms find the differences in Canadian and US GAAP informative. By examining the association of the net income and shareholders’ equity differences with stock returns (prices), this study addresses whether Canadian GAAP is incrementally informative to US GAAP for Canadian investors.

By examining the SEC-required reconciliations of net income from Canadian GAAP to US GAAP,\(^4\) researchers may make inferences about the incremental informativeness of the reconciliation data. Informativeness of the reconciliation data could potentially imply informativeness of Canadian GAAP. A significant association between the accounting reconciliation data and Canadian stock returns or prices would imply that Canadian GAAP

\(^3\) Ibid.

\(^4\) This also applies to shareholders' equity reconciliations. These reconciliations are not required by the SEC but a number of Canadian companies volunteer this information.
offers information incremental to that provided by US GAAP. Testing for association between annual GAAP information and annual returns does pose a "wide window" problem. The inability to control for all other disclosures during the course of the year precludes establishing a causal link between reconciliation data and returns. If Canadian GAAP can be shown to have additional information to US GAAP, then Canadian accounting principles may be inferred to be incrementally informative for the Canadian investor. This implies that Canadian investors derive benefit from Canadian GAAP to assist in the determination of stock prices.

1.1. Overview of Recent Studies

Financial statements prepared according to US GAAP have been used as the benchmark for numerous studies that compare accounting principles of different countries. Researchers have attempted to determine if the SEC-required reconciliation from foreign accounting principles to US GAAP is used by US capital markets in determining share prices.\(^5\) The main purpose of this line of research has been to provide evidence to the SEC on the usefulness of the required reconciliations to US investors.\(^6\)

Several recent studies have examined the association between the data found in foreign-to-US GAAP reconciliations and returns (prices). Most studies have used US GAAP as the

---

\(^5\) While most studies have concentrated on US share prices, some studies have attempted to determine the effect on domestic prices.

\(^6\) Because of the perceived similarities, Canadian GAAP to US GAAP reconciliations has not been a topic of considerable research.
benchmark. Amir, Harris and Venuti [1993] (hereafter AHV) studied such an association for firms from twenty countries over a ten-year period. They specifically excluded Canadian firms from the study due to the perceived similarities of the accounting standards between Canada and the US. Bandyopadhyay, Hanna and Richardson [1994] (hereafter BHR) studied only Canada versus US reconciliations from 1983 to 1989. Barth and Clinch [1996] (hereafter BC) examined U.K., Australian and Canadian to US accounting standards reconciliations from 1985 to 1991. Rees [1995] first combined firms from all countries into a single analysis and then partitioned out Canadian firms. Section 3 of this study provides a more detailed review of these studies.

In a concurrent study that uses Canadian GAAP as the benchmark, Richardson et al. [1996]\(^7\) examines the incremental informativeness of Canadian GAAP in the presence of US GAAP. The authors use stock returns association analysis and market-to-book analysis for the period 1983 to 1993 to establish the relationship between the accounting reconciliation data and stock returns (prices). Additionally, the authors do a comparison analysis in an effort to determine the “better” GAAP for Canadian firms that provide such reconciliations.

AHV, Rees, and BC show that there is a significant association between the total foreign-to-US GAAP reconciliations and stock returns in the US market. In addition, AHV and BC provide evidence that there is a significant association between returns and specific

---

\(^7\) Professor Gordon Richardson provided some preliminary results of his work-in-progress; however, the study has not yet reached the working paper stage.
reconciling items. In particular, these studies show that goodwill adjustment and asset revaluation adjustments are incrementally informative in the sense that they are significantly associated with returns (prices).

From the US GAAP benchmark, the results of the Canadian-to-US GAAP reconciliations are mixed. BHR concludes that there is no significant association between the accounting reconciliation data and returns. This conclusion held for the total reconciling amount as well as for specific reconciling items. In contrast, BC found that the total reconciling amount and the interest capitalization adjustment did have a significant association with returns. Using a random walk expectations model, Rees found a statistically significant association between the unexpected amount of the reconciliations and returns. The results of BC and Rees suggest that US GAAP provides information incremental to Canadian GAAP for the US investor.

From the Canadian GAAP benchmark, tests of incremental informativeness of Canadian GAAP given US GAAP show that Canadian GAAP does offer incremental information. Richardson et al. show that for the 1983 to 1993 period, Canadian GAAP is incrementally informative to the US GAAP for the Canadian investor. Richardson et al. also report that Canadian GAAP appears to be the better GAAP for Canadian firms reporting a US-to-Canadian GAAP reconciliation.
1.2. Contribution

In order to examine whether Canadian GAAP provides incremental information to Canadian investors, this study uses Canadian GAAP as the benchmark for the analyses. This approach is similar to Richardson et al. AHV, Rees, BC, and BHR use US GAAP as the benchmark. The motivation for those studies has been to show whether the SEC required reconciliations were incrementally informative to the US securities markets.

Richardson et al. only examine the total reconciling amounts. This study extends the Richardson et al. study by examining specific reconciling items between Canadian and US GAAP. AHV, BC, and BHR also use specific reconciling item analysis in order to determine if specific accounting standards are driving the results found for the total reconciling amount. This study follows AHV, BC, and BHR in the use of specific item analysis in order to determine if there is a particular accounting standard that contributes to the informativeness of the reconciliation data.

Another contribution of this study is to examine the effect that exchange rate differences have on the association between accounting reconciliation data and Canadian stock returns or prices. Rees examined exchange rate differences as they affected US stock returns. I am unaware of any study in this area that has examined the effect of exchange rate differences on Canadian stock returns.

---

8 This refers only to the determination of net income and shareholders' equity. Differences in Canadian-to-US GAAP related to cash flow statements, presentation or the calculation of per share amounts are beyond the scope of this study as such differences do not have any impact on earnings or book value.
In their concurrent study, Richardson et al. [1996] examine the 1983-93 period to establish an association between Canadian equity market data (returns or prices) and accounting reconciliation data. This study examines the same association for the 1993-94 period. Canadian GAAP has been evolving closer to US accounting principles since the beginning of Richardson et al.'s time period. Analysis over a more current period may better reflect the impact of the current expectations of Canadian investors concerning the informativeness of Canadian GAAP, given a knowledge of US GAAP financial information.

In addition to a returns association analysis, this study also uses an approach developed by Ohlson [1995], Feltham and Ohlson [1995] (hereafter FO) and AHV that relates value to accounting information. This approach examines the association between market price and shareholders' equity reconciliations (market-to-book analysis). AHV observe that a market-to-book analysis examines whether net income or shareholders’ equity reconciliations may help explain the difference between market value and book value. To date, only the Richardson et al. study has done such analysis for Canadian firms.

---

9 BHR identified five major differences in net income as defined by US and Canadian GAAP. Of the five differences, one has essentially been eliminated by the adoption in December 1989 of the new rules concerning extraordinary items in Canada. The differences related to foreign exchange and deferred taxes are now subject to exposure drafts in Canada. Upon adoption of these exposure drafts, the accounting treatment for Canadian companies will be a lot closer to US accounting practices. Although interest capitalization is not required under Canadian GAAP, recent Canadian practice is moving toward some form of capitalization thereby reducing the impact of this difference.

10 The difference between market value and book value is unrecorded goodwill. Unrecorded goodwill is related to expected “excess” or “abnormal” future earnings.

11 AHV and BC include a market-to-book analysis for the non-Canadian component of their studies.
The results of this study show that in assessing the impact of reconciliations on stock returns, only the component amounts are incrementally informative. In assessing the impact of shareholders' equity reconciliations on prices, there is a statistically significant association between accounting reconciliation data and prices only when the data is partitioned into annual samples. This statistical association occurs in 1993, but not in 1994. This suggests that as Canadian accounting principles move closer to US accounting principles, Canadian investors may not find any incremental information in Canadian GAAP given financial statements prepared according to US GAAP. Overall, the results of this study appear to provide little evidence to support the hypothesis that Canadian GAAP is incrementally informative to US GAAP for Canadian crosslisting firms.

1.3. Outline

The remainder of this study is structured as follows. Section 2 offers some institutional reasons why Canadian crosslisted firms may want to report only according to US GAAP. Section 3 highlights the major Canadian-US GAAP differences. Section 4 summarizes the relevant literature. Section 5 details the research design, the sample selection and the hypotheses to be tested. Section 6 discusses the results and concluding remarks are provided in Section 7.
2. **Financial Reporting Requirements**

The financial reporting requirements for Canadian crosslisting firms are determined by the OSC in Canada and the SEC in the United States. Section 2.1 describes the US reporting requirements for Canadian crosslisting firms. Section 2.2 defines the policy issue before the OSC. Section 2.3 looks at specific arguments that can be advanced to the OSC by the crosslisting firms for reporting according to US GAAP only.

2.1. **US Listing Requirements**

The securities commissions of the major international exchanges have relaxed the rules concerning foreign company registration.\(^\text{12}\) However, the SEC has not allowed the US exchanges to ease the financial reporting requirements for foreign companies that wish to trade in the US. Apart from exempting large private placements from providing reconciliations to US accounting principles, the SEC has held firm to its belief\(^\text{13}\) in the incremental informativeness of US accounting principles for the US investor.\(^\text{14}\) The SEC is also holding on to its belief that the US investor must be afforded some protection from

\(^{12}\) London and Tokyo allow foreign registrants to file their financial statements with the exchange according to the domestic GAAP of the firm. Neither of these exchanges require a reconciliation to UK or Japanese GAAP.

\(^{13}\) AHV, BC and Rees provide evidence to support the SEC's position.

\(^{14}\) Recently, the SEC has started to ease the requirement for US GAAP information in a very limited way. While not changing its intent, the SEC is now allowing the use of very specific International Accounting Standards instead of US GAAP.
the perceived lower standards of disclosure inherent in the GAAP of most other jurisdictions.\textsuperscript{15}

The SEC's reluctance to lower the disclosure requirements for foreign firms may be partially explained by the litigious nature of US investors. The SEC fears litigation related to any losses that US investors might incur related to those foreign firms. The SEC does not wish to be blamed for allowing US investors to be "misled" by financial statements that have been prepared according to a GAAP that may not be familiar to the average US investor.

On the issue of reporting requirements for foreign firms, the major US exchanges are in disagreement with the SEC.\textsuperscript{16} The major US exchanges\textsuperscript{17} have been lobbying the US Congress to allow foreign companies access to the US capital markets without preparing financial information in accordance with US GAAP. The NYSE has argued that the SEC's US GAAP reconciliation requirement has put the US exchanges at a competitive disadvantage in their efforts to attract foreign listings. The NYSE believes that it could become a regional exchange in the increasingly global market place if its requirements for listing continue to be more stringent than those of other exchanges. Its lobbying efforts have extended to funding of research into international accounting standards.

\textsuperscript{15} Biddle and Saudagaran (1989) rated US GAAP as having the highest disclosure requirements.
\textsuperscript{16} This is just one of many issues in the foreign registration debate. The New York Stock Exchange has recently submitted a proposal to the SEC to ease the listing requirements for Canadian firms. This particular proposal does not address the accounting issue debate.
\textsuperscript{17} Included in this is are the New York Stock Exchange, American Stock Exchange and the NASDAQ system.
Despite the SEC's reporting restrictions on foreign companies, Canadian companies do receive preferential treatment. In June 1991, the SEC implemented the Multijurisdictional Disclosure System (MJDS). This is part of a bilateral agreement between the OSC and the SEC that allows Canadian crosslisting firms to prepare only a net income reconciliation regardless of the nature of the public offering.\(^\text{18}\) In contrast, non-Canadian foreign companies have to provide the net income reconciliation as well as a reconciliation of the major differences in the shareholders' equity section of the financial statements. Canadian firms are exempt from the latter, even though some firms volunteer such disclosure.

2.2. OSC Policy Issue

The percentage of the total traded value of the Canadian crosslisting firms occurring on a US exchange increased from 41.2% in 1989 to 50.7% in 1994.\(^\text{19}\) During this period, the number of Canadian equity issues on a US exchange increased from 148 to 172.\(^\text{20}\) This reflects a growing trend among Canadian firms to access the US capital markets to satisfy their capital needs. This trend continued in 1995 as 45 more Canadian companies listed equities in the US capital markets (Siklos [1996]).

\(^\text{18}\) The MJDS is designed to reduce the amount of paperwork required by firms that wish to offer equities in both countries. For the most part, meeting the filing requirements of one country is sufficient to file in the other country.


\(^\text{20}\) Ibid.
FASB [1995] observes that there are potential problems such as higher compliance costs and reduced professional credibility resulting from the differences in accounting principles. The increasing number of Canadian firms accessing the US capital markets has raised the issue of the usefulness of dual GAAP financial reporting. Currently, such firms must prepare financial statements for the OSC using Canadian accounting principles. Additionally, the SEC requires these firms to prepare financial statements in accordance with US GAAP or to provide a reconciliation of the major differences in determining net income according to US GAAP. This often requires Canadian crosslisters to prepare two sets of financial statements.

Canadian crosslisted firms have been lobbying the OSC to allow them to use US accounting standards instead of Canadian GAAP for their domestic reporting requirements. This would eliminate their need to maintain accounting records according to Canadian GAAP. If the observations of FASB [1995] and the arguments of the crosslisted firms are correct, then the elimination of the Canadian GAAP reporting requirement would decrease costs and reduce potential credibility problems for the accounting profession.

2.3. Arguments to OSC

The SEC is set in its position that the reconciliations to US GAAP are useful and will continue to be required. In order to reduce the cost of complying with two sets of financial

---

21 This position is reinforced in Owen [1994] and Bayless et al. [1996].
accounting standards, Canadian crosslisting firms are trying to persuade the OSC to drop the Canadian GAAP reporting requirements for domestic use. These crosslisted firms cite cost disadvantages as the principal reason for wanting to report according to US GAAP only.

2.3.1. Cost Disadvantage Argument

A major cost component relates to specialized accounting and audit expertise of US accounting standards required by accountants and auditors of Canadian crosslisters. While the costs of internal expertise and the additional audit costs can be large in dollar value, they are likely to be immaterial in relation to the reported net income of such companies. A more serious concern is the potential release of proprietary information that would be accessible to competitors, especially since non-crosslisted firms do not have to disclose similar information. By reporting in both GAAP's, a firm's competitors may be able to infer information about the company's operations. This offers non-crosslisting firms a potential competitive advantage in the domestic marketplace.

---

22 While the focus of this study is on Canadian firms, it is not just Canadian firms that complain about the costs of the reconciliations. Bayless et al. [1996] describe the cost arguments of Holderbank of Switzerland.
23 Recently, a large Canadian firm listed on the NYSE. The costs incurred to list, including all financial reporting disclosure issues have been estimated to exceed $1,000,000US. This represents less than 0.1% of the market value of the firm. A vice-president of the firm estimates ongoing year-to-year costs associated with Canadian-US GAAP differences to be around $250,000US, including increased audit fees related to US GAAP.
24 For example, real estate firms may report a reconciling item related to the recognition of leasing revenue. Access to US and Canadian methods of accounting for leasing revenues may provide competitors, regardless of where they are located, additional insight into the reporting firm's operations that they would otherwise not obtain.
2.3.2. Cost of "Coping Mechanism"

Choi and Levich [1991] indicate that international investment decisions are often affected by differences in accounting practices. Investors develop models that allow them to cope with various accounting standards. These models allow the translation of financial results reported according to one set of accounting rules into a framework that is more easily understood by the investor.

Canadian crosslisting firms would eliminate the need for such a coping mechanism for US investors by using US accounting principles only. This would reduce the cost to US investors, which in recent years have been the dominant providers of equity capital for Canadian crosslisting firms. A reduction in such cost to the investor may reduce the firms' cost of raising capital in the US, and hence the firms' overall cost of capital. However, the coping mechanism costs for Canadian investors would increase as a result of reporting according to US GAAP only. On the other hand, this increase in cost for the Canadian investor may not be of major concern to the crosslisted firms, since the majority of the trading for such crosslisted firms occurs in the US.

2.3.3. Benefit Analysis

The potential cost to the firm needs to be weighed against the potential benefit of incremental information to investors. The additional disclosure may provide information pertaining to the future cash flows of the firm, which would allow investors to establish a
more accurate value for the shares. The cost arguments and therefore the cost-benefit analysis is not examined in this thesis.
3. **GAAP Differences**

FASB [1995] identified 30 areas in which Canadian and US GAAPs are different. These include principles required for computation of net income, definition and computation of shareholders’ equity (book value), presentation of cash flow statements, calculation of earnings per share and additional disclosure requirements. Based on reported occurrences, the sample for this study shows that there are four major specific areas of GAAP differences in the computation of net income. These are the accounting treatment for foreign exchange gains or losses, accounting for extraction industries, accounting for deferred taxes and accounting for non-pension post retirement benefits. This section provides an analysis of such differences, which are also summarized in Table 1.

3.1. **Unrealized Foreign Exchange Gain or Loss**

Statement of Financial Accounting Standard (SFAS) No. 52 requires US companies to include into net income any gain or loss due to exchange rate fluctuations on foreign denominated long-term debt. This accounting standard is for US companies that have issued non-US dollar debt to finance US operations. Section 1650 of the Canadian Institute of Chartered Accountants (CICA) Handbook stipulates that gains or losses related to the exchange rate changes on foreign denominated long-term debt not be directly included in the calculation of income. Instead, any gain or loss is deferred and amortized over the remaining life of the debt instrument.

---

25 This is the primary source of Canadian GAAP.
The CICA Accounting Standards Board (AcSB) is currently studying the Canadian GAAP treatment of foreign currency translation. In May 1996, the AcSB reissued an Exposure Draft on the proposed elimination of the deferral and amortization of exchange gains and losses on foreign denominated long-term debt. If adopted, the proposal would eliminate the difference between Canadian and US accounting treatment in this area.

3.2. Accounting for Extraction Industries

Extraction industries (e.g., oil and gas, mining, etc.) can choose to account for exploration and development costs by either the successful efforts method or the full cost method in both Canada and the US. Under US GAAP (SFAS No. 69), firms using full cost method are limited to pooling the costs to a specific geographical area. SFAS No. 69 further specifies that a geographical area cannot extend beyond the boundaries of the reporting country.

The maximum value of the asset that can be carried on the balance sheet in the US is the lower of the total allowable capital costs and the estimated future cash flows expected from the resource. This is referred to as a ceiling test. The expected future cash flows are required under US GAAP to be discounted using a 10% rate.

---

26 Exposure Drafts publicize proposed changes to Canadian GAAP as recommended by the AcSB. Public comments are invited by the AcSB at this stage. This Exposure Draft was originally issued in September 1993 but was withdrawn after public comment.
Section 3060 of the CICA Handbook does not specifically address any limitations on the definition of the cost centre over which full costs need to be pooled. This allows the use of worldwide cost centres as opposed to a specific geographical area required under US GAAP. Furthermore, the ceiling test for Canadian firms specifically prohibits the use of discounting to estimate the value of future cash flows (CICA Section 3060).

3.3. Deferred Taxes

Under US GAAP (SFAS No. 109), the liability method is used in accounting for income taxes. This method is more faithful to the definitions of assets and liabilities in the sense that future income tax assets and liabilities reflect future cash flows at future tax rates, rather than historical cash flows at past tax rates.

The liability method emphasizes the balance sheet and is reflected in the broader concept of temporary differences. Temporary differences arise whenever the tax basis of assets and liabilities differ from the reported accounting basis. The liability method increases the scope of the transactions to be included in the income tax expense, since it is not restricted to transactions going through the income statement.

Under Canadian GAAP (Section 3470 CICA Handbook), deferred tax expense is based on the matching principle. This method emphasizes the income statement and is reflected in the narrower concept of timing differences. Timing differences are a measure of historical cash flows at past tax rates and is generally restricted to income statement transactions.
This method reflects historical information while the liability method reflects future information.

Changes to accounting for deferred taxes in Canada are currently being proposed under a CICA Exposure Draft issued in March 1996. If adopted, the differences between Canadian and US GAAP treatment of deferred taxes will essentially be eliminated.

3.4. Non-Pension Post Retirement Benefits

US GAAP (SFAS No. 106) requires the accrual of actuarially determined non-pension post retirement benefit costs. This accrual is to be made as active employees of the firm earn the benefits. As actual costs are incurred, the accrued liability is reversed. Canadian GAAP does not specifically address this issue. The common practice in Canada for this type of benefit is to charge the costs to earnings as they are incurred.

3.5. Other GAAP Differences

The Canadian-US GAAP differences that have been explained are not exhaustive. Other differences that are reported infrequently include:

- the accounting treatment for the capitalization of research and development costs, and the amortization thereof;
- the accounting treatment of the capitalization of interest for assets under development, and the depreciation thereof;
• the accounting treatment for additional compensation related to the issuance of executive stock options; and

• the accounting treatment for the termination of management contracts.
4. Literature Review

Comparing accounting principles between countries has been an active area of research. Cooke [1993], Norton [1995], and Weetman and Gray [1991] develop measures of comparable conservatism in accounting records between various countries and the US. Alford et al. [1993] use portfolio analysis to try to distinguish the usefulness of GAAP differences in 20 countries with US GAAP as the benchmark. AHV uses a variety of analyses in an attempt to determine “incremental information” of the non-US to US GAAP reconciliations. Canadian-to-US GAAP reconciliations have been examined by Rees, BC, and BHR using various regression analyses.

This section will provided an overview of AHV, Rees, BC, and BHR studies. This will include a review of the motivation, the sample selection, the research design and the conclusion reached by the authors.

4.1. Amir, Harris and Venuti [1993]

4.1.1. Motivation

The authors attempt to provide evidence of the usefulness of the SEC requirement for foreign firms to reconcile net income and the shareholder's equity section of the balance sheet from foreign accounting principles to US GAAP. Evidence is provided by
examining whether the reconciliations to US accounting principles significantly increase the association between accounting measures and prices (returns). The authors look at two specific issues. The first issue is whether the total reconciling difference of US/Non-US net income (equity) is associated with returns (prices). The second issue is identifying which specific items, if any, that make up the total net income (equity) reconciling difference are associated with returns (prices). AHV's objective is to provide evidence to the SEC about the usefulness of the required accounting reconciliations. To do this, the authors define the reconciling difference as the net income (equity) as defined by US accounting principles less the reported net income (equity) according to the GAAP of the firm's home country.

4.1.2. Sample Selection and Data

The sample consists of non-US firms that traded American Depository Receipts (ADRs) between 1981 and 1991. There were three specific exclusions to the sample. The first exclusion is for firms that were traded in the OTC market before 1983, since these firms were "grandfathered" and did not have to file Form 20-F. The second exclusion is for Israeli and Japanese firms that trade in the US and use US GAAP. The final exclusion is for all Canadian firms. The authors state that the SEC has long held the belief that Canadian GAAP is similar to US GAAP. This led the authors to believe that the differences would not have any value relevance. The final sample consists of 467 firm-years representing 101 firms over 10 years in 20 countries.
4.1.3. Research Design

AHV use short window, long window, and annual returns analysis to examine the association between net income reconciliations and returns. The short window analysis is based on the five days (-2 to +2) around the earlier of the Form 20-F or annual report filing date. The long window test is from two days after the earliest earnings announcement date to two days after the earlier of the Form 20-F or annual report filing date. Both tests intend to measure the “surprise” content of the reconciliation information. These tests examine the association between the total earnings reconciliation and the market adjusted return for firm \( j \) in year \( t \).

The authors examine the association between the total net income reconciling amount and the annual return for firm \( j \) in year \( t \). The authors use a valuation approach outlined in Ohlson [1989]. This approach shows that both earnings levels and changes are associated with returns. Hence, unlike the short and long window tests, this test includes the actual earnings for firm \( j \) as reported according to the domestic GAAP.

The hypothesis, in its alternate form, is that the information in the reconciliation of net income to US accounting principles is associated with returns. Market-to-book analysis is another approach used by the authors to provide evidence of the usefulness of the reconciliations to US GAAP. The difference between market value and book value is unrecorded goodwill, which is likely to be related to the market’s perception of expected earnings. Accounting differences may also cause market value and book value to be
different. If this is the case, then the reconciliation to US accounting principles will increase the association between the market-to-book ratio and accounting reconciliation data.

The hypothesis (in its alternative form) for the above test is that the reconciliation from foreign accounting principles to US accounting principles provides information that affects firm value incrementally to foreign accounting principles.

For all the above mentioned tests, the authors break down the total reconciling amount into specific reconciling differences. AHV look at four specific reconciling items that cover about 70% of the recorded differences. The items examined are the goodwill adjustment, the asset revaluation adjustment, pension adjustment and the tax adjustment. A fifth category, "other", is used to capture the remaining adjustment amounts. The reconciling items are used for the net income and shareholders' equity reconciliation.

The hypothesis (in its alternative form) for the individual reconciling items tests is that specific reconciling items provide information that incrementally affects the value of the firm. Further to this hypothesis, the authors state that a positive sign would show that US investors prefer US accounting treatment for the specific item.
4.1.4. Results/Conclusions

The results of the AHV study show that the net income and the shareholders' equity reconciliations from foreign GAAP to US accounting principles are associated with returns and price. This study also shows that there are specific accounting measures that are associated with returns and price. The results provide evidence that the SEC's requirement to provide the reconciliation to US accounting principles is useful to the US equity market participants.

4.2. REES [1995]

4.2.1. Motivation

The motivation of this study is based on the policy disagreement between the SEC and the NYSE. This disagreement concerns the usefulness of requiring foreign companies to provide a reconciliation to US accounting principles of the net income and the shareholders' equity section of the Balance Sheet. Rees examines the SEC's rationale for the reconciliations. Rees posits whether there is an association between returns and the reconciliation amounts. Evidence of an association would imply that the capital markets obtain information from such reconciliations.

4.2.2. Sample Selection and Data

The author obtained the initial sample of firms from the 1992 Compact Disc Disclosure Database. Rees searched the data base for firms that file a Form 20-F. During this data
collection stage, other firms were identified that allowed the author to include firm years from 1982 to 1991. Excluded from the final sample were firms that did not provide a reconciliation to US GAAP, did not have at least 2 consecutive years of data, had no equity securities trading in the US, had no price data available within the data range, and had no active trading for the firm's stock. The final sample included 568 firm-years for 150 firms. Of the 568 observations, 150 were Canadian companies.

4.2.3. Research Design

Rees uses a changes model in an attempt to establish the relationship between the reconciliation amount and returns. The reconciliation amount is the difference in the net income as reported in the domestic accounting principles and the net income reported according to US accounting principles reported in the domestic currency. The difference in the reconciliation amount from year $t-1$ to year $t$ is the change amount of the reconciliation. The change amount is adjusted by the US dollar exchange rate in effect one day prior to the filing of the SEC Form 20-F. This results in what Rees calls the Unexpected Reconciliation amount stated in US dollars.

Rees uses a short window test to determine the relationship between the reconciliations and the returns. The returns for firm $i$ in year $t$ are based on the US dollar market price. The return is calculated from one day prior to the 20-F form being received by the SEC to three days after the receipt.
As noted previously, the reconciliations are adjusted by the exchange rate in effect one day prior to the filing of the Form 20-F. The author uses US-based returns for this study. Rees attempts to distinguish returns associated with the reconciliations from returns based on changes in the exchange rate. The author calculates the percentage change in the exchange rate over the event window to isolate the returns associated with the reconciliations.

The hypothesis (in its alternative form) is that the reconciliation from domestic accounting principles to US GAAP provides incremental information that affects firm value.

4.2.4. Results/Conclusions

Rees found that for the entire sample, the unexpected reconciliation amount and the exchange rate changes are significantly associated with returns at the 5% level. For the Canadian firms in the sample, only the unexpected reconciling amount was found to be significantly associated with returns. This association is significant at the 1% level. For the non-Canadian firms in the sample, the unexpected reconciliation amount was significantly associated with returns at the 1% level, while the association for the exchange rate was significant at the 5% level.
4.3. Barth and Clinch [1996]

4.3.1. Motivation

The objective of this paper is to provide some insight into accounting issues that have been recently or are currently under consideration in the three countries. The accounting issues under consideration are goodwill, asset revaluation, income taxes and pension accounting. The authors attempt to show how the accounting treatments for these issues are associated with returns (prices). The models used in the study allow the authors to provide some evidence on the usefulness of the SEC-required domestic-to-US GAAP reconciliations.

4.3.2. Sample Selection and Data

The data for the analysis is from firms incorporated in the UK, Australia and Canada that have equity traded on US exchanges, and are available in Compustat. The final sample consisted of firms that either had a Form 20F, a Form 10K or an annual report that disclosed the reconciliation to US accounting principles. For the returns analysis, the final sample consisted of 98, 22, and 229 firm-years for UK, Australian and Canadian firms respectively. The price analysis consisted of 139 and 36 firm-years for UK and Australian firms. Canadian firms are not included in the price analysis since “Canadian firms generally do not report shareholders' equity differences in their SEC filings.”

---

27 Barth and Clinch [1995], Page 5
4.3.3. Research Design

As in Rees and AHV, the authors define the aggregate reconciling amount as the difference between shareholders' equity (net income) according to US GAAP and shareholders' equity (net income) according to domestic accounting principles. The aggregate reconciling amount is categorized by the specific differences in accounting principles. Along with the four main accounting issues mentioned previously, the authors isolate the effects of interest capitalization, foreign currency accounting, and accounting for extractive industries. BC also includes an "other" category to capture all other reconciling items not specifically considered.

BC uses a levels and changes model to establish that total reconciling amounts result in a closer association between price and shareholders' equity. The levels for this model are the domestic value for shareholders' equity and the total reconciling amount. The changes component for the model are the domestic net income and the total reconciling amount to US GAAP net income. Besides using the total reconciling amount, the authors also perform the same analysis using the specific differences in place of the total reconciling amount for shareholders' equity and net income.

BC uses a 15-month returns analysis to establish an association between the reconciling amounts and returns. The 15-month period is used to ensure that the domestic-to-US GAAP reconciliation disclosures are public information. In addition to the reconciling
amounts, BC also includes the change in the levels of the net income and the reconciling amounts.

As with Rees and AHV, the alternate hypothesis is that the financial statement reconciling data provides incremental information that affects share returns and prices.

4.3.4. Results/Conclusions

BC offer more evidence that the reconciliations to US accounting principles are associated with returns (prices). As in AHV, the total reconciling amount and specific reconciling items are shown to increase this association. Consistent with AHV, goodwill adjustments and asset revaluations appear to be the most important items for UK and Australian firms reconciling to US accounting principles.

For Canadian firms, BC expands on the results in Rees. Like Rees, BC finds that the change in the level of the reconciliation significantly increases the association with returns. Unlike UK and Australian firms, the only specific item that showed a significant association with returns was the capitalization of interest adjustment. This suggests that US investors felt that interest incurred for projects under development was more associated with future earnings than with current earnings, and therefore should be capitalized.
4.4. Bandyopadhyay, Hanna and Richardson [1994]

4.4.1. Motivation

This study examines the magnitude and information content of the reported reconciliations between Canadian GAAP earnings and US GAAP earnings from the US benchmark. The main purpose for this paper is similar to AHV and Rees, with the exception that BHR specifically examines the Canada/US accounting differences.

4.4.2. Sample Selection and Data

The sample used for the analysis was drawn from firms that trade on the TSE and on a major US exchange (either NYSE, ASE or NASDAQ) for the years 1983-1989. The authors eliminated firms for which annual reports were not available at Waterloo or Wilfred Laurier University libraries; return information not available on CRSP or Standard and Poor's Daily stock price record, and firms for which the reconciling amount was zero. This reduced the overall sample size to 299 firm-years for 96 firms. The authors then examined the reconciliations and determined that there were six main categories of reconciling items: foreign exchange amortization, oil and gas exploration amortization, capitalization of interest, gain/loss on extraordinary items (for both Canadian definition and the US definition) and the deferred tax carry forward. The sixth category is an "other" category used to capture all remaining differences between Canadian and US GAAP.
4.4.3. Research Design

The study analyzes the magnitude of the reconciling amount. As in Rees, AHV, and BC, BHR defines the total reconciling amount as net income according to US accounting principles less net income according to Canadian GAAP. Like BC, the authors also examine the specific reconciling items.

BHR use a levels and changes model for the total reconciling amount and the specific reconciling items analysis. To determine the returns, the authors use a twelve-month period ending in the month in which financial information is filed with the Canadian or US regulatory agencies. In addition, the authors use US dollar equivalents to perform the analysis. Canadian dollar data was translated into US dollars at the exchange rate in effect at the end of the period.

The authors perform a short window test in an attempt to determine if there is any earnings surprise associated with the reconciliations. This test does not follow the standard cumulative abnormal returns analysis due to the difficulty in determining the specific date of the information release. Instead, the authors use tests that are similar to Easton and Zmijewski's [1993] squared market model prediction error test.

The hypothesis (in alternate form) for the annual returns test and the short window test is that there is an increase in the association between returns and accounting reconciliation data.
4.4.4. Results/Conclusions

The results of this study indicate that there is no significant association between the reconciliations to US accounting principles and returns. The results are similar for the annual return analysis and the short window tests. The authors report adjusted-$R^2$ of 0.044 and 0.039 respectively. Based on these results, the authors conclude that there is evidence that investors act as if the Canadian to US GAAP reconciliations do not affect prices. The results are inconsistent with BC and Rees, who have shown that there is an association between the Canadian/US accounting reconciliation data and returns.

BHR conclude that their analysis provides evidence "that, on average, investors act as if Canadian and US GAAP differences do not affect pricing decisions." This conclusion implies that Canadian and US accounting principles provide the same information to the capital markets. The conclusion is based on a one-way analysis of the differences. The analysis examines only if US GAAP provides information incremental to Canadian GAAP for US investors. To be able to reach their conclusion, the authors would also have to establish that Canadian GAAP does not provide information incrementally to US GAAP. Canadian crosslisting firms can point to the results of this study as evidence that reporting according to Canadian or US accounting principles provides similar information to the capital markets.
5. Research Design and Sample Selection

AHV, Rees, BC and BHR provide evidence to the SEC of the incremental informativeness of US GAAP given financial statements presented according to a foreign GAAP. Similar to Richardson et al., this study examines the incremental information content of Canadian GAAP when US GAAP financial information is known. Richardson et al. do not examine the specific reconciling items, exchange rate fluctuations or the effects of the dominant market in their analyses. This study extends the Richardson et al. study by examining the incremental informativeness of the specific reconciling items, and the effect of changes in the US-Canadian dollar exchange rate.

This section provides the principle hypotheses, the design of the research and the sample selection procedure. Section 5.1 develops the principle hypotheses. Section 5.2 describes the research design using the twelve-month return analysis, Section 5.3 explains the research design using market-to-book analysis, and Section 5.4 describes the sample selection procedure.

5.1. Hypotheses

Given US-based GAAP statements, this study examines whether the US GAAP to Canadian GAAP reconciliations are significantly associated with returns (prices). This association test allows inferences to be made about the incremental informativeness of
Canadian GAAP but not about the usefulness of Canadian GAAP. Evidence of usefulness of Canadian GAAP may be obtained through a short window analysis. Discussion of the usefulness of Canadian GAAP is beyond the scope of this study. The null hypothesis asserts that financial statements based on US accounting principles provide the relevant information to Canadian investors, and the reconciliations to Canadian GAAP are not significantly associated with returns (prices). The null hypothesis asserts that Canadian GAAP does not have incremental information to US GAAP. If the null hypothesis cannot be rejected, then US GAAP may be inferred to essentially reflect the financial performance of such crosslisted firms given the business environment as good as (or better than) Canadian GAAP. This would provide evidence to support the conclusion reached by BHR that the Canadian and US accounting differences do not affect market pricing decisions, since neither Canadian nor US GAAP provide information incremental to one another.28

Evidence that the null hypothesis cannot be rejected would strengthen the argument to eliminate Canadian GAAP reporting requirements for Canadian crosslisted firms. The crosslisting firms could argue that Canadian investors do not appear to derive any additional benefit from Canadian accounting principles determining the computation of earnings and book value.

---

28 AHV did not include Canadian firms in their study due to the perceived similarities between the accounting principles in the two countries. Results that indicate that the null hypothesis cannot be rejected would provide further support for their position.
The alternative hypothesis asserts that after controlling for the effects of US GAAP, there is a statistically significant association between accounting reconciliation data and returns (prices). This reflects the view that Canadian GAAP is better able to reflect the financial performance of firms in the Canadian business environment. Evidence of a significant association between returns (prices) and accounting reconciliation data would strengthen the OSC’s argument for the retention of Canadian GAAP requirement for crosslisting firms.

This study examines the association between US-to-Canadian accounting reconciliation data and stock returns (prices) for Canadian investors. Since Canadian investors constitute one of many financial statement user groups, evidence to reject or not reject the null hypothesis concerning net income and book value reconciliations may not be sufficient by itself to determine whether Canadian GAAP requirement should be eliminated for Canadian crosslisting firms. The differences in the computation of net income and shareholders’ equity are only two areas of Canadian-to-US GAAP differences. Other areas of GAAP pertaining to cash flow statements, calculation of earnings per share and other disclosure differences would have to be examined in order to determine the overall benefit of Canadian GAAP for crosslisting firms.

GAAP differences are just one aspect of the issue before the OSC concerning the elimination of Canadian GAAP for crosslisting firms. The OSC also has to consider whether it is in the best interest of Canadian investors to allow a foreign regulatory body
to determine accounting principles for Canadian firms. Given the small number of crosslisting firms relative to the entire Canadian market, the OSC would have to consider any possible effects the elimination of Canadian GAAP reporting requirements for crosslisted firms may have on the rest of the Canadian capital market.

Given that a specific country's GAAP is generally developed to capture the financial performance of a firm subject to the cultural, business and taxation environment of that particular country (Bloom and Naciri [1989] and FASB [1995]), it would follow that for Canadian investors, Canadian GAAP is likely to capture the financial performance of Canadian firms much better than US GAAP. This would be consistent with the results of Richardson et al., which found a significant association between the US-to-Canadian accounting reconciliation data and stock returns (prices). Such a significant association would indicate that Canadian investors find information in Canadian GAAP that is incremental to US GAAP.

5.2. Annual Returns Analysis

The association between accounting reconciliation data and share returns is examined since the last release of accounting information for each firm-year.29 Similar to BHR, this study uses a twelve-month period, ending three months after the fiscal year end, to measure the stock returns. In order to obtain twelve month return data that does not reflect information from the prior year, the annual reports for each firm are assumed to be

29 For quarterly reporting, a reconciliation to US GAAP of net income is not required by the SEC.
released at the same time each year. The total reconciling amounts and specific reconciling items are used to determine the association between accounting reconciliation data and stock returns.

5.2.1. Total Reconciling Amount Analysis

Ohlson and Shroff [1992] (hereafter OS) show the level of earnings to be an appropriate accounting data variable associated with returns. Easton and Harris [1991] (hereafter EH) develop this further to show that in addition to the level of earnings, the changes in the level of earnings are also associated with returns. Ohlson [1995], FO, OS and EH all point out that the market may consider other information that is not related to either the level or change in earnings in determining price. Equation (3) in AHV formalizes these concepts in describing determinants of returns in the following manner:

\[
R_{it} = \beta_0 + \beta_1 NIUS_{it} + \beta_2 \Delta NIUS_{it} + \beta_3 V_{it} + \varepsilon_{it}
\]  

(1)

where:

- \( R_{it} \) is the twelve-month return for firm \( i \) in year \( t \);
- \( NIUS_{it} \) is the reported net income of firm \( i \) in year \( t \) according to US GAAP;
- \( \Delta NIUS_{it} = NIUS_{it} - NIUS_{it-1} \);
- \( V_{it} \) is nonrandom other information which explains returns for firm \( i \) at time \( t \); and
- \( \varepsilon_{it} \) is a random error term, assumed to be independent, identically distributed (i.i.d.).

\[30\] BHR make the same assumption about the timing of the release of the information.
AHV deflate the independent variables by beginning-of-period price. Richardson et al. use the number of common shares outstanding as a deflator. Equation (1) does not reflect any deflators. This study uses the number of common shares outstanding as the deflator, thereby allowing a direct comparison to the results of Richardson et al.

The other information set available to the capital markets may include the US-Canadian GAAP net income reconciliations. The reconciliations of net income may be reflected in the $V_{it}$ (other information) term that is associated with returns in Equation (1). Such other information is in addition to the information contained in the level ($NI_{US}$) and the changes ($\Delta NI_{US}$) of earnings. If the net income reconciliations are reflected in the other information term, then:

$$V_{it} = DNI_{it} + \Delta DNI_{it}$$

(2)

where:

- $NIC_{it}$ is the net income of firm $i$ in year $t$ according to Canadian GAAP;
- $DNI_{it} = NIC_{it} - NI_{US_{it}}$;
- $\Delta NIC_{it} = NIC_{it} - NIC_{i,t-1}$; and
- $\Delta DNI_{it} = \Delta NIC_{it} - \Delta NI_{US_{it}}$.

Substituting Equation (2) into Equation (1) provides the following testable model:

$$R_{it} = \beta_0 + \beta_1 NI_{US_{it}} + \beta_2 \Delta NI_{US_{it}} + \beta_{31} DNI_{it} + \beta_{32} \Delta DNI_{it} + \varepsilon_{it}.$$  

(3)

Equation (3) allows a comparison of the results of this study with those of Richardson et al.

31 AHV and Richardson et al. use similar logic in the development of their testable equations.
For Equation (3), $\beta_{31}$ and $\beta_{32}$ capture the association between accounting reconciliation data and returns. If the null hypothesis of $\beta_{31} = 0$ and $\beta_{32} = 0$ cannot be rejected, then this would imply that there is no significant association between returns and the reconciliation data. This would reflect the view that for Canadian crosslisters, Canadian GAAP does not provide information incremental to that provided by US GAAP. If either $\beta_{31}$ or $\beta_{32}$ is significantly different from zero, then the null hypothesis can be rejected. This would provide support that financial reporting based on Canadian GAAP provides incremental information to financial reporting based on US GAAP.

5.2.2. Specific Reconciling Analysis

Based on the reported occurrences in the sample data, specific reconciling items fall into five main categories with at least twenty observations each.\(^{32}\) The categories are accounting for foreign exchange gain or loss on long term debt, accounting for extraction industries, accounting for deferred taxes, accounting for non-pension post retirement benefits, and total other adjustments. The accounting treatments for these items in Canada and the US are summarized in Table 1.

The total reconciling amount can be broken down into the following components:\(^{33}\)

\[
DNI_{it} = FX_{it} + EXT_{it} + TAX_{it} + NPPR_{it} + OTH_{it}
\]  

(4)

where:

\(^{32}\) While the approach is similar to BHR, the reconciling items are different, with the exception of accounting for foreign exchange.

\(^{33}\) Similar approach as AHV, BC and BHR.
\( FX_{it} \) is the foreign exchange adjustment for firm \( i \) in year \( t \);
\( EXT_{it} \) is the extraction industry adjustment for firm \( i \) in year \( t \);
\( TAX_{it} \) is the deferred tax adjustment for firm \( i \) in year \( t \);
\( NPPR_{it} \) is the non-pension post retirement benefit adjustment for firm \( i \) in year \( t \);
and
\( OTH_{it} \) is the total of all other adjustments for firm \( i \) in year \( t \).

Substituting Equation (4) into Equation (3) results in the following model:

\[
R_{it} = \beta_0 + \beta_1 NIUS_{it} + \beta_2 ANIUS_{it} + \beta_3 FX_{it} + \beta_4 EXT_{it} + \beta_5 TAX_{it} + \beta_6 OTH_{it} + \beta_7 \Delta FX_{it} + \\
\beta_8 \Delta EXT_{it} + \beta_9 \Delta TAX_{it} + \beta_{10} \Delta OTH_{it} + \mu_{it}.
\]  

(5)

If the null hypothesis in Equation 3 \((H_0: \beta_3 = \beta_5 = 0)\) cannot be rejected, then Equation (5) could indicate if there are offsetting components that net out to zero. If the null hypothesis for Equation (3) is rejected, then this analysis will give insight into which specific reconciling item (if any) may be driving the result. Either way, the results of Equation (5) will offer insight into which specific reconciling items (if any) provide incremental information to the Canadian investor.

Rejection of the null hypothesis \((H_0: \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9 = \beta_{10} = 0)\) for the specific reconciling item test would imply that Canadian investors use specific Canadian accounting standard(s) incrementally to US GAAP in determining share prices. If the null hypothesis can be rejected for a specific reconciling item, then the Canadian accounting treatment for this item is regarded by the Canadian market as being better able to reflect the valuation of the firm compared to the corresponding US accounting treatment.
5.2.3. Exchange Rate Issues

The foreign exchange rate is important for two distinct reasons. First, Canadian investors are interested in returns and prices expressed in Canadian dollars. The basic measurement criteria of additivity requires US dollars to be converted to Canadian dollars at the rate in effect on the reporting date. Second, the changes in foreign exchange rate are important due to their direct impact on cash flows, and hence on returns (and risk).

In addition to the net income reconciliation data that may be part of the other information set available to investors, fluctuations in the US to Canadian dollar exchange rate may also be included in the other information set. If the exchange rate difference is part of the other information set, then \( V_t \) can be expressed as follows:

\[
V_t = DNI_{it} + \Delta DNI_{it} + EXCRAT_{it} \tag{6}
\]

where:

\[
EXC_{it} \quad \text{is the US-Canadian dollar exchange rate in effect three months after the fiscal year end for firm } i \text{ at time } t;
\]

\[
EXC_{it-1} \quad \text{is the US-Canadian dollar exchange rate in effect three months after the fiscal year end for firm } i \text{ at time } t-1; \text{ and}
\]

\[
EXCRAT_{it} = \frac{(EXC_{it} - EXC_{it-1})}{EXC_{it-1}}.
\]

Substituting Equation (6) into Equation (1) results in:

\[
R_{it} = \beta_0 + \beta_1 NIU_{it} + \beta_2 \Delta NIU_{it} + \beta_3 DNI_{it} + \beta_4 \Delta DNI_{it} + \beta_5 EXCRAT_{it} + e_{it}. \tag{7}
\]

Equation (7) extends the Richardson et al. study in examining the effects of Canadian firms reporting in US dollars.
For Equation (7), $\beta_{31}$ and $\beta_{32}$ continue to capture the relationship between accounting reconciliation data and returns. $\beta_{33}$ captures any possible effects of the exchange rate differences. Rejecting the null hypothesis ($H_0: \beta_{33}=0$) would suggest that exchange rate fluctuations are associated with stock returns for Canadian crosslisting firms. If the Canadian market perceives the financial results of the Canadian crosslisting firm are dependent on the US dollar, then an association between stock returns and the change in the exchange rate would be detected. Rees showed that this type of association held for foreign-to-US exchange rate fluctuations and US stock returns.

To examine the effects of exchange rate fluctuations on the specific reconciling items, Equation (4) is substituted into Equation (7). This results in:

$$\begin{align*}
R_t &= \beta_0 + \beta_1 \text{NIUS}_t + \beta_2 \Delta \text{NIUS}_t + \beta_3 \text{FX}_t + \beta_4 \text{EXT}_t + \beta_5 \text{TAX}_t + \beta_6 \text{OTH}_t + \beta_7 \Delta \text{FX}_t + \\
&\quad \beta_8 \Delta \text{EXT}_t + \beta_9 \Delta \text{TAX}_t + \beta_{10} \Delta \text{OTH}_t + \beta_{11} \text{EXCRAT}_t + \mu_t.
\end{align*}$$

The rejection of the null hypothesis for a particular reconciling item would suggest that it contained information not available under US GAAP reports. As with Equation (5), this analysis can provide evidence whether the results obtained in Equation (7) are offset by competing reconciling items, or whether particular reconciling item(s) are driving the results.
5.3. Market-to-Book Analysis

Ohlson [1995] and FO develop the association between value and accounting information. The difference between value and book value of the firms equity is unrecorded goodwill. Such unrecorded goodwill reflects the expectation of future "excess" or "abnormal" earnings. The unrecorded goodwill is also related to the persistence of the abnormal earnings and to "other" nonrandom information that might be useful in predicting future abnormal earnings. This alternative approach is adopted to supplement the analysis of the value-relevance of Canadian GAAP.

AHV propose a market-to-book model based on a refinement of Ohlson [1995]. The model developed by AHV uses market value as a proxy for value and net income as a proxy for earnings surprise. The extent to which market value is associated with the book value of shareholders' equity, net income and US-to-Canadian GAAP reconciliations may offer insights into the incremental informativeness of Canadian GAAP.

Following Ohlson [1995], OS show that book value is an appropriate accounting variable associated with price. Assuming that net income is the first order difference in book value, then a model using book value and net income would be a levels and changes model for price. Such logic is analogous to the levels and changes model for the returns

---

34 AHV developed this from the working paper used by Ohlson in 1991. Ohlson [1991] has been further developed by Feltham and Ohlson [1995].
35 This assumes clean surplus accounting.
Equation (5) from AHV formalizes the concepts extended in Ohlson [1995], FO and OS as follows:

\[ P_i = \beta_0 + \beta_1 BVUS_{it} + \beta_2 NIUS_{it} + \beta_3 W_{it} + \eta_{it} \]  \hspace{1cm} (9)

where:

- \( P_i \) is the share price of firm \( i \) at time \( t \);
- \( BVUS_{it} \) is the book value of the common stock according to US GAAP for firm \( i \) at time \( t \);
- \( W_{it} \) is nonrandom other information explaining the price of firm \( i \) at time \( t \); and
- \( \eta_{it} \) is a random variable, assumed i.i.d.

AHV made inferences about the information content based on return on equity (\( NIUS_{it}/BVUS_{it} \)) and the changes in the return on equity. To be comparable to Richardson et al. and to make inferences based on accounting data, both sides of AHV's Equation (5) have been multiplied by book value.

Part of the other information set available to the capital markets may include the US to Canadian GAAP reconciliations of book value and net income. If the reconciliations are part of the other information set, then:

\[ W_{it} = DBV_{it} + DNI_{it} \]  \hspace{1cm} (10)

where:

- \( BVC_{it} \) is the book value of common equity according to Canadian GAAP for firm \( i \) at time \( t \); and
- \( DBV_{it} = BVC_{it} - BVUS_{it} \).

Substituting Equation (10) into Equation (9) results in the following testable equation:

\[ P_i = \beta_0 + \beta_1 BVUS_{it} + \beta_2 NIUS_{it} + \beta_3 DBV_{it} + \beta_{32} DNI_{it} + \eta_{it} \]  \hspace{1cm} (11)

AHV and Richardson et al. use this approach in the development of their testable regression equations.
Equation (11) allows a comparison of the results of this study to those of Richardson et al.

5.4. Sample Selection

The TSE Monthly Review provides a report of equities\(^{37}\) that are crosslisted on the TSE and on a US exchange. The December 1993 and December 1994 issues of the TSE Monthly Review listed 180 firms representing 310 firm-years that crosslisted common equity during the 1993 and 1994 calendar years. 33 firm-years were eliminated from this sample because no information was available at The University of British Columbia Libraries about the financial results of the firm.\(^{38}\) The sample was further reduced by 32 firm-years because there was no reconciliation or reference to a reconciliation in the financial information obtained. To determine accurate and current market values for time \(t\) and \(t-1\), firms needed to be actively traded on the TSE. To be considered part of the sample, the firms also had to be actively trading on a US exchange during the year. 23 firm-years were eliminated due to lack of trading on either the TSE or the US exchange. A further 86 firm-years were eliminated due to no reported differences in net income between US and Canadian accounting principles. The final sample consisted of 136 firm-years for 86 separate firms. Of the 86 firms, 50 firms voluntarily reported shareholders' equity reconciliations, representing 77 firm-years. The sample selection data is summarized in Table 2.

\(^{37}\) The list includes preferred shares and warrants that are listed on the TSE and a US exchange. This list is broken down by firm.

\(^{38}\) Through the various resources available at UBC there were no annual reports, Form 10K, Form 20F or other SEC required reports that contained financial information.
6. Results & Analysis

This section discusses the results of the regression models developed in Section 5. Section 6.1 provides a brief discussion of the descriptive statistics. Section 6.2 examines the results of the returns analysis using the total reconciling amount. Section 6.3 discusses the results of the returns analysis when the individual reconciling items are considered. The market-to-book analysis is discussed in Section 6.4.

6.1. Descriptive Statistics

As shown in Table 3, net income according to Canadian GAAP is on average 21.7% higher than net income according to US GAAP.\(^{39}\) However, it is only 0.4% of the Canadian dollar market value of common equity.\(^{40}\) This suggests that the difference may be immaterial to the overall pricing of the common equity.

The make up of the reconciling items has changed somewhat since the BHR and the Irwin and Mason [1989] studies. In both these studies, the difference in accounting for foreign exchange gain/loss was the major reconciling item.\(^{41}\) In this study, the major difference is the accounting for deferred taxes, with 55.9% of the firm-years reporting a reconciling amount for this item.

---

\(^{39}\) This difference is after translation to Canadian dollars.

\(^{40}\) Market value is determined using the TSE prices.

\(^{41}\) This is considering the number of firm-years reported for this difference.
The sample consists of large and small firms, as measured by Canadian market value of the firm. The smallest firm has a market value of just under $2.4 million. The largest firm in the sample has a common equity capitalization of over $15.3 billion. The average market value is just over $1.5 billion. With a median value of $585 million, most of the firms in the sample are relatively small. However, the larger firms seem to hold particular sway over the sample. To reduce the influence of such large firms, the regression analysis was done using per share data.  

Table 4 reports the results of the correlation matrix. The absolute value of the highest reported correlation factor is 0.6115 for DNI_{it} and ΔDNI_{it} (shown in Panel A). This suggests that multicollinearity does not appear to be a problem.

6.2. Returns Analysis: Full Sample

As reported in Panel A of Table 5, the results for the returns test using the full sample show no significant association between returns and accounting reconciliation data. This suggests that Canadian investors do not find Canadian GAAP to be incrementally informative to US GAAP. Such results seem contrary to the expectation that Canadian GAAP would be incrementally informative to US GAAP for Canadian investors. Furthermore, the results are different from Richardson et al., which found that net income

\footnote{It can be argued that deflating by NIUS_{it-1} would also control for size influence. However, using per share data allows a more direct comparison with Richardson et al.}
reconciliations were significantly associated with returns, thereby implying the incremental informativeness of Canadian GAAP. Such difference in results may be partly due to the difference in the time period of these two studies. The earlier years in Richardson et al. may be driving the overall results, while convergence in GAAP of the two countries in the later periods may reduce the statistical association between reconciliation data and returns.

Another surprise in the results is the lack of any statistically significant coefficients as seen in all panels of Table 5. AHV, BC, BHR and Richardson et al. all report a statistically significant association between returns and net income, regardless of the significance of the reconciling amount. It appears that for Canadian crosslisting firms in 1993 and 1994, accounting information relating to the calculation of net income was not a statistically significant factor used by the Canadian capital markets to determine price. Further evidence of this can be found in the adjusted-$R^2$ reported for this model. As can be seen in Table 5 Panel A, the adjusted-$R^2$ is -0.0150. This suggests that there is a lot of "noise", which reduces the association between net income and stock returns.\footnote{Most of the adjusted-$R^2$'s for the returns analyses are negative, as reported in Table 5 through Table 8.}

6.2.1. Returns Analysis: Annual Partitions

A confounding factor is that differences in accounting standards between Canada and the US are diminishing over time. This is controlled by partitioning the data into annual sub-samples in order to determine if the results remained the same over time or whether they vary intertemporally. With the implementation of NAFTA, the business environments of

\footnote{Most of the adjusted-$R^2$'s for the returns analyses are negative, as reported in Table 5 through Table 8.}
the two countries can be considered to be converging. This would create the expectation that over time, any association between net income reconciliations and stock returns would decrease.

Panel B of Table 5 shows that while the results do vary over time, the association between net income reconciliation data and returns remains insignificant in both years. This is consistent with the results for the full sample. This implies that Canadian GAAP is not incrementally informative to US GAAP in any of the annual sub-periods.

The 1993 fiscal-year sub-sample results show no significant association between accounting data and returns. The results for the 1994 fiscal-year sub-sample are slightly different from the 1993 sub-sample. Panel B of Table 5 shows that for the 1994 sub-sample, while there is no significant association between returns and accounting reconciliation data, NIUS is significant at the 10% level. This suggests that in 1994, Canadian investors found US GAAP net income to be associated with returns. This appears to be consistent with the prior expectations that as Canadian GAAP edges closer to US GAAP, US GAAP financial information will contain all the information used by the capital market, thereby, potentially making Canadian GAAP information redundant.

6.2.2. Returns Analysis: Market Partition

The full sample dataset was partitioned into two sub-samples based on whether the majority of the common equity was traded on the TSE or a US exchange. This
partitioning is intended to determine if the results vary depending on the location of the dominant market, and whether the particular market has influence over the results for the full sample.

A priori, Canadian GAAP is not expected to provide incremental information for US market dominated firms. Conversely, for Canadian market dominated firms, Canadian GAAP is expected to provide incremental information to the Canadian investor.

As can be seen in Panel C of Table 5, the results of Canadian and US market domination partition are the same as the full sample in that there are no significant coefficients. This indicates that the null hypotheses cannot be rejected. Given that none of the coefficients for either sub-samples are statistically significant, the results suggest that neither US nor Canadian investors received any additional information that had not already been reflected in the GAAP used for the original financial reports.

6.2.3. Returns Analysis: Moving Exchange Rate

As shown in Panels A and B of Table 6, controlling for the effects of changes in the Canadian-US dollar exchange rate provide the same results as ignoring the exchange rate fluctuations. The results indicate that the null hypothesis cannot be rejected for the full sample, nor for each year of the sample. The results suggest that there is no information in Canadian GAAP that is not already accounted for in US GAAP.
Panel C of Table 6 indicates that the null hypotheses cannot be rejected. Canadian GAAP does not appear to provide information not already contained in US GAAP reports, regardless of which market dominates trading. However, unlike the results of the total data sample, NIUS is significantly associated with returns at the 5% level for both trading markets. This is consistent with the results reported for the returns analysis without controlling for exchange rate fluctuations. In addition, \( \Delta \text{NIUS} \) is significant at the 1% level for crosslisted firms that predominantly trade on the TSE.

The \( R^2 \) for the US and Canadian market dominant firms are 0.2484 and 0.2953 respectively. This is higher than the \( R^2 \) for the total sample (0.0190) and for the partitions when the change in exchange rates is ignored (0.0101 and 0.0955, respectively).

6.2.4. Returns Analysis: Reporting Currency

The data was also partitioned by the currency in which the firms chose to report their financial statements. This partition is designed to test whether the choice of currency affects the relationship between accounting reconciliation data and returns. 26% of the firm-years in the total data sample chose to report their financial information in US dollars. Such firms believed that US dollar financial reports better reflected the economic reality of the firm. This partition examines how Canadian investors interpret financial reports based on different currencies.
Table 7 shows that for firms reporting in Canadian dollars, the results are the same as for the total sample in that there are no statistically significant coefficients. The results indicate that the null hypothesis for Canadian dollar reporting firms cannot be rejected. This suggests that for Canadian investors, there is no additional information in Canadian GAAP that is not already contained in US GAAP for crosslisting firms that use Canadian dollars for financial reporting.

The results for US dollar reporting firms also indicate that the null hypothesis cannot be rejected. However, in contrast to firms that use Canadian dollars, firms that report in US dollars show that EXCRAT (1%), NIUS (5%), and ΔNIUS (10%) are significant at the specified levels. The results imply that Canadian investors associate returns with US GAAP accounting data for firms that report financial statements in US dollars. Further evidence of this is found in the comparison of the R². US dollar reporting firms have a higher R² (0.4313) than the Canadian dollar reporting firms (0.0052).

Firms that choose to report their financial results in US dollars generally have a significant portion of their revenue stream directly tied to the US dollar. The revenue stream could be from trading in US dollar denominated commodities or from significant US-based business operations. All firms reporting results in US dollars gave one of the two cited reasons as the explanation for using US dollars.

44 For all firms that report in US dollars, the US business environment has a significant impact on their operations either directly through operations or indirectly through the effects on the US dollar. This is reflected in the results that show US GAAP
information to be statistically associated with returns, while Canadian GAAP information does not appear to add any incremental value.

6.3. Returns Analysis: Individual Reconciling Items

Given that the total reconciling amounts show no significant association with returns, it is useful to determine whether this is due to offsetting influences of individual reconciling items. Table 8 shows that when the total reconciling amounts are separated into individual components, reconciling amounts reflecting changes in accounting for gain/loss on foreign exchange for long-term debt ($\Delta FX$), changes in accounting for extraction industries ($\Delta EXT$), and accounting for extraction industries (EXT) are significant at the 1%, 5%, and 10% levels respectively. This suggests that within the total reconciling amount are items that offset the influence of one another. The results also suggest that Canadian investors find specific Canadian accounting standard incrementally informative in the determination of share price.

Table 8 also shows that after controlling for exchange rate differences, different individual components of the reconciliation are statistically significant compared to the results without controlling for exchange rate changes. For this test, $\Delta FX$ (1%), $\Delta EXT$ (5%), OTH (10%) and $\Delta OTH$ (10%) are significant at the levels specified. Overall, the results tend to reject the null hypothesis that specific components of the reconciliation are not associated with returns.
6.4. Market-to-Book Analysis

The results of the market-to-book analysis are similar to that of the returns analysis in that the null hypothesis cannot be rejected, thereby implying that Canadian GAAP is not incrementally informative to US GAAP. However, unlike the returns results for the total sample, the market-to-book analysis shows a significant association between US accounting data and price (see Panel A of Table 9). BVUS (1%) and NIUS (10%) are significant at the levels specified.

6.4.1. Market-to-Book Analysis: Annual Partition

As in the returns analysis, the full sample was partitioned into annual sub-samples to see if the overall results hold for each time period. Panel B of Table 9 shows that the results for the 1993 sub-sample are different from the total sample. For 1993, DNI is significant at the 10% level. This implies that in 1993, Canadian GAAP provided information that was incremental to US GAAP for Canadian crosslisted firms.

The results for the 1994 sub-sample are different from those of 1993. Table 9 shows that for the 1994 sub-sample, BVUS (5%) and NIUS (10%) are significant at the levels specified. This is similar to the results of the total sample. The results indicate that the null hypothesis cannot be rejected suggesting that there was no incremental information associated with Canadian GAAP for Canadian crosslisted firms in 1994.
7. Conclusion

This study examined the incremental information content of Canadian accounting principles when financial information according to US GAAP is known. It uses the SEC-required reconciliations of net income and the voluntary disclosures of reconciliations of shareholders’ equity in order to determine the relationship between the reconciliations and share returns (prices). Based on this relationship, inferences can be made about the "incremental information" of Canadian GAAP.

Along with Richardson et al., this study extended the current literature by offering some evidence about the informativeness to the Canadian investor of Canadian GAAP when US GAAP financial information is known. Previous studies in this area have tried to demonstrate to the SEC that the required reconciliations to US GAAP are not necessary for the US investor. This study addresses the OSC policy issue by examining the effects on the Canadian investor.

This study extended the current literature in three areas. The first was the examination of the specific reconciling components to determine the specific effects of the differing accounting standards. The second was the examination of the effects of exchange rate fluctuations. The third contribution was examining the effects of the various capital markets dominating share trading.
The results of this study imply that overall Canadian GAAP does not provide information incrementally to US GAAP. However, specific Canadian GAAP items do appear to offer incremental information to the Canadian investor when US GAAP financial statements are known. When comparing the overall differences in accounting principles, the manner in which the Canadian investor reacts depends on the treatment of the exchange rate. When the exchange rate is held constant, the Canadian investor does not appear to benefit from the reconciliations. However, when exchange rate fluctuations are taken into account, US GAAP information seems to be statistically significant. This effect is documented regardless of whether the majority of the traded value occurs on the TSE or a US exchange.

However, the effect does not appear to be constant over time. In 1993, neither US GAAP financial information nor the reconciling data appeared to provide information incrementally to one another. This may imply that the Canadian investor did not distinguish between the GAAPs of the two countries. In 1994, US GAAP was statistically associated with returns (prices) while the reconciling data was not. This suggests that Canadian investors found US GAAP to be relevant, and that Canadian GAAP provided no additional information for the Canadian crosslisted firms.

Further studies need to be carried out concerning the incremental informativeness of the Canadian GAAP treatment of cash flows, earnings per share and other disclosure issues. The analysis of these items would offer additional evidence on whether Canadian GAAP is
incrementally informative to US GAAP. Updating this study over a more recent time period may also offer evidence about whether US GAAP contains all the accounting information used by Canadian investors.
8. References


Delaney, Patrick R., James R. Adler, Barry J. Epstein and Michael F. Foran; “Interpretation and Application of Generally Accepted Accounting Principles 1996.” New York; John Wiley & Sons, Inc; 1996


Feltham, Gerald A. and James A Ohlson; “Valuation and Clean Surplus Accounting for Operating and Financial Activities.” Contemporary Accounting Research, Vol. 11 No. 2 Spring 1995; pp


Mawani, Amin; "Comments on the CICA Exposure Draft on Income Taxes." University of British Columbia 1996.


Richardson, Gordon et al.; [Preliminary Empirical Results of Canadian-US GAAP Reconciliations]; University of Waterloo, 1996.


Robertson, Darroch; “Deferred but not Forgotten.” CA Magazine, January 1993, pp 54-60.

Siklos, Richard; “Rule change would ease Canadian entry to NYSE.” The Financial Post April 12, 1996; p 3.


- “TSE Review December 1989.” Toronto
- “TSE Review December 1990.” Toronto
- "TSE Review December 1991." Toronto
- "TSE Review December 1992." Toronto
- "TSE Review December 1993." Toronto
- "TSE Review December 1994." Toronto

## Table 1

### Summary of Accounting Differences

<table>
<thead>
<tr>
<th></th>
<th>Canadian GAAP</th>
<th>US GAAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX</td>
<td>Canadian GAAP (CICA Handbook, section 1650) requires the deferral and amortization of unrealized foreign exchange gains or losses on foreign long-term debt.</td>
<td>US GAAP requires the immediate recognition of the gains or losses in net income.</td>
</tr>
<tr>
<td>EXT</td>
<td>Canadian GAAP allows the use of worldwide cost centres. Canadian GAAP requires the use of a zero discount rate in the calculation regarding the ceiling test.</td>
<td>US GAAP requires cost centres not to extend beyond the geographical boundaries of a country. US GAAP requires a 10% discount rate for the ceiling test calculation.</td>
</tr>
<tr>
<td>TAX</td>
<td>Under Canadian GAAP, deferred tax expense is based the narrow concept of timing differences. Timing differences emphasis the matching principle for the income statement. This reflects past cash flows at historical tax rates.</td>
<td>Under US GAAP (FASB Statement No. 109), the liability method is used in accounting for income taxes. This method is reflected in the broad concept of temporary differences, which is closer to the definitions of assets and liabilities. This method reflects future cash flows at future tax rates. It is more encompassing than the deferral method as the scope of the transactions to impact on income tax expense is not limited to income statement items.</td>
</tr>
<tr>
<td>NPPR</td>
<td>Under Canadian GAAP, charges for non-pension post retirement benefits are normally charged to earnings as they occur.</td>
<td>US GAAP (FASB Statement No. 106) requires the accrual of actuarily determined post retirement benefit costs as active employees earn these benefits.</td>
</tr>
<tr>
<td>OTH</td>
<td>All other differences not specifically explained above.</td>
<td></td>
</tr>
</tbody>
</table>
TABLE 2
Sample Selection Summary
Panel A

Total Sample

# of cross-listed firm-years in TSE Monthly Review 310
less: no reconciliations available (32)
less: not actively traded on TSE or US exchange (23)
less: no reported difference in reconciliation statement (86)
less: no data available at UBC (33)

Final Sample Size for Returns Analyses 136
less: reconciliation of book value not reported 59

Final Sample Size for Market to Book Analyses 77

Panel B

Net Income Reconciliation

\[
\begin{array}{ccc}
 & 1993 & 1994 & \text{Total} \\
\text{Canadian \$ Reporting} & 47 & 54 & 101 \\
\text{US \$ Reporting} & 18 & 17 & 35 \\
 & 65 & 71 & 136 \\
\text{Canadian Market Dominance} & 43 & 48 & 91 \\
\text{US Market Dominance} & 22 & 23 & 45 \\
 & 65 & 71 & 136
\end{array}
\]

Panel C

Book Value Reconciliation

\[
\begin{array}{ccc}
 & 1993 & 1994 & \text{Total} \\
\text{Canadian \$ Reporting} & 24 & 32 & 56 \\
\text{US \$ Reporting} & 9 & 12 & 21 \\
 & 33 & 44 & 77 \\
\text{Canadian Market Dominance} & 27 & 31 & 58 \\
\text{US Market Dominance} & 6 & 13 & 19 \\
 & 33 & 44 & 77
\end{array}
\]
### Table 3

**Descriptive Statistics**

<table>
<thead>
<tr>
<th></th>
<th>#</th>
<th>Mean</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIC</td>
<td>136</td>
<td>$37,269</td>
<td>$6,425</td>
<td>-$656,000</td>
<td>$1,178,000</td>
</tr>
<tr>
<td>NIU</td>
<td>136</td>
<td>30,617</td>
<td>7,117</td>
<td>-764,000</td>
<td>1,008,000</td>
</tr>
<tr>
<td>BVC</td>
<td>77</td>
<td>605,027</td>
<td>191,450</td>
<td>-63,305</td>
<td>4,308,000</td>
</tr>
<tr>
<td>BVU</td>
<td>77</td>
<td>577,571</td>
<td>158,300</td>
<td>-258,300</td>
<td>4,495,000</td>
</tr>
<tr>
<td>MV</td>
<td>136</td>
<td>1,505,317</td>
<td>585,676</td>
<td>2,398</td>
<td>15,369,580</td>
</tr>
<tr>
<td>FX</td>
<td>45</td>
<td>6,702</td>
<td>637</td>
<td>-24,000</td>
<td>78,600</td>
</tr>
<tr>
<td>EXT</td>
<td>24</td>
<td>3,837</td>
<td>182</td>
<td>-11,500</td>
<td>51,900</td>
</tr>
<tr>
<td>TAX</td>
<td>76</td>
<td>-4,745</td>
<td>-423</td>
<td>-135,000</td>
<td>89,200</td>
</tr>
<tr>
<td>NPPR</td>
<td>26</td>
<td>16,971</td>
<td>4,900</td>
<td>-9,996</td>
<td>205,000</td>
</tr>
<tr>
<td>OTH</td>
<td>92</td>
<td>4,677</td>
<td>541</td>
<td>-52,582</td>
<td>214,500</td>
</tr>
</tbody>
</table>

All numbers, except # of observations, are in $,000's (Canadian).

NIC is net income according to Canadian GAAP;
NIU is net income according US GAAP;
BVC is book value according to Canadian GAAP;
BVU is book value according to US GAAP;
MV is market value using TSE prices;
FX is adjustment for gain/loss on foreign exchange related to long-term debt;
EXT is adjustment for extraction industries;
TAX is adjusted for deferred taxes;
NPPR is adjustment for non-pension post retirement benefits; and
OTH is all other adjustments.
Table 4
Correlation Matrix

Panel A

<table>
<thead>
<tr>
<th></th>
<th>NIUS(_t)</th>
<th>ANIUS(_t)</th>
<th>DNI(_t)</th>
<th>ADNI(_t)</th>
<th>EXCRAT(_t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIUS(_t)</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANIUS(_t)</td>
<td>0.5227</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNI(_t)</td>
<td>-0.2905</td>
<td>-0.1125</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADNI(_t)</td>
<td>-0.0767</td>
<td>-0.3282</td>
<td>0.6115</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>EXCRAT(_t)</td>
<td>-0.0850</td>
<td>-0.0084</td>
<td>-0.0154</td>
<td>-0.1429</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

Panel B

<table>
<thead>
<tr>
<th></th>
<th>BVUS(_t)</th>
<th>NIUS(_t)</th>
<th>DBV(_t)</th>
<th>DNI(_t)</th>
<th>EXCRAT(_t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BVUS(_t)</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIUS(_t)</td>
<td>0.5036</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DBV(_t)</td>
<td>-0.3000</td>
<td>0.0856</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNI(_t)</td>
<td>-0.1258</td>
<td>-0.4938</td>
<td>-0.2560</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>EXCRAT(_t)</td>
<td>0.1299</td>
<td>-0.1531</td>
<td>0.0790</td>
<td>-0.1030</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

\(R_i\) is the 12 month return for firm \(i\) in year \(t\);
NIUS\(_t\) is the reported net income of firm \(i\) in year \(t\) according to US GAAP;
ANIUS\(_t\) = NIUS\(_t\) - NIUS\(_t-1\);  
NIC\(_t\) is the net income of firm \(i\) in year \(t\) according to Canadian GAAP;
DNI\(_t\) = NIC\(_t\) - NIUS\(_t\);
\(\Delta\)DNI\(_t\) = \(\Delta\)NIC\(_t\) - \(\Delta\)NIUS\(_t\);
P\(_t\) is the share price of firm \(i\) at time \(t\);
BVUS\(_t\) is the book value of the common stock according to US GAAP for firm \(i\) at time \(t\);
BVC\(_t\) is the book value of common equity according to Canadian GAAP for firm \(i\) at time \(t\);
DBV\(_t\) = BVC\(_t\) - BVUS\(_t\); and,
EXCRAT\(_t\) is the percentage change in the exchange rate for firm \(i\) in year \(t\).
Table 5

Returns Analysis: Exchange Rate Constant

\[ R_t = \beta_0 + \beta_1 \text{NIUS}_t + \beta_2 \Delta\text{NIUS}_t + \beta_3 \text{DNI}_t + \beta_4 \Delta\text{DNI}_t + \varepsilon_t \]

Panel A

<table>
<thead>
<tr>
<th></th>
<th>( \beta_0 )</th>
<th>( \text{NIUS}_t )</th>
<th>( \Delta\text{NIUS}_t )</th>
<th>( \text{DNI}_t )</th>
<th>( \Delta\text{DNI}_t )</th>
<th>( R^2 )</th>
<th>adj. ( R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Estimate</strong></td>
<td>0.2267</td>
<td>0.0796</td>
<td>0.0016</td>
<td>0.1417</td>
<td>-0.0360</td>
<td>0.0157</td>
<td>-0.0150</td>
</tr>
<tr>
<td><strong>White's t-stat</strong></td>
<td>3.165</td>
<td>1.464</td>
<td>0.060</td>
<td>0.968</td>
<td>-0.512</td>
<td></td>
<td></td>
</tr>
<tr>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel B

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual Partition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1993 (n=65)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimate</strong></td>
<td>0.5270</td>
<td>0.0974</td>
<td>0.0043</td>
<td>0.0653</td>
<td>0.0285</td>
<td>0.0108</td>
<td>-0.0574</td>
</tr>
<tr>
<td><strong>White's t-stat</strong></td>
<td>4.016</td>
<td>0.326</td>
<td>0.925</td>
<td>0.823</td>
<td>0.860</td>
<td></td>
<td></td>
</tr>
<tr>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1994 (n=71)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimate</strong></td>
<td>-0.0542</td>
<td>0.1148</td>
<td>-0.0177</td>
<td>0.4249</td>
<td>-0.0615</td>
<td>0.0955</td>
<td>0.0399</td>
</tr>
<tr>
<td><strong>White's t-stat</strong></td>
<td>-0.921</td>
<td>1.759</td>
<td>-0.361</td>
<td>1.286</td>
<td>-0.645</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel C

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Market Partition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Canadian (n=91)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimate</strong></td>
<td>0.2147</td>
<td>0.0493</td>
<td>0.0081</td>
<td>0.2195</td>
<td>-0.0656</td>
<td>0.0101</td>
<td>-0.0370</td>
</tr>
<tr>
<td><strong>White's t-stat</strong></td>
<td>2.342</td>
<td>0.677</td>
<td>0.196</td>
<td>1.219</td>
<td>-0.839</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>US (n=45)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimate</strong></td>
<td>0.3416</td>
<td>0.1267</td>
<td>0.0911</td>
<td>-0.5072</td>
<td>0.4657</td>
<td>0.0748</td>
<td>-0.0201</td>
</tr>
<tr>
<td><strong>White's t-stat</strong></td>
<td>2.551</td>
<td>0.985</td>
<td>1.183</td>
<td>-1.047</td>
<td>1.216</td>
<td></td>
<td></td>
</tr>
<tr>
<td>****</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

- \( R_t \) is the 12 month return for firm \( i \) in year \( t \);
- \( \text{NIUS}_t \) is the reported net income of firm \( i \) in year \( t \) according to US GAAP;
- \( \Delta\text{NIUS}_t \) = \( \text{NIUS}_t - \text{NIUS}_{t-1} \);
- \( \text{NIC}_t \) is the net income of firm \( i \) in year \( t \) according to Canadian GAAP;
- \( \text{DNI}_t \) = \( \text{NIC}_t - \text{NIUS}_t \);
- \( \Delta\text{DNI}_t \) = \( \Delta\text{NIC}_t - \Delta\text{NIUS}_t \);
- \( \varepsilon_t \) is a random error term, assumed to be i.i.d..
Table 6

Returns Analysis: Exchange Rate Included

\[ R_{it} = \beta_0 + \beta_1 \text{NIUS}_{it} + \beta_2 \Delta \text{NIUS}_{it} + \beta_3 \text{DNI}_{it} + \beta_3 \Delta \text{DNI}_{it} + \beta_3 \text{EXCRAT}_{it} + \varepsilon_{it} \]

<table>
<thead>
<tr>
<th>Panel A</th>
<th>Full Sample (n=136)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \beta_0 )</td>
</tr>
<tr>
<td>Estimate</td>
<td>0.2256</td>
</tr>
<tr>
<td>White’s t-stat</td>
<td>2.696</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B</th>
<th>Annual Partition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1993 (n=65)</td>
</tr>
<tr>
<td></td>
<td>Estimate</td>
</tr>
<tr>
<td></td>
<td>White’s t-stat</td>
</tr>
<tr>
<td></td>
<td>1994 (n=71)</td>
</tr>
<tr>
<td></td>
<td>Estimate</td>
</tr>
<tr>
<td></td>
<td>White’s t-stat</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel C</th>
<th>Market Partition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Canadian (n=91)</td>
</tr>
<tr>
<td></td>
<td>Estimate</td>
</tr>
<tr>
<td></td>
<td>White’s t-stat</td>
</tr>
<tr>
<td></td>
<td>US (n=45)</td>
</tr>
<tr>
<td></td>
<td>Estimate</td>
</tr>
<tr>
<td></td>
<td>White’s t-stat</td>
</tr>
</tbody>
</table>

***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

- \( R_{it} \) is the 12 month return for firm \( i \) in year \( t \);
- \( \text{NIUS}_{it} \) is the reported net income of firm \( i \) in year \( t \) according to US GAAP;
- \( \Delta \text{NIUS}_{it} \) is \( \text{NIUS}_{it} - \text{NIUS}_{it-1} \);
- \( \text{NIC}_{it} \) is the net income of firm \( i \) in year \( t \) according to Canadian GAAP;
- \( \text{DNI}_{it} \) = \( \text{NIC}_{it} - \text{NIUS}_{it} \);
- \( \Delta \text{DNI}_{it} \) = \( \Delta \text{NIC}_{it} - \Delta \text{NIUS}_{it} \);
- \( \text{EXCRAT}_{it} \) is the percentage change in the exchange rate for firm \( i \) in year \( t \), and
- \( \varepsilon_{it} \) is a random error term, assumed to be i.i.d.
Table 7

Returns Analysis: Reporting Currency

\[ R_{it} = \beta_0 + \beta_1 NIUS_{it} + \beta_2 \Delta NIUS_{it} + \beta_3 DI_{it} + \beta_4 \Delta DI_{it} + \epsilon_{it} \]

\[ R_{it} = \beta_0 + \beta_1 NIUS_{it} + \beta_2 \Delta NIUS_{it} + \beta_3 DI_{it} + \beta_4 \Delta DI_{it} + \beta_5 EXCRAT_{it} + \epsilon_{it} \]

<table>
<thead>
<tr>
<th>Exchange Rate Constant</th>
<th>Exchange Rate Included</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canadian Dollar</strong></td>
<td><strong>US Dollar</strong></td>
</tr>
<tr>
<td>(n=101)</td>
<td>(n=35)</td>
</tr>
<tr>
<td><strong>Estimate</strong></td>
<td><strong>White’s t-stat</strong></td>
</tr>
<tr>
<td>( \beta_0 )</td>
<td>0.2862</td>
</tr>
<tr>
<td>NIUS</td>
<td>0.0437</td>
</tr>
<tr>
<td>( \Delta NIUS )</td>
<td>0.0039</td>
</tr>
<tr>
<td>DNI</td>
<td>0.0457</td>
</tr>
<tr>
<td>( \Delta DNI )</td>
<td>-0.0113</td>
</tr>
<tr>
<td>EXCRAT</td>
<td></td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.0052</td>
</tr>
<tr>
<td>adj. ( R^2 )</td>
<td>-0.0376</td>
</tr>
</tbody>
</table>

***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

\( R_{it} \) is the 12 month return for firm \( i \) in year \( t \);

NIUS\( _{it} \) is the reported net income of firm \( i \) in year \( t \) according to US GAAP;

\( \Delta NIUS_{it} = NIUS_{it} - NIUS_{it-1} \);

NIC\( _{it} \) is the net income of firm \( i \) in year \( t \) according to Canadian GAAP;

DNI\( _{it} \) = NIC\( _{it} \) - NIUS\( _{it} \);

\( \Delta DNI_{it} = \Delta NIC_{it} - \Delta NIUS_{it} \);

EXCRAT\( _{it} \) is the percentage change in the exchange rate for firm \( i \) in year \( t \), and

\( \epsilon_{it} \) is a random error term, assumed to be i.i.d.
Table 8

Returns Analysis: Specific Reconciling Items

\[ R_{it} = \beta_0 + \beta_1\text{NIUS}_i + \beta_2\Delta\text{NIUS}_i + \beta_3\text{FX}_i + \beta_4\text{EXT}_i + \beta_5\text{TAX}_i + \beta_6\text{OTH}_i + \beta_7\Delta\text{FX}_i + \beta_8\Delta\text{EXT}_i + \beta_9\Delta\text{TAX}_i + \beta_{10}\Delta\text{OTH}_i + \mu_i. \]

\[ R_{it} = \beta_0 + \beta_1\text{NIUS}_i + \beta_2\Delta\text{NIUS}_i + \beta_3\text{FX}_i + \beta_4\text{EXT}_i + \beta_5\text{TAX}_i + \beta_6\text{OTH}_i + \beta_7\Delta\text{FX}_i + \beta_8\Delta\text{EXT}_i + \beta_9\Delta\text{TAX}_i + \beta_{10}\Delta\text{OTH}_i + \beta_{11}\text{EXCRAT}_i + \mu_i. \]

<table>
<thead>
<tr>
<th>Exchange Rate Constant</th>
<th>Estimate</th>
<th>White’s t-stat</th>
<th>Estimate</th>
<th>White’s t-stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=136)</td>
<td></td>
<td></td>
<td>(n=136)</td>
<td></td>
</tr>
<tr>
<td>( \beta_0 )</td>
<td>1.0907</td>
<td>2.527</td>
<td>**</td>
<td>0.2075</td>
</tr>
<tr>
<td>NIUS</td>
<td>1.3191</td>
<td>1.328</td>
<td>0.1190</td>
<td>1.967</td>
</tr>
<tr>
<td>( \Delta\text{NIUS} )</td>
<td>0.0698</td>
<td>0.120</td>
<td>-0.0198</td>
<td>-0.596</td>
</tr>
<tr>
<td>FX</td>
<td>-0.3891</td>
<td>-0.062</td>
<td>0.5378</td>
<td>0.867</td>
</tr>
<tr>
<td>EXT</td>
<td>6.3146</td>
<td>1.918</td>
<td>*</td>
<td>0.1713</td>
</tr>
<tr>
<td>TAX</td>
<td>-0.6269</td>
<td>-0.257</td>
<td>0.2838</td>
<td>1.297</td>
</tr>
<tr>
<td>NPPR</td>
<td>5.4335</td>
<td>1.577</td>
<td>-0.1430</td>
<td>-0.615</td>
</tr>
<tr>
<td>OTH</td>
<td>2.9970</td>
<td>1.271</td>
<td>0.3035</td>
<td>1.675</td>
</tr>
<tr>
<td>( \Delta\text{FX} )</td>
<td>-9.6950</td>
<td>-3.677</td>
<td>***</td>
<td>-2.920</td>
</tr>
<tr>
<td>( \Delta\text{EXT} )</td>
<td>-6.1340</td>
<td>-1.915</td>
<td>*</td>
<td>-0.5543</td>
</tr>
<tr>
<td>( \Delta\text{TAX} )</td>
<td>1.7708</td>
<td>0.779</td>
<td>-0.1537</td>
<td>-0.912</td>
</tr>
<tr>
<td>( \Delta\text{NPPR} )</td>
<td>-0.9737</td>
<td>-0.851</td>
<td>0.0298</td>
<td>0.363</td>
</tr>
<tr>
<td>( \Delta\text{OTH} )</td>
<td>-1.2502</td>
<td>-1.293</td>
<td>-0.1825</td>
<td>-1.812</td>
</tr>
<tr>
<td>EXCRAT</td>
<td></td>
<td></td>
<td>1.0588</td>
<td>0.651</td>
</tr>
</tbody>
</table>

| R²                      | 0.1005   |                | 0.0421   |                |
| adj. R²                 | 0.0105   |                | -0.0626  |                |

***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

\( R_{it} \) is the 12 month return for firm \( i \) in year \( t \);
\( \text{NIUS}_i \) is the reported net income of firm \( i \) in year \( t \) according to US GAAP;
\( \Delta\text{NIUS}_i = \text{NIUS}_i - \text{NIUS}_{i-1} \);
\( \text{FX}_i \) is the foreign exchange adjustment for firm \( i \) in year \( t \);
\( \text{EXT}_i \) is the extraction industry adjustment for firm \( i \) in year \( t \);
\( \text{TAX}_i \) is the deferred tax adjustment for firm \( i \) in year \( t \);
\( \text{NPPR}_i \) is the non-pension post retirement benefit adjustment for firm \( i \) in year \( t \);
\( \text{OTH}_i \) is the total of all other adjustments for firm \( i \) in year \( t \);
\( \text{EXCRAT}_i \) is the percentage change in the exchange rate for firm \( i \) in year \( t \); and
\( \epsilon_i \) is a random error term, assumed to be i.i.d.
Table 9

Market-to-Price Analysis

\[ P_a = \beta_0 + \beta_1 \text{BVUS}_a + \beta_2 \text{NIUS}_a + \beta_3 \text{DBV}_a + \beta_4 \text{DNI}_a + \eta_a \]

**Panel A**

Full Sample (n=77)

<table>
<thead>
<tr>
<th></th>
<th>( \beta_0 )</th>
<th>BVUS</th>
<th>NIUS</th>
<th>DBV</th>
<th>DNI</th>
<th>( R^2 )</th>
<th>adj. ( R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate</td>
<td>5.1130</td>
<td>1.1254</td>
<td>-0.2514</td>
<td>0.3127</td>
<td>0.2159</td>
<td>0.6726</td>
<td>0.6541</td>
</tr>
<tr>
<td>White’s t-stat</td>
<td>5.250</td>
<td>8.343</td>
<td>-1.863</td>
<td>1.601</td>
<td>1.080</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>***</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Panel B**

Annual Partition

<table>
<thead>
<tr>
<th>Year</th>
<th>(n=33)</th>
<th>(n=44)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>4.0061</td>
</tr>
<tr>
<td></td>
<td>White’s t-stat</td>
<td>2.491</td>
</tr>
<tr>
<td>1993</td>
<td>**</td>
<td>***</td>
</tr>
<tr>
<td></td>
<td>Estimate</td>
<td>1.1850</td>
</tr>
<tr>
<td></td>
<td>White’s t-stat</td>
<td>10.690</td>
</tr>
<tr>
<td>1994</td>
<td>**</td>
<td>***</td>
</tr>
</tbody>
</table>

***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

- \( P_a \) is the share price of firm \( i \) at time \( t \);
- \( \text{BVUS}_a \) is the book value of the common stock according to US GAAP for firm \( i \) at time \( t \);
- \( \text{NIUS}_a \) is the reported net income of firm \( i \) in year \( t \) according to US GAAP;
- \( \text{BVC}_a \) is the book value of common equity according to Canadian GAAP for firm \( i \) at time \( t \);
- \( \text{DBV}_a = \text{BVC}_a - \text{BVUS}_a \);
- \( \text{NIC}_a \) is the net income of firm \( i \) in year \( t \) according to Canadian GAAP;
- \( \text{DNI}_a = \text{NIC}_a - \text{NIUS}_a \); and,
- \( \eta_a \) is a random variable, assumed i.i.d.