

# Mitigation of U.S. Home Bias in the Valuation of Canadian Natural Resource Firms: Choice of Reporting and Transaction Currency

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This study explores whether the valuation of Canadian natural resource firms is related to their decisions to present financial reports in U.S. dollars or to allow dual currency (Canadian and U.S. dollar) trades of their shares in Canadian markets. The results indicate that firms electing to report their financial results in U.S. dollars do enjoy a higher proportion of U.S. trades, and a higher market value, compared with firms reporting in domestic currency. These findings are consistent with U.S. dollar reporting reducing the behavioral phenomenon known as “home bias”, for U.S. investors. In contrast, giving investors the opportunity to transact in U.S. dollars in Canada does not appear to have a beneficial impact. This latter finding is consistent with the practical observation that very few Canadian firms adopted dual currency trading. The dual currency trading experiment on the TSX appears to have failed.

**Keywords:** Home Bias, Dual Currency Trading, Reporting Currency, Natural Resource Firms

## I. Introduction

In January 2004 the Toronto Stock Exchange (TSX) announced the introduction of “dual currency” trading in the equity of 12 Canadian companies and said that it hoped to add “dozens of additional companies” to its dual currency trading platform by year-end.<sup>1</sup> The stated motive was to give Canadian investors who maintain U.S. dollar

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1. “TSX to begin dual currency trading in 12 companies”, CBC News, Monday January 12, 2004, 4:01 PM ET

brokerage accounts more flexibility- they would no longer need to trade on U.S. exchanges to transact in U.S. dollars. All 12 of the firms volunteering to take part in this “first phase” of dual currency trading were listed on both the TSX and on an American exchange, 8 of the 12 reported their financial results in U.S. dollars rather than Canadian dollars and most were in the natural resource sector. When announcing the introduction of dual currency trading, the TSX also stated its intention to attract a greater U.S. investor clientele, with particular reference to arbitrage traders and institutional investors, and argued on behalf of the appeal of Canadian markets as follows:

“Our research shows that our TSX market structure attributes, including strict price-time priority trading rules, a highly visible order book displaying multiple levels of order liquidity, and rapid, fully electronic (non-intermediated) trade execution, are of significant interest to investors that trade in U.S. dollars”.

Several other measures were also adopted by the TSX in response to increasing competition from U.S. stock exchanges. These included extended trading hours, increased transparency, and lower trading costs (for a discussion see Mittoo 2003). Offering investors who prefer to conduct their transactions in U.S. dollars the opportunity to do so on the TSX was meant to encourage them to conduct their trades in this market. For participating firms, dual currency trading therefore had the potential to result in greater demand for their shares.

Canadian firms have a long tradition of sourcing debt and equity capital in the larger and deeper U.S. markets. Some elect to do so by cross-listing their equity in those markets. While there is an extensive literature validating the hypothesis that cross-listed Canadian firms enjoy a valuation premium relative to their domestic counterparts (see, for example, Doidge, Karolyi and Stulz, 2004, Doidge et al 2009 and King and Segal, 2003b, 2009), much less is known about these other tactics - that is, the impact of dual currency trading, and the practice of reporting financial results in U.S. dollars. These are separate decisions from the cross-listing decision.<sup>2</sup> While cross-listing involves offering securities for sale on organized U.S. exchanges, the opportunity for U.S.

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2. All of the initial dual currency trading firms were cross-listed, but not all cross-listed firms report their financial results in U.S. dollars and not all U.S. dollar reporting firms are cross-listed or elect dual currency trading. See appendix II for a detailed listing of all cross-listed firms and their reporting currency and transaction currency choices.

dollar trading in TSX transactions could improve firm visibility and also offer greater convenience for certain investors. U.S. dollar reporting is cosmetic and involves translating from Canadian to U.S. dollars in the presentation of financial statements. Unlike cross-listing and U.S. dollar trading, U.S. dollar reporting does not directly affect equity share transactions.

Cross-listing has been found to be associated with significant increases in the number and value of shares traded, though not all companies experience benefits of increased liquidity when they cross-list in the United States. According to the findings of Baruch et al (2007), cross-listed stocks on U.S. exchanges actually exhibit great variation in the U.S. fraction of their global trading. Moreover, there is significant cross sectional diversity in the U.S. fraction of trading even among cross-listed stocks from the same country. This study examines two factors that may impact the proportion of U.S. trading in shares of Canadian firms. These are the decisions to adopt dual currency trading in the common shares of the firm on Canadian markets and the decision to report financial statements in U.S. dollars.

The behavioral phenomenon known as “home bias” or “the liability of foreign-ness” is the tendency to overweight domestic securities in investment portfolios and to underweight less familiar foreign securities. If U.S. dollar reporting or transacting reduces the “home bias” of U.S. investors, this would be consistent with many other examples of the capital market effects of the tendency to invest in the familiar, as discussed in Huberman (2001). Home bias is not unique to U.S. investors. It has been found to be a persistent and pervasive influence on security valuation with a variety of institutional and behavioral causes (see, for example, Chan, Covrig and Ng 2005). Further, several means of reducing home bias have been shown to enhance security valuation (see, for example, Lau, Ng and Zhang 2010). For instance, more familiar accounting practices are associated with greater analyst following, lower risk, higher valuation and greater foreign equity holdings in the findings of Bradshaw, Bushee and Miller (2004), Covrig, Defond and Hung (2004), Bai, Tan and Welker (2008) and Amiram (2012). Along these same lines, the selection of reporting currency can be considered an accounting disclosure “choice”, and one that may improve financial statement familiarity for investors if their home currency is selected as the reporting currency.

U.S. dollar reporting could also shift the focus of foreign exchange translation risk management to a U.S. perspective and this may appeal

to U.S. investors as it will smooth reported results from their perspective. Smoother reported earnings via translation exposure management have been associated with higher firm value in Collins and Salatka (1993), Demarzo and Duffie (1995) and Bartov (1997). Also, reported results may be relevant to decision making, since managers have been shown to hedge book value or “accounting risk” in such studies as Soo and Soo (1994) and Bodnar, Hayt and Marston (1998). The reporting currency choice is still cosmetic, however, in comparison with most accounting “choices”, since Canadian firms electing to present their financial reports in U.S. dollars still prepare those reports according to Canadian accounting principles. As the adoption of a U.S. perspective via U.S. dollar reporting does not involve different accounting measurement or information disclosure, an observed positive impact could be interpreted as strong evidence of the mitigation of “home bias” and the benefit of offering greater familiarity to U.S. investors.

We examine a sample of Canadian firms in 2004, when dual currency trading was introduced on the TSX. As noted above, 12 firms volunteered to participate in the “first phase” of dual currency trading in early 2004. In Fall 2004 the offer to participate was then extended to Energy and Basic Materials firms (see appendix I for a chronology of events). The TSX likely focused on natural resource firms for the dual currency trading experiment because Canadian firms in this sector have a longstanding tradition of accessing U.S. capital markets for financing. Several potential impacts of appearing more familiar to U.S. investors are examined in this study, including the attraction of greater analyst following, a higher proportion of U.S. trades, and higher market value as measured by Tobin’s Q ratio.

The findings indicate that U.S. dollar financial reporting is beneficial, consistent with U.S. dollar reporting mitigating “home bias” for U.S. investors. In contrast, offering investors the opportunity to transact in U.S. dollars in Canada is found to have little impact. This latter result is consistent with the practical observation that very few Canadian firms adopted dual currency trading. There may be little benefit in doing so. In fact, the U.S. dollar trading experiment on the TSX appears to have failed. See appendix I for a description of the incidence of dual currency trading in corporate securities on the TSX from 2003 to 2010. The practice had disappeared for common shares by 2010.

The remainder of this paper is organized as follows. Section II

provides a review of previous research and hypothesis development. Section III includes a description of the sample, while Section IV includes variable definitions, measures and descriptive statistics. Results are provided in Section V and Section VI concludes.

## **II. Previous Research and Hypothesis Development**

### *A. Home Bias*

Home bias is the tendency for investors to allocate a greater share of their portfolios to domestic stocks than would be warranted by their representative share in the world market portfolio. For example, Dahlquist et al (2002) report that in 1997, U.S. investors held 91% of their stock investments in U.S. stocks, but that at that time, U.S. stocks represented only 49% of the world market portfolio. That is, U.S. investors were overweighting domestic stocks in their portfolios. French and Poterba (1991) suggest that this tendency may be due to investors imputing extra “risk” to foreign investments because they know less about foreign markets, institutions and firms. Home bias is exhibited by sophisticated institutional investors and not just by individual investors. For instance, in their study of mutual fund equity allocations worldwide, Chan, Covrig and Ng (2005) find that funds allocate a disproportionately larger fraction of investment to domestic stocks in all 26 countries examined.

The economic significance of home bias could be substantial. Huberman (2001) gives numerous examples of the tendency to invest in the familiar, at both an international and a local level, and explains that “when individuals’ stories about portfolio selection are systematically similar, they are pervasive market forces”. For example, a direct test of the cost of capital impact of home bias is conducted by Carrieri, Errunza and Hogan (2007), based on the Hail and Leuz (2009) framework. Their results indicate that home bias exists in every country and that local risk therefore plays an important role in explaining expected returns.

Home bias could arise due to national regulations such as restrictions on foreign investments, and also to information processing costs and transactions costs, as well as to purely behavioral reasons such as patriotism or familiarity. Information asymmetry, in particular, has been shown to contribute importantly to investor decision making. One measure of information asymmetry is analyst following, with less

asymmetry being reflected in greater analyst following (for example, see Sahut, Gharbi and Gharbi, 2011). This is because analysts act as significant information intermediaries, engaging in private information search activities that potentially improve capital markets' information quality.<sup>3</sup> Familiar accounting choices have also been shown to positively impact analyst coverage in Bai, Tan and Welker (2008) and Bradshaw, Bushee and Miller (2004). Therefore, if reporting or transacting in U.S. dollars is associated with increased analyst following, benefits may accrue to firms because of the positive impact that greater analyst following has on their information environments. In addition to such indirect effects from attracting greater analyst coverage, accounting choices that improve familiarity have also been shown to directly impact foreign equity portfolio investments. For instance, Amiran (2012) finds that the positive impact of accounting familiarity on foreign investor holdings is more pronounced when investor and investee countries share language, legal origin, culture and religion. This would be the case for Canada and the United States.

Another way to enhance familiarity for foreign investors is to cross list equity securities in their local capital markets. That is, cross listed Canadian firms can reasonably be expected to be more familiar to U.S. investors and to therefore be subject to less home bias. Lang, Lins and Miller (2003) report that cross listing is associated with increases in analyst coverage and greater forecast accuracy. Greater analyst coverage could have a genuine impact on the information environments of firms if it results in improved monitoring and less information asymmetry between insiders and outsiders to the firm. Observed increases in forecast accuracy in Lang, Lins and Miller (2003) are attributed both to the disclosure of more information and to changes in analyst composition (Nowland and Simon 2010).<sup>4</sup> As disclosed information becomes more value relevant, share prices are shown to be more responsive to earnings announcements (see Bailey, Karolyi and Salva

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3. For example, Healey and Palepu (2001), Pietroski and Roulstone (2004) and Frankel and Li (2004) find that analysts act as significant information intermediaries between managers and market participants. Also, Schutte and Unli (2009) find that analyst coverage reduces noise and that firms with greater analyst following have less volatile returns, while Hong, Lim and Stein (2000) find that stocks with less available news, measured by lower analyst coverage, exhibit excess return volatility.

4. This is also consistent with the finding in Hope (2003) that more detailed disclosures are associated with greater forecast accuracy.

2006). Like cross-listed firms, U.S. dollar reporting or transacting firms may be able to attract greater analyst coverage and benefit from an improved informational environment.

For reporting currency in particular, another consideration is that the perceived riskiness of earnings and book value of assets from a U.S. perspective could be reduced by selecting to report in U.S. dollars. That is, the choice of reporting currency directly affects the exposure of financial statements to exchange rate changes and this may alter perceptions and behaviors. The exposure of book value to exchange rate changes is referred to as the “translation” exposure of the firm.<sup>5</sup>

While book value or “translation” exposure may not reflect the exposure of firm market value to exchange rate changes, several prior studies have nonetheless documented a relationship between managerial hedging decisions and translation exposure (see, for example, and Hagelin and Pramborg (2004) and (2006), Soo and Soo (1994), and Bodnar, Hayt and Marston(1998)). It has been argued that the elimination of extraneous noise, through such activities as hedging book exposures, increases the information content of corporate earnings and that this serves as a signal of management ability and quality (eg see Collins and Salatka (1993), DeMarzo and Duffie (1995) and Bartov (1997)). This reported linkage between translation exposure management, earnings quality, and valuation provides a justification for managers hedging book value or “accounting risk”, as opposed to, or in addition to, economic risk. If U.S. dollar reporting currency firms reduce volatility from a U.S. perspective, there could be similar positive consequences and this could be a factor contributing to any observed valuation premium for U.S. dollar reporting firms.

Another issue that may contribute to U.S. home bias is actual, and potentially important, differences in regulations and governance practices in Canadian and U.S. capital markets. Relative to the United States, Canada features higher corporate ownership concentration, more frequent use of pyramidal ownership structures, and a higher level of corporate ownership by wealthy families (Doidge, Karolyi and Stulz

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5. Translation exposure depends on the translation methodology used in addition to the financial statement configuration of the firm. This contrasts with transaction exposure which involves the short term cash flow consequences of exchange rate uncertainty and its impact on the domestic currency value of future transactions that have an identifiable amount and date. Also, economic or “operating” exposure is the impact of exchange rate changes on the entire future stream of cash flows, well beyond immediate identifiable transactions. For a discussion see Booth (1996).

2004). King and Segal (2003a) explain four key differences between the United States and Canada that may lead to the perception that Canada has weaker investor protection. These include the nature and concentration of firm ownership, government regulations restricting firm ownership, the structure of securities regulation, and the (lack of) enforcement of insider trading laws.<sup>6</sup> If investor rights are not as well protected in Canada, U.S. investors may decline to invest in Canadian shares.

While home bias can impact the demand for foreign securities and have substantial capital market effects, the resulting cost to investors of indulging local preferences may not be very high. In their statistical analysis of optimal portfolio weights in international versus purely domestic portfolios, Gorman and Jorgensen (2002) find that the optimal weights are insignificantly different. That is, the theorized gains from international diversification may be difficult for individual investors to capture in practice, so that investors exhibiting a strong home bias are not necessarily acting irrationally. This may help to explain the persistence of home bias.

If firms allowing dual currency trading or that report in U.S. dollars succeed in reducing U.S. investor home bias, then everything else equal, for the reasons described above, we would expect such firms to have a higher percentage of U.S. trading in their shares and to experience a valuation premium. Therefore:

Hypothesis 1a: Firms allowing U.S. dollar transactions in their shares on Canadian markets (“dual currency trading”) have a higher percentage of U.S. trading in their shares

Hypothesis 1b: Firms reporting financial results in U.S. dollars have a higher percentage of U.S. trading in their shares

### *B. Impacts of U.S. Investor Trading Activity*

Strong linkages between the Canadian and U.S. economies have

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6. This may be particularly relevant for firms that have dual class shares (Amoako-Adu and Smith 1995). Dual class ownership allows divergence of control and cash flow rights, creating a more acute agency conflict between controlling and minority shareholders. Even in the U.S., where the level of investor protection is considered to be among the best in the world, Gomphers, Ishii and Metrick (2010) report that dual class ownership is associated with lower valuation.



fostered a tradition of Canadian firms listing in the U.S. in order to access the larger U.S. capital markets and to enhance stock liquidity.<sup>7</sup> Ammer et al (2008) report that this cross-listing is economically important, with U.S. ownership in foreign firms roughly doubling upon cross-listing in the U.S..<sup>8</sup> Consistent with this finding, Canadian cross-listed firms have been shown to enjoy a valuation premium relative to their Canadian peers, though they still trade at a discount relative to comparable U.S. firms (King and Segal 2003a and 2009, Doidge et al 2009). Many explanations for the cross-listing premium have been offered, including greater visibility, an improved information environment, lower cost of capital, the creation of a currency for control transactions, bonding to the U.S. security regulations that protect investors and reduce agency costs, as well as mitigation of the effects of U.S. investors' home bias.<sup>9</sup>

U.S. investor behavior has been shown to significantly impact Canadian capital markets and security prices, for both cross-listed and other firms. For example, evidence of the importance of U.S. transactions for trading in the shares of Canadian cross-listed firms on Canadian markets is presented by Tannous and Zhang (2008). Their study of trading on the TSX during U.S. partial holidays shows that Canadian transaction costs are higher and volumes are lower than they would be without the participation, trading behavior, and price discovery process, of U.S. traders. Similarly, in an earlier study, Cheung and Kwan (1992) demonstrate that there is lower trading volume in Canada during U.S. partial holidays, for the market as a whole and not just for cross-listed shares. So while U.S. investors exhibit significant home bias in their equity holdings, they still trade heavily on, and have a strong influence on, Canadian markets and Canadian equity prices. This strong influence of U.S. investors argues for the beneficial impact for Canadian firms of actions that make them appear more familiar to U.S. investors, whether or not they are cross-listed. Therefore:

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7. Resource stocks, which form a significant component of the Canadian economy, dominated the set of cross-listed firms accessing U.S. capital prior to 1990 and are the "traditional" type of Canadian cross-listing firm. Post-1990, cross-listings have also been undertaken by firms spanning a broader variety of industries (Mittoo 2003).

8. Ammer et al (2008) use confidential, security-level U.S. Treasury Federal Reserve Board data on all foreign security holdings of U.S. residents, in their analyses.

9. See, for instance, Karolyi 1998, Lang, Lins and Miller 2003, King and Mittoo 2007, Doidge et al 2009, Ball et al 2009, Hail and Leuz 2009, Miller and Puthenpurackal 2002 and Ayyagari and Doidge 2010.

Hypothesis 2: Firms with a higher percentage of U.S. trading activity experience a valuation premium

Hypothesis 3a: Firms allowing U.S. dollar transactions in their shares on Canadian markets (“dual currency trading”) experience a valuation premium

Hypothesis 3b: Firms reporting financial results in U.S. dollars experience a valuation premium

To summarize, there are a variety of reasons we might expect benefits to accrue to Canadian firms electing to report in U.S. dollars or to allow U.S. dollar transactions in their shares in Canada. Those firms appearing more familiar to U.S. investors may enjoy greater U.S. trading activity, greater analyst coverage and higher market value. Underlying these benefits to reducing “home bias” could be such factors as better perceived corporate governance or investor protection and also the reduction of perceived foreign exchange exposure.

### III. Sample

The sample consists of 142 large (revenues of \$100 million +) , Canadian headquartered, natural resource firms. Only firms with Canadian headquarters were included in order to control for documented evidence that U.S. portfolio managers exhibit a strong preference for locally headquartered firms (Coval and Moskowitz, 1999). Strong ties and close proximity between the Canadian and U.S. economies, as well as institutional and cultural similarities, imply that Canadian firms could actually experience less “home bias” in their interactions with U.S. investors than would firms from other countries.

Natural resource firms are of particular interest, since they were first to be invited to participate in dual currency trading and because there is a long tradition of Canadian natural resource firms accessing U.S. capital markets to finance their activities. Natural resource firms comprise two industry groups on the TSX; Basic Materials and Energy (60 and 82 of the sample firms, respectively).

The selected sample period is 2004. In January 2004 the TSX initiated dual currency trading (see the appendix for a chronology of events and a list of dual currency trading firms in the sample). Initially

there were 12 participating firms. By year-end 2004, 17 sample firms had elected to allow both U.S. and Canadian dollar denominated TSX transactions in their shares. All of these firms were cross-listed and 10 published their financial reports in U.S. dollars. By year-end 2005, this number had increased to 18 firms, of which 11 reported in U.S. dollars.

Appendix II provides a listing of the 61 sample firms that either adopted dual currency trading or reported their financial results in U.S. dollars or were cross-listed. It is clear that these are related, but different, decisions.<sup>10</sup> For instance, of the 32 sample firms that reported their financial results in U.S. dollars in 2004, 22 were cross-listed and 10 allowed dual currency trading in their shares in 2004. Also, of the 49 cross-listed firms, in 2004 there were 22 that reported in U.S. dollars and 15 that allowed dual currency trading in their shares on the TSX. It is important to emphasize that what was new in 2004 was the opportunity for dual currency trading, with TSX transactions occurring in either Canadian or U.S. dollars. The reporting currency and cross-listing choices were not new opportunities but were established firm characteristics/choices at that time.

Canadian firms vary in the extent of their foreign financing, investing and operating activities. In this sample, half (71) of the firms are geographically segmented and report having assets or revenues in foreign segments. Also, many (61 or 43%) report direct investment in foreign assets. Average proportions of foreign revenues and assets for sample firms in 2004 are 26.7% and 24.1%, respectively. Virtually all Canadian firms with “foreign” debt financing have U.S. dollar debt (eg. see Rotenberg, 1998) and the current sample is no exception. In terms of financing, close to half (64 or 45%) of the sample firms have “foreign” debt and foreign currency denominated debt represents 32.2% of all reported debt on their 2004 balance sheets.

#### **IV. Variable Definitions, Measures and Descriptive Statistics**

All financial statement data used in the study was hand collected from firm annual reports and annual information forms.<sup>11</sup> Table 1 describes

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10. Chi-square tests confirm the statistical significance of the relations among these choices.

11. These are publicly available on sedar.com and all sample firms reported using Canadian GAAP.

**TABLE 1. Variable Definitions**

Unless indicated otherwise, all variables are measured at year-end 2004

Variable Name	Definition
#Analysts	Number of Analysts covering the firm as reported by Bloomberg, that is, total analyst recommendations
Change #Analysts	Change in Number of Analysts covering the firm from 2003 to 2005
EBIT Growth	Average annual EBIT growth for the two year period from 2003 to 2005
Leverage	Equity Multiplier equal to Total Assets divided by Book Value of Equity
Foreign Sales	Foreign Revenues/Total Revenues where "Foreign" is defined as non-Canadian
Materials	Indicator Variable set to one if the firm is in a Basic Materials Industry and to zero otherwise
REPORT_US	Indicator Variable set to one if the firm reports in U.S. dollars and to zero otherwise
ROA	Return on Assets equal to Net Income divided by Total Assets
TA	Total Assets in Millions of Canadian dollars
Size	Natural log of Total Assets
%US Trading	Percentage of Trading in U.S. Markets
Change %US Trading	Change in Proportion of Trading in U.S. Markets from 2003 to 2005
Tobin's Q	Tobin's Q ratio calculated as [Market Value of Equity plus Book Value of Debt]/Total Assets
TRADES_US	Indicator Variable set to one if the firm allows U.S. dollar share purchase/sale transactions in Canada and to zero otherwise
Cross List	Indicator Variable set to one if the firm has Cross Listed Equity in the U.S. and to zero otherwise

each variable. Most measures are taken directly from the financial statements while others are derived from financial statement numbers or from information contained in the annual information forms or in the footnotes to the financial statements. The data on equity market prices and the percentage of U.S. trading was obtained from Bloomberg.<sup>12</sup>

12. As in other related studies (eg King and Segal 2009, Doidge et al (2009), Gompers Ishii and Metrick 2010, data are winsorized at the 1% and 99% levels to reduce the impact of outliers.

*A. Measure of Trading by U.S. Investors*

Canadian firms with greater U.S. investor interest are expected to have a higher proportion of their share transactions undertaken by U.S. investors. The proposed measure of trading by U.S. investors is the percentage of trades in a firm's shares that occurs on U.S. markets. When a Canadian firm is cross-listed in the United States, its shares are traded in U.S. dollars and as ordinary equity securities for U.S. investors. However, no NYSE-listed non-U.S. stock is completely fungible with the corresponding home market securities because investors buying the security in the U.S. must hold it in a U.S. dollar account and receive U.S. dollar dividends. Similarly, U.S. investors can hold Canadian "ordinaries" in Canadian dollars only through special arrangements with depositories in Canada. Pulatkonak and Sofianos (1999) describe the institutional arrangements involved in the purchase and sale of cross-listed shares and explain that while it is beneficial for U.S. and Canadian investors to transact in the shares in their local markets, the investments are virtually identical. That is, necessary custodial arrangements add to the expense of U.S. investors trading in Canada so that all else equal, U.S. investors will trade in the U.S. and vice versa, in the same security.

Since most investors transact in their local markets, the percentage of trades conducted in the U.S. may be considered a reasonable proxy for the level of U.S. investor trading in the Canadian security. This is the case whether or not the firm is cross-listed, since Canadian firms that are not cross-listed often have U.S. trades in their shares on the American over-the-counter markets. In fact, most large Canadian firms have some U.S. market trading activity. U.S. investor interest in a firm and U.S. involvement will be measured as the actual percentage of U.S. market trades in the security as reported by Bloomberg.

The average percentage of U.S. trading in shares of all sample firms was 18.4% in 2004. As shown in table 2, those firms with cross-listed shares in the U.S. had an average of 42 % of their equity trades in the U.S., but even those firms that did not cross-list have some U.S. trading activity, with an average level of 6.1% in 2004. The percentage is higher for the subset of U.S. dollar reporting firms (34.2%) versus only 14.1 % for the Canadian dollar reporting firms. Also, those firms allowing dual currency trading in their shares in Canada have a higher proportion of U.S. market trading, at 37.9%, versus 15.9% for other firms. These differences are statistically significant across the various subsamples (Cross list/not, U.S. dollar reporting/not, dual currency trades/not). This

TABLE 2. Descriptive Statistics – U.S. Trading, Analyst Coverage and Tobin's Q

	Non Cross-listed			Cross-listed			Difference of Means t-test Sign.
	N	Mean	Standard Deviation	N	Mean	Standard Deviation	
%US Trading	93	6.1	15.0	49	42.0	30.6	35.9***
Change %US Trading	93	1.8	10.2	49	9.8	18.5	8.0***
#Analysts	93	4.8	3.7	49	8.9	7.5	4.1***
Change #Analysts	93	2.3	3.2	49	1.2	2.4	-1.1**
Tobin's Q	93	1.77	0.87	49	2.25	1.13	-0.64***
	Report in CAD			Report in USD			Difference of Means t-test Sign.
	N	Mean	Standard Deviation	N	Mean	Standard Deviation	
%US Trading	110	14.1	25.5	32	34.2	29.3	20.1***
Change %US Trading	110	4.3	13.5	32	5.7	16.6	1.4
#Analysts	110	5.9	5.1	32	7.5	7.0	1.6
Change #Analysts	110	2.2	2.7	32	1.0	3.8	-1.2*
Tobin's Q	110	1.82	0.9	32	2.36	1.17	-0.65***

( Continued )

TABLE 2. (Continued)

	Trade in CAD		Trade in USD or CAD		Difference of Means t-test Sign.		
	N	Mean	Standard Deviation	N		Mean	Standard Deviation
%US Trading	125	15.9	27.0	17	37.9	24.7	22.0***
Change %US Trading	125	4.4	14.1	17	5.9	14.6	1.5
#Analysts	125	5.5	4.5	17	11.9	9.0	6.4***
Change #Analysts	125	1.9	3.1	17	1.9	1.9	0
Tobin's Q	125	1.93	1.02	17	2.01	0.74	0.08

**Note:** This table presents descriptive statistics on the U.S. Trading, Analyst Coverage and Tobin's Q ratios of various subsamples of firms. %US Trading is the Percentage of Trading in U.S. markets, Change % US Trading is the change in the percentage of U.S. trading from 2003 to 2005. # Analysts is the number of analysts covering the firm as reported by Bloomberg, Change # Analysts is the change in the number of analysts covering the firm from 2003 to 2005. Tobin's Q is calculated as the market value of equity plus the book value of debt, divided by the total assets of the firm. Means for each variable are compared using a t-test, with significance in the differences between means indicated in the right most column. \*10%, \*\*5%, \*\*\*1% significance levels.

is consistent with the hypotheses that U.S. dollar transacting and reporting are both associated with a higher proportion of U.S. trading and, hence, greater U.S. investor interest (per H1a and H1b).

Also reported in table 2 is the average change in % US trading from 2003 to 2005, for the various subsamples. The average change for all firms was a 4% increase, from 16.5% in 2003 to 20.5% in 2005. The cross-listed firms did experience a greater increase in % US trading than the others, with a 9.8% increase compared with a 1.8% increase for non cross-listed firms. In contrast, no significant difference was observed in the changes in % US trading for either the U.S. dollar reporting or transacting currency subsamples between 2003 and 2005.

### *B. Measures of Analyst Coverage*

The level of analyst coverage is our proxy for the quality of the information environment of sample firms. Analysts serve as information intermediaries, devoting resources and expertise to gathering and analyzing corporate information. Many studies therefore use the number of analysts following a firm and generating earnings forecasts for the firm as a measure of information asymmetry between insiders and outsiders (eg, see Hong, Lim and Stein 2000). The Bloomberg measure of the total number of analysts following each firm is used in this study and for the full sample, the average analyst coverage is 7.3 at the end of 2004.<sup>13</sup>

Total analyst coverage by subsample is displayed in table 2. The cross-listed firms have higher coverage of 8.9 analysts on average, compared with 4.8 analysts covering non-cross listed firms. Analyst coverage is also higher for the U.S. dollar reporting firms (7.5 versus 5.9) and for the dual currency trading firms (11.9 versus 5.5). These differences are statistically significant for dual currency transacting and cross-listed firms.

From 2003 to 2005, average analyst following in the sample overall increased from 5.1 to 7.0. The cross-listed firms experienced a smaller increase than non-cross-listed firms (1.2 versus 2.3), as did the U.S. dollar reporting firms (1.0 versus 2.2). The dual currency trading firms

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13. An alternative measure is the I/B/E/S variable from Thomson Financial, which indicates the number of analyst announcements/guidance revisions issued over a relevant time horizon. In the final months of 2004 for instance, there was an average of 3.9 analyst announcements for sample firms and the correlation between the two measures of analyst coverage was .685 (significant at .000).



had the same increase in coverage as the firms that did not participate in the experiment (1.9 for both).

### *C. Measure of Relative Market Value*

The final variable described in table 2 is Tobin's Q, or relative market value of sample firms, by subsample. It is calculated at year end 2004 as the market value of equity plus the book value of debt, divided by the book value of total assets. In the overall sample, the average value of Tobin's Q is 1.94. As shown in table 2, consistent with prior research, cross listed firms are observed to have significantly higher relative market values than non-cross listed firms. Some cross listed firms report in U.S. dollars and some participated in the dual currency trading experiment, as explained above and shown in appendix II. These are separate decisions. Like the subsample of cross-listed firms, sample firms reporting in U.S. dollars have higher average Tobin's Q ratios than the Canadian dollar reporting firms (2.36 and 1.82, respectively). There is no significant difference however in the Tobin's Q ratios for the firms that did and did not participate in the dual currency trading experiment.

### *D. Further Descriptive Statistics - Control Variables*

Further descriptive statistics for the various subsamples of firms (cross-listed/not, U.S. dollar reporting/not and dual currency trading/not) are provided in table 3. Several firm characteristics are seen to differ for the different subsamples. Selected control variables measure various financial attributes of the sample firms and are similar to those used in Doidge et al (2009) and King and Segal (2009). They include measures of firm size, growth opportunities, profitability, financial leverage and foreign involvement/visibility. Size is measured as the book value of total assets. The proxy for growth opportunities is the actual annual EBIT growth experienced on average from 2003 to 2005. Profitability is measured using Return on Assets, dividing net income by the book value of total assets. Financial leverage is measured using the Equity Multiplier, calculated as total assets divided by the book value of equity. Finally, the proportion of foreign sales is included as a proxy for foreign involvement and visibility.

As shown in table 3, the significant features of cross-listed firms include larger firm size, and lower profitability. U.S. dollar reporting firms are characterized by lower profitability, lower leverage and

TABLE 3. Descriptive Statistics—Control Variables

	Non Cross-listed			Cross-listed			Difference of Means t-test Sign.
	N	Mean	Standard Deviation	N	Mean	Standard Deviation	
Total Assets	93	950	1756	49	4240	6949	3290***
EBIT Growth	93	0.44	2.93	49	0.62	1.61	0.18
Return on Assets	93	5.29	0.06	49	0.05	0.12	-5.24**
Leverage	93	1.9	0.64	49	1.78	0.83	-0.12
Foreign Sales	93	0.24	0.36	49	0.31	0.42	-0.07
	Report in CAD			Report in USD			Difference of Means t-test Sign.
	N	Mean	Standard Deviation	N	Mean	Standard Deviation	
Total Assets	110	2001	4195	32	2375	5752	374
EBIT Growth	110	0.48	2.7	32	0.62	1.77	0.14
Return on Assets	110	4.52	7.74	32	-0.19	0.12	-4.71**
Leverage	110	1.94	0.75	32	1.55	0.46	-0.39***
Foreign Sales	110	0.18	0.3	32	0.57	0.45	0.39***

(Continued)

TABLE 3. (Continued)

	Trade in CAD		Trade in USD or CAD		Difference of Means t-test Sign.		
	N	Mean	Standard Deviation	N		Mean	Standard Deviation
Total Assets	125	1323	2957	17	7687	8861	6364***
EBIT Growth	125	0.53	2.68	17	0.35	0.87	-0.18
Return on Assets	125	0.04	0.09	17	0.03	0.1	-0.01
Leverage	125	1.85	0.74	17	1.87	0.48	0.02
Foreign Sales	125	0.23	0.35	17	0.55	0.45	0.32***

**Note:** This table presents descriptive statistics on control variables for various subsamples of firms. Total Assets is measured in millions of Canadian dollars. EBIT Growth is the average annual percentage of growth in earnings before interest and taxes for the two year period from 2003 to 2005. Return on Assets is net income divided by total assets in 2004. Leverage is measured using the Equity Multiplier and is calculated as total assets divided by the book value of equity, in 2004. Foreign Sales is the percentage of non Canadian revenues to total revenues in 2004. Means for each variable are compared using a t-test, with significance in the differences between means indicated in the right most column. \*10%, \*\*5%, \*\*\*1% significance levels.

greater foreign sales. Dual currency trading firms are larger and have a higher proportion of foreign sales.

The foreign sales percentage is an important control variable in this study because, as Sabherwal (2007) argues, firms with higher visibility due to their product market activities will be more familiar to investors in the foreign market and their shares may therefore be more actively traded by foreign investors. Sabherwal finds that Canadian firms with a higher proportion of U.S. sales do indeed have a greater percentage of U.S. trading in their shares. This could be due to more advertising, more media coverage and the actual use of the firms products or services resulting in greater comfort and familiarity for U.S. investors. By including the foreign sales percentage as a control variable, we attempt to separate out such product market effects from the potential impacts of dual currency trading and U.S. dollar reporting. The average proportion of foreign sales in the entire sample was 27% in 2004. This data is collected by examining the segment disclosure footnotes in the annual reports of sample firms. As shown in table 3, the cross-listing decision does not appear to be related to the proportion of foreign sales, while the U.S. dollar reporting and dual currency trading firms have significantly higher foreign sales at 55% and 57%, respectively.

Overall, the descriptive statistics suggest important differences in firms in the three subsamples, depending on whether firms are cross-listed, report their financial results in U.S. dollars, or allowed dual currency trading in their common shares on the TSX.

## V. Analyses and Results

### A. *Preliminary Tests - Choice of Reporting Currency and Dual Currency Trading*

The financial attributes of firms electing U.S. dollar reporting and dual currency trading, as described by the control variables in table 3, are now compared using logistic regression analysis. Results are reported in table 4. First is an indicator variable to control for natural resource sector, as the sample includes both Materials and Energy firms. The indicator is set to 1 for Materials firms and to 0 for Energy firms. The remaining explanatory variables include the control variables described above, but measured in the prior period as at 2003, to avoid endogeneity

**TABLE 4. Probability of Reporting in USD or Allowing Dual Currency Trading**

	(1) REPORT_US Coefficient (sign.)	(2) REPORT_US Coefficient (sign.)	(3) TRADES_US Coefficient (sign.)	(4) TRADES_US Coefficient (sign.)
Constant	-4.006 (.003)***	-4.620 (.007)***	-7.389 (.000)***	-7.926 (.000)***
Materials	1.482 (.020)**	1.738 (.025)**	0.107 (.880)	0.430 (.575)
Size 2003	0.621 (.012)**	0.340 (.225)	1.010 (.000)***	0.787 (.015)**
ROA 2003	-6.980 (.016)**	-4.247 (.228)	-5.664 (.118)	-1.591 (.690)
Leverage 2003	-1.553 (.022)***	-1.286 (.083)*	-1.067 (.118)	-0.931 (.184)
Foreign Sales	1.836 (.009)***	2.711 (.002)***	1.640 (.066)*	1.982 (.040)**
EBIT Growth	0.060 (.611)	0.053 (.676)	-0.098 (.479)	-0.129 (.453)
Cross List	-	2.666 (.000)***	-	2.362 (.009)***
Chi-square	44.059***	60.364***	26.695***	35.580***

**Note:** This table presents binary logistic regression analyses of the probability of sample firms choosing either U.S. dollar reporting or dual currency trading. Independent variables include indicators for natural resource sector (set to 1 for Materials firms and to 0 for Energy firms) and also the control variables from table 4 but measured as of 2003, including measures of firm size (natural log of total assets), profitability (return on assets), financial leverage (equity multiplier or assets over equity), proportion of foreign sales, and EBIT growth (average annual growth for 2003 to 2005). Columns (2) and (4) include the cross listed status indicator as an additional control variable, for comparison purposes.  $n = 142$ . \* 10% \*\* 5% \*\*\* 1% statistical significance level. For Independent Variables see table 1.

and misspecification.<sup>14</sup>

Both the reporting currency and dual currency trading choices are observed to be related significantly to the firm characteristics selected as control variables. In particular, as shown in columns 1 and 3, both choices are more likely for larger firms with greater foreign involvement or visibility. In addition, U.S. dollar reporting currency firms tend to be in the Materials sector and to have lower profitability and lower

14. The average annual EBIT growth is measured from 2003-2005 and the foreign sales percentage was measured using information in the 2004 financial statement footnotes.

leverage than sample firms that report their financial results in Canadian dollars. Also reported in table 4 in columns 2 and 4, for comparison purposes, are specifications that include cross-listed status as a control variable. As expected, given the high incidence of U.S. dollar reporting and dual currency trading by cross listed firms (see appendix II), the cross-list control variable is highly significant.

### *B. Analysis of Percentage of U.S. Trading*

The next analysis involves examining relationships between the percentage of U.S. trading in the common shares of sample firms and several key variables to test Hypotheses 1a and 1b. These hypotheses are that firms allowing dual currency trading and firms reporting financial results in U.S. dollars are expected to have higher percentages of U.S. trading in their shares. The findings are reported in table 5. Independent variables represent the transaction and reporting currency choices of firms, interactions between these choices, and the control variables.

Column 1 provides the results for a base line specification including only the control variables. In column 2, the TRADES\_US variable representing the dual currency trading choice is added. Column 3 then includes only the REPORT\_US variable, representing the reporting currency choice. Considering the specifications in columns 2 and 3, it is observed that both TRADES\_US and REPORT\_US are positively associated with the percentage of U.S. trading, in isolation. When both variables are included in column 4 along with an interaction term, however, only the U.S. dollar reporting currency indicator, REPORT\_US, is observed to be significantly related to the percentage of U.S. trading.

Referring now to the results for the control variables, some are found to be significant in certain specifications. The first control variable is an indicator distinguishing between the two natural resource sectors, set to 1 for Basic Materials firms and to zero for Energy firms. It is of marginal significance in the final specification in column 4. Size, leverage, proportion of foreign sales, and EBIT growth are insignificant in all specifications. Profitability as measured by Return on Assets is consistently and negatively associated with the percentage of U.S. trading in the data year examined and appears to be an important control variable. Finally, the level of analyst coverage, a proxy for the information environment, is included and is positively associated with

TABLE 5. Percentage of U.S. Trading in 2004

	(1) Coefficient t-statistic (sign.)	(2) Coefficient t-statistic (sign.)	(3) Coefficient t-statistic (sign.)	(4) Coefficient t-statistic (sign.)
Constant	10.12 0.74 (.459)	10.70 0.81 (.422)	4.75 0.36 (.721)	5.95 0.45 (.652)
TRADES_US	–	22.73 2.73 (.007)***	–	17.01 1.39 (.17)
REPORT_US	–	–	21.74 3.11 (.002)***	18.05 2.29 (.024)**
REPORT_US* TRADES_US	–	–	–	1.71 .11 (.913)
Materials	2.82 0.52 (.605)	3.08 0.58 (.562)	–1.07 –.20 (.844)	–0.31 –.06 (.955)
Size	3.15 1.10 (.276)	3.09 1.11 (.271)	3.63 1.31 (.194)	3.53 1.28 (.202)
ROA	–112.42 –4.09 (.000)***	–108.91 –4.06 (.000)***	–99.92 –3.72 (.000)***	–99.11 –3.73 (.000)***
Leverage	–4.50 –1.12 (.267)	–3.44 –.87 (.386)	–2.22 –.56 (.576)	–1.74 –.44 (.659)
Foreign Sales	2.23 .31 (.755)	–2.95 –.41 (.684)	–4.82 –.66 (.508)	–7.769 –1.06 (.293)
EBIT Growth	0.17 .18 (.861)	.22 .23 (.818)	–0.17 –.18 (.861)	–0.077 –.08 (.935)
#Analysts	.02 .03 (.977)	–.55 –.82 (.417)	–.45 –.70 (.488)	–.822 –1.22 (.226)
R-squared	.166	.216	.230	.260
adj R-squared	.116	.162	.177	.195
F statistic	3.322***	3.997**	4.332**	4.008***

(Continued)

**TABLE 5. (Continued)**


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**Note:** This table presents regression analyses of the determinants of percentage of U.S. trading in the common shares of sample firms. The dependent variable is the percentage of trading in U.S. markets in 2004. Independent variables include indicators for whether the firm participated in dual currency trading on the TSX (TRADES\_US), whether the firm reported its financial results in U.S. dollars (REPORT\_US) and natural resource sector (Materials versus Energy firms). Control variables include measures of firm size (natural log of total assets), profitability (return on assets), financial leverage (equity multiplier or assets over equity), proportion of foreign sales, EBIT growth (average annual growth for 2003 to 2005), and analyst coverage.  $n = 142$ . \* 10% \*\* 5% \*\*\* 1% statistical significance level. Dependent Variable = percentage of trading in U.S. markets in 2004. For Independent Variables see table 1.

the percentage of U.S. trading but only in the first specification.

In summary, a higher percentage of U.S. trading is associated with appearing more familiar to U.S. investors through U.S. dollar financial reporting (H1b) but not by allowing trades to occur in Canada, in U.S. dollars (H1a). This is consistent with the notion that there is less U.S. investor home bias in the transactions in Canadian equity shares where the firm appears more familiar, but only via its reporting currency choice and not by allowing dual currency trading. Next we examine whether this greater U.S. investor interest appears to translate into higher valuation for sample firms (Hypothesis 2).

### *C. Multivariate Analysis: Relative Valuation*

Cross sectional analyses of the Tobin's Q ratios of sample firms is presented in tables 6. As a benchmark, in specification 1, U.S. trading involvement is measured more crudely using the cross-list indicator variable. Remaining analyses are conducted with the finer percentage of U.S. trading measure since most sample firms have some U.S. trading in their shares but it is much higher for those that are cross-listed (See table 2). As in table 5 above, the first specifications are base line regressions that include only the control variables, with these alternative measures of U.S. trading including the indicator variable for cross-listed status in column 1 and then the finer measure of actual % U.S. trades in column 2. Both measures of U.S. investor involvement are positively related to firm value as measured by Tobin's Q, consistent with Hypothesis 2.

Remaining specifications (columns 3 through 7) then continue with the finer measure of U.S. investor interest, the % US trading, and



TABLE 6. Tobin's Q Determinants

	(1) Coefficient t-statistic (sign.)	(2) Coefficient t-statistic (sign.)	(3) Coefficient t-statistic (sign.)	(4) Coefficient t-statistic (sign.)	(5) Coefficient t-statistic (sign.)	(6) Coefficient t-statistic (sign.)	(7) Coefficient t-statistic (sign.)
Constant	3.808 8.374 (.000)***	3.584 7.435 (.000)***	3.578 7.391 (.000)***	3.533 7.278 (.000)***	3.454 7.256 (.000)***	3.502 7.300 (.000)***	3.454 7.203 (.000)***
Cross List	0.836 4.081 (.000)***	-	-	-	-	-	-
% US Trading	0.010 3.077 (.003)***	0.010 3.055 (.003)***	0.010 3.055 (.003)***	0.009 2.666 (.009)***	0.008 2.359 (.020)**	0.009 2.491 (.014)**	0.008 2.455 (.016)**
TRADES_US	-	-	-0.107 -0.342 (.733)	-0.062 -1.103 (.272)	-	-	-0.010 -0.021 (.983)
REPORT_US	-	-	-	-	0.615 2.358 (.020)**	0.826 2.313 (.023)**	0.730 2.492 (.014)**
USTrading* TRADES_US	-	-	-	0.013 1.106 (.271)	-	-	-

( Continued )

TABLE 6. (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)
US Trading*	-	-	-	-	-	-0.007	-
REPORT_US						-0.867	
						(.388)	
REPORT_US	-	-	-	-	-	-	-0.385
*TRADES_US							-0.676
							(.983)
Materials	-0.356	-0.283	-0.285	-0.261	-0.387	-0.416	-0.387
	-1.899	-1.471	-1.475	-1.347	-1.997	-2.114	-1.984
	(.060)*	(.144)	(.143)	(.180)	(.048)**	(.037)**	(.050)**
Size	-0.282	-0.247	-0.247	-0.244	-0.226	-0.241	-0.231
	-2.902	-2.424	-2.421	-2.388	-2.257	-2.367	-2.286
	(.004)***	(.017)**	(.017)**	(.019)**	(.026)**	(.020)**	(.024)**
ROA	2.591	2.066	2.081	2.092	2.174	2.072	2.228
	2.533	1.993	1.998	2.011	2.136	2.020	2.177
	(.013)**	(.049)**	(.048)**	(.047)**	(.035)**	(.046)**	(.032)**
Leverage	-0.258	-0.278	-0.282	-0.269	-0.223	-0.223	-0.225
	-1.860	-1.943	-1.956	-1.865	-1.569	-1.567	-1.571
	(.065)	(.054)	(.053)*	(.065)*	(.119)	(.120)	(.119)

(Continued)

TABLE 6. (Continued)

	(1) Coefficient t-statistic (sign.)	(2) Coefficient t-statistic (sign.)	(3) Coefficient t-statistic (sign.)	(4) Coefficient t-statistic (sign.)	(5) Coefficient t-statistic (sign.)	(6) Coefficient t-statistic (sign.)	(7) Coefficient t-statistic (sign.)
Foreign Sales	0.390 1.614 (.109)	0.275 1.089 (.278)	0.298 1.137 (.258)	0.238 0.890 (.376)	0.080 0.307 (.760)	0.139 0.514 (.608)	0.104 0.387 (.700)
EBIT	0.005 .161 (.873)	0.021 .598 (.551)	0.020 0.587 (.558)	0.021 0.611 (.543)	0.011 0.335 (.738)	0.010 0.287 (.774)	0.010 0.297 (.767)
#Analysts	0.016 0.713 (.477)	0.038 1.647 (.102)	0.041 1.665 (.099)*	0.044 1.793 (.076)*	0.025 1.061 (.291)	0.029 1.213 (.228)	0.028 1.119 (.265)
R-Square	.253	.206	.206	.215	.242	.247	.249
adj R-square	.202	.151	0.144	.146	.183	.181	.176
F statistic	4.962***	3.754***	3.325***	3.120***	4.086***	3.745***	3.405***

**Note:** This table presents regression analyses of the determinants of Tobin's Q or relative valuation of sample firms. The dependent variable is Tobin's Q in 2004. Independent variables include the cross list indicator or the proportion of U.S. market trading in the common shares of the firm. Indicator variables are included for whether firms participated in the dual currency trading experiment on the TSX (TRADES\_US), and whether they report their financial results in U.S. dollars (REPORT\_US). These indicator variables are also interacted with the percentage of U.S. trading variable. Remaining variables are controls and are the same as those used in the analysis of percentage of U.S. trading in table 6. First there is an indicator variable representing natural resource sector (materials versus energy firms). Other control variables include measures of firm size (natural log of total assets), profitability (return on assets), financial leverage (equity multiplier or assets over equity), proportion of foreign sales, EBIT growth (average annual growth for 2003 to 2005), and analyst coverage. \* 10% \*\* 5% \*\*\* 1% statistical significance levels. Dependent Variable = Tobin's Q, where Tobin's Q = [Market Value of Equity plus Book Value of Debt]/Total Assets. For Independent Variables see table 1.

examine the relationships between relative firm value as measured by Tobin's Q and firm characteristics. According to Hypotheses 3a and 3b, firms that allow dual currency trading and firms that report their results in U.S. dollars are expected to experience a valuation premium. The dual currency trading (TRADES\_US) and U.S. dollar reporting (REPORT\_US) indicators are now added to the base line regression, with the results shown in table 6 columns 3 through 7. First, only dual currency trading is included in column 3, and then the interaction between %US trading and dual currency trading is added in column 4. Similarly, for U.S. dollar reporting, the REPORT\_US indicator is included in column 5 and then it is included along with its interaction with the % US trading in column 6. Finally, both reporting currency and dual currency trading indicators are included, as well as the interaction between them, in column 7.

Referring to columns 3 through 7 of table 6, reporting currency (REPORT\_US) is consistently found to be relevant to value (H3b) while dual currency trading (TRADES\_US) is not (H3a). When both the reporting currency and the dual currency trading indicators are included in column 7, these results continue to hold. Also, the interaction between the indicator variables for dual currency trading and for reporting currency, with the percentage of U.S. trading and with each other, are not significant.

Remaining explanatory variables in all specifications in table 6 control for firm characteristics. As in prior analyses, these include natural resource sector (Materials or Energy), firm size, profitability, leverage, growth, percentage of foreign sales, and extent of analyst coverage. Some significant relationships are detected between these variables and firm value as measured using Tobin's Q. In particular, Tobin's Q is observed to be consistently higher for larger firms and for more profitable firms.

Specifications in columns 3 and 4 include only dual currency trading (TRADES\_US), and not reporting currency (REPORT\_US). In these regressions, firms with greater analyst coverage and lower leverage are observed to have higher value, while the natural resource sector indicator is insignificantly related to firm value. Then, in columns 5 through 7, when the reporting currency indicator (REPORT\_US) is included, the natural resource sector indicator is significant with non-materials (energy) firms have higher Tobin's Q while analyst coverage and financial leverage are not significantly related to firm value.

Comparing the findings for U.S. trading percentage and for relative firm value (tables 5 and 6), the results in table 5 indicated that U.S. dollar reporting firms have a higher percentage of U.S. market trading in their common shares. The relationship between U.S. market trading and the dual currency trading choice was significant when that indicator was included in isolation, but was not significant when U.S. dollar reporting (and the interaction between the two indicators) was also included in the analysis. The cross sectional analyses of Tobin's Q in table 6 is observed to generate similar results, since only the U.S. dollar financial reporting choice is found to be positively related to firm value. That is, U.S. dollar reporting is observed to be value relevant but dual currency trading is not.

Finally, the analyses presented in table 6 are repeated in table 7, including the cross-list indicator as an additional control variable, to verify that the positive impact of reporting currency choice on relative firm value is still evident, even after controlling for both the proportion of U.S. trading and the cruder measure of U.S. investor involvement of cross-list status. The results reported in table 6 continue to hold, though less significantly. That is, U.S. dollar reporting is observed to be value relevant but dual currency trading is not.

In summary, we attribute the greater investor interest and higher market value of U.S. dollar reporting firms to the mitigation of "home bias", since the reporting currency choice is a purely cosmetic or "look alike" effect. The appeal of U.S. dollar reporting could be partially explained by a reduction in perceived translation risk, by providing investors with a U.S. book value perspective. That is, firms that report in U.S. dollars may be treated more like American firms in the U.S. capital markets (supporting H3b). In contrast, allowing dual currency trading is not observed to have these effects (inconsistent with H3a).

#### *D. Multivariate Analyses - Robustness Checks*

Several alternative analyses were conducted to assess the robustness of reported results. These included a variety of additional and alternative variables and measurements, model specifications and time periods. No changes in reported results were detected. These robustness checks are described below.

First, since the dual currency trading experiment on the TSX continued into 2005, the percentage of U.S. trading in 2005 was

TABLE 7. Tobin's Q Determinants – Including Crosslisted Status as an Additional Control Variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)
Constant	3.808 8.374 (.000)***	3.717 7.783 (.000)***	3.710 7.843 (.000)***	3.662 7.738 (.000)***	3.96 7.599 (.000)***	3.618 7.589 (.000)***	3.597 7.567 (.000)***
Cross List	0.836 4.081 (.000)***	0.710 2.694 (.008)***	0.741 2.774 (.006)***	0.757 2.840 (.005)***	0.585 2.161 (.033)**	0.560 2.030 (.045)**	0.616 2.257 (.026)**
% US Trading	0.003 0.792 (.430)	0.003 0.867 (.388)	0.004 0.867 (.388)	0.002 0.541 (.589)	0.003 0.688 (.493)	0.004 0.841 (.402)	0.003 0.786 (.434)
TRADES_US	-	-	-0.236 -0.767 (.445)	-0.793 -1.484 (.140)	-	-	-0.088 -0.198 (.843)
REPORT_US	-	-	-	-	0.463 1.738 (.085)*	0.592 1.596 (.113)	0.581 1.967 (.052)*
US Trading* TRADES_US	-	-	-	0.014 1.274 (.205)	-	-	-

(Continued)

TABLE 7. (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)
US Trading*	-	-	-	-	-	-0.004	-
REPORT_US	-	-	-	-	-	-0.502	-
*TRADES_US	-	-	-	-	-	(.616)	-
Materials	-0.356 -1.899 (.060)*	-0.352 -1.863 (.065)*	-0.359 -1.896 (.060)**	-0.335 -1.762 (.081)*	-0.418 -2.187 (.031)**	-0.434 -2.232 (.028)**	-0.424 -2.201 (.030)**
Size	-0.282 -2.902 (.004)***	-0.274 -2.752 (.007)***	-0.277 -2.771 (.007)***	-0.274 -2.745 (.007)***	-0.254 -2.553 (.012)**	-0.261 -2.590 (.011)**	-0.260 -2.602 (.011)**
ROA	2.591 2.533 (.013)**	2.700 2.605 (.010)***	2.762 2.651 (.009)***	2.789 2.685 (.008)***	2.671 2.598 (.011)**	2.590 2.482 (.015)**	2.765 2.675 (.009)***
Leverage	-0.258 -1.860 (.065)	-0.254 -1.823 (.071)*	-0.262 -1.868 (.064)*	-0.247 -1.763 (.081)*	-0.217 -1.552 (.123)	-0.218 -1.549 (.124)	-0.221 -1.568 (.120)
Foreign Sales	0.390 1.614 (.109)	0.354 1.431 (.155)	0.410 1.587 (.115)	0.345 1.314 (.192)	0.194 0.739 (.461)	0.223 0.828 (.409)	0.238 0.879 (.381)

(Continued)

TABLE 7. (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)	Coefficient t-statistic (sign.)
EBIT	0.005	0.007	0.006	0.007	0.003	0.002	0.001
Growth	.161 (.873)	.213 (.832)	0.177 (.860)	0.194 (.846)	0.078 (.938)	0.061 (.951)	0.017 (.986)
#Analysts	0.016	0.019	0.024	0.027	0.012	0.015	0.016
	0.713 (.477)	0.797 (.427)	0.971 (.334)	1.109 (.270)	0.515 (.608)	0.618 (.538)	0.648 (.518)
R-Square	.253	.253	.257	.267	.272	.274	.282
adj R-square	.202	.194	0.191	.196	.208	.203	.205
F statistic	4.962***	4.324***	3.936***	3.745***	4.262***	3.872***	3.658***

**Note:** This table presents the same regression analyses of the determinants of Tobin's Q or relative valuation of sample firms as in table 7, with cross listed status included as an additional control variable in each specification for comparison purposes. The dependent variable is Tobin's Q in 2004. Independent variables include the cross list indicator or the proportion of U.S. market trading in the common shares of the firm. Indicator variables are included for whether firms participated in the dual currency trading experiment on the TSX (TRADES\_US), and whether they report their financial results in U.S. dollars (REPORT\_US). These indicator variables are also interacted with the percentage of U.S. trading variable. Remaining variables are controls and are the same as those used in the analysis of percentage of U.S. trading in table 6. First there is an indicator variable representing natural resource sector (materials versus energy firms). Other control variables include measures of firm size (natural log of total assets), profitability (return on assets), financial leverage (equity multiplier or assets over equity), proportion of foreign sales, EBIT growth (average annual growth for 2003 to 2005), and analyst coverage. \* 10% \*\* 5% \*\*\* 1% statistical significance levels. Dependent Variable = Tobin's Q, where Tobin's Q = [Market Value of Equity plus Book Value of Debt]/Total Assets. For Independent Variables see table 1.



estimated as in table 5. This involved measures of each variable in the subsequent year, including some reclassifying of sample firms as there were three firms that changed their dual currency trading status between 2004 and 2005 (see the appendices for details).

Other robustness checks involved including additional or alternate variables in the models. An indicator for dual class ownership structures was added, to control for governance concerns. There were 14 sample firms with dual class shares, slightly lower than the typical 20% in the general Canadian population reported in Amoako-Adu and Smith (1995). Including an indicator variable for dual class status had no impact on the reported results and the variable was insignificant. An alternate measure of foreign visibility, the proportion of foreign assets, was also substituted for the foreign sales variable. Firm visibility in foreign markets through international business activities could significantly impact investor awareness since direct foreign investment often involves foreign employment and a physical presence in the foreign markets. The results were similar to those obtained using the foreign sales measure and there was no impact on reported results.

We also examined whether the adoption of dual currency trading was associated with a change in the level of analyst coverage or in the percentage of U.S. trading. To do so, data was also collected for these variables for 2003 and 2005, as shown in table 2. When these change variables were included in the multivariate analyses rather than the levels, there was no change in the findings. Finally, a two stage estimation procedure was tried, with the percentage of U.S. trades as estimated in table 5 being used as an independent variable in the Tobin's Q analyses in table 6. Again, no difference in results was found.

## **VI. Concluding Remarks**

This study examines a sample of Canadian natural resource firms in 2004, the year the TSX experiment with dual currency trading was initiated. Many of the firms electing to allow U.S. dollar trades in their shares on the TSX also reported their financial results in U.S. dollars and had significant U.S. investor trading in their common shares. Both the decisions to allow dual currency trading, and U.S. dollar reporting in the financial statements, are examined.

Firms appearing more familiar to U.S. investors by presenting financial reports in U.S. dollars are found to experience a higher proportion of U.S. trading and higher Tobin's Q. This finding suggests

that U.S. dollar reporting reduces the behavioral phenomenon known as “home bias”, and is similar to other reported evidence of the positive impacts of offering greater familiarity to U.S. investors (see Huberman (2001) and Covrig, Defond and Hung (2007)). As the reporting currency decision is not costly, the implication is that Canadian firms have an incentive to report in U.S. dollars to capture related benefits. In contrast, the finding that U.S. dollar trading in the shares of the firm on Canadian markets was not associated with beneficial effects is consistent with the practical observation that the U.S. dollar trading experiment for common shares was short-lived in Canada. Few firms participated in the experiment and those that did abandoned it after just a few years.

*Accepted by: Prof. H. Shefrin, Guest Editor, May 2013*

*Prof. P. Theodossiou, Editor-in-Chief, May 2013*

## **Appendix I. The Introduction of Dual Currency Trading in Common Shares on the TSX**

### *A. Chronology of Events – per TSX Listing Bulletins and Press Announcements*

Date	Announcement
January 12, 2004	Phase 1 of Dual Currency Trading Effective February 2, 2004 12 participating firms
September 21, 2004	Expansion of Dual Currency Trading Effective October 1, 2004 Energy Sector
October 25, 2004	Expansion of Dual Currency Trading Effective November 1, 2004 Basic Materials Sector

### *B. History of Dual Currency Trading in All Categories of Corporate Securities, All Listings*

This table describes the adoption of Dual Currency Trading for all listed securities on the TSX and the number of sample firms allowing Dual Currency Trading in their common shares, for the 2003 to 2010 period.

Year	Total Dual Currency Trading Listings All Corporate Securities	Dual Currency Trading in Common Shares Sample Natural Resource Firms
2003	28	0
2004	57	17
2005	57	18
2006	28	16
2007	19	1
2008	21	1
2009	30	1
2010	31	0

Source: TSX Review, December Issue Various Years, “Trading in U.S. Funds” table.

## Appendix II. Dual Currency Trading in Common Shares of Sample Firms

This table identifies the years of dual currency trading, reporting currency, and cross-listed status of the 61 sample firms that either adopted dual currency trading in their common shares or U.S. dollar reporting or were cross listed. The overall sample period is 2003 – 2010.

	Company Name	Dual Currency Trading	U.S. Dollar Reporting	Cross- Listed
1	Aber Diamond Corp.		X	X
2	Agnico Eagle Mines		X	X
3	Agrium Inc.		X	X
4	Asia Pacific Resources Ltd.			X
5	Aur Resources Inc.		X	
6	Ballard Power Systems Inc.		X	X
7	Barrick Gold Corp	2004-2005	X	X

8	Baytex Energy Trust			X
9	Cambior Inc		X	X
10	Cameco Corp.			X
11	Canadian Natural Resources	2004-2006		X
12	Canadian Superior Energy Inc.			X
13	CE Franklin Ltd.			X
14	Centerra Gold Inc.		X	
15	Compton Petroleum Corp.			X
16	Crystallex International Corp.	2004-2005	X	X
17	Eldorado Gold Corp.		X	X
18	Enbridge Inc.			X
19	Encana Corp.	2004-2005	X	X
20	Enerplus Resources Fund			X
21	Enterra Energy Trust			X
22	Eurozinc Mining Corp.		X	
23	Falconbridge Ltd.	2005	X	
24	First Calgary Petroleum Ltd.		X	X
25	Fording Canadian Coal Trust			X
26	Gammon Lake Resources Inc.			X
27	Goldcorp Inc.	2005	X	X
28	Great Basin Gold Ltd.			X
29	Hydrogenics Corp.		X	X

30	IAMGold Corp.	2004-2005	X	X
31	Imperial Oil	2004-2005		X
32	Inco Ltd.	2004-2006	X	X
33	Inter Pipeline Fund			X
34	Ipsco Inc.		X	X
35	Ivanhoe Energy Inc.	2004-2005	X	X
36	Ivanhoe Mines Ltd.		X	X
37	Kinross Gold Corp.	2004-2009	X	X
38	Methanex Corp.	2004	X	X
39	Nexen Inc.			X
40	Noranda	2004-2005		
41	North Amer Palladium Ltd.			X
42	Northern Orion Resources Inc.		X	X
43	Northgate Minerals Corp.	2004-2005	X	X
44	Nova Gold Resources Inc.			X
45	Pan American Silver Corp.	2004-2005	X	X
46	Pebercan Inc.		X	
47	Pengrowth Energy Trust			X
48	Penn West Energy Trust			X
49	Petro-Canada	2004-2006		X
50	Potash Corp of Saskatchewan		X	
51	Precision Drilling	2004-2006		
52	Provident Energy Trust			X

53	Quadra Mining Ltd.		X	
54	Semafo Inc.		X	
55	Silver Standard Resources			X
56	Sino-Forest Corp.		X	
57	Suncor Energy	2004-2006		X
58	Talisman Energy	2004-2005		X
59	Taseko Mines Ltd.			X
60	Tenke Mining Corp.		X	
61	Trans Canada Corp.			X

Source: TSX Review, December Issue Various Years, "Trading in U.S. Funds" Table

## References

- Amiram, D. 2012. "Financial Information Globalization and Foreign Investment Decisions", *Journal of International Accounting Research*, Vol 11 (2): 57-81.
- Ammer, J.; Holland, S. B.; Smith, D. C.; and Warnock, F. E. 2008. "Why Do U.S. Cross-Listings Matter?", International Finance Discussion Paper Number 930, Board of Governors of the Federal Reserve System.
- Amoako-Adu, B., and Smith, B. 1995. "Relative Prices of Dual-Class Shares," *Journal of Financial and Quantitative Analysis* (30): 223-239.
- Ayyagari, M., and Doidge, C. 2010. "Does Cross Listing Facilitate Changes in Corporate Ownership and Control?," *Journal of Banking and Finance* Vol 34: 208-223.
- Bai, K-H.; Tan, H.; and Welker, M. 2008. "International GAAP differences: The Impact on Foreign Analysts," *The Accounting Review*, Vol 82 (3): 593-628.
- Bailey, W.; Karolyi, G.A.; and Salva, C. 2006. "The Economic Consequences of Increased Disclosure: Evidence from International cross-listings," *Journal of Financial Economics* 81: 175-213.
- Ball, R.T.; Hail, L.; and Vasvari, F.P. 2009. "Equity Cross-Listings in the U.S. and the Price of Debt," Working Paper.

- Bartov, E. 1997. "Foreign Currency Exposure of Multinational Firms: Accounting Measures and Market Valuation," *Contemporary Accounting Research* 14: 623-652.
- Baruch, S.; Karolyi, G.A.; and Lemmon, M.L. 2007. "Multimarket Trading and Liquidity: Theory and Evidence," *Journal of Finance*: 2169-2200.
- Bodnar, G.M.; Hayt, G.S.; and Marston, R.C. 1998. "1998 Survey of Financial Risk Management by U.S. Non-financial Firms". *Financial Management* 27(4): 70-91.
- Booth, L. 1996. "On the Nature of Foreign Exchange Exposure," *Journal of Multinational Financial Management* 6(1): 1-24.
- Bradshaw, M.T.; Bushee, B.J.; and Miller, G.S. 2004. "Accounting Choice, Home Bias, and U.S. Investment in Non-U.S. Firms," *Journal of Accounting Research*, Vol. 42, No.5: 795-841.
- Carrieri, F.; Errunza, V.; and Hogan, K. 2007. "Characterizing World Market Integration Through Time," *Journal of Financial and Quantitative Analysis* 42: 915-940.
- Chan, K.; Covrig, V.; and Ng, L. 2005. "What Determines the Domestic Bias and Foreign Bias? Evidence from Mutual Fund Equity Allocations Worldwide," *Journal of Finance* 60: 1495-1534.
- Cheung, C.S., and Kwan, C.C.Y. 1992. "A Note on the Transmission of Public Information Across International Stock Markets," *Journal of Banking and Finance* 16: 831-837.
- Collins, D., and Salatka, W. 1993. "Noisy Accounting Earnings Signals and Earnings Response Coefficients: The case of Foreign Currency Accounting," *Contemporary Accounting Research* 10: 119-159.
- Coval, J.D., and Moskowitz, T.J. 1999. "Home Bias at Home: Local Equity Preference in Domestic Portfolios," *Journal of Finance* 54: 1-39.
- Covrig, V.M.; Defond, M.L.; and Hung, M. 2007. "Home Bias, Foreign Mutual Fund Holdings, and the Voluntary Adoption of International Accounting Standards," *Journal of Accounting Research* 45 (1): 41-70.
- Dahlquist, M.; Pinkowitz, L.; Stulz, R.M.; and Williamson, R. 2002. "Corporate Governance, Investor Protection, and the Home Bias," *Journal of Financial and Quantitative Analysis*: 87-110.
- DeMarzo, P.M., and Duffie, D. 1995. "Corporate Incentives for Hedging and Hedge Accounting," *The Review of Financial Studies* 8(3): 743-771.
- Doidge, C.; Karolyi, G. A.; and Stulz, R.M. 2004. "Why are Foreign Firms Listed in the U.S. Worth More?," *Journal of Financial Economics* 71: 205-38.

- Doidge, C; Karolyi, G.A.; Lins, K.V.; Miller, D.P.; and Stulz, R.M. 2009. "Private Benefits of Control, Ownership, and the Cross-Listing Decision," *Journal of Finance*: 425-466.
- Foerster, S.R., and Karolyi, G.A. 1993. "International Listing of Stocks: The Case of Canada and the U.S.," *Journal of International Business Studies*; 24(4): 763-784.
- Frankel, R.M., and Li, X. 2004. "Characteristics of a Firm's Information Environment and the Information Assymetry Between Insiders and Outsiders," *Journal of Accounting and Economics* 37(2): 229-259.
- French, K., and Poterba, J. 1991. "Investor Diversification and International Equity Markets," *American Economic Review* 81: 222-226.
- Gompers, P.A.; Ishii, J.; and Metrick, A. 2010. "Extreme Governance: an Analysis of Dual-Class Firms in the United States," *Review of Financial Studies* 23(3): 1051-1088.
- Gorman, L.R., and Jorgensen, B.J. 2002. "Domestic versus International Portfolio Selection: A Statistical Examination of the Home Bias," *Multinational Finance Journal* 6(3&4): 131-166.
- Hagelin, N., and Pramborg, B. 2004. "Hedging Foreign Exchange Exposure: Risk Reduction from Transaction and Translation Exposure", *Journal of International Financial Management and Accounting* 15(1): 1-20.
- Hagelin, N., and Pramborg, B. 2006. "Empirical Evidence Concerning Incentives to Hedge Transaction and Translation Exposure," *Journal of Multinational Financial Management* 16(2):142-159.
- Hail, L, and Leuz, C. 2009. "Cost of Capital Effects and Changes in Growth Expectations around U.S. Cross-listings," *Journal of Financial Economics* 93: 428-454.
- Healy, P.M., and Palepu, K.G. 2001. "Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature," *Journal of Accounting and Economics* 31(1-3): 405-440.
- Hong, H.; Lim, T.; and Stein, J. 2000. "Bad News Travels Slowly: Size, Analyst Coverage, and the Profitability of Momentum Strategies", *Journal of Finance* 55: 265-295.
- Hope, O.-K. 2003. "Accounting Policy, Disclosures and Analysts' Forecasts," *Contemporary Accounting Research* 20: 295-321.
- Huberman, G. 2001. "Familiarity Breeds Investment," *Review of Financial Studies* 14(3): 659-680.
- Jorion, P., and Schwartz, E. 1986. "Integration vs. Segmentation in the Canadian Stock Market," *Journal of Finance*: 603-614.
- Karolyi, G.A. 1998. "Why Do Companies List Shares Abroad? A Survey of the



- Evidence and Its Managerial Implications,” *Financial Markets, Institutions and Instruments* (7): 1-60.
- King, M.R., and Mittoo, U.R. 2007. “What Companies Need to Know about International Cross-Listing”, *Journal of Applied Corporate Finance* 19(4): 60-74.
- King, M.R., and Segal, D. 2003a. “Corporate Governance, International Cross Listing and Home Bias,” Working Paper.
- King, M.R., and Segal, D. 2003b. “Valuation of Canadian – vs. U.S.-Listed Equity: Is There a Discount?” Bank of Canada Working Paper 2003-6.
- King, M. R., and Segal, D. 2009. “The Long-Term Effects of Cross Listing, Investor Recognition, and Ownership Structure on Valuation,” Advance Access published May 13 2008, *Review of Financial Studies*, 22(6): 2393-2421.
- Lang, J.H.; Lins, K.V.; and Miller, D. P. 2003. “ADRs, Analysts, and Accuracy: Does Cross Listing in the United States Improve a Firm’s Information Environment and Increase Market Value?,” *Journal of Accounting Research* 41(2): 317-345.
- Lau, S.T.; Ng, L.K.; and Zhang, B. 2010. “The World Price of Home Bias,” *Journal of Financial Economics* 97(2): 191-217.
- Miller, D.P., and Puthenpurackal, J. 2002. “The Costs, Wealth Effects, and Determinants of International Capital Raising: Evidence from Public Yankee Bonds,” *Journal of Financial Intermediation* 11(4): 455-485.
- Mittoo, U. 2003. “Globalization and the Value of U.S. Listing: Revisiting Canadian Evidence”, *Journal of Banking and Finance*, 27(9): 1629-1661.
- Nowland, J., and Simon, A. 2010. “The Effect of a Change in Analyst Composition on Analyst Forecast Accuracy: Evidence from U.S. Cross Listings,” *Journal of International Accounting Research* 9(1): 23-38.
- Piotroski, J.D., and Roulstone, D. 2004. “The Influence of Analysts, Institutional Investors, and Insiders, on the Incorporation of Market, Industry and Firm Specific Information into Stock Prices,” *Accounting Review* 79(4): 1119-1151.
- Pulatkonak, M., and Sofianos, G. 1999. “The Distribution of Global Trading in NYSE-Listed Non-U.S. Stocks,” NYSE Working Paper 99-03.
- Rotenberg, W. 1998. “Harmonization of Foreign Currency Translation Practices: Canadian Treatment of Long Term Monetary Items,” *International Journal of Accounting*, 33(4): 415-431.
- Sabherwal, S. 2007. “The U.S. Share of Trading Volume in Cross-Listings: Evidence from Canadian Stocks,” *The Financial Review* 42: 23-51.

- Sahut, J-M.; Gharbi, S.; and Gharbi, H.O. 2011. "Stock Volatility, Institutional Ownership and Analyst Coverage," *Bankers, Markets and Investors*, forthcoming.
- Schutte, M., and Unli, E. 2009. "Do Security Analysts Reduce Noise?" *Financial Analysts Journal*, 65 (3): 40-55.
- Soo, B.S., and Soo, L.G. 1994. "Accounting for the Multinational Firm: is the Translation Process Valued by the Stock Market?", *Accounting Review* 69 (4): 617-637.
- Tannous, G.F., and Zhang, Y. 2008. "Cross-listing and Trading on the Domestic Market: Evidence from Canada-US Partial Holidays," *Journal of Business Finance & Accounting* 35 (9) & (10): 1245-1275.