

# PLAYING Favourites

Bias in equity recommendations on Canadian stocks.

BY BIN CHANG

**Analysts** usually issue biased recommendations, that is, a disproportionately large percentage of favourable recommendations such as strong buy and buy. This bias in equity recommendations has led to a heated debate in both academia and the finance industry because equity analysts face a conflict of interest: on one hand, they are supposed to issue independent opinions about stocks, and on the other hand, they are compensated by the investment banking business that they generate. Since the latter is generally greater if recommendations are favourable, this may cause them to issue biased recommendations.

Aiming to reduce the bias in equity recommendations, Canadian regulators took a series of actions, with Policy 11 as the core framework. On April 12, 2001, the Securities Industry Committee on Analyst Standards released its draft report containing recommendations aimed at improving the independence of research and ensuring the professional practice of Canadian securities industry analysts. The Investment Dealers Association (IDA) published the initial proposed Policy 11 on July 5, 2002, a revised version on April 25, 2003, and a summary of comments on August 8, 2003. Policy 11 requires more disclosures from analysts and independence of research departments from investment banking departments. Also, in a letter dated August 15, 2002, the Ontario Securities Commission (OSC) requested information from financial institutions about current practices to address conflicts of interest relating to equity analysts. Accordingly, in September 2002, most financial institutions had adjusted their practice and replied to OSC.

The research on bias in recommendations on Canadian

stocks is sparse. While Choi (2006) provides thoughts on the regulation of analysts in Canada, empirical studies in this area have not been conducted yet. In contrast, studies on American stocks are extensive, observing that U.S. analysts are biased on the grounds that the percentage of strong buy and buy recommendations out of all recommendations was 62% in 1993-2002.<sup>1</sup> Furthermore, analysts from investment banks were found to be more biased than independent analysts in that period, which is consistent with their above-mentioned conflict of interest. In 2002, the NYSE and NASD issued regulations to reduce the bias in equity recommendations, and the SEC fined 10 banks \$1.435 billion for dishonest equity recommendations.<sup>2</sup> Research finds that the bias in U.S. equity analysts has been reduced since 2002.<sup>3</sup>

This paper studies four questions. First, was the bias in recommendations on Canadian stocks reduced after Policy 11? If so, were recommendations on Canadian stocks more biased than those of U.S. stocks? As many investment banks went out of business and investors' money was written off in the ongoing financial crisis, it is worthwhile to investigate investment banks' behaviour. Thus the third research question is: were investment banks more biased than other financial institutions? Finally, did investment banks issue more biased recommendations on cross-listed firms than on other firms?

## THE RESEARCH

The data on analyst recommendations is obtained from the I/B/E/S Detailed History file from January 1993 to December 2006 for Canadian firms. Analysts

---

Bin Chang is assistant professor of finance in the Faculty of Business and IT at the University of Ontario Institute of Technology.

generally rate stocks as “strong buy,” “buy,” “hold,” “sell,” and “strong sell.” Analysts also use other labels such as “market underperform” and “market outperform,” or “underweight” and “overweight,” to convey their opinions. I/B/E/S standardizes the recommendations and converts them to five-tier numerical scores with one for strong buy, two for buy, three for hold, four for sell and five for strong sell. Note that this system is not consistently used in Canada and the U.S. because some financial institutions have changed from a five-tier rating system to a three-tier rating system including only buy, hold, and sell since 2002. Thus, following the literature on U.S. practices, this paper classifies all recommendations by only three categories: strong buy/buy, hold, and sell/strong sell for the whole sample period.

The sample includes 3,085 analysts who issued 94,404 recommendations from 1993 to 2006. The number of recommendations per year, the number of financial institutions, firms covered, and analysts increased throughout the sample. The total number of recommendations increased from 2,068 to 8,157. The number of financial institutions increased from 51 to 166, the number of covered firms increased from 392 to 817, and the number of analysts increased from 233 to 966.

This paper uses the percentage of strong buy/buy recommendations as the measure of bias. It is the number of strong buy/buy recommendations divided by the total number of all recommendations. If analysts are unbiased, the percentage of hold, sell, and strong sell should be reasonably large. A disproportionately large percentage of strong buy and buy recommendations represents a favourable bias. The percentage of strong/buy recommendations is favoured over average numerical scores because the fact that some financial institutions dropped the categories of strong buy and strong sell since 2002 makes the average numerical scores inconsistent across different rating systems. For example, a financial institution has 50% of recommendations in strong buy and 50% in buy. Since I/B/E/S records strong buy as one and buy as two, the average numerical score for this institution is 1.5 under the five-tier rating system. After it changes from a five-tier to a three-tier rating system, all strong buy/buy recommendations fall into the category of buy. Thus,

the average numerical score becomes two regardless of the recommendations. As seen from this example, the average numerical score is inconsistent around the system change. Following the literature, we avoid this issue by using the percentage of strong buy/buy recommendations.

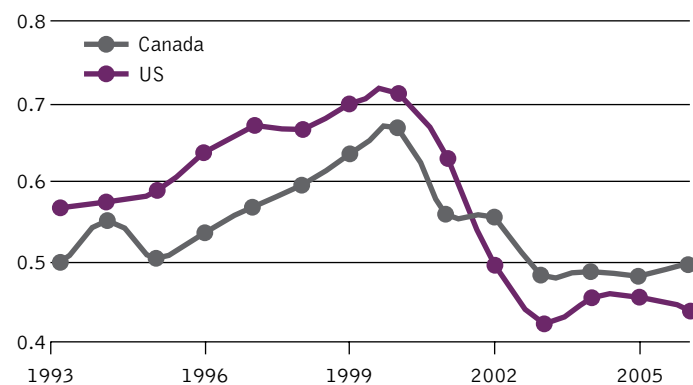
This paper compares the percentage of strong buy/buy recommendations in the pre-regulation period (1993-2002) with the post-regulation period (2003-2006). Ideally, if the expected percentage of strong buy/buy

**TABLE 1: Tests of Difference in the Percentage of Strong Buy/Buy Recommendations**

	Pre-Regulation	Post-Regulation	Difference	p-value
Canada	57%	49%	-8%	0.034**
U.S.	62%	44%	-18%	<0.001***
Difference	-6%	4%		
p-value	0.015**	0.034**		
Investment Banks	56%	47%	-9%	0.004***
Other financial institutions	58%	53%	-5%	0.093*
Difference	-2%	-6%		
p-value	0.555	0.010***		
Cross-listed firms/by investment banks	60%	44%	-16%	<0.001***
Other firms/by investment banks	55%	45%	-10%	0.003***
Difference	5%*	-2%		
p-value	0.071	0.333		

\*\*\* significant at 1%, \*\* significant at 5%, and \* significant at 10%

**FIGURE 1: U.S. vs. Canada: Percent of Strong Buy/Buy Recommendations**



Both the bursting of the technology bubble and the spillover of regulation may have contributed to the sharp reduction of the bias in 2001 and 2002. We use the S&P/TSX composite index to represent the Canadian stock market and the S&P 500 to represent the U.S. stock market.

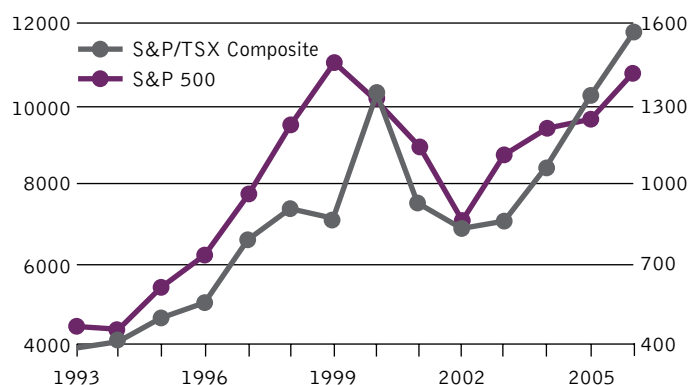
recommendations were known, bias could be measured as the difference between the actual percentage and the expected percentage. However, the expected percentage is difficult to estimate since it depends on the macro stock market condition and investment sentiment. Thus, we follow the literature<sup>4</sup> and compare the percentage in the pre-regulation and post-regulation periods. Year 2002 was set as the regulation year since the initial Policy 11 was published in 2002 and many financial institutions had adjusted their practice accordingly.

We first examine the change in the percentage of strong buy/buy recommendations. Figure 1 shows that in the U.S., the percentage of strong buy/buy recommendations decreased from 62% to 44% in the two sub-periods, which confirms the literature on the U.S. market. Furthermore, it provides new evidence that the bias on Canadian stocks increased consistently in the early sample period and reached the peak by 2000. The figure shows that bias dropped sharply and remained stable from 2003 to 2005. As seen in Table 1, the change in bias is 8%, which is statistically significant at the 5% level.

Also, as shown in Figure 1, the comparison between the bias on Canadian stocks and U.S. stocks reveals that recommendations on U.S. firms used to be more biased in the pre-regulation period, but they have become less biased since 2002. The greater reduction in bias on U.S. firms was due to tougher regulation. In December 2002, the Global Analyst Research Settlement (“Global Settlement”) involving the sell-side research of the top ten U.S. investment banks was formally announced. These financial institutions were fined a total of \$1.435 billion.<sup>5</sup> In contrast, no Canadian regulators have fined any financial institutions for bias in analysts’ recommendations.

Both the bursting of the technology bubble and the spillover of regulation may have contributed to the sharp reduction of the bias in 2001 and 2002. We use the S&P/

**FIGURE 2: S&P/TSX Composite vs. S&P 500**



TSX composite index to represent the Canadian stock market and the S&P 500 to represent the U.S. stock market. Figure 2 shows that the Canadian stock market reached a peak in 2001 and the U.S. market reached a peak in 2000. After the peak, both markets touched the bottom in 2002. The bursting of the stock market bubble could have pulled down the expected percentage of strong buy/buy recommendations in 2001 and 2002. The difficulty of untangling the issue is compounded by the fact that, although the initial Policy 11 was published in 2002, regulators already paid attention to analysts’ conflict of interest much earlier. In fact, the Securities Industry Committee on Analysts Standards issued a draft to address this issue in April 2001 and this topic had already been in the media. Thus it is likely that financial institutions started adjusting their practice in 2001.

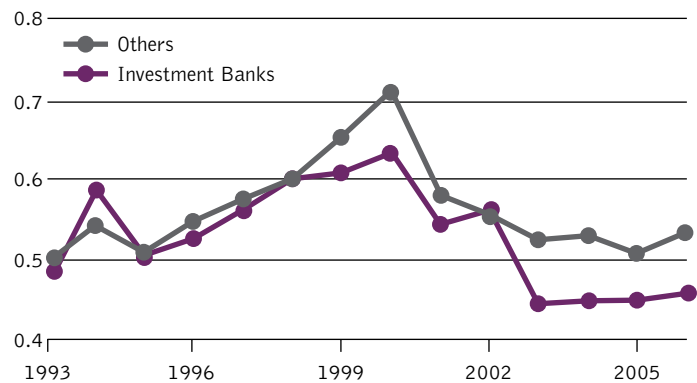
The effect of regulation rather than stock market performance contributed to the stable low bias from 2003 to 2006. As shown in Figure 2, both the Canadian and U.S. stock markets had bounced back since 2003 and kept an upward momentum until the end of the sample. In contrast, the percentage of strong buy/buy recommendations stayed at the low level. In order to exclude the impact of the bear market, we compare the percentage of favourable recommendations in the bull

market: the 1993-2000 period and the 2003-2006 period. The unreported summary shows similar results with the bias decreasing from 57% to 49% in Canada (the change was statistically significant at the 5% level). Thus stock market performance cannot explain the low bias for the later sample period.

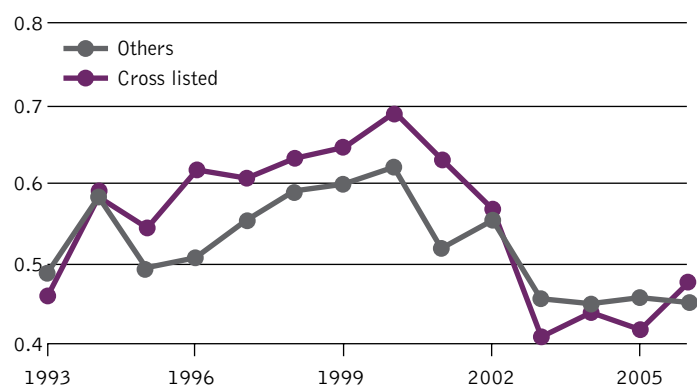
Next, this research dug deeper to test whether investment banks are more biased than other financial institutions since the conflict of interest from analysts of investment banks triggered the regulation. American research classifies affiliated analysts as analysts who work for banks with current investment banking ties to the corporations they cover and finds that they are biased. However, other research (Bradshaw, Richardson and Sloan (2003) and Clarke et al. (2006)) finds that even unaffiliated analysts are biased because they have incentives to issue optimistic research in order to increase their chances of generating future investment banking business from the firms they cover. Since both affiliated and unaffiliated analysts from investment banks are biased, we follow Bradshaw, Richardson and Sloan (2003) and Clarke et al. (2006) to compare analysts from investment banks with those from other financial institutions.

In Canada, the *Financial Post*, the *Globe and Mail*, and the IDA publish the number of investment banking deals, proceeds, and ranks of financial institutions every year. All financial institutions with investment banking business are classified as investment banks. Figure 3 shows the annual percentage of strong buy/buy recommendations for investment banks and other financial institutions separately. Prior to 2002, the bias from investment banks was 2% less than that from other financial institutions, although the difference is not statistically significant. This result contrasts with the U.S. study, which finds that investment banks are much more biased than non-investment banks in the U.S. and that larger bias led to new legislation to separate the research departments from the investment banking departments. A potential reason for the different findings across the border may be that there is less competition for investment banking business in Canada than there is in the U.S. In Canada, 74% of recommendations from investment banks come from five big Canadian banks, including RBC Financial Group, BMO Financial Group, TD Bank Financial Group, CIBC, and Scotiabank. These five banks together dominate both commercial banking and investment banking. Without tough competition, the motivation for the big five Canadian banks to issue favourable recommendations is not as strong as for their

**FIGURE 3: Investment Banks vs. Other Financial Institutions: Percent of Strong Buy/Buy Recommendations**



**FIGURE 4: Cross-listed vs. Other Firms Covered by Canadian Banks: Percent of Strong Buy/Buy Recommendations**



U.S. counterparts.

As shown in Figure 3, the gap between the percentage of strong buy/buy recommendations between investment banks and other financial institutions has actually increased since 2002—47% for investment banks and 53% for other financial institutions with a difference that was significantly different from 0 at the 1% level. This finding is similar to Clarke et al. (2006) who find that in the U.S., investment banks were the least likely to issue favourable recommendations after the regulation. Among these big five institutions, CIBC's bias dropped the most, from 63% to 34%. CIBC paid USD \$2.4 billion in 2005 to settle an Enron lawsuit. CIBC's great reduction might be related to the investigation by U.S. regulators and courts.

It's also notable that each of the big five Canadian banks is cross-listed in the U.S. They operate businesses in the U.S. and issue recommendations on U.S. firms. They were very likely to be influenced by the U.S. regulation changes

in 2002.<sup>6</sup> However, the impact of U.S. regulation on them is limited for the following reasons. First, with the exception of CIBC and RBC, they have very little presence in the U.S. investment banking business. Second, most of their recommendations are related to Canadian stocks rather than U.S. stocks.

Further, we investigate the bias on Canada and U.S. cross-listed firms. Up to 2006, more than 200 Canadian firms were listed in the U.S. market. The trend to inflate recommendations on U.S. firms must have affected those cross-listed firms. Thus cross-listed firms should suffer more from bias in equity recommendations than other Canadian firms in early periods. Also, since the reduction of biased recommendations on U.S. firms was larger than that of Canadian firms after 2002, the reduction of bias on cross-listed firms should be larger than that of other firms. Unfortunately, I/B/E/S does not provide the geography of the financial institutions, making the comparison of American and Canadian analysts on the same stocks impossible. However, we are still able to investigate investment banks' behaviour using the media reports mentioned above. As seen in Figure 4, the percentage of strong buy/buy recommendations was 60% on cross-listed firms and 55% on other firms in the pre-regulation period, but they were reduced to around 45% afterwards, which is consistent with the arguments above.

Overall, the findings are related to each of the four questions: recommendations on Canadian stocks in general after Policy 11, the comparison between bias on Canadian stocks and that on U.S. stocks, the breakdown within recommendations from financial institutions, and the breakdown within cross-listed firms and other firms. First, equity recommendations on Canadian firms were biased with 57% of recommendations being strong buy or buy prior to 2002. This provides a rationale for the Investment Dealers Association's Policy 11, which aimed to reduce bias in equity recommendations. This bias was greatly reduced to 49% after the enforcement of the policy, showing that the policy had a great effect. Second, compared to the U.S., the bias on Canadian stocks was less severe before 2002, but became greater after 2002 because the bias on U.S. stocks experienced a greater reduction due to tougher regulations. Third and most strikingly, investment banks in Canada are less biased than other financial institutions even before 2002, contradicting the U.S. literature in the same period. Finally, cross-listed firms suffered more bias from investment banks than other firms in the pre-regulation period, but experienced greater reduction in bias later. ■

## REFERENCES

- Agrawal, Anup and Chen, Mark, A. 2008, "Do analyst conflicts matter? Evidence from stock recommendations," *Journal of Law and Economics* 51, 503-537.
- Barber, Brad, Reuven Lehavy, Maureen McNichols, Brett Trueman, 2001, "Can investors profit from the prophets? Security analyst recommendations and stock returns," *Journal of Finance* 56, 531-538.
- Barber, Brad, Reuven Lehavy, and Brett Trueman, 2007, "Comparing the stock recommendation performance of investment banks and independent research firms," *Journal of Financial Economics* 85, 490-517.
- Choi, Stephen 2006, "Thoughts on the regulation of investment analysts in Canada," *Task Force to Modernize Securities Legislation in Canada working paper*.
- Bradley, Daniel J., Bradford D. Jordan and Jay R. Ritter, 2008, "Analyst behavior following IPOs: The 'bubble period' evidence," *Review of Financial Studies* 21, 101-133.
- Bradshaw, Mark T., Scott A. Richardson, and Richard G. Sloan, 2003, "Pump and dump: An empirical analysis of the relation between corporate financing activities and sell-side analyst research," *Working paper, Harvard Business School*.
- Clarke, Jonathan, Ajay Khorana, Ajay Patel and P. Raghavendra Rau, 2006, "Independents' day? Analyst behavior surrounding the Global Settlement," *Working paper, Purdue University*.
- Dugar, Amitabh, and Siva Nathan, 1995, "The effect of investment banking relationships on financial analysts' earnings forecasts and investment recommendations," *Contemporary Accounting Research* 12, 131-160.
- Jegadeesh, Narasimhan, Joonghyuk Kim, Susan D. Krische and Charles M. C. Lee, 2004, "Analyzing the analysts: When do recommendations add value?" *Journal of Finance* 59, 1083-1124.
- Kadan, Ohad, Leonardo Madureira, Rong Wang and Tzachi Zach, 2006. "Conflicts of interest and stock recommendations—the effects of the global settlement and related regulations," forthcoming, *Review of Financial Studies*.
- Krigman, Laurie, Wayne H. Shaw, and Kent L. Womack, 2001, "Why do Firms Switch Underwriters?" *Journal of Financial Economics* 60, 245-284.
- Lin, Hsiou-wei, Maureen F. McNichols, 1998, "Underwriting Relationships, Analysts' Earning Forecasts and Investment Recommendations," *Journal of Accounting and Economics* 25, 101-110.
- McNichols, Maureen and Patricia C. O'Brien, 1997, "Self-Selection and Analyst Coverage," *Journal of Accounting Research* 35, 167-199.
- Michael, Roni, and Kent Womack, 1999, "Conflict of interest and the credibility of underwriter analyst recommendations," *Review of Financial Studies* 12, 653-686.
- Womack, Kent, 1996, "Do brokerage analysts' recommendations have investment value?" *Journal of Finance* 51, 137-167.

## ENDNOTES

1. For biases among equity recommendations in U.S. firms, see Agrawal and Chen (2008), Bradley, Jordan and Ritter, (2008), Barber, Lehavy, McNichols, and Trueman (2001), Barber, Lehavy, and Trueman (2007), Clarke et al. (2006), Dugar and Nathan (1995), Kaden et al. (2006), Krigman, Shaw, and Womack (2001), Lin and McNichols (1998), McNichols and O'Brien (1997), Michael and Womack (1999), and Womack (1996).
2. For details about the Global Settlement, see <http://www.sec.gov/spotlight/globalsettlement.htm>.
3. For the changes in biases among equity recommendations in U.S. firms, see Clarke et al. (2006) and Kaden et al. (2006).
4. Clarke et al. (2006) and Kaden et al. (2006) compare the percentage of strong buy and buy recommendations in the pre-regulation and post-regulation period in the U.S.
5. The 10 financial institutions include Bear Stearns, Credit Suisse First Boston, Deutsche Bank, Goldman Sachs, J. P. Morgan Chase, Lehman Brothers, Merrill Lynch, Morgan Stanley, Salomon Smith Barney, and UBS Warburg.
6. We are thankful to the referees for providing us with this insight.