

# Open Market Share Repurchases in CANADA

Many Canadian firms time repurchases when their shares are undervalued.  
What does this mean for investors?

BY WILLIAM J. McNALLY

Open market repurchases are becoming increasingly popular in both Canada and the U.S.<sup>1</sup> Between 1988 and 2000, the value of repurchases in Canada rose from \$501 million to \$5.3 billion, while in the U.S. the value of share repurchases in 1998 temporarily surpassed that of dividend payments.<sup>2</sup> Moreover, the stock market reacts favourably to them and announcements generate abnormal price increases of over three per cent in the U.S. and over one per cent in Canada.<sup>3</sup> There are also substantial increases in stock prices in the years following repurchases. My sample yields an average abnormal return of 11.8 per cent per annum over the two years following the repurchase.

Why does the market react so favourably? The reason for the abnormal returns is a puzzle in the academic literature. Competing theories offer very different views of the market. Most theories assume that market participants are rational and that firms behave fairly, but one theory takes the opposing view that investors are irrational and that controlling shareholders try to cheat outside shareholders.

This study analyzes a sample of repurchases from the 1990s to see which theory explains the Canadian experience. It also shows us something about the rationality of the market and the motives of company insiders.

## What Explains Repurchases?

Repurchases are mainly a means of distribution—a substitute to dividends. If shareholders sell the same proportion of shares as the firm purchases, then proportionate control is unaffected and all shareholders get some cash. Even if some shareholders refrain from selling, repurchases have no effect on the stock price if the firm pays a fair price for the shares. In a perfect capital market repurchases are irrelevant.

The most common reason given in the financial press for the rise in stock price is that “buybacks... enhance the value of remaining shares because, in the future, net income will be spread among fewer shares outstanding.” But this is wrong, because it ignores the fact that buybacks reduce assets (or increase liabilities) in a way that offsets the reduced number of shares outstanding, and leaves the stock price unaffected.

The reason for the increase in stock price lies in the factors that make capital markets imperfect: taxes, contracting costs and asymmetric information. Indeed, those factors inform the popular academic hypotheses: tax savings, agency cost reductions, information signalling, and undervaluation.

The tax hypothesis assumes that firms have less than the optimal amount of leverage. Repurchases increase leverage

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William J. McNally is associate professor and director, Clarica Financial Services Research Centre, School of Business and Economics, at Wilfrid Laurier University.

and so should increase firm value, following Miller and Modigliani. But while changes in capital structure do motivate some repurchases, they don't explain the changes in stock prices that we observe. There is also a personal tax hypothesis, which argues that firms repurchase because their investors prefer capital gains to dividends. The personal tax hypothesis is difficult to test because investors' preferences about distributions are hard to measure.

If a firm has high cash flow (or lots of cash), and managers tend to waste that cash on things like perquisites and empire building, then the market will discount the firm's value to account for the waste. This discount is called "agency costs." In the presence of agency costs, a repurchase increases firm value because the reduction in free cash flow reduces the opportunities for waste (Jensen, 1986).

According to the *Wall Street Journal*, repurchases are "a signal to savvy investors" that the company's insiders believe their shares are trading below fair value.<sup>5</sup> If insiders know more about the firm's future profitability than the market, then repurchases are a means for insiders to signal their knowledge to the market. In the U.S., the announced repurchase proportion is widely believed to be an information signal (McNally, 1999). According to the signalling hypothesis, the stock price should rise as the market reacts to the new earnings information that it infers from the signal.

In their simplest form, the three preceding theories (tax, agency and signalling) imply a full reaction by the market at the time of the announcement. But repurchase announcements are not binding commitments to action, and so the market may condition its reaction on whether the firm actually buys any shares. The market's response may come in two parts: 1) at the time of the announcement and 2) after the completion of the repurchase. In the empirical analysis, we will look to see if the long-run stock returns are conditional on actual repurchasing.

The last theory explicitly assumes that the market does not react fully to the announcement. The undervaluation hypothesis argues that insiders take advantage of the slow market reaction. The firm buys shares from uninformed investors when prices are cheap, which transfers wealth to those who don't sell (the firm's insiders). A *Wall Street Journal* article published in the spring of 2000 echoed the undervaluation hypothesis when it argued that many recent repurchases by firms like AT&T, Intel and Microsoft were in error because they bought when prices

were too high.<sup>6</sup> Implicitly, the firms ought to have bought when shares were cheap, e.g., after a sell-off.

This theory assumes that outside investors don't learn: they don't infer the full extent of undervaluation from the announcement; they don't learn that they lose if they sell; and they aren't suspicious of firms that try to time their repurchases by announcing after a sell-off.

Undervaluation is fundamentally at odds with the other hypotheses. It assumes that the market is irrational (it doesn't learn) and that repurchases are a means of taking advantage of uninformed shareholders. The other hypotheses assume that the market is rational and that the repurchase reveals information to all (about earnings, taxes or agency costs). My results will shed light on which view is correct.

### The Data

The sample of NCIBs is drawn from archived press releases carried by Canada NewsWire Ltd. from 1989 to 1998. For comparison's sake, I also employ a sample of firms that did not make NCIBs. The non-event firms are size-matched with the NCIB firms, and each non-event firm has the same announcement day as its NCIB partner. The accounting data is from Standard and Poor's and Stock Guide Publications. The stock price data is from the Canadian Financial Markets Research Centre. After removing observations with incomplete data, there are 396 NCIB and 248 non-NCIB observations.

### Why Do Firms Repurchase?

In their press releases, NCIB firms are required to announce the reason for the repurchase. The majority, 69 per cent, of NCIBs are motivated by the insiders'

**TABLE 1** Abnormal Stock Returns Around NCIBs

Sample size = 396 NCIBs. Abnormal returns calculated as compound stock return less compound return of CFMRC value-weighted portfolio over the same period. p-values in parentheses indicate level of significance for test of whether the mean is different from zero.

Day Ranges Around Announcement Day	Mean (%)	Std Dev (%)	p-value
-105 to -5	-5.32	21.87	<.0001
-65 to -5	-4.56	16.45	<.0001
-1 to 2	1.06	5.73	0.0003
-1 to 3	1.15	6.35	0.0003
-1 to 4	1.30	7.08	0.0003
0 to +250	9.73	46.70	<.0001
0 to +500	25.30	84.72	<.0001
-100 to +500	24.14	91.94	<.0001

belief that the firm's shares "represent a good investment" or "are currently undervalued by the market." Such wording is generally consistent with both the signalling and undervaluation hypotheses. Some firms explicitly favour undervaluation by stating reasons such as "... the acquisition of shares at prices less than what the Corporation believes is fair value is in the best interests of the Corporation and its remaining shareholders." Twelve per cent of the issuer bids are motivated to offset the dilution caused by employee stock ownership plans (ESOPs), and the remaining 19 per cent of the announcements do not offer a clear motive.

### Shares Targeted and Bought

In most announcements the number of shares targeted is equal to the maximum allowed under Toronto Stock Exchange (TSX) by-laws. Half of the sample announced repurchase proportions around 5 per cent, and many others announced proportions close to the alternate maximum of 10 per cent of the public float. The average proportion sought is 5.23 per cent, and the median is 5 per cent.

Are repurchase announcements trustworthy indicators of

firms' actual purchasing activity? Market commentators argue no, because some firms repurchase nothing, but my results show that 78 per cent of the sample repurchase some shares over the course of their bid. By the end of the bid, the average number of shares actually rises by 1.53 per cent due to the exercise of stock options and convertible securities. In contrast, the non-NCIB firms increase their shares outstanding by 4.12 per cent.<sup>7</sup> Thus, repurchases do not always reduce the number of shares outstanding (only half do), but they do slow the rate of expansion in shares outstanding that is common in firms today.

### Market Reaction and Types of Firms

How do stock prices behave around Canadian repurchases? What factors determine whether a given firm will experience abnormal returns? What types of firms tend to repurchase? This section will answer these questions and, in the process, shed some light on which of the explanatory hypotheses explain the Canadian repurchase experience.

Figure I shows the cumulative abnormal returns (CARs) from 100 trading days before the announcement to 500 trading days (two years) following.<sup>8</sup> Table I calculates the abnormal returns for various sub-periods of that time interval. On average there is a decline in price preceding the announcement, a small increase in price following the announcement, and then a long-term increase in price in the two years following the announcement.

The *Financial Post* in August of 1998 claimed that repurchases "work like a temporary fix to stop a sell-off from being overdone."<sup>9</sup> The average abnormal return over the 100 trading days preceding a repurchase is -5.3 per cent (Table I), which is indicative of a sell-off in the stock. Only 60 per cent of the firms experience a decline in price, although the decline is a substantial -18.8 per cent. The remaining firms experience a positive abnormal return of 14.6 per cent. Evidently some firms time

**TABLE 2** OLS Regression Analysis of Long-Run (2-year) Abnormal Returns

The dependent variable is the compound stock return over the period less the compound return on the CFMRC value-weighted market index. The long-run period is from +5 to day +505. Buy = 1 if the firm's shares outstanding fall at any time during the NCIB.

	Coeff.	p-value
Intercept	3.628	0.9450
Size (\$M)	-1.013	0.6835
Free Cash Flow/TA	0.396	0.3929
Market-to-Book	-2.714	0.3566
Volatility	0.426	0.0370
Abnormal Returns Prior to	0.564	0.0180
Debt-to-Total Assets	0.003	0.3098
Buy	20.050	0.0566
Nobs	368	
Adj R2	4.9%	

**TABLE 3** Comparison of NCIB and Non-NCIB Firms

	NCIB (N=396)		Non-NCIB (N=248)		p-value Test of Difference in	
	Mean	Median	Mean	Median	Mean	Median
Size (\$M)	669.94	102.92	746.82	141.64	0.6238	0.2138
Free Cash Flow/TA (%)	10.07	8.86	7.00	6.41	0.0127	<.0001
Market-to-Book	1.21	0.88	2.26	0.91	0.0168	0.2011
Volatility (%)	47.12	39.14	56.98	45.81	0.0288	0.0189
Beta	0.67	0.56	0.99	0.68	0.1495	0.0164
Debt to Total Assets (%)	21.68	20.90	22.84	19.86	0.4530	0.8424

# Market is not fooled by firms that repurchase after a sell-off.

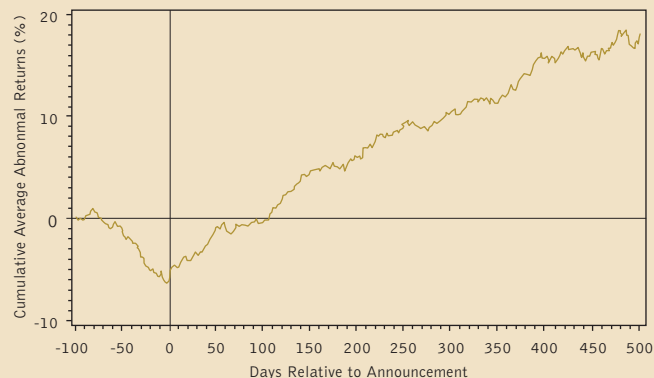
**TABLE 4** A Probit Regression Explaining the Likelihood of a Repurchase

There are 598 observations: 367 NCIB firms and 231 non-NCIB firms for the period 1989-1998. The dependent variable is a binary variable, =1 if firm announced a NCIB, =0 otherwise.

	Coeff.	p-value
Intercept	1.396	0.0346
Log (Size)	-0.050	0.1245
Free Cash Flow/TA	0.024	<.0001
Market-to-Book	-0.102	0.0007
Volatility	-0.438	0.0057
Abnormal Return Prior to	-0.497	0.0349
Debt-to-Total Assets	-0.001	0.8478
<b>Nobs</b>	<b>598</b>	
<b>R<sup>2</sup></b>	<b>12.8%</b>	

**FIGURE 1** Cumulative Abnormal Returns of NCIB Firms: 1989-1998

Daily abnormal return = stock return - market return (the TSX value-weighted market return). Daily abnormal returns are averaged across firms and cumulated over a period from 100 trading days before the announcement to 500 trading days after. 396 NCIB firms.



their repurchase after a sell-off, which suggests that they try to repurchase when their shares are undervalued.

Table I shows that there is a significant abnormal return of 1.3 per cent around the announcement. The abnormal return implies that the market learns information from the announcement. Since all of the hypotheses predict an abnormal return, we'll have to look at the long-run returns to distinguish between them.<sup>10</sup>

The returns over the two years following the repurchase are surprisingly large (see Table I). The average abnormal return over the first year following the announcement is 9.73 per cent, and the average over two years is 25 per cent (11.8 per cent per annum). In

contrast, the abnormal returns to non-NCIB firms were 0.65 per cent and -3.65 per cent over the same periods (neither value is statistically different from zero).

According to the undervaluation hypothesis, the abnormal long-run returns prove that the stock was undervalued at the time of the announcement, and that the market didn't learn the full extent of undervaluation from the announcement. But, as we shall see, not all firms experience a large abnormal long-run return.

## Determining the Long-Run Returns

This section looks at factors explaining the two-year return using regression analysis (see Table 2).

Explanatory factors include:

- The firm's market capitalization (size)
- Free cash flow, net income plus depreciation and deferred taxes over total assets)
- Market-to-book (M/B) ratio
- The standard deviation (volatility) of stock returns preceding the announcement
- The stock return preceding the announcement
- Leverage (short- plus long-term debt over total assets)
- A dummy variable indicating whether the firm buys any shares or not.

The regression yields two interesting results. First, a positive relationship between the long-run return and the pre-announcement return—the market reacts much more favourably to firms which do not announce after a sell-off. The two-year abnormal return is 44.4 per cent for firms that do not announce after a sell-off, but only 12.4 per cent for firms that do. Second, the regression shows that firms which buy some shares during the NCIB (Buy=1) earn long-run returns that are 20 per cent higher on average than firms that buy nothing.<sup>11</sup>

These results show that the market is not fooled by firms that repurchase after a sell-off. The market is smarter than the undervaluation hypothesis assumes. The agency and signalling hypotheses gain support from the fact that the market conditions its response on whether the firm actually buys some shares.

## What Types of Firms Repurchase?

Table 3 presents a comparison between the NCIB and non-event firms. The main differences are that NCIB

firms have greater free cash flow (cash flow/TA), are less risky (lower volatility), and have lower M/B ratios than firms that do not initiate repurchases.<sup>12</sup> One reason why firms have low M/B ratios is that they have poor growth opportunities. Firms with poor growth opportunities, a high level of free cash flow, and low risk are commonly referred to as “cash cows.”

Table 4 presents the results of a Probit regression, which explains the likelihood that a firm will announce a repurchase. Positive coefficients indicate that a high value of the explanatory variable is associated with a greater likelihood that the firm will effect a repurchase. The coefficient on the free cash flow variable is positive (and significant), while the coefficients on the M/B ratio, volatility and prior returns are all negative. The first three results confirm that cash cows are more likely to repurchase (high cash, low volatility and low M/B), and the fourth confirms that companies are more likely to repurchase after a sell-off in their stock (negative prior returns).

## Conclusions

Canadian repurchase announcements are preceded by a decline in share price, are accompanied by a small announcement period return, and are followed by a large long-run abnormal return. This pattern is identical to the pattern of returns around U.S. open market repurchases.

The majority of firms (69 per cent) say they want to repurchase because their shares are undervalued, and 60 per cent announce after a sell-off in their stock. This suggests that firms try to time their repurchase when their shares are undervalued. But the market is not fooled. The long-run market reaction is much smaller for firms that announce following a sell-off so the market seems to be smarter than the undervaluation hypothesis gives it credit for.

The best explanation for my results is the agency hypothesis. My results suggest that cash cows use repurchases to distribute their excess cash and that the market welcomes the distribution as evidence that the cash will not be wasted. The market does not react completely at the time of the announcement, rather it conditions its reaction on whether the firm buys any shares, and this explains the long-run abnormal returns.

Research in the U.S. has found no single explanation for repurchases. Rather, there is evidence that firms have a variety of motives for repurchasing. My results suggest that the same is true in Canada. The dominant

explanation seems to be the agency hypothesis, but there is evidence that firms try to announce their repurchases when their shares are undervalued. ■

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## Endnotes

1. Open market repurchases are also known as Normal Course Issuer Bids or NCIBs in Canada.
2. Grullon (2000), p.1.
3. See Comment and Jarrell (1991), and Ikenberry, Lakonishok and Vermaelen (2000).
4. Patrick Bloomfield, *Financial Post*.
5. Steven Levingston, *Wall Street Journal*, 1992.
6. Robert McGough, Suzanne McGee, and Cassell Bryan-Low, “Buyback Binge Now Creates Big Hangover.” *Wall Street Journal*, Dec 18, 2000.
7. The difference between the NCIB and non-NCIB samples is significant at the 5 per cent level.
8. An abnormal return is the difference between the return for the stock and for the market. Cumulative abnormal returns (CARs) are average daily abnormal returns (averaged across all the firms in the sample), which are summed through time.
9. Ian Karleff in the *Financial Post* on Aug 22, 1998.
10. See Li and McNally (2002) for a more detailed analysis of announcement returns.
11. The regression also shows that high-risk (volatility) firms earn higher long-run returns, which is consistent with the basic idea of a risk-return trade-off. The same result occurs with beta, but the relationship is weaker.
12. Repurchasing firms are about the same size as the average TSX-listed firm—certainly no smaller. For example, the average market capitalization on the TSX in 1992 was \$496 million and the average size of the NCIB firms is \$670 million.

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