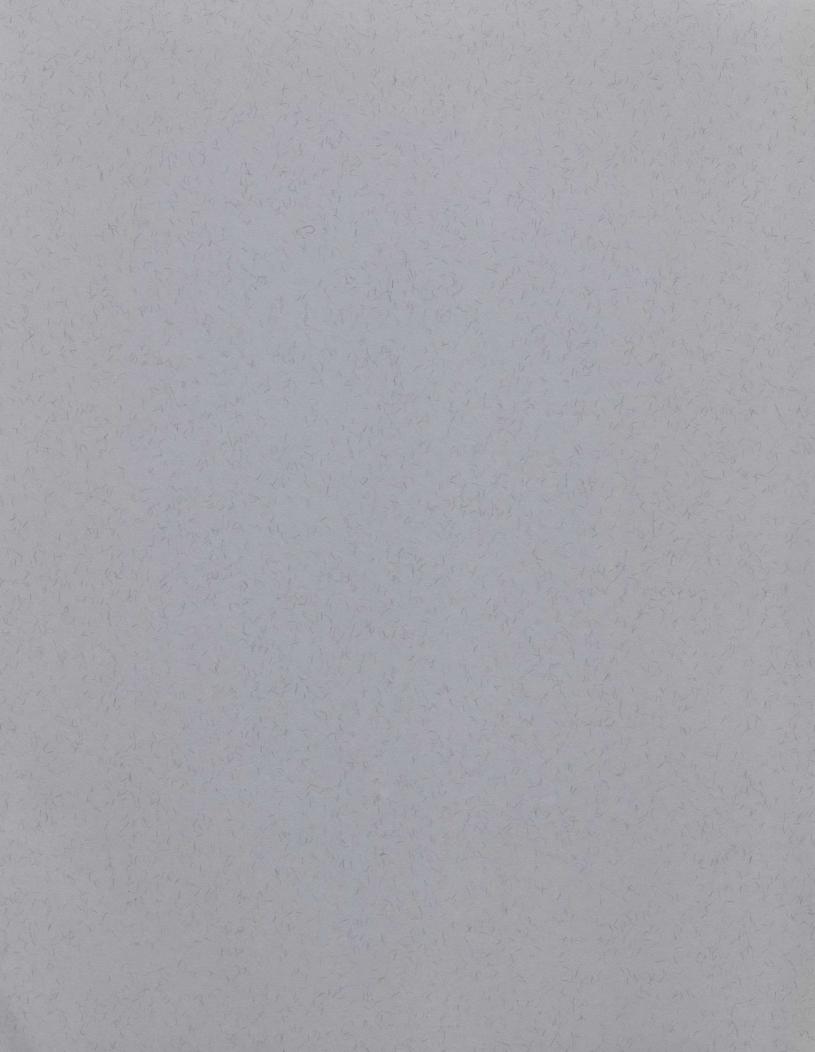# Canadian Studies Grant Programs

An Examination of the Synergistic Attributes of
Canadian/U.S. Sell-off Restructuring

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AN EXAMINATION OF THE SYNERGISTIC ATTRIBUTES
OF CANADIAN/U.S. SELL-OFF RESTRUCTURING

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ABSTRACT

There have been no previous published studies investigating the impacts on both the selling and acquiring firms in cross-border divestiture transactions between U.S. and Canadian firms. We examine such transactions in this paper. This research addresses questions regarding the degree of synergy resulting from these transactions and the extent to which Canadian and U.S. firms benefit from these sales. We also contrast the relative consequences to U.S. firms of selling Strategic Business Units (SBUs) to Canadian firms as opposed to selling to domestic firms.

The empirical analysis in the paper examines 62 U.S. firms which sold units to Canadian firms over the 1980-1995 interval, 32 Canadian firms which were acquirers in those transactions, and a subsample of 23 matched pairs transacions. The methodology employed includes both percentage and dollar abnormal returns. We find gains to U.S. divestor/selling firms of similar magnitudes to those in prior studies of sell-offs by U.S. firms. The gains to Canadian acquirers are larger than those previously identified for buyers in domestic sell-offs. These gains are both economically material and statistically significant. However a wide range of outcomes is observed, particularly for sellers. Finally, we identify potential causes of these differences and review policy and strategic implications Canadian acquirers.

AN EXAMINATION OF THE SYNERGISTIC ATTRIBUTES
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I. INTRODUCTION

During the past decade, numerous studies have examined the motives underlying corporate restructuring and its consequences. This literature reflects the increasing use of restructuring strategies internationally and a desire by both researchers and practitioners to better understand the causes and implications of this activity.

We extend earlier research into the motivations for, and consequences of, various restructuring strategies and the involvement of firms in sell-offs. While sell-offs are conceptually the simplest form of restructuring, existing research has not yet provided a complete analysis of this activity in the international and cross-border arena. The purpose of this study is to examine the valuation consequences for U.S. and Canadian firms of engaging in cross-border divestitures, and to consider policy and strategic issues associated with these transactions.

These two neighboring economies are clearly prominent in matters associated with international economics and finance. There is a greater volume of international trade between the U.S. and Canada than between any two other countries. Along with this flow of commerce comes a high level of Foreign Direct Investment (FDI). Corporate acquisitions (including the purchase of units divested by foreign firms) comprise one of the major channels for FDI. Given the extent of both Canadian/U.S. commerce in general and FDI in particular, it is not surprising that sell-offs frequently involve one firm in

Canada, and another in the U.S. Only recently has this link between FDI, restructuring, and corporate acquisitions been formally recognized in the research literature. This paper contributes to the nascent literature on international restructuring by being the first to conduct a systematic investigation using cross-border Canadian/U.S. divestitures. The remainder of the paper is organized as follows. Section II reviews the relevant literature. Testable hypotheses are developed in Section III. Section IV addresses empirical dimensions of the paper, including the sample examined, data employed, and methodology used. Section V reports and interprets the empirical results, with a summary and conclusion in Section VI.

II. BACKGROUND AND LITERATURE REVIEW

We draw primarily from two lines of research: One relates to FDI, and the other to corporate restructuring. As previously indicated, cross-border acquisitions (whether involving whole-firms or units divested by firms) are a major vehicle for the implementation of FDI. An examination of the FDI literature[1] shows that macro-economic aspects of FDI (such as overall flows of FDI and their association with economic development) have received considerable attention. In contrast, explicit linkages between FDI, corporate acquisitions, and restructuring have only recently received academic scrutiny. Blumberg and Owers (1990) related cross-border divestiture activity to FDI, and documented the substantial relative role of divestiture activity in FDI. Harris and Ravenscraft (1991) considered whole-firm cross-border acquisitions within an

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[1] The FDI literature includes works such as Caves (1988), Young (1988), Scholes and Wolfson (1990), and Froot and Stein (1991).

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FDI context, and provided extensive empirical evidence on the linkage between FDI and corporate transactions. Pettway, Sicherman, and Spiess (1992) examined U.S./Japanese mergers and unit sales and found evidence of gains to both U.S. and Japanese firms involved in these transactions. Blumberg and Owers (1996) contrasted the impact for U.S. firms of divesting to foreign acquirers with the impact of divesting to domestic buyers. They found that the valuation consequences for U.S. firms of selling strategic business units (SBUs) to foreign acquirers varied substantially according to the domicile of the acquirer firm. This study follows in the line of investigation of Sicherman, Pettway and Spiess (1993) and Blumberg and Owers (1996) in a number of ways. We focus on Canadian/U.S. transactions, and use data bases from both financial systems and a "matched pairs" of transacting firms methodology. Finally, in addition to employing event study abnormal return measures, we also examine the monetary/dollar valuation impacts of U.S./Canadian sell-off restructuring.

Numerous studies have focused on the motives and valuation effects of primarily domestic sell-offs as a vehicle for corporate restructuring. Examples include Datta and Datta (1996), Lang, Poulsen, and Stultz (1995), Kaplan and Weisbach (1992), Kaplan (1989), Hite, Owers and Rogers (1987), Klein (1986), Jain (1985), Alexander, Benson and Kampmeyer (1984), and Rosenfeld (1984). These studies generally have found that sellers gain at the announcement of a sale. This finding is typically interpreted as supporting the view that asset sales are associated with the redeployment of assets to

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higher valued uses, thus creating synergy. If this is the case, the sell-off will result in a gain in the combined value of both firms involved in the transaction[2].

In contrast to the results for divestors, the existing evidence on the gains to acquirers of divested units in sell-offs is inconclusive. Hite, Owers and Rogers (1987) found that buyers gain, but with gains of smaller magnitudes than those to sellers. The gains over the immediate announcement window (-1,0) were 1.66% for sellers in transactions which were completed, and 1.41% for sellers when the transactions was subsequently terminated. For buyers, the (-1,0) announcement abnormal returns were 0.83% (completed transactions) and 0.36% (subsequently terminated transactions).

Jain (1985) found positive but statistically insignificant returns to buyers. In contrast to these studies, Rosenfeld (1984) found an equal division of gains over various subintervals during the (-30, +30) announcement window. Sicherman and Pettway (1987) found significant gains for buyers which acquired related units in divestitures, but no significant gains for buyers of unrelated units. Sicherman and Pettway (1992) examined matched pairs of buyers and sellers in divestitures, and found that on average, both parties gained. Their average (-1,0) abnormal returns were 0.92% for sellers and 0.50% for buyers.

Sell-offs can also be viewed as partial acquisitions from the buyer's perspective, subject to several important differences. In the market for entire firms, there is the potential (and often the actuality) of a competitive auction market for the target firm. The market for parts of firms (i.e. divisions, subsidiaries, or Strategic Business Units [SBUs])

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[2] Empirical support for this hypothesis may be found in Sicherman and Pettway (1992).

is quite different. These transactions are typically conducted outside the public market arena and are usually monopsonistic in nature, involving a single buyer negotiating the purchase of a divested asset. Additionally, sell-offs are motivated in some instances by the seller's need to raise cash[3]. These factors in combination would predict that both the acquiring firm as well as the selling/divesting firm would share in the gains from transactions involving acquisitions of business units. This is in contrast to whole-firm mergers where the open auction process typically drives target prices up to where they represent zero net present value (NPV) investments for buyers. Studies of mergers as profiled in Jensen and Ruback (1983), Jarrell, Brickley and Netter (1988), and Black (1989) have found that on average, buyers experience small (if any) gain in value from the transactions.[4]

In recent years a literature examining cross-border whole-firm acquisitions has developed. For example, a number of studies have examined the effect of U.S. firms acquiring foreign domiciled target (whole) firms. Doukas and Travlos (1989) found that the majority of these transactions did not result in significant valuation changes for the acquiring firms, with the exception of positive returns from acquisitions representing the first entry of the U.S. firm into the target firm's economy. Along similar lines, Lin, Madura and Picou (1994) found substantial variations in acquirer firms' abnormal returns according to the domicile of the foreign target firm. For example, acquisition of German

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[3] See Lang, Poulsen, and Stultz (1995) for a discussion and examination of the liquidity motive for sell-offs.

[4] Bradley, Desai, and Kim (1988) found losses to acquirers in multiple bidder acquisitions. More recently, Banerjee and Owers (1992) found evidence of prevailing negative consequences for "white knight" acquirers.

firms was associated with positive abnormal returns, while British and Canadian targets were associated with negative abnormal returns.[5]

Kang (1993) examined matched pairs of firms involved in international whole-firm mergers. In his analysis of U.S./Japanese transactions he found that, in contrast to purely domestic transactions, both firms gained. His finding for whole firm transactions was conceptually similar to Pettway, Sicherman, and Spiess's (1993) results on Japanese acquisitions of both entire U.S. firms and units divested by U.S. firms. For divestitures, their results indicate that Japanese buyers experienced abnormal returns over the (-1,0) announcement window of 0.49%, a similar magnitude to the returns noted for acquirers in other (primarily domestic) divestiture studies. They also found that U.S. sellers gained 4.65% over (-1,0) window, which is substantially larger than the U.S. firms' gains noted in previous studies of primarily domestic transactions. The evidence on cross-border divestitures in Blumberg and Owers (1996) comes from an examination of the valuation effects for U.S. firms divesting to foreign acquirer firms. They found little evidence that U.S. firms fare better when selling to non-U.S. firms than when selling to domestic acquirers. In their sample of 165 international transactions, the (-1,0) abnormal return was 1.44% (z statistic of 5.88).

A number of theories posit international market segmentation, market imperfections, and informational asymmetries as impediments to international financial and product market integration. These factors could cause divested units sold across international borders to have different values than units sold in entirely domestic

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[5] Negative abnormal returns for acquirers are the most frequently experienced valuation consequences for U.S. firm's acquisition of domestic whole-firm targets.

transactions. Hence, these transactions have potentially different valuation consequences for both sellers and acquirers. In this context, the Blumberg and Owers (1996) findings for sellers in cross-border transactions were surprising. However, their overall findings included a range of outcomes for when selling to firms domiciled in different countries. Over the (-1,0) announcement window, the returns ranged from a high of 2.5% (when selling to West German acquirers) to a low of 0.5% (when selling to Swiss acquirers). More relevantly to this study, in the subsample of transactions involving sales to Canadian firms, the U.S. divesting firms experienced an average abnormal return over the (-1,0) announcement window of 0.88%, which was not significantly different from zero.

III. HYPOTHESES

This paper analyzes the division of gains between buyers and sellers in Canadian/U.S. sell-off transactions. It examines subsamples of both U.S. sellers and Canadian buyers. In addition, where information and data are available for both firms in particular transactions, it further examines a subsample of "matched pairs" of Canadian buyers and U.S. sellers. Finally, it measures and analyzes the effects of the cross-border divestitures on transacting firms in terms of both percentage and dollar abnormal returns.

Examination of the subsamples of Canadian buyers and U.S. divestors will provide the basis for testing hypotheses relating to the overall valuation consequences of U.S./Canadian divestitures. In addition, hypotheses relating to the creation of synergy related gains (and the division of any such gains), will be tested using the matched pairs subsample.

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Drawing on findings in prior studies, we hypothesize that while both sellers and buyers experience positive abnormal returns from divestiture transactions, the majority of gains accrue to the sellers. In other words, our initial null hypothesis is that there is no difference between the magnitude and distribution of gains in cross-border divestitures and those of purely domestic divestitures. As a secondary hypothesis, we examine the extent to which the valuation gains accrue to the sellers as opposed to the acquirers. Absent the effects of the factors mentioned previously (market segmentation, market imperfections, etc...), we would expect that the gains will accrue primarily to the selling firms, as in domestic transactions.

IV. EMPIRICAL METHODS

Sample Selection and Description

The sample covers the period 1980-1995, and was gathered by examination of the rosters in the Mergers and Acquisitions quarterly. Cross-border divestiture transactions wherein the acquirer was a Canadian company (and the seller domiciled in the U.S.) were identified. Additional requirements for inclusion in the preliminary sample were that the equity of both firms be publically traded in their respective countries, and that detailed information regarding the transactions (such as identifiable announcement dates) and the essential details of the transaction be reported in the financial press, specifically the *Wall Street Journal* and the wire services found on the *Lexis/Nexis* database. Additionally, for a firm to be included in the sample, daily returns data on its common stock must be available for a period starting 251 trading days prior to the announcement of the sale and

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ending 10 days after the announcement. Data on the U.S. firms were obtained from CRSP (Center for Research in Security Prices). Data on the Canadian firms were obtained from TSE (Toronto Stock Exchange) Western.[6]

The data requirements necessary for the statistical methodology employed had a major impact on the size of the final subsamples of U.S. sellers, Canadian buyers, and matched pairs of firms. Of the 62 U.S. divestor firms for which data was sufficient, there was a subset of 32 Canadian firms with available data. There was sufficient information and data to examine matched pairs of both firms in 23 transactions. The data analysis thus examines samples of 62 U.S. sellers, 32 Canadian buyers, and 23 matched pairs of transactions. Descriptive statistics on the respective subsamples are provided in Table 1.[7]

Statistical Methodology

The methodology begins with the well established event-analysis techniques. We then make the appropriate extensions to this methodology to conduct our analysis of the dollar abnormal returns and matched pair aspects of our study. Details of the methodology are provided in the appendix.

Due to the difference in size between bidders and targets in mergers, Malatesta (1983) argued that the appropriate metric for determining the impact of mergers on security holders' wealth is the change in dollar values of securities due to the merger. Using this line of reasoning, Dennis and McConnell (1986) examined the dollar abnormal

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[6] The TSE Western data bank provides daily return and price data for firms trading on the Toronto stock Exchange for dates 1975 onward.
[7] Of firms for which data supported abnormal return analysis, sufficient information to provide descriptive statistics in Table 1 was unavailable for 3 U.S. firms and 1 Canadian firm.

gains to bidders and targets in mergers. They found that the division of gains was more equitable than indicated by the percentage abnormal returns. Hence, an examination of the dollar abnormal returns to the firms involved in sell-off divestitures will add understanding regarding the valuation effects of these transactions over and above that provided by the pecentage metrics..

The dollar abnormal returns are calculated in a manner similar to that used by Dennis and McConnell (1986). Cumulative abnormal returns (CAR) over identified intervals are applied to the market value of equity as of 6 days before the divestiture announcement. Over the interval T_{1j} to T_{2j} of length $n = (T_{2j} - T_{1j} + 1)$ the dollar abnormal return (DAR) is defined as follows:

$$DAR = (\text{n-day CAR}) \times (\text{Stock Price @ day-6}) \times (\text{\# shares outstanding @ day-6}).$$

In our analysis, we present results for the two day (-1,0) interval relative to the announcement date[8].

V. RESULTS
Percentage Returns

U.S. Seller and Canadian Acquirer Samples

Table 2 reports the mean abnormal return (MAR) for individual days around the announcement of the divestiture for the entire sample (Panel A) and the matched pair subsample (Panel B). For the sample of 62 U.S. divestor firms, the MAR have magnitudes of returns similar to those found in prior studies of divestitures by U.S. firms

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[8] Results for other event windows are available from the authors upon request.

to U.S. acquirers. The day -1 MAR is 0.93%, and the day 0 MAR 0.93%. The day -1 MAR is significant at better than the 5% level. In contrast to most prior divestiture studies, we find that the magnitude of abnormal return gains to acquirers is similar to that for sellers. The 32 Canadian acquirers exhibit a day -1 MAR of 0.80% (t-statistic of 1.98), and a day 0 MAR of 0.89% (t-statistic of 2.02). Both days' MAR are significant at better than the 5% level.

Table 3 presents event study results for selected intervals, with results for the entire sample in Panels A and C and for the matched pairs in Panels B and D). The mean cumulative abnormal returns (MCAR) in Panel A indicate that American sellers gain 1.86% over the (-1,0) announcement window (significant at the 5% level or better), and 3.13% over the (-10,0) announcement window (also significant at the 5% level or better). In Panel C, Canadian acquirers have MCAR of 1.56% and 1.97% over the (-1,0) and (-10,0) windows respectively (both significant at the 5%). In addition, the percentage of positive outcomes over the (-1,0) window is larger sellers (75% versus 58.1%) and more statistically significant for acquirers than for sellers. These percentages differ somewhat from findings in prior studies. For example, Hite, Owers and Rogers (1987) found 55% of sellers and 51% of buyers experienced positive abnormal returns over the (-1,0) window. The relative magnitudes of these outcomes suggest that U.S./Canadian divestitures generate more consistently positive outcomes for both parties to the transactions, in particular for Canadian acquirers. Finally, Panels A and C of Table 3 indicate that both Canadian acquirers and U.S. sellers exhibit consistently positive and

significant MCARs over a number of longer intervals surrounding the announcement date.

Matched Pair Sample

As mentioned previously, our samplesof U.S. divestors and Canadian acquirers includes 23 matched pair transactions with sufficient data to permit examination of both parties to the transaction. The mean abnormal returns (MAR) for these firms are presented in panels B of Table 2. American sellers realize a day -1 MAR of 1.32% (significant at the 5% level), with Canadian buyers realizing a MAR of 1.45% on the dsme day (significant at the 1% level). In panel B of Table 3, American sellers receive MCARs over the (-1,0) window of 0.99%, with 60.9% of the firms exhibiting positive returns (neither figure, however, is significant). In contrast, in Panel D of Table 3 Canadian acquirers earn MCARs over the same interval of 2.60%, with 82.7% of the firms exhibiting positive returns (both figures for Canadian acquirers are significant at the 5% level or better). These findings differ notably from those of previous studies. To our knowledge, no prior studies have found gains to acquiring firms exceeding those to sellers. This finding is important not only from an academic research standpoint, but also potentially stratecic and policy perspectives. We further examine this division of gains in the following presentation of the dollar returns.

Dollar Returns

Table 4 presents distributional summaries of the dollar abnormal return (DAR) to the entire sample (Panels A and B) and matched pair sample (Panels C, D, and E).

Overall, the results support the conclusion that Canadian buyers fared well when acquiring units sold by American firms. In panel C, the average DAR to American sellers was $21,998,304, while in Panel D the DAR to Canadian buyers totalled $23,193,709 (significant at the 10% level). These results are notable, particularly given the relative sizes of the typical transacting parties in our sample as reported in Table 1. This size differential implies that the Canadian firms capture a much greater share than expected of the total wealth created in cross border transactions. than would be expected based on the relative size of the firms. Finally, the average value created for these transactions totalled $45,192,013.

Table 5 partitions the matched pair sample according to the outcomes to each party to the transaction. Panel A reports results for the 12 transactions where both parties experienced positive DARs over the (-1,) window. The average combined DAR totalled $107,690,000, representing an average gain of 2.27% on the combined equity value of the transacting firms.

Canadian buyers gained at the expense of American buyers in 7 transactions, as presented in Panel B of Table 5. In this subsample, average losses to sellers ($46,620,000) are much larger than the gains to buyers ($18,255,875), resulting in a net average combined loss in value of $28,370,000. Panel C of Table 5 shows an average combined loss in value of $4,505,193 in two transactions gained at the expense of Canadian buyers. Finally, in two transactions, both firms experienced losses totalling $22,630,000.

Summary of Findings

The examination of U.S. sellers, Canadian buyers and matched pairs of U.S./Canadian firms has produced interesting findings. As in prior studies, we find gains to both sellers and buyers. However, our results indicate that Canadian buyers gain to a greater extent than domestic acquirers of U.S. divested assets as noted in prior studies. Acquirer gains of 1.56% (2.60%) for the entire (matched pairs) sample over the (-1,0) window are significantly greater than the gains documented in prior studies of both domestic and cross-border acquisitions. In addition, it should be noted that Canadian buyers gained in 19 of the 23 matched pairs transactions (of these transactions, the Canadian sellers experienced gains in 7 transactions where the American sellers experienced losses). Finally, the results for the dollar gains confirm that these transaction result in economically significant gains to Canadian acquirers.

VI. CONCLUSION

In the context of extensive evidence of the effects of domestic sell-off restructuring, and the role of cross-border divestitures in FDI, this paper examines a matched-pairs sample of firms involved in Canadian/U.S. sell-offs and investigates the effect of this international dimension on the valuation outcomes for the firms involved.

For a sample of 23 transactions where both Canadian and U.S. data were available, we examine the outcomes for U.S. firms selling corporate assets, and for their corresponding Canadian acquirers. The results for these transactions differs significantly from those of prior studies of primarily domestic transactions. We note that while gains

from sell-offs are shared by both American sellers and Canadian buyers, a signifigant portion of the gains accrue to the Canadian buyers. This finding is robust across both analysis of percentage and of dollar metrics. In contrast, existing research generally support sellers gaining to a greater extent than buyers.

These are interesting findings, and provide insights into a number of policy issues. While it appears that selling firms may experience similar gains whether selling to a domestic buyer or a Canadian buyer, the gains to Canadian acquirers are generally greater than those experienced by U.S. buyers in divestiture transactions. From a strategic perspective, we may infer that, while U.S. firms selling to Canadian acquirers experience similar gains as those selling to domestic buyers, they presumably sell to Canadian acquirers only when Canadians have the highest valuations for the asset in question. Given that previous divestiture studies have interpreted their findings as supporting the synergy/higher valued uses hypothesis, we can infer that these divested units were of greater value to Canadian than U.S. potential buyers. This inference immediately raises another question. Why (even if these units are more valuable to Canadian acquirers, for reasons presumably related to market segmentation), competing potential Canadian bidders do not bid up the price until the acquisition becomes a zero Net Present Value (and associated zero abnormal return) purchase? A full examination of this question is beyond the scope of this study. However, our findings support the contention that the number of close substitutes for Canadian acquirers may be sufficiently small in number that Canadian firms capture a relatively larger share of any gains than is the case within

the domestic U.S. market. Canadian firms exploring such acquisition opportunities will
want to examine why and how they can be the prevailing bidder, and still create value.

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Table 1
Descriptive Statistics on Firm Size ($)

Univariate descriptive statistics for transactions involving Canadian acqusitions of American divested business units between 1980 and 1995. All figures are in U.S. dollars

Panel A. Entire Sample

VARIABLE	N	MEAN	MIN	MAX	STD DEV
EQUITY VALUE OF AMERICAN FIRMS	59	3,387,700,000	15,354,750	28,180,000,000	6,265,300,000
EQUITY VALUE OF CANADIAN FIRMS	31	1,700,700,000	12,981,311	7,860,300,000	2,110,900,000
COMBINED EQUITY VALUE	23	4,673,100,000	365,190,000	25,640,000,000	5,664,000,000

Panel B. Matched Pairs

VARIABLE	N	MEAN	MIN	MAX	STD DEV
EQUITY VALUE OF AMERICAN FIRMS	23	2,983,000,000	33,664,500	25,620,000,000	5,801,200,000
EQUITY VALUE OF CANADIAN FIRMS	23	1,690,100,000	12,981,311	7,860,300,000	2,182,500,000
COMBINED EQUITY VALUE	23	4,673,100,000	365,190,000	25,640,000,000	5,664,000,000

Table 2

Event Study Results for Selected Days

Daily Abnormal Returns as calculated using a market model, employing a 200-day estimation period ending 50 days prior to the announcement date of divestiture. Mean Abnormal Returns (MARs), the percentage of positive returns (with significance based on the two-tailed binomial sign test), the t-statistic on the MAR (based on Brown and Warner (1985)) and the z-statistic (as calculated in Dodd and Warner (1984)) are also presented.

Panel A. Entire Sample

	AMERICAN FIRMS (sellers) (n=62)					CANADIAN FIRMS (acquirers) (n=32)			
DAY	MAR	%POS	t-STAT	z-STAT	DAY	MAR	%POS	t-STAT	z-STAT
-5	.0044	58.1	1.098	1.546	-5	-.0003	45.4	-0.108	-0.101
-4	.0003	40.3	0.041	0.421	-4	-.0007	45.4	-0.221	-0.487
-3	-.0027	43.5	-0.756	-0.593	-3	-.0002	54.3	0.088	0.214
-2	-.0008	38.7*	-0.185	-0.496	-2	.0044	55.9	1.524	1.799*
-1	.0093	51.6	2.419**	2.694***	-1	-.0080	58.8	1.975*	1.186
0	.0093	51.6	1.016	3.533***	0	.0089	55.9	2.021**	1.371
+1	.0120	46.7	1.290	1.369	+1	.0068	50.0	1.382	0.432
+2	-.0061	42.9	-1.717*	-0.675	+2	-.0026	41.2	-0.787	-0.321
+3	-.0011	47.6	-0.240	-0.581	+3	.0015	59.4	0.365	0.697
+4	.0046	34.9**	-0.927	0.776	+4	-.0013	60.0	-0.465	0.159
+5	.0029	46.0	-0.744	0.457	+5	-.0006	48.5	-0.155	0.587

*   significant at the 10% level using a two-tailed test
**   significant at the 5% level using a two-tailed test
*** significant at the 1% level using a two-tailed test

Table 2 - Continued

Panel B.
Matched Pairs

	AMERICAN FIRMS					CANADIAN FIRMS				
	(sellers) (n=23)					(acquirers) (n=23)				
DAY	MAR	%POS	t-STAT	z-STAT		DAY	MAR	%POS	t-STAT	z-STAT
-5	.0021	56.5	0.436	0.571		-5	-.0006	52.4	-0.131	0.077
-4	-.0108	30.4*	-2.225**	-2.493**		-4	.0006	47.8	0.159	-0.261
-3	-.0049	34.8	-0.776	0.571		-3	.0001	60.9	0.028	0.006
-2	.0007	34.8	0.122	-0.612		-2	.0052	59.1	1.527	1.220
-1	.0132	65.2*	2.699**	3.931***		-1	.0145	77.3***	2.887***	1.889*
0	-.0033	47.8	-0.485	0.303		0	.0121	60.9	2.215**	1.597
+1	-.0068	26.1**	-1.293	-2.353***		+1	.0130	63.6	1.814*	0.856
+2	-.0018	39.1	-0.544	-0.729		+2	-.0025	40.9	-0.540	-0.488
+3	-.0010	43.5	-0.211	0.065		+3	-.0045	52.4	-0.958	-0.249
+4	-.0013	34.8	-0.256	-0.436		+4	-.0034	60.9	-0.922	-0.001
+5	-.0008	56.5	-0.179	-0.001		+5	-.0005	61.9	-0.103	0.470

*   significant at the 10% level using a two-tailed test
**   significant at the 5% level using a two-tailed test
***   significant at the 1% level using a two-tailed test

Table 3

Event Study Results For Selected Intervals

Abnormal returns are calculated using a market model, employing a 200 day estimation period ending 50 days prior to announcement of divestiture. Mean Cumulative Abnormal Returns (MCAR), the percentage of positive returns (with the significance based on the two-tailed binomial sign test), the t-statistic on the MCAR (based on Brown and Warner (1985)) and the z-statistic (as in Dodd and Warner (1984)) are also presented.

Panel A. American Firms (Sellers)
Entire Sample
(n=62)

Interval	(-1,0)	(-5, 0)	(-5, +5)	(-10, 0)	(-20, 0)	(-30, 0)	(-40, 0)	(-50, 0)
MCAR	.0186	.0198	.0320	.0313	.0193	.0389	.0241	.0358
% Positive	58.1	48.4	51.6	58.7	60.3	55.6	42.9	49.2
t-statistic	1.675*	1.117	1.621	2.189**	1.000	1.368	0.904	1.196
z-statistic	4.403***	2.901**	2.545**	3.256***	2.014**	1.852*	6.747***	0.889

Panel B. American Firms (Sellers)
Matched Pairs
(n=23)

Interval	(-1,0)	(-5, 0)	(-5, +5)	(-10, 0)	(-20, 0)	(-30, 0)	(-40, 0)	(-50, 0)
MCAR	.0099	-.0030	-.0146	.0134	.0237	.0208	.0113	.0369
% Positive	60.9	47.8	47.8	56.5	60.9	52.2	43.5	43.5
t-statistic	1.002	-0.239	-0.239	0.985	1.047	0.767	0.0391	0.959
z-statistic	-0.239	0.457	0.457	1.276	1.409	0.0835	0.488	0.902

*   significant at the 10% level using a two-tailed test
**   significant at the 5% level using a two-tailed test
**   significant at the 1% level using a two-tailed test

Table 3 - Continued

Panel C: Canadian Firms (Acquirers)
Entire Sample
(n=32)

Interval	(-1,0)	(-5, 0)	(-5, +5)	(-10, 0)	(-20, 0)	(-30, 0)	(-40, 0)	(-50, 0)
MCAR	.0156	.0149	.0198	.0197	.0254	.0250	.0406	.0420
% Positive	74.2**	61.3	58.1	65.6	60.6	68.7**	73.5**	67.7*
t-statistic	2.159**	1.762*	1.678	1.454	1.215	1.086	1.619	1.412
z-statistic	2.854***	1.518	1.271	2.258**	2.709***	2.449**	2.896***	2.593***

Panel D: Canadian Firms (Acquirers)
Matched Pairs
(n=23)

Interval	(-1,0)	(-5, 0)	(-5, +5)	(-10, 0)	(-20, 0)	(-30, 0)	(-40, 0)	(-50, 0)
MCAR	.0260	.0311	-.0106	.0417	.0647	.0574	.0933	.1108
% Positive	82.7***	60.9	65.2	73.9**	73.9**	73.9**	69.6**	78.3**
t-statistic	2.892***	2.259**	-0.226	2.647**	2.610**	2.137***	3.017***	3.140**
z-statistic	3.351***	2.630***	-3.720***	3.526***	4.732***	3.429***	4.463***	4.007**

* significant at the 10% level using a two-tailed test
** significant at the 5% level using a two-tailed test
** significant at the 1% level using a two-tailed test

Table 4
Dollar Abnormal Returns

Dollar Abnormal Returns (DAR) are calculated following Dennis & McConnell (1986). The DAR is calculated by multiplying the two day (-1,0) announcement window market model abnormal return x (stock price @ day -6) x (# of shares outstanding @ day -6). t-statistics are in parentheses.

Panel A.
American Firms - Entire sample
(n=62)

Mean	Median	% Positive	Max	Min	Std Dev
4,610,177	1,573,754	57.6	488,490,000	-31,230,000	94,810,095
(0.373)					

Panel B.
Canadian Firms - Entire sample
(n=32)

Mean	Median	% Positive	Max	Min	Std Dev
22,713,661	3,287,367***	75.0**	212,930,000	-79,510,000	58,521,198
(2.126)**					

* significant at the 10% level using a two-tailed test
** significant at the 5% level using a two-tailed test
*** significant at the 1% level using a two-tailed test

Table 4 - Continued

Panel C.
American Firms - Matched Pairs
(n=23)

Mean	Median	% Positive	Max	Min	Std Dev
21,998,304	6,692,624	60.9	488,490,000	-26,480,000	120,450,000
(0.876)					

Panel D.
Canadian Firms - Matched Pairs
(n=23)

Mean	Median	% Positive	Max	Min	Std Dev
23,193,709	2,993,372**	82.6**	212,930,000	-7,951,000	64,161,006
(1.733)*					

Panel E.
Total Combined Dollar Returns - Matched Pairs
(n=23)

Mean	Median	% Positive	Max	Min	Std Dev
45,192,013	10,531,569**	73.91**	488,780,000	-261,800,000	136,900,000
(1.583)					

*   significant at the 10% level using a two-tailed test
** significant at the 5% level using a two-tailed test
*** significant at the 1% level using a two-tailed test

Table 5

Dollar Abnormal Returns - Differentiated By Gains and Losses

Dollar Abnormal Returns (DAR) are calculated following Dennis & McConnell (1986). The DAR is calculated by multiplying the two day (-1,0) announcement window market model abnormal return x (stock price @ day -6) x (# of shares outstanding @ day -6). t-statistics are in parentheses.

Panel A
(n = 12)

Canadian Firms Gain
American Firms Gain

	Mean	Median	Min	Max	Std. Deviation
Canadian Firms	42,282,393	6,554,143	123,212	212,930,000	79,237,761
American Firms	65,405,177	22,697,421	1,573,754	488,490,000	135,630,000
Combined	107,690,000[1]	41,705,371	5,040,058	488,780,000	149,090,000

[1] represents 2.27% of combined equity of firms involved

Panel B
(n = 7)

Canadian Firms Gain
American Firms Loss

	Mean	Median	Min	Max	Std. Deviation
Canadian Firms	18,255,875	5,101,336	1,065,721	60,782,657	24,354,251
American Firms	-46,620,000	-10,810,000	-264,800,000	-473,778	96,912,333
Combined	-28,370,000[2]	4,627,557	-261,800,000	58,800,506	106,950,000

[2] represents -0.02% of combined equity of firms involved

Table 5 - Continued

Panel C.
(n = 2)
Canadian Firms Loss
American Firms Gain

	Mean	Median	Min	Max	Std. Deviation
Canadian Firms	-43,010,000	na	-79,510,000	-6,502,776	51,621,941
American Firms	38,497,803	na	11,681,798	6,531,808	37,923,558
Combined	-4,507,197[3]	na	-5,179,023	5,179,023	13,698,384

[3] represents -0.42% of combined equity of firms involved

Panel D
(n =2)
Canadian Firms Loss
American Firms Loss

	Mean	Median	Min	Max	Std. Deviation
Canadian Firms	-7,857,267	na	-12,410,000	-3,305,547	6,437,104
American Firms	-14,770,000	na	-25,610,000	-3,938,368	15,324,579
Combined	-22,630,000[4]	na	-28,920,000	-16,350,000	8,887,475

[4] represents -2.09% of combined equity of firms involved

APPENDIX A:METHODOLOGY

For each security j, the market model is used to calculate an abnormal return (AR) for event day t as follows:

$$AR_{jt} = R_{jt} - (a_j + \beta_j R_{mt}) \tag{1}$$

where R_{jt} is the rate of return on security j for event day t, and R_{mt} is the rate of return on the Center for Research in Security Prices (CRSP) value-weighted index on event day t. The coefficients α_j and β_j are the ordinary least squares estimates of the intercept and slope, respectively, of the market model regression, which is run over an estimation period from $t = -200$ to $t = -51$, relative to the initial event date $t = 0$.

The cumulative abnormal return (CAR) from day T_{1j} to day T_{2j} is defined as:

$$CAR_j = \sum_{t=T_{1j}}^{T_{2j}} AR_j \tag{2}$$

We cumulate over various intervals around the announcement date. For a sample of N securities, the mean CAR is defined as:

$$\overline{CAR} = \sum_{j=1}^{N} CAR_j / N \tag{3}$$

The expected value of CAR is zero in the absence of abnormal performance.

The test statistic described by Dodd and Warner (1983) is the mean standardized cumulative abnormal return. To compute this statistic, the abnormal return AR_{jt} is standardized by its estimated standard deviation s_{jt},[25] i.e.,

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[25] The value of S_{jt}^2 is:

$$S_{jt}^2 = S_j^2 \left(1 = \frac{1}{D_j} + (R_{mt} - R_m) 2 / \sum_{t=1}^{D_j} (R_{mt} - \overline{R_m})^2\right)$$

$$SAR_{jt} = AR_{jt}/S_{jt} \qquad (4)$$

The standardized cumulative abnormal return SCAR$_j$ over the interval t = T$_{1j}$........T$_{2j}$ is:

$$\overline{SCAR_j} = \sum_{t=T_{1j}}^{T_{2j}} SAR_{jt} \; \sqrt{(T_{2j} - T_{1j} + 1)} \qquad (5)$$

The test statistic for a sample of securities is

$$Z = \sum_{j=1}^{N} \overline{SCAR_J} \sqrt{N} \qquad (6)$$

Each SAR$_{jt}$ is assumed to be distributed unit normal in the absence of abnormal performance. Under this assumption, Z is also unit normal.

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where

S_j^2	=	residual variance for security j from the market model regression
D_j	=	number of observations during the estimation period
R_{mt}	=	rate of return on the market index for date of the event period
R_m	=	mean rate of return on the market index during the estimation period
R_{mt}	=	rate of return on the market of day t of the estimation period

For each security j, the market model is used to calculate an abnormal return (AR) for event day t as follows:

$$AR_{jt} = R_{jt} - (\alpha_j + \beta_j R_{mt}) \tag{1}$$

where R_{jt} is the rate of return on security j for event day t, and R_{mt} is the rate of return on the Center for Research in Security Prices (CRSP) value-weighted index on event day t. The coefficients α_j and β_j are the ordinary least squares estimates of the intercept and slope, respectively, of the market model regression, which is run over an estimation period from t = -200 to t = -51, relative to the initial event date t = 0.

The cumulative abnormal return (CAR) from day T_1 to day T_2 is defined as:

$$CAR = \sum \tag{2}$$

We cumulate over various intervals around the announcement date. securities, the mean CAR is defined as:

$$\overline{CAR} = \sum_{j=1}^{N} CAR_j / N \tag{3}$$

The expected value of CAR is zero in the absence of abnormal performance.

The test statistic described by Dodd and Warner (1983) is the mean standardized cumulative abnormal return. To compute this statistic, the abnormal return AR_{jt} is standardized by its estimated standard deviation s_{jt},[26] i.e.,

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[26] The value of s_{jt}^2 is

where

s_j^2 = residual variance for security j from the market model regression
D_j = number of observations during the estimation period
R_{mt} = rate of return on the market index for the date of the event period
$\overline{R}_m$ = mean rate of return on the market index during the estimation period
R_{mt} = rate of return on the market of day t of the estimation period