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LETTER FROM THE EDITOR

This edition of *The Journal of Business Valuation* features papers presented at the 2008 Biennial Conference of The Canadian Institute of Chartered Business Valuators held in Quebec City, articles from other well-respected publications, presentations by valuation professionals and also the 2008 winning research paper from CICBV's Ian R. Campbell Research Competition.

The topics included in this edition are at the forefront of the North American valuation profession both in theory and in practice. Readers are reminded that the papers contained in *The Journal of Business Valuation* are not the opinions of our association but rather of the authors who submitted papers for this journal.

The Journal of Business Valuation features an expanded array of content, including presentations from National and Regional Conferences of the CICBV, articles from other publications and the award winning paper from CICBV's research competition. As a result of the increased amount of articles, *The Journal of Business Valuation* is published twice a year.

I would like to thank all of the authors who have submitted papers to our journal and also the volunteers and staff who made this edition possible.

Drew Dorweiler, MBA, CPA•ABV, CBV (EEE), ASA, CFE, CBA
Chair, Editorial Committee

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TRENDS IN CANADIAN SECURITIES CLASS ACTIONS: 1997-2008 CANADA STRIKES ITS OWN COURSE—CLASS ACTION FILINGS ON THE RISE

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1. INTRODUCTION

Securities class actions are a relatively new development in Canada, spurred on by recent legislative changes. Although all but one province had enacted class action legislation by 2004, including Québec in 1978 and Ontario in 1993,² securities claims brought under common law allegations of negligent and fraudulent misrepresentation were not conducive to class actions. More recently, however, amendments to provincial Securities Acts have opened the door to securities class actions. Specifically, 4 provinces have introduced civil liability for continuous disclosure (“CLCD”) and a right of action for investors harmed by misrepresentations or failures to make timely disclosure. In Ontario, the first province to amend its *Securities Act* (“the OSA”), civil liability for continuous disclosure has been in force since December 31, 2005, under Part XXIII.1 of the OSA. Alberta (effective December 31, 2006), Québec (effective November 9, 2007) and British Columbia (effective July 4, 2008) have each enacted substantially similar amendments to their Securities Acts.

Importantly, these amendments to the provincial Securities Acts do not require plaintiffs to prove that they relied on the alleged misrepresentation or omission. In this respect, the litigation environment is now more plaintiff-friendly in Canada than in the U.S., where the presumption of reliance—based on the “fraud-on-the-market” doctrine that the U.S. Supreme Court endorsed in 1988—is both rebuttable and limited to securities that trade in an efficient market.³ In the era when Canadian securities class actions could only be brought for common law torts of negligent and fraudulent misrepresentation, no such short-cut to showing reliance was

1 Mr. Berenblut is a Senior Vice President, Mr. Heys is a Vice President, and Ms. Starykh is a Consultant at NERA. The authors thank Ward Branch, Jake George, Marcia Kramer Mayer, and Robert Patton for helpful comments on earlier drafts of the paper. In addition, we thank Tara Poranganel, Nicole Roman, Carlos Soto, Nii Nookwei Tackie, and other NERA researchers for their assistance.

2 Nova Scotia is the most recent province to enact a class action statute, leaving only Prince Edward Island and the three territories without such legislation. Other jurisdictions that have enacted class action statutes include: Québec (1978), Ontario (1993), British Columbia (1995), Saskatchewan (2002), Newfoundland (2002), Manitoba (2002) and Alberta (2004). Class proceedings have also been available before the Federal Court since 2002.

3 *Basic v. Levinson*, 485 U.S. 224, 108 S.Ct. 978, 99 L.Ed.2d. 194 (1988).

available for cases involving allegations regarding continuous disclosures.⁴ While the gate-keeping procedures and damages limitations accompanying the addition of secondary market liability to the Securities Act may still make these kinds of securities class actions less attractive for plaintiffs to pursue in Canada than the U.S., the new cause of action and the absence of a requirement to show reliance are strong inducements to new filings.⁵

Although it is still too early to know whether the incidence of securities class actions in Canada will approach that of the U.S., 2008 saw a substantial rise in filings, an indication that plaintiffs' counsel are prepared to test the new provisions of the Securities Acts. First-time allegations contributed to the 2008 activity, with claims involving options backdating and the credit crisis—each of which has fuelled a wave of U.S. litigation—making their Canadian debuts.⁶ In light of the now fertile environment for securities class action litigation in Canada, and coinciding with NERA's new presence in the country, we examine here for the first time trends in Canadian securities class actions.

2. TRENDS IN FILINGS

Filed in 1997, *Carom v. Bre-X* was the first securities class action to be brought in Canada.⁷ Before *Bre-X*, most Canadian class action cases dealt with consumer issues such as defective products. From 1997 through 2007, annual securities class action filings fluctuated in a range from one (in 2000) to five (in 2004)⁸—see Figure 1. In 2008, a record nine new securities class actions were filed, an 80% increase over the previous maximum and a 125% increase over the prior year.

Even with this record level of new cases, Canadian securities class action filings in 2008 amounted to less than 4% of the 255 in U.S. Federal Courts through December 14 of that year.⁹ In part, this reflects the fact that the Canadian market is much smaller—one-fourth the size of the U.S. in terms of issuers (hence there are fewer litigation targets) and only one-tenth as large in terms of capitalisation (meaning the average target is smaller, and therefore less attractive for plaintiffs).¹⁰ Even controlling for market size, however, securities class action filings are less common in Canada than in the U.S.

Canada's enabling of securities class actions through the introduction of civil liability for continuous disclosure, intended to facilitate judicial economy, access to justice, and deterrence,¹¹ was accompanied by provisions

4 *Carom v. Bre-X Minerals Ltd.*, (1998), 27 C.P.C. (4th) 73 (Ont. Ct. (Gen. Div.)) (pleadings amendment). Note that deemed reliance was a feature of the prospectus liability provisions of the OSA prior to the amendments.

5 The most notable gate-keeping mechanism is the requirement that plaintiffs seek leave of the court to bring a class action by demonstrating both that the action is brought in "good faith" and that there is a reasonable possibility of success at trial. Other deterrents to bringing class actions in Canada as compared to the U.S. are limitations on damages and rules entitling the successful parties to have their legal costs paid by the unsuccessful parties. (Section 138.11 of the OSA specifically overrules the *Class Proceedings Act* on this point.)

6 Dr. Stephanie Planchich and Svetlana Starykh, "2008 Trends in Securities Class Actions: Annual Filings Are at the Highest Level in Six Years, Driven by the Credit Crisis, While Median Settlement Values Stay Steady," December 18, 2008. The NERA study can be found at: www.nera.com/image/PUB_Recent_Trends_Report_1208.pdf.

7 *Carom v. Bre-X*, *supra* note 3. U.S. filings against Canadian issuers listed on U.S. markets began before *Bre-X* and continue. Such filings are outside the scope of this report.

8 We have collected data from multiple sources, including RiskMetrics Group/Securities Class Action Services ("SCAS"), Factiva, Bloomberg, FactSet Research Systems, Inc., SEC filings, Canadian Legal Information Institute ("CanLII") databases, plaintiff counsel websites, and the public press. In compiling our filing data, we have sought information on all unique class actions alleging damages with regard to the purchase, ownership, or sale of securities. We report a single filing that potentially is related to an alleged fraud if multiple statements of claims are filed in different jurisdictions.

9 *Supra*, note 6 at p. 2, Figure 1.

10 On November 30, 2008, the number of listed companies was 6,457 on the NYSE, NASDAQ, and AMEX markets combined as compared to about 1,600 on the Toronto Stock Exchange ("TSX"). At the same date, the total market capitalisation of listed issuers was approximately US\$1.05 trillion on the TSX versus approximately US\$11.6 trillion on the NYSE, NASDAQ, and AMEX combined. Sources: for Canada, Toronto Stock Exchange Statistics – November 2008, Toronto Stock Exchange, November 2008; for U.S., World Federation of Exchanges, Monthly Statistics, November 30, 2008, available online at: www.world-exchanges.org/statistics/ytd-monthly.

11 "The purposes of class action legislation are:

(1) more efficient handling of potentially complex cases of mass wrong

Figure 1 Filings

January 1, 1997 – December 31, 2008



designed to discourage U.S.-style “strike suits” in Canada.¹² While the market size-adjusted filing rate remains much lower in Canada than in the U.S., it is growing faster, making it too soon to tell whether the balance has been appropriately struck.

2.1 Civil Liability for Continuous Disclosure: The Latest Cases

The first case filed under Part XXIII.1 of the OSA commenced against IMAX Corporation in 2006. Since then, 11 additional cases have been brought under the new provisions of the OSA. The affected issuers are:

- CV Technologies, Inc.
- Southwestern Resources Corp.
- Celestica Inc.
- European Minerals Corporation (now known as Orsu Metals Corporation)
- Gammon Gold Inc.
- TVI Pacific Inc.
- SunOpta, Inc.
- Gildan Activewear Inc.

(2) improved access to justice for those whose claims might not otherwise be asserted; and

(3) modification of the behaviour of actual or potential wrongdoers who might be tempted to ignore their obligations to the public.”

Ward K.Branch, *Class Actions in Canada* (Toronto: Canada Law Book, June 2008), para. 3.10.

12 “Strike suits” is a derogatory term for cases of questionable merit whose filing is presumed to be motivated by the prospect for contingency fees. Features of the provincial litigation designed to discourage such suits are noted *supra*, note 5.

- Canadian Imperial Bank of Commerce (CIBC)
- Arctic Glacier Income Fund
- American International Group (AIG)

None of the new filings has yet reached the leave application or certification stage. The *IMAX* case is expected to be the first matter for which the courts will consider the applicable test under the Ontario legislation for the leave application.

The prospects for Canadian securities class actions received a boost in late 2008 with a ruling in the *IMAX* case. Plaintiffs had brought an application to the Ontario Superior Court of Justice relating to certain refusals regarding their efforts to cross-examine a defence expert and a law clerk employed by one of the defendants' counsel, each of whom had submitted affidavits. The court held that the plaintiffs were entitled to a certain amount of discovery at this stage of the proceedings, and the decision was upheld on appeal. This outcome is in contrast to the U.S., where discovery is stayed under the Private Security Litigation Reform Act ("PSLRA") while a motion to dismiss is pending. For parallel U.S.-Canada actions, the *IMAX* ruling may enable plaintiffs to do an end-run around the discovery stay provisions of the PSLRA by bringing an action north of the border. The recent filing in Ontario of a class action against AIG may be an example of this tactic.¹³

While the *IMAX* ruling may open the door to some early discovery, a subsequent ruling in *Ainslie v. CV Technologies*, may make it difficult for plaintiffs to discover enough to satisfy the leave application requirement to demonstrate "a reasonable possibility that the action will be resolved at trial in favour of the plaintiff."¹⁴ The plaintiffs in *CV Technologies* sought to compel each defendant to file affidavit evidence and/or be examined. In rejecting their application, Madam Justice Lax held that the legislation places no onus on defendants to assist plaintiffs in securing evidence upon which to base an action. Rather, plaintiffs are required to demonstrate the propriety of their proposed claim before a defendant is required to respond.¹⁵

2.2 Types of Allegations

Allegations in Canadian securities class actions mainly focus on improper accounting, misleading earnings guidance, insider trading, product/operational defects, and customer/vendor issues. The distribution of allegations by type in cases filed from 1997 through 2008 is illustrated in Figure 2.¹⁶ As in the U.S., the largest group of allegations, comprising 26% of the Canadian total, relate to accounting misstatements.¹⁷ Another 16% involve earnings guidance and 13% cite insider trading.

13 Note that AIG is not a reporting issuer in Ontario. The OSA provisions for civil liability for continuous disclosure provisions apply not only to issuers reporting in Ontario, but also to issuers who have "a real and substantial connection to Ontario": OSA, sections 138.1 (definition of "responsible issuer") and 138.3.

14 OSA, section 138.8(1).

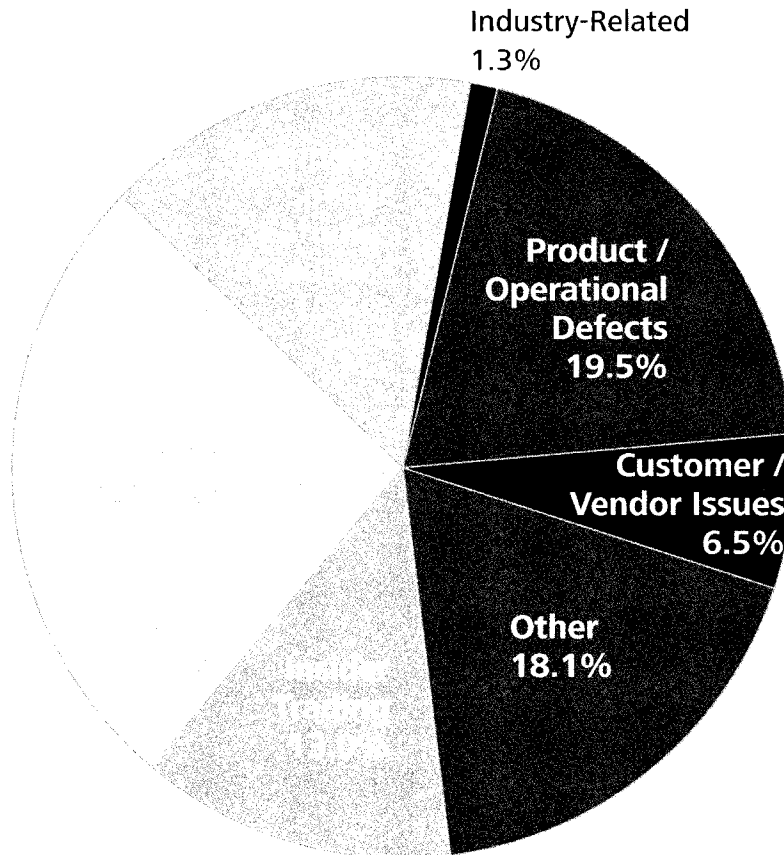
15 *Ainslie v. CV Technologies Inc.* (Court file no. 07-CV-336986 PD1), decision dated December 3, 2008.

16 Most shareholder class action statements of claim have multiple allegations. We examined the distribution of all 77 allegations in the 42 cases filed in Canada from 1997 through 2008. To code allegations in cases for which we do not have a statement of claim, we researched news stories and reviewed complaints involving parallel actions, if any, in the U.S.

17 Dr. Stephanie Planchich, Svetlana Starykh, and Brian Saxton, "2008 Trends: Subprime and Auction-Rate Cases Continue to Drive Filings, and Large Settlements Keep Averages High," July 29, 2008, p. 9, Figure 9. That NERA study can be found at: www.nera.com/image/BRO_Recent_Trends_8.5x11_0808.pdf. Note that it does not tally insider trading allegations. Allegations related to merger integration issues, which the U.S. study does find, are not present in any of the Canadian statements of claim that we reviewed.

Figure 2 Allegations in Filings (N=77)

January 1, 1997 – December 31, 2008



2.3 Credit Crisis Cases

Two Canadian cases filed in 2008, the CIBC and AIG securities class actions, stem from the current credit crisis. In the U.S., this crisis has driven 2008 securities class actions filings to the highest level in six years.¹⁸ Although the crisis had its origins in the U.S. subprime mortgage market, it has had global ramifications from which Canadian issuers and investors have certainly not been immune. The freeze-up and subsequent restructuring of the market for non-bank-sponsored Asset Backed Commercial Paper (“ABCP”) is just one example of how the crisis has affected Canadian financial markets.

Stock prices around the globe have been affected by the exposure of public companies to mortgage-related securities. In the U.S., the first credit crisis-related securities class action, involving subprime lender New Century Financial, was filed in February 2007. The first such Canadian case was filed in July 2008, with allegations relating to CIBC’s exposure to subprime mortgage loans.¹⁹

¹⁸ Plancich and Sarykh, 2008, *ibid*.

¹⁹ The FMF Capital class action, involving the demise of the U.S. subprime lender, may have been an early indicator of the trouble to follow. Filed in January 2006, this case had already settled prior to the wave of credit crisis litigation that continues in the U.S. For more details about this case, see: www.nera.com/image/Case_Closed_Subprime_FMF_0808_final.pdf.

2.4 Options Backdating Cases

In the U.S., the first options backdating case was filed in May 2005. The number of such U.S. filings peaked at 24 in 2006, but new cases continue to be brought, with nine in 2007 and five in 2008.²⁰

We are aware of only two Canadian cases with options backdating allegations. Involving TVI Pacific Inc. and Gammon Gold Inc., both were filed in 2008, some three years after the inception of such litigation in the U.S.

The paucity of Canadian options backdating cases to date may reflect the fact that Canadian regulators have not conducted the kind of large-scale investigations of options granting practices that were undertaken by the U.S. Securities and Exchange Commission (“SEC”).²¹ Nevertheless, we understand that Canadian plaintiffs’ counsel has identified approximately 50 TSX-listed companies that are suspected of having manipulated stock options between 1987 and 2005.²² These companies are said to have received letters from plaintiffs’ counsel alleging that stock options are likely to have been manipulated, demanding an independent investigation into the companies’ stock options practices, and threatening legal action if no such investigation is conducted.²³ These overhanging threats of litigation suggest that options manipulation cases may become a larger component of Canadian class action filings in the future.

2.5 Filings by Economic Sector

Securities class action filings in Canada have been brought against companies in 13 different economic sectors.²⁴ Issuers in the financial, energy and non-energy minerals sectors together account for almost 43% of filings. The distribution of cases by industry is illustrated in Figure 3.

Nearly one-quarter of Canadian cases involve companies in the financial sector. Of these, the largest group—including an ongoing market timing matter—have mutual funds as the defendant issuer. Another three financial sector cases—those against CIBC, AIG and FMF Capital—relate to subprime mortgage loans.

No doubt reflecting the importance of the sector to the Canadian economy, almost 20% of cases involve resource companies, among them Bre-X Minerals Ltd., Naxos Resources Ltd., Southwestern Resources, TVI Pacific, Inc., Canadian Superior Energy, PetroKazakhstan/CNPC, Gammon Gold Inc. and European Minerals Corporation (now known as Orsu Metals).

20 Note that, because there is often no significant stock price reaction following disclosures relating to backdating, many options backdating cases are brought as derivative actions rather than securities class actions. Our focus in this paper is on securities class actions and we have omitted derivative cases. For more details about options backdating cases, see Dr. Patrick Conroy, Matthew Evans, and Dr. Sunil Panikath, “Options Backdating: A Primer,” October 5, 2006. This NERA study may be found at: www.nera.com/image/PUB_Backdating_Part_1_Primer_SEC1381_Jul2007-FINAL.pdf.

21 Canada was the first major jurisdiction to require the expensing of all stock-based compensation awards based on fair value rather than intrinsic value (the use of the intrinsic value method was eliminated from CICA Handbook section 3870 in November 2003). As compared to intrinsic value expensing, fair value expensing provides less incentive for issuers to engage in backdating rather than, say, grant options with below-market strikes. As a result, it may be that companies reporting under Canadian GAAP were less apt to engage in options backdating than those reporting under US GAAP. For answers to some frequently asked questions relating to accounting for options and options backdating, see Dr. Thomas L. Porter, “Backdating Options: Frequently Asked Accounting Questions” available online at: www.nera.com/image/PUB_BackdatingOptionsFAQ_Final_2.08.pdf.

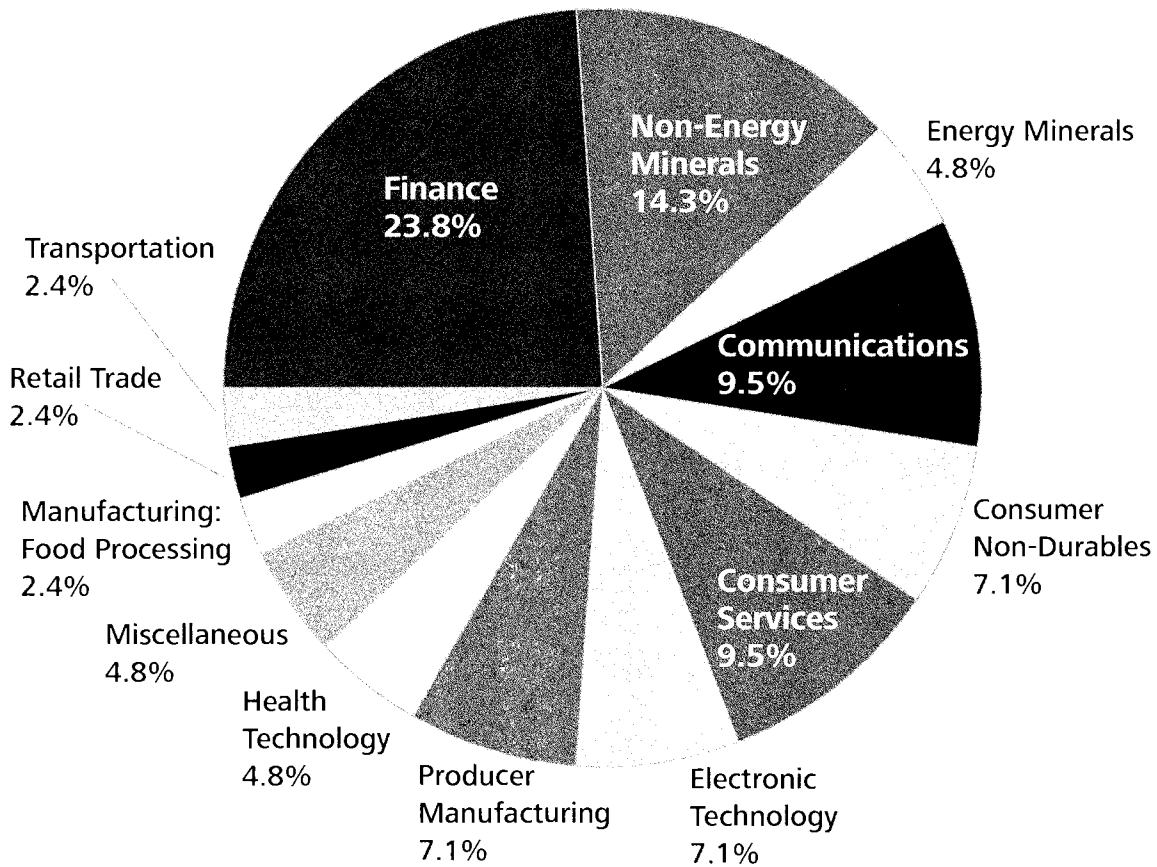
22 Julius Melnitzer. “Manipulation ‘serious problem’; Canada rife with option backdating, lawyers conclude”, National Post, September 19, 2007, p. FP1.

23 Many of these allegations may be brought as derivative actions rather than shareholder class actions.

24 This analysis is based on the economic sector classification of FactSet Research Systems, Inc.

Figure 3 Percent of Filings by Sector (N=42)

January 1, 1997 – December 31, 2008



3. TRENDS IN RESOLUTIONS

One of the guiding policy objectives of the OSA amendments would seem to be deterrence—that is, providing incentives for issuers and other parties in the know to more diligently and rigorously comply with their secondary market disclosure obligations. Consistent with this objective, the CLCD provisions of the OSA limit the liability of responsible issuers, directors, officers and other potential defendants where plaintiffs cannot establish that the misrepresentation or omission was made knowingly.²⁵ The liability limit for an issuer is the greater of \$1 million or 5% of market capitalisation as measured over the 10 trading days prior to the class period.²⁶ To date too few cases have settled to assess whether the limitations on liability are binding and, if so, under what circumstances.

²⁵ OSA, section 138.7.

²⁶ Unless otherwise indicated, all dollar amounts in this study are expressed in Canadian dollars.

3.1 Verdicts

While the vast majority of securities class action cases in both Canada and the U.S. result in settlements, a small fraction of cases do go to trial. In Canada, the *Danier Leather* case, which was brought under the prospectus liability provisions (section 130) of the OSA rather than the new secondary market liability provisions, is the first, and so far only, verdict in a securities class action for misrepresentation in Canada. In that case, the court found that neither the company nor its senior officers were liable for failing to update earnings forecasts included in the initial public offering (“IPO”) prospectus with information that defendants learned after the filing of the prospectus but prior to the conclusion of the offering period. This ruling was upheld by the Supreme Court of Canada.²⁷

3.2 Settlements

Since class action legislation was first enacted in Canada, 20 securities class action cases have settled (see Figures 4 and 5).²⁸ Only one—the *Southwestern Resources* case, which settled for \$15.5 million prior to any application for leave or certification—involved a case brought pursuant to the new securities legislation.

Perhaps not surprisingly, cross-border cases tend to result in larger settlements than Canadian-only cases. Among the nine settled cross-border cases, the average settlement is \$322 million and the median is \$46 million (see Figure 4). The average is skewed by two Nortel settlements for \$1.3 billion and \$1.2 billion. In domestic shareholder class actions, the average settlement is \$73 million and the median is \$14 million (see Figure 5). Aggregate settlements to date are \$3.6 billion, almost 80% of which is accounted for by cross-border cases.

The existence of cross-border cases reflects the fact that many major Canadian public corporations are listed on U.S. exchanges. These companies face the risk of securities litigation on both sides of the border. Settlements in U.S.-only cases, which can be substantially larger than in Canada-only cases, are not reflected in the figures cited above. An extreme example is the US \$2.4 billion settlement paid by CIBC in the *Enron* U.S.-only class action, which alone amounts to almost as much as the \$2.9 billion total of settlements in all cross-border cases to date.

3.3 Claimed Losses and Settlements

In contrast to the U.S., some Canadian provinces, such as Ontario, require the statement of claim to specify a damages amount. Of the cases that have settled and for which complete data are available, the average settlement value as a percent of the amount claimed (excluding punitive damages) is approximately 16%.

For cross-border cases, the average settlement rate is 13.7% of the amount claimed and tends to be higher for cases with larger claim amounts. The median settlement rate is 11.2%. See Figures 4 and 6.

For domestic cases, the average settlement rate is 18.0% of the claimed amount, a figure heavily influenced by the high settlement rates in the *Portus Alternative Asset Management* (38.2%) and *Atlas American RSP Index Fund* (89.8%) cases. The median settlement rate is 7.2%. See Figures 5 and 7.

27 *Kerr v. Danier Leather Inc.*, [2007] 3 S.C.R. 331, 2007 SCC 44. Two other shareholder class actions have been dismissed by the court: *Pente Investment Management Ltd. v. Schneider Corp.* (dismissed in 1998) and *Stern v. Imasco Ltd.* (dismissed in 1999). Both of these cases involved oppression claims relating to proposed corporate acquisitions.

28 *Hollinger International, Inc.* and *Crocus Investment Fund* were settled with respect to only some defendants.

Figure 4 Global Cross-Border Shareholder Class Action Settlements

Ranking	Company	Settlement Year	Settlement Value (CDN \$ MM)	Claim Amount or Plaintiffs' Damage Estimate (CDN \$ MM)	Settlement Value as a Percent of Claim Amount
1	Nortel Networks Corp. (I)	2006	1,318	11,767	11.2%
2	Nortel Networks Corp. (II)	2006	1,198	4,126	29.0%
3	Biovail Corp.	2008	141		
4	YBM Magnex International, Inc. ^A	2002	110	875	12.6%
5	Hollinger International, Inc. ^B	2008	46		
6	Cinar Corp.	2003	43		
7	FMF Capital Group Ltd. ^C	2007	27	298	9.1%
8	Royal Group Technologies Ltd.	2007	9	700	1.3%
9	Molson Coors Brewing Company ^D	2008	7		
	Total		2,899	17,765	16.3%
	Average		322	3,553	12.6%
	Median		46	875	11.2%

Note that tentative and partial settlements are included for comparison, and "Settlement Year" in this table represents the year in which the last settlement—whether partial or final—had the first fairness hearing. For tentative settlements, "Settlement Year" is the year in which the settlement was announced.

If a settlement letter included an exchange rate, we used that exchange rate to convert settlement and claim values from US \$ to CDN \$. If an exchange rate was not available in a settlement notice, we applied an exchange rate as of tentative settlement date (or as of final settlement date if tentative settlement date was not known for the case).

^A The US case filed in the Eastern District of Pennsylvania had been dismissed with prejudice on December 12, 2000. Plaintiffs appealed the dismissal. While the appeal was pending, the US claims had been settled as a part of Canadian settlement.

^B This settlement is a partial tentative settlement.

^C This settlement consists of CDN \$4.55 million and US \$21 million.

^D This is a tentative settlement.

4. LOOKING FORWARD

Securities class actions for secondary market violations are new to Canada. Compared to the U.S., the total number of securities class action filings to date is miniscule, even taking into account the smaller size of the Canadian market. Nevertheless, the plaintiffs' bar is more active than ever, with a record number of new filings during 2008, many of them brought under the new amendments to the provincial securities legislation. Until new-provision cases proceed to adjudication in the leave and certification stages, it remains to be seen whether the gate-keeping aspects of the new amendments to the legislation, as interpreted by the courts, will meaningfully hinder the ability of plaintiffs to prosecute securities class actions in Canada.

Allegations relating to the credit crisis and options backdating have generated a great deal of securities class action litigation in the U.S., but so far there has been little action along these lines north of the border.

In terms of settlements, 2008 was a big year, with almost \$890 million in total payments consented to for Canadian securities class actions (including cross-border and domestic cases), the most in any year except 2006, when the Nortel cases settled.²⁹ Currently, there are approximately \$3 billion in claims across 21 active Canadian

²⁹ Note that approximately two-thirds of this, \$611 million, was from one case—the Portus Alternative Asset Management case.

securities class actions (see Figure 8). Although there are 10 cases involving claims of at least \$100 million (excluding punitive damages) and settlements to date have sometimes been a high portion of the claimed amount (as high as 29% for cross-border cases and 90% for domestic cases), it seems unlikely that we will see an increase in the aggregate settlement amount in 2009. Even a higher-than-average settlement rate of 20% would produce only about \$600 million in settlements if all pending cases (and no new ones) settled in 2009, an unlikely prospect.

Figure 5 Domestic Shareholder Class Action Settlements

Ranking	Company	Settlement Year	Settlement Value ^A (CDN \$ MM)	Claim Amount or Plaintiffs' Damage Estimate (CDN \$ MM)	Settlement Value as a Percent of Claim Amount
1	Portus Alternative Asset Management	2008	611	1,600	38.2%
2	Atlas Cold Storage Holdings Inc.	2008	40	353	11.3%
3	Atlas American RSP Index Fund (now known as The Renaissance US RSP Index Fund)	2007	20	22	89.8%
4	BC Tel	2008	16		
5	Southwestern Resources Corp.	2008	16	300	5.2%
6	Crocus Investment Fund ^B	2008	13	150	8.3%
7	Bre-X Minerals Ltd. ^C	2002	9	3,000	0.3%
8	Bell Canada International Inc.	2005	3	250	1.2%
9	Canadian Superior Energy, Inc. ^D	2006	2	30	7.2%
10	Book4Golf.com Corp. (Yorkton Securities)	2006	2	505	0.3%
11	First Marathon Inc.	1999	<i>n.a.</i>	300	<i>n.a.</i>
	Total		731	6,510	11.2%
	Average		73	651	18.0%
	Median		14	300	7.2%

Note that tentative and partial settlements are included for comparison, and "Settlement Year" in this table represents the year in which the last settlement—whether partial or final—had the first fairness hearing. For partial tentative settlements, "Settlement Year" is the year in which this settlement was announced.

^A If "*n.a.*," the settlement value was not disclosed.

^B This settlement includes a partial settlement and two tentative partial settlements.

^C There were two independent settlements in the US (US \$4.59 million) and Canada.

^D There were two independent settlements in the US (US \$3.2 million) and Canada.

Figure 6 Settlement and Ratio of Settlement to Plaintiffs' Claim Amount in Global Cross-Border Shareholder Class Action Settlements

Shareholder Class Action Settlements

January 1, 2002 – December 31, 2008

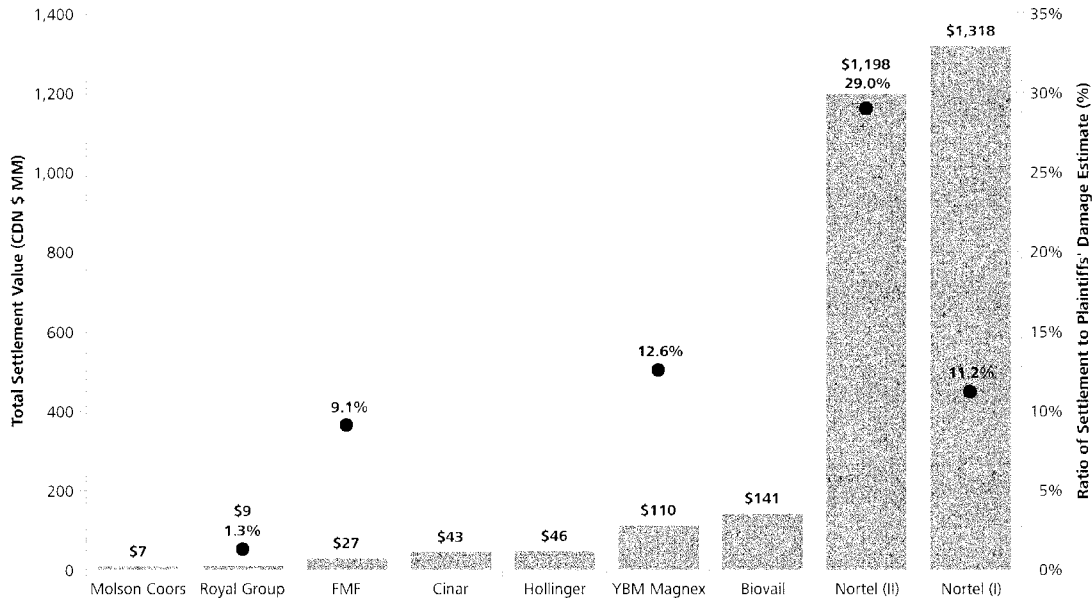


Figure 7 Settlement and Ratio of Settlement to Plaintiffs' Claim Amount in Domestic Cross-Border Shareholder Class Action Settlements

January 1, 2002 – December 31, 2008

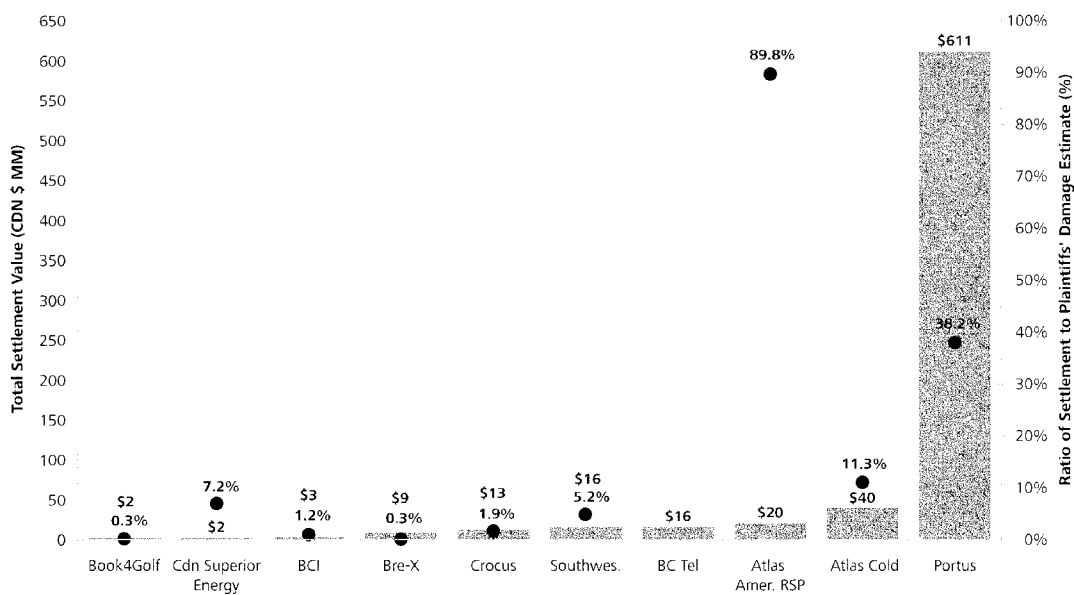


Figure 8 Pending Shareholder Class Actions

Ranking	Company	File Date	Statement of Claim Amount			US Jurisdiction With Parallel Case (If Any)
			Total	Compensatory	Punitive	
			----- (CDN \$ MM) -----			
1	American International Group	11/12/08	550	500	50	USDC – New York (Southern)
2	Arctic Glacier Income Fund	10/24/08	165	150	15	
3	BCE Inc.	10/24/08	588	588		
4	Canadian Imperial Bank of Commerce	07/22/08				USDC – New York (Southern)
5	Celestica Inc.	07/30/07	320	300	20	USDC – New York (Southern)
6	CP Ships Limited ^A	01/04/05	105	100	5	USDC – Florida (Middle)
7	Crocus Investment Fund ^B	07/12/05	200	150	50	
8	CV Technologies, Inc.	07/20/07	110	100	10	
9	European Minerals Corporation	06/02/08	55	50	5	
10	Franklin Templeton Investments Corp.	10/25/04				
11	Gammon Gold Inc.	03/06/08	80	75	5	
12	Gildan Activewear Inc.	06/12/08	505	500	5	USDC – New York (Southern)
13	Gordon-Daly Grenadier Securities	12/31/99				
14	Hollinger International, Inc. ^B	09/07/04				USDC – Illinois (Northern)
15	IMAX Corp.	09/06/06	210	200	10	USDC – New York (Southern)
16	Jitec, Inc.	07/07/03	0.04	0.04		
17	Naxos Resources, Ltd.	06/30/97				
18	Nelbar Financial Corp.	07/15/99	10	10		
19	PetroKazakhstan Inc. (China National Petroleum Corp.)	02/07/07	85	75	10	
20	SunOpta, Inc.	03/18/08	110	100	10	USDC – New York (Southern)
21	TVI Pacific Inc.	03/03/08	16	15	1	
	Total		3,109	2,913	196	

Notes:

^A Independent: US case is settled in 2008 for US \$1.3 million.

^B Case is partially settled.

2

THE COST OF CAPITAL

*by Roger Grabowski, ASA
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What follows is drawn from some of the material Shannon Pratt and I assembled when we put together the third edition of *Cost of Capital: Applications and Examples* (Wiley, 2008). In assembling the third edition, we nearly tripled the volume of the book. We authored the book from the standpoint of two practitioners trying to share what we had learned over the years and we presented the information that we thought would be useful for anyone who needs to estimate rates of return. I will present some of the current evidence on the equity risk premium, information on risk measures, some size affect information and industry and company risk data.

1. THE EQUITY RISK PREMIUM

The equity risk premium (“ERP”) is a key element in developing a rate of return appropriate for equity capital (commonly called the cost of equity capital) for discounting expected cash flows. Generally we can categorize the methods of estimating ERP as looking backwards and looking forwards. However, the goal is to estimate investor’s current expectations of how much the returns in the stock market will exceed the rates of return on risk-free securities.

When basing ERP estimates on historic data one must decide on the best way to summarize the data. There are many studies that present basically different types of summaries of exactly the same data. For example, the geometric average or arithmetic average can be used to summarize data. Also, one must choose an appropriate sample period. But in selecting among the alternative ways of summarizing the data, one must realize that there is no one correct method. You each have the responsibility to look at the evidence and determine what you believe is the consensus ERP.

Figure 1 displays a summary of data updated to 2007 from data put together by Dimson, Marsh and Staunton at the London Business School. They capture information on rates of return for 17 different countries, including the U.S. and Canada, and present a portfolio of world companies’ returns; so they provide assistance if we are in an environment where we are looking at different countries. Dimson and his colleagues’ research helps to determine what ERP estimate would be appropriate in Canada, Japan, the UK, Germany, as well as the U.S.

There is now a new source for Canadian long-term historical risk premium data. Morningstar (through Business Valuation Resources Canadian), is offering long-term risk premiums for the period 1936-2007.

Figure 1 Canada, UK and US Long-Term Historical Risk Premiums

1900 - 2007		
<i>Historical Realized Risk Premiums</i>		
<i>(Premium over total return on Long-term gov't bonds)</i>		
	Geometric Equity Risk Premium	Arithmetic Equity Risk Premium
Canada	4.4%	5.4%
UK	4.4%	5.6%
US	4.7%	6.3%

Source: Update of data compiled by Dimson et al. in *Triumph of the Optimists*

Let's look at some of the issues when summarizing historical data. The typical summary of historical risk premium data are expressed in terms of one-year returns. In fact, using one-year returns, or the arithmetic average of one-year returns, makes the assumption that every year people rebalance their portfolios based on the percentage of market value of all available securities. That may not mimic a long-term investor. And in fact, if a long-term investor uses two-year returns or three-year returns as their benchmark instead of one-year returns, ultimately the arithmetic average moves closer to the geometric average of returns for the same time period.

In the typical summary of historical risk premiums in the U.S., as found in the Morningstar/Ibbotson *S&P Yearbook*, we see an arithmetic average of one-year returns of 7.1%, and a geometric average of 5.2%. Both are correct; the question is, what kind of investor are you looking at? Are they long-term, "buy and hold" investors? Are they short-term investors who are trading? Using an arithmetic mean versus a geometric mean explains how two different summaries of the same data can exist.

One must decide what is a meaningful sample period, just as we must when we do our financial analysis of the guideline companies or subject companies. What period of time is useful in representing both what you think the current state of the business is, and also future expectations? In the case of an old business with 20 years of data, should we blindly average 20 years of financial information, or should we pick a more relevant sub-period? This is an issue that must be confronted in every valuation. In picking the sample period of historical risk premium data, we have to make a similar sort of analysis. Morningstar is a data provider, providing data covering many years. Decisions must be made as to which segment of that data is relevant.

I have divided the data that Dimson and his colleagues provide, spanning 1900 to 2007, into three time periods. The first period, 1900-1925, is the information that Dimson provides, but Morningstar does not. I have divided the period after 1925 in half. Notice in Figure 2 that the relative volatility of stocks to bonds has changed. In previous eras, stocks were much riskier; by which I mean to refer to the variability of annual returns. On a relative basis, bonds were virtually riskless because today interest rates and bond prices move up and down with a variability that is closer to the variability of stock returns than it ever was in the past. This tells us that if we are looking at historical equity risk premium data to estimate the ERP and the ERP is the extra return investors expect for the risk of investing in common stocks compared to bonds, we have to look at the relative risk of investing in stocks and bond. We have to look at the data and ascertain whether the relative risk is different today than it was in an earlier period. This suggests that data from the 1950s to 2007 is more representative of today's risk relationships than earlier data.

Ibbotson was a pioneer in publishing rates of return on common stocks. In the early 2000s his publication was being criticized by other academics who warned pension managers that the rates of return developed from historical equity premium data that he published could not be expected, on average, to be earned in the future. Pension managers need to know the expected rate of return on common stocks in order to know how much to fund pension plans. If they expect 7% premium over bond returns, but the pension fund only realizes say a 4% or 5% return, then many pension plans will be under funded.

In a series of articles, Ibbotson finally responded to this criticism. Based on his research he concluded that the historic risk premium series likely overstates the amount of return expected in the future because of non-recurring events that caused the price-earnings ratios to increase compared to the average over time (see Figure 3). Ibbotson concluded that the trend of this increase of price-earnings ratios will probably not be repeated.

Ibbotson introduced a concept that he called the "supply side" estimate of the ERP. The meaning of supply side is very simple. It is based on the concept that the supply of earnings and dividends drive stock returns. His method of measurement involves removing price-earnings ratio inflation from the historical returns. The *S&P Yearbook* provides supply-side ERP estimates for periods beginning with 1926. The only problem is that the *S&P Yearbook* does not provide comparable data for periods beginning after 1926, say 1956. I understand from Morningstar that they are planning on another publication that will expand the data, allowing the same choice of sample periods as they provide for one using their historical risk premium data.

As noted, the data compiled by Dimson and his colleagues involves 17 countries. I invite you to look at the rates of return they expect in a world environment. They publish historical data and then remove what they believe to be non-recurring inflation in price-dividend ratios. They conclude with what they think is a more steady state of expected growth in dividends and expected returns on stocks versus bonds (see Figure 4).

Figure 2 Which Period to Use – Historical Volatility – Stocks Versus Bonds

Historical Realized Risk Premiums Over Total Return On LT Govt Bonds						
	Geometric Equity Premium	Arithmetic Equity Premium	Volatility of Bond Returns	Volatility of Stock Returns	Ratio of Volatility of Returns: Stocks to Bonds	
1900-1925						
Canada	6.3%	6.4%	8.0%	9.5%	1.2	
UK	4.1%	4.4%	6.6%	11.0%	1.7	
US	5.1%	6.7%	2.6%	19.1%	7.3	
1926-1955						
Canada	6.1%	8.3%	5.3%	22.5%	4.2	
UK	3.3%	3.8%	11.3%	15.4%	1.4	
US	5.7%	8.5%	4.7%	24.8%	5.2	
1956-2007						
Canada	2.5%	3.2%	10.2%	15.5%	1.5	
UK	5.2%	7.2%	13.6%	27.1%	2.0	
US	4.0%	4.9%	10.8%	16.9%	1.6	

Source: Update of data compiled by Dimson et al. in *Triumph of the Optimists*

Figure 3 Increase of Price-Earnings Ratios Not Repeatable

Ibbotson and Chen “The Supply of Stock Market Returns” working paper (June 2001); *Financial Analysts Journal* (Feb 2003)

P/E growth is not forecast to repeat (non-recurring), ERP (expected future equity risk premium) will be less than the historical realized risk premium

SBBI Valuation Edition reports updated “supply side” estimate of equity risk premiums annually

- Differences between arithmetic average of one-year realized returns and supply-side estimates of equity premiums are as follows:

	Historical Realized ERP		Supply Side ERP Estimate	
	Geometric	Arithmetic	Geometric	Arithmetic
1926-2007	5.1%	7.1%	4.2%	6.2%
1953-2007 (unpublished)	4.7%	6.1%	3.6%	5.1%
1963-2007 (unpublished)	3.6%	4.9%	3.3%	4.6%

SBBI Yearbook does not give information for periods other than beginning in 1926

Figure 4 Dimson and Colleagues' Rates of Return for World Environment

- Convert historical realized premium to forward-looking projection
 - Remove non-recurring Price/Dividend growth
 - Assume
 - (a) increase in price/dividend ratio is attributable solely to long-term decrease in required risk premium (and decrease will not continue) and
 - (b) future standard deviation of annual returns will equal historical standard deviation of returns (approx 20% per annum),
- Conclude: arithmetic *ERP* estimated at beginning of 2008:
- 4.8% - 5.3% arithmetic average (2.8% - 3.3% geo average)
 - vs. bonds for US
 - 3.4% - 3.9% arithmetic average (2.3% - 2.8% geo average)
 - vs. bonds for "world" index of stocks in 17 countries (denominated in US \$)

Ibbotson and Goetzman, in a Yale working paper, agree that the historical risk premium data (including the data contained in the *S&P Yearbook*) likely inflates returns that can be expected in the future.

These forecasts tend to give somewhat lower forecasts than historical risk premiums, primarily because part of the total returns of the stock market have come from price-earnings ratio expansion. This expansion is not predicted to continue indefinitely, and should logically be removed from the expected risk premium.¹

Another approach would be to ask for opinions. In summarizing survey information we find that no one expects an ERP as high as 6 or 7%. The basic range of long-run ERP that everyone agrees upon appears to be between 4 and 6% (see Figure 5). Consider these opinions on equity risk premiums.

- Damodaran, *Damodaran on Valuation*, 2nd ed. (2006)
 - “... the historical risk premium that makes the most sense is 4.84%” (geometric premium over government bonds) (p. 41)
 - “The implied equity risk premium in Jan 2006 was 4.08%.” (forward-looking approach using expected dividends and expected dividend growth) (p. 48)
- Pablo Fernandez, “Equity Premium: Historical, Expected, Required and Implied” Working Paper (Feb. 18, 2007)
 - Recommends that “... an additional 4% (over government bonds) compensates the additional risk of a diversified portfolio.” (p. 28)
- Copeland, Koller and Murrin, *Valuation: Measuring and Managing the Value of Companies*, 3rd ed. (2000)
 - “In early 2000, we were recommending using a 4-1/2 percent to 5 percent historically estimated market risk premium of US companies.” (p. 216)
 - “A number of investment banks have begun publishing estimates of the market risk premium, several using *ex-ante* approach. In early 2000, most of these estimates were 3 1/2 percent to 5 percent.” (p. 223)
- Koller, Goedhart and Wessels, *Valuation: Measuring and Managing the Value of Companies*, 4th ed. (2005)
 - “Although many in the finance profession disagree about how to measure the market risk premium, we believe 4.5 to 5.5 percent is the appropriate range.” (p. 306)

Looking at the new Morningstar publication on Canadian rates for the period from 1953-1977, the long-term risk premium that was actually earned in Canada is approximately 4.8%, consistent with this range of expected ERP.

2. RISK MEASURE

How does the textbook Capital Asset Pricing Model (“CAPM”) hold up? CAPM is widely used and beta, as *the* risk measure, is often held sacred. In fact, there is a great deal of literature on why beta is a poor measure of risk. The theory is that if one invests in a portfolio of high beta stocks and also invests in a portfolio of low beta stocks, on average the rates of return for the low beta stock portfolio will be lower than the rates of return on the high beta stock portfolio. In fact, such results are rarely seen, as per some of these observations.

Fama and French, “The Cross-Section of Expected Returns” *Journal of Finance* (1992)

The efficiency of the market portfolio implies that (a) expected returns on securities are a positive linear function of their market *betas* (the slope in the regression of a security’s return on the market’s return), and (b) market *betas* suffice to describe the crosssection of expected returns. (Observed relation between market *beta* and average return is flat.)

¹ Goetzmann and Ibbotson, “History and the Equity Risk Premium.” Yale International Center for Finance, Working Paper No. 05-04 (April 2005), p. 8.

Fama and French, “Value Versus Growth: The International Evidence” *Journal of Finance* (1998)

Problem with CAPM using US data shows up in same way in the stock returns of 12 non-US major markets.

Brav, Lehavy, and Michaely, “Expected Return and Asset Pricing”, Working Paper (July 2005)

- Use *expected* returns (based on *Value Line* data for period 1975-2001 and a second study based on expected returns from sell-side analysts as reported by *First Call* for period 1997-2001) rather than historic realized returns
- Find stock’s *expected* return is positively related to *beta*
- Find that investors expect higher rates of return on small cap stocks and *on average* receive higher returns – expected return on small cap stocks is higher than large cap stocks after taking into account differences in *beta* – consistent with the small stock premium

Only about 25% of the difference in returns in future periods is tracked to differences in beta; that is not a very high correlation – only 25% of the differences are measured by what we think of as the sacred cow, beta.

So there is a great deal of literature exploring whether beta is the correct risk measure. There is an entirely new area of inquiry around what is called *total beta* (see Figure 6). As Bennett and Sias point out in their paper.

- Empirical results demonstrated that even very large portfolios have substantial firm-specific risk.
- Found no evidence investors can form well-diversified portfolios regardless of the number of securities in the portfolio.
- If firm-specific risk is not easily diversifiable, then firm-specific risk may impact the expected rate of return.²

If beta is the slope of the regression of stock returns to market returns over a look-back period, total beta corrects for the poor fit of the regression. So the larger the error around the regression line, the worse the fit and the less reliable is the beta estimate drawn from the relationship of historical returns. The error around the regression line is called idiosyncratic risk. Most academics claim that the market does not “price” idiosyncratic risk (i.e., one does not earn a greater return on investing in a stock with greater idiosyncratic risk); you can, in fact, invest in sufficient shares of stocks in enough companies that you can diversify idiosyncratic risk out of existence. The research of the last 10-15 years has suggested that what is taught in most textbooks on this subject is not the complete story. Idiosyncratic risk appears to be priced by the market and is part of the total risk package that investors assess when making an investment. The issue is not just how companies’ returns move with the market; it is how predictable the returns are relative to the market returns.

Total beta is a new type of risk measure that people are investigating because beta has proven to be such a poor risk measure. In a paper by Professor Toffalis, a statistician, the point is made that total beta is actually a statistical correction to what everybody thinks is a good way of estimating beta. He explains that many of the problems with beta and CAPM are that people forget the statistics; they forget how to do good estimating (see Figure 7). He returns to basic regression statistics and explains how the estimators can be improved. He concludes that total beta is a better estimator, statistically. He presents some empirical data to show that total beta is a more stable estimate of risk than is beta (Figure 8).

2 Bennett and Sias, “How Diversifiable is Firm-specific Risk”, Working Paper (June 2005).

Figure 5 Basic Range of Long-Run ERP

2008 United States RP_m Survey of Indicators

<i>Indicated Ranges for the Equity Risk Premium</i>	
• <i>Historical evidence:</i>	4-7%
– <i>Duff & Phelps Risk Premium Report</i>	5%
• <i>Historical evidence with non-recurring events removed</i>	3-6%
• <i>Bottom-up expected returns:</i>	5-6%
• <i>Academic consensus:</i>	3-6%
• <i>Corporate expectations & usage:</i>	3-4%
<i>Equity Risk Premium for 2008</i>	4-6%

Figure 6 Is Beta the Correct Risk Measure?

- Risk may better be measured by relative volatility (σ_i / σ_m) rather than the market risk [$Cov(R_i, R_m) / Var(R_m)$]
- R^2 of beta regression measures proportion of risk that is market risk
- Assume average guideline company beta = 1.10 and average correlation of regressions = $R = .33$
- “Total Beta” = $1.10 / 0.33 = 3.30$
- The formula for standard beta mixes together relative volatility and correlation. A low beta could actually represent a high relative volatility that is masked by a low correlation. Investors would be misled into thinking they had selected an investment whose volatility is low.

Why do we bother with formulas for leveraging and unlevering? Beta is a measure of a company's risk. All companies have financial risk if they have debt and they also have operating risk. Unlevering betas is a way of separating the risk from financial risk, taking it out of the observations and leaving only operating risk (see Figure 9). It is a method that is dependent on formulas that have been developed by academics. Every formula is based on some conventions and rules and conditions that make a specific formula usable or not usable.

The underlying concept of unlevering is based on the value of the tax deduction that a company expects, or that investors expect a company will realize, on the interest payments that the company will be making on their debt (see Figure 10). If a company is losing money, tax deductions or the effect of tax deductions will not be expected—that is, the government will not help to subsidize the interest payments. This increases the cost of debt, so each formula addresses the risk of realizing the tax benefits of debt differently.

The most common formula found in textbooks is known as the Hamada formula (see Figure 11). Some textbooks describe the Hamada formula as the correct formula when debt to equity will be maintained in the same proportions in the future—that is, at market value, debt and equity is going to go up or down as the underlying cash flows increase and decrease and the ratio of debt to equity will remain constant. This description of the underlying premise of this formula is wrong. Somehow, between 1972 when Hamada developed this formula and today, it was miss-described in a number of textbooks. The formula has certain conditions but not the one that is described in most textbooks. The Hamada formula is widely used; it just happens to be the wrong formula if one expects the ratio of debt to equity to remain constant (see Figure 12).

Other formulas, including the Miles-Ezzel (Figure 13) and the Harris-Pringle (Figure 14) formulas, are derived from a basic premise that debt goes up as market value of equity goes up and debt goes down as market value of equity goes down, with a constant ratio. Some people do not believe that using debt as a percentage of market value of equity represents what happens in the real world.

One author, Pablo Fernandez, observes that debt goes up, but it goes up and goes down in a ratio more related to book value of equity than market value of equity. He has developed a formula that embodies that relationship (see Figure 15). His reasoning is that ratings agencies look at the ratio of debt to book value of equity. Fernandez points out the difficulty involved. When company stock goes down, the theory is that debt should go down, but, of course, this is the one time a company cannot reduce its debt, and the reason the stock went down—the company is hurting. Therefore the company cannot sell more stock to substitute stock for debt nor can it raise enough cash to pay off debt.

These are some of the formulas covered in our book. It was a revelation to Shannon and I, when we were writing this, that all these things were not actually settled years ago. We found textbook after textbook that had the wrong description for unlevering and relevering formulas. How this happened is not clear.

3. SIZE PREMIUM

My former colleague David King and I have published a number of studies on the size premium in recent years. The annual update of that research, the Duff & Phelps' *Risk Premium Report*, is explained extensively in *Cost of Capital*. The empirical data shows that the size premium is a correction to the textbook CAPM. Beta works as a good measure of risk for big companies, but underestimates the risk of smaller companies and the returns that are earned on smaller companies. Therefore a factor should be added. There is a relationship between equity premium and size—that is, the smaller the company, the greater the rate of return investors demand (see Figure 16).

Figure 7 Problems with Beta Instruments May Result from Poor Statistical Estimations

- Market evidence is the regression of returns during a look-back period provides for poor estimates of beta
- Desirable:
 - Estimate beta that allowed for measurement error in the variable chosen for market return
 - Estimate security market line which allowed for error in explanatory variable
- OLS line minimizes sum of squared errors in y-direction
- Which variable should be x variable, which should be y variable- market return or security return
- “A regression line does not purport to represent a functional relationship between mathematical variables or a structural relation between random variables.” Kendall and Stuart, *The Advanced Theory of Statistics, volume 2: Inference and Relationship* (1979, p 402)

Figure 8 Total Beta Is Statistical Correction for Estimation Error

- Tofallis, "Investment Volatility: A Critique of Standard Beta Estimation and a Simple Way Forward," working paper (January 2008)
- Slopes of the two least squares regression lines [(1) return on security as y , return on market as x ; (2) return on market as y , return on security as x] bracket the slope of the estimated functional line
 - The Total Beta is equal to the geometric mean functional relationship = geometric mean of the slopes of the two least squares regression lines [$(\beta_x, y \text{ times } \beta_y, x)$].^{5]}
 - Preliminary evidence is that Total Beta is more stable over time
 - Total Risk can be applied to all portfolios- whether diversified or not

Figure 9 Formula for Unlevering and Relevering Betas

Theory:

- Company risk comprised of operating risk and financial risk (leverage)
- More leverage means more risk (higher beta)

Problem:

- Publicly traded guideline or comparable companies may have leverage that differs from our subject company

Solution:

- “Unlever” the guideline or comparable companies betas
 - Removing the effect of financial leverage leaves the effect of operating risk only – unlevered beta often termed “asset beta”.
- “Relever” estimated unlevered beta to reflect leverage of subject company

Figure 10 Beta Measurement – Levered Versus Unlevered Betas

- Basic relationship underlying formulas for unlevering/relevering beta

<u>Value of a Levered Firm</u>	
<u>Assets</u>	<u>Capital</u>
Value of Unlevered Firm	Value of Debt Capital
plus	plus
Value of Tax Shield	Value of Equity Capital
- In this formulation, the cost of debt capital is measured prior to the tax affect because the value of the tax deduction on the interest payments equals the value of the tax shield.

Figure 11 Hamada's Formula

Hamada, "The Effect of the Firm's Capital Structure on the Systematic Risk of Common Stocks," *Journal of Finance* 27(2) (1972).

$$B_u = \frac{B_L}{1 + (1 - t)W_d / W_e}$$

$$B_L = B_u (1 + (1 - t)W_d / W_e)$$

Figure 12 Assumptions Underlying Hamada's Formula

The Hamada formulas are consistent with theory that:

- Discount rate used to calculate the tax shield equals the cost of debt capital (i.e., the tax shield has same risk as debt).
- Debt capital has negligible risk that interest payments and principal repayments will not be made when owed which infers tax deductions on the interest expense will be realized in the period in which the interest is paid (i.e., beta of debt capital equals zero).
- Value of the tax shield is proportionate to the value of the market value of debt capital (i.e., value of tax shield $= t \times W_d$).
- *But the Hamada formulas are based upon Modigliani and Miller's formulation of the tax shield values for constant debt. The formula is not correct if the assumption is that debt capital remains at a constant percentage of equity capital (equivalent to debt increasing in proportion to net cash flow to the firm in every period). The formulas are often wrongly assumed to hold in general.*

Arzac, Enrique R., and Lawrence R. Glosten. "A Reconsideration of Tax Shield Valuation." *European Financial Management* (2005): 453-461.

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Figure 13 Miles-Ezzel Formula

Miles and Ezzel, “The Weighted Average Cost of Capital, Perfect Capital Markets, and Project Life: a Clarification,” *Journal of Financial and Quantitative Analysis* (Sept 1980) pp 719-730.

- Introduces beta for debt capital

$$B_U = \frac{M_e \times B_L + M_d \times B_d [1 - (t \times k_{d(pt)}) / (1 + k_{d(pt)})]}{M_e + M_d [1 - (t \times k_{d(pt)}) / (1 + k_{d(pt)})]}$$

$$B_L = B_U + \frac{W_d}{W_e} (B_U - B_d) \left[1 - \frac{(t \times k_{d(pt)})}{(1 + k_{d(pt)})} \right]$$

Figure 13 Miles-Ezzel Formula — *continued*

The Miles Ezzell formulas are consistent with the theory that:

- Discount rate used to calculate the tax shield equals the cost of debt capital (i.e., the tax shield has same risk as debt) during the first year and the discount rate used to calculate the tax shield thereafter equals the cost of equity calculated using the asset beta of the firm (i.e., the risk of the tax shield after the first year is comparable to the risk of the operating cash flows). That is, the risk of realizing the tax deductions is greater than assumed in the Hamada formulas.
- Debt capital is bearing risk of variability of operating net cash flow in that interest payments and principal repayments may not be made when owed which infers tax deductions on the interest expense may not be realized in the period in which the interest is paid (i.e., beta of debt capital may be greater than zero).
- Market value of debt capital remains at a constant percentage of equity capital which is equivalent that debt increases in proportion to the net cash flow of the firm (net cash flow to invested capital) in every period.

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Figure 14 Harris-Pringle Formula

Harris and Pringle, "Risk-Adjusted Discount Rates – Extensions from the Average-Risk Case," *Journal of Financial Research* (Fall 1985) pp 237-244.

$$B_U = \frac{B_L + B_d \frac{W_d}{W_e}}{\left(1 + \frac{W_d}{W_e}\right)}$$

$$B_L = B_U + (B_U - B_d) \times \left(\frac{W_d}{W_e} \right)$$

Figure 14 Harris-Pringle Formula — *continued*

The Harris-Pringle formulas are consistent with the theory that:

- Discount rate used to calculate the tax shield equals the cost of equity calculated using the asset beta of the firm (i.e., the risk of the tax shield is comparable to the risk of the operating cash flows). That is, the risk of realizing the tax deductions is greater than assumed in the Hamada and Miles-Ezzell formulas.
- Debt capital is bearing risk of variability of operating net cash flow in that interest payments and principal repayments may not be made when owed which infers tax deductions on the interest expense may not be realized in the period in which the interest is paid (i.e., beta of debt capital may be greater than zero)
- Market value of debt capital remains at a constant percentage of equity capital which is equivalent that debt increases in proportion to the net cash flow of the firm (net cash flow to invested capital) in every period.

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- Fernandez, “Levered and Unlevered Beta,” working paper (April 20, 2006)**
- Equity is measured at book value and debt is measured at market value

Figure 15 Fernandez Formula

$$B_u = \frac{B_L + \left(\frac{W_d}{W_e} \right) (1-t) B_d}{1 + \left(\frac{W_d}{W_e} \right) (1-t)}$$

$$B_L = B_U + \frac{W_d}{W_e} (1-t) (B_U - B_d)$$

Figure 15 Fernandez Formula — *continued*

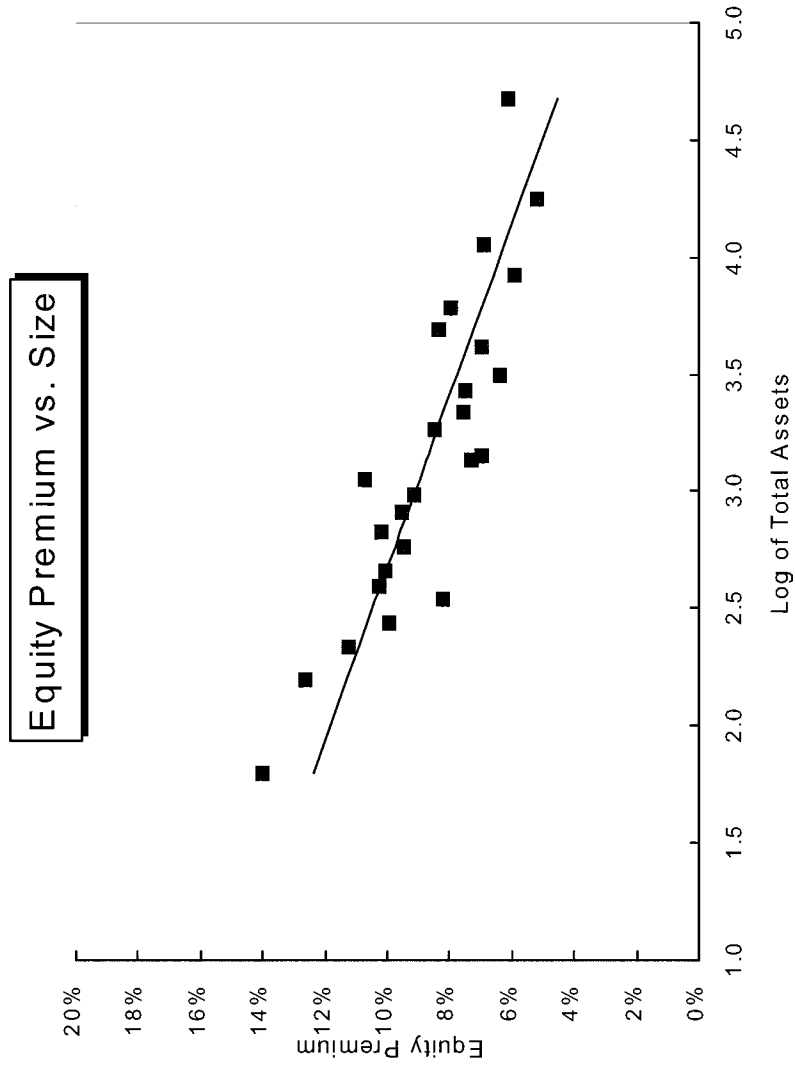
The Fernandez formula is consistent with the theory that:

- Debt capital is proportional to equity book value and the increase in assets is proportional to net cash flow.
- Debt capital is bearing risk of variability of operating net cash flow in that interest payments and principle repayments may not be made when owed which infers tax deductions on the interest expense may not be realized in the period in which the interest is paid (i.e., beta of debt capital may be greater than zero).

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Figure 16 Size and Return from Risk Premium Report

Smaller Size = Higher Rate of Return



Historical evidence suggests that investments in small capitalization (small market value) companies have earned greater historical rates of return than investments in large capitalization companies over the long term. Historical evidence further suggests that CAPM (beta adjusted return) tends to underestimate historical rates of return on small companies (i.e., beta adjusted return too low). The *SBBI Yearbook* documents (see Figure 17) this effect based on:

- Size (where size is measured by market value) premiums over return predicted using textbook CAPM and
- 10 size deciles (where size is measured by market value).

Companies with small equity value get high returns for a variety of reasons.

- Reward for risk of smaller companies?
- Losers? Big companies with high risk.
- Financial distress? Big or small companies in trouble.
- High leverage? Big or small companies with high financial risk.
- New companies? Speculative new technology or new market entrants.

To correct textbook CAPM, practitioners typically add a premium to the return predicted by the textbook CAPM to adjust for size.

3.1 Are Small Companies Risker than Comparable Large Companies?

In their working paper, “Growth Options, Unwritten Call Discounts and Valuing Small Firms” (March 2004), Long and Zhang presented research that shows that small public companies earn higher rates of return and have lower multiples than large, widely-held companies. The risks include lack of liquidity and lack of information. They found that valuing a small company is not the same as valuing a scaled-down large company due to a number of factors.

- A potential competitor can more easily enter the “real” market and take value from a small company.
- Large companies have resources to better adjust to competition and avoid bankruptcy.
- Small companies undertake less R&D, spend less on advertising, which gives them less control over product demand and potential competition.
- Small companies have fewer resources to fend off competition and redirect themselves after changes in the market occur.

Long and Zhang defined value using this formula:

$$\text{Value} = E_1 / k + \text{PVGO} - \text{Call}$$

where: E_1 / k = value of assets in place

PVGO = present value of future growth options

Call = “unwritten call” - value that can be taken by potential competition that can enter the market and destroy value

Small companies have a larger “unwritten call” against their value from prospective new competition as opposed to larger firms. The value of the unwritten call option increases with volatility; unsystematic risk (variance of returns) of small companies is larger than large companies due to larger variance of underlying cash flows, increasing the value of the unwritten call.

Long and Zhang studied survival of small companies and found large companies were better able to handle change in a competitive environment over time. Though size and variance of returns were highly correlated, the found the unwritten call option against small company had a value larger than predicted by variance (i.e., find size premium).

Figure 17 Returns in Excess of CAPM

S&P 500 Benchmark

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ 1926-2005

Decile	Beta*	Realized Arithmetic Mean Return	Estimated Return in Excess of Riskless Rate**	Return in Excess of Riskless Rate†	Size Premium (Return in Excess of Riskless Rate†-CAPM)
1-Largest	0.91	11.29%	6.07%	6.45%	-0.37%
2	1.04	13.22%	8.00%	7.33%	0.67%
3	1.10	13.84%	8.62%	7.77%	0.85%
4	1.13	14.31%	9.09%	7.98%	1.10%
5	1.16	14.91%	9.69%	8.20%	1.49%
6	1.18	15.33%	10.11%	8.38%	1.73%
7	1.23	15.62%	10.40%	8.73%	1.67%
8	1.28	16.60%	11.38%	9.05%	2.33%
9	1.34	17.48%	12.26%	9.50%	2.76%
10-Smallest	1.41	21.59%	16.37%	10.01%	6.36%
Mid-Cap, 3-5	1.12	14.15%	8.94%	7.91%	1.02%
Low-Cap, 6-8	1.22	15.66%	10.47%	8.63%	1.81%
Micro-Cap, 9-10	1.36	18.77%	13.55%	9.61%	3.95%

* Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926-December 2005.

** Historical riskless rate is measured by the 80-year arithmetic mean income return component of 20-year government bonds (5.22 percent).

† Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.30 percent) minus the arithmetic mean income return component of 20-year government bonds (5.22 percent) from 1926-2005.

Source: *Stocks, Bonds, Bills and Inflation, Valuation Edition, 2006 Yearbook* (Chicago: Ibbotson Associates, 2006), p. 137

3.2 Risk Premium Report—Size Study

The Duff and Phelps' *Risk Premium Report* presents research into the relationship between company “size” and equity risk premiums realized. The data can be applied to cost of capital estimations using the buildup method. It measures historical realized risk premiums, *including size premium*, since 1963: *market risk premium plus size premium (R_{Pm} plus size premium)*. The study used size as proxy for risk and as a complement/alternative to *SBBI* data (see Figure 18).

In the Duff and Phelps' study, equity premium plus “size” premium for established companies with size was measured by:

- Market value of equity (same as *SBBI Yearbook*)
- Book value of equity
- Net income
- Market Value of Invested Capital (“MVIC”)
- Book Value of Invested Capital
- EBITDA
- Sales
- Number of Employees

They isolated “distressed” or “challenged” companies as “High Financial Risk Portfolio”.

The beta can be used easily in the “buildup method” (see Figure 19). The study also included size premiums for use in the CAPM.

3.3 Better Methods for Estimating Beta for Smaller Companies

Kaplan and Peterson present a better method for estimating beta for smaller companies in their paper, “Estimate of Small Stock Betas are Much Too Low” (July, 1996). They found that beta estimates based on OLS regression of 60 months data were severely biased downwards for small market value firms. Traditional OLS beta was found to be unrelated to future returns and adjusted estimates of beta provided better estimates of expected returns.

- Traditional OLS β : $R_t - R_{ft} = \alpha + \beta \times (R_{mt} - R_{ft}) + e_t$
- Lagged β : $R_t - R_{ft} = \alpha + \beta \times (R_{mt} - R_{ft}) + \beta_1 \times (R_{mt-1} - R_{ft-1}) + u_t$
- $\text{Sum}\beta = \beta + \beta_1$

Their study explains *part* of the size effect but *not all of it*. (Duff and Phelps' *Risk Premium Report* measures *beta* using *Sumbeta* and *Cost of Capital*, 3rd ed., provides *Excel* routines for calculating *Sumbeta*).

Many divisions are largest companies in the industry, making “pure play” beta estimation difficult (e.g., 75% of revenue from single SIC code). Kaplan and Peterson highlighted three main points in “Full Information Betas,” *Financial Management* (Summer, 1998).

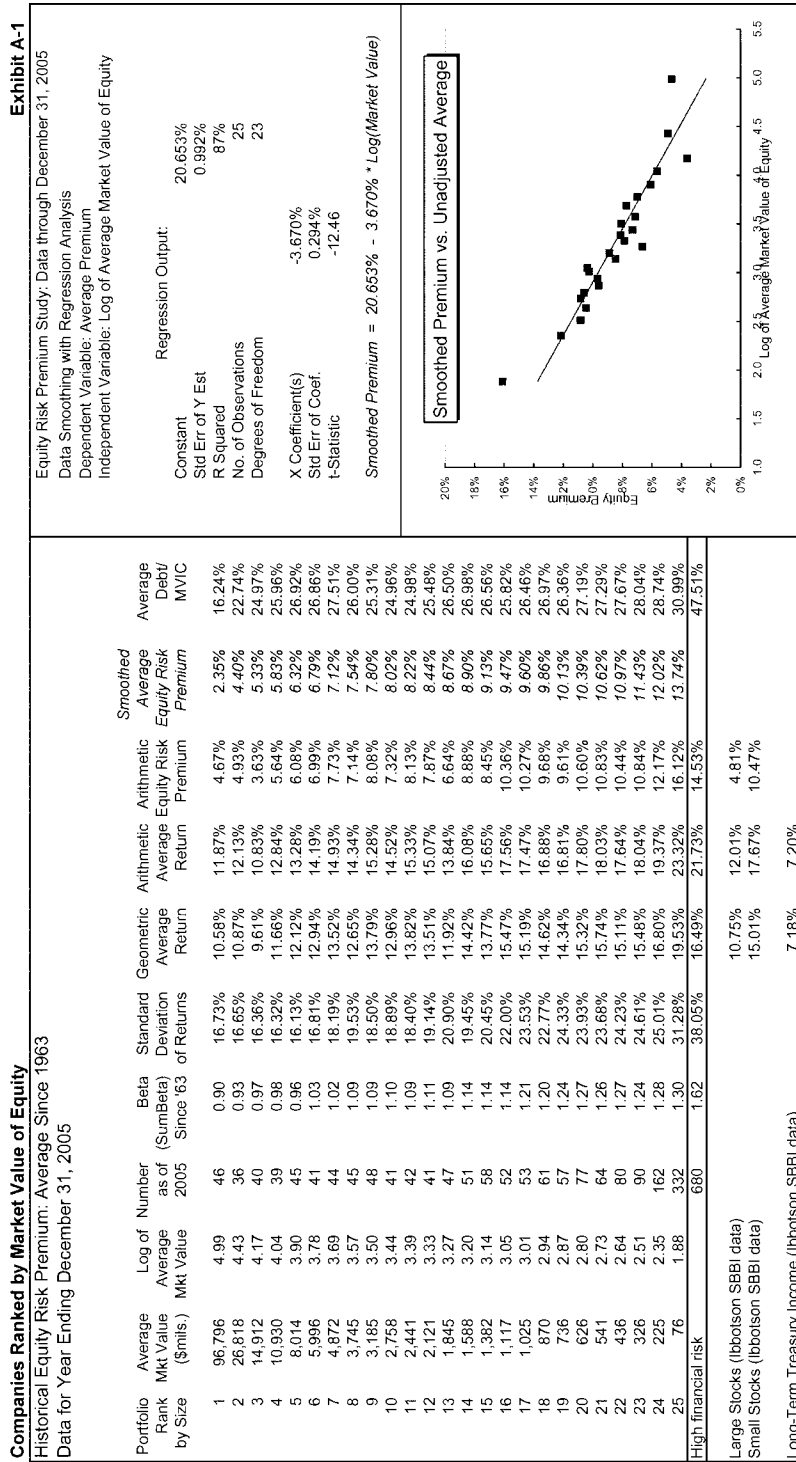
1. Calculated beta for each company and weighting of each to industry (sales, assets or other).
2. Cross sectional regression with betas as dependant variable and weighting as independent variable.
3. Weighted by market capitalization of companies in industry.

Morningstar's *Beta Book* provides full information beta estimates:

- weighted by sales—easy to obtain data

Detailed Exhibits (A-1 thru A-8)

Figure 18 Risk Premium Report



- Problem: Market weights profit not sales; can overweight relative importance of high-sales, low-profit businesses.

Cost of Capital provides Excel routines for calculating full information betas where the user can:

- base weighting on sales, operating income or assets and
- use OLS or *Sumbetas*.

3.3 Applying CAPM to Private Companies

To apply CAPM to a private company and estimate the value of equity, the betas for guideline public companies must first be estimated and from that estimate it should be determined what beta should be applied. One must unlever the beta estimate derived from the guideline public companies and relever the beta for the debt of the private company. But all of the formulas for unlevering and relevering betas are dependent on market values of equity. Therefore the beta is determined and the rate of return is determined and the market value of equity is determined, but these values for a private company are not known until the process is complete. This calls for applying something called the iterative method.

The iterative method requires that you start with an estimate of the amount of equity relative to debt and “plug” that into your relevering formula. Then you adjust your rate of return on equity, calculate a weighted average cost of capital and you find the present value of the cash flows. Debt is subtracted, which leaves an estimate of the equity. That estimate of equity should be used in the second iteration of relevering your betas. Next, the weighted average cost of capital is recalculated, the present value of cash flows is determined using this new weighted average cost of capital and debt is subtracted. This gives a new estimate of the equity value. That ratio of debt to equity is put in the relevering formulas. The end product is that debt-to-equity values remain, which are the ratios exactly equal to those used in relevering formulas for beta. There is then a perfect balance. Not using the iterative process is a mistake that is frequently made.

The *SBBI Yearbook* divides up its size premium deciles; the tenth decile is split into 10a and 10b (see Figure 20). The *SBBI Yearbook* uses market value as the basis for measuring size. The problem with market value, unless the database is screened, is that troubled companies can have very low equity values at the same time as being big companies. The stock prices of companies just before they are de-listed and just before they go bankrupt gets driven down. They become a small company when size is measured by market value and are measured as small companies in the *SBBI Yearbook* data. The only problem is that these companies are not small in an operating or asset sense.

Here are some statistics on the size of companies that are categorized as small. For example, in the 10b sub-decile, there are companies with a billion dollars in assets and there are companies that have market value of equity from \$150 to \$160 million. There are book values from \$147 million down to \$-6 million and incomes from a \$10 million average for a 5-year period to a \$-50 million average. This suggests that troubled companies could be included in 10b, and troubled companies could be why people realize rates of return that are so high. They buy the stock when it's trading like an option, then the stock increases, and they make huge returns—not because the company is small, but because the company is troubled. This data must be used with care (see Figure 21).

It has been said that the size effect went away. In fact, size is a cyclical element. Small companies earn more than big companies on average, but not all the time. That is part of the risk. If it is always possible to earn more money investing in small companies than in big companies, then small companies would not be riskier than big companies. These companies are risky because sometimes you earn more and sometimes you earn less (see Figure 22).

Figure 19 Applying Data for a Small Private Company

Simple “build up” over risk-free rate

Fundamental measures of size applicable to private companies:

Exhibit A-2: Book value of common equity

Exhibit A-3: 5-year average net income

Exhibit A-5: Total assets

Exhibit A-6: 5-year average EBITDA

Exhibit A-7: Sales

Exhibit A-8: Number of employees

Can use regressions provided to extrapolate data for smaller companies

Figure 19 Applying Data for a Small Private Company — *continued*

<i>Simple “build up” over risk-free rate using regressions</i>			
	<u>Size</u>	<u>Regression</u>	<u>Equity Risk Prem plus size premium</u>
Book equity	\$10 mil.	Exh A-2	14.6%
5 yr Average NI	\$2 mil.	Exh A-3	13.6%
Assets	\$20 mil.	Exh A-5	14.7%
5 yr Average EBITDA	\$8	Exh A-6	13.5%
Sales	\$50	Exh A-7	12.9%
Employees	200	Exh A-8	<u>12.6%</u>
Average Equity Risk Premium plus size Premium			13.7%
		plus: Risk-free rate	<u>5.0%</u>
		equals: k	18.7%

4. INDUSTRY RISK AND COMPANY-SPECIFIC RISK

Specific company risk adjustment is an area where we as valuers make estimates to change our discount rates, often with very poor support. This is an area that we as a profession are often groping at: how different is the subject company from the average company from which the return data we use is developed. This is an area where academics and courts criticize us and a lot of work is needed here. However, the build-up method typically incorporates a good deal of what is called company-specific risk. To judges, the company-specific risk premium seems like a device experts employ to bring their final results into line with their clients' objectives.

We as a profession need to keep looking at how we overcome these kinds of attitudes. Here are a few suggestions (see Figure 23). You can use data in the *Risk Premium Report* about fundamental risk that has to do with variability of profit margin and size of profit margin.

Figure 24 shows basic fundamental risk measures that track to different rates of return.

Figure 20 Returns in Excess of CAPM

10th Decile Split

Long-Term Returns in Excess of CAPM Estimation for Decile Portfolios of the NYSE/AMEX/NASDAQ 1926-2005

Decile	Realized Arithmetic Mean Beta*	Estimated Return in Excess of Return	Size Premium Return in Excess of Riskless Rate**	(Return in Excess of Riskless Rate† CAPM)
1-Largest	0.91	11.29%	6.07%	-0.37%
2	1.04	13.22%	8.00%	0.67%
3	1.10	13.84%	8.62%	0.85%
4	1.13	14.31%	9.09%	1.10%
5	1.16	14.91%	9.69%	1.49%
6	1.18	15.33%	10.11%	1.73%
7	1.23	15.62%	10.40%	1.67%
8	1.28	16.60%	11.38%	2.33%
9	1.34	17.48%	12.26%	2.76%
10a	1.43	19.71%	14.49%	4.39%
10b-Smallest	1.39	24.87%	19.65%	9.83%
Mid-Cap, 3-5	1.12	14.15%	8.94%	1.02%
Low-Cap, 6-8	1.22	15.66%	10.47%	1.81%
Micro-Cap, 9-10	1.36	18.77%	13.55%	3.95%

* Betas are estimated from monthly portfolio total returns in excess of the 30-day U.S. Treasury bill total return versus the S&P 500 total returns in excess of the 30-day U.S. Treasury bill, January 1926-December 2005.

** Historical riskless rate is measured by the 80-year arithmetic mean income return component of 20-year government bonds (5.22 percent).

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Source: *Stocks, Bonds, Bills and Inflation, Valuation Edition, 2006 Yearbook* (Chicago: Ibbotson Associates, 2006), p. 139

Figure 21 What Kinds of Companies Make Up 10b?

Size	NYSE + AMEX + NASDAQ Companies			
	Market Value of Equity	Book Value of Equity	MVIC*	Assets
99th percentile	\$ 161	\$ 147	\$ 460	\$ 1,078
75th percentile	89	48	120	162
Median	54	25	69	53
25th percentile	28	11	35	21
1st percentile	5	(6)	7	4

*MVIC = Market Value of Equity + Book Value of Preferred + Book Value of Debt

Source: Compustat Database Screen and Capital IQ Database

Figure 21 What Kinds of Companies Make Up 10b? — *continued*

Size	NYSE + AMEX + NASDAQ Companies				Latest FY Return on Book Equity
	Sales	5-yr Avg Net Income Before Ex.	5-yr Avg EBITDA		
99th percentile	\$ 662	\$ 10	\$ 46		58%
75th percentile	61	2	5		10%
Median	28	(0)	1		2%
25th percentile	12	(5)	(2)		-21%
1st percentile	-	(50)	(28)		-349%

Source: Compustat Database Screen and Capital IQ Database

Figure 22 The Size Effect—Recent Evidence and Theory

Has size effect disappeared in recent years?

- While the size premium has varied in magnitude, it still exists in the most recent twenty-year period (even after 1981).
- The size premium is cyclical – if small company stocks always outperformed large company stocks they would not be as risky

Small Stock Premium 1982-2006, Small Minus Large Company Returns

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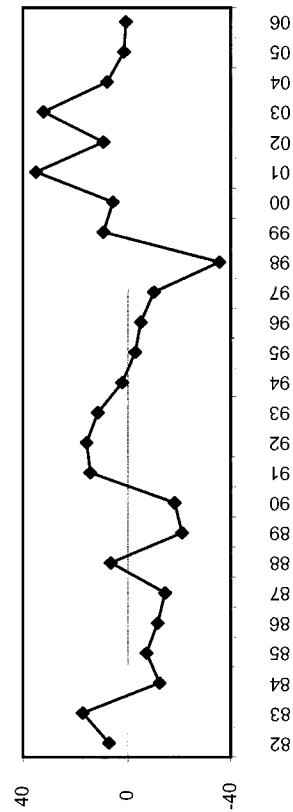


Figure 23 Specific Company Risk Adjustment

- Adjusting Build-up method for Industry Risk Premia
- Judgment
- Using *Total Beta*
- Directly measure risk using Duff & Phelps' *Risk Premium Report-Risk study*
 - Operating Margin
 - CV (operating margin)
 - CV (return on equity)
- Estimate "Cost to Cure" risk and adjust expected cash flows

Figure 24 Fundamental Risk Measures

D&P Measures of “Risk”

- ***Profitability***
 - Operating Profit / Revenue
- ***Volatility of Earnings***
 - Volatility of Operating Profit Margin
 - Volatility of ROE (NI/Book)

Figure 24 Fundamental Risk Measures — *continued*

How do these risk measures relate to rates of return?

- D&P sorts companies into 25 portfolios, ranked by risk measures
 - Operating Income Margin
 - CV (Operating Income Margin)
 - CV (ROE)
- Same procedure as used when ranked by size
- Results:
 - Lower profitability gives higher equity returns
 - Higher earnings volatility gives higher equity returns

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VALUATION HOT TOPICS

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1. GOODWILL IMPAIRMENT AND PURCHASE PRICE ALLOCATION ISSUES

1.1 Step-up in Tax Basis

In the determination of a business enterprise value, the issue of whether or not to include a notional step-up in the tax basis of assets is the subject of much debate. Most notional valuations for financial reporting purposes implicitly assume a purchase of shares, as the valuator makes the simplifying assumption that tax depreciation is equal to accounting depreciation, and any amortization that is included in the forecast is either dismissed or is heavily discounted in the final analysis.

As an example, let us assume the following fact pattern:

- a reporting unit that has never made an acquisition and has no intangible assets or goodwill on its balance sheet;
- the fair value of the reporting unit is \$600,000 (present value of the cash flows is \$100,000, and the present value of the terminal cash flows is \$500,000); and
- the carrying value of the reporting unit is \$650,000.

In the above example the conclusion would be a step one failure. The question that may arise is: Should the valuator be taking into consideration the potential value associated with the tax benefit that may be available if the transaction was structured as a purchase of assets, and is it the highest price available?

Emerging Issue Task Force (“EITF”) 02-13 suggests that judgment as to whether the valuation of a reporting unit should be based on the assumption of a purchase of assets or a purchase of shares is highly subjective and should be considered on a case-by-case basis. It goes on to further suggest that considerations based on a market participant perspective should be factored into any conclusion. Specifically, it suggests that valuers consider:

- the nature of prior transactions (assets or shares) within the industry or within that specific company;
- whether the structure assumed is feasible and could a purchase of assets or a purchase of shares be enacted;
- are there laws that would prohibit or prevent either an asset or share transaction; and

- finally, does the assumption result in the highest economic value to the seller of the reporting unit?

From a valuation perspective, the issue of whether or not to include the step-up in tax basis becomes problematic given that buyers and sellers each have their own strategic position at opposite ends of the asset-versus-shares continuum. In our experience we have seen 3 positions put forward: an assumption that 100% step-up in the tax basis is appropriate; that a 50% step-up in the tax basis is appropriate (which would be to acknowledge that there are generally opposing views between buyers and sellers); and a conservative approach is to assume a purchase of shares and no step-up in the assets basis. In drawing a conclusion, it is extremely important to have the appropriate documentation and support to justify a position and speak with the client and their auditors about the significance of the position in advance of drawing a final conclusion.

1.2 Allocation of Corporate Overhead

The allocation of corporate expenses in large multinational corporations with multiple reporting units can have a significant impact on a goodwill impairment determination. In their conclusions, valuers need to assess the basis for the allocation of corporate overhead, as well as determine if it is reasonable that this overhead remain at the corporate level (i.e., not be pushed down to the reporting units). Another factor to consider in assessing the allocation of corporate overhead is whether a reporting unit should be viewed on a stand-alone basis (i.e., operating independently) or should larger market participants be considered (i.e., potentially allocating the allocation of corporate overhead on an incremental basis).

The Financial Accounting Standards Board (“FASB”) guidance under Standard 142 does not explicitly address the issue of the allocation of corporate overhead. However, reference is made to the issue of pushing down corporate assets and liabilities to reporting units. The guidance suggests that corporate assets and liabilities could remain at the corporate level as long as they are not required by the reporting units to operate as a business.

Further support for the basis of allocation of corporate overhead may be obtained by reviewing industry data, market participant public filings press releases relating to recent acquisitions. Companies may be disclosing that one of the significant reasons for making the acquisition was to realize corporate synergies, which may suggest that corporate overhead should be considered on an incremental basis and not on a stand-alone basis. Another factor to consider is the structure of the company. If a company has dissimilar reporting units that roll up into a holding company, the corporate overhead associated with the holding company may not need to be allocated down to the individual reporting units.

Another potential issue concerning corporate overhead allocation relates to the inconsistency between the assumptions used to allocate the corporate overhead and the assumptions used to derive the discount rate. For example, assume a company has \$2 billion in market capitalization and multiple reporting units, each one of which has a value of no more than \$50 million. An assumption that each of the reporting units could operate on a stand-alone basis is supportable (i.e., there are no incremental corporate overhead, treasury or finance costs allocated to the reporting units, only direct reporting unit costs). In the selection of discount rates, valuers will occasionally reference the overall \$2 billion market capitalization in selecting the discount rate for the individual reporting units. The disconnect between the assumptions is that the large public company is being used as a comparable company, but the costs associated with being a large public company are not being pushed down to the reporting units. As such, some of the costs that contribute to the lower cost of capital are not being reflected in the underlying cash flows of the reporting units and thus the value is potentially overstated.

Having assessed the corporate overhead allocation, determined the discount rates, and assuming that you have left some of the corporate overhead at a corporate level may result in a conclusion whereby the sum of the reporting unit values were greater than the consolidated company market value. Does that conclusion seem reasonable? According to FASB 142, a control premium may cause fair value of the reporting units to exceed the market capitalization of the company as a whole. However, we would caution against using a control premium and not allocating all of the corporate overhead. You may want to consider the possibility of a double count

because some practitioners view synergies associated with cost rationalization as being part of an observable control premium.

1.3 Income Trust Issues

Income trust distributions will no longer be taxable starting in 2011. Since the announcement, companies have begun planning for the transition or have already made transitions to change their corporate structure. In the interim, the valuation profession will consider how these tax changes will impact the fair value of income trusts.

When reviewing or preparing a goodwill impairment test, there are some areas you may wish to consider in applying income taxes. If you've been reviewing a reporting unit that is an income trust, year after year, particularly when that income trust historically has been close to impairment, you will need to consider how taxes affect your testing in the current year.

It is important to understand the nature of your income trust, as some will be exempt from income taxes, such as real estate income trusts. Another item to carefully consider is discount rate. When income trusts came onto the market a few years ago, investors had an expectation for the types of returns they would yield from structuring as an income trust. In this changing environment, investors may have changed their outlook on their returns from income trusts, given the impending taxation, which may in turn impact discount rates when calculating the fair value of your reporting unit.

Another consideration, as always, is the market participants and what their tax status may be. For example, you may have market participants such as pension plans that are making acquisitions of income trusts. In those cases you might want to consider their tax status, and how you might want to apply income taxes in calculating a fair value of those reporting units.

Income trusts are still active in the market; they are still making acquisitions and are still being acquired. So there are some things to consider when preparing a purchase price allocation. After the identification of an intangible asset has been determined, it is important to consider the life of the assets. It is possible to identify an intangible asset with a life that will be fully amortized prior to 2011, the year of the tax changes. In those cases consider how, if at all, to implement income taxes into your analysis. You will also want to consider the application of the tax amortization benefit, as this may not be available to the income trust until 2011, at which point you will want to value the tangible asset value at 2011 and then discount that back to the valuation date in your analysis. The over-riding theme concerning income trust issues is the task of understanding the market participants and their considerations, especially in this period of change for the income trusts.

Another item to consider, if you are calculating both sides of the fair value equation and looking at the book value side of the equation, will be the addition of future income tax liabilities to the carrying value, which may offset some of the differences between the fair value and the carrying value of an enterprise.

1.4 Control Premiums

Control premiums, while they make sense in theory, can be very difficult to apply and support in application. Control premiums are highly variable and can depend on many factors, including the industry of the acquired business, the general state of the economy and the conditions of the stock market. Obtaining sufficient support for control premium can be one of the most important valuation considerations, as it may impact a reporting unit's ability to pass the goodwill impairment test.

Todd Hardeman from the U.S. Securities Exchange Commission ("SEC") has indicated, benchmarks to Mergerstat or other sources may not be sufficient to support a control premium. Hardeman states that "discounts need to be supported by objective and reliable information," and asks whether management can demonstrate that cash flows include disproportionate returns to shareholders. Hardeman is quite clear in saying that unless man-

agement can prove with objective and reliable information that there is a disproportionate return to shareholders, a lack of control discount is appropriate. When discussing the magnitude of the discount, he goes on to say that simply citing average marketability discounts is not enough. Management must provide sufficient objective support for any amount of discount taken.

In order to come up with that support, potential sources include referencing the industry in which the reporting unit exists and looking at how that industry is behaving—is it in a consolidation period? And if so, what information has been disclosed in the marketplace about the consolidation characteristics or about the rationale for acquisitions in that industry? What were management’s intentions when they purchased the company? Our final thought on this matter is not whether a control premium exists, but rather what support, on a case-by-case basis, there is for that control premium. As Hardeman expressed, “blind reliance on Mergerstat is not sufficient.”

1.5 Fair Value Tips

What follows are tips for performing valuations for financial reporting, some of which will segue into advice on purchase price allocations. These are suggestions for making reports more useful to readers. The use of sensitivities around key assumptions, such as discount rates, attrition rates, margins and so on can be helpful. It is useful to demonstrate that under a higher discount rate scenario, the reporting unit still passes the goodwill impairment testing or provides a break-even discount rate, at which point the reporting unit still passes the impairment test. In the purchase price allocation environment, support for assumptions may not be readily available, as is often the case with intangible assets such as customer relationships and attrition rates. If you take the time to explain your rationale, your report will be more useful to readers. When real estate or machinery and equipment are involved in valuations, you may want to look at the life of the tangible assets and compare them to the economic life of the business. As an example, we can think of a hydro-facility plant where hydro dams often have lives in excess of 100 years, whereas perhaps the underlying business has a 50-year power purchase agreement. You would want to give consideration to the likelihood of renewal for that contract after the 50-year period to ensure tangible assets are properly valued. If you feel that the tangible assets are significant to the overall enterprise value, you may consider using a specialist in the real estate area to evaluate the fair value of those assets.

2. FAIR VALUES AND THE VALUATION OF INTANGIBLE ASSETS FOR PURCHASE PRICE ALLOCATION PURPOSES

2.1 Contributory Asset Charges

Contributory asset charges are typically used in the multi-period excess earnings approach. They are intended to represent economic rent and involve an attempt to back off economic rents for all of the assets that contribute to the overall business cash flow. The intention being that once the economic rents have been backed off, the residual cash flow is that associated with the subject asset being valued. Contributory asset charges generally represent return on and return of capital. Some of the standard contributory asset charges that we see are: working capital, fixed assets, workforce and other identified intangible assets.

What follows is a summary of some of the topics that have been discussed in the Appraisal Foundation’s “Best Practice for Valuation in Financial Reporting: The Identification of Contributory Asset Charges, and Calculation of Economic Rent”—a draft publication that was circulated June 10, 2008. The paper addresses several issues pertaining to contributory asset charges, some of which we will discuss.

The first issue we wish to explore posed relates to the appropriate basis for inclusion as a contributory asset charge. The first view suggested all readily measurable assets, including elements of goodwill, should be included as contributory charges. This view is outside of the norm of current practice, but advocates of this position argue that by using an excess earnings approach, you arrive at a residual cash flow stream and if there are other reliable measurable assets that don’t meet the accounting definition, they are, by default, being included in the fair value for that subject asset (in effect overstating the value of that asset).

The second view is the predominant view in practice today and holds that contributory asset charges should meet the recognition criteria under FASB 141, and also include workforce. Advocates of this view suggest that since goodwill is the residual it cannot be quantified and reliably measured and therefore would be too subjective to include as a contributory charge.

The final view is the polar opposite of the first and suggests that only those assets that meet the recognition criteria should be included as contributory asset charges—so goodwill and workforce are not included as contributory asset charges. The issue with this position could be a situation where you are valuing an intangible asset, you know that the workforce is very valuable, and some of that value will be transferred to that intangible asset.

The next issue relates to the appropriate basis for the calculation of the contributory asset charges. The document set out two fundamental approaches, one of which is a level rent, which involves trying to determine an appropriate lease charge. Level rent is not commonly used in Canada, although it is in other countries. In Canada, the default approach tends to be the return on assets approach, which uses depreciation as a proxy, and takes a return using the fair value of the contributory asset. If used appropriately, these two approaches should be equal in terms of the magnitude and quantum of their charges. However, some practitioners will fail to consider how fixed assets are going to change over time and others look at the fixed assets that were acquired at the valuation date, rather than the fixed assets relative to future cash flows both of which will result in potential misstatement of value. It is important to consider both when determining value.

Another issue explored in the paper relates to the appropriate basis to apply a contributory asset charge. The paper sets out two options: one is based on relief from royalty, while the other examines the value from which that relief from royalty is derived. For example, if you select 5% as the basis for your royalty rate, proponents of the first view would suggest that 5% should therefore be deducted as a contributor charge. Others will suggest that if you use the 5% to value a brand (for example), you will apply that royalty rate to future cash flows, maybe capitalize it, and arrive at a fair value. The concluded value for the brand is then multiplied by the rate of return and this product is then divided by the revenues to form the basis for the contributory charge.

In a situation where there is stable revenue growth, the results of these two methods will be very similar. However, in a situation where brand revenue is growing significantly and the asset (i.e., technology) that is being valued using a multi-period excess earnings approach is a wasting asset, the application of contributory asset charges will yield significantly different results under the two methods noted above. We prefer the use of the selected royalty rate, as we believe it represents the true economic rent associated with the contributory asset.

2.2 Grouping Assets

There can be a tendency to group assets together in a purchase price allocation, when there may be some benefit to actually valuing the assets separately. In this discussion we will focus on customer-related intangibles, where this issue occurs sometimes.

As evidenced in discussions with clients and other valuers, customer-related intangible assets continue to be challenging when they are valued for business combination purposes in financial statements. There are a few types of customer-related intangibles, including contractual and non-contractual customer relationships, customer lists and backlog. In a purchase price allocation it is important to realize that there may be more than one type of customer-related intangible asset to consider, the characteristics of which could be quite different.

When valuing customer-related intangible assets, we often employ the multi-period excess-earnings approach and therefore may need to take charges against those earnings for contributory assets. In terms of grouping assets, this is a good way to ensure that you are not impacting the value of the customer relationship with other intangible assets such as workforce or brand. Another consideration in looking at cash flows for customer relationships is examining some of the costs that may have been included in the internal rate of return calculation of the acquisition.

It's important to perform an analysis of the costs—such as the selling and marketing costs—to ensure that, if they are inappropriate, they are not included in the customer relationship calculation.

To give an example from EITF 2-17, which provides more guidance on valuing customer relationships, consider a parent company that has acquired a vendor company in a business combination. The vendor company has a customer retail company and the retail company purchases from two lines of businesses: sporting goods and electronics. The sporting goods purchases are under customer contracts, while the electronic goods are not. In this example, EITF 2-17 states that the vendor company and parent company both believe there is only one overall customer relationship, between the vendor company and the retail company. In that scenario, you might consider valuing the customer relationship with the retail company as one relationship and one intangible asset, apart from goodwill. But what if the vendor company and parent company believe there are two relationships—one for the sporting goods contract, and one for the electronics products? In that case, you might consider valuing the relationship, although it is with one customer, as two separate customer-related intangible assets. Again, it is important to look at the market participant view: what would the participant view the retail company as? Would they view it as being one or two relationships?

Care must be exercised when grouping customers together, because in the example of the retail company, you may consider a customer under contract to have different risks than sales to a customer without contractual obligations.

There are other considerations when determining whether or not assets should be grouped together, particularly with customer-related intangible assets. Those would be the size of the customer, the life of the contracts, and the economic considerations of those customers. As an extreme example, assume a business was acquired and one of their major customers is Wal-Mart, which accounts for 50% of the sales. Considerations may be given to valuing that Wal-Mart relationship separately, particularly if the remaining customer base is small and numerous. This represents an extreme case where there are different risk factors in the relationship with Wal-Mart, as opposed to the remaining customers. The difference in risk factors could also affect the discount rate applied to the excess earnings method, as such the risks reflected in the cash flows would have to be accounted for separately from the risks embedded in the discount rate selected for the customer relationships.

2.3 Internal Rate of Return (IRR) Versus Weighted Average Cost of Capital (WACC) Versus Weighted Average Return on Assets (WARA)

Diversity exists today in determining the appropriate starting point to derive discount rates to apply to intangible assets. Some practitioners advocate the use of the WACC, which reflects the overall rate of return for a business (i.e., takes into consideration all the assets and liabilities of a company—tangible, intangible, long-term and current). A potential issue in calculating a WACC is the consideration of a size premium and the right basis for the size premium. A view exists that in evaluating an acquisition, you develop a cost of capital estimate based on the risks and rewards associated with the proposed investment. However, if all the market participant acquirers are large multinational companies, would those companies be looking at the size premium associated with a large multinational company and not the size premium associated with the target? We can see the merits of both approaches depending on the facts and circumstances.

But what happens if the IRR is completely different from the WACC? Some practitioners use the IRR as the best evidence to equate the risks of the overall deal, but even with the IRR, there are some issues that need to be considered. Buyer-specific synergies included in the cash flows and in the price make it very difficult to adjust for those buyer-specific cash flows and get a real true market participant IRR. Another practicality is that some companies don't prepare a cash flow forecast. This leaves the client developing a set of cash flows post-acquisition that may not fully take into consideration their intent as of the date of the acquisition.

Other practitioners will look to WARA and will consider the observable rates of return on tangible assets, working capital and fixed assets, and will then make discounted rate decisions based on the intangible assets, the

goodwill and the proportion weight that it will derive in overall enterprise value. This approach is very subjective and can be difficult to support in isolation.

To ensure that a robust analysis is completed, we feel a key factor is to ensure that all three methods (WACC, WARA and IRR) are considered and comparisons should be made and anomalies reconciled.

2.4 Valuation of Technology Companies

Valuation of technology companies in a purchase price allocation raises a “chicken and egg” dilemma. Let’s assume the subject of the purchase price allocation is a large technology company that has been in operation for 20 years and has a dominant market position with long-standing customer relationships. There is a dilemma as to how the technology and the customers can be split. The company has overlapping revenue streams, sales of existing technology to new customers, new technology sales to new customers and new technology sales to existing customers. Past guidance would suggest that it is appropriate to only use the excess earnings methodology once, and the presence of an enabling technology may limit the use of a relief from royalty approach.

So, if the technology is enabling, the limitations we experience include the struggle to find a comparable royalty rate for the subject technology. We struggle with things such as dates, license terms, renewal extensions, exclusivity and whether upgrades are included in the license. All of these factors make the relief from royalty approach very difficult when you have enabling technology.

The other difficulties encountered are in situations where the customers have been around for 20 years and therefore it is difficult to produce good objective support for a cost approach, in terms of trying to replace those customers. (It is also a very difficult discussion to have with the sales and marketing director at the company.) As much as we want to group these together and perform one excess earnings valuation called “customers and technology,” auditors will insist that we separate these, citing factors such as different economic lives and different methods of amortization.

This leaves trying to support 1 of 4 possible approaches:

1. relief from royalty, and the struggle to find good data;
2. the cost-savings or green field method, trying to develop assumptions with respect to replacement costs for customers, where the period of time in which customers would come back is very subjective;
3. bifurcation of the cash flows, which involves estimates that are hard to support; and
4. a dual excess earnings model, which involves an iterative model to determine the assumed value of customers.

2.5 Valuation Approaches and Limitations

(a) The Cost Approach

The Cost Approach, which establishes the value based on cost, is based on the principle that an investor would pay no more for an asset than it would cost to replace it with a similarly functioning asset. We tend to see this approach used when valuing inventory, although we would caution that the fair value of inventory isn’t necessarily the book value or the cost; adjustments to book value may have to be made. We also see this approach with workforce, which requires considerations of such factors as training and hiring costs and efficiency of employees. And again we see this approach occasionally in real estate.

However, there are limitations to the Cost Approach. It does not incorporate information about the amount of economic benefit, nor the duration of that benefit, or the risks of receiving those benefits. For example, if we consider using the cost approach to value brand, it may not take much to come up with a slogan, but the reputation of that slogan might determine that the cost approach method is inappropriate. There is also a shortcoming in

the Cost Approach method when attempting to reflect the obsolescence of an asset. Taking, for example, a technology asset with a life of 5 years that is in its 3rd or 4th year, the obsolescence would be difficult to measure.

We also see a limitation when trying to value customer relationships. There is an opportunity to use the Cost Approach in certain circumstances for customer relationships, however this approach may fail to capture the continuing cash flows from the relationship over the remaining life of that relationship. It also may assume that customers can be replaced simply by incurring additional costs, such as selling or advertising costs, without disrupting the business. This does not take into account the potential for opportunity costs.

When dealing with software intangibles, it may be advisable to look carefully at whether or not the software is for internal use or if it is being licensed to third parties. We generally see that if the software is being used for internal purposes, the Cost Approach method is appropriate; however, if it is being licensed to third parties, an income approach may be more reasonable.

(b) The Market Approach

The Market Approach involves three phases. The first is a “search and select” phase, where an understanding of the asset is sought and a search for appropriate comparable assets are conducted. The second phase involves an adjustment (if necessary) where the multiple is computed, ensuring that the multiple is well-defined and consistently applied. Third, the adjusted multiple would be applied to the value. However, the Market Approach is generally not used to value intangible assets; they are generally not sold separately in the marketplace, therefore making it difficult to find public comparable information. In some cases licenses have traded in the marketplace, but this is quite rare.

(c) The Income Approach

The Income Approach measures an asset’s future cash flows, with an enterprise allocating those cash flows to the various intangible assets. When using the Income Approach, the discount rate needs to reflect the risks associated with the cash flows of those intangible assets.

The methodologies we often see for valuing intangible assets include excess earnings, the relief from royalty and or discount cash flows. When estimating the cash flows, increased revenues, cost savings or profit generation may be included, but a review of how market participants view the cash flows is always advisable. If an understanding of the cash flows are unique to the purchaser, or if all market participants are able to achieve those cash flows, this will help determine whether or not the cash flow should be included.

Other things to consider are the source of the cash flows, and the relationship to the enterprise’s cash flows as a whole. Concerning customer relationships, a review of the patterns and the expected durations of cash flows, the stage of development, as well as attrition rates will assist in relating the intangible asset cash flow to the overall cash flows used for the company.

To continue a discussion of customer relationship intangibles using an income approach, some of the critical factors to consider are the assumptions of the life of the asset, and what kind of incremental cash flows are expected. Attrition assumptions can also have a significant impact on value and may warrant a sensitivity analysis. Management and valuers may find it difficult to calculate and support assertions surrounding attrition. Ideally, the company would have historical data that is available to analyze and derive a trend with respect to attrition. Or, as another approach, perhaps the acquiring company has a similar customer base, and they have tracked their customer attrition and feel that it can be applied to the acquired customer base.

To return to some of the misapplications as they relate to customer relationships, sometimes clients wonder why they should value a customer that was already their customer before the acquisition. Although a buyer may already have a business relationship with a customer, they need to consider the potential for incremental cash flows from that customer, in which case valuation of that customer relationship is usually warranted. The exception

may be in a consolidating industry, where the same product is being sold to the same customers and those sales may be considered redundant sales. In circumstances where all market participants would be requiring only redundant sales, there may be said to be little or no value to those customer relationships.



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FINANCING ROUNDTABLE—PANEL

*by Michael Mazan, MBA, BComm
Birch Hill Equity, Toronto*

*by Robert Olsen, MBA, ICDD, CF
Goldman Sachs, Toronto*

MICHAEL MAZAN—BIRCH HILL EQUITY PARTNERS

I intend to provide an overview of the market, contrasting the U.S. and Canadian experience, and then go on to speculate on what I think current developments means for the market going forward, with an emphasis on the implications for small- and mid-cap companies in Canada, and their access to capital.

Birch Hill Equity Partners has recent experience in the market. We'll first start with an example—a couple of the transactions that we have recently completed will indicate what the market looks like.

Birch Hill Equity Partners evolved out of TD Capital, the private equity arm of TD bank, in 2005. In 2005 we raised an \$850 million fund. TD is still an important part of the \$850 million, but the vast majority of our capital now comes from third party institutions, primarily pension fund money from people like the Canada Pension Plan, California Public Employees' Retirement System ("CalPERS"), Ontario Municipal Employees Retirement System ("OMERS") and others. Our mandate is to take capital from those institutions and direct it into a variety of mid-market companies across Canada. We are domiciled in Toronto, and our focus is Canada, which means that we look for companies that are either resident in Canada, have significant operations in this country and have a largely Canadian management team. I will touch a little later on the difference between U.S. and Canadian firms—if you are representing clients looking for capital, there are many similarities, but also some big distinctions in Canadian and U.S. firms, and there are relative benefits and drawbacks to taking capital from each country.

Our specific line of work involves looking to write equity cheques of between \$30 million and \$150 million in individual transactions. Practically, that means we are looking for companies with a minimum of \$8 million to \$10 million of Earnings Before Interest, Taxes, Depreciation and Amortization ("EBITDA"). We are sector agnostic; because of the size of the Canadian market we look at just about any industry sector across the country, except for commodity-type businesses, real estate and pure start-ups.

In terms of what happens to an entrepreneur's life on the day that we invest—we are not operators; if we end up making day-to-day decisions in any of the companies in which we invest, this is a sign that something has gone dramatically off the rails. What we try to do instead is to partner with best-in-class management teams; these are the people who make the day-to-day operating decisions. What we do, and where we think we add value, is in three specific areas. We get excited about capital allocation decisions, so if one of our companies is looking at

making an acquisition, or building a new facility, we will try to make sure that the right kind of decision is being made. We spend a lot of time making sure that the right management team is in place, as well as the right compensation and incentive systems, and we make sure that interests are aligned with building shareholder value. What that practically means is that all of our management teams have a significant equity stake in the businesses in which we invest, and we also put in place bonus systems, again aligning shareholder and management interests. The third area on which we concentrate is strategy. We are not experts on any of the businesses in which we invest, but we see enough situations where we are able to be a good sounding board or “thought-partner” with management, and prevent strategic drift (companies starting to do things that they’re not good at) from happening.

We are very active from a governing standpoint, and that means more than just going to quarterly board meetings. It means being on the phones with our management teams on a weekly basis; more often if there is a critical decision being made. We would like to think that management teams, executives and other shareholders in the company welcome our involvement; but an entrepreneur’s life does change on the day that we invest. Sometimes it can be difficult to change the frame of mind of someone who has grown up in their business. Suddenly having a majority partner to report to can be a difficult transition. (It is not an absolute requirement of ours that we be majority partners. On occasion we will take less than a controlling stake while remaining an influential minority.)

We have delivered a 28% annual return to our investors over the last 15 years—we are quite happy with that and feel fortunate to have performed at the top over an extended period of time. But what is more important is the way that money is made. We advise clients in situations where they are looking to raise capital. Private equity firms operate in very different manners. The way in which they make money also varies considerably. There are three basic ways to make money in private equity: the first is to use leverage—and a lot of leverage. With leverage, even a small increase in company value can lead to a dramatic increase in equity value. Unfortunately, the converse of that is also true, and we see it often in the U.S. in many larger deals, where a small stumble means that the equity value is either dramatically impaired or completely wiped out. The second way to make money is through multiple expansion. In an era of declining interest rates, where purchase multiples have marched steadily upwards, buying at 4 times the price and selling at 8 times the price was a great way to make money. Unfortunately, in the near future, both leverage and multiple expansion are not going to be reliable ways of making money. The third way to make money is to actually grow the underlying value of the businesses in which you invest. That means both growing revenues and growing cash flow. We are quite proud of the fact that over the last 15 years the revenue in cash flow growth in companies in which we have invested has grown at roughly 20% each year. The lion’s share of our returns has been made through growing the value of underlying businesses.

Why is this important to an entrepreneur and to an owner? If somebody is selling 100% of their business to a private equity practitioner, it doesn’t really matter who is buying the business. However, if the seller is rolling part of their stake, or if they care about the welfare of their employees, the private equity firm’s business philosophy is very important. Many firms consider putting a lot of leverage in businesses, and this has a very direct impact on how people will run their business. They will spend time looking at quarterly covenants, looking to make sure they are on track with the banking deal, as opposed to thinking about growing their business. We don’t use a lot of leverage at Birch Hill; we try to invest in companies that have a strong growth profile and try to give them the latitude to be able to grow their businesses over time.

What kinds of companies do we look for? We (and probably all private equity firms) look for companies that will be leaders in their market and companies that have a unique advantage over their competition, whether that be intellectual property or a low cost position—something that will differentiate them from their competition with at least some sustainable advantage. We look for companies that have a track record of growth and a good runway in front of them for growth; companies that have sticky customer relationships, low attrition to those relationships and a generally sound economic model, all wrapped around a great nucleus management team. We might want to add to this management team in time, but typically we would have a couple of operators that know the business well.

Let's take two recently announced transactions as examples. The first is a company called Sleep Country, which is a national retail chain selling bedding and mattresses. We spent quite some time looking at that business from a distance; we liked the management team and the way they thought about their company. We also liked the economic model—Sleep Country asks for payment of most or all of the cost of a mattress upfront, while suppliers to Sleep Country give them 60 days to pay. This means Sleep Country is a negative networking capital business. It is also a business with a strong track record of organic growth, with a lot of organic growth opportunities in front of it, in the Canadian market and also opportunistically expanding into the U.S. Organic growth along with negative networking capital makes for a good combination, allowing growth to be financed internally.

The other company we acquired is a company called McCarthy's, the largest provider of school uniforms in Canada, with a dominant market share. The owner-entrepreneur in that business, Martin McCarthy, grew that business from nothing to where it is today, over the course of 20 years. McCarthy was at a stage in life where he wanted to take some cash off the table, and was still very interested in being an active CEO in the business. He wanted a partner who could provide him with capital to help him grow his business over time and help supplement his management team to support a much larger organization. We were able to go in and buy a majority stake in McCarthy's, while having him continue as CEO and still owning a significant portion of the business.

With that introduction, let me now give an overview of the market, with comparisons between Canada and the U.S. When I think of the U.S., I think of the 10:1 ratio, whether that be population or Gross Domestic Product ("GDP"). In private equity that ratio doesn't hold—whether it's private equity or capital under management, the ratio is closer to 19-24:1. There are many reasons for that: the U.S. industry developed earlier than it developed in Canada. A fair question to ask is, is the border real? If one of your clients was out looking for private equity capital, does it matter whether you go to a Canadian firm or to a U.S. firm?

The industries are very different. The U.S. market is large enough that as a private equity practitioner, you can make a good living being an industry or vertical specialist, doing nothing but investing in, say, food companies or transportation companies. Because of the nature of the Canadian market, we tend to be generalists; the market is too small to make a living in any one particular sector. That is an important decision for an entrepreneur regarding a client: do you want someone who has deep industry experience and expertise? In many cases the answer would be "yes." Somebody with a vertical focus can add a lot of value in a short space of time. In Canada, because of the generalist nature, we view Canada itself as being our specialization. There are many arguments about whether this situation is sustainable. We would say that our network of relationships in Canada, our ability to supplement a management team very quickly with professionals and the network of connections means that we can add value very quickly, not from an industry standpoint, but from a variety of other standpoints.

Even though the private equity capital to GDP ratio is much lower in Canada, capital is not in short supply. There is ample capital available for quality companies. U.S. investors in Canada are very active in the large deal space. When there are regulatory impediments that require Canadian content, like the BCE transaction, there will be a Canadian sponsor. But there are many large transactions in Canada that have been completed over the years—Shoppers Drug Mart, Yellow Pages—that would have primarily U.S. sponsorship. In the small- and mid-size areas of the market, there are many examples of U.S. firms coming to Canada and successfully investing here, but we certainly see less representation, and when they do come into Canada, they typically call on the Toronto market and not the rest of the country. This is a very different arrangement for an entrepreneur who wants a partner that will be actively involved in their business.

Buyer multiples tend to be significantly higher in the U.S.—between 200 and 400 basis points in the last decade. The case of higher multiples is not necessarily a surprise; it is caused by the fact that there is a greater variety of lenders in the U.S. market, and historically they have been more aggressive about the kinds of terms and the level of leverage that they've been willing to provide to companies. That has led to a significant discrepancy between the multiples that are paid in the U.S. and in Canada.

The other important implication is that there is a steady march upward in multiples over time, notwithstanding the recent fall-off. Over the course of the last decade, buyer multiples and leverage multiples have reached

historic highs. That message is exacerbated when you look at corporate profits as a percentage of GDP. Corporate profits as a percentage of GDPs, through the end of 2007, were at a historic high. People were paying high multiples off of high earnings. The implication of that is that economic softness has meant that a number of the transactions in the last few years have ended in tears. That will have important implications for both fundraising, as well as returns for private equity firms over the next few years.

So if more capital is being raised in the U.S. than in Canada, and buyer multiples are also higher in the U.S., it should come as no surprise that returns in buy-outs in Canada have, over the last 10 years, been significantly higher than they have been in the U.S. The 20% return in Canadian buy-outs over the last 10 years is a number that we would traditionally expect to return to our limited partners ("LP"s). Again, an important implication for clients is that if they are looking at a private equity option, they must understand what the expectations are on the other side of the equation. Whether it's through multiple expansion, leverage or growing the underlying value of the businesses, when we go out and raise funds, we tell our limited partners and prospective funders that over the course of a fund, we will look to return to them between \$2.5-\$3 for every capita that they give to us. Twenty percent compounded over a 5-to-6-year hold period, which is the average length of time that we would hold one of our investments. The 9% and 12% returns that you see in the U.S. market would be under what they would traditionally expect to return to their limited partners. However, there is a very significant difference between top quartile performance and medium performance in private equity. The distinction between a top quartile performer and a medium performer tends to be lasting. Unlike the public market, where a fund manager might have top decile performance in one period, that is no predictor of their ability to perform in the next period. Private equity returns among firms tend to be fairly consistent and fairly predictable.

Another interesting area is the venture capital side of the business, where the situation is reversed. The underperformance of Canadian venture capital can be explained by some structural factors. One factor is the popularity of labour-sponsored venture funds with tax driving funds towards labour-sponsored funds. This has meant that although collectively they have not had a great track record over the course of the last decade, they have been able to attract capital, and this has artificially created a lower cost of capital in Canada's venture industry.

To turn away from a comparison between the Canadian and U.S. markets, an identifiable macro-trend in private equity over the last 15 years in the North American market as a whole has concerned the amount of funding and the amount of capital that has been raised in the industry. This has grown from not much more than a cottage industry in the late 1980s and early 1990s to an industry that has raised over \$220 billion in capital. The implications for that will be no surprise if you look at the academic studies; there is an inverse correlation between the returns that get generated in any one year and the capital that gets raised in that particular year. The amount of capital being raised at such an exponential rate argues strongly for depressed returns in this business over time.

Even in all the private equity investing activity over the last few years, and at the beginning of 2007 through to 2008, morning papers were full of stories such as the \$20 billion purchase of TXU Energy by Kholberg, Kravis, Roberts and Texas Pacific Group or Health South. Despite all of that capital being deployed, there is still an overhang of \$300 billion in private equity capital in North America. Considering that there is roughly a dollar of debt for every dollar of equity that gets deployed in a transaction, that means there is well over half a trillion dollars of capital waiting to be deployed in the next few years. The lesson overall, whether at the large end or the small end of the market, is that there is ample capital available to quality companies. The environment for fundraising is tougher than it was a year ago; it will continue to become tougher, but the long-term reality for institutions and pension funds is that they cannot deliver the kinds of returns they need to meet the actuarial value of the benefits they need to pay out by investing just in fixed income or just in the public markets. They have historically looked at alternative assets to make up that gap and will increasingly do so in the future.

In Canada, the message is not much different. The numbers are more volatile because the figures are considerably smaller. 2006 was a better year for fundraising in Canada; in 2007 there was a drop-off, not because it was a poor environment for fundraising, but because many of the funds had topped up in 2006. The amount

of capital being deployed into companies on the buy-out mezzanine side is at a historic high. Because of the amount in capital waiting to be deployed into business, we will also see similarly high amounts being deployed in transactions, despite the credit meltdown in Canada. The way that private equity firms work is that when you raise funds, you have a certain amount of time to deploy capital. Unless you return it to your LPs, you are compelled to deploy it into companies. We would expect all of the capital that is being raised to try to find a home in the next few years.

Through 2007 and in the first part of 2008, there was a decline in buy-out and private equity investing numbers. While the market has exhibited significant decline, that decline has been most severe at the large end of the market. Mega-deals (deals that require over \$3 billion of capital) exhibited a 74% decline throughout the second half of 2007, largely driven by the fact that credit was not available, and the fact that the people who supply credit to those transactions are the large banks that have been the most severely impacted by the meltdown. While there has been a 23% decline for transactions under \$1 billion, it is worth noting that the downturn for the small end of the market is less severe. Since capital is available, transactions will continue to be completed for companies with less than \$50 billion of EBDA.

To conclude with an overview of the complexion of the Canadian private equity industry: I represent Birch Hill, which is an independent entity and such private entities make up the larger part of the market. There is also a very large and active institutional market in Canada, and on a proportionate basis that would be more important in Canada than in the U.S. Groups such as Ontario Teachers' Pension Plan and Ontario Municipal Employees' Pension Plan have direct investing groups and dedicated funds. They are a significant part of the Canadian market. The kinds of transactions in which we will invest depends on factors that can catalyse the need for private equity capital, such as a spin-out of a division in a larger entity or someone looking to take capital off of the table.

There is a variety of different parties in the Canadian market, as well as available capital. Despite assumptions about the difficulty of the current market, the market is still open. This is particularly true of the Canadian mid-market, which should be a viable option in the coming years.

ROBERT OLSEN—GOLDMAN SACHS

Goldman Sachs has a vibrant business, particularly across North America. We have invested around \$12 billion in North America (roughly 10% of which was in Canada) in public and private opportunities, mostly from a debt perspective; any equity that we invest tends to be very structured equity. So we find the mid-market particularly compelling from a debt perspective. And, unlike Birch Hill Equity and some other companies in Canada that see Canada as a separate market, we are more vertically driven, so we follow particular industries up and down, across the border.

In Canada there are around 10 people in my business, half working in public opportunities and the other half in private opportunities. We have some people in western Canada concentrating on the oil and gas sector and some commodity opportunities; we have a heavily weighted public investment portfolio with respect to commodities. Mostly, though, we try to look for private companies who have a debt need. We are different from a lot of debt providers in the way we look at the world. We are management agnostic, which is a strange way of looking at the world, but we take the approach, with respect to providing debt, that we have to assume that industry conditions may move against the company. Management may not be as strong as we expected; the entrepreneur may have become disengaged, having taken money off the table; things can happen that affect management performance, and we have to have a way out with our debt. If we don't have a way out, then we will suffer losses. This is exactly what has happened in the U.S., during the current meltdown. Many debt providers became exuberant in providing capital without really thinking. A lot of hedge funds went into the debt market and a lot of those hedge funds are no longer in business. Furthermore a lot of banks are suffering and having to raise capital outside of North America in order to stay in business.

From our perspective, we look at companies and insist that there must be a second way out. Cash flows is certainly one way of looking at a company, but there must also be another way. The way we think about businesses is that we particularly like businesses with a recurring nature and with some stickiness to their customers. So we look at businesses with a narrow focus. What we try to do with mid-market companies is probably unique, in that we try to bring Goldman Sachs resources to mid-market companies. So for companies who are thinking about international expansion or U.S. expansion, there are many unique qualities that we can provide, since we have a multi-faceted franchise. For instance, we have a business that is currently expanding into China, and we have some reasonable contacts in that marketplace (politically and otherwise). We are able to bring that to bear for a mid-market company, which is not something that we sell when we're making an investment for a company, but it's something that is there once we get into the deal.

The other thing that is probably unique is, because our balance sheet is strong, we can take large positions in companies, and it is not unusual for us to have \$100 million debt investment in a mid-market company, which is a lot of capital for most businesses. We do that because of our investing approach. We are very comfortable with how deep we are in the enterprise value of those companies, but we are not uncomfortable with the amount of capital that we have committed to a particular name. Most Canadian banks will consider \$30 or \$40 million to be a lot of capital to commit to a mid-market company.

In Canada we provide debt and equity, although we are more focused on structured equity and more focused on private rather than public companies. The range of investments that we might make is anywhere from \$20 to \$200 million; we are often the only investor in the company, because we are not capital-constrained. If we are partnering with an equity sponsor, we are probably the only debt provider in the company.

We concentrate on certain key verticals. In Canada, in addition to commodities, which we do in the public space, on the private debt opportunity space we particularly like businesses that have root density as part of their success—for example industries like waste management or shredding or vending or cash-handling; we follow those industries across North America, and go to the trade shows and follow the companies. As a firm we also like software because of the recurring nature of it. We like transaction processing, and we like multi-location retail opportunities if its non-fashion.

When we find industries that we like, we may appear aggressive, because we invest on a basis of recurring revenues as opposed to a multiple of EBITDA. The numbers that I'm about to mention view the whole world on the basis of multiples of EBITDA, since that is the easiest way of finding information in the marketplace. Most debt providers, 3 or 4 years ago, would lend 5 times EBITDA; today it might be 3 times EBITDA. We might end up with some of our investments looking to follow that same pattern, but more likely in the software space, for example, we might invest 8 or 9 multiples of EBITDA and similarly in the transaction processing space. We are more concerned with revenues than with cash flow in those particular verticals.

I joined Goldman Sachs 3 years ago from a fund background, and the current debt environment is the most unique time that I have experienced. This market is peculiar in that there was a sub-prime market that blew up the collateralized local obligations ("CLO") market, that suddenly blew up many banks and hedge funds and worked its way into the mid-market. This all happened over a period of 6 months. The market that we are in right now is in many ways unprecedented. It is an extreme challenge to raise capital in the U.S.; in Canada less so, but the larger the deal size, the bigger the difficulty. The mid-market in Canada is far better because the banks here have done much better than U.S. counterparts and, as a result, capital is still available. But certainly, debt multiples are lower, and terms have changed. There were deals that were completed a year ago where leverage levels were 7.5 times EBITDA; a company is being bought for 9 times, and the covenant levels allow the debt provider to go to even 8.5 times without breaching covenants. So the equity sponsor had nothing at risk, and it wasn't the sponsor that was making the mistake. It makes sense for an equity sponsor to put leverage in a business that has an upside opportunity because multiple expansion is ahead, and the amount of capital being risked is comparatively low. The debt providers, on the other hand, face a binary set of circumstances; they either make money or they do not, and there is no upside. So debt providers exited the U.S. market *en masse*, and a similar situation is being seen in

Canada. Leverage levels are lower than they were, terms are more difficult than they had been and pricing is more expensive.

This information pertains to public companies, but the same can be said of private business. In the first quarter of 2007, \$180-190 billion of syndicated debt deals was hitting the market. In the most recent quarter, the amount was closer to \$40 billion, which shows that deal activity and M&A activity is down, and the number of debt providers in the marketplace to provide capital to some of these deals is also down. This trend is continuing in the U.S.; in Canada, judging by the reactions of partners on deals that we are considering, investors are working through the night to win the opportunity to work on our interesting opportunities because there are few other things happening in the marketplace. This is a great time for clients with interesting companies to be raising capital. Terms haven't changed as much in Canada, so that part probably doesn't affect them, but the market in general is very different compared to how it was a year ago.

What affects us the most is returns. The average returns are similar to what they were in 2003 *on average*, and many companies in the U.S. are not getting anywhere near this average. Good, solid companies are doing exceedingly well because there is no deal flow; other companies are receiving no bids at all, so the market is polarized, with little happening in the middle.

In Canada, we concentrate our activities in the second lien or mezzanine space. There was no second lien market in Canada until we entered the market; we created the market, and convinced senior lenders that they should feel comfortable with someone providing capital behind them, much like a mezzanine provider, but with more rights. We have closed several deals in Canada with those features. Pricing has dramatically changed. A year ago we were fighting to get 750 over bankers' acceptances ("BA"s); BAs today are around 3%, that's 10.5% for the back-end piece of an opportunity. Now we are getting 900, perhaps 1000 for those same businesses, which are probably better businesses with lower leverage. Pricing now is not changing back; there is an overhang in the market; there are deals that banks got hung with when they became exuberant, believed they could find providers of capital but didn't. So until all of those deals come through the system, there is no likelihood of pricing coming back to where it was and, as a result, we are benefiting. We are averaging out much better in this environment than we were, and we are not being repaid on any of our existing deals, so the portfolio keeps improving; this is a great time for pricing on the second lien side. Although for a borrower costs have gone up, leverage has gone down and purchase pricing has gone down, so we are in a more conservative state that favours entrepreneurs.

From a default perspective, we are not witnessing as many defaulters as we could be, as a result of all the covenant-light deals that are in the marketplace. So there are many deals where the covenant levels were set so high, or there were so few covenants, that companies are not yet in default even though they are completely underperforming. Eventually, the number of defaults will increase dramatically. Business in the U.S. is absolutely distressed, and Canadian business will shortly be in a similar state. The only thing saving Canada right now is that we haven't been as exuberant. Purchase price multiples haven't been as great, and debt levels haven't been as high. That is a general rule, but there are a lot of deals I could point to where, if the companies breach a covenant, they will be in serious trouble because the value of those businesses does not support the debt that they're in. The other part of this arrangement is that the special loans departments of banks are becoming involved much earlier than they previously would. The number of defaults is likely to go up immeasurably in Canada, which will provide a good opportunity for people looking to grow companies. There will be a lot of strategic opportunities in the coming months, given what is happening in the industry.

Equity levels have increased dramatically, and the leverage level is at 4.1 in the U.S. and lower in Canada. In Canada, senior debt for strong businesses is around 3.25 times EBITDA of leverage, whereas those same businesses a couple of years ago might have been 5 times EBITDA of leverage. We are in a company right now with a strong recurring revenue, and when we refinanced the business we put in 6 times EBITDA of leverage; we're handling another transaction where we are bringing in debt providers as partners, and some Canadians claimed to be bidding on this opportunity at 5 times the leverage a couple of years ago; we were looking at 3.7 times the leverage on the new opportunity. Some of the Canadian banks considered this an aggressively levered company, although

these were the same people who several months ago had been bidding at 5 times EBITDA of leverage. This shows how dramatic a shift has occurred in Canada; the impact of what is happening in the U.S. is becoming apparent here.

Prior to July 2007, M&A activity was strong, but now it has slowed down; the investing pace was robust but has certainly slowed down. In Canada we have had a stronger flow than has been seen in the U.S., but there are still very few auctions in this environment. It's hard to see why people would sell in this environment, so M&A activity is down. From a credit perspective, money was formerly easy to come by. Now we are at about 3.5 times EBITDA on senior, with maybe another turn of leverage of second lien or mezzanine behind that. The cost of debt on senior debt was maybe 1-3%, now for senior debt it is 375 or 400 basis points and for second lien, about 900 basis points, which equates to about 12%. Most deals now have second lien at 12% and mezzanine at 13-15%. This is a big change: mezzanine providers a couple of years ago couldn't get capital out, because the second lien people were doing it all at 10% all-in; now mezzanine and second lien is more similar in pricing, which provides an opportunity for mezzanine providers to fill the space left by the absence of second lien providers. So the market has definitely changed. On a recent deal, we were about half a turn above what the mezzanine is; that deal will probably trade at about 7.5 times EBITDA; a year ago it traded at 10.5 times. We feel secure with where we are in the debt structure, but on the mezzanine side there will be some tightness.

The U.S. market is still declining. The real estate industry is nowhere near a recovery. As for the write-down of loans, Goldman Sachs estimates we are about half of what they will eventually be, and this is partly because we haven't seen the write-downs in Europe that we might have expected. We expect to see more write-downs, which will result in more banks going out of business or raising capital from sovereign wealth funds. The economy in the U.S. is struggling, and companies with a discretionary nature are suffering in particular, but bank balance sheets will eventually recover, and people will again start raising capital. Banks are making tough decisions today in order to come back into the market tomorrow.

5

TURNING TROPHIES INTO TREASURE—A VALUATOR’S PERSPECTIVE ON THE BUSINESS OF PROFESSIONAL SPORTS

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1. OVERVIEW

The valuation of sports properties is often perceived as one of the most exciting areas of our profession. Sports business mandates constitute an amalgam of traditional valuation approaches applied to a specialized industry niche possessing its own distinct value drivers and considerations.

Sports property valuations may be required in a variety of situations, including:

- mergers and acquisitions,
- fairness opinions,
- business reorganizations,
- shareholder disputes,
- structuring shareholder agreements,
- income tax,
- estate planning,
- insolvency,
- commercial litigation, and
- marital disputes.

While the purchase and sale of professional sports franchises and arenas constitute the most visible event necessitating the participation of an experienced valuator, the foregoing situations also can give rise to valuation mandates. For example, in 1994, the Toronto Maple Leafs NHL franchise and the arena in which the team played, Maple Leaf Gardens, were owned by a public company, Maple Leaf Gardens, Limited, which was being taken private. Consequently, the fairness opinions that had been prepared in connection with this going-private transaction were called into question by The Public Guardian and Trustee of Ontario and the Attorney General for Ontario and a vigorous litigation ensued, in which the valuation professionals played a central role.

As is the case with many businesses, shareholder agreements can necessitate valuation mandates, as sports teams and arenas are often owned by numerous individuals and/or corporations. For example, at the date this

paper was written, the Calgary Flames NHL franchise is held by over two dozen owners and the Green Bay Packers NFL team is owned by several thousand individuals, most of whom are members of the local Wisconsin community. Both friendly transactions and acrimonious disputes among shareholders occurring under such shareholder agreements will typically require the involvement of one or more valuation professional to determine the value of the entity holding the sports-related assets (or interests therein).

Income tax and estate planning also constitute frequent sources of valuation work involving sports organizations. Those sports properties that have been owned by families will often, at some point, require valuations to be performed for intergenerational transfers of ownership among family members. Moreover, considering the significant appreciation in value experienced by professional sports franchises around the globe during the past few decades, owners of sports properties eventually may need to contend with capital gains related issues; valuation professionals often provide integral assistance in this process.

Insolvency or restructuring involving either a professional sports organization or one of the owners thereof is another event that will frequently necessitate the expertise of business valuers. For example, in the 1990s, there were several high-profile bankruptcies of English Premier League football (i.e., soccer) organizations that occurred after several previous rounds of financing had been obtained. At every step of the way, from the initial financing to the restructuring or asset liquidation process, business valuations are typically required to provide an indication of worth of the sports franchise and related properties.

2. PRICE VERSUS FAIR MARKET VALUE

The valuation of professional sports properties provides an excellent illustration of the difference between price and fair market value in a “real world” setting. As valuation professionals are well aware, there are generally two distinct sets of circumstances where the value of a business is determined:

1. Notional Market Valuation and
2. Open Market Transaction.

2.1 Notional Market Valuation

Fair market value, fair value or some other legislated or defined value is often notionally determined in the absence of an open market transaction. The value standard most frequently applied in notional market valuations is “fair market value.” The generally accepted definition of this valuation term by Canadian courts is:

The highest price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm’s length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts.

2.2 Open Market Transaction

Price is negotiated between a vendor and a purchaser acting at arm’s length. The term “price” is defined as “the consideration paid in a negotiated, open-market transaction involving the purchase and sale of an asset.”

In a sports market context, sentimental value may occasionally represent a component of price. This concept is evidenced by a sports team owner who is an extremely wealthy individual and does not view the acquisition of a sports team from an economic perspective but rather as a “trophy.” An investment involving sentimental value, in other words, may be ego-driven in nature and made by a purchaser who is willing and able to absorb significant losses.

Special interest purchasers are often present in the marketplace for professional sports properties. Special interest purchasers are generally defined as “acquirers who believe they can enjoy post-acquisition economies of

scale, synergies, or strategic advantages by combining the acquired business interest with their own.” Examples of these types of purchasers are large companies possessing broadcasting, media and entertainment operations that can avail themselves of synergies presented by controlling assets relating to professional sports organizations. In recent years, a number of such companies have successfully acquired professional sports properties in order to benefit from the content provided to the purchaser’s media distribution network.

In the sports business world, both of the above sets of circumstances are frequently encountered. As is illustrated below, there may be significant differences between fair market value and price. For example, fair market value typically assumes the following conditions exist:

- equal knowledge and negotiating skills;
- no compulsion to transact;
- generally no special interest purchaser considerations;
- imprudent actions and emotions are not considered;
- vendor and purchaser are assumed to deal at arm’s length; and
- transaction is assumed to be consummated for cash.

In contrast, the price determined in an open-market transaction may be influenced by the following considerations:

- unequal knowledge and negotiating skills;
- compulsion to transact may be present (e.g., a sale made in an insolvency setting even if the purchaser intends to continue the sports organization as a going concern);
- special interest purchasers may force the price upward;
- price may be struck as a result of imprudent decisions by the vendor, the purchaser, or both;
- sentimental value considerations may force the price upward;
- outwardly, vendor and purchaser may appear to act at arm’s length, but may have common interests due to the elements of the transaction such as vendor employment agreements, non-competition agreements, etc.; and/or
- the negotiated price may contain non-cash elements such as contingent “earn-out” or bonus payments, freely trading or restricted shares and/or debt instruments.

3. VALUATION APPROACHES

As is the case with most businesses, a sports franchise’s value is derived from its future benefits such as revenues, earnings before interest, taxes, depreciation and amortization (“EBITDA”) and net cash flow. Among the factors influencing the perceived future benefits for a sports franchise include its management team, trademarks, brands and logos, customer “fan base” relations, customer contracts (e.g., season tickets, corporate boxes, personal seat licences), player relations and contracts, broadcasting contracts, arena ownership or lease agreements, team-alliance synergies, local demographics (e.g., population size, wealth, popularity of sport), etc. Simply put, the fundamental goal for a sports team owner is to maximize the number of fans in the seats (or viewing the matches via broadcast media) and the goal for an arena/stadium owner is to minimize the number of “dark nights” in which no event is occurring in the building.

Admittedly, while future benefits often cannot be measured with absolute certainty, franchise values will change in a manner commensurate with perceived increases and decreases in such benefits. In the sports business world, while no single approach or formula can be used to determine the value of sports properties in every

situation, different approaches and methods have been adopted for estimating future benefits and franchise/asset values.

The three basic, generally accepted approaches used in the valuation profession are all applicable for valuing sports franchises.

- Asset-Based Approach
- Income Approach
- Market Approach

The Asset-Based Approach is adopted in situations where liquidation is contemplated because the sports franchise is not viable as an ongoing operation, the nature of the sports business is such that asset values (e.g., real estate such as stadium or arena facilities) constitute the primary component of corporate worth and/or there are either no or minimal indicated earnings/cash flows to be capitalized.

The Income Approach is used where the sports franchise is earning a fair return on its capital employed and the purchaser wishes to acquire its future indicated earnings/cash flow stream (i.e., the above mentioned future benefits are identifiable and reasonably quantifiable).

In sports business valuations, the Market Approach is often utilized, considering the active market that exists for many professional sports properties. In the Market Approach, the subject sports property is compared to similar properties by performing a detailed analysis of prior transactions involving similar sports properties and/or in the ownership of the subject sports franchise or asset.

4. TRANSACTIONAL ISSUES

In analyzing transactions in sports properties, aside from reviewing the amount and structure of the transaction price, it is frequently necessary for the valuation professional to identify and quantify key organizational elements that generate value for the subject professional sports club, such as (but not limited to) management team and personnel, corporate operations, finance and technology.

It is a sports business paradigm that the management team should, in maximizing franchise value, maintain and enhance the quality of the team brand. Such brand value enhancement may be performed in a variety of ways, including winning on-field victories and championships, attracting individual “marquee” players, fostering positive community relations and developing a robust tradition ultimately bestowing “iconic” status on the sports franchise.

For example, the valuator should examine the quality of the management team, employees and players, focusing on the club’s ability to retain talent and expertise (on the field, among the coaching staff and in the front office). In order to enhance value, the sports organization should possess the potential to develop future leaders (for both players and management), avoid labour actions (e.g., strikes, lockouts), motivate commitment to the club’s culture and ethics in its players and employees and strengthen relationships among management, players and employees.

In assessing value of sports franchises in a transactional setting, the valuation professional should also examine the ability of the organization to maximize the potential of its corporate operations. For example, the franchise organization should constantly strive to improve capacity utilization wherever possible (e.g., selling out games, maximizing advertising and media revenue). Recent revenue maximization trends by franchise owners in this context have included selling advertising on fixed or rotating panels in close proximity to playing surfaces, inside arena corridors, on building exteriors and on game tickets. Sports team management should also be seeking to optimize other areas of business potential (e.g., creation of team-alliance synergies, increase in the number of official sponsors or partners with the club, etc.).

Moreover, the sports organization should periodically assess what investments are required to expand or improve fixed asset infrastructure (e.g., addition of seats, creation of premium or “club” seat categories, addition or expansion of facility restaurant, bar, concessions and parking facilities). Management should also be cognizant of ways to strengthen the franchise’s market position in the presence of other forms of entertainment competing for the same consumer, media and advertising spending sources.

The valuation professional must examine the ability of the sports organization to maximize the value of its intangible assets. Aside from traditional items such as the franchise logo, influencing the popularity of merchandising and licensing revenues, in recent years, savvy sports marketing experts have derived new sources for professional sports franchises to obtain revenues—notable the leasing of stadium/arena naming rights. Typically, building naming rights are leased for several million dollars annually for terms of 10 to 20 years; these stable revenues often flow directly to the bottom line of the club/building owner.

Furthermore, in transactional contexts involving professional sports organizations, the valuation professional should assess the financial strength of the subject business. In particular, the valuator needs to place particular emphasis on the extent to which leverage has been (or may be) utilized to finance capital assets and franchise operations. Other financial issues should be reviewed, including the club’s ability to recognize and maximize all revenues (i.e., deferred revenues) from an accounting standpoint and to depreciate or amortize the franchise itself, player contracts, capital assets, etc. If the franchise is being positioned for sale, it may be desirable for the club to “clean up” the balance sheet (e.g., eliminate redundant assets such as excess cash, marketable securities, non-operating real estate, inter-company or shareholder loans), adjust overvalued assets and other reserves in order to present the sports business’ true earning power, accelerate the collection of accounts receivable, etc.

Finally, sports business valuation experts have increasingly focused on a franchise’s ability to enhance value through the creative use of technology. In recent years, technology has been utilized by sports team owners through innovations such as the use of Web-based resources featuring fan club sites and live or archived game broadcasts. Many sports business experts predict a proliferation of fee-based broadcasts of matches and related content through television, Internet audio and video, as well as mobile phone media. Other uses of technology that may create franchise value relate to the extent to which technology can be implemented to improve communications (e.g., within the internal organization, with the fan base and among the league and its members).

5. VALUE DRIVERS

Both of the concepts of price and fair market value are often influenced by numerous value drivers that relate specifically to professional sports franchises. Among the frequently encountered examples of “external” value drivers (over which a franchise owner exerts little, if any influence) are included, but are by no means restricted to:

- degree of control of franchise operations by league;
- finite number of teams permitted in league (i.e., barriers to or ease of entry through expansion);
- franchise expansion fee (this often constitutes a “floor” to franchise value, as well as a windfall profit to franchise owners when received). For example, in the NHL, the most recent expansion fee paid for a new franchise, occurring several years prior to the publication of this paper, was \$85 million USD. Media reports have stated that the next potential round of NHL expansion could command franchise fees as high as \$225 million USD;
- extent and terms of revenue sharing;
- presence of salary cap;
- local market barriers to ownership entry/exit;

- availability of government grants or other forms of financial assistance;
- market demographics;
- market radius protection (in the NHL, each franchise is protected by a fifty-mile radius within which another franchise in the league cannot be operated without the existing owner's permission); and
- extent to which league approval is required for franchise ownership transactions.

Moreover, included among the various salient “internal” value drivers over which a franchise owner typically possesses some ability to influence are:

- ticket revenue (e.g., season ticket base, ability to increase or vary ticket prices);
- broadcast revenue (e.g., from television, radio and Internet media);
- team-alliance synergies (i.e., synergies and benefits derived from common ownership of two or more sports teams);
- player-transfer fees (i.e., these represent highly lucrative sources of revenue in international soccer);
- advertising revenue;
- playoff revenue (revenues from post-season play often contribute significantly to profits);
- concessions revenue;
- merchandising and memorabilia revenue (including revenues from licensing team name and logo); and
- stadium/arena ownership revenues (derived from building sources such as luxury “club” seating, corporate boxes, naming rights and ancillary events such as concerts, unrelated sporting events, conventions, etc.).

Interestingly, two factors that do not always constitute significant value drivers for a sports franchise are the win-loss record of the club, as well as the individual players comprising the team. The impact of possessing (or lacking) either championship trophies or superstar players must be assessed by the valuation professional as to the incremental contribution of each to the value of a particular sports organization.

Among the important items on the expense side of the income statement that may materially impact the value of a professional sports franchise include player salaries, which are, in turn, influenced by permitted contractual increases, free agency, union collective bargaining agreements, long-term injuries to or retirements of players, etc. Franchise owners who do not own the stadium/arena facility will also be subject to leases for building rental, as well as leases for concessions, merchandising and/or parking facilities. Moreover, some teams, such as Canadian NHL franchises, must contend with material foreign currency risk, as their revenues will be received in the local currency while some of their expenses (e.g., player salaries) may be denominated in a foreign currency. Finally, the ability of a sports club to claim amortization expense on its franchise cost, player contracts and capital assets will impact its fiscal situation, as well as its operating cash flows.

6. INTANGIBLE ASSETS

In valuing a professional sports franchise, the valuator should be aware that the organization may own valuable sports-related intangible assets that should be considered with values correspondingly assigned to each identifiable intangible. Examples of such sports-related properties can be found in each of the five general categories of identifiable intangible expenses provided in section 1581 of the Canadian Institute of Chartered Accountants (“CICA”) *Handbook*.

For example, customer-related intangible assets owned by sports clubs include non-contractual customer relationships (e.g., season ticket holders), customer lists and customer contracts (e.g., personal seat licenses and corporate boxes). Technology-based intangible assets held by sports organizations may comprise patents, internally developed software (e.g., scoreboard graphics) and databases.

Marketing-related intangible sports assets may consist of properties such as trademarks, trade names, Internet domain names, non-competition agreements and logos. Contract-based intangibles typically represent such potentially valuable sports assets as merchandise and logo license agreements, arena and stadium leases, permits, franchise rights, broadcast rights, player and employment contracts, arena and stadium naming rights, etc. And artistic-related intangible assets held by sports teams can comprise items such as books, photographs, video and audio libraries (including Internet content) and music (e.g., the *Hockey Night in Canada* theme song). Figure 1 provides a list prepared by *Forbes* of the most valuable sporting event brands, which illustrates the magnitude some sports-related intangible asset values can command.

Figure 1 The Most Valuable Sporting Event Brands

Rank	Event Brand	Value (US\$million)
1	NFL Super Bowl	379
2	Olympic Games (Summer)	176
3	FIFA World Cup	103
4	NASCAR Daytona 500	91
5	Rose Bowl	88
6	NCAA Mens' Final Four	82
7	Olympic Winter Games	82
8	Kentucky Derby	69
9	MLB World Series	56
10	NBA Finals	47

Frequently, intangible assets relating to sports franchises are valued using the Relief from Royalty Method. Using this method, the valuator seeks to ascertain what arm's length royalty would likely have been charged had the owner of the sports-related intangible been required to license that asset from a third party. The quantification of the benefits (and hence the value of the intangible asset) is the product of the said market-based royalty rate and the revenues generated from sales of the product.

Among the challenges that may be encountered by valuers seeking to apply comparable market royalty rates are the difficulty of finding comparable rates (using size, industry, same benefits as criteria) and the limited disclosure that may be available on market rates (e.g., information may be only summarized or stale-dated). Among the sports-related intangibles typically valued using this method are included franchise rights, broadcast license agreements, Internet domain names, naming rights, sponsorship contracts, trade names and logos. The Profit-Split Method, which is based on the allocation or "split" of an operating profit margin that a notional licensee would be willing to pay to a notional licensor for use of the intangible asset, is also often used as a reasonableness test in valuing intangible sports properties.

Furthermore, sports-related intangible assets, such as naming rights and sponsorship agreements, may possess significant value, as is evidenced in the table in Figure 2 from the *Economist*.

Figure 2 Sports-Related Intangible Assets

Sponsor	Object of Sponsorship	Estimated Total Value of Deal (US\$million)	Length of Deal (years)
Barclays	New Jersey Nets basketball arena	400	20
Adidas	German national football team	298	10
Adidas	London Olympics 2012	200	5
Lenovo	Williams Formula One	190	5
EDF Energy	London Olympics 2012	160	5
Lloyds TSB	London Olympics 2012	160	5
Fiat	Juventus football club	134	3
Aegon	Ajax football club	121	7
Prudential	New Jersey Devils ice hockey arena	105	20
Panasonic	Official worldwide Olympic partner	100	8
Johnnie Walker	McLaren Formula One	100	5
Nike	Tiger Woods	100	5

7. CONCLUSION

While the sports business field may be a source of some exciting mandates for the valuation practitioner, as the above narrative indicates, sports properties encompass a highly-specialized segment of our profession that is subject to its own distinct challenges. On the subject of challenges, I will leave the reader with a final observation gleaned from my 25 years of experience in the valuation and corporate finance milieu. Namely, one of the most daunting tests in sports valuation mandates from the professional's perspective often is to withstand the intense scrutiny from media and others—both inside and outside the sports world—that frequently surrounds the issue giving rise to the mandate. The business valuator must never lose sight of the professional responsibility set forth in the CICBV *Code of Ethics* to maintain client confidentiality despite the enthusiasm and potential for publicity that may be generated by the topic.

6

M&A TRENDS FOR THE ALTERNATIVE POWER AND INFRASTRUCTURE SECTOR

*by Blair Roblin, LLB, MBA, CBV, CF
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The fossil fuel energy crisis necessitates alternative sources of energy. In the long term, the cost of oil will only increase, while environmental concerns, such as climate change and pollution, are shared around the world.

As far as infrastructure is concerned, Canada is somewhat unique—first of all, the nation is suffering from a severe infrastructure deficit, which is somewhat surprising for a developed country, particularly if you consider that the deficit relates to a lack of spending over the last 20 years, rather than the requirement for new infrastructure.

Infrastructure has a particular importance in Canada. This is partly due to the country's vast geography; there is much ground to cover and lots of obstacles in the way. Also, Canada is very trade-dependent, a fact that highlights the importance of transportation logistics to facilitate movement of goods across the country and also for export. Thirdly, the global trend toward urbanization is especially evident in Canada, where over half of the population is based in the three metropolitan areas of Montreal, Toronto and Vancouver.

There is therefore a renewed focus on alternative energy and infrastructure, and this topic will demand great attention from such people as financiers, mergers and acquisitions advisers and valuers.

1. ALTERNATIVE POWER

This time, substitutes are needed for oil. I say "this time" because a comparable crisis occurred in the early 1980s. In 1981 oil reached \$35 a barrel. The pundits were predicting that the price would double over the next couple of years, and there was a rush towards newer, cleaner technologies. What happened then is unlikely to happen again—in that case the fix, in simple terms, came from the supply side. New discoveries were made in the North Sea and the Gulf of Mexico, OPEC loosened its stranglehold somewhat and by 1986 the price of oil was back down to \$10 a barrel. The price remained relatively cheap for the next 15 years (it is remarkable that when oil is cheap, the desire to promote new technologies subsides considerably). Whether the time of peak oil has come or not, suffice it to say that the oil resources now being identified are going to be considerably more expensive to harvest than ones in the past; the tar sands are an excellent example of this.

The political issues surrounding oil remain. The Middle East is still the Middle East; Venezuela has oil, but also has Hugo Chavez; Russia has oil, but the Russian government is very difficult to deal with (as BP or Shell, or even the Russian oligarchs would happily confirm). Furthermore, there is relentless growth in the BRIC countries (Brazil, Russia, India, and China), where overall there will be tremendous demand for oil.

So, greener energy is better and will perhaps reduce our reliance on oil, but other traditional sources of energy will not necessarily fill the gap. Coal is cheap, but is politically problematic since it is one of the dirtier fuels. Nuclear power has regained respect over the last several years and will probably re-emerge—the dangers demon-

strated by the Three Mile Island and Chernobyl accidents have become distant memories, helped by the fact that safety standards have improved in recent years. The drawback of nuclear power, of course, is the considerable expense attached to both the refurbishments and the green fields, and this expense will not come in bite-sized pieces.

A number of utilities are developing renewable portfolio standards, and governments are showing a greater resolve to promote greener sources of energy, to the point that some new sources of energy, such as wind or solar, are commanding significantly higher tariffs on a kilowatt-hour basis than traditional sources. In Québec, even a hydro-electric project has attracted controversy. The 1500 MW Romaine River project is projected by Hydro-Québec to generate electricity at the considerable cost of 9.2 cents per kilowatt-hour.

2. CANADA'S INFRASTRUCTURE

Canada has an infrastructure deficit requiring about \$123 billion in current spending and another \$115 billion to keep up with growth requirements. This is not exclusively due to new technologies or growth. A greater reason for the deficit is the need to replace existing facilities, such as roads, bridges, sewers and water treatment facilities. Expenditure from all orders of government has declined during the last 40 years, and of course the average age of assets (roads and highways, waste water, sewers and bridges) is also increasing drastically.

As a solution, the government of Canada has taken a significant step with the introduction of the Building Canada program. This calls for \$33 billion in spending from 2007 through to 2014; it is the largest single federal commitment to public infrastructure of this type, and it includes everything from highways, railways, shipping, airports, broadband, convention centres and so on. Half of the money will be deployed at the municipal level, and there is a series of agreements that have introduced cost-sharing at the provincial level. Canada may be able to carry out this plan because the country has the balance sheet to substantiate it, as well as a good credit rating. There is also lots of foreign interest in investing in Canada, and a well-developed Public Private Partnership ("P3") infrastructure makes the country able to take on these investments.

The private partnerships occurring in Canada right now cover the full gamut of areas discussed so far. Virtually all of the provinces have either a Crown corporation or a designated department to look after partnerships with private enterprise, which is proving to be a "win-win" situation. The government can defray a certain amount of the cost that they'd otherwise take on themselves; an opportunity is provided for investment from private investors; and in certain instances there is a chance for the government to bring in revenues by selling off some of these assets.

Nevertheless, such investments are fairly unique, and not all private investors would be interested in such an arrangement. This isn't the sort of model that a private equity group would jump into, grow the sales by 100% in 5 years and do a quick flip; the timelines involved are long. There are land acquisitions, environmental assessments, and government approvals to consider, and the hold periods can be very long as well. On completion many of these deals operate in a similar manner to utilities—there are steep costs that favour investors with deep pockets, such as large institutions and pension funds.

For the reasons mentioned earlier, the public-private partnerships are becoming ultimately more popular, but one of the few apparent drawbacks is the issue of private control of strategic assets. This is especially the case when a foreign investor wishes to invest in something that is strategic to a country. This was an issue the first time the subject was broached, when foreign investors proposed to own nuclear assets in Canada. More recently, in 2008 the New Zealand government blocked the Canada Pension Plan Investment Board from making a minority investment in the Auckland International Airport, for the reason that they were concerned about losing control of a strategic asset. These are just some examples of the many private funds (Borealis, McCorry, and Brookfield cover all facets of alternative energy and infrastructure).

I think that this area will continue to grow. Despite all the turmoil in capital markets, there is a lot of money still on the sidelines ready to be deployed in these types of projects. For the funds and the institutions, this arrangement is an excellent way to diversify away from fixed income securities, from hedge funds, from real estate and from private equity.

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7

HOW PATENT VULNERABILITY IMPACTS VALUATION

by David Wanetick, AVA
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As I often tell business leaders who attend my course on Valuing Early-Stage Technologies, valuing patents isn't rocket science. It is much more difficult. Or to paraphrase Winston Churchill, "valuing patents is a riddle, wrapped in a mystery, inside an enigma."

Measuring even a well-delineated permanent entity is much more difficult than may be imagined. As Neil deGrasse Tyson (a renowned astrophysicist) and Benoit Mandelbrot (the father of fractal geometry) have discussed, no one really knows what the circumference of the coastline of the United Kingdom is. The tides will cause varying degrees of erosion on the coastline depending on the hour of measurement while the cumulative affect of choosing which rock formations to measure around will have a dramatic impact on the final assessment of circumference. Patent valuation is infinitely more difficult to determine than the measurements of a given land mass due to the interminable variation of underlying technologies, legal issues, business issues and the context in which patent valuations are conducted.

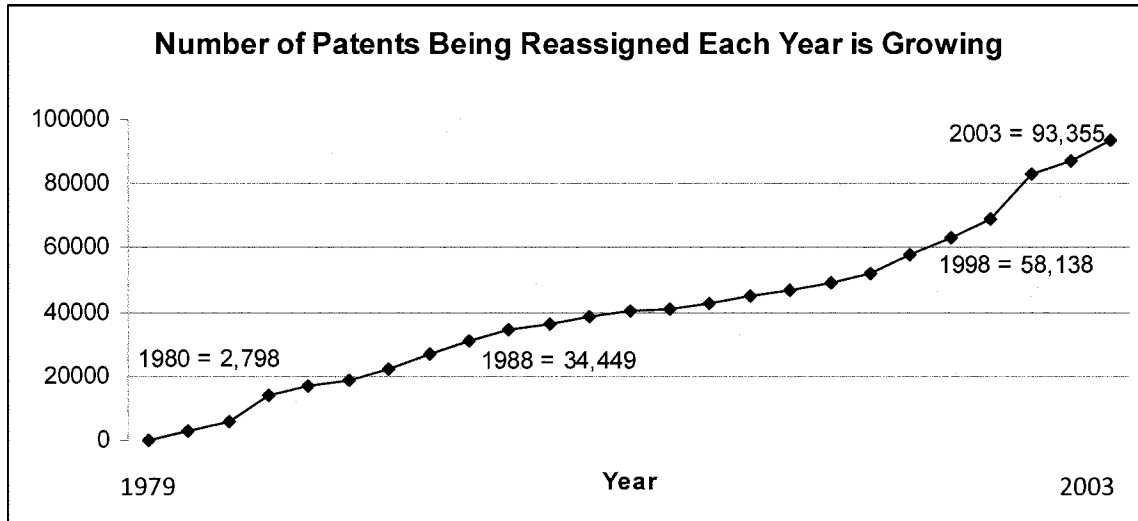
Companies that have patents often attempt to achieve a more attractive valuation by boasting about their patent portfolio. This is often a successful gambit as many investors, customers and media figures are impressed when a company reports a relatively large number of patents or pending patents in its portfolio. Thus, it is no surprise that many entrepreneurs and venture capitalists have admitted to me that they view patent preparation and filing costs akin to marketing expenditures (see Figure 1).

However, valuation analysts should not reflexively assign a higher valuation to companies that own patents or are applying for patent protection. Companies can have a patent on a technology for which there is no possibility of commercializing or selling. Patents pending are particularly specious. Pendency (the length of time it takes the U.S. Patent and Trademark Office ("USPTO") to make a decision on a patent application) is now an average of 32 months. In some industries—such as semiconductors and electronics—pendency is more in the order of 4 to

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5 years. Thus, the market targeted by a patent could become obsolete before the USPTO makes a decision. In fact, only between 2% and 5% of patents generate any royalties and another 45% to 50% don't even have any strategic value. Further, 2 out of every 3 patents lapse because of failure to pay fees, most often because their owners believe that the thousands of dollars in maintenance fees exceeds the value of the patents.

Figure 1 Patent Numbers Increasing



Source: IncreMental Advantage research

1. WHAT IS A PATENT?

It is first necessary to dispel a few of the common misperceptions revolving around the definition of a patent. A patent is certainly not a right to a monopoly. Inventors can design around a patent by producing another technology that yields the same effects. Having a patent that becomes incorporated into a commercially successful product doesn't always provide substantial profits to its owners. (The patent may generate nominal royalties because of its minimal value added to the end product or its early stage of development may require significant future investment on the part of the licensee.) A patent is simply a license to exclude anyone else from reproducing the same affect by applying a specified process during the time in which the patent remains in force. Similarly, patents can be viewed merely as instruments that grant their holders the right to sue alleged infringers.

2. WHAT MAKES A PATENT VULNERABLE?

One reason that valuation professionals should not over-rate a patent is that the patent could very well be deemed to be invalid. Roughly 50% of the patents that are litigated are held to be invalid. Simply granting of a patent by the USPTO does not ensure patent validity. There is no way that one could expect patent examiners to only issue patents that would invariably be ruled valid during litigation. On average, patentees spend less than \$10,000 on legal fees in connection with the drafting of their patents and patent examiners dedicate an average of 11 hours of review per patent application. Less than \$10,000 in legal services and 11 hours of an examiner's time can never withstand the \$7 million average cost of litigation (that is expended in patent cases where more than \$25 million is at risk) and thousands of hours of effort by locked-on lawyers dedicated to defeating a patent. In fact, the only way that a patent's validity can be proven is through litigation. Determining which patents will be ruled valid is very tenuous: validity often hinges on the interpretation of seemingly common words such as "when" and "either."

Another major reason that patents are vulnerable is that patentees often cannot afford to assert their rights. With litigation costs on the order of \$7 million, few solo inventors or small companies have the financial resources or managerial bandwidth to challenge infringers. If the suspected infringer is a large company, it can usually threaten the plaintiff with a countersuit as these parties may be violating one of the defendant's patents.

It is this vulnerability that is a significant factor behind license brokerage rates (the rates realized when selling patents) ranging in a seemingly insulting band of between 1 and 10 percent of the anticipated cumulative licensing fees. Buyers can acquire a patent for as little as 1 percent of the royalties that such patent is expected to produce because there are risks of the patent being ruled invalid immediately after the acquisition transpires or there could be an injunction imposed on a product that incorporates the patent that would cause associated revenues to dry up.

3. THE IMPACT OF UNCERTAINTY ON PATENT VALUATION

There is tremendous uncertainty associated with assessing the value of patents. However, it is this uncertainty that can be used to make an argument about the value of a patent. The valuation analyst could review certain characteristics pertaining to a patent and argue that such set of factors is a positive or a negative factor in the patent's expected value.

3.1 Years of Patent Life Remaining

Most investors would not want a patent that has limited years of patent protection (e.g., one that is more than 16 years old). However, a patent that was too recently issued (e.g., within the past 3 years) is unlikely to have been litigated. The average age of patents when they are litigated is 3 years. It is better to acquire a patent after it has been proven valid during litigation or has passed through the period when challenge to its validity is most likely. As a sweeping generality, those patents that are most valuable are between 10 and 13 years old.

3.2 Number of Inventors Listed on a Patent

A higher number of inventors listed on a patent indicates that the patent is of higher quality than a patent that has a lower number of patent inventors listed. The reason is that more intelligent scientists or engineers believed in—and dedicated their time to championing—the technology behind the patent. However, having numerous inventors listed on a patent can be a source of vulnerability. If these inventors are deposed or cross-examined when their patent's validity is challenged, it becomes more likely that one of the inventors will mention the existence of prior art. Also, failing to list an inventor on a patent risks giving rise to litigation.

4. WHAT MAKES A PATENT VALUABLE?

While the complexity of—and uncertainty surrounding—patents makes it impossible to derive definitive valuations, there are a host of factors that are determinative of patent value. While a few of these factors are provided below, it is critically important to realize that businesses that attempt to commercialize their patents, don't receive the value (deal) that their technology (patent) deserves, they receive the value (deal) that they negotiate.

- **Anticipated licensing revenue.** A standard procedure in patent valuation is determining the net present value of royalties that will be received as a result of licensing the patent. One benefit of developing a highly delineated model of projected royalties is that very specific factors can be taken into account.
- **Ability to trigger sales of end products.** Patents are most valuable when they cause consumers to buy more of the product or newer versions of the product. For instance, some 10 years ago Intel and

Microsoft were able to spark sales of personal computers when they introduced new semiconductors and software. Consumers willingly retired perfectly good PCs as they raced to embrace PCs with the greatest processing power and snazziest software. Similarly, patents that increase the utility for existing or new users are generally very valuable. Examples of this can be found in the patents behind the features on cell phones. Finally, patents are valued dearly when the patented feature is a primary factor in the demand for the product. This is to say that the patent is the product. Examples of this contention include the primary patents underpinning many pharmaceuticals, Velcro and Post-It notes.

- **Ability to generate add-on sales.** A licensee may derive important ancillary benefits associated with selling products with imbedded cutting-edge technologies. The benefits may be in the form of greater traffic generation to its website, catalogs, or stores. A more direct example of generating add-on sales would be a patent that improves on the functionality of ice skates could also contribute to higher sales of protective gear. In such instances, the licensor should seek higher licensing fees from the licensee since the licensee will enjoy spill-over benefits associated with selling the cutting-edge technologies.
- **Ability to generate sales in new markets.** Licensors typically seek lower royalty rates from licensees who will sell the related products in a new market compared to the royalty rates they seek from competitors who will challenge the licensors in their existing markets. While the royalties per unit from the former licensee will be lower, there are two factors that are accretive to patent value in this scenario. First, the total royalties generated by a licensee pioneering a new market are likely to be substantial. Secondly, licensees penetrating new markets do not pose the profit denigration issues for licensors that competing licensees represent.
- **Stage of development.** Typically, the earlier in the commercialization stage a technology is, the lower the licensing value. This is because there are significant risks in the technology never being brought to the market and if the technology eventually becomes market ready this will only be achieved at great expense. In the scenarios in which the licensee would have to make much of this investment, the licensing fees would be less lucrative for the patentee.
- **Quality of law firm.** Services such as PatentCafe rate and rank law firms on their history of writing patents that successfully sustain invalidity challenge. Patents drafted by law firms that score highly on such rosters are generally of higher quality than patents that score poorly on such surveys.
- **Quality of patent examiner.** Patents that are granted by patent examiners with longer tenures and more impressive records of granting patents that successfully sustain invalidity challenges are statistically more valuable than patents without such lineage.
- **Size of portfolio being sold.** Our research indicates that each patent family will receive the highest price when between 25 and 76 patent families are included in a patent portfolio. Portfolios with more than 76 patent families are discounted because the buyers believe that the sellers are purging a lot of their mediocre patents in the portfolio sale. On the other side of the spectrum, selling too few patents yields a discounted value per patent because of the natural aversion that patent managers have to seek significant funds (e.g., \$3 million) from their boards of directors in order to buy a small number of patents (e.g., two). (See Figures 2 and 3.)
- **Strategic implications.** A given patent usually has dramatically different value for various potential licensees or acquirers. Savvy licensing professionals will conduct intensive due diligence to understand the dynamics of their potential licensing partners in order to seize the incremental advantages associated with deconstructing their business models. There are many factors that determine how much value a licensee or acquirer would place on a particular patent.
 - Ability to commercialize. The value of licensing a patent is reduced if the licensee would have to make significant capital investments to produce a product that incorporates the patented invention compared to a licensee who already has the requisite production infrastructure in place.

Figure 2 Selling a Patent Family

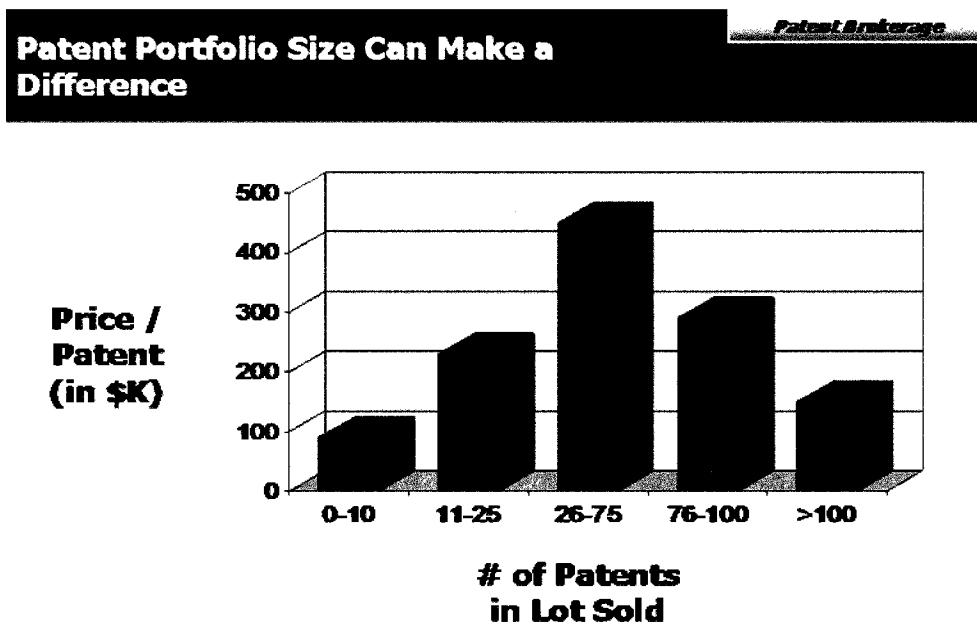
ThinkFire's database of 309 deals collected between 2002-2008 indicates a median price per patent family of \$112,000 and a mean price of \$383,000.

Summary Results

Factor	Overall
Number of Transactions	309
Total Gross Deal Proceeds	\$573 m
Maximum Cost / US Issued + WW	\$12 m
Mean Cost / US Issued + WW	\$383 k
Median Cost / US Issued + WW	\$112 k

Source: ThinkFire as delivered by Lew Zaretsky at the BCLT Seminar

Figure 3 Patent Portfolio Size Can Make a Difference



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- Stature of the inventor. In many closely-knit industries such as colorectal surgery, the players with buying power are well aware of the most renowned inventors. These decision makers are often inclined to buy products that incorporate the inventions introduced by renowned inventors. In these scenarios, patents granted to the most respected inventors inherently have more value than patents granted to unknown inventors. This incarnation of “the Matthew Effect” is analogous to the value that art dealers place on provenance (the history of an artwork’s ownership).
- Value of depriving competitors of key technologies. Sometimes (particularly large) companies license in or acquire technology solely to keep it out of the hands of competitors. Depriving a competitor of a crucial ingredient in producing a product could result in their delay in introducing competing products to lucrative markets and force them to make significant expenditures in terms of having to design around hard-to-reproduce technologies. Professionals engaged in negotiating patent licenses should shop their technologies to several competing potential licensees so as to raise the competitive spirit among the potential licensees.
- Acquirer’s or Licensee’s portfolio concentration. The breadth and depth of the destination portfolio is a function of the value that an acquirer will place on a patent under consideration for purchase. For instance, companies contemplating acquiring a patent for strategic (rather than commercial) reasons that have no patents in a particular discipline will typically value a patent with broad claims covering that discipline more favorably than a company that has a rich patent thicket in the given discipline. The explanation for the variance is that companies that already have a robust portfolio derive less incremental freedom to operate by acquiring such a patent than companies for which such acquisition could be used as a Trojan Horse for placing a stake in a new discipline.
- Capital raising implications. Licensees can win economic advantage by realizing that winning a license agreement can be enormously helpful to a patentee seeking to raise capital. In other words, a large company can often pay a lower royalty rate when it knows that its agreement will validate the licensor’s technology and such validation and license agreement will increase the ability of the licensor to attract funding. The leverage that the licensee may exert in such a scenario is a function of the number of licensee agreements that the licensor has executed. The licensee will have quite a bit of leverage if it stands to become the first licensee but perhaps no leverage if it is the 20th such licensee.
- Economic impact of licensing agreement. A licensor can negotiate a reduced royalty rate by demonstrating that its licensing agreement will enable the licensee to achieve reduced production costs for its entire product line. For instance, if a licensee is currently producing 150,000 sensors at a cost of \$1.25 each, it may be able to reduce its costs per sensor to \$1.00 if it enters into a license agreement to produce another 50,000 sensors.
- The profitability of the industry and the importance of acquiring such patents. The wealthier the purchasers or licensees are, the more they can afford to pay. Thus, companies involved in direct battles with competitors will pay more than companies with no particularly pronounced competitive concerns. The rivalry between Qualcomm and Broadcom is resulting in generous licensing and reassignment opportunities for patent-holders. However, when this rivalry diminishes, so too will their compensation to inventors and patentees. Finally, patents that are expected to be adopted by standard setting bodies are valued higher than business method patents.

Patent valuation requires knowledge of the relevant inventions, market conditions and patent law. It also entails the ability to bring a myriad of facts and considerations together to build an argument about the value that you believe your patent merits. In the final analysis, the value of patents is not only a function of the revenues and other economic and strategic benefits that it will yield. It is also a function of the timing of the transaction and the negotiating abilities of the principals involved.

8

BUSINESS COMBINATIONS AND THE RELATED FINANCIAL ACCOUNTING STANDARDS*

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The issuance of several Financial Accounting Standards Board (FASB) statements relating to business combinations has created some implementation challenges for corporate financial managers. And, the implementation of these FASB statements often requires the expertise of valuation specialists. This paper summarizes the FASB statements related to the business combination purchase price allocation process and the treatment of acquired intangible assets after the acquisition date. In addition, the paper summarizes a recent study conducted by Willamette Management Associates that analyzed approximately 200 purchase price allocations in the prepackaged software industry.

1. INTRODUCTION

In a merger and acquisition (“M&A”) transaction (i.e., a business combination), an allocation of the purchase price is typically performed for income tax and/or financial accounting purposes. Purchase price allocation is the process of assigning fair values (for financial accounting purposes) to the assets acquired and liabilities assumed of an acquired enterprise at the acquisition date.

In the case of an asset purchase transaction, the allocation of a purchase price for federal income tax purposes is governed by Internal Revenue Code (“IRC”) section 1060. Section 1060 and the corresponding regulations require the acquirer to allocate the purchase price in an asset purchase transaction among 5 different classes of assets. Section 197 provides guidance on how to account for purchased intangible assets as part of a taxable asset purchase transaction.

The Statement of Financial Accounting Standards (“SFAS”) No. 141, *Business Combinations* (effective June 2001) provides guidance related to the accounting for business combinations for financial statement reporting purposes. After December 15, 2008, SFAS No. 141 will be replaced by the revised SFAS No. 141 (“141R”).

This discussion provides an overview of the relevant Financial Accounting Standards Board (“FASB”) statements that affect the purchase price allocation for financial accounting purposes. In addition, the discussion presents a summary of a recent study conducted by Willamette Management Associates that examined the purchase price allocations of M&A transactions involving companies in standard industrial classification (“SIC”) code

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7372. This SIC code includes companies that are primarily engaged in the design, development and production of prepackaged computer software.

2. APPLICABLE STATEMENTS OF FINANCIAL ACCOUNTING STANDARDS

The discussion that follows summarizes the relevant financial accounting standards that provide guidance on the purchase price allocation process and the subsequent treatment of acquired goodwill and other identifiable intangible assets. The relevant SFAS issues are listed.

- SFAS No. 141, *Business Combinations*, effective June 30, 2001
- SFAS No. 142, *Goodwill and Other Intangible Assets*, effective December 15, 2001
- SFAS No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*, effective December 31, 2001
- SFAS No. 157, *Fair Value Measurements*, effective November 15, 2007
- SFAS No. 141(R), revised version of SFAS No. 141, effective December 15, 2008

These FASB statements have important implications for companies that are planning or currently undergoing M&A transactions.

2.1 SFAS No. 141 and SFAS No. 142

In June 2001, after 5 years of research and development, the FASB issued SFAS No. 141 and SFAS No. 142. Since the issuance of Accounting Principles Board (“APB”) Opinion No. 16 in 1970, the FASB has spent considerable time and resources trying to develop better ways to account for M&A transactions.

Overall, SFAS No. 141 and SFAS No. 142 improved previous accounting practices. The conceptually flawed pooling of interests method was eliminated, and corporate acquiror financial statements were made more comparable. At the same time, these two FASB statements made accounting for goodwill more complex, increasing the liability and risk of management and auditors.

SFAS No. 141 supersedes the APB Opinion No. 16, also titled *Business Combinations*. SFAS No. 142 supersedes APB Opinion No. 17, *Intangible Assets*.

The purposes of the issuance of SFAS No. 141 and No. 142 were primarily to:

- improve financial reporting and comparability,
- provide more complete financial information,
- better reflect the investment made in an acquired entity and
- align the international standards on business combinations to those in the U.S.

2.2 SFAS No. 141

Companies that make acquisitions that are defined as a business combination are required to prepare financial statements consistent with SFAS No. 141.

Before the introduction of SFAS No. 141, two accounting methods were used to account for mergers and acquisitions: the purchase method and the pooling of interests method. Basically, the purchase method required that the acquirer record the acquisition at the fair value of the net assets acquired. In the pooling method, the financial statements of the separate entities were added together at their historical book values.

The main accounting change resulting from the adoption of SFAS No. 141 was that business combinations were accounted for using the purchase method (i.e., the pooling method was eliminated). The application of the purchase method involved the following procedures:

1. Determine the purchase price paid by the acquiring company.
2. Determine the fair value of each of the identifiable assets and liabilities of the acquired company.
3. Record as goodwill any excess of the purchase price over the fair value of the identifiable net assets. Accordingly, the value of goodwill purchased in a business combination was calculated as:

Total acquisition purchase price	
Less:	Fair value of financial assets
Less:	Fair value of tangible assets
<u>Less:</u>	<u>Fair value of identified intangible assets</u>
Equals:	Fair value of purchased goodwill

The most significant change in the purchase price allocation procedure was the new criteria established in SFAS No. 141 to recognize intangible assets apart from goodwill. The criteria for separate recognition of intangible assets in a business combination were the contractual-legal criterion and the separability criterion.

An asset is separable if it is capable of being (1) separated or divided from the acquired entity and (2) sold, transferred, licensed, rented or exchanged individually or in combination with a related contract, asset or liability.

There were 5 categories of intangible assets defined in SFAS No. 141:

1. marketing-related intangible assets,
2. customer-related intangible assets,
3. artistic-related intangible assets,
4. contract-based intangible assets and
5. technology-based intangible assets.

Any acquired intangible asset that did not meet the revised criteria for recognition as a separate asset was required to be included in goodwill (assembled workforce was no longer considered separable from goodwill).

The most important reasons for reconsidering accounting for business combinations were as follows:

- the increased transition from tangible-asset-intensive companies to technology-based companies which placed greater relative importance on intangible assets and their contribution to profitability and value;
- the increase in M&A activity, which resulted in competitive inequity and significant differences in financial statements, depending on the method of accounting used (pooling method versus purchase method); and
- the need for greater uniformity in domestic accounting and international standards, in a time of increased global interaction and exchange of capital flows across international boundaries.

2.3 SFAS No. 142

This FASB statement addresses the financial reporting and accounting of goodwill and other intangible assets subsequent to their acquisition. Prior to SFAS No. 142, APB Opinion No. 17 required that acquired goodwill be amortized over a period not to exceed 40 years.

SFAS No. 142 distinguishes between goodwill and intangible assets that have indefinite useful lives and intangible assets that have finite useful lives.

The first type of intangible assets are not amortized, but they are to be tested at least annually for impairment pursuant to SFAS No. 142. Intangible assets that have finite useful lives continue to be amortized over their useful lives and should be periodically reviewed for impairment.

SFAS No. 142 requires that companies periodically test for goodwill impairment at the reporting unit level. A reporting unit level is an operating segment that operates on a stand-alone basis and does not necessarily equal the total entity level.

For intangible assets with indefinite lives, the impairment testing is performed at least annually. It is performed between annual tests if there is an indication that the asset may be impaired. Goodwill should be tested annually at any time during the company's fiscal year (the testing date must be consistent from year to year).

SFAS No. 142 provides guidance on how to evaluate purchased goodwill on an ongoing basis. Goodwill is tested for impairment in a two-step process.

- **Step 1:** Compare the fair value of the reporting unit equity to its book value. If the fair value of the reporting unit equity is lower than its book value, then goodwill potentially could be impaired, and step 2 of the impairment test should be performed.
- **Step 2:** Compare the implied fair value of the reporting unit goodwill with the carrying value of that goodwill. The implied fair value of the goodwill is determined by allocating the fair value of the reporting unit to its assets and liabilities as if the reporting unit had been acquired in a business combination.

The excess of the fair value of a reporting unit over the amounts assigned to the assets and liabilities is the implied fair value of the goodwill.

2.4 SFAS No. 144

While SFAS No. 142 governs the impairment of goodwill and other indefinite life intangible assets, SFAS No. 144 provides guidance on the impairment of finite life tangible and intangible assets. In August 2001, the FASB issued SFAS No. 144. SFAS No. 144 replaced SFAS No. 121 and a portion of APB Opinion No. 30 that relates to the disposal of assets. SFAS No. 144 also amended ARB No. 51, to eliminate the exception to consolidation for a subsidiary for which control is likely to be temporary.

A long-lived asset should be tested for recoverability whenever circumstances indicate that its carrying amount may not be recoverable and exceeds its fair value. Examples of such circumstances include: significant adverse changes in the market price, usage, physical condition, legal and business climate that could affect the value of a long-lived asset.

Pursuant to SFAS No. 144, the carrying value of a long-lived asset is not recoverable if it exceeds the sum of its undiscounted cash flow. The impairment loss is measured as the amount by which the carrying amount of a long-lived asset exceeds its fair value.

2.5 SFAS No. 157, Fair Value Measurements

The appropriate standard of value for SFAS Nos. 141, 142 and 144 is fair value. This standard of value is generally recognized to represent a marketable, controlling ownership interest level of value.

SFAS No. 142 and No. 144 define fair value as "the amount at which the asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced sale or liquidation."

SFAS No. 157 effectively amends all prior statements and all prior APB pronouncements that related to fair value. SFAS No. 157 was issued in September 2006, and it became effective (in part) on November 15, 2007.

SFAS No. 157 defines fair value as “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.”

This statement highlights that fair value is a market-based measurement—and not an entity-specific measurement. Pursuant to SFAS No. 157, a hypothetical transaction is a sale transaction in the principal (or most advantageous) market for the subject asset or liability.

In other words, the transaction is considered from the perspective of a market participant that already holds the asset or owes the liability. Accordingly, the generally accepted accounting principle (“GAAP”) fair value definition focuses on the price that would be received to sell the asset or paid to transfer the liability (i.e., the exit price).

In addition to providing a comprehensive definition of fair value, SFAS No. 157 both developed a procedural framework for measuring fair value for GAAP purposes and expanded the required financial statement disclosures regarding fair value measurements. SFAS No. 157 did not expand the types of transactions for which fair value measurement is required.

2.6 SFAS No. 141R (revised 2007)

On December 7, 2007, the FASB issued a revised version of SFAS No. 141. SFAS No. 141R continues the FASB movement toward fair value accounting and international convergence of accounting standards.

Acquiring companies should consider SFAS No. 141R when negotiating or entering M&A transactions that will close after December 15, 2008. SFAS No. 141R significantly affects a domestic acquirer’s financial statement presentation, both before and after an M&A transaction.

In SFAS No. 141R, the purchase method was renamed the “acquisition method,” in an effort to show more clearly what types of transactions result in a business combination. Under SFAS No. 141R, the consideration for an acquisition (including the acquirer’s equity securities and contingent consideration) will be measured and recognized at fair value at the acquisition date.

Some of the important changes under SFAS No. 141R include those listed below.

- Transaction costs are expensed in the period incurred under SFAS No. 141R, instead of being included in the purchase price and capitalized as under SFAS No. 141.
- Contingent consideration is recorded at fair value at the acquisition date and remeasured at the end of each reporting period until resolved under SFAS No. 141R. Under SFAS No. 141, contingent consideration was not recognized and was recorded as goodwill, if and when paid.
- In-process research and development (“R&D”) is recorded at fair value, has an indefinite life and is subject to future impairment testing until completed or abandoned under SFAS No. 141R. In-process R&D was expensed at the acquisition date under SFAS No. 141.
- If an acquiring company obtains control but less than 100 percent of the target company, then any residual goodwill is allocated between the controlling interests and the non-controlling interests. Under previous GAAP, the residual goodwill was only allocated to the controlling interest.

The underlying principle of SFAS No. 141R is to recognize all assets acquired and liabilities assumed at fair value at the acquisition date, with some exceptions. These exceptions should continue to be measured in accordance with other GAAP provisions and include deferred income taxes, employee benefits and share-based payments.

3. WILLAMETTE MANAGEMENT ASSOCIATES STUDY OF ACQUISITION PURCHASE PRICE ALLOCATIONS

Willamette Management Associates analyzed 199 purchase price allocations of transactions reported in the U.S. Securities and Exchange Commission (SEC) Form 10-K of companies in SIC code 7372. The purchase transactions studied were completed during the July 2003 through April 2008 time period. Figure 3 (at the end of this article) presents the underlying detail of the 199 acquisition purchase price allocations. We conducted our study for the purpose of determining what major intangible assets are typically included in the purchase price.

Based on the Willamette Management Associates study, the purchase price of the 199 transactions ranged from a high of \$8.6 billion to a low of \$240,000, with a median of \$20.5 million.

Goodwill—the excess of the cost of the acquired entity over the net amounts assigned to the assets acquired and liabilities assumed—was reported in 93 percent of the transactions studied.

Our study showed that the most frequently reported identifiable intangible assets in the transactions were developed technology and customer relationships.

Figure 1 presents a summary of the acquired intangible assets reported in the transactions studied—expressed as a percentage of the total purchase price.

Figure 1 Summary of Acquired Intangible Assets

**Willamette Management Associates Study of 199 Acquisitions
Completed in the Prepackaged Software Industry
Percent of Total Purchase Price**

	<u>Goodwill</u>	<u>Developed Technology</u>	<u>In-Process R&D</u>	<u>Customer Relationships</u>	<u>Trade name & Trademark</u>	<u>Noncomplete Agreements</u>	<u>Other Intangibles</u>
High	102.5%	100.0%	40.2%	62.2%	46.1%	35.8%	100.0%
Low	5.2%	0.3%	0.3%	0.4%	0.1%	0.0%	0.0%
Mean	61.8%	18.7%	5.8%	14.4%	3.7%	4.2%	23.0%
Median	64.1%	14.5%	3.3%	10.5%	1.8%	1.7%	13.4%

Note: The high, low, mean, and median calculations for each intangible asset category are calculated based only on data for transactions that reported a portion of the purchase price being allocated to that intangible asset.

Figure 2 presents a summary of the median intangible assets reported in the transactions studied—expressed as a percentage of the total purchase price for 2005 through 2008.

For transactions that provided information regarding the remaining useful life of the acquired intangible assets, the lives assigned to the identifiable intangible assets ranged from 1 year to 22 years.

The following ranges of useful lives were reported in the transactions analyzed:

- developed technology: 1 year – 10 years
- customer relationships: 1 year – 22 years
- trade name and trademarks: 1 year – 18 years
- noncomplete agreements: 1 year – 8 years

Figure 2 Summary of the Median Intangible Asset

Willamette Management Associates Study of 199 Acquisitions Purchase Price Allocation Percentage Percent of Total Acquisition Purchase Price

	<u>Goodwill</u>	<u>Developed Technology</u>	<u>In-Process R&D</u>	<u>Customer Relationships</u>	<u>Trade name & Trademark</u>	<u>Noncompete Agreements</u>	<u>Other Intangibles</u>
2008 Median	65.0%	12.5%	7.1%	8.0%	0.8%	1.5%	4.3%
2007 Median	63.3%	13.6%	2.2%	11.0%	1.7%	1.6%	11.6%
2006 Median	66.9%	15.4%	3.6%	12.1%	2.8%	2.3%	16.2%
2005 Median	58.5%	15.1%	2.7%	8.5%	1.3%	1.3%	24.9%

The accounting for a recognized intangible asset is based on its useful life to the acquirer entity. The useful life of an intangible asset is that period of time that the asset is expected to directly or indirectly generate cash flows for the entity.

An intangible asset with a finite useful life is amortized. An intangible asset with an indefinite useful life is not amortized. SFAS No. 142 provides guidance on the accounting for goodwill and other intangible assets after the purchase price allocation.

The remaining useful life of an intangible asset usually depends on technological or functional obsolescence. In addition, the level of expenditures necessary to maintain the value of an intangible asset may provide an indication of its remaining useful life.

For example, marketing expenditures related to a trademark is an indication of a limited remaining useful life for that particular intangible asset.

For some identifiable intangible assets, the remaining useful life could be determined to be indefinite if no factors limit the useful life of those assets. Of the 199 transactions analyzed in the study, 74 companies assigned an estimated useful life to the trade name. In contrast, only one company reported an indefinite life for the trade name asset.

4. SUMMARY AND CONCLUSION

Over the years, the FASB has issued and revised a series of statements governing the accounting for intangible assets acquired in a business combination. These FASB statements include SFAS Nos. 141 and 141R, which relate to the allocation of a purchase price in an acquisition, and SFAS Nos. 142 and 144, which address the subsequent treatment of the acquired tangible and intangible assets.

While the intent of these statements is to provide more clarity for the financial community, improve U.S. financial statement comparability and align U.S. standards with international accounting, these standards have also increased reporting requirements that may create challenges for companies that are planning or currently structuring M&A transactions.

Figure 3 Underlying Detail of 199 Acquisition Purchase Price Allocations

Acquiring Company	Target Company	Date	[a] Purchase Price \$000	Developed Technology		In-Process R&D \$000	Customer Relationships		Trade name/Trademark		Noncomplete Agreements		Other Identifiable Intangible Assets	
				\$000	Estimated Useful Life (years)		\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)
2 Oracle Corp.	BEA Syst.	Apr-08	8,573,000	1,635,000	6.0	NA	1,045,000	8.0	62,000	5.0	NA	NA	NA	NA
3 Microsoft	FAST	Apr-08	1,284,000	134,000	5.0	NA	27,000	7.0	NA	NA	NA	NA	70,000	6.0
4 Magna Design Autom.	Sabio Labs	Feb-08	15,941	11,041	2,000	1,600	1,200	5.0-6.0	NA	NA	NA	NA	NA	3.0
5 Skilloff Public	NETig	Jan-08	287,510	225,040	9,950	1.5	23,500	4.0	2,700	2.0	6,900	2.5	NA	NA
6 Synantec Corp.	Transparent Logic Tech.	Jan-08	12,000	9,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7 Electronic Arts, Inc.	YG Holding Group	Jan-08	682,000	414,000	51,000	4.0	138,000	NA	41,000	5.0	NA	NA	22,000	3.0
8 Autodesk, Inc.	Robotat S.A.	Jan-08	44,100	25,900	8,600	5.0	18,000	6.0	NA	2.5-4.0	NA	NA	NA	NA
9 Autodesk, Inc.	Huma Strategies	Jan-08	83,700	50,300	12,800	2,700	6,600	5.0-8.5	500	NA	NA	NA	NA	NA
10 Double-Take Software	TimeSpring Software	Dec-07	9,777	6,528	1,936	NA	NA	NA	NA	NA	NA	NA	NA	NA
11 Salury.com	Schoonover Assoc.	Dec-07	4,388	2,610	NA	NA	250	5.0	586	5.0	600	3.0	300	2.0
12 Omniture, Inc.	Offermatica Corp.	Dec-07	60,401	41,722	12,900	4.0	5,200	6.0	NA	NA	NA	NA	NA	NA
13 Imagware Syst.	Sol Logic	Dec-07	3,389	1,036	NA	NA	NA	NA	NA	NA	NA	NA	2,311	NA
14 Quest Software	Unknown	Dec-07	67,600	11,532	4.3	220	3,978	4.6	120	NA	785	2.6	NA	NA
15 Blackboard, Inc.	Xyrios Software	Nov-07	36,200	22,000	2,900	NA	7,600	NA	NA	NA	NA	NA	NA	NA
16 Synantec Corp.	Vouta, Inc.	Nov-07	321,000	36,000	4.0	NA	NA	NA	NA	NA	NA	NA	31,000	3.0-8.0
17 McAfee, Inc.	Safesoft Holding	Nov-07	347,253	102,340	6.913	5.0	NA	NA	1,353	10.0	NA	NA	41,800	4.5
18 Navteq Corp.	Mapolute	Nov-07	42,919	28,081	10,100	6.0	3,700	4.0	870	4.0	2,800	4.0	NA	NA
19 Interwoven	Optimost	Nov-07	50,690	32,400	10,100	6.0	8,600	8.0	15,900	7.0	3,160	2.0	NA	NA
20 Citrix Syst., Inc.	XeSource	Oct-07	386,673	214,299	95,000	7.0	32,380	8.0	NA	NA	NA	NA	837	5.0
21 Opnet Tech	Network Physics	Oct-07	10,005	NA	7,827	NA	724	10.0	1,500	1.0	NA	NA	NA	NA
22 MPC Corp.	Gateway	Oct-07	39,824	23,058	NA	NA	20,000	NA	NA	NA	NA	NA	NA	NA
23 Parametric Technology	NetRegulus	Oct-07	2,500	NA	2,500	3.0	NA	NA	NA	NA	NA	NA	NA	NA
24 Synyx Tech.	MDL Group	Oct-07	121,794	95,150	10,500	7.0	2,500	3.0-10.0	1,400	3.0	NA	NA	13,500	3.0-8.0
25 SoftBrands	MAI	Oct-07	28,392	13,174	2,600	3.0-7.0	2,700	3.0-10.0	1,000	NA	2,600	3.0-10.0	1,000	3.0-10.0
26 Websites Pros	Web.com	Sep-07	159,958	73,454	26,200	NA	27,100	3-7	8,500	NA	1,300	4.0	NA	NA
27 Scansoft, Inc.	Commissure	Sep-07	25,612	19,140	2,010	4.8	3,000	7.0	50	2.0	590	4.0	NA	NA
28 Activision Blizzard	Buare Creations	Sep-07	71,888	55,833	5,660	1.0-5.0	2,800	7.0-8.0	1,100	8.0	NA	NA	NA	NA
29 Magna Design Autom.	Rio Design Automation	Sep-07	5,629	3,089	819	5.0	656	NA	NA	NA	NA	NA	NA	NA
30 Tyler Tech.	EDP Enterprises	Sep-07	9,000	5,600	NA	NA	NA	NA	NA	NA	NA	NA	3,300	6.0
31 Scansoft, Inc.	Scansoft	Aug-07	282,589	196,054	11,000	6.0	60,700	7.0	NA	NA	NA	NA	NA	NA
32 Scansoft, Inc.	VoiceSignal	Aug-07	268,320	176,043	16,400	9.6	42,100	5.4	1,600	10.0	NA	NA	NA	NA
33 Sybase, Inc.	Cubiplan	Aug-07	6,400	3,500	2,600	5.0	NA	NA	NA	NA	NA	NA	NA	NA
34 Microsoft	aQuantive	Aug-07	5,927,000	327,000	NA	NA	476,000	6.0	NA	NA	NA	NA	112,000	5.0
35 Salury.com	JTC Competency	Aug-07	2,995	911	NA	NA	1,360	5.0	NA	NA	10	3.0	400	3.0-5.0
36 Blackboard, Inc.	eTapestry.com	Aug-07	25,468	18,428	2,790	7.0	NA	10.0	560	7.0	1,000	5.0	NA	NA
37 Novell, Inc.	Serforce	Aug-07	20,220	17,728	2,690	3.0	NA	3.0	NA	NA	NA	NA	NA	NA
38 Quest Software	Script Logic Corp.	Aug-07	103,039	67,030	16,000	5.0	NA	5.0	6,500	NA	NA	NA	NA	NA
39 Unica Corp.	MarketingCentral	Jul-07	12,574	5,673	2,011	1.0-8.0	1,988	3.0-14.0	44	1.0	NA	NA	1,360	14.0
40 Capgemis, Inc.	Castelle	Jul-07	16,500	3,945	8,159	6.9	219	NA	NA	NA	NA	NA	NA	NA
41 Autodesk, Inc.	NavisWorks	Jul-07	30,200	9,300	6,500	6.0	5,500	6.0	600	6.0	NA	NA	NA	NA
42 Parametric Tech.	NC Graphics	Jul-07	7,200	500	4,400	1.0-10.0	1,300	1.0-10.0	NA	NA	NA	NA	100	1.0-10.0
43 Talco Corp.	Veritext, Inc.	Jun-07	1,919	1,727	NA	NA	192	4.0	NA	NA	NA	NA	NA	NA
44 Kamea Corp.	StraightSource	Jun-07	12,213	NA	NA	NA	NA	NA	NA	NA	NA	NA	7,963	2.5-9.0
45 Symplicity, Inc.	HARDI	Jun-07	20,414	7,826	NA	NA	NA	NA	NA	NA	NA	NA	11,670	2.0-5.0
46 TIBCO Software	Spofford Holdings, Inc.	Jun-07	261,034	121,447	35,600	4.0	18,300	7.0	7,000	4.0-5.0	800	2.0	10,600	6.8
47 Epicor Software Corp.	Professional Advantage Pty	May-07	16,651	10,626	1,199	NA	5,728	NA	NA	NA	NA	NA	NA	NA
48 Salury.com	ICR	May-07	10,277	5,762	110	5.0	NA	5.0	290	NA	NA	NA	120	3.0
49 Kana Software	eVergence	May-07	6,127	3,877	NA	NA	2,500	5.0	NA	NA	NA	NA	NA	NA
50 Goldleaf Financial Sol.	Data Trade	May-07	5,825	3,794	720	5.0	950	10.0	NA	NA	NA	NA	NA	NA
51 Scansoft, Inc.	BeVocal	May-07	182,675	121,240	6,400	4.6	34,700	7.0	NA	NA	100	2.0	NA	NA
52 Synantec Corp.	Altiris	Apr-07	1,638,238	633,233	89,920	5.0	NA	NA	NA	NA	NA	NA	216,446	8.0
53 Smith Micro Software	Insiguit Solutions	Apr-07	17,388	7,398	NA	NA	NA	NA	NA	NA	NA	NA	9,880	NA
54 ACI Worldwide, Inc.	Syntasoft Sdn Bhd	Apr-07	2,942	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,283	6.9

Figure 3 Underlying Detail of 199 Acquisition Purchase Price Allocations —
continued

Acquiring Company	Target Company	Date	[a] Purchase Price \$000	Goodwill		Developed Technology		In-Process R&D	Customer Relationships		Trade name/Trademark		Noncomplete Agreements		Other Identifiable Intangible Assets	
				\$000	Useful Life (years)	\$000	Estimated Useful Life (years)		\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)
55 Vestibles Press	Sumitwebster, Inc.	Mar-07	2,080	1,997	NA	NA	1.0-2.0	NA	93	1.0-2.0	258	NA	12	1.0-2.0	NA	NA
56 Scansoft, Inc.	Focus	Mar-07	53,537	26,683	NA	7.3	9.5	NA	19,800	NA	NA	NA	1,000	6.2	NA	NA
57 GoldenF Financial Sol.	Community Banking Syst.	Mar-07	4,766	2,825	1,040	5.0	1,040	NA	504	10.0	NA	NA	170	3.0	NA	NA
58 Navet Corp.	Traffic.com	Mar-07	234,939	102,194	7,976	3.0	10.0	NA	22,568	10.0	11,011	8.0	NA	NA	NA	NA
59 Talo Corp.	JobFlash, Inc.	Mar-07	3,318	2,030	810	5.0	4.0	NA	290	4.0	20	2.0	NA	NA	NA	NA
60 Electronic Arts, Inc.	Digital Illusions	Mar-07	93,000	55,000	3,000	2.0	5,000	NA	NA	NA	2,000	NA	NA	NA	NA	NA
61 Omnitune, Inc.	Tonish Clarity	Mar-07	63,878	42,424	17,600	7.0	NA	NA	3,700	8.0	166	5.0	NA	NA	NA	NA
62 Synapse Corp.	4FrontSecurity	Feb-07	7,000	6,000	NA	4.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
63 SkillSoft Publics	Targeted Learning Corp.	Feb-07	5,200	3,200	510	4.0	NA	NA	330	3.0	20	2.0	NA	NA	NA	NA
64 Smith Micro Software	Excel Syst.	Feb-07	8,063	5,766	NA	6.0	NA	NA	NA	NA	NA	NA	NA	NA	2,399	NA
65 ACI Worldwide, Inc.	Visual Web Solutions	Feb-07	9,266	6,865	1,339	5.0	NA	NA	NA	NA	10,000	5.0	700	3.0	NA	8.0
66 Intuit, Inc.	Digital Insight Corp.	Feb-07	1,344,427	1,002,631	134,800	3.0	NA	NA	146,000	5.0	148	2.0	NA	NA	NA	NA
67 Omnitune, Inc.	Intellid	Jan-07	15,483	10,814	600	4.0	8.0-10.0	NA	4,400	7.0	800	5.0	800	5.0	NA	NA
68 Blackbird, Inc.	Target Companies	Jan-07	58,733	36,453	7,096	5.3	NA	NA	13,627	12.7	60	1.0	NA	NA	NA	NA
69 Citrix Syst., Inc.	Ardence	Jan-07	62,939	43,187	17,300	5.3	NA	NA	4,800	6.4	NA	NA	NA	NA	NA	NA
70 Cadence Design Syst.	Invarium/Clear Shape Tech.	Jan-07	75,500	45,700	NA	NA	4.0-10.0	NA	1,800	NA	NA	NA	NA	NA	100	4.0-10.0
71 Parametric Tech.	ITE/O Software	Jan-07	17,200	11,700	6,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	14,300	5.0-7.0
72 VMware	MVC	Jan-07	82,500	75,800	1,100	4.0	NA	NA	1,300	5.0	NA	NA	300	3.0	NA	NA
73 Scansoft, Inc.	Intellid	Dec-06	12,927	10,315	1,100	5.5	NA	NA	1,400	7.0	700	3.5	2,000	5.0	NA	NA
74 Informatica Corp.	The Map Network	Dec-06	53,788	43,202	6,700	5.0	NA	NA	2,412	10.0	NA	NA	NA	NA	3,701	7.0-10.0
75 Navet Corp.	Empire Interactive	Dec-06	37,270	27,726	1,011	5.0	NA	NA	NA	NA	NA	NA	NA	NA	22,816	NA
76 Silverstar Holdings	Vodavi Tech, Inc.	Dec-06	27,550	NA	200	4.0	NA	NA	11,100	9.0	700	4.0	NA	NA	NA	NA
77 Arisoft, Inc.	Cinatel Security Software	Dec-06	31,600	14,400	15,900	4.0	NA	NA	850	10.0	110	6.0	51	3.0	NA	NA
78 McAfee, Inc.	BlueChip	Dec-06	61,195	41,660	774	5.0	NA	NA	NA	NA	NA	NA	90	2.6	NA	NA
79 Ormco	Unknown	Dec-06	17,600	13,700	3,120	3.0	NA	NA	235	NA	NA	NA	NA	NA	1,608	NA
80 Quest Software	Salesforce Japan	Dec-06	2,777	1,851	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6,000	8.0
81 Salesforce.com	Company-I	Dec-06	37,000	33,000	2,600	4.0-5.0	NA	NA	1,300	7.0	500	7.0	200	3.0	NA	NA
82 Synapse Corp.	Knight Tech.	Nov-06	7,900	6,161	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,950	NA
83 Magma Design Autom.	Quip	Nov-06	7,718	6,161	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
84 Oakley Corp.	RedMoj	Nov-06	9,924	7,554	2,370	3.0	NA	NA	416	5.0	NA	NA	NA	NA	24	NA
85 Novell, Inc.	BrassRing	Nov-06	117,797	106,163	368	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
86 Xeneta Corp.	Tradefirm Solutions	Nov-06	9,837	5,200	3,050	NA	NA	NA	940	NA	500	NA	500	NA	258	NA
87 DemandTec, Inc.	CreditDiscovery	Nov-06	268	NA	NA	NA	NA	NA	30,700	7.0	NA	NA	NA	NA	NA	NA
88 Intuity	Mobile 365, Inc.	Nov-06	418,500	337,900	25,200	7.0	NA	NA	1,710	5.0	NA	NA	NA	NA	550	3.0
89 Sybase, Inc.	MindSolve Syst.	Nov-06	11,263	6,155	2,190	3.0	NA	NA	NA	NA	NA	NA	NA	NA	1,563	3.0-10.0
90 Simulast Syst.	FO Syst.	Nov-06	3,600	1,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
91 QAD, Inc.	WikiAnswers	Nov-06	2,000	437	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
92 Answers Corp.	At Metrix	Oct-06	6,545	4,835	1,900	10.0	NA	NA	800	10.0	1,100	10.0	NA	NA	NA	NA
93 Sys	Formscope Group	Oct-06	22,200	10,200	4,900	3.0	NA	NA	13,800	5.0	NA	NA	NA	NA	NA	NA
94 Bottomline Tech.	eStar, Inc.	Oct-06	49,816	32,071	5,300	5.0	NA	NA	7,300	4.0	1,400	5.0	NA	NA	NA	NA
95 Art Tech. Group	Onigma	Oct-06	25,592	NA	23,139	3.9	NA	NA	NA	NA	NA	NA	NA	NA	1,889	3.9
96 McAfee, Inc.	iShoppingCart.com	Sep-06	12,933	9,437	999	3.0-8.0	NA	NA	2,332	3.0-8.0	694	NA	167	3.0-8.0	NA	NA
97 Vestibles Press	Renex, Inc.	Sep-06	10,963	8,406	110	3.0-4.0	NA	NA	930	3.0-4.0	640	NA	220	3.0-4.0	NA	NA
98 Vestibles Press	Avail	Sep-06	9,802	4,596	5,000	10.0	NA	NA	180	5.0	26	18.0	NA	NA	NA	NA
99 GlobalScale, Inc.	Precision Software	Sep-06	15,300	5,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,900	NA
100 QAD, Inc.	P&H Solutions, Inc.	Sep-06	155,576	99,180	24,550	5.7	NA	NA	NA	NA	NA	NA	NA	NA	25,134	7.6
101 ACI Worldwide, Inc.	Flashline, Inc.	Aug-06	29,268	17,000	5,500	3.0	NA	NA	900	4.0	NA	NA	700	1.0	NA	NA
102 BEA Syst.	Online Benefits, Inc.	Aug-06	43,240	25,469	500	2.0	NA	NA	8,800	NA	3,946	7.0	3,913	5.0	NA	NA
103 Adm. Inc.	PRWeb	Aug-06	35,277	25,840	NA	NA	NA	NA	3,041	5.0	NA	NA	NA	NA	8,900	3.0-5.0
104 Vogue	Stop-Up Commerce, Inc.	Aug-06	60,000	50,400	NA	4.0	NA	NA	1,000	5.0	6,000	5.0	NA	NA	NA	NA
105 Electronic Arts, Inc.	Mythic Entertainment	Jul-06	76,000	62,000	15,000	4.0	NA	NA	1,141	NA	343	1.3	NA	NA	144	NA
106 Synops Tech.	Autodesk	Jul-06	7,103	3,730	2,601	NA	NA	NA	NA	NA	1,000	NA	NA	NA	15,700	0.6-1.6
107 Synops Tech.	RedOcean, Inc.	Jan-06	113,978	87,004	1,970	5.0	NA	NA	80	6.0	NA	NA	1,160	NA	NA	NA
108 Activision Blizzard	Etra Tech	Jan-06	8,747	5,746	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	890	3.2
109 ArcSight, Inc.	Previews	Jan-06	4,844	260	3,540	3.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Figure 3 Underlying Detail of 199 Acquisition Purchase Price Allocations —
continued

Acquiring Company	Target Company	Date	[a] Purchase Price \$000	Developed Technology		In-Process R&D \$000	Customer Relationships		Trade name/Trademark		Noncompetitive Agreements		Other Identifiable Intangible Assets	
				\$000	Estimated Useful Life (years)		\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)
111 ACI Worldwide, Inc.	Electronic Payment Syst.	May-06	30,471	22,349	5.0/2	NA	NA	NA	NA	NA	NA	NA	5,681	7.4
112 Double-Take Software	Sundell System Software	May-06	6,261	NA	NA	NA	2,267	NA	NA	NA	NA	NA	1,992	6.0
113 RightView Tech.	Sundell System Software	May-06	9,197	4,358	7.40	NA	3,250	7.40	140	NA	NA	NA	NA	NA
114 Datawatch Corp.	ClearStory Syst.	May-06	4,790	3,605	180	NA	1,660	10.0	NA	4.0	540	NA	NA	NA
115 Anyas, Inc.	Pluent, Inc.	May-06	672,136	404,280	88,000	28,100	65,900	9.5	60,000	Indefinite	NA	NA	12,700	3.0
116 BMC Software, Inc.	Identity Software	May-06	150,600	96,300	26,200	NA	NA	NA	NA	NA	NA	NA	420	3.0
117 McAfee, Inc.	SiteAdvisor	May-06	61,662	50,697	15,450	3.0	NA	NA	NA	NA	NA	NA	800	5.0
118 Parametric Tech.	Mathsoft	Apr-06	64,400	42,000	10,300	5.0	2,100	9.7	600	5.0	NA	NA	128,500	NA
119 Lawson Software	Inertia International	Apr-06	490,889	419,300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
120 Novell, Inc.	e-Security	Apr-06	72,833	60,908	6,970	3.0	2,110	3.0	390	3.0	NA	NA	NA	NA
121 Salesforce.com	Sendia Corp.	Apr-06	15,502	6,705	5,710	NA	690	NA	NA	NA	NA	NA	NA	NA
122 Salary.com	eComp Data Services	Apr-06	585	266	NA	NA	NA	NA	NA	NA	75	NA	NA	NA
123 Smith Micro Software	Photogs, Inc.	Apr-06	11,632	9,139	NA	NA	NA	NA	NA	NA	NA	NA	1,265	NA
124 Sys	RBIS	Apr-06	9,970	5,487	NA	NA	1,800	8.0	400	3.0	40	2.0	230	6.5
125 Borland Software Corp.	Segue Software, Inc.	Apr-06	117,303	65,528	23,400	3.0-6.0	4,800	7.0	1,000	4.0	300	1.0	11,300	7.0
126 Scansoft, Inc.	Dectaphone	Mar-06	373,685	239,509	21,500	6.6	NA	105,800	28,460	NA	NA	NA	NA	NA
127 Unica Corp.	Sane Solutions	Mar-06	26,396	16,189	2,714	1.0-8.0	4,037	3.0-14.0	14,200	NA	NA	NA	NA	NA
128 Serena Software	Unknown	Mar-06	1,077,022	795,013	165,800	6.0	4,100	276,200	900	6.0	NA	NA	NA	NA
129 Autodesk, Inc.	Constructware	Mar-06	51,200	35,900	5,100	NA	NA	14,100	7.0	NA	NA	NA	9,400	NA
130 Cadence Design Syst.	Lokuxon	Mar-06	25,800	17,400	NA	NA	39,600	NA	NA	NA	NA	NA	5,000	5.0
131 Blackboard, Inc.	WebCT	Feb-06	187,500	85,000	33,700	NA	85,000	5.0	NA	NA	NA	NA	NA	NA
132 Electronic Arts, Inc.	JAMDAT Mobile, Inc.	Feb-06	684,000	490,000	122,000	10.0	2,700	7,000	NA	NA	NA	NA	1,300	3.0
133 BEA Syst.	Pago, Inc.	Feb-06	88,419	55,272	12,800	7.0	2,110	10.0	3,860	NA	NA	NA	17,340	NA
134 Goldman Financial Sol.	Goldleaf Tech	Jan-06	19,233	13,774	2,070	NA	760	NA	NA	NA	NA	NA	84	2.0
135 Siba Software	Centra Software	Jan-06	62,300	23,500	5,050	4.0	1,340	1.850	NA	NA	NA	NA	NA	NA
136 Informatica Corp.	Similarity	Jan-06	56,151	46,475	5,690	5.0	3,400	5.00	NA	NA	NA	NA	NA	NA
137 Bottomline Tech.	Transit P/c	Jan-06	10,200	7,300	1,500	5.5	NA	7,300	10.8	2.0	200	1.0	200	2.0
138 Concur Tech	Outask, Inc	Jan-06	76,860	51,400	6,200	5.5	NA	NA	NA	3.75	3.0	NA	NA	NA
139 Goldman Financial Sol.	P.T.C. Banking Syst.	Jan-06	1,048	478	280	NA	53	10.0	NA	NA	NA	NA	NA	NA
140 Keneva Corp.	Webtree	Jan-06	34,955	34,511	877	3.0	1,031	22.0	20	NA	NA	NA	37,330	NA
141 Opowave Syst.	Musiwave	Jan-06	127,196	88,383	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
142 Acumatic Corp.	PerformanceSoft, Inc.	Jan-06	20,924	15,718	1,100	5.0	3,400	5.0	800	3.0	NA	NA	NA	NA
143 Autodesk, Inc.	Aliae Syst. Holdings	Jan-06	213,000	132,500	34,800	6.0	7,900	29,800	7.0	6.0	NA	NA	NA	NA
144 Citrix Syst., Inc.	Reflectnet and Obihall Data	Jan-06	68,024	44,353	17,300	5.7	1,000	3,100	4.7	5.0	110	3.0	NA	NA
145 Navteq Corp.	Gedas Mexico	Jan-06	5,311	2,407	86	3.0	74	5.0	NA	NA	NA	NA	1,751	10.0
146 Parametric Tech.	DFNC and Cadfran, Inc.	Jan-06	9,900	4,100	NA	NA	NA	8.3	NA	NA	NA	NA	9,300	5.0
147 VMware	Akimbi Syst.	Jan-06	47,300	39,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
148 Bottomline Tech.	Visibility, Inc.	Dec-05	11,500	3,000	1,600	3.0	NA	628	3.0-14.0	NA	NA	NA	NA	NA
149 Unica Corp.	MarketSoft Software	Dec-05	7,295	1,697	1,129	1.0-8.0	NA	NA	2,900	NA	800	NA	NA	NA
150 Enmar Software Corp.	CRS Retail Tech. Group	Dec-05	127,084	78,400	26,700	NA	2,000	6,000	NA	5.0	500	2.0	NA	NA
151 Adobe Syst., Inc.	Macromedia	Dec-05	3,538,513	1,993,898	365,500	4.0	NA	183,800	130,700	NA	NA	NA	NA	NA
152 Sys	eVideo	Dec-05	2,040	1,752	71	5.0	9	5.0	NA	NA	NA	NA	NA	NA
153 Ansys Corp.	Brainbox	Dec-05	9,600	NA	5,400	6.0	NA	NA	NA	NA	NA	NA	NA	NA
154 Magna Design Autom.	ACAD Corp.	Nov-05	4,384	1,474	1,860	4.0	300	4.0	NA	NA	300	3.0	NA	NA
155 SS&C Tech	Sandline Merger Corp.	Nov-05	1,233,928	806,587	55,700	8.5	197,100	11.5	17,200	13.9	NA	NA	2,070	7.7
156 Sys	Logic Innovations	Nov-05	4,270	3,510	302	5.0	68	5.0	144	NA	NA	NA	94	1.0
157 Backbone Software	Constant Data, Inc.	Nov-05	6,100	3,300	NA	NA	57	NA	NA	NA	NA	NA	2,600	5.0
158 Engageon, Inc.	Cartronics	Nov-05	40,359	17,325	1,074	1.0-6.0	10,028	1.0-6.0	501	NA	NA	NA	NA	NA
159 Enrad, Inc.	Retni Business	Nov-05	3,057	2,416	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
160 BEA Syst.	Plumtree Software, Inc.	Oct-05	211,148	104,049	33,200	5.0	4,600	14,230	6.0	NA	NA	NA	NA	NA
161 Sunbeam Syst.	Pathlore	Oct-05	57,198	34,647	1,470	4.0	NA	12,300	NA	NA	980	1.5	5,750	4.0
162 Borland Software Corp.	Legadero Software, Inc.	Oct-05	7,640	4,425	2,400	3.0	300	3.0	100	3.0	100	2.0	NA	NA
163 SoftBrands	ForceViz Technology	Sep-05	2,287	585	676	3.0-4.0	NA	282	25	3.0-4.0	376	3.0	NA	NA
164 Arisoft, Inc.	Condat Corporation	Sep-05	22,000	9,200	800	5.0	3,300	10.0	200	1.0	NA	NA	NA	NA
165 Sys	ForceViz Technology	Sep-05	263	NA	NA	NA	NA	NA	NA	NA	NA	NA	133	5.0
166 Asana International	FieldCentrix, Inc.	Sep-05	4,064	1,540	721	NA	1,360	NA	NA	NA	NA	NA	NA	NA
167 Scansoft, Inc.	Former Nimble	Sep-05	266,725	146,717	20,110	4.0-8.0	19,430	6.0	2,200	7.0	NA	NA	NA	NA
168 Sys	Web Tech	Aug-05	240	61	NA	NA	NA	NA	NA	NA	NA	NA	154	3.0
169 ActivCard Corp.	Protecon Dignu Syst.	Aug-05	29,202	20,806	6,878	4.0	782	661	NA	NA	NA	NA	NA	NA
170 Intervox en	Scriptura	Aug-05	18,100	6,100	7,400	NA	1,300	NA	NA	NA	2,100	NA	NA	NA
171 TIBCO Software	Veioel	Aug-05	3,400	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,400	3.0-6.0
172 ACI Worldwide, Inc.	S2 Syst., Inc.	Jul-05	36,605	19,422	3,012	8.0	NA	NA	NA	NA	NA	NA	13,310	NA
173 Parametric Tech.	Arborex	Jul-05	194,800	151,600	10,500	4.7	35,300	10.0	800	5.0	NA	NA	NA	NA

Figure 3 Underlying Detail of 199 Acquisition Purchase Price Allocations —
continued

Acquiring Company	Target Company	Date	[a] Purchase Price \$000	Goodwill \$000	Developed Technology	In-Process R&D \$000	Customer Relationships	Trade name/Trademark	Noncomplete Agreements	Other Identifiable Intangible Assets
					Estimated Useful Life (years)	\$000	Estimated Useful Life (years)	\$000	Estimated Useful Life (years)	Estimated Useful Life (years)
174 Parametric Tech.	Polyprint and Agprints	Jul-05	6,800	5,600	3,300	NA	NA	NA	NA	NA
175 Smith Micro Software	Allume, Inc.	Jul-05	12,800	7,573	NA	NA	NA	NA	NA	4,863
176 McAfee, Inc.	Wireless Security Corp.	Jan-05	20,331	13,247	1,500	4,000	NA	NA	NA	300
177 Sansoft, Inc.	MedRemote	May-05	13,747	9,342	1,090	7.0	1,370	7.1	NA	3.0
178 Saba Software	1HISQ Learning Solutions	May-05	20,500	9,145	NA	NA	NA	NA	NA	60
179 Selectica	Determine	May-05	892	NA	367	3.0	338	4.0	NA	NA
180 Novell, Inc.	Immunix, Inc.	Apr-05	17,654	14,676	2,410	480	80	1.0	NA	96
181 Silverstar Holdings	Strategy First	Apr-05	1,765	764	NA	NA	NA	3.0	NA	NA
182 Cadence Design Syst.	Versio Ltd.	Apr-05	325,400	160,000	NA	9,400	NA	NA	NA	1,245
183 Novell, Inc.	Talis Syst.	Apr-05	22,165	16,308	3,290	NA	1,980	3.0	NA	NA
184 Synops Tech.	Synthermix	Apr-05	14,015	8,406	2,350	NA	500	NA	NA	NA
185 Activcard Corp.	Aspace Solutions	Mar-05	14,187	5,320	4,474	537	3,856	1.0-3.1	NA	10
186 Teler Corp.	Recurface.com	Mar-05	4,640	3,651	623	NA	93	5.0	NA	NA
187 TBCO Software	ObjectStar International	Mar-05	21,400	7,400	NA	NA	NA	NA	NA	NA
188 Sansoft, Inc.	Phiorite	Feb-05	37,608	35,515	2,150	NA	3,950	7.9	NA	13,960
189 Openwave Syst.	Chys	Jan-05	11,383	NA	11,100	NA	4,210	8.0	NA	414
190 Sansoft, Inc.	ART	Jan-05	30,979	19,064	5,150	NA	210	5.0	NA	20
191 Sys	Antin	Jan-05	2,526	1,900	NA	NA	NA	NA	NA	NA
192 Citrix Syst., Inc.	NetScaler and Teros	Jan-05	354,400	230,000	40,200	NA	NA	NA	NA	35,800
193 Sys	Xsilogy	Dec-04	738	NA	190	NA	10	10.0	NA	NA
194 Sansoft, Inc.	Rhetorical	Dec-04	9,069	9,300	490	NA	790	8.0	NA	NA
195 Logtelevision	SVertion	Nov-04	7,680	6,846	640	NA	NA	NA	30	1.0
196 McAfee, Inc.	Foundstone, Inc.	Oct-04	90,378	57,693	27,000	NA	NA	NA	177	2.0
197 Artisoft, Inc.	Vertical Networks, Inc.	Sep-04	17,200	16,700	800	NA	NA	NA	NA	NA
198 Interwoven	Software Intelligence	Aug-04	1,600	215	1,200	NA	3,500	5.0	NA	NA
199 Citrix Syst., Inc.	Neto and Esperity.com	Jan-04	291,000	195,100	38,700	NA	303	NA	NA	NA
Activcard Corp.	Aspace Solutions	Jul-03	4,316	4,140	1,246	383	100	1.0-3.0	NA	32,400

Note:

[a] Total purchase price includes equity and assumed liabilities. Transaction prices are based on preliminary estimates as presented in company Forms 10-K and may have been revised at a later date.



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9

THE VALUATION OF CANADIAN INCOME TRUSTS: DO INVESTORS SEE THROUGH DISTRIBUTABLE CASH MANAGEMENT?*

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In this paper, we investigate if and why income trusts manipulate the calculation and reporting of distributable cash, and whether investors see through distributable cash management. Using Standardized Distributable Cash as a benchmark, we find that income trusts use their discretion to overstate distributable cash when they would otherwise report a decrease in Standardized Distributable Cash, when managerial ownership is higher, and when board ownership is higher. Income trusts that experience a decline in yield from the previous year seem to record higher over distributions, while income trusts with higher managerial equity incentives record lower over distributions. Results also seem to indicate that independent directors/trustees constrain managers' ability to pay distributions higher than disclosed distributable cash to protect unit value. Finally, we find that Standardized Distributable Cash and discretionary distributable cash are valued positively, while over (under) distributions are valued negatively. In our view, this finding substantiates the primacy of cash distributions in the valuation of income trusts, with management's use of discretion in the calculation of distributable cash making possible stability in that regard.

1. INTRODUCTION

This paper investigates how investors value Canadian income trusts. More specifically, do investors focus on reported distributable cash or do they see through distributable cash management and adjust for its systematic overstatement? In contrast to corporations, which mandate, constitution and governance are set within the parameters of the Business Corporations Act. Each income trust is a distinct legal entity, governed by a private trust deed, and so structured as to control an underlying operating company or a set of income generating assets. The trust's key focus is to maximize its periodic cash distributions to unitholders so that it does not retain any excess cash. Up until October 2006, income trusts were the top-selling product on Canadian securities markets (*Toronto Star*, October 27, 2005). The total market capitalization of income trusts went from less than \$20 billion

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in January 2000 to more than \$200 billion in March 2006, i.e., more than 10% of the market capitalization of all companies traded on the Toronto Stock Exchange (“TSX”) (*Standard & Poor’s*, April 10, 2006). Initial public offerings (“IPO”)s of income trust units dominated the market for new equity issues, and the largest IPO ever made in Canada, the Yellow Pages Income Trust, raised more than \$3 billion (*Globe and Mail*, July 6, 2005).

Despite their popularity, income trusts have been criticized extensively. Such criticisms essentially revolve around three issues. First, income trust governance is relatively unchartered, as trusts do not have trustees but powers and responsibilities are governed by a private trust deed, not by corporate laws. Second, until 2007, the measurement of distributable cash was solely at the discretion of an income trust’s management and completely outside the scope of regulators’ standards or guidelines. This unregulated context contributed to the so-called distributable cash game with income trusts managing the distributable cash figure to deceive investors about the sustainability of cash distributions (*Canadian Business*, October 10, 2005). Third, to assess the value and performance of income trusts, investors and financial analysts examine the level and stability of past cash distributions and forecast future distributions. Rating agencies also publish stability ratings to help in assessing the stability of future distributions.² A trust that either cuts or suspends distributions is called a “fallen angel” because the announcement often results in a large decrease in unit price. Moreover, the yield demanded by investors generally increases with the risk of a cut or suspension in distributions. In light of investors’ fixation on cash distributions, income trusts have strong incentives to maintain a stable or increasing trend in distributions from year to year, possibly in a way that is detrimental to long-term value creation.

Our investigation provides the following results. First, it appears that income trusts use their discretion to overstate distributable cash when they would otherwise report a decrease in Standardized Distributable Cash, when managerial ownership is higher and when board ownership is higher. Second, income trusts that experienced a decline in yield from the previous year seemed to record higher over distributions. In contrast, income trusts with higher managerial equity incentives record lower over distributions. Independent directors/trustees impose some constraint upon managers’ ability to pay distributions higher than disclosed distributable cash to protect unit value.

Finally, we find that investors value positively Standardized Distributable Cash and discretionary distributable cash if reporting discretionary distributable cash allows income trusts to maintain their cash distributions. However, if the cash distribution exceeds disclosed distributable cash, then the over distribution component is negatively valued as it constitutes a return of capital.

The rest of the paper is organized as outlined. Section 2 describes the institutional environment in which income trusts are evolving. Research propositions are developed in Section 3. The method is presented in Section 4. Results are discussed in Section 5. Finally, Section 6 concludes and discusses the paper’s contributions.

2. BACKGROUND

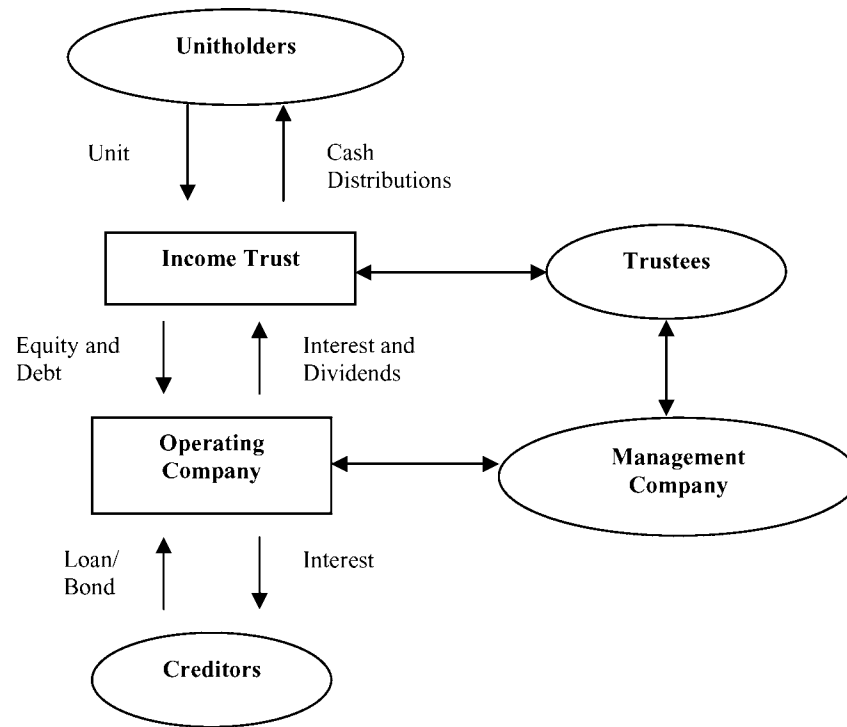
2.1 Income Trusts and their Institutional Environment

An income trust is a legal entity structured to hold equity and interest-bearing debt from an underlying operating company that operates a business (e.g., public, restaurants, consumer product companies and manufacturing companies) or holds a set of income-generating assets (e.g., real estate, oil and gas properties and mining properties). The operating company might be a private company that decides to raise financing through an income trust vehicle in a manner similar to a traditional IPO; a private or public company that decides to spin off part of its business into an income trust; or a public company that decides to convert its common shares into trust units without any new financing (Jog and Wang, 2004). The income trust is legally required to distribute any money generated to its unitholders. To maximize periodic cash distributions to unitholders, the trust ideally owns mature

2 For example, Dominion Bond Rating System (DBRS) provides stability ratings that measure the volatility and sustainability of distributions per fund unit over time. DBRS’ stability ratings consider 7 main factors, among which the stability and sustainability of EBITDA.

assets that require little ongoing capital expenditures, face little competition and provide a predictable stream of cash flows (King, 2003) (see Figure 1).

Figure 1 Structure of an Income Trust



Income trusts differ from regular corporations because they are a flow-through structure that allows income to be taxed at the investor level only. Interest payments to the income trust reduce the operating company's taxable income and minimize corporate taxes at the operating company level. The income trust then distributes the interest earned to unitholders and claims a deduction on its taxable income for the distributions, to achieve the goal of distributing all taxable income for the year. Finally, investors tax themselves on the distributions according to their individual circumstances. Therefore, they can receive a higher level of cash distribution than is possible when the same assets are held by a corporation (King, 2003).³

Income trusts have a median distribution of 87% of cash flow from operations as compared to a median distribution of 7% of cash flow from operations for comparable corporations (Halpern and Norli, 2003). Rating agencies also publish stability ratings to help in assessing the stability of future distributions. Dominion Bond Rating Services' stability rating measures the stability and sustainability of cash distributions per fund unit over time (DBRS, 2004). Standard & Poor's stability rating measures the prospective relative sustainability and variability of an income trust's distributable cash flows (Standard & Poor's, 2005). Unfortunately, stability ratings are only available for approximately 10% of listed income trusts.

Canadian Business reports a 77% average decline in unit price of the 13 business trusts that have suspended distributions in 2006 (*Canadian Business*, September 25, 2006). Investors are then left with an investment that pays less income and has declined in value (*Globeadvisor.com*, March 29, 2006). Consequently, the yield demanded

³ While Bill C-52 essentially ended income trusts' tax advantage (except for real estate investment trusts), it did not eradicate them as many have been taken over and others intend to take full advantage of the tax benefits until 2011, at which point they will be subjected to a flat income tax.

by investors increases with the risk of a cut or suspension in distributions.⁴ Overall, given the impact of a cut or suspension of distributions on unit price and yield, income trusts have strong incentives to maintain a stable or increasing trend in distributions from year to year. In the next section, we discuss the opportunities offered to management by the high degree of discretion allowed in the calculation of distributable cash to meet that objective.

2.2 Distributable Cash

Distributable cash drives the level of cash distributions. Distributable cash generally refers to the net cash generated by the income trust's businesses or assets, as estimated by management, which is available for distribution to unitholders (CSA, 2004). The measurement and recognition of distributable cash is problematic. Staff Notice 52-306—Non-GAAP Earnings Measures—explicitly identifies distributable cash as a non-GAAP (Generally Accepted Accounting Principles) financial measure. Hence, income trusts are asked to provide a reconciliation of distributable cash to the most directly comparable measure calculated in accordance with GAAP (preferably cash flows from operations). They are expected to discuss the reconciling items, especially when they are discretionary in nature (CSA, 2003). Unfortunately, Staff Notice 52-306 neither provides a single definition for distributable cash nor specific measurement requirements, thus leading a wide range of practices (CICA, 2007).

In a report published in 2004, the Canadian Securities Administrations ("CSA") reviewed the continuous disclosure records of 40 income trusts, of which 18 included a statement of distributable cash in the management discussion and analysis ("MD&A"), 16 presented distributable cash information in a note to financial statements, 3 presented distributable cash as a separate financial statement and 3 did not present distributable cash information. Moreover, 9 trusts presented distributable cash figures without a reconciliation to the audited financial statements; 26 provided a reconciliation between distributable cash and net earnings; and the remainder provided a reconciliation with some other financial measure such as earnings before interest, taxes, depreciation and amortization ("EBITDA"), net cash from operations, or cash and cash equivalents (CSA, 2004). In a similar report published in early 2006, Standard & Poor's examined distributable cash calculations among a sample of 40 income trusts. Nineteen different terms (e.g., cash available for distribution, amount available for distribution, net cash available to unitholders) were used to characterize distributable cash (Standard & Poor's, 2006a). After adjusting for an average two-year reporting distortion of 26%, 30% of the income trusts had distributable cash that was lower than what was reported by management and insufficient to cover distributions over a 2- to 3-year period (Standard & Poor's, 2006b).

The distributable cash game is played by many trusts that take advantage of the lack of consistency and transparency in its measurement and reporting, with many arguing that some trusts with excessive distributions share attributes with Ponzi schemes (*Canadian Business*, October 10, 2005; CSA, 2007).

The CSA issued revisions to National Policy 41-201—Income Trusts and Other Indirect Offerings—in July 2007. National Policy 41-201 states that "distributable cash is fairly presented only when reconciled to cash flows from operating activities as presented in the income trust's financial statement, including changes in non-cash working capital." It recommends the grouping of adjustments to cash flows from operating activities into one of the following categories: 1) capital adjustments; 2) non-recurring adjustments; and 3) other adjustments including discretionary items, together with a detailed discussion of the nature of the adjustments (CSA, 2007). However, it still does not provide a single definition for distributable cash. Within a few days of the issuance of National Policy 41-201, the Canadian Institute of Chartered Accountants' ("CICA") Canadian Reporting Performance Board ("CPRB") issued its final Interpretative Release—Standardized Distributable Cash in Income Trusts and Other Flow-Through Entities, a non-mandatory guidance document. The CPRB defines Standardized Distributable Cash as (CICA, 2007):

the periodic cash flows from operating activities as reported in the GAAP financial statements, including the effects of changes in non-cash working capital and any operating cash flows provided from or used in discontinued operations, less

⁴ The yield is calculated by dividing the annual distribution rate by the unit price and multiplying the result by 100.

adjustments for total capital expenditures as reported in the GAAP financial statements; restrictions arising from compliance with financial covenants restrictive at the date of calculation; and limitations arising from the existence of a minority interest in a subsidiary. No other adjustments for one-time or unusual items should be made to cash flows from operating activities in the calculation of Standardized Distributable Cash

The Interpretative Release provides a conceptual framework to assess income trusts' calculation and reporting practices prior to its adoption. The conceptual framework, as well as our research propositions, is discussed in the next section.

3. STANDARD DISTRIBUTABLE CASH AND RESEARCH PROPOSITIONS

3.1 Standardized Distributable Cash

In the absence of a standardized definition for distributable cash or specific requirements regarding its calculation and reporting, income trusts' managers can manipulate the distributable cash figure to appear to pay a distribution that is lower or equal to distributable cash and maintain a stable or increasing trend in distributions. The concept of Standardized Distributable Cash provides a standardized measure of distributable cash.

Prior to the adoption of the CICA's Interpretative Release, there were two identifiable components to the cash distribution: disclosed distributable cash and the difference between the cash distribution and disclosed distributable cash, which we call the over (under) distribution. Using Standardized Distributable Cash as the benchmark to the calculation of the cash distribution allows us to now split the distribution into 3 components: 1) Standardized Distributable Cash; 2) the difference between disclosed distributable cash and Standardized Distributable Cash, which we call discretionary distributable cash; and 3) the over (under) distribution. Under the latter, income trusts would have incentives to maximize discretionary distributable cash and minimize over distributions to appear to pay a distribution that is lower or equal to distributable cash; and maintain a stable or increasing trend in distributions.

The example in Figure 2 illustrates the 3 components of the distribution for a trust that discloses a distributable cash figure higher than Standardized Distributable Cash, and pays a distribution lower than disclosed distributable cash. In the example, the trust discloses a distributable cash figure of \$1.05 per unit. The calculated standardized distributable cash is \$0.75 per unit. The difference between disclosed distributable cash and standardized distributable cash, discretionary distributable cash, is \$0.30 per unit. The declared distribution is \$1.00 per unit. The difference between disclosed distributable cash and the declared distribution, the under distribution, is \$0.05 per unit. The example shows how a trust can overstate the distributable cash figure to give the impression of being conservative (i.e., paying a distribution lower than distributable cash) while actually paying a distribution higher than Standardized Distributable Cash, the real cash generated by the operating activities after capital expenditures.⁵ In the next section, we discuss economic and governance factors that could explain such behaviour.

Figure 2 Three Components of Distribution

Standardized Distributable Cash	\$0.75
Discretionary distributable cash	<u>\$0.30</u>
Disclosed distributable cash	\$1.05
Under distribution	<u>(\$0.05)</u>
Declared distribution	\$1.00

⁵ For example, the income trust could exclude the changes in the working capital accounts or capital expenditures from the calculation of disclosed distributable cash.

3.2 Factors that May Influence Measurement of Distributable Cash and Cash Distributions

We now discuss the 4 factors that, in our view, are likely to influence the measurement of distributable cash as well as cash distributions by income trusts.

(a) *Smoothing*

Given their incentive to show a stable or increasing trend in distributable cash and cash distributions, income trusts are more likely to overstate the disclosed distributable cash figure than to understate a disclosed distributable cash figure that is larger than the previous year. Means to achieve that end include an understatement of maintenance capital expenditures, using discretionary adjustments and drawing down distributable cash reserve, etc. If income trusts overstate disclosed distributable cash to avoid reporting a decrease, then trusts with a decrease in Standardized Distributable Cash will record higher discretionary distributable cash.

(b) *Managerial Equity Incentives*

Much prior research suggests that equity incentives encourage managers to increase short-term share prices with discretionary financial disclosures or accounting manipulations (e.g., Cheng & Warfield, 2005; Lev, 1992; Efendi, Srivastava, and Swanson, 2005). Hence, to avoid a decrease in unit price, managers of trusts with higher equity incentives may have an incentive to overstate disclosed distributable cash and minimize over distributions. If such is the case, trusts with higher managerial equity incentives will record higher discretionary distributable cash. They will record lower over distributions.

(c) *Board Ownership*

To align the interests of directors/trustees with those of shareholders, regulators and governance activists (e.g., the Coalition for Good Governance) recommend that trustees have a significant investment in the shares of the entities they govern. However, the increase in shareholdings also increases the importance, and potential benefits, of insider trading to trustees, thus encouraging earnings management (Ronen et al., 2006). Therefore, if unit ownership makes trustees more sensitive to changes in unit price and leads them to support managerial opportunism that results in higher unit prices, then trustees with higher ownership will let managers overstate disclosed distributable cash. However, they will avoid distributions in excess of disclosed distributable cash. If such is the case, trusts with higher director ownership will record higher discretionary distributable cash. They will record lower over distributions.

(d) *Board Independence*

A board of directors/trustees must promote accurate, high quality and timely disclosure of financial and other material information to the public markets and to shareholders (Blue Ribbon Committee, 1999). An important function of the board of directors/trustees is also to ensure that management is working in the best interests of the corporation and its shareholders to enhance corporate economic value (Fama and Jensen, 1983). In that regard, there is evidence that an independent board will lead a firm to engage in less earnings management (Agrawal and Chadha, 2005; Beasley, 1996; Dechow et al., 1996; Bedard et al., 2004; Klein, 2002; Xie et al., 2003). Thus, income trusts with a higher proportion of independent directors/trustees on the board will record lower discretionary distributable cash. Independent directors/trustees should also limit managers' ability to declare a distribution higher than disclosed distributable cash to protect unit value. If such is the case, then trusts with a higher proportion of independent directors/trustees on the board will record lower over distributions.

3.3 Valuation of Distribution Components

Our next research question is whether investors see through distributable cash management, i.e., whether and how they value the 3 components of cash distributions. Prior theoretical work (Bhattacharya, 1979; Miller and Rock, 1985) and empirical evidence (Aharony and Swary, 1980; Asquith and Mullins, 1983) document the potential information content of dividends. Prior research also shows that a decision by a firm to change its dividend provides investors with a credible signal about its future prospects. In other words, a change in dividends is a benchmark that adds credibility to reported earnings. Sivakumar and Waymire (1993) as well as Cormier et al. (2000) document that in an environment with few mandatory disclosure requirements or restrictions on accounting methods, dividends and dividend changes are value-relevant to a greater extent than reported earnings. This suggests that investors will value positively both standardized and discretionary distributable cash if discretionary distributable cash allows income trusts to maintain their cash distributions. However, if the cash distribution exceeds disclosed distributable cash, then the over distribution component should be negatively valued as it constitutes a return of capital.

4. METHOD

4.1 Sample and Data

Sample income trusts are drawn from Investcom (www.investcom.com). Financial data is obtained from Compustat, Stock Guide and annual reports. Governance and compensation data is obtained from sample trusts' proxy statements. Investcom lists 241 income trusts as at December 1, 2005, and 176 of the 241 income trusts are found in Compustat. Data is pooled over the 2000-2005 period. Overall, complete data is available for 521 income trust-year observations for the distributable cash management tests and 532 trust-year observations for the valuation tests.

4.2 Models and Variables

(a) Determinants of Discretionary Distributable Cash

Model 1 is a pooled regression model used to examine the determinants of discretionary distributable cash.

Model 1

$$DISCRDCASH_{i,t} = \beta_0 + \beta_1 CHANGESTDDCASH_{i,t} + \beta_2 OPTIONS_{i,t} + \beta_3 TRUSTEESOWN_{i,t} + \beta_4 TRUSTEESIND_{i,t} + \beta_5 OWN_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 TYPE_{i,t} + \varepsilon_{i,t}$$

Where:

$DISCRDCASH =$	Disclosed distributable cash for year t minus Standardized Distributable Cash for year t scaled by the number of units outstanding at the end of year t
$CHANGESTDDCASH =$	1 if Standardized Distributable Cash for year t is lower than Standardized Distributable Cash for year t-1; 0 otherwise
$OPTIONS =$	Average value of "in the money" stock options held by the top paid executives at the end of year t divided by their total compensation for year t
$TRUSTEESOWN =$	Total number of units owned by the trustees at the end of year t scaled by the number of units outstanding at the end of year t

<i>TRUSTEESIND</i> =	Percentage of outsiders on the board of trustees for year t, as disclosed in the trust's proxy statement
<i>OWN</i> =	1 if an external shareholder controls more than 10 percent of outstanding votes at the end of year t (i.e. the trust is closely-held); 0 otherwise
<i>SIZE</i> =	Natural logarithm of lagged total assets
<i>TYPE</i> =	Business, real estate, resource or utility trust as per Investcom's classification

Discretionary distributable cash (*DISCRDCASH*) is the difference between disclosed and Standardized Distributable Cash for year t. Thus, *DISCRDCASH* is positive if disclosed distributable cash is higher than Standardized Distributable Cash (i.e., overstated) and negative if disclosed distributable cash is lower than Standardized Distributable Cash (i.e., understated). Standardized Distributable Cash is calculated in accordance with the CICA's Interpretative Release, i.e., periodic cash flows from operating activities as reported in the GAAP financial statements less adjustments for total capital expenditures as reported in the GAAP financial statements and limitations arising from the existence of a minority interest in a subsidiary. Distributions paid to minority unitholders for year t are used to proxy for the limitations arising from the existence of a minority interest in a subsidiary.

CHANGESTDDCASH measures income trusts' incentives to overstate disclosed distributable cash in order to maintain a constant or increasing level of distributable cash from year to year. Accordingly, we expect *CHANGESTDDCASH* to be positively related to discretionary distributable cash. We use the average value of the in-the-money options held by top managers in proportion to their annual compensation (*OPTIONS*) to proxy for the importance of managerial equity incentives. We expect *OPTIONS* to be positively related to discretionary distributable cash. *TRUSTEESOWN* measures board ownership. We expect *TRUSTEESOWN* to be positively related to discretionary distributable cash. Finally, *TRUSTEESIND* is the percentage of independent directors/trustees on the board. We expect *TRUSTEESIND* to be negatively related to discretionary distributable cash.

Two control variables are included in the model (*OWN*, *SIZE*). We control for ownership because prior research shows that reporting incentives of closely-held firms tend to differ (Hogler & Hunt, 1993). Firm size is included as a control variable to proxy for various aspects of the income trust.

(b) *Determinants of Over (Under) Distributions*

Model 2 is a pooled regression model used to examine the determinants of over (under) distributions.

Model 2

$$EXCDISTR_{i,t} = \beta_0 + \beta_1 CASH_{i,t} + \beta_2 CUMRESERVE_{i,t} + \beta_3 DEVCASH_{i,t} + \beta_4 OPTIONS_{i,t} + \beta_5 TRUSTEESOWN_{i,t} + \beta_6 TRUSTEESIND_{i,t} + \beta_7 OWN_{i,t} + \beta_8 SIZE_{i,t} + TYPE_{i,t} + \epsilon_{i,t}$$

Where:

<i>EXCDISTR</i> =	Distribution for year t – disclosed distributable cash for year t scaled by the number of units outstanding at the end of the year t
<i>CASH</i> =	Cash and cash equivalents at the end of year t scaled by the number of units outstanding at the end of year t
<i>CUMRESERVE</i> =	Cumulative distributable cash reserve at the beginning of year t scaled by the number of units outstanding at the end of year t

<i>DEVDCASH</i> =	1 if disclosed distributable cash for year t is lower than disclosed distributable cash for year t-1; 0 otherwise
<i>OPTIONS</i> =	Average value of “in the money” stock options held by the top paid executives at the end of year t divided by their total compensation for year t
<i>TRUSTEESOWN</i> =	Total number of units owned by the trustees at the end of year t scaled by the number of units outstanding at the end of year t
<i>TRUSTEESIND</i> =	Percentage of outsiders on the board of trustees for year t, as disclosed in the trust’s proxy statement
<i>OWN</i> =	1 if an external shareholder controls more than 10 percent of outstanding votes at the end of year t (i.e. the trust is closelyheld); 0 otherwise
<i>SIZE</i> =	Natural logarithm of lagged total assets
<i>TYPE</i> =	Business, real estate, resource or utility trust as per Investcom’s Classification

EXCDISTR is the difference between the distributions declared during year t and disclosed distributable cash for year t. Thus, *EXCDISTR* is positive if declared distributions exceed disclosed distributable cash and negative if declared distributions are lower than disclosed distributable cash. Income trusts are more likely to pay a distribution higher (lower) than distributable cash if they have (don’t have) cash available to pay the distribution. As such, we expect *CASH* to be positively related to *EXCDISTR*. *CUMRESERVE* is calculated by adding the difference between disclosed distributable cash and declared distributions for each sample year prior to year t. *CUMRESERVE* will be positively related to *EXCDISTR* if trusts use the available distributable cash reserve to justify paying a distribution higher than disclosed distributable cash for the year (i.e., they draw from the distributable cash reserve). It will be negatively related to *EXCDISTR* if it captures trusts’ historical tendency to declare distributions lower or higher than disclosed distributable cash. Hence, we do not make any directional prediction for *CUMRESERVE*.

DEVDCASH measures income trusts’ incentives to declare distributions higher than distributable cash in order to maintain a constant or increasing level of distributions from year to year. Accordingly, we expect *DEVDCASH* to be positively related to *EXCDISTR*. We use the same proxy for managerial equity incentives. We expect *OPTIONS* to be negatively related to *EXCDISTR*. *TRUSTEESOWN* measures board ownership. We expect *TRUSTEESOWN* to be negatively related to *EXCDISTR*. Finally, *TRUSTEESIND* is the percentage of directors/independent trustees on the board. We expect *TRUSTEESIND* to be negatively related to *EXCDISTR*.

Two control variables are included in the model (*OWN*, *SIZE*). We control for ownership because prior research shows that reporting incentives of closely-held firms tend to differ (Hogler & Hunt, 1993). Firm size is included as a control variable to proxy for various aspects of the income trust.

(c) Valuation of Distribution Components

Model 3 is a pooled regression model used to examine the value-relevance of distribution components, incremental to book value.

Model 3

$$PRICE_{i,t} = \beta_0 + \beta_1 BVALUE_{i,t} + \beta_2 STDDCASH_{i,t} + \beta_3 DISCRDCASH_{i,t} + \beta_4 EXCDISTR_{i,t} + TYPE_{i,t} + \varepsilon_{i,t}$$

Where:

PRICE = Price at the end of year t

<i>BVALUE</i> =	Book value at the end of year t scaled by the number of units outstanding at the end of year t
<i>STDDCASH</i> =	Standardized Distributable Cash for year t scaled by the number of units outstanding at the end of year t
<i>DISCRDCASH</i> =	Disclosed distributable cash for year t minus Standardized Distributable Cash for year t scaled by the number of units outstanding at the end of year t
<i>EXCDISTR</i> =	Distribution for year t – disclosed distributable cash for year t scaled by the number of units outstanding at the end of the year t
<i>TYPE</i> =	Business, real estate, utility or resource trust as per Investcom's Classification

We expect book value per share (*BVALUE*), Standardized Distributable Cash per share (*STDDCASH*) and discretionary distributable cash (*DISCRDCASH*) to be positively related to unit price; and the over (under) distribution (*EXCDISTR*) to be negatively related to unit price.

5. RESULTS

5.1 Descriptive Statistics

Figure 3 presents the industry and category distribution of sample income trusts. *Investcom.com* identifies 4 different categories of income trusts: Business, Resource, Utilities and Real Estate. We rely on Investcom.com's classification. The larger sample size is consistent with the increased use of the income trust structure over the period.

Figure 3 Sample by Type and Year

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>Total</u>
Business	10	10	41	52	63	59	235
Real Estate	11	13	19	24	23	22	112
Utilities	4	3	7	10	13	12	49
Resource	8	11	18	27	29	32	125
Total	33	37	85	113	128	125	521

Figure 4 presents descriptive statistics for the variables included in the regression models. This table shows median (average) Standardized Distributable Cash of \$0.7366 (\$0.4004) per unit and median (average) discretionary distributable cash of \$0.3500 (\$0.9577) per unit. This suggests that the median (average) income trust takes advantage of the available discretion to overstate disclosed distributable cash by 32% (71%). Sample trusts exhibit a median (average) under distribution of \$0.0716 (\$0.1890) per unit. However, when the distribution is compared to Standardized rather than disclosed distributable cash, the median (average) distribution paid exceeds Standardized Distributable Cash by \$0.2784 (\$0.7687) per unit. Thus, the overstatement of disclosed distributable cash potentially allows sample trusts to mislead investors as to the nature of the distribution they receive (return of capital as opposed to return on capital).

The median income trust experiences an increase in Standardized Distributable Cash as well as in disclosed distributable cash from the year before (both *CHANGESTDDCASH* and *DEVDCASH* have a zero median). The median income trust also does not appear to rely on managerial equity incentives (*OPTIONS* has a zero median).

However, this can be partially explained by the fact that trusts that use a management company to manage the operating company tend to disclose the total management fees paid rather than the summary compensation table required by securities regulators. Disclosure improves with time, perhaps as a sign that regulators' pressures were successful. Furthermore, on average, the value of top executives' in-the-money options represents 60.47% of their total compensation. Directors/trustees own an average of 4.84% (median of 1.01%) of the outstanding units, potentially to align their interests with those of the shareholders. Finally, 75% (74.08%) of the directors/trustees on the board of the median (average) trust are independent. This percentage seems high given that governance is not regulated in the income trust industry, with some people going as far as comparing it to the Wild West (*Report on Business*, October 25, 2006). It could be due to the fact that we base our classification on the information disclosed by the trusts in their proxy statements. Since there is no standardized definition of an independent director/trustee, trusts can exercise discretion as to whom they consider as outsiders.

The median (average) trust has cash of \$0.1311 (\$0.3538) per unit and a cumulative distributable cash reserve of \$0.0000 (\$0.1864) per unit. Hence, the overstatement of disclosed distributable cash can also allow for the creation of artificial distributable cash reserves. Finally, the median (average) unit price is \$12.55 (\$14.13) and the median (average) book value per unit is \$8.33 (\$8.08).

Untabulated analyses reveal that a high percentage of trusts (79%) pay a distribution that is lower than the distributable cash that they voluntarily report. However, once we replace income trusts' self-reported measures of distributable cash by the CICA's suggested measure of Standardized Distributable Cash, most (68%) trusts exhibit a distribution lower than disclosed distributable cash.

5.2 Multivariate Results

Figure 5 presents the results of the pooled regression examining the determinants of discretionary distributable cash. We use the Hausman specification test to decide on the use of a random or fixed effects model. We obtain a Chi2 statistic of 8.02 ($p < 0.237$), which indicates that the random effects is the best model. The random effects model is significant ($p < 0.000$) with a R2 of 24.92%. All reported t-statistics are based on robust standard errors. Consistent with our prediction, the coefficient on *CHANGESTDDCASH* is positive and significant ($p < 0.000$). This seems to suggest that income trusts use their discretion to overstate distributable cash and avoid reporting a decrease in distributable cash and cash distributions. Also consistent with our prediction, the coefficient on *OPTIONS* is positive and significant ($p < 0.038$). This result suggests that managers of trusts with higher equity incentives have an incentive to overstate disclosed distributable cash to avoid a decrease in unit price. The coefficient on *TRUSTEESOWN* is also positive and significant ($p < 0.041$). Thus, it would seem that unit ownership makes trustees more sensitive to changes in unit price and leads them to support managerial opportunism in the form of overstated disclosed distributable cash. A higher proportion of independent trustees on the board does not seem to constrain managers' ability to manipulate the distributable cash figure since the coefficient for *TRUSTEESIND* is positive and not significant ($p < 0.175$). None of the other coefficients are significant.

Figure 6 presents the results of the pooled regression examining the determinants of over (under) distributions. We use the Hausman specification test to decide on the use of a random or fixed effects model. We obtain a Chi2 statistic of 404.67 ($p < 0.000$), which indicates that the fixed effects is the best model. The fixed effects model is significant ($p < 0.000$) with a R2 of 8.80%. The coefficient on *CASH* is positive, but not significant ($p < 0.333$). This seems to indicate that income trusts are not influenced by the level of cash available to pay the distribution when they decide on the level of the distribution. The coefficient on *CUMRESERVE* is negative and significant ($p < 0.002$). As such, *CUMRESERVE* seems to capture trusts' historical tendency to declare distributions lower or higher than disclosed distributable cash. The coefficient on *SIZE* is negative and significant ($p < 0.000$), suggesting that larger trusts are less likely to pay a distribution higher than disclosed distributable cash. Finally, the coefficient on *OWN* is not significant.

Figure 4 Descriptive Statistics

Variable**	Mean	Median	Minimum	Maximum
<i>STDDCASH</i>	0.4004	0.7366	-18.5092	4.0501
<i>DISCRDCASH</i>	0.9577	0.3500	-1.4450	19.5843
<i>CHANGESTDDCASH</i>	0.2994	0.0000	0.0000	1.0000
<i>OPTIONS</i>	0.6047	0.0000	0.0000	24.2400
<i>TRUSTEESOWN</i>	0.0484	0.0101	0.0000	0.5976
<i>TRUSTEESIND</i>	0.7408	0.7500	0.3333	1.0000
<i>OWN</i>	0.5509	1.0000	0.0000	1.0000
<i>SIZE</i>	6.0036	6.0528	2.5293	8.9057
<i>EXCDISTR</i>	-0.1890	-0.0716	-3.4548	0.6842
<i>CASH</i>	0.3538	0.1311	0.0000	15.2702
<i>CUMRESERVE</i>	0.1864	0.0000	-0.5448	9.9191
<i>DEVDCASH</i>	0.1363	0.0000	0.0000	1.0000
<i>PRICE</i>	14.1279	12.0000	1.8900	92.6700
<i>BVALUE</i>	8.2569	8.6047	0.5536	31.3203

* This table presents descriptive statistics for the variables included in the regression models.

** Variable definitions:

<i>STDDCASH</i>	Standardized Distributable Cash for year t scaled by the number of units outstanding at the end of year t
<i>DISCRDCASH</i>	Disclosed distributable cash for year t minus Standardized Distributable Cash for year t scaled by the number of units outstanding at the end of year t
<i>CHANGESTDDCASH</i>	1 if Standardized Distributable Cash for year t is lower than Standardized Distributable Cash for year t-1; 0 otherwise
<i>OPTIONS</i>	Average value of “in the money” stock options held by the top paid executives at the end of year t divided by their total compensation for year t
<i>TRUSTEESOWN</i>	Total number of units owned by the trustees at the end of year t scaled by the number of units outstanding at the end of year t
<i>TRUSTEESIND</i>	Percentage of outsiders on the board of trustees for year t, as disclosed in the trust’s proxy statement
<i>OWN</i>	1 if an external unitholder controls more than 10 percent of outstanding votes at the end of year t (i.e. the trust is closely-held); 0 otherwise
<i>SIZE</i>	Natural logarithm of lagged total assets
<i>EXCDISTR</i>	Distribution for year t – disclosed distributable cash for year t scaled by the number of units outstanding at the end of the year t
<i>CASH</i>	Cash and cash equivalents at the end of year t scaled by the number of units outstanding at the end of year t
<i>CUMRESERVE</i>	Cumulative distributable cash reserve at the beginning of year t scaled by the number of units outstanding at the end of year t
<i>DEVDCASH</i>	1 if disclosed distributable cash for year t is lower than disclosed distributable cash for year t-1; 0 otherwise
<i>PRICE</i>	Price at the end of the fiscal year
<i>BVALUE</i>	Book value at the end of the year scaled by the number of units outstanding at the end of the year

Figure 5 Determinants of Discretionary Distributable Cash*

Variable**	Predicted Sign	Coefficient	P > z ***
<i>CHANGESTDDCASH</i>	+	1.0022	0.000
<i>OPTIONS</i>	+	0.1098	0.038
<i>TRUSTEESOWN</i>	+	2.1464	0.058
<i>TRUSTEESIND</i>	-	0.8597	0.175
<i>OWN</i>	?	0.1104	0.469
<i>SIZE</i>	?	0.0200	0.924
<i>Intercept</i>		-0.4078	0.812
N			521
Wald Chi-2			81.55 (0.000)
R-square			24.92%

*This table presents the results of the pooled random effects regression examining the determinants of discretionary distributable cash. Parameter estimates are based on the following model:

$$(1) \quad DISCRDCASH_{i,t} = \beta_0 + \beta_1 CHANGESTDDCASH_{i,t} + \beta_2 OPTIONS_{i,t} + \beta_3 TRUSTEESOWN_{i,t} + \beta_4 TRUSTEESIND_{i,t} + \beta_5 OWN_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 TYPE_{i,t} + \varepsilon_{i,t}$$

**Variable definitions:

<i>DISCRDCASH</i>	Disclosed distributable cash for year t minus Standardized Distributable Cash for year t scaled by the number of units outstanding at the end of year t
<i>CHANGESTDDCASH</i>	1 if Standardized Distributable Cash for year t is lower than Standardized Distributable Cash for year t-1; 0 otherwise
<i>OPTIONS</i>	Average value of “in the money” stock options held by the top paid executives at the end of year t divided by their total compensation for year t
<i>TRUSTEESOWN</i>	Total number of units owned by the trustees at the end of year t scaled by the number of units outstanding at the end of year t
<i>TRUSTEESIND</i>	Percentage of outsiders on the board of trustees for year t, as disclosed in the trust’s proxy statement
<i>OWN</i>	1 if an external unitholder controls more than 10 percent of outstanding votes at the end of year t (i.e. the trust is closely-held); 0 otherwise
<i>SIZE</i>	Natural logarithm of lagged total assets
<i>TYPE</i>	Business, real estate, utility or resource trust as per Investcom’s classification

***One-tailed if directional prediction, two-tailed otherwise. z-statistics based on robust standard errors.

Our results support most of our research propositions. *DEVDCASH* is positively associated with *EXCDISTR*, and the association is significant ($p < 0.000$). Thus, trusts seem more likely to pay a distribution higher than disclosed distributable cash if they experienced a decline in disclosed distributable cash from the previous year. *OPTIONS* is negatively associated with *EXCDISTR*, and the association is marginally significant ($p < 0.094$). This suggests that managers with higher equity incentives avoid paying a distribution higher than disclosed distributable cash to protect unit price. *TRUSTEESOWN* is positive and not significant ($p < 0.402$). Finally, *TRUSTEESIND* is negative and significant ($p < 0.043$). This seems to indicate that independent directors/trustees constrain managers’ ability to pay distributions higher than disclosed distributable cash to protect unit value.

Figure 6 Determinants of Over (Under) Distributions*

Variable**	Predicted Sign	Coefficient	P > z ***
<i>CASH</i>	+	0.0073	0.333
<i>CUMRESERVE</i>	-	-0.0729	0.002
<i>DEVDCASH</i>	+	0.1759	0.000
<i>OPTIONS</i>	-	-0.0114	0.094
<i>TRUSTEESOWN</i>	-	0.2680	0.402
<i>TRUSTEESIND</i>	-	-0.2040	0.043
<i>OWN</i>	?	-0.0399	0.371
<i>SIZE</i>	?	-0.1241	0.000
Intercept		0.7102	0.000
N			521
Wald Chi-2			8.33 (0.000)
R-square			8.80%

*This table presents the results of the pooled fixed effects regression examining the determinants of over (under)distributions. Parameter estimates are based on the following model:

$$(2) \quad EXCDISTR_{i,t} = \beta_0 + \beta_1 CASH_{i,t} + \beta_2 CUMRESERVE_{i,t} + \beta_3 DEVDCASH_{i,t} + \beta_4 OPTIONS_{i,t} + \beta_5 TRUSTEESOWN_{i,t} + \beta_6 TRUSTEESIND_{i,t} + \beta_7 OWN_{i,t} + \beta_8 SIZE_{i,t} + TYPE_{i,t} + \varepsilon_{i,t}$$

**Variable definitions:

<i>EXCDISTR</i>	Distribution for year t – disclosed distributable cash for year t scaled by the number of units outstanding at the end of the year t
<i>CASH</i>	Cash and cash equivalents at the end of year t scaled by the number of units outstanding at the end of year t
<i>CUMRESERVE</i>	Cumulative distributable cash reserve at the beginning of year t scaled by the number of units outstanding at the end of year t
<i>DEVDCASH</i>	1 if disclosed distributable cash for year t is lower than disclosed distributable cash for year t-1; 0 otherwise
<i>OPTIONS</i>	Average value of “in the money” stock options held by the top paid executives at the end of year t divided by their total compensation for year t
<i>TRUSTEESOWN</i>	Total number of units owned by the trustees at the end of year t scaled by the number of units outstanding at the end of year t
<i>TRUSTEESIND</i>	Percentage of outsiders on the board of trustees for year t, as disclosed in the trust’s proxy statement
<i>OWN</i>	1 if an external unitholder controls more than 10 percent of outstanding votes at the end of year t (i.e. the trust is closely-held); 0 otherwise
<i>SIZE</i>	Natural logarithm of lagged total assets
<i>TYPE</i>	Business, real estate, utility or resource trust as per Investcom’s classification

***One-tailed if directional prediction, two-tailed otherwise. z-statistics based on robust standard errors.

Figure 7 presents the results of the pooled regression examining the valuerellevance of Standardized Distributable Cash, discretionary distributable cash and over (under) distributions, incremental to book value. We use the Hausman specification test to decide on the use of a random or fixed effects model. We obtain a Chi2 statistic of 117.40 ($p < 0.000$), which indicates that the fixed effects is the best model. The fixed effects model is significant ($p < 0.000$) with a R2 of 39.01%. The coefficient on *BVALUE* is positive and significant as predicted ($p < 0.000$). Standardized Distributable Cash and discretionary distributable cash are both positively associated with

unit price and the association is significant ($p < 0.001$ and $p < 0.003$). This result is consistent with either of two scenarios: investors are not able to see through distributable cash management and use disclosed distributable cash as a benchmark measure or investors value both measures positively because discretionary distributable cash allows income trusts to maintain their cash distributions. Finally, the coefficient on *EXCDISTR* is negative and significant as predicted ($p < 0.018$). This seems to suggest that investors appropriately consider over distributions as a return of capital, rather than a return on capital. Similarly, it seems to indicate that investors react positively to the decision to retain available distributable cash by paying a distribution lower than disclosed distributable cash.

Figure 7 Valuation of Distribution Components*

Variable**	Pred	Coefficient	P > z ***
<i>BVALUE</i>	+	0.9513	0.000
<i>STDDCASH</i>	+	1.6538	0.001
<i>DISCRDCASH</i>	+	1.4838	0.003
<i>EXCDISTR</i>	-	-2.3991	0.018
Intercept		3.6483	0.004
N			532
Wald Chi-2			27.51 (0.000)
R-square			39.01%

*This table presents the results of the pooled fixed effects regression examining the value-relevance of distribution components. Parameter estimates are based on the following model:

$$(2) \quad PRICE_{i,t} = \beta_0 + \beta_1 BVALUE_{i,t} + \beta_2 STDDCASH_{i,t} + \beta_3 DISCRDCASH_{i,t} + \beta_4 EXCDISTR_{i,t} + TYPE_{i,t} + \varepsilon_{i,t}$$

**Variable definitions:

<i>PRICE</i>	Price at the end of year t
<i>BVALUE</i>	Book value at the end of year t scaled by the number of units outstanding at the end of year t
<i>STDDCASH</i>	Standardized Distributable Cash for year t scaled by the number of units outstanding at the end of year t
<i>DISCRDCASH</i>	Disclosed distributable cash for year t minus Standardized Distributable Cash for year t scaled by the number of units outstanding at the end of year t
<i>EXCDISTR</i>	Distribution for year t – disclosed distributable cash for year t scaled by the number of units outstanding at the end of the year t
<i>TYPE</i>	Business, real estate, utility or resource trust as per Investcom's classification

***One-tailed if directional prediction, two-tailed otherwise. z-statistics based on robust standard errors.

6. CONCLUSION

This paper investigates whether and how reporting incentives and constraints influence income trusts' calculation and reporting of distributable cash and cash distributions. We also examine whether investors see through distributable cash management. Using Standardized Distributable Cash as the starting point to the calculation of the cash distribution, we split declared distributions into 3 components:

1. Standardized Distributable Cash;
2. the difference between disclosed distributable cash and Standardized Distributable Cash, which we call discretionary distributable cash; and
3. the difference between the cash distribution and disclosed distributable cash, which we call the over (under) distribution.

First, we investigate the determinants of discretionary distributable cash. Our results suggest that income trusts use their discretion to overstate distributable cash when they would otherwise report a decrease in Standardized Distributable Cash, and when managerial and board ownership is higher. Second, we examine the determinants of over (under) distributions. After controlling for the cash available to pay the distribution and the cumulative distributable cash reserve at the beginning of the period, we find that income trusts that experienced a decline in disclosed distributable cash from the previous year seem to record higher over distributions, but that income trusts with higher managerial equity incentives record lower over distributions. Our results also seem to indicate that independent directors/trustees constrain managers' ability to pay distributions higher than disclosed distributable cash to protect unit value. Finally, we examine whether and how the market values the three components of cash distributions, incremental to book value. Our results show a positive association between Standardized Distributable Cash and unit price, and discretionary distributable cash and unit price; and a negative association between over (under) distributions and unit price. In our view, this finding substantiates the primacy of cash distributions in the valuation of income trusts, with management's use of discretion in the calculation of distributable cash making possible stability in that regard.

On October 31, 2006, the federal government of Canada announced its intention to impose taxes on Canadian flow-through entities (including income trusts) in a manner similar to corporations, and Bill C-52 received Royal assent on June 22, 2007. Commonly referred to as the "Halloween Massacre," the announcement put an end to the conversion frenzy and resulted in a loss of \$19 billion in market capitalization in the first day of trading alone. Thus, critics have expressed concerns over the fact that the CICA's recommendations are a little late in coming (MacIntyre, 2007). Nevertheless, according to Standard & Poor's (2007a), accounting and disclosure issues remain of utmost importance to the income trust market and are in no way diminished by Bill C-52 because investors are still exposed to significant information risk in the transition period. Our results support the CSA's and CICA's initiative by showing that income trusts take advantage of the high degree of discretion allowed in the calculation and reporting of distributable cash to overstate distributable cash and maintain a stable or increasing trend in distributions.

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