JOURNAL OF BUSINESS VALUATION

LETTER FROM THE EDITOR

This edition of *The Journal of Business Valuation* features papers presented at the 2009 Regional Conferences of The Canadian Institute of Chartered Business Valuators held in Niagara Falls and Kelowna. It also includes articles from other well-respected publications, as well as a research paper that received special recognition from the CICBV's 2009 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.

Robert Doran, CBV
Chair, Editorial Committee

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PRIVATE EQUITY RETURNS AND DISCLOSURE AROUND THE WORLD*

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INTRODUCTION

Private equity (PE) funds are specialized intermediaries. Usually, such funds are organized as limited partnerships that invest in illiquid assets, i.e., privately held firms. Valuation of these illiquid assets is difficult and subject to discretion. PE funds routinely report to their institutional investors the valuations on their investments in illiquid companies prior to an actual exit or sale transaction. Fund managers raise follow-on funds before exiting their investments, and may have incentives to overvalue their as-yet-unsold investments when making disclosures to institutional investors. Despite perverse incentives to overvalue, PE funds do not face mandatory disclosure rules in any country with a significant PE industry. Yet the overvaluation of unexited PE investments has the potential to distort capital allocations to the PE industry generally, and across PE funds in different countries around the world (FSA, 2006). Thus, it has motivated PE associations such as the European Venture Capital Association (EVCA) and Institutional Limited Partners Association, as well as investment manager associations around the world, to reconsider imposing standards, or at least more stringent guidelines, on reporting unrealized returns (Cumming & Johan, 2007; McCahery & Vermeulen, 2009).

In this paper, we examine the theory and evidence underlying the way in which PE fund managers disclose information to their institutional investors. The issue of PE funds' disclosure to institutional investors is very much an international issue, because institutional investors invariably invest in PE funds internationally (Tykvova & Schertler, 2006). Even institutional investors in relatively smaller countries invest in PE funds in the U.S., across Europe and in the Asia-Pacific region (Cumming & Johan, 2007). Institutional investors rank the quality

of international disclosures from PE funds as among the most important hurdles in PE investment, and as important as risks associated with illiquidity and liquidations (Cumming & Johan, 2009). Given the industry practice of internationalization in PE investment, an effective analysis of PE disclosures requires an international perspective. This paper represents what we believe is a first attempt to do so.

We analyze PE funds' reporting of valuations in terms of their unexited internal rates of returns (IRRs). We ask if there are systematic biases in the reporting of fund performance, and under what conditions such biases are more pronounced. We examine a detailed international data set that provides cash flow information at the level of the individual investment for the 5,038 portfolio firms of 221 PE funds. Our sample covers the period 1971–2003, and 39 countries. To analyze potential biases in the reporting of current fund holdings, we use information on former fund holdings to construct a benchmark. We investigate potential drivers of fund dispositions to establish predictions for the returns on current fund holdings. By comparing the reported and predicted returns of current holdings, we are able to examine fund reporting and to consider potential determinants of biases in the valuation of current holdings. We confirm the validity of the approach by comparing realized IRRs to previously reported unrealized IRRs for a subsample of the data.

We find systematic biases in the reporting of unrealized IRRs relative to forecasted IRRs. These reporting biases are explained by cross-country differences in accounting standards, legality, and proxies for information asymmetry between PE managers and their institutional investors. We show that higher-quality legal systems and accounting standards lead to less overvaluation. Thus, we provide empirical evidence for the idea that a trade-off between the reputational costs of misreporting and the benefit of PEs that result from misreporting govern the degree of overvaluation. We also study other various determinants of this trade-off that reflect international differences in PE markets. Overall, our data show that economic and institutional drivers of misreporting information are directly related to information asymmetries faced by the users of the information reported.

The paper is organized as follows. In the second section we present the institutional background behind PE disclosure and valuations and we derive the theoretical hypotheses that form the basis for our empirical analysis. We describe our data set in the third section. In the fourth section we analyze realized IRRs by considering sample selection issues. In the fifth section we compare unrealized IRRs to predicted IRRs. The last section concludes.

REPORTING BIASES WITH UNREALIZED INVESTMENTS: INSTITUTIONAL BACKGROUND AND HYPOTHESES

Institutional Background

Main characteristics of the PE industry

PE is a collective investment scheme (fund) that invests in companies with the intention of obtaining a controlling interest, usually by becoming a majority shareholder, sometimes by becoming the largest plurality shareholder. In this paper we use the term PE as a generic term that encompasses all investments in private firms. Likewise, for ease of exposition, we use the term "PE funds" to include earlier stage venture capital (VC) funds and both late-stage and mezzanine funds. Similarly, a "PE manager" refers to the manager of a PE fund that makes and implements investment decisions. The PE fund's goal is to be in a position to restructure the target company's reserve capital, management, and organizational infrastructure. The target companies are typically held privately and restructured over a period of three to seven years. They are then exited through an initial public offering (IPO) or sold to other (strategic or financial) investors. Restructuring can be done through leveraged buyouts, VC, growth capital, angel investing, mezzanine debt, management share participation programs, and other methods. PE funds are typically invested in non-listed companies with limited liability.

PE funds are financial intermediaries between entrepreneurial firms and, primarily, institutional investors (Sahlman, 1990). PE funds exist because of pronounced information asymmetries and principal-agent problems in financing start-up and late-stage firms, and because institutional investors lack the time and skill to select

suitable entrepreneurial firms in which to invest. Therefore, PE funds are typically set up as limited partnerships that exist for a ten-year period with an option to continue for a further three years, so that investments can be selected and brought to fruition via exit. The PE manager, who selects, monitors, and adds value to the investment, is the general partner, and the institutional investors are the limited partners (Gompers & Lerner, 1999).

Each year, PE managers report valuations on unrealized portfolio investments to their investors. However, there is a principal-agent problem between PE managers and their institutional investors. Since the resulting cash flows must be distributed to the limited partners, the measurement of returns on investments that have been exited is straightforward. However, matters are far more difficult for reporting returns and valuations on unrealized investments, since this reporting hinges on the valuations determined by the PE managers.

In the context of PE investment, an "unexited" or "unrealized" investment return is not one for which the PE fund manager has sold the investment by way of an IPO, acquisition, or some other form of exit. Rather, it is a return that the PE fund manager still maintains in the fund portfolio (as noted above, such investments often last three to seven years), and to which the fund manager assigns a value that implies a return. The fund manager reports that unrealized valuation and implied return to the fund's institutional investors. The valuation is not a market valuation, because the investee firms are privately held. Hence, there is room for interpretation of the appropriate valuation.

Given that PE funds are intermediaries between the portfolio firms and the investors, there are two links that affect the valuation of unexited investments and their disclosure to investors. The first is the financial reporting and disclosure of the privately held portfolio firm, and the second is the valuations disclosed by private equity managers to their investors. To clarify the potential impact of the disclosure environment and the legal framework on both links, we review the institutional set-up for links for both the U.S. and the European Union (EU), thereby covering a large part of our sample. By making this connection, we also point to channels through which both the legal framework and the disclosure environment affect the valuation of unexited investments.

Related research

Our paper builds on and extends the literature that investigates the financial disclosure of firms that are, or aim to become, PE-backed. Using a panel of U.S. biotech firms, Hand (2005) finds that the financial statements of privately held, VC-backed firms are value-relevant. Despite the fact that disclosure is not mandatory for these firms, reporting is value-relevant to about the same degree as in public markets, but only for later (and not for earlier stages) of the firm's life cycle. Armstrong *et al.* (2005) confirm and extend this view by analyzing a broader set of venture-backed early stage companies in different industries. Beuselinck *et al.* (2008) address this question by using a sample of Belgian PE-financed companies. They show that firms do not reveal more information before receiving PE investments compared to their non-PE counterparts. However, after having received PE financing, these (unlisted) firms voluntarily disclose more information. Rather than looking into the relationship between the portfolio firm and the PE investor, we address the disclosure behavior of PE firms in relation to their investors concerning the value of the portfolio firms. Thereby, we complement these studies, and extend them in two directions. First, we investigate the second, missing link between financial reporting and disclosure in the PE industry. Second, we apply our analysis to an international setting.

Our paper is related to analyses of returns of PE investments as in Manigart *et al.* (1996, 2000, 2002a, b), Moskowitz and Vissing-Jorgensen (2002), Ljungqvist and Richardson (2003a), Das *et al.* (2003), and Cochrane (2005), who investigates the performance of PE investments in individual U.S. portfolio firms. Ljungqvist and Richardson (2003b) use a proprietary data set to analyze the investment behavior of PE funds in the U.S., Cumming and MacIntosh (2003) present data on exits and returns in Canada and the U.S., Manigart *et al.* (1996, 2000, 2002a, b), Hege *et al.* (2003), and Schwienbacher (2003) have similar data that compare Europe and the U.S. We differentiate ourselves from these studies because, to our knowledge, our paper is the first to analyze the (over-) valuations issue with an international data set. Thus, we add new insights to the regulatory discussion. Our paper is also related to other studies on international aspects in the PE industry (see for an overview Wright

et al., 2005). These studies have, however, quite a different focus than ours and consider issues such as e.g. the development of the PE industry particular markets (Ahlstrom *et al.*, 2007) and issues of risk management practices in the PE industry in a cross-country perspective (Kut *et al.*, 2007; Smolarski, 2007). Perhaps the paper most closely related to ours in this context is Wright *et al.* (2004) who focus on the use of valuation methods in different countries; however, unlike our paper they do not consider issues of disclosure and strategic over-reporting.

Valuation and disclosure rule for privately held companies

An important channel that can affect the PE funds' disclosure of information to their limited partners is the degree of information disclosed by the funds' portfolio firms. The disclosure of such financial information to the portfolio firm's investor (i.e., the private equity fund) is clearly an important starting point for the correct valuation of the PE's investments. PE funds' portfolio firms are usually privately held and have limited liability status. Although publicly traded global firms face stiff financial reporting standards worldwide with respect to their valuation and disclosure policies, matters can be significantly different for privately held portfolio firms.

In the U.S., there are no mandatory financial reporting or disclosure rules imposed on privately held firms (FASB, 2006). Therefore, non-listed firms are free to choose how, if, and to what extent they will provide financial reporting. However, firms have strong incentives to provide financial statements that generally adhere to the guiding principles of U.S. Generally Accepted Accounting Principles (GAAP) (FASB, 2006; McCahery & Vermeulen, 2009). These incentives stem mainly from two factors. The first is the often stressed effect of voluntary disclosure on the cost and availability of capital. (For empirical analyses on this effect for publicly traded firms, see, e.g., Welker, 1995, and Healey *et al.*, 1999.) Firms want to attract new financiers. To do so, even privately held firms that do not directly rely on the public markets need to convince potential investors that their financial situation and firm are sound. Second, firms that are willing to go public soon are required to hold at least their last five years' financial statements that are consistent with U.S. GAAP (Hand, 2005). Since a significant number of PE deals are exited via an IPO, PE-backed firms have a strong incentive to provide sound financial statements. Furthermore, given the strong position of PE investors, we should expect PE funds to be able and willing to force their portfolio firms to provide such financial statements.

In the EU, matters are somewhat different. The EU's Fourth Council Directive (EU, 1978) sets the minimum standard of reporting for non-listed companies with limited liability in the European Union: ". . . the annual accounts shall comprise the balance sheet, the profit and loss account and the notes on the accounts. These documents shall constitute a composite whole." This requirement differentiates the EU reporting requirements from their counterparts in the U.S., because the directive is based on a binding legal requirement, not on voluntary disclosure or an agreement between company and investors/funds. Further, EU-based firms must also disclose their financial statements to the general public (EU, 1978, Section 10, "Publication" Article 47). (However, we note that state laws may provide exceptions to this requirement.) Nevertheless, many companies, especially small, non-listed firms, adhere to traditional European accounting standards that were set in the 1971-2003 period covered by our data set, but also beyond. These standards are unlike U.S. GAAP, which are based on the idea of fair value and going concern, relying instead on the concept of debtor protection. The transition to International Financial Reporting Standards (IFRS), which are closer to fair value accounting, has happened in most European countries since 2007 and appear to have been slowly adopted by non-listed firms. (But we note that adoption rates for non-listed firms are difficult to quantify and present opportunities for further research.)

This brief comparison reveals three important points. First, PE managers should have access to proper financial reports of the portfolio firms to use as a starting point for their own valuations. Second, the financial reports of portfolio firms should limit the discretionary powers that portfolio managers have over valuations. Third, we should expect that the stringency of reporting standards (with respect to fair value) should be reflected in the valuation of PE-backed firms.

Valuation and disclosure guidelines for private equity funds

PE funds organized as private limited partnerships do not face mandatory reporting and disclosure rules, particularly for the countries and years covered by the data in this paper (see, e.g., Cumming & Johan, 2007, 2009; Lerner *et al.*, 2004; FSA, 2006; McCahery & Vermeulen, 2009, and Tuck School, 2003). There have been several attempts to establish voluntary industry guidelines and thus increase transparency in the industry. The first of these goes back to the National Venture Capital Associations (NVCA) effort in 1990 to propose guidelines for consistent valuations in the industry (Lerner *et al.*, 2004; Tuck School, 2003). The British Venture Capital Association (BVCA) and EVCA followed the NVCA in the early 1990s, proposing guidelines for valuations and their disclosure from the limited to the general partners of private equity funds. The basic idea behind all these guidelines is that the general partner is the better-informed party, and therefore is in charge of valuing portfolio companies. Furthermore, the early valuation principle strongly relied on the idea of valuing the portfolio firm at the price of the most recent investment. This principle could either imply a valuation at the cost of investment, or, in cases in which further investment rounds by other informed outside investors (other PE investors) had taken place, using the price paid in the last investment round.

After many previously published guidelines, the International Private Equity and Venture Capital Valuation Guidelines (IPEV), which form the joint guidelines of many regional industry groups except for the NVCA, were published in October 2006. Throughout this entire process, the valuation guidelines of both IPEV and NVCA moved further towards valuing portfolio firms on the basis of fair values. But despite this objective, firms still use many different methods, such as the price of recent investments, earnings multiples, discounted cash flows or earnings of underlying business, discounted cash flows from the investments, and industry valuation benchmarks (IPEV, 2007). The use of different methods implies that even now there is significant leeway for PE managers on their valuation of their unexited investments. This leeway is even wider with these guidelines that allow for substantial exceptions to the general rule.

Hypotheses

Intentional overvaluation by PE fund managers depends on information asymmetry between general and limited partners, and the expected marginal benefits and marginal costs of overvaluation. The marginal benefit is the expected probability of the overvaluation not being detected and the increase in the likelihood of raising future funds. The marginal cost is the expected probability of an overvaluation being detected and the loss of reputation, and the subsequent worsening in ability to raise capital. The likelihood of an overvaluation being detected depends on the information asymmetry between the limited partners and the general partner. The PE fund manager's decision to willingly over-report valuations is determined by the factors that affect this basic trade-off. We argue that the main factors affecting this trade-off are legal and accounting standards, conditions in local public markets, and fund and firm characteristics. The legal and accounting standards are international in themselves. The conditions in local public markets and fund and firm characteristics reflect cross-country differences only indirectly, via the country-specific composition of funds and firms.

Prior theoretical work that addresses trade-offs between overvaluations and reputational costs includes, among others, Verecchia (1983), Benabou and Laroque (1992), Healey and Palepu (2001), Stocken (2000), and Neus and Walz (2005). These studies show that insiders disclose their private information truthfully, provided that investors are sufficiently patient; that the accounting system is sufficiently useful for assessing the credibility of the insider's disclosure; and that the insider's disclosure can be evaluated over a sufficiently long period.

We note that for several reasons, the lack of formal rules for valuing unrealized PE investments as discussed does not imply that we should not expect any systematic link between valuations, the disclosure environment, and the legal frameworks. First, there is ample empirical evidence for the U.S. that the financial reporting of PE-backed firms is value-informative (Armstrong *et al.*, 2005; Hand, 2005). The fact that large sophisticated investors in PE funds may demand these financial reports greatly limits the leeway for PE managers. Second, when a PE-

backed company goes public, the company is required to report its financial information, which must include the time prior to the IPO (typically five years). Hence, although PE-backed firms are not required to follow disclosure and valuation rules while the firm is private, reporting standards do become relevant for the subset of firms that anticipate going public. Going public is the objective for a substantial portion of PE-backed companies at the time of first investment. For the U.S., ex post, during our observation period roughly one quarter of all firms were exited through an IPO; ex ante, a significantly higher percentage expect to exit via an IPO (Ueda & Frantzeskakis, 2007). Third, there are studies that support the view that stronger regulations and accounting standards significantly and positively impact the quality of voluntary reporting across countries (e.g., Chen & Countenay, 2006). Other studies find that countries with better laws have firms that are more likely to be early voluntary adopters of the IFRS (e.g., Renders & Gaeremynck, 2007). Although there is no international index on the informativeness of voluntary reporting, to assess robustness to different measures of existing standards we can assess the quality of reporting standards relative to a number of different available accounting indexes. However, all these factors do not imply that with stringent reporting standards there is no leeway for PE fund managers when reporting the value of their portfolio firms, or for firms in engaging in earnings management (see Sloan, 1996, and Xie, 2001, for evidence for the U.S.). But these factors do lead us to expect that in cross-country comparisons, the quality of PE disclosure is related to the stringency of the reporting standards.

Finally, we note that limited partnership agreements sometimes contain fair-valuation clauses. There is some evidence consistent with the view that fair-valuation clauses, among the many other clauses in PE fund agreements, tend to be more common in countries with stronger legal environments (Cumming & Johan, 2009). As well, based on La Porta *et al.* (1997, 1998), we expect that such clauses are more likely to be enforced in countries with stronger legal environments. If so, valuation clauses would strengthen our prediction of a negative relation between the strength of legal and accounting standards and the degree of over-reporting, as postulated in Hypothesis 1.

Hypothesis 1: *Unexited PE investments are less likely to be overvalued in countries that have superior accounting and legal standards.*

Apart from legal changes over time, there are several important factors that may affect a trade. These factors can lead us to expect that they structurally affect the willingness of the firm to either over-report or decline to write down poor investments. Conditions in public equity markets in the country in which the investment takes place are generally an important source of information for valuation. Behavioral biases lead PE managers to write up investments in good market conditions and to not write down investments in bad market conditions. Practitioner web pages such as http://vcexperts.com frequently note this tendency among fund managers. Write-downs give rise to a negative perception among possible future owners of the firm and therefore hurt exit potential.

Further, to attract new capital for follow-on funds, especially in times of poor local market conditions, fund managers have stronger incentives to overvalue unexited investments. In contrast, in times of good market conditions, attracting new capital is not as challenging, and there is often excess capital chasing too few opportunities (Gompers & Lerner, 2000). Hence, we expect PE funds to have a greater tendency to overvalue investee firms in times of poor market conditions in the country in which the investment takes place. Our international data set makes it possible for us to investigate the impact of local market conditions differing across countries.

Hypothesis 2: *Unexited PE investments are more likely to be overvalued at times and in countries where there are poor market conditions.*

Because PE funds hold illiquid assets in the form of portfolio firms that do not have a market value, institutional investors face pronounced information asymmetries. The incentive to overvalue and thereby attract new future funds from institutional investors is especially pronounced for inexperienced fund managers – that is, first-time PE managers who have no track record of successful exits. Related evidence shows first-time PE managers often grandstand to institutional investors by taking portfolio firms public sooner than appropriate (Gompers & Lerner, 1999). Given they have less reputational capital to lose, first-time PE managers are more likely to face lower expected costs of reporting overvaluations, and hence a stronger incentive to overvalue unexited investments. Further, with respect to analyzing financial statements and forecasting firm valuations (Bushee, 1998), there is

likely a lower degree of skill and sophistication among first-time fund managers. We may also reasonably expect that the degree of sophistication among PE funds is correlated with the degree of sophistication of institutional investors (Lerner & Schoar, 2004), since more sophisticated institutional investors are less likely to invest in funds managed by less skilled or first-time PE fund managers. Overall, we conjecture that the more experienced PE managers who have managed multiple funds are better able to forecast valuations precisely, and have fewer incentives to overvalue unexited investments.

We note that we would expect significant international differences in the supply of experienced PE fund managers. For instance, we expect that countries with less stringent accounting standards may have less experienced fund managers. Our empirical analyses separate out these different possibilities in an international context.

Hypothesis 3: *Inexperienced PE managers are more likely to overvalue unexited investments.*

It is possible that a decline in the value of a PE-backed firm is due to adverse changes in market conditions between the time of reporting and the time of exit. Changes in value can also be attributable to idiosyncratic factors associated with the portfolio firm, changes of which the PE manager was unaware at the time of reporting. As a result, earlier-stage investments are more likely to be overvalued, since the time to exit is longer (Gompers & Lerner, 1999). Therefore, it is more difficult to distinguish between reported overvaluations and changes in market conditions or other idiosyncratic factors that affect firm value. We also expect that where information asymmetries are more pronounced, such as for high-tech firms, unexited investments are more likely to be overvalued. Thus, we follow Gompers & Lerner (1999) by controlling for industry effects with dummy variables and industry market/book values. It is more difficult for institutional investors to disentangle reported overvaluations from the negative shocks associated with changes in market conditions and other idiosyncratic factors that affect value.

Similar to the notion that there are international differences in the experience of PE fund managers, we note that we would also expect to find significant differences in the demand for PE investment by firms at different stages of development and in different industries. For instance, we can expect countries with less stringent accounting standards to have fewer early stage high-tech firms. Therefore, in our empirical analyses we consider and control for these different factors, which we expect to be central to understanding international differences in PE valuations.

Hypothesis 4: *Unexited earlier-stage PE investments are more likely to be overvalued.*

In addition to testing these hypotheses, we control for factors that may affect the degree of over-reporting valuation of the IRRs of unexited investments. These factors include proxies for the contribution of PE fund manager effort (see Cumming, 2006; Jääskeläinen *et al.*, 2006; Kanniainen & Keuschnigg, 2003, 2004, Keuschnigg, 2004, and Keuschnigg & Nielsen, 2001, for evidence consistent with the idea that PE funds that add more value to their investees are less likely to overstate unexited investments), and syndication (see Brander *et al.*, 2002; Lerner, 1994 and Wright & Lockett, 2003, for evidence consistent with PE funds having fewer incentives to overstate unexited returns in syndicated deals).

DATA

We obtain our data set from the Center of Private Equity Research (CEPRES) in Frankfurt, Germany. Table 1 summarizes the data, which comprise 221 PE funds managed by 72 PE managers, and include 5,038 observations of portfolio firms (3,824 VC and 1,214 late-stage mezzanine and buyout firms). Our sample period spans 1971 to 2003, and covers 39 countries from North and South America, Europe, and Asia. For confidentiality reasons, we cannot disclose the names of funds, managers, and firms, etc. The observations represent 2,419 fully realized investments, i.e., the previous fund holdings; 1,665 unrealized investments, i.e., the current fund holdings in the original amounts; and 954 partially realized investments, i.e., the current fund holdings that have been partially exited or liquidated. The annual transaction volume is consistent with that reported in, for example, the U.S. (Gompers & Lerner, 1999). Table 1 indicates that the sample is characterized by a large proportion (47.6%) of investments in the U.S., consistent with other work showing the U.S. has the dominant PE market (Armour &

Cumming, 2006). Therefore, we test our hypotheses with and without the U.S. data in the sample. Table 1 further shows that the sample represents a wide range of industries and investment characteristics; however, for brevity we do not include other smaller categories in Table 1.

Table 1. Sample Characteristics

Number of observations (investee firms)	5117
Number of fully exited investments	2498
Number of partially exited and unexited investments	2619
Number of investments and fully realized exits 1971-1979	35 investments, 34 exits
Number of investments and fully realized exits 1980-1989	486 investments, 377 exits
Number of investments and fully realized exits 1990-1999	3282 investments, 1952 exits
Number of investments and fully realized exits 2000-2003	1314 investments, 135 exits
Period for which not fully exited investments are reported	June 2000 - September 2003
<u>Fund Manager Characteristics</u>	
Number of different fund managers	221
Number of different funds	72
Average number of funds managed by PE fund manager	3.5
Average age (in days) of fund manager at time of first investment	3192.3
<u>IRR Characteristics in Sample</u>	
Average IRR (fully exited investments only)	68.18%
Average IRR (unrealized and partially realized investments only)	63.23%
Number of investments for which we can match subsequent realized IRR with prior reported IRR (exact back-testing) for the years 2001 – 2005	80
—Average number of years from reported unexited IRR to fully realized IRR (only for the exact back-testing subsample of 80 firms)	2.6
—Average difference between realized IRR and prior reported IRR for exact back-testing sample of 80 firms	219.71%
<u>Investee Characteristics in Full Sample</u>	
Proportion of seed stage investments in sample	0.044
Proportion of start-up stage investments in sample	0.018
Proportion of early-stage investments in sample	0.216
Proportion of expansion-stage investments in sample	0.092
Proportion of late-stage investments in sample	0.056
Proportion of MBO/MBI-stage investments in sample	0.115
Proportion of LBO investments in sample	0.009
Proportion of publicly listed investments in sample	0.005
Proportion of U.S.-based investments in sample	0.476
Proportion of UK-based investments in sample	0.119
Proportion of German-based investments in sample	0.047
Proportion of French-based investments in sample	0.095
Proportion of Internet investments in sample	0.026
Proportion of Telecom investments in sample	0.075
Proportion of semiconductor investments in sample	0.015
Proportion of media investments in sample	0.064
Proportion of information technology-based investments in sample	0.108

Investment Structure Characteristics in Full Sample	
Proportion of syndicated investments	0.233
Proportion of investments with convertible securities and periodic cash flows	0.238
Average amount invested (real 2003 $US)	5,963,340

This table presents descriptive statistics for the sample. There are a total of 5,117 observations in the sample. One observation corresponds to one investee firm. We calculate averages with each investee firm as a separate observation. The sample comprises both exited and unexited investments (unexited as at 2003) from 39 countries around the world. For a subsample of 80 investee firms for which we observe the actual IRR and the prior reported unexited IRR, there are exits data up to 2005.

The data contain actual IRRs for realized investments, those that account for all cash flows between the fund and the portfolio firm. Thus, our study differs from others, such as Cochrane (2005), that appear to base their proxies for returns on initial and final cash flows. In addition, our data contain details on the IRRs of unrealized investments that were reported to institutional investors by PE managers between June 2000 and September 2003. For unrealized investments reported to institutional investors, we use only one report per entrepreneurial firm. In our empirical analyses we test our theoretical hypotheses with two types of analyses. First, using econometric models with 2498 realized IRRs, we compare the reported unexited valuations with the econometric model's predicted valuations. Second, with a smaller subsample of 80 investments (Table 1), we perform exact back-testing of the realized valuation relative to the prior reported unrealized valuation.

Despite the fact that IRRs are subject to manipulation (Damodaran, 2001), we focus on IRRs in our analyses for several reasons. For example, one criticism of the use of IRR as a performance measurement is that managers can manipulate the duration of an investment. To some extent this criticism is correct, but for most entrepreneurial firms, the duration from first investment until actual exit is determined by exogenous factors, such as market conditions and factors internal to the investee company itself that affect the timing of the exit. Thus, realized IRRs are much harder to manipulate than unrealized IRRs.

Perhaps more importantly, the venture capital and private equity funds in our sample report IRRs for realized and unrealized investments. Further, they sometimes manipulate unrealized IRRs in their reports to institutional investors. In fact, IRR is the only performance metric provided to the institutional investors in our sample. Hence, it is appropriate for us to look at IRRs, because this variable is the information that has been reported to the institutional investors in our data set. Our data are derived from institutional investors, and the IRRs were provided by the institutional investors. We note that we do not calculate any IRRs ourselves, although we verify the IRRs from the cash flows provided. Our hypotheses and data are based on IRR manipulation for each investee firm, and it is necessary to study IRRs to see what is actually manipulated.

Table 2 defines the other variables in our data set and models. To test Hypothesis 1, we use the following accounting and legal measures:

(1) The Disclosure Index developed by La Porta *et al.* (2006, Table 3): This index, which applies to IPO firms, is applicable to PE investee companies that are expected to go public in an IPO, because PE funds are more likely to disclose more accurate valuations of unexited investee companies that have better prospects of subsequently achieving an IPO. Hypothesis 1 requires a negative relation between the Disclosure Index and the disclosure of unexited PE returns to institutional investors.

(2) The Earnings Aggressiveness Index developed by Bhattacharya *et al.* (2003, Table 2): This measure reflects median accruals scaled by total assets for each country. We define earnings aggressiveness as the tendency to delay the recognition of losses and the speed of the recognition of gains. Accounting conservatism is the opposite of earnings aggressiveness; it represents the more timely incorporation of economic losses

rather than economic gains (Ball *et al.*, 2000).[1] Hence, support for Hypothesis 1 requires a positive relation between the Earnings Aggressiveness Index and the disclosure of unexited PE returns to institutional investors.

(3) The Private Firm Accounting Indexes developed by Burgstahler *et al.* (2006, Table 2), with the following notation and variables: (1) EM1 (Avoidance of Small Losses) measures the degree to which firms use accounting discretion to avoid reporting losses. Using this index is consistent with the view that PE funds are often reluctant to write down the book value of their investments for several reasons, but especially to avoid the appearance of carrying "living dead" investments that will be difficult to sell. (2) EM2 (Magnitude of Total Accruals in Relation to Cash Flow from Operations) measures the extent to which firms use reporting discretion to, for example, boost earnings in years of poor performance. This measure is particularly relevant for our sample period 2000–2004. (3) EM3 (Smoothing of Operating Earnings vis-à-vis Cash Flow) refers to the extent to which firms use accruals to reduce the variability of reported earnings. This variable is a relevant measure for PE fund reporting, because exit transactions such as IPOs might be facilitated by reducing the appearance of earnings variability of the portfolio firm prior to the actual exit. (4) EM4 (Correlation between Accounting Accruals and Cash Flow from Operations) is an alternative measure of earnings smoothing, because larger magnitudes of this negative measure indicate smoothing of reported earnings unrelated to the firm's economic performance. (5) EM Aggregate (Aggregate Measures of Earnings Management) is the percentage sum of EM1 to EM4. We note that we define these accounting indexes developed by Burgstahler *et al.* (2006) for a subset of countries in our sample: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Portugal, Spain, Sweden, and the U.K. Thus, the use of these accounting indexes facilitates a dual robustness check for a subsample of countries and for different measures of accounting standards throughout various countries. The Burgstahler *et al.* (2006) accounting standards are pertinent measures for private firms.

(4) The Legality Index, based on Berkowitz *et al.* (2003), following La Porta *et al.* (1997, 1998): The Legality Index refers to Berkowitz *et al.*'s weighted average of a country's efficiency of the judicial system, rule of law, corruption, risk of expropriation, risk of contract repudiation, and shareholder rights. Where legal protection and enforcement is superior, misreporting PE fund managers are more likely to be exposed as such to institutional investors.

We note that we considered a wide variety of other legal and accounting measures (e.g., Disclosure Level Index in Table 2 of Bhattacharya *et al.* (2003), originally used by the Center for International Financial Analysis and Research, 1995) to test Hypothesis 1, and found consistent results, since many of these alternative indexes are highly correlated with each other. Alternative specifications are available on request.

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1   Accounting conservatism can be further categorized into unconditional and conditional conservatism (Beaver and Ryan, 2005). Unconditional conservatism refers to predetermined aspects of the accounting process leading to an understatement of the book value of net assets. Conditional conservatism refers to writing down the book value of assets under adverse circumstances, but not up when there are favorable circumstances. This latter asymmetry is picked up in some of the private firm accounting indexes developed by Burgstahler *et al.* (2006, Table 2). We use different indexes to check for robustness. We also note that all of our multivariate tests account for market conditions.

Table 2. Variable Definitions

Variable	Description
Internal Rate of Return (IRR)	The exact IRR based on all current discounted cash flows. For unrealized investments, we use the reported valuation as the last cash flow.

Market and Legal Factors

Variable	Description
Legality Index	Weighted average of the following factors (based on Berkowitz *et al.*, 2003): efficiency of judicial system, rule of law, corruption, risk of expropriation, risk of contract repudiation, and shareholder rights (as per La Porta *et al.*, 1998). Higher values indicate "better" legal systems.
Disclosure Level Index	La Porta *et al.*'s (2006, Table 3) accounting disclosure requirements index. Higher values indicate better disclosure.
Earnings Aggressiveness Index	Bhattacharya *et al.*'s (2003, Table 2) measure of countries' firms' and accountants' tendency to incorporate economic gains in a more timely fashion than economic losses (i.e., the opposite of accounting conservatism). Higher values indicate more aggressive earnings reporting (i.e., less conservative accounting practices).
Private Firm Accounting Indexes	Burgstahler *et al.*'s (2006, Table 2) accounting standards for earnings management in private and public firms in the European Union. The higher the number, the worse the accounting disclosure. EM1=Avoidance of Small Losses. EM2=Magnitude of Total Accruals relative to Cash Flow from Operations. EM3=Smoothing of Operating Earnings vis-à-vis Cash Flow; EM4=Correlation between Accounting Accruals and Cash Flows from Operations; EM Aggregate = Average of the Percentage Ranks from EM1 – EM4.
Sarbanes Oxley	A dummy variable equal to one for PE fund disclosures of unrealized IRRs to institutional investors after July 30, 2002 (and in year 2003 in the data), and zero otherwise. (We note that the disclosures first started in the 2000 data.)
MSCI Return	The country-specific Morgan Stanley Capital International index return over the contemporaneous investment period.
Risk Free Return	The U.S. risk-free return over the contemporaneous investment period. We note that the use of the euro and other risk-free returns does not materially change the results.
Committed Capital Overall Market at Date of Investment	The industry total of committed venture capital in the overall U.S. market (as reported by *Venture Economics*) in the year of investment. This variable is a proxy for deal-flow competition. To avoid correlation with the Legality index, we take the measure from the U.S. and not specific countries in the data.

Fund Characteristics

Variable	Description
Fund Number in the PE Firm	The number of PE funds the PE firm had operated prior to managing this current fund.
Age of Specific PE Fund	The age (in days) of the PE fund.
Portfolio Size (# Portfolio firms) / # General Partners	The number of portfolio firms in the PE fund / the number of investment professionals of the general partners in the fund.

Portfolio Firm Characteristics

Variable	Description
Seed Stage	A dummy variable equal to one for financing provided to research, assess and develop an initial concept.
Start-up Stage	A dummy variable equal to one for financing provided to firms for initial product development and marketing. Firms may be in the process of being set up or may have been in business for a short time, but have not sold their product commercially.
Early Stage	A dummy variable equal to one for financing provided to firms with product in testing and/or pilot production. The firm may or may not be generating revenue, and has usually been in business less than 30 months.
Expansion Stage	A dummy variable equal to one for financing provided to firms in need of development capital. The financing is provided for the growth and expansion of a firm, which may or may not break even or trade profitably. Capital may be used to finance increased production capacity, for market or product development, to provide additional working capital.
Late Stage	A dummy variable equal to one if the firm has reached profitable operating levels.

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Variable	Description
MBO/MBI	A dummy variable equal to one for buyout financing either of MBO or MBI form. We define an MBO as a buyout in which external managers take over the firm. Financing is provided to enable a manager or group of managers from outside the target firm to buy into the firm with the support of private equity investors. We define an MBI as a buyout in which the target's management team acquires an existing product line or business from the vendor with the support of private equity investors.
LBO	A dummy variable equal to one for a buyout in which the new firm's capital structure incorporates a particularly high level of debt, much of which is normally secured against the firm's assets.
Publicly Listed Firm	A dummy variable equal to one for firms with a listing on a stock exchange.
Industry Market / Book	The industry market/book ratio for the firm's primary industry.
Industry Dummy Variables	Dummy variables equal to one for the firm's primary industry.
Country Dummy Variables	Dummy variables equal to one for the firm's country of primary residence.
Year of Exit Dummy Variables	Dummy variables equal to one for the year of exit.
Investment Characteristics	
Syndicated Investment	A dummy variable equal to one if the investment is syndicated, zero if not syndicated, and 0.5 if unknown.
Co-Investment	A dummy variable equal to one if the investment is co-invested (two or more PE funds in the same PE firm investing in the same portfolio firm), zero if not a co-investment, and 0.5 if unknown.
Convertible Security with Actual Periodic Cash Flows	A dummy variable equal to one if the investor holds a convertible security which functionally provides for periodic cash flows back to the investor prior to exit.
Lead Investment	A dummy variable equal to one if the investor is the lead investor, zero if not the lead investor, and 0.5 if unknown.
PE Board Seat(s)	A dummy variable equal to one if the investor has board seat(s), zero if no board seats, and 0.5 if unknown.
Standard Deviation of Cash Flows to Entrepreneur / Initial $ Invested	The standard deviation of the cash flows provided to the entrepreneur from the investor, scaled by (divided by) the initial investment amount. We calculate the standard deviation based on all flows of funds between the PE fund and portfolio firm. For example, a small amount of capital in one round combined with a massive amount in the next round increases the risk measure. Smaller initial investments are also deemed riskier with the scaling. However, our results are robust to different scaling measures.
Initial Amount Invested	The initial investment value (in real 2003 U.S. dollars).

Table 3, Panel A, presents summary IRR statistics for all funds. We also differentiate among funds according to market and legal factors (Panel B), PE fund characteristics (Panel C), portfolio firm characteristics (Panel D), transaction-specific characteristics (Panel E), and by country and legal origin (Panel F). We provide comparison tests for average and median returns across fully realized compared to unrealized or only partially realized investments. The median unrealized IRR is zero for all transactions (Table 3, Panel A, row 1), but the average unrealized IRR is 63.23%. In contrast, realized IRRs have a median of 16.99% and an average of 68.67%. Median realized IRRs are significantly greater than are median unrealized IRRs, but the average realized IRRs are not statistically different from the average unrealized IRRs. We attribute the nonsignificance of the differences in average values to the very large standard deviations of the returns, which is consistent with U.S. data (Cochrane, 2005).

Table 3. Summary Statistics

		Unrealized / Partially realized Portfolio Firm Investments			Fully Realized Portfolio Firm Investments			Difference Tests	
		# Firms	Average IRR	Median IRR	# Firms	Average IRR	Median IRR	Means	Medians
Panel A All Funds									
1	All Funds in the Data	2619	63.23	0	2419	68.67	16.99	0.22	**p <= 0.00*****
Panel B Market and Legal Factors									
2	Legality Index > 20	1874	60.01	2.16	1631	47.23	19.26	-0.87	**p <= 0.00*****
3	Legality Index < 20	745	71.3	0	788	113.04	14.21	0.54	**p <= 0.00*****
4	Disclosure Level Index > 0.75	1654	55.38	1.66	1438	43.68	19.24	-0.81	**p <= 0.00 *****
5	Disclosure Level Index < 0.75	967	76.65	0	981	105.31	14.57	0.47	**p <= 0.00 *****
6	Earnings Aggressiveness Index > -0.383	765	27.43	3.17	646	85.5	18.39	1.03	**p <= 0.00*****
7	Earnings Aggressiveness Index < -0.383	1854	77.92	0	1773	62.54	16.22	-0.54	**p <= 0.00*****
8	MSCI Return > 3.5%	611	76.88	9.32	1908	58.07	20.21	-1.14	**p <= 0.00*****
9	MSCI Return < 3.5%	2008	59.07	0	511	108.24	-10.99	0.64	**p <= 0.00*****
Panel C Fund Characteristics									
10	Fund Number in the PE Firm > 3	1603	69.37	0	781	88.72	1.51	0.34	**p <= 0.00*****
11	Fund Number in the PE Firm < 3	1018	53.55	10.3	1638	59.11	20.27	0.29	**p <= 0.00*****
12	Age of Specific PE Fund > 1795 days	1230	54.15	9.23	2233	57.48	18.73	0.19	**p <= 0.00*****
13	Age of Specific PE Fund < 1795 days	1391	71.25	0	186	202.96	-91.74	0.67	**p <= 0.00*****
14	Portfolio Size (# Portfolio firms) / # General Partners > 20	1035	59.58	0	988	21.29	12.34	**-2.52****	**p <= 0.00*****
15	Portfolio Size (# Portfolio firms) / # General Partners < 20	1586	65.61	1.7	1431	101.38	22.07	0.87	**p <= 0.00*****
Panel D Portfolio Firm Characteristics									
16	Seed Stage	146	8.88	0	71	520.37	-2.92	1.01	**p <= 0.097***
17	Start-up Stage	56	126.72	18.97	34	48.58	-11.45	**-1.65***	p <= 0.127
18	Early Stage	670	39.55	0	424	-1.52	-29.14	**-2.93*****	**p <= 0.00*****
19	Expansion Stage	240	36.4	0	226	28.91	14.54	-0.56	**p <= 0.00*****
20	Unknown Seed, Early or Expansion Stage	838	91.8	5.09	1119	71.69	20	-0.36	**p <= 0.00*****
21	Late Stage	168	55.77	0	116	121.2	25.34	1.5	**p <= 0.00*****
22	Industry Market / Book > 5	1448	101.95	0	816	80.27	6.08	-0.55	**p <= 0.00*****
23	Industry Market / Book < 5	1173	15.42	7.92	1603	62.76	20.28	**2.01****	**p <= 0.00*****
Panel E Investment Characteristics									
24	Syndicated Investment	729	68.11	0	449	151.27	15.88	1.01	**p <= 0.00*****
25	Initial Amount Invested > US $2,500,000	1310	34.62	5.04	1040	75.58	25.22	1.09	**p <= 0.00*****
26	Initial Amount Invested < US $2,500,000	1311	91.8	0	1379	63.46	8.6	-0.75	**p <= 0.00*****
Panel F									
27	UK	305	22.04	6.25	304	40.81	24.1	1.36	**p <= 0.00*****
28	U.S.	1273	60.89	0.19	1162	43.62	13.84	-0.95	**p <= 0.00*****
29	All English Legal Origin	1699	54.25	1.16	1493	42.76	17.49	-0.8	**p <= 0.00*****
30	France	226	17.94	3.82	259	149.53	12.35	0.88	**p <= 0.00*****
31	All French Legal Origin	318	19.1	3.82	312	127.3	12.76	0.95	**p <= 0.00*****

		Unrealized / Partially realized Portfolio Firm Investments			Fully Realized Portfolio Firm Investments			Difference Tests	
		# Firms	Average IRR	Median IRR	# Firms	Average IRR	Median IRR	Means	Medians
32	Germany	126	142.74	0	109	105.31	15.39	-0.35	**p <= 0.04****
33	Switzerland	19	11.48	3.84	12	60.51	35.51	1.48	p <= 0.21
34	All German Legal Origin	206	89.97	0	134	83.64	10.95	-0.08	**p <= 0.00*****
35	Sweden	27	7.73	0	27	44.99	21.44	1.41	p <= 0.11
36	All Scandinavian Legal Origin	54	14.1	3.27	49	50.84	19.29	1.33	**p <= 0.02****
		Mean Test	Median Test			Mean Test	Median Test		
37	English versus French	**2.84*****	p <= 0.63			-0.73	**p <= 0.02****		
38	English versus German	-0.73	p <= 0.14			-0.68	p <= 0.48		
39	English versus Scandinavian	**3.22*****	p <= 0.99			-0.27	p <= 0.93		
40	French versus German	-1.48	p <= 0.43			0.34	p <= 0.92		
41	French versus Scandinavian	0.7	p <= 0.88			0.64	p <= 0.50		

This table presents summary statistics according to various characteristics of the PE funds: Panel (A) all portfolio firms in the data set, Panel (B) market and legal factors, Panel (C) PE fund characteristics, Panel (D) portfolio firm characteristics, Panel (E) transaction-specific characteristics, and Panel (F) country and legal origin. The table shows the data summary for the average and median internal rates of return for the number of realized and unrealized transactions. The unit of observation is the portfolio firm. Difference tests: *, **, *** Significant at the 10%, 5% and 1% levels, respectively. Dollar values expressed in real U.S. 2003 dollars. Variables are as defined in Table 2.

When we observe the legal and accounting indexes (Table 3, Panel B, rows 2-7), we see that the average unrealized IRRs are significantly higher among countries with weaker legal environments and less stringent accounting requirements. This observation is consistent with Hypothesis 1. Due to the high variance in IRRs, these differences-of-means tests are not statistically significant, but are nevertheless indicative of trends in the data.

We note that when public equity markets experience high returns (Table 3, Panel B, row 8), the realized returns are positive and greater than are the unrealized median returns. However, when public equity markets experience low returns (row 9), then the unrealized median returns are greater than the realized median returns, which are negative. These facts indicate that in cold markets, PEs are less inclined to write off the values of their portfolio as they should, given market developments. This finding is consistent with Hypothesis 2. Also, we note that unrealized investment returns are sticky downwards at zero. The data indicate that PE managers do not tend to write off the value of an investment below its book value until such losses are actually realized: 42.4% of the realized investments had IRRs of less than zero, while 16% of the unrealized investments had reported IRRs of less than zero.

Panel C of Table 3 reports the data according to various PE fund characteristics. Although the average and median realized returns are higher among funds that have PE managers of different levels of experience compared to the respective unrealized returns in rows 12 and 13, we note that funds managed by PE managers with less experience have higher median unrealized IRRs compared to those of their more experienced counterparts. This finding is consistent with Hypothesis 3. Furthermore, row 13 shows that younger funds are less inclined to report losses on unrealized investments. Again, this finding is consistent with Hypothesis 3. We also note that funds with large portfolios have statistically significant higher unreported IRRs relative to reported IRRs. This result suggests that those funds that add less value to their portfolio firms are more likely to exaggerate their IRR performance on unrealized investments. Kanniainen and Keuschnigg (2003, 2004) show that in terms of the number of portfolio firms, value added is inversely related to portfolio size per investment professional.

Panel D of Table 3 reports the data according to portfolio firm characteristics. The data indicate that for the start-up and early stages of investment (rows 17 and 18), for which informational opaqueness is very pronounced, the unrealized median and average IRRs are greater than are the realized IRRs. Unrealized IRRs are less than the realized IRRs at the latter development stages. Indirectly in support of Hypothesis 4, we note that the average unrealized IRRs of firms in industries with high market/book values are quite high, over 100%, but due to the high variance, not significantly different from realized IRRs.

The definition of a seed, start-up, early-stage, or even expansion-stage firm is complicated, due to differences in conventions across countries. For many of the firms in our sample, we are unable to obtain a reliable definition, and therefore use an "unknown" category (row 20).

Panel E of Table 3 reports the data according to transaction characteristics. Lead investors in syndicated deals (row 24) report very high average IRRs on unrealized investments.

Panel F of Table 3 reports the data by country and legal origin. The data indicate that English legal origin countries experience the highest median realized IRRs (17.49%), and German legal origin countries experience the lowest median realized IRRs (10.95%). However, tests for differences in medians (rows 96-101) are statistically significant for differences in medians between English and French legal origin countries. There are no statistically significant differences in means across legal origins. This finding is explained by the high variability in returns, which is consistent with Cochrane's (2005) evidence for the U.S. There are no statistically significant differences in medians across legal origins for unrealized returns. The mean unrealized returns are highest (89.97%) in German legal origin countries, but the differences in mean unrealized returns are not significant for German legal origin countries relative to other legal origin countries. Again, this nonsignificance is due to the high variance. Mean English legal origin countries' unrealized returns are 54.25%, and significantly higher than are mean French legal origin countries' unrealized returns (19.1%) and mean Scandinavian legal origin countries' unrealized returns (14.1%). Further, we note that for all legal origins, the median unrealized returns are lower than are median realized returns. Panel F of Table 3 indicates that legal origins and country-specific factors do not appear to play as great a role in driving differences in means and medians as do market and legal factors (Panel B of Table 3), fund characteristics (Panel C), portfolio firm characteristics (Panel D), and investment characteristics (Panel E). In particular, we note that the differences in legal and accounting standards (Panel B, rows 2-7) appear to be stronger drivers of differences in realized and unrealized returns than do the legal origins variables in Panel F.

Since some entrepreneurial firms do business in more than one country and others are in unknown locations, in our empirical analysis we eliminated from the data entrepreneurs with an unknown domicile. Using alternative methods, such as two-step regressions or inferring values based on other information known about the firms, to deal with these unknown observations does not yield materially different inferences drawn from the data. For entrepreneurs based in more than one country, we use the average values of the legal and accounting conditions variables across the different countries.

DERIVING A BENCHMARK: THE ANALYSIS OF REALIZED RETURNS

In this section we analyze realized returns. The first subsection describes empirical methods. Results are briefly discussed in the second subsection. These results are thereafter used as a benchmark in the analysis of unrealized returns in the subsequent section.

Empirical Methods

The methods we use to analyze realized returns are based on previous work (Cochrane, 2005; Nikoskelainen & Wright, 2007) and utilize a multistep Heckman-like (1976, 1979) sample selection correction on realized/ unrealized exits and full/partial exits. For the subsample of realized exits that we report below, we find that this

approach outperforms both other single-step sample selection corrections and standard ordinary least squares (OLS) methods.

Our sample selection corrections involve multiple steps. In the first step we determine the probability of either full or partial exit. Our second step involves establishing the probability of a full or partial exit, taking into account the first-step consideration of an actual exit. The third step is a linear regression, which we use to explain returns with the sample selection correction based on steps one and two (Heckman, 1976, 1979). We note that our results are robust in relation to alternative specifications of the sample selection corrections.

Our econometric specifications are a function of the following variables that we define in Table 2:

(1) Probability of exit $= f\{$age of investment$\}$

(2) Probability of a full exit $= f\{$age of investment, legal environment, stage of investment, country dummy variables, industry dummy variables, exit year dummy variables, syndication | Actual Exit in regression (1)$\}$

(3) Realized returns $= f\{$market and legal conditions, PE fund characteristics, portfolio firm characteristics, investment characteristics | Actual Exit [regression (1)] and Full Exit [regression (2)]$\}$

Step (1) models the probability of an exit as a function of age. The age of the investment is a natural explanatory variable for the probability of exit (Cochrane, 2005; Cumming *et al.*, 2006). The longer a particular firm is in the portfolio of the PE fund, the more likely it is to be divested, regardless of whether the firm is successful or unsuccessful.

Step (2) models the extent of exit as a function of variables that we use as our proxies for the information asymmetry that the new owner(s) of the firm confronts upon exit. This step is consistent with Gompers and Lerner (1999) and Cumming and MacIntosh (2003). Partial exits are more likely when the new owner faces more pronounced information asymmetry. The PE partially exits to certify the quality of the firm to the new owner. Full exits are less likely for younger investments, poorer legal conditions, earlier-stage firms, high-tech industries, and non-syndicated investments. In step (2) we also control for market conditions with exit year dummy variables.

Step (3) examines the factors that affect realized investment performance: market and legal conditions, characteristics of PE funds, characteristics of portfolio firms, and transaction structures. Earlier studies are consistent with the view that PE fund returns are greater in stronger markets (Cochrane, 2005; Phalippou & Zullo, 2005), with improved governance (Hochberg *et al.*, 2007; Ljungqvist & Richardson, 2003a, b), and in common-law countries with stronger legal environments (Lerner & Schoar, 2005). PE funds that are reputed to add greater value tend to have higher returns (Hsu, 2004), and PE-backed firms in high-tech industries also tend to earn higher returns (Gompers & Lerner, 1999). PEs that structure their transactions with convertible securities and stronger control rights add more value, thereby improving returns (Kaplan & Schoar, 2005; Ljungqvist & Richardson, 2003a, b). Step (3) reflects this prior work (see also Ahlstrom *et al.*, 2007; Beuselinck *et al.*, 2008, Beuselinck & Manigart, 2007; Bowen & De Clercq, 2008; Coeurduroy & Murray, 2008; Cumming, 2008; Kut *et al.*, 2007; Meuleman & Wright, 2006; Nielsen, 2008; Smolarski, 2007; Wright *et al.*, 2004, 2005, 2007; Zacharakis *et al.*, 2007).

In view of the large number of regressions and to streamline the findings, we do not present extensive robustness checks here. When we examine alternative specifications with different right-hand-side variables, we find that the results are extremely robust. We attribute this robustness to the large number of observations in the data. For instance, the results are robust to inclusion of industry, country, and exit-year dummy variables. We considered other variables, such as other measures of market returns, etc., but eliminated them as less relevant. We correct for standard errors by cluster design (Petersen, 2009), by country, and heteroskedasticity in all regressions.

It is possible that some of the right-hand-side variables are endogenous. For example, syndication might be endogenous if project quality affects the probability of syndication. We consider this issue, but we are limited by

the absence of ideal instruments (as in Brander *et al.*, 2002). Some potential instruments are fund characteristics, such as fund location, if different from the portfolio firm, and fund size, which could be more closely connected to syndication than to returns themselves. Since we do not find material differences in the results, we report only the straight estimates without the use of instrumental variable methods. Other studies, such as Cochrane (2005) and Ljungqvist and Richardson (2003a, b), ignore the effect of any investment characteristics on returns, but Hand (2005), considers more detailed firm-specific information. We do not feel comfortable with dropping these variables, because they have been used in other studies to explain the performance of PE-backed IPOs and the ensuing returns to PEs (Barry *et al.*, 1990; Megginson & Weiss, 1991; Gompers & Lerner, 1999; Hand, 2005). We believe that failure to consider these variables could result in a more serious problem concerning omitted variables in relation to endogeneity. Regardless, our main results are robust to alternative specifications with or without these variables.

Ideally, our specifications in each step would involve different explanatory variables (Puhani, 2000). To some extent we use different variables, as the right-hand-side variables do not completely overlap. For instance, the age of the investment is in steps (1) and (2), but not in step (3). Our reported results are robust to alternative specifications. A limitation in our data set is that, in many cases, we do not know the precise exit vehicle, so we cannot explore that dimension with the data. Nevertheless, if there is no causal relation between exit vehicle choice and returns, then this lack of detail in the data is not a significant limitation for our research question. The exit choice would be endogenous to a good project with high returns. At a general level of comparison, steps (1) and (3) are consistent with Cochrane (2005), steps (1) and (2) are consistent with Cumming *et al.* (2006), and Step (3) is consistent with Ljungqvist and Richardson (2003b) and Brander *et al.* (2002).

Empirical Results

In Table 4 we present the results for the full sample. The main results are robust to consideration of the subset of only the VC investments. Model 1 is the standard OLS approach with the subsample of fully realized exits. Model 2 is the three-step bivariate Heckman-corrected (1976, 1979) approach based on actual exits compared to no exit, and full exits compared to partial exits. We note that the data indicate a superior fit in regard to the Heckman-corrected model (Model 2) relative to the simple OLS model (Model 1) concerning the subsample of realized returns. Adjusted R^2s and other model selection criteria all point to the appropriateness of Model 2.

The Step 1 selection regressions in Model 2 indicate that the longer the duration of the investment, the more likely the exit. This point is obvious, and Cochrane (2005) uses this variable in his sample of U.S. data.

We use the Step 2 selection regressions in Model 2 to examine the determinants of full compared to partial exits. A partial exit facilitates ownership transfer when it is relatively difficult for the new owner to value and monitor the firm. Consistent with previous work such as Gompers and Lerner (1999), PE funds choose a partial exit when the informational problems faced by the new owners are more pronounced. The funds then complete the exit and fully divest once the new owners feel sufficiently confident to take over total ownership of the firm. Our specifications control for industry factors, year effects, stage of development at first investment, investment duration, and investment syndication. This method is consistent with Gompers and Lerner (1999), Lockett and Wright (1999, 2001), Wright and Lockett (2003), Cumming and MacIntosh (2003), Manigart *et al.* (2006), and De Clercq *et al.* (2008).

The data indicate that controls for other factors are not warranted. Furthermore, we do not want to over specify the full/partial exits regressions, because it is undesirable for the different Heckman (1976, 1979) regressions to have right-hand-side variables that are overly correlated between equations (Puhani, 2000).

Alternative specifications for the first-step selection regressions, including alternative right-hand-side variables, single-step mechanisms rather than multiple step, etc., do not materially impact the results, including those discussed below pertaining to IRRs. (Different specifications are available on request.)

Table 4. Regression Analysis on the Determinants of Realized Returns

	Predicted Sign for Realized Returns	Model 1 OLS on Subsample of Fully Realized IRRs Dependent Variable= Log(1+IRR)		Model 2 1st Step Heckman (1976, 1979) Regression: Bivariate Probit Model Step 1a: Determinants of Exit Dependent Variable= 1 if Exit		Step 1b: Determinants of Full Exit, conditioned on step 1a regarding an actual exit Dependent Variable= 1 if Full Exit		2nd Step Heckman Regression (Realized IRRs) Dependent Variable= Log(1+IRR)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant		-5.48	-1.5	-0.26	-2.08**	-4.17	-2.3**	-15.88	-3.4***
Duration of PE Investment (in Days)				0.0007	14.4***	0.0002	2.4**		
Market and Legal Factors									
Log (Legality Index)	+	3.91	3.6***			1.27	2.0**	3.30	2.4**
Log (Committed Capital Overall Market at Inv Date)	-	-0.82	-6.8***					0.89	4.5***
Log (MSCI Return)	+	1.09	1.4					1.45	3.0***
Log (Risk Free Rate)	?	-10.23	-2.5**					-20.66	-4.1***
Fund Characteristics									
Log (Fund Number in the PE Firm)	+	0.06	0.6					-0.04	-0.4
Log (Portfolio Size (# Portfolio firms) / General Partner)	-	-0.30	-2.1**					-0.33	-2.4**
Portfolio Firm Characteristics									
Seed Stage	?	-0.55	-1.1			0.12	0.5	-0.55	-1.4
Start-up Stage	?	0.07	0.1			0.37	2.3**	-0.16	-0.3
Early Stage	?	-1.34	-4.6***			0.23	0.9	-1.25	-5.2***
Expansion Stage	?	0.06	0.2			-0.08	-0.4	0.02	0.1
Late Stage	?	1.00	2.0**			0.11	0.4	0.85**	2.2**
MBO/MBI	?	-0.36	-2.0**			-0.45	-3.6***	-0.21	-0.7
LBO	?	-0.32	-0.6			-0.51	-1.5	0.22	0.3
Publicly Listed Firm	?	2.32	3.0***					2.47	2.6***
Turnaround	?	-0.03	-0.1			-0.52	-2.0**	0.51	0.5
Secondary Trade	?	-1.83	-0.9			0.46	0.8	-1.96	-1.5
Log (Industry Market / Book)	+	0.12	0.6			-0.11	-1.1	-0.01	-0.1
Industry Dummy Variables?		Yes		No		Yes		Yes	
Country Dummy Variables?		Yes		No		Yes		Yes	
Year of Exit Dummy Variables?		Yes		No		Yes		Yes	
Investment Characteristics									
Syndicated Investment	+	0.42	2.06**			-0.40	-2.7***	0.55	2.3**
Co-Investment	-	-0.11	-0.52					-0.20	-0.9
Convertible Security with Actual Periodic Cash Flows	+	2.56	15.64***					2.22	13.3***
Lead Investment	?	0.34	1.37					0.36	1.6

	Predicted Sign for Realized Returns	Model 1 OLS on Subsample of Fully Realized IRRs		Model 2 1st Step Heckman (1976, 1979) Regression: Bivariate Probit Model Step 1a: Determinants of Exit		Step 1b: Determinants of Full Exit, conditioned on step 1a regarding an actual exit		2nd Step Heckman Regression (Realized IRRs)	
		Dependent Variable= Log(1+IRR)		Dependent Variable= 1 if Exit		Dependent Variable= 1 if Full Exit		Dependent Variable= Log(1+IRR)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
PE Board Seat(s)	+	-0.54	-1.67*					-0.78	-2.9***
Standard Deviation of Cash Flows to Entrepreneur	?	0.00	1.67*					0.00	0.9
Log (Amount Invested)	?	0.02	0.43					0.04	0.8
Heckman (DATE)Lambda A	-							-1.99	-3.0***
Heckman (DATE)Lambda B	-							-6.40	-10.4***
Model Diagnostics									
Number of Observations		1819		4306				1819	
Adjusted R²		0.28						0.32	
F Statistic		17.27***						19.99***	

This table presents OLS and Heckman (1976, 1979) corrected estimates of the determinants of realized PE IRRs. We use an OLS model on the restricted sample of fully realized exits for the full sample PE investments. Model 2 presents Heckman corrected estimates on the sample of all PE investments. The Heckman corrections involve a first step bivariate probit model to select fully realized exits, as opposed to no exit, or a partial exit. By using these corrections we can assess the incidental truncation of observed IRRs. The sample in the second step is based on the selection in the first step. The full sample of all realized and unrealized (or partially realized) investments comprises 5,038 observations from 39 countries. We skip observations for which there is incomplete data for the transaction. One observation is per portfolio firm, not per staged investment round. Standard errors are corrected by cluster design by country and heteroskedasticity. *, **, *** Significant at the 10%, 5% and 1% levels, respectively. Variables are as defined in Table 2.

Given these preliminary selection regressions, we can briefly analyze the returns based on the Heckman (1976, 1979) corrections, and compare these results with standard OLS tests that are based on the subsample of fully realized IRRs. We use four groups of determinants in our regression: market and legal factors, fund characteristics, firm characteristics, and investment characteristics.

When we look at market and legal factors that affect realized returns, we find a statistically significant and positive coefficient of the market return variable in our Heckman-corrected (1976, 1979) estimates (Model 2). This result accords with the Capital Asset Pricing Model. The coefficient on the legal environment index is positive and significant in all of the specifications. This finding indicates that legal protection facilitates PE returns, and is consistent with the role of legal protections in public markets (La Porta *et al.*, 1997, 1998). In most of our regressions, to control for country- and industry-specific effects we use both country and industry dummies.

For fund characteristics, we find highly negative, significant, economically large effects of portfolio size per investment professional. These results are consistent with Kanniainen and Keuschnigg (2003, 2004), Keuschnigg (2004), and Cumming (2006).

For portfolio firm characteristics, depending on the specification, we find some differences in the estimates for stage of investment variables. Nevertheless, our main regression results are robust to the inclusion or exclusion of different controls for country dummy variables, industry dummy variables, and year of exit dummy variables.

We find that investment structures appear to have a significant effect on returns along several different dimensions. First, syndication significantly enhances returns. This finding is consistent with the view that syndic-

ation facilitates value-added investments (Brander *et al.*, 2002; Gompers & Lerner, 1999). Second, co-investment and the allocation of board seats are associated with lower returns, possibly because such structures are more likely for poorly performing investments (see also Gompers & Lerner, 1999). Third, the use of convertible securities with periodic cash flows (Table 3) enhances returns. This finding is consistent with the view that the use of convertible securities gives rise to incentives for the PE manager to provide value-added advice and to efficiently monitor the firm. It also provides incentives for the portfolio firm to perform (Casamatta, 2003; Schmidt, 2003).

We note that both selection effects have a statistically and economically important impact on the measurement of returns. The lambda A and B coefficients are both negative and statistically significant in the Heckman (1976, 1979) regression in Model 2 in Table 4. The negative sign of these coefficients indicates that realized returns are systematically lower than unrealized returns. In particular, unrealized returns are roughly 7% higher than realized returns, and unrealized returns from partial exits are roughly 1% higher than realized returns. This result implies that the degree to which unrealized returns are overstated is greater for completely unrealized exits compared to partially realized exits.

Overall, the models in Table 4 correspond closely to the data. The adjusted R^2 values range from 28% to 32%. The high R^2 values in our specifications are useful for reliably predicting returns of unrealized investments.

ANALYSIS OF REPORTING BIASES IN UNREALIZED INVESTMENTS

In the first subsection we present an analysis of unexited investments based on predicted returns with the regression models in Table 4 discussed above. In the second subsection we present an analysis of reported returns versus subsequently realized returns for a subsample of the data.

Predicted Returns Compared to Reported Returns

Empirical methods

In our data we observe one investment valuation for each unexited portfolio firm for the period June 2000 to September 2003. We use three steps to compare the predicted returns for unrealized investments with the reported returns on unrealized investments. First, we estimate the realized IRRs based on a set of explanatory variables that are our proxies for market and legal conditions, PE fund and portfolio firm characteristics, and transaction characteristics for each of the observations for the realized returns. These variables are collectively represented by $X_{Realized}$ in Eq. (1):

$$IRR_{Realized} = \alpha_1 + \beta_1 X_{Realized} + residuals$$

Second, we generate a vector of predicted returns for the full sample of all investments based on the estimated coefficients in Eq. (1), as follows:

$$IRR_{Predicted} = \hat{\alpha}_1 + \hat{\beta}_1 X_{Unrealized}$$

Third, we compare the difference between the reported unrealized returns by PE managers to predicted returns, and regress this difference on a set of explanatory variables:

$$IRR_{Unrealized} - IRR_{Predicted} = \alpha_3 + \beta_3 X_{Unrealized} + residuals$$

One possible concern with the data and empirical strategy is that the IRRs of many unrealized investments are reported at cost to institutional investors. This fact creates two concerns in our regression analyses. The first is that the difference between reported IRRs and predicted IRRs on the unrealized investment are the negative of

the predicted IRR, indicating a complete absence of information content in reported valuations. The second is that the relation between accounting standards and (over-) valuations stems from the fact that badly performing firms are held at their cost valuations, i.e., with an IRR of zero, while well-performing firms experience a further investment stage leading to higher (market) valuations. The signs and statistical significance of our results are robust to excluding all transactions from the data and regressions for which the reported unrealized IRR is zero. (This finding applies to approximately 25% of our sample.) However, the magnitude of the estimated coefficients varies, depending on whether we exclude this subsample (details with different subsample are available on request from the authors). Also, we note our regressions results are robust to sensitivity checks for collinearity.

We present the estimates of Eq. (3) in Tables 5 and 6. We express these differentiated amounts as $\log(1+\text{Reported IRR}) - \log(1+\text{Predicted IRR})$. Alternatively, we can interpret this difference as $\log((1+\text{Reported IRR})/(1+\text{Predicted IRR}))$, so that the economic significance of the coefficients directly indicates the relative degree of overstatement of unrealized returns. Our explanatory variables consist of our four categories that are our proxies for information asymmetry between PE managers and their institutional investors. Category (1) covers market and legal conditions, along with different accounting indexes used in recent accounting research on international differences in reporting standards (Bhattacharya *et al.*, 2003; Burgstahler *et al.*, 2006; and La Porta *et al.*, 2006). Category (2) is PE fund characteristics. Category (3) is portfolio firm characteristics, and Category (4) is transaction-specific characteristics. Model 4 in Table 5 shows that on average, from June 2000 to September 2003, PE managers report unrealized IRRs that are 143% of the magnitude predicted by our econometric model. The value of 143% indicates significant reported overvaluations, since the value should be 100% if actual and expected returns are equal.

Table 5. Determinants of the Difference Between Unrealized IRRs Disclosed to Institutional Investors and Predicted IRRs

		Model 3 Unrealized Log(1+IRR) - Fitted Values from Predicted Log (1+IRR) in Model 1 of Table 4		Model 4 Unrealized Log(1+IRR) - Fitted Values from Predicted Log (1+IRR) in Model 2 of Table 4	
		Coefficient	t-statistic	Coefficient	t-statistic
Constant		6.42	12.7***	4.61	3.9***
Market and Legal Factors					
Disclosure Index	H1 (-)	-0.45	-4.8***	-0.39	-2.2**
Earnings Aggressiveness Index	H1 (+)	42.61	14.4***	44.98	7.8***
Sarbanes Oxley		-0.31	-5.9***	-1.65	-16.3***
Log (MSCI Return)	H2 (-)	-1.46	-8.3***	-4.00	-10.5***
Log (Risk Free Rate)		30.12	14.5***	-31.18	-7.6***
Fund Characteristics					
Log (Age of PE Fund within the PE Firm)	H3 (-)	-0.36	-6.4***	-1.72	-11.3***
Log (Portfolio Size (# Portfolio firms) / General Partner)		0.34	9.6***	0.73	11.0***
Portfolio Firm Characteristics					
Seed Stage	H4 (+)	0.10	0.75	-0.62	-3.2***
Start-up Stage	H4 (+)	0.17	1.40	0.54	2.1**
Early Stage	H4 (+)	1.24	20.5***	1.05	9.6***
Expansion Stage	H4 (-)	-0.12	-1.56	-0.45	-2.9***
Late Stage	H4 (-)	-0.97	-8.9***	-0.95	-5.5***

MBO/MBI	H4 (-)	0.26	2.4**	-0.42	-1.8*
LBO	H4 (-)	0.42	1.54	-0.38	-0.7
Publicly Listed Firm	H4 (-)	-1.79	-10.5***	-1.63	-9.3***
Log (Industry Market / Book)		-0.11	-2.0**	-0.03	-0.3
Disclosure Year Dummy Variables		Yes		Yes	
Industry Dummy Variables?		Yes		Yes	
Country Dummy Variables?		Yes		Yes	
Investment Characteristics					
Syndicated Investment		-0.34	-5.8***	-0.63	-6.3***
Co-Investment		0.08	1.46	0.05	0.6
Convertible Security with Actual Periodic Cash Flows		-2.62	-21.5***	-3.06	-9.6***
Lead Investment		-0.18	-2.8***	0.04	0.3
PE Board Seat(s)		0.59	7.2***	0.71	5.2***
Standard Deviation of Cash Flows to Entrepreneur		-.276867D- -0.04	-0.1	0.00	1.5
Log (Amount Invested)		-0.04	-2.4**	0.02	0.6
Model Diagnostics					
Number of Observations		1294		1294	
Adjusted R^2		0.74		0.65	
F Statistic		99.80***		74.91***	

This table presents OLS estimates of the determinants of the difference between the unrealized reported IRRs and the predicted IRRs based on the models for realized IRRs in Table 4. Each individual observation is per portfolio firm, not per staged investment round. We exclude observations where a variable that is used in the particular specification is not observed, due to private confidential information. The number of observations corresponds to the number of unrealized investments. Standard errors are corrected by cluster design by country and heteroskedasticity. *, **, *** Significant at the 10%, 5% and 1% levels, respectively. The variables are as defined in Table 2.

Multivariate econometric results

We derive the dependent variables for each model in Tables 5 and 6 from the models in Table 4. We report two different specifications based on predictions from each of the two Table 4 models. The results are robust to concerns about collinearity. Overall, the multivariate econometric analyses indicate that the data are consistent with the theory that valuations of unrealized investments are higher when the information asymmetries that confront institutional investors are more pronounced, as happens in countries with weaker accounting standards, and for investors, portfolio firms, and transactions that are more opaque.

The results in Tables 5 and 6 indicate that valuations are overstated by PE funds in countries with weaker disclosure, and in countries with less conservative accounting.[2] The results for countries with weaker disclosure standards (La Porta _et al._, 2006) and greater earnings aggressiveness (Bhattacharta _et al._, 2003) are strong in Models 3 and 4 in Table 5. Furthermore, our results are robust to the use of the various private-firm accounting standards indexes (Burgstahler _et al._, 2006) in Models 5-10 in Table 6. We note that the reporting of overvaluations was far greater before the introduction of the Sarbanes-Oxley legislation in July 2002. Table 6 presents supportive evidence, using yearly fixed-effect regressions.

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2   We note that we express the legal and accounting indexes in logs, with the exception of the Earnings Aggressiveness Index. The reason is that the values in this index are small fractions that are typically negative (see Bhattacharya _et al._, 2003, Table 2). We considered converting the earnings aggressiveness index into logs as well, using arbitrary rescaling to make a log transformation possible. The estimates in logs (available on request) yield similar results without qualitative differences in interpretation of any of the results.

Overall, we find very strong evidence that stricter accounting environments curb the overvaluation of unrealized PE fund returns reported by PE managers to their institutional investors. This finding supports Hypothesis 1. We also find evidence that a stronger legality index leads to less overvaluation (Table 6, Model 10). This finding supports the idea that stronger legal settings that protect investors impose higher costs of overvaluing PE firms. Thus, for a wide variety of proxies for international differences in accounting and legal settings, there is strong support for Hypothesis 1.

Consistent with Hypothesis 2, we find that overvaluation is more pronounced when there are weak stock market conditions, as in Models 3 and 4 in Table 5. We note as well that PE funds appear to be reluctant to devalue the book value of their portfolio firms when there are weak markets, because doing so would signal negative information to potential new investors in the investee company and for investors in the PE fund itself. As indicated in the description of the data, the reported unrealized returns are rarely less than zero.

Aside from market, legal, and accounting variables, several other categories of variables are related to information opaqueness and reputation. First, for fund manager characteristics, the valuations reported by less-experienced PE managers are significantly higher. More-experienced PE managers have more reputational capital at stake, but younger PE managers have an incentive to signal with higher valuations to increase the probability of closing the next fund (Hypothesis 3). Also, the overvaluation of unrealized IRRs is greater among PE funds with larger portfolios per investment professional. This finding is consistent among all our specifications (Models 3, 4, and 10 in Tables 5 and 6). Fund managers who invest in a larger number of companies provide less value-added to their investees and have lower expected returns. Such fund managers have an incentive to overvalue their unexited portfolio holdings to attract funds from institutional investors.

Furthermore, we find some evidence of stronger overvaluation among early-stage firms and less-pronounced overvaluation for expansion-stage and late-stage portfolio firms (Model 4 in Table 5). This evidence suggests that the longer the time to exit, the less potentially damaging is the overvaluation, since there is a longer time period before these overvaluations become transparent and a higher chance that positive factors may arise, thus allowing the PE manager to justify the overvaluation (Hypothesis 4). Also, information asymmetries are more pronounced with earlier-stage high-tech firms, thus providing greater scope for exaggerating unrealized returns. However, we acknowledge that not all of the estimated coefficients for the stage variables are consistent. In particular, seed-stage investments tend to not be overvalued in Model 4. One explanation for this result is that by convention, seed investments are valued at cost.[3] Further, our evidence for buyout investments is not robust to the specification of the benchmark model (Model 3 compared to Model 4). We note that this is the only major difference between Models 3 and 4. In some cases, such as riskier leveraged buyouts (LBOs) with high degrees of leverage, it is possible that the overvaluation is attributable to misperceived risks.

Model 3 in Table 5 indicates that overvaluation is more pronounced among firms in high market/book industries, in certain industries such as the web-based firms, and among smaller investments. However, these effects are not robust in Models 4 and 10. This finding provides support for Hypothesis 4, and indicates once again that investments that exhibit a higher degree of information asymmetries are more inclined to be overvalued. The value of growth firms relies heavily on the anticipated growth rate, which is exposed to shocks that have positive or negative effects on firm valuation. Hence, it is more difficult for investors to distinguish between the impact of market shocks and overvaluation.

Also, Models 3, 4, and 10 indicate less overvaluation among syndicated investments. PE managers are less inclined to report overly high valuations when their actions might be monitored by, and therefore might be revealed to, other syndicated investors. This evidence implies that syndication acts as a barrier for overvaluation. PE managers of different PE firms monitor each other in this respect. But this is not the case for PE managers of the same PE firm: the co-investment variable has a positive, but not statistically significant, effect on the degree of overvaluation.

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3   The 2007 reporting guidelines for the EVCA (see, e.g., http://www.evca.com; and http://www.apcri.pt/New/imagens/evca_reporting_guidelines.pdf), for example, recommend reporting at cost for seed stage investments.

Table 6. Private Firm Disclosure Indexes and Unrealized IRRs Disclosed to Institutional Investors in Europe

	Hypothesis # (Predicted Sign)	Model 5 Dependent Variable: Unrealized Log(1+IRR) - Fitted Values from Predicted Log(1+IRR) in Model 2 (Table 4)		Model 6 Dependent Variable: Unrealized Log(1+IRR) - Fitted Values from Predicted Log(1+IRR) in Model 2 (Table 4)		Model 7 Dependent Variable: Unrealized Log(1+IRR) - Fitted Values from Predicted Log(1+IRR) in Model 2 (Table 4)		Model 8 Dependent Variable: Unrealized Log(1+IRR) - Fitted Values from Predicted Log(1+IRR) in Model 2(Table 4)		Model 9 Dependent Variable: Unrealized Log(1+IRR) - Fitted Values from Predicted Log(1+IRR) in Model 2 (Table 4)		Model 10 Dependent Variable: Unrealized Log(1+IRR) - Fitted Values from Predicted Log(1+IRR) in Model 2 (Table 4)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Market and Legal Factors													
EM1	H1 (+)	0.41	3.6***										
EM2	H1 (+)			4.5	2.3**								
EM3	H1 (+)					3.41	1.4						
EM4	H1 (+)							10.38	2.9***				
EM Aggregate	H1 (+)									0.023	2.3**	0.01	2.2**
Log (Legality Index)	H1 (-)											-2.47	-1.8*
Year 2000 Disclosure (Fixed Effect)		-8.77	-20.4***	-10.8	-7.8***	-5.75	-4.0***	-16.69	-5.3***	-8.965	-14.1***	10.59	2.5**
Year 2001 Disclosure (Fixed Effect)		-9.28	-19.3***	-11.1	-7.8***	-5.98	-4.4***	-17.04	-5.3***	-9.489	-14.2***	9.05	2.1**
Year 2002 Disclosure (Fixed Effect)		-10.64	-24.3***	-12.4	-9.4***	-7.22	-4.7***	-18.42	-5.9***	-10.603	-18.1***	7.98	1.9*
Year 2003 Disclosure (Fixed Effect)		-10.23	-17.5***	-12.2	-8.4***	-7.20	-4.8***	-18.08	-5.7***	-10.389	-13.7***	8.38	2.0**
Log (MSCI Return)	H2 (-)											-7.23	-9.8***
Log (Risk Free Rate)												-42.34	-7.0***
Fund Characteristics													
Log (Age of PE Fund within the PE Firm)	H3 (-)											-1.52	-9.7***
Log (Portfolio Size (# Portfolio firms) / General Partner)												0.28	2.0**
Portfolio Firm Characteristics													
Seed Stage	H4(+)											0.65	2.5**
Start-up Stage	H4(+)											0.72	2.1**
Early Stage	H4 (+)											1.92	7.3***
Expansion Stage	H4 (-)											0.19	0.7

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	Hypothesis # (Predicted Sign)	Model 5		Model 6		Model 7		Model 8		Model 9		Model 10	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Late Stage	H4 (-)											-0.28	-0.8
MBO/MBI	H4 (-)											1.11	3.9***
LBO	H4 (-)											0.24	0.5
Log (Industry Market / Book)												-0.18	-1.5
Industry Dummy Variables?		Yes		Yes		Yes		Yes		Yes		Yes	
Country Dummy Variables?		No		No		No		No		No		No	
Investment Characteristics													
Syndicated Investment												-0.46	-3.1***
Co-Investment												-0.12	-0.7
Convertible Security with Actual Periodic Cash Flows												-4.29	-6.4***
Lead Investment												-0.15	-1.0
PE Board Seat(s)												0.85	4.6***
Standard Deviation of Cash Flows to Entrepreneur												0.0004	0.5
Log (Amount Invested)												0.02	0.5
Model Diagnostics													
Number of Observations		366		366		366		366		366		366	
Adjusted R²		0.24		0.22		0.22		0.23		0.21		0.78	
F Statistic		12.25***		11.48***		11.06***		11.72***		11.02***		44.29***	

This table presents OLS estimates of the determinants of the difference between the unrealized reported IRRs and the predicted IRRs based on Model 2 for realized IRRs in Table 4. Each individual observation is per portfolio firm, not per staged investment round. Observations are only for the subset of portfolio firms in Europe for which Burgstahler et al.'s (2006, Table 2) accounting standards for earnings management in private and public firms in the European Union (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iraly, The Netherlands, Portugal, Spain, Sweden, United Kingdom) are available. We exclude observations for which we do not observe a variable that is used in the particular specification, due to private confidential information. The number of observations corresponds to the number of unrealized investments. Standard errors are corrected by cluster design by country and heteroskedasticity.. *, **, *** Significant at the 10%, 5% and 1% levels, respectively. The variables are as defined in Table 2.

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Models 3, 4, and 10 indicate that the use of convertible securities mitigates overvaluation. Periodic cash flows lead to a higher degree of certainty in valuation. This certainty makes overvaluation less likely and less attractive to a PE manager, since the valuation of these investments can more easily be determined or verified by outside parties, such as auditors or institutional investors.

Our data support the idea that overvaluation of unrealized IRRs takes place when the information asymmetries that confront the institutional investor are greater. In the context of our international sample, it is perhaps most important that the data indicate that the reporting of overvaluations is more pronounced in countries with lower-quality accounting standards.

Robustness Check: Reported Returns Compared to Subsequently Realized Returns

We compare actual realized IRRs to unrealized reported IRRs for a subsample of 80 observations (portfolio firms) from 11 countries (Canada, Finland, France, Germany, Israel, Norway, Spain, Sweden, the Netherlands, the UK, and the U.S.). We use only those firms for which both the realized and unrealized reported IRRs are known. The reported IRRs are between 2000 and 2003, and the realized IRRs are between 2001 and 2005. The average (median) duration between the reported IRR and the realized IRR is 2.6 years. The average (median) unrealized reported IRR is 219.71% (2.56%). The average (median) subsequently realized IRR is 98.46% (8.70%). Our predicted average (median) IRR (based on Model 1 of Table 4) for this subsample is 15.22% (7.75%). The correlation between out-of-sample average realized IRRs and our predicted IRRs is 0.45, which is significant at the 1% level. We note that the average reported unrealized IRR is more than 100% higher than the average realized IRR. We also note that although the average level predicted by our model is less than the out-of-sample realized IRR, there is a high positive correlation between our predicted IRR and the out-of-sample realized IRR.

In Table 7 we present regressions that we use to analyze the differences between reported unrealized IRRs and predicted IRRs, and between reported unrealized IRRs and subsequently realized IRRs. We use the subsample of the 80 investments for which this information is available. Model 11 presents our OLS estimates of the determinants of the difference between unrealized reported IRRs and predicted IRRs. These estimates are analogous to regression Model 3 in Table 5, although there are fewer included right-hand-side variables in Model 1 due to the comparative dearth of observations. In Models 12, 13, and 14 in Table 7, the dependent variable is the difference between unrealized reported IRRs and subsequently realized IRRs for the same investments. There are 80 observations, which represent the 80 portfolio firms that are subsequently exited.

Table 7 indicates findings similar to those reported above in Tables 5 and 6. We present Model 11 to provide a basis of comparison to the Table 5 results for the subsample of 80 observations. The unrealized reported IRRs are significantly higher than expected for countries with weaker accounting standards, in terms of both the Disclosure Index and Earnings Aggressiveness Index, consistent with Hypothesis 1. Also, we note that unexited reported IRRs are significantly higher than expected for high-tech industries with high industry market/book values, and for non-syndicated investments and investments for which convertible securities are not used. Further, we note that in Models 12, 13, and 14, unrealized reported IRRs are higher than the subsequently realized IRRs for investments with weaker accounting standards (a lower disclosure index and higher earnings aggressiveness index, consistent with Hypothesis 1), and higher for investments in which convertible securities are not used.

The econometric results in Table 7 do not perfectly overlap for the prediction model or the actual realizations for the subsample of 80 firms for which we can make this comparison. Nevertheless, the main qualitative results are analogous and robust to alternative specifications. Table 7 shows overvaluation is greater among countries with weak accounting standards, consistent with Hypothesis 1. Overvaluation is also greater in the presence of certain characteristics of the investment such as the use of convertible securities, which mitigates the tendency for PE managers to report overvalued unrealized investments to their institutional investors.

Table 7. Determinants of the Difference between Reported Unrealized IRRs Disclosed to Institutional Investors and Subsequently Realized IRRs

	Hypothesis # (Predicted Sign)	Model 11 Dependent Variable: Unrealized Reported Log(1+IRR) - Fitted Values from Predicted Log (1+IRR) in Model 1 of Table 4		Model 12 Dependent Variable: Unrealized Reported Log(1+IRR) - Subsequently Realized Log (1+IRR)		Model 13 Dependent Variable: Unrealized Reported Log(1+IRR) - Subsequently Realized Log (1+IRR)		Model 14 Dependent Variable: Unrealized Reported Log(1+IRR) - Subsequently Realized Log (1+IRR)	
		Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant		10.89	4.8***	19.26	2.4**	7.73	0.9	17.30	2.784***
Market and Legal Factors									
Disclosure Index	H1 (-)	-8.06	-7.1***	-16.50	-2.9***				
Earnings Aggressiveness Index	H1 (+)	20.59	1.1	489.70	3.9***	387.38	2.5**	375.45	2.5**
Log (MSCI Return Reporting Time)	H2 (-)	-1.74	-1.8*						
Log (MSCI Return Reporting Time) - Log (MSCI Return Exit Time)				-2.26	-0.5	-1.93	-0.4	-0.17	-0.05
Duration from Reporting to Realization						0.36	1.0		
Fund Characteristics									
Log (Age of PE Fund within the PE Firm)	H3 (-)	-0.38	-1.5	0.09	0.9	0.05	0.04		
Log (Portfolio Size (# Portfolio firms) / General Partner)		0.40	1.8*	1.93	1.0	1.06	0.6		
Portfolio Firm Characteristics									
Log (Industry Market / Book)		0.76	3.5***	0.01	0.01	-0.19	-0.2	0.05	0.04
Industry Dummy Variables?		Yes		Yes		Yes		Yes	
Country Dummy Variables?		Yes		Yes		Yes		Yes	
Investment Characteristics									
Syndicated Investment		-0.67	-2.58**	0.81	0.6	0.66	0.5		
Convertible Security with Actual Periodic Cash Flows		-2.88	-12.2***	-3.42	-3.4***	-3.22	-3.3***	-3.13	-3.4***
Standard Deviation of Cash Flows to Entrepreneur		0.10	1.8*	-0.04	-0.3				
Log (Amount Invested)		0.02	0.2	0.35	0.8	0.37	1.1		
Model Diagnostics									
Number of Observations		80		80		80		80	
Adjusted R²		0.80		0.13		0.131		0.159	
F Statistic		19.28***		1.71*		1.74*		2.35**	

This table presents first, in Model (11), OLS estimates of the determinants of the difference between the unrealized reported IRRs and the predicted IRRs based on the Models for realized IRRs in Table 4. In Models (12), (13), and (14), the dependent variable is the difference between unrealized reported IRRs and the subsequently realized IRRs. We exclude observations for which we do not observe a variable that is used in the particular specification, due to private confidential information. The number of observations corresponds to the number of unrealized investments. Standard errors are corrected by cluster design by country and heteroskedasticity. *, **, *** Significant at the 10%, 5% and 1% levels, respectively. The variables are as defined in Table 2.

CONCLUSION

PE funds may overstate the value of their investments in order to attract new investors into follow-up funds. We provide theoretical arguments and supporting empirical evidence from 39 countries that shows that significant systematic biases exist in the reporting of fund performance to institutional investors. Our data enable us to account for different portfolio firm characteristics, and for differences in transaction structures. The global nature of the data set makes it possible for us to investigate potentially important aspects of economic and financial rules and institutions, and their impact on PE returns and reporting behavior.

The data show a robust and significant impact of accounting standards and the legal framework on the reporting behavior of PE managers. This finding is consistent with our central theoretical prediction. Less-stringent accounting rules and weak legal systems appear to facilitate overvaluation, thereby decreasing the information content of reported valuations. Further, PE funds are less inclined to overvalue unexited investments since the introduction of the Sarbanes-Oxley legislation in 2002.

These results have strong policy implications. Stronger legal accounting standards might induce the provision of more risk capital if the communication between institutional investors and PE funds is more accurate. Stronger standards might also reduce any distortions in the allocation of capital throughout PE funds and throughout countries, due to the effects of overvaluation on subsequent fundraising.

Consistent with our other predictions, the data show that less-experienced PE managers and those involved in early-stage high-tech investments are more inclined to overvalue unexited investments. PE funds with a greater number of investee firms per manager tend to report overvaluations. In contrast, PE funds that syndicate and use convertible securities with periodic cash flows tend to be less inclined to overstate the value of their unrealized investments. Thus, in addition to international differences in accounting standards, international differences in market conditions and investment characteristics also account for some of the differences we observe in the reporting behavior by PE fund managers to their institutional investors.

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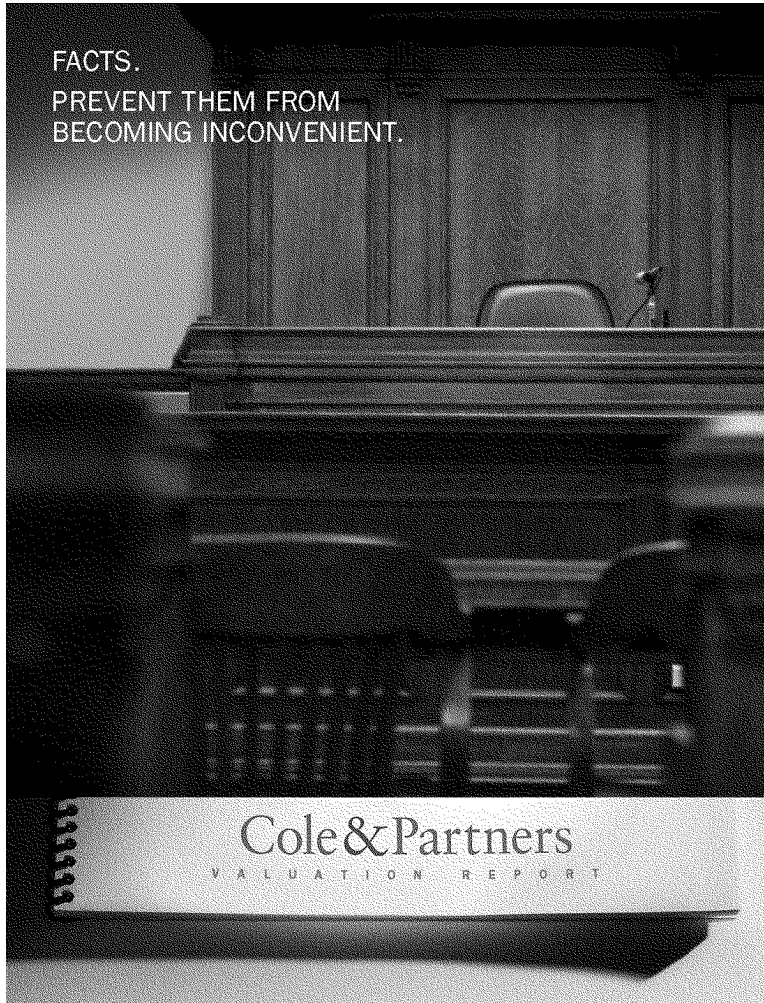
2

FINDING VALUE IN DISTRESSED SITUATIONS

by Michael Cheevers, CA, CIRP, CBV, CFE
Wolrige Mahon, Vancouver

Purpose

This paper is being written to assist CBVs in those circumstances when they are asked to advise on business or asset valuation issues and negotiations when there is a strong smell of insolvency. There is no attempt in this paper to provide a comprehensive legal analysis of insolvency situations, but rather to discuss in anecdotal form those issues that can impact "value" to different groups in insolvency situations.

Whenever a trustee is presented with a business in trouble and is asked for advice there are numerous issues to consider: a weighing of the various rights of different creditor groups, the risks and uncertainties inherent in any business forecast and the amount of "skin" each group still has in the game. The answers are not always obvious or easy.

The use of different insolvency legislation can impact the rights of different creditor groups and the priority and amount they ultimately receive.

Distressed Situations

Before going too far it is worthwhile discussing the term "distressed situations" so that the reader can understand the level of difficulty being envisaged by the author. We are definitely in the emergency ward rather than in long-term care.

A distressed situation is being considered as one where cash already has, or will shortly, run out. It is quite likely that a formal insolvency process will be required or is already underway.

Level Playing Field

One of the first concepts I came across when starting in the business valuation profession was that of fair market value. The definition generally involves willing buyers and willing sellers, a good supply of useful information, cash and the ability not to have to transact. What I like to call a level playing field. There is no such thing in a distressed situation. The question for a CBV therefore is what values should be used under these circumstances and are there any particular areas or minefields that warrant specific due diligence. A knowledge of the various insolvency processes and the difficulties/dangers involved in each can provide a negotiating edge. This can be helpful when there is no level playing field.

Insolvency Processes

The various different insolvency processes can bring with them different creditor rights and differences in the authority of the "person in charge" to make a deal. As in any negotiation, if you know the other party's strengths and weaknesses and who makes the final decision, it can have an impact on the outcome.

I will be discussing the processes used in British Columbia. Although the same processes are used across the country, there can be subtle differences relating to laws that come under provincial jurisdiction including those dealing with personal property, real estate and employment.

The two main statutes covering insolvency in Canada are the *Bankruptcy and Insolvency Act* ("BIA") and the *Companies' Creditors Arrangement Act* ("CCAA"). Canada is unusual in having two statutes dealing with insolvency and it is not uncommon to see changes being enacted to keep them current. The most recent changes became law on September 18, 2009 and they were significant.

Receiverships are a very common form of insolvency process and although some aspects of their administration are now included in the BIA, this remedy for secured creditors relies primarily on contract and common law and, when so appointed, on the form of the court order.

In British Columbia we now have "model orders" for both CCAA and court-appointed receivership administrations. These orders have been agreed to by the judiciary and a committee of specialist lawyers, and when a proceeding starts the model order is used with specific changes being black lined. These orders are helpful because there is minimal legislation covering the issues included in the orders, unlike the comprehensive BIA.

BIA

The BIA covers bankruptcies and proposals. My comments relate to commercial filings as opposed to personal filings.

A trustee in bankruptcy administers bankrupt estates and acts primarily in the interests of non-secured creditors. The powers of a trustee come from the BIA and the most important decisions have to be made with the approval of the inspectors, a committee usually comprised of members from the creditor group. The trustee files a report for the first meeting of creditors which can contain useful information about assets and their possible valuation.

A bankruptcy filing brings into place a creditor priority regime that is different from that before bankruptcy. For example, it changes the priority for wages, certain tax liabilities including GST and it changes the rights of landlords. These changes are usually beneficial to a secured creditor and harmful to a director. A bankruptcy might trigger the termination of contracts (for example Bill 13 contracts for timber harvesting) whereas an application under the CCAA does not. The type of insolvency process can impact different groups in different ways and therefore, depending on whom you are acting for, these differences can potentially be used for valuation/negotiation purposes.

The second process available under the BIA is the filing of a proposal. A proposal is a contract between a debtor and its creditors and it requires approval of a majority in number and two-thirds in value of the creditors who vote in order for it to be imposed on the minority. It also requires court approval. A trustee acts as "trustee under the proposal" and although he can assist in the formulation of the proposal, the prime responsibility is to creditors for whom the report on the proposal is prepared. The failure or rejection of a proposal leads to automatic bankruptcy. It is not uncommon in large insolvencies for there to be a "pre-pack", whereby a company is restructured subject to approval by the creditors. CBVs could be involved in negotiating the pre-pack and determination of the consequences of a bankruptcy could be helpful in negotiations.

CCAA

The CCAA is a very brief statute, dating back to the 1930s, which has been resurrected and now used through the implementation of the model court orders. It is an expensive and court-driven process, and because of this requires debt of at least $5 million. Under the CCAA the court appoints a monitor to look after the interests of the creditors and provide reports to court.

Usually the debtor company remains in control of its affairs and it is the debtor which would be responsible for the sale or purchase of assets.

When a company files under the CCAA a stay of proceedings is applied that stops any creditors, including secured creditors, from exercising their "usual" remedies. If a plan of arrangement fails, or if the court believes a credible plan cannot be filed, it will lift the stay so that creditors can take their usual remedies. There is no automatic bankruptcy.

As with proposals, it is not unusual to come across pre-pack situations and the comments above under those circumstances apply as they relate to valuations.

Receivership

A privately appointed receiver, that is one appointed pursuant to the terms of a contract, will usually act in the interests of the appointing creditor, but he also has a responsibility to act in a commercially reasonable manner. The privately appointed receiver becomes the agent of the company over which the appointment applies.

A court-appointed receiver is subject to the terms and conditions of the order under which the appointment is made. The model court orders can have significant impacts on the rights of third parties and these orders should be reviewed in detail if one is dealing with a receiver appointed in this way.

Unlike the appointment of a trustee in bankruptcy, there is no universal stay of proceedings against a privately appointed receiver. One of the most difficult situations for a receiver relates to leased real property. A landlord has the right to distrain against assets on real property leased by a company in receivership. A bankruptcy trustee has far greater protection from landlords under the BIA.

Being the agent of the company in receivership, a privately appointed receiver is not a successor under the *BC Employments Standard Act*. However, a court-appointed receiver, being a separate party, is liable as a successor which can have a significant impact on the continuation of the operations of a business.

These are two examples of differences between the two types of receivership appointment. Both of them could affect the ability of a receiver to continue operations and, following on from that, the value of the business. One of the benefits of a court-appointed receivership is that clear title can be given on the sale of land. A privately appointed receiver cannot have registered interests removed from a land title without going to court.

Process summary

Each insolvency process is designed to serve different purposes. However, it can be the person who initiates an insolvency process who controls whose interests are served best and which process is chosen. Some of those differences are discussed below, but if large transactions are being considered then it could be worthwhile obtaining expert insolvency advice as to the strengths and weaknesses of a particular party's position.

Finding Value for an Owner

Minimize liabilities

The greatest value (or increase in net worth) that an owner can realize upon in an insolvent situation is usually by way of a reduction in liabilities. This presumes that the owner ends up owning and controlling a viable business. A reduction in liabilities that allows the business to continue, and yet achieves a better return to creditors than a pure liquidation, is the best result for all concerned. The overriding question is how much of a haircut the creditors need to take, and that question is further confused because of the different priorities and rankings into which different creditor groups can fall.

Proposals filed under the BIA and plans of arrangement filed under the CCAA are the usual processes for compromising debt and allowing a business to continue.

Although proposals require initial approval by the court, they are largely a creditor-driven process which helps to keep the costs reasonable. The BIA contains relatively inflexible conditions for successfully filing and completing a proposal. The failure of a proposal, either because of rejection by the creditors by way of a vote, or by non-performance of the terms of the proposal, will result in bankruptcy. This is not the case with an arrangement filed under the CCAA, which, being a court-driven process, is far more flexible than the BIA.

Whether it is a proposal or plan of arrangement, they both have to be accepted by a set majority of the creditors. In order to achieve acceptance there is a need to demonstrate that the assets are worth more on a going concern basis than they are in the liquidation. This requires the development of a business plan and forecasts and, based upon the inherent risks in the forecasts and the time to profitability, how obvious it is that continuation is preferable to liquidation.

This scenario is somewhat simplistic in that there can be different categories of creditors, each of which may have different priority rankings in terms of repayment and each of which can vote in a separate group. A successful proposal or arrangement must be approved by all the different creditor groups.

Creditor groups

The three usual categories of creditors are secured creditors, preferred creditors and unsecured creditors.

In almost every business insolvency, if there are secured creditors they have security over all the assets. The implication of this is that unless these creditors are either paid in full, or agree to settle for a lower amount, then there will be nothing available for other creditor groupings and most likely any proposal or arrangement will be voted down by these unpaid groups. Having a secured creditor settle for less than the balance owed, particularly when that creditor knows that other creditors lower down the food chain must receive something to buy their vote, an amount those creditors would not receive in a liquidation, requires there to be an obvious upside to operating as opposed to liquidating.

The most common creditors to receive a preference, in terms of payment under a proposal or arrangement, are the government for payroll deductions and taxes, employees for wages and landlords for rent. Given that compromising these claims is either not permitted under the statutes or is very difficult to negotiate, and given that in practice all would likely have to agree to a compromise or none of them would, these amounts usually have to be paid in full if a business is to continue. There are specific provisions in the BIA that permit the "shedding" of onerous leases but they can be costly, especially in terms of cash, for an insolvent debtor.

The unsecured creditor group has no special rights when it comes to receiving dividends and their choices should be straightforward when made rationally, but harder to make emotionally when little, if anything, is being returned. The art form in designing a proposal or arrangement is finding the line between emotional and rational.

If there are a small number of unsecured creditors with a significant voting block, then negotiations prior to filing a proposal or arrangement can be worthwhile.

Contractual rights

The filing or initiation of an insolvency process can trigger a number of contractual defaults, potentially ending rights and resulting in a significant loss in value. Similarly, it is also possible for a debtor to end certain types of responsibilities or liabilities under contracts, as mentioned above regarding landlords, and each situation has to be separately reviewed. The matter of contractual rights is not one that can be adequately discussed in this paper other than to caution that it is a complex area that will often require legal advice. The recent changes to the BIA and CCAA contain new sections dealing with this issue.

Weakness is strength

Those debtors who will lose everything they have through a liquidation process, such as bankruptcy or receivership (often combined with personal guarantees in smaller matters), have an ideal opportunity to "make a deal". It is much easier to negotiate knowing you have nothing to lose and everything to gain.

Financing

One of the most critical issues for an insolvent business is cash flow. Unless cash is available an insolvent business will not survive. Credit is not available from suppliers and cash on delivery is normal.

Cash can come from several sources. Accounts receivable can be collected and not used to reduce secured debt. Debtor in possession (DIP) financing can be organized but it is usually subject to a lender obtaining a "super-priority" by way of court order. "Ordinary" financing might be available from a lender by taking out the current secured creditors, but this normally would only be given once a proposal or arrangement has been through the approval process. This is likely to require the use of a pre-pack agreement, where all substantive negotiations take place prior to an insolvency filing and the insolvency process is being used merely to formalize or fix creditors' positions.

Risks and rewards

The risks for an owner of an insolvent business to making a proposal or arrangement are small once all equity is lost. Personal guarantees can be a deciding factor in whether to choose a liquidation over some form of restructuring. In the writer's experience, once the secured creditors are in a probable loss situation, it is they who decide on the process, not the debtor.

When the businesses involved are major drivers in an economy, and the US car manufacturers are an obvious current example on a national scale, or the "only mill in town" on a local level, then different societal and political considerations can come into play.

Directors' liabilities

Incorporated businesses operate through the authority of their directors and those directors can be personally liable for a number of different types of debt in an insolvency of the company. These can include wages, GST and unremitted payroll deductions. Where these types of liabilities come under provincial jurisdiction, such as employment, the amount can vary from province to province.

Proposals and arrangements can be designed to protect directors from these types of liabilities. The benefit of the protection is that there will be motivated and knowledgeable people anxious to work towards the successful

completion of a reorganization. The downside can be that it is often a level of government that is impacted by those specific terms in the plan and negotiations can be more difficult with this group than with private enterprise.

Finding Value for Creditors

Trustee

The primary job of a trustee is to maximize the return to the creditor group as a whole, whether that is acting as a trustee in bankruptcy, as a monitor under the CCAA or as a receiver, either privately appointed or court-appointed. Although there is an over-riding requirement to act in the best interests of all affected, there have to be certain safeguards in the system to insure there are no conflicts of interest.

If a trustee is to act in more than one capacity, such as being both a receiver and trustee in bankruptcy of a business, it is necessary to obtain an independent legal opinion as to the enforceability of the security involved.

Different insolvency mandates can produce different results for different categories of creditors:

Secured creditors

A receivership is a realization process available to secured creditors holding any form of security document that both encumbers assets and permits the appointment. If extra powers are required an application can be made for a court appointment, where the powers come from the form of court order. However, the success of such an application cannot be taken for granted where other creditors' rights are seriously impacted.

There is a priority payment regime in a receivership that can be changed to the benefit of a secured creditor if a business is placed into bankruptcy. Whereas payroll deductions have a "super-priority" irrespective of the type of insolvency, both a portion of wages and GST rank behind secured creditors for payment in a bankruptcy, but not in a receivership. Hence, provided the costs of administering a bankruptcy do not exceed the GST and payroll being impacted, a bankruptcy will often be administered in conjunction with a receivership. The BIA, a statute designed for the benefit of non-secured creditors, can act to their detriment in certain circumstances.

The recent introduction of the *Wage Earner Protection Program Act*, or WEPPA, now goes some way to protecting employees for unpaid wages in both receiverships and bankruptcies.

Preferred creditors

There is a preference given in section 136 of the BIA to a list of creditors who are paid in a priority ranking. These creditors have to be paid in full before unsecured creditors receive anything. They include, in a bankruptcy, landlords for specific amounts and wages for specific amounts. These preferred creditors are only paid if secured creditors have been paid in full.

As mentioned above, landlords can have a stronger negotiating position under a proposal or an arrangement than in a bankruptcy.

The nature of the claims given preferred status is such that many are protected by way of other statutes. These include employment statutes, workers compensation statutes (for injury) and real property statutes.

Unsecured creditors

Unsecured creditors only receive payment when all other classes of creditors have been paid in full. The role of a trustee is to examine all claims, but particular attention is paid to the validity of all secured claims and the quantum of preferred claims because of their impact on the assets available to settle the unsecured claims.

Fraudulent preferences and transfers at undervalue

Another area reviewed in detail by a trustee that can impact the assets in an estate involves those transactions that have taken place prior to a bankruptcy or a proposal, in order to determine whether or not any "preferences" or "transfers at undervalue" have taken place. A preference happens when consideration is given to a creditor during a time frame when not all creditors are being paid. The BIA was amended on September 18, 2009 and one of the sections changed related to what used to be called "fraudulent conveyances" and are now called "transfers at undervalue". Conveyances were considered to be those transactions that resembled gifts, i.e. there is consideration only in one direction. This new term "transfers at undervalue" implies that consideration can be given but is inadequate.

The object of the legislation is to reverse those transactions that give a clear preference to a creditor and to obtain the return, or cash equivalent, of an asset conveyed at less than its real value. There are different time frames for these two types of transactions depending upon whether they are with related or arm's-length parties.

A preference given to an arm's-length party within three months of a bankruptcy can be reversed. That period extends to one year for a non-arm's-length party.

If the court finds that a transfer at undervalue has taken place with an arm's-length party within one year of bankruptcy, and the debtor was insolvent at the time, it may give judgment to the trustee for the amount of the undervalue. If the transaction is with a non-arm's-length party that period can be extended to five years but the debtor must have been insolvent at the time of the transaction or intended to defeat the interests of creditors.

In the United States it is not uncommon for trustees in bankruptcy to demand the return of all payments made by bankrupt businesses in the three months prior to bankruptcy, irrespective of whether they were a preference. This type of claim can be expensive to defend which means settlements are common.

Sale of assets

Although there is discussion above about the lack of a "level playing field" when it comes to selling assets, the trustee or receiver should still try to create a competitive process for the sale of assets whenever possible. Specialized inventories or work in process are hard to sell, but whenever there is any sort of "public" demand for the assets being sold, creating competition should not be difficult.

Some sales, such as a tender sale by a trustee in bankruptcy, have strict guidelines that govern the process so that it does not fall into disrepute and be undermined. The main safeguards involve bid shopping. However, it is not uncommon for a receiver to ask auctioneers to give bids on assets and then ask those who demonstrate most interest to sharpen their pencils and bid again. In effect an auction takes place of qualified bidders.

Court-appointed receivers usually require court approval for any significant sales of assets. It is not uncommon for new bids to be presented in court and this can start a whole new bidding process.

One feature that has become popular in recent times is the use of "stalking-horse" bids. These bids are usually made by parties already involved, such as a secured creditor, in an attempt to set a minimum bid level. The bid, of course, is made public.

Finding Value for Purchasers

Publicly available information

Sales in an insolvency context are almost always a very public process. There can be situations where the assets warrant very little public attention and interested parties will be few, but a trustee or receiver should always attempt

to insure that adequate steps are taken to publicize a sale. There can be situations where some interested parties do not want competition for assets, but a trustee or receiver has a responsibility to maximize the proceeds for all creditors and could be criticized if a sale has insufficient exposure.

A receiver will advertise an appointment in local newspapers and send notices to the Registrar of Companies and the Superintendent of Bankruptcy. In a CCAA proceeding it is common practice for all significant notices and court documents to be placed on the monitor's website. In all insolvency proceedings creditors should receive a notice from the trustee, receiver or monitor.

Sales processes

There are no absolute rules as to how assets have to be sold out of an insolvent administration. It is usually the nature of the asset that dictates the most effective way of selling. It is usual to sell real estate through a listing agent. Unless they are saleable to the retail public, it is usual to sell inventories to competing businesses. Capital assets are more likely to be sold through a bidding process, perhaps a formal tender, or through a public auction.

Bid shopping

Given the need for an element of transparency in the sales process there is often a concern by bidders that their offer will simply be used to encourage others. Most people bidding on assets in an insolvent administration are hoping to get a bargain. It is the job of the insolvency professional to maximize the return on assets whilst at the same time not offending any rules relating to sales processes. Other than for a formal tendering process there are few rules that have to be followed, but it is helpful to have a good knowledge of contract law.

In a formal tender the insolvency professional has the opportunity to draft the contract that must be signed with any offer. This allows a great deal of flexibility in setting the terms and specifically whether or not the highest or any offer has to be accepted. If no offers are acceptable they should all be rejected prior to any further sales process. It is not appropriate to "shop bids" that have not been rejected. Doing so would lead ultimately to a lack of bidding in the tendering process.

As mentioned above, if court approval is needed for a sale of assets it is not uncommon for bids to be made in court. The offer for which approval is being sought will be public knowledge through documents filed in court, making it easy to prepare a better offer. The insolvency professional cannot argue too hard against acceptance of a higher offer as it improves the return to creditors and the court might well lay down a new process that is determinative in finding the final purchaser.

Title to assets and potential liabilities

Whenever purchasers buy assets they want to know that they are receiving clear title and that there are no claims against those assets. A receiver or trustee on the other hand is always very reluctant to provide such assurance and normally sells the "receiver's interest in the asset". The difference between these two positions usually relates to a lack of perfect information.

An insolvency professional will attempt to obtain the best information available about the assets for sale. Searches can be made in various registries to determine the rights of those parties who have taken the trouble to register their interests. It is almost second nature to an insolvency professional to check proper documentation and registration for such items as leased equipment because lack of proper documentation and registration can mean that the asset is available to all creditors and not for return to the lessor.

The concern to the insolvency professional is that not all interests have to be registered to be effective. If a party has a right to use intellectual property that is owned by an insolvent business it might not be apparent to the insolvency professional or to a purchaser of that intellectual property. Certain government claims can rank

ahead of secured creditors and not be registered anywhere, but it would be most unusual for an insolvency professional not to settle government claims. The concern of the insolvency professional is not so much in having to return funds if an asset should not have been sold, but rather for damages if it cannot be kept by the purchaser.

It is important for purchasers to be aware of the potential risks of buying from a receiver, and to read the fine print in an auction document for instance, but in the writer's experience, if a reasonable level of due diligence and communication takes place, rarely are there any significant issues. What is important to consider is the nature of the asset being purchased, and the types of potential claims, if any, that could be made against title.

Environmental issues

It is not uncommon, particularly with industrial sites, for there to be concerns about environmental liabilities. A major difficulty for the insolvency professional is in accurately estimating the costs of cleaning up the site and the time needed to obtain the necessary government clearance certificates. Although it is not appropriate to generalize, a purchaser who is prepared to take over an "unclean" site can often negotiate a very significant discount because it brings closure and certainty to an insolvency administration. In many cases there is no requirement for immediate cleanup of the site and the purchaser has both a cash flow saving and potentially a real cost saving.

Summary

CBVs are most likely to have an involvement with insolvency situations when either the amounts involved are significant, when circumstances are such that "normal" valuation criteria can be used in assessing assets, or when a restructuring is to take place and refinancing is contemplated. In all of these situations, having some knowledge of the insolvency process involved can give some insight as to those areas that can be problematic and those that can perhaps be used to negotiate a better deal.

3

M&A ACTIVITY IN WESTERN CANADA[*]

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Introduction

This paper will discuss M&A activity in Western Canada since the market collapse in the fall of 2008, and the impact that event has had on merger and acquisition activity in both small and large transactions. It will then move on to discuss transaction "metrics" and address the factors that make a deal tick, for both the larger and smaller transactions, while highlighting the similarities and comparisons between the various segments of the industry, in which the authors are both practitioners. This paper will then conclude with a discussion of the future outlook for the M&A industry, with an overview of recent trends in a cross-section of transactions.

An Overview of M&A Developments in Western Canada

Figure 1 describes a series of transactions that illustrates many of the different components or examples of the various types of M&A transactions that can occur in the marketplace, and is based on actual transactions that occurred.

Figure 1

Illustrative Western Canadian M&A Activity
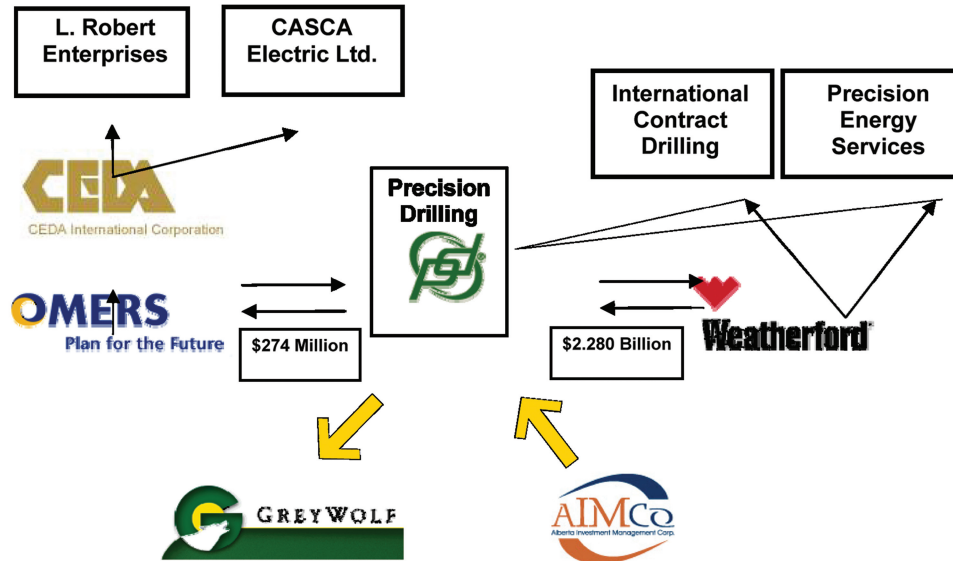
Many people are aware of Precision Drilling, a large Calgary-based oil field services company that grew through a multitude of acquisitions. Precision Drilling grew into a diversified oil field services company by acquiring a number of other players in the same (or similar) industry – a remarkable feat considering Precision Drilling was (at the time) a privately held company. After a long string of successful acquisitions, management at Precision Drilling decided that some of the business divisions were non-core; it spun out CEDA International Corporation to OMERS, a private equity arm of the Ontario Municipal Employees Retirement System. This transaction demonstrates how private equity and pension-backed private equity have become significant players in the M&A marketplace over the past decade. Shortly after the CEDA transaction was completed, Precision Drilling then spun out their Energy Services Division, which represented all of their international operations. The Energy Services Division was acquired by Weatherford International, a publicly-traded company based in Houston, Texas. This was a largely stock-based transaction valued at approximately $2.28 billion, and demonstrates the importance of strategic acquisitions in the M&A industry. After this series of transactions, Precision Drilling was left with a fairly "tight" core of strategic operations that focussed largely on contract drilling for the oil and gas industry.

Concurrent with the CEDA spin-out, the firm of one of the authors was involved in the sale of CASCA Electric to CEDA. This transaction illustrates that, like strategic acquirers, private-equity purchasers are not passive investors, but will actively make strategic acquisitions in order to grow a particular platform business. CEDA also acquired several other privately held businesses, including L. Roberts Enterprises, which illustrates a situation where a private business owner is motivated to exit for succession and retirement purposes.

Shortly after divesting itself of CEDA and its Energy Services Division, management at Precision Drilling converted to an income trust. As a side-note, Precision Drilling is predicted to convert back to a corporation sometime in 2010.

However, the metamorphosis of Precision Drilling was not yet complete. In 2008, Precision Drilling acquired Greywolf Supply for approximately $2 billion. This was a strategic acquisition that allowed Precision Drilling to become more vertically integrated. As well, it was a fairly ambitious acquisition completed in turbulent times, and Precision Drilling took on a lot of debt to get that deal done.

To complete the series of transactions (to date, at least), AIMCO recently acquired a 20% interest in Precision Drilling. AIMCO is, for a lack of a better description, the Alberta sovereign wealth fund.

This series of transactions illustrates the role of M&A in corporate growth, corporate rationalization, and private business succession. These transactions serve to offer a flavour of the myriad of transactions that the authors, as M&A practitioners, see in Western Canada.

September 2008 Market Collapse

The collapse of the stock market that occurred in September 2008 and the subsequent dramatic drop in economic activity that quickly followed were watermark events to those working in the financial services industry. Figure 2 is a graph of the TSX composite index starting out in January 2008 demonstrating the precipitous decline in September 2008, followed by the steady, but precarious, recovery to the fall of 2009.

Figure 2

Background

► Beginning in the late Spring of 2008, the TSX Composite index and other benchmark indices around the world began rapidly declining in value.

► TSX returns:
  ► Jul 1/08 - Dec 31/08 (38.7%)
  ► Sep 1/08 - Oct 31/08 (29.1%)
  ► Sep 1/08 - Nov 30/08 (39.0%)

S&P/TSX Composite Index

S&P/TSX Composite Index
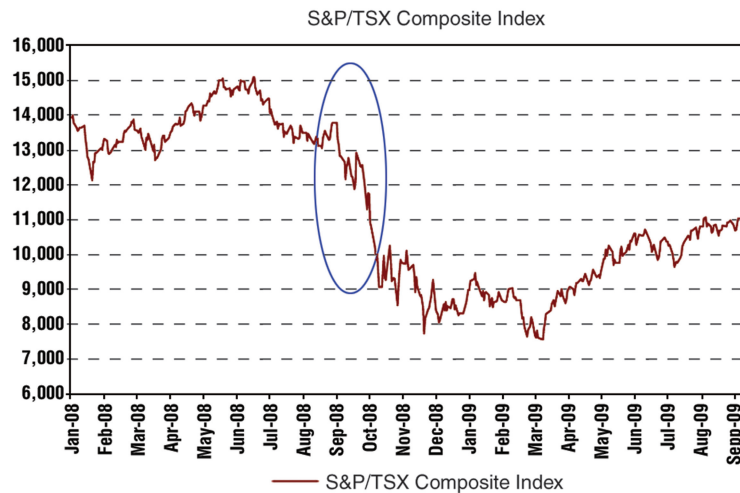
What impact did the market decline have on M&A in Canada?

As illustrated in Figure 2, during the September to October 2008 period, the TSX lost approximately 50% of its value. Even more dramatic, it lost over 30% in a span of a few weeks. However, in February and March of 2008, there were already signs of trouble within the financial services industry. News reports of over-leveraged real estate in the United States were making headlines across North America, but at the time, most people assumed that these issues were manageable and isolated within the financial sector in the United States. The massive impact these issues had on the entire financial platform of the economy and the subsequent financial crisis were almost impossible to predict. However, once the extent of the issue became clear, the market reaction was quick and severe, and expanded globally. Canada was not immune to the economic fallout, given the economic ties that we share with the United States, and how, unpredictably, our banking industry was indirectly involved in the mortgage crisis.

Figure 3

What Happened?

► Liquidity crisis in the United States had global ramifications in the Financials sector
  ► September 7, 2008 – US Government recapitalizes Fannie Mae/Freddie Mac
  ► September 15, 2008 – Lehman Brothers Holdings files for Chapter 11 protection
  ► September 16, 2008 – The US Federal Reserve Bank provides $85 B investment into American International Group (AIG)

► Trickle down effect to Canadian Financials and directly impacted companies created mass sell-down in equities and commodities
  ► "Cash is king"
  ► Flood of capital from equities into cash and government backed debt securities
  ► Interbank lending slows to a crawl as all are afraid of counterparty risk
  ► Lending to Canadian businesses slows

► Within a few months, 50% of the TSX's value is eroded

The severe economic decline was followed quickly by a credit crunch, where banks became extremely reluctant to lend money. The implications to the M&A market were immediate, and affected all transactions – both big and small. M&A transactions are like a big pyramid and the whole pyramid is rather interlinked. The big transactions are financed through the public markets (or private equity) and the smaller more entrepreneurial transactions are typically financed through bank debt – leveraging against the assets of the business, or mortgaging a house, for example. Despite the fact that a $2 million transaction is completely different from a $2 billion transaction, it's interesting to note how similar the metrics are between these two types of transactions, in terms of how deals are done, what multiples are paid and how deals are financed. To complete the metaphor that the M&A industry is like a pyramid, the entire industry is much like a house of cards whereby the $2 million transaction is indirectly affected by the $2 billion transaction.

In the fall of 2008 when the crash hit, no one knew if it signalled the beginning of the end, the bottom, or exactly where we were in the financial cycle. As a consequence, there was no way that a large public company would contemplate orchestrating a divestiture or an acquisition at that time. Public companies couldn't raise money. There was no IPO market and public companies weren't going to do a secondary issue, as the stock market was in turmoil, plus they would be financing the transaction with shares that were worth 50% (or less) than they were only a month earlier. This would make any transaction prohibitively more "expensive" and companies would get punished by their shareholders. As a result, the "large cap" M&A market collapsed, and once those large cards were pulled from the bottom, the entire house of cards that was the entire M&A industry collapsed along with it.

Figure 4

What Happened in M&A?
Large Transactions

► Market uncertainty created a lack of confidence
   ► Loss of visibility created valuation challenges
   ► "Trying to catch a falling knife"

► Strategics and PE inward focused
   ► Focus on operational improvements and weathering the storm rather than acquisition growth

► Public markets decline
   ► Currency value of stock
   ► PE exit option disappeared
   ► Magnified impact of income trust taxation changes

► Lack of available financing

► Incongruent price expectations between vendors and acquirers

Figure 5

What Happened in M&A? Small Transactions

▶ Pre-Sept, 2008
   ▶ Transaction prices climbed over the past decade with both earnings and multiples approaching record highs
   ▶ Vendors pricing expectations became unrealistic
   ▶ Banks remained somewhat bullish on providing transaction financing
   ▶ Purchasers maintained a more conservative approach to valuation and preferred to pass on overpriced transactions
   ▶ Successful transactions became more elusive

▶ Post-Sept, 2008
   ▶ Vendors retreated from the marketplace
      ▶ Need to focus on business
   ▶ Purchasers retreated from the marketplace
      ▶ Sit on sidelines until a trough is established
   ▶ Bankers retreated from the marketplace
      ▶ Transaction financing deemed too risky

The economic turmoil that ensued is well documented and understood. In a nutshell, Freddie Mac got restructured and Lehman Brothers went down, both catastrophic events for the financial markets. The whole M&A industry was in shock. Shortly thereafter, AIG was propped up by the U.S. government. The relevant question is: what impact did these events have on M&A transactions?

Cash became king. There was a flight to security in the M&A market. Investors did not want to hold corporate bonds that were issued to finance an acquisition – they wanted government-backed securities; they wanted treasury bills, and they wanted whatever carried the least amount of risk in these turbulent financial times.

In addition, the banks became paralyzed. They didn't even want to deal with each other to clear overnight accounts at that point in time, let alone lend money to finance an acquisition. As a result, lending to Canadian businesses slowed to a crawl and this affected businesses of all sizes. To get a bank to finance an acquisition was an impossible task. The impact on the entire M&A industry was predictable.

Following the collapse in the fall of 2008, there was speculation that the Canadian banking system might follow the way of the U.S.'s. As a result, many individuals withdrew their deposits from the big five banks and invested in government-backed bonds, as they felt this would provide them with impenetrable security. In hindsight, this philosophy was ludicrous, but it does illustrate the fear that permeated the financial sector. It also provides some insight as to why the entire transaction market became paralyzed – the banks were dealing with their own crisis during a time of tremendous uncertainty.

The other major impact of all of this is that strategic acquirers and private equity groups who were previously quite bold and aggressive were looking inwards. They saw their portfolios in trouble; they saw earnings deteriorate; they saw their funded debt to EBIDTA covenants go completely offside. As a result, they found themselves spending a lot of time and energy managing over-levered balance sheets in their portfolios or their own over-levered balance sheet, in the case of strategics. The focus of these once dominant market players was inward, in order to stabilize their own businesses. The focus of the banks was also introspective, as they sought to protect their assets and portfolios. Furthermore, the banks were scrutinizing their exposure and risk, and generally not looking for new financing opportunities nor were they seeking out new deals to fund. The lack of available financing was a significant factor in the subsequent collapse of the entire M&A market.

The second factor that precipitated the decline of the M&A market was the valuation of the underlying businesses. A purchaser investigating a business in February 2009, for example, would have a complete vacuum of information regarding the impact that the recent economic fallout had (and would have) on the underlying business. The full impact of the recession had certainly not been felt, and at the time, no one knew if the bottom was behind us, or yet to come. As a result, purchasers were extremely cautious and conservative in their valuations, and most simply withdrew altogether and preferred to watch from the sidelines. As a result, most vendors decided to abort any divestiture mandates, unless they were in dire straits and had to sell due to distress. A substantial majority of the M&A activity that existed prior to the fall of 2008 was voluntarily pulled off the market.

Small to Mid-Sized Companies

A very similar situation existed for small to mid-sized companies. However, there was a market shift that was observable from as far back as 2006. The first observable part of this shift was a situation wherein the Western Canadian economy was firing on all cylinders, thus allowing many businesses to have record earnings. In fact, many businesses had profits higher than they ever had in history. This created a bit of a challenge from a valuation standpoint, because most vendors expected the valuation to be heavily weighted towards the more recent (higher) results. Most seasoned valuators know that business cycles follow trends, and it is a fool's folly to assume that a recent upward trend isn't reversible. Cycles go up, and cycles go down, and rarely is a two- or a three-year trend a predicable indicator of future economic performance. However, once a business owner understands the basic valuation math that EBIT times a multiple equals value, it is a predictable result that the owner will attempt to "push" the valuation by focussing on the best financial years, and ignoring the more modest years.

The second troubling factor that occurred was that the EBITDA multiples that were being driven by the market (particularly on the vendor side), were really pushing the envelope to historical highs. This relates back to the concept of the house of cards, and how small transactions are influenced by large transactions. A lot of that "push" in multiples was coming from the big public companies that were doing transactions. Over a period of a few years, EBIT multiples for large transactions of five to seven were being pushed to six, eight, and ten, and this became the new "norm" – so much so that all parties to the transaction bought into this paradigm shift – strategic purchasers, private equity, banks and vendors. These lofty multiples trickled down into medium sized companies, where historical multiples of three to five were "pushed" to four to six, with many vendors expecting much more.

This combination of inflated earnings and bloated multiples resulted in valuation expectations that simply weren't sustainable. While stratospheric pricing expectations have always been the Achilles heel of transactions, this situation was quite different, as the vendors had some "justifiable" evidence that it was warranted.

Around the same time, the banks were bullish to finance any transaction which was brought before them. Ironically, this relaxed attitude towards risk and aggressive attitude towards lending would eventually form the root of the cause of the subsequent credit crisis.

So, we had a situation where vendors' pricing expectations were stratospheric, and the banks were prepared to finance these transactions. However, absent from the party were the purchasers. In the small transactions market, purchasers are mostly entrepreneurs. For an entrepreneurial purchaser, who is borrowing against his or her own assets, the stakes are extremely high. Entrepreneurial purchasers never really bought into these huge valuation multiples that were being driven by the market. So, many purchasers, even going back several years, were prepared to sit on the fence. They were prepared to pass on overpriced transactions when the multiples got to be too high and when the valuations got beyond what they felt comfortable with. This resulted in deals being harder and harder to complete in the two years leading up to September 2008. Then, the skid marks happened.

Figure 6

Purchaser Continuum

Transaction Size:
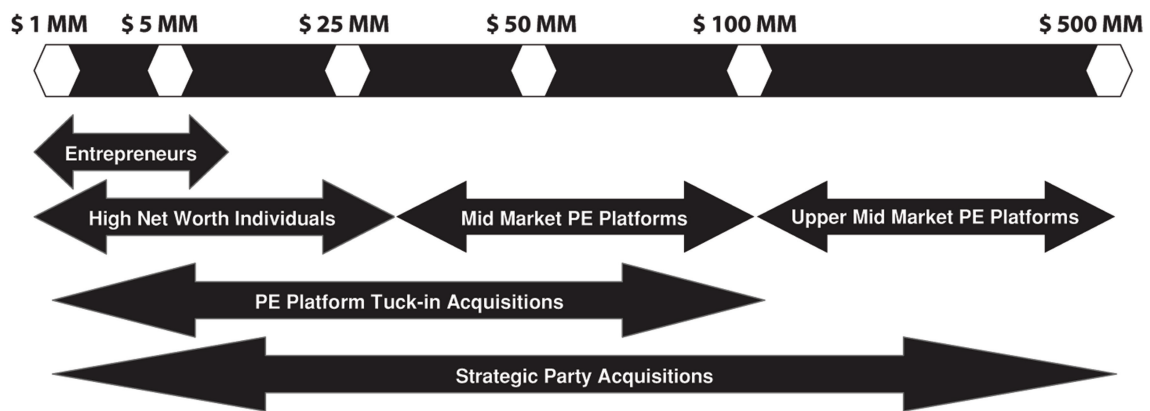
After the fall of 2008, when the market imploded and credit became tight, everyone hit the exits. The vendors hit the exits. One of the authors, at this time, had a handful of deals on the go, and all of the vendors decided to rethink their divestiture strategy – many of them citing the fact that their retirement portfolio had suffered some huge losses, their businesses were worth a lot less than they previously thought, and they felt that they may not be able to afford to retire at this point in time. Secondly, in September 2008, there was a general consensus that we had all seen the explosion but we hadn't yet felt the shockwaves. Certainly the Canadian economy had not yet felt the full impact of the credit crisis. As a result, most vendors felt extremely anxious about their immediate future, and felt that they needed to concentrate on weathering their businesses through the pending economic storm. Most vendors decided to sit on the fence, believing it was not the right time to sell.

Around the same time, the purchasers also headed for the exits. Nobody knew where the bottom was back in September 2008, and nobody wanted to make a deal in those uncertain conditions. The bankers also quickly hit the exits. The last thing they wanted to do was finance an acquisition. They didn't even want to trade between themselves, much less finance any sort of acquisition. In a sense, the whole market imploded.

Figure 7

Selected Post-Decline Transactions

Transaction Date	Target	Transaction Value ($mm)	Buyer	Target Location
Selected Mid-Market Transactions				
04/26/2009	Eveready Inc.	$416.62	Clean Harbours Canada, Inc.	Alberta
02/15/2009	Bow Valley Energy Ltd.	$202.14	Dana Petroleum (E&P) Limited	Alberta
06/20/2009	T & T Supermarket, Inc.	$198.31	Loblaws, Inc.	British Columbia
12/15/2008	Lockerbie & Hole, Inc.	$170.20	Aecon Group Inc. (TSX:ARE)	Alberta
05/28/2009	Tristone Capital Inc.	$104.30	Macquarie Group, Ltd. (ASX:MQG)	Alberta
Selected Smaller Transactions				
12/23/2008	Canem Systems, Ltd.	$6.57	Seacliff Construction Corp. (TSX:SDC)	British Columbia
05/19/2009	Northwell Oilfield Hauling Ltd.	$4.15	Terracore Speciality Drilling Ltd.	Alberta
11/07/2008	ViRexx Medical Corp.	$3.58	Paladin Labs Inc. (TSX:PLB)	Alberta
12/05/2008	Canamera Carriers Inc.	$3.55	Trimac Transportation Services Limited Partnership	Saskatchewan
03/13/2009	Heli-Welders Canada Ltd.	$1.54	Canadian Helicopters Income Fund (TSX:CHL.UN)	British Columbia

Source: Capital IQ

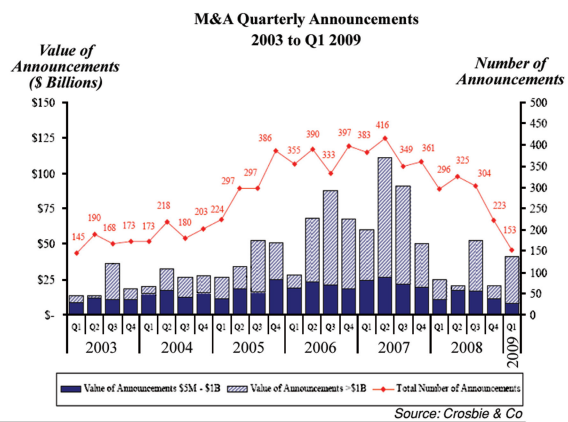## Mid- to Large-Sized Companies

Transaction pricing was impacted by several factors including reduced multiples, reduced financing, and lower EBITDA. Trailing twelve-month EBITDA, a common basis for pricing in the heady days, was subject to much greater scrutiny. Transaction financing, if available, was materially less a multiple of EBITDA.

Figure 8

Early 2009 Canadian Transaction Volumes Large Transactions

► Through Q1 2009, Canadian M&A levels have declined to 2003 levels
  ► Total transaction value however seems quite high
  ► Skewed values as a result of Suncor/Petro-Canada deal and sale of Nova Chemicals
  ► Transactions with TEV < $1 billion at the lowest level since 2002 through Q1 2009

► Canadian buyout activity is also on the decline
  ► The Canadian Venture Capital Association (CVCA) reports buyout activity for the first half of 2009 totalled $860 million US; a substantial decline from last year's $4.0 billion US deployed in H1 2008

  ► Decreased activity is as a result of reduced access to debt financing and a challenging valuation environment

M&A Quarterly Announcements 2003 to Q1 2009

Value of Announcements ($ Billions)

Number of Announcements

145 190 168 173 173 218 180 203 224 297 297 386 355 390 333 397 383 416 349 361 296 325 304 223 153

Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1 Q2 Q3 Q4 | Q1
2003   2004   2005   2006   2007   2008   2009

Value of Announcements $5M - $1B   Value of Announcements >$1B   Total Number of Announcements

Source: Crosbie & Co

Transactions were typically negotiated on a debt-free enterprise value basis. Typically, working capital required to generate a maintainable EBITDA is included in Enterprise Value. Sufficiency of working capital has also been subject to greater scrutiny. Vendors can enhance value by prudently managing working capital well in advance of a sale.

Each deal is unique and each purchaser has a different point of view on maintainable EBITDA, multiples and closing working capital. Understanding each side's priorities and motivation with respect to these factors will enhance transaction success.

One tool Chartered Business Valuators advising on transactions have in their tool kit that notional valuators don't have is non-cash consideration. Vendor Take Backs, share consideration and earn-outs can often aid in bridging pricing gaps.

Metrics for Small Transactions

In terms of levers of price and transaction metrics for small transactions, there are numerous parallels between the small to medium-sized transactions and large cap markets, with just some slight variations. When the authors review the valuation metrics for small to medium-sized companies, there really are two distinct "pools" of companies that often use completely different valuation metrics. There is a significant difference between a transaction for around $2 million and a transaction for around $10 million. For the smaller transactions the goodwill multiple is the big valuation driver. While the goodwill multiple is somewhat flawed from a theoretical valuation perspective, it is what most purchasers in this space understand. For clarification, the metrics of a goodwill multiple are relatively simple. The goodwill multiple is basically discretionary cash flow after tax, and after owner's remuneration, divided by the goodwill portion of the purchase price. In essence, it is the number of years' cash flow that a purchaser is paying for goodwill. The goodwill multiple is fairly simplistic, but it's also very intuitive. To a purchaser, a goodwill multiple of 2.0 means that he has to run the business for two full years before the business has repatriated the goodwill portion of the purchase price. Not the whole purchase price, just the goodwill portion. Purchasers typically wouldn't pay a five-times goodwill multiple, as they aren't comfortable that the payback period for the intangible goodwill will extend to five years. What the goodwill multiple lacks in valuation theory, it makes up for in simplicity and intuitive appeal. Most entrepreneurial purchasers don't understand an EBIT-based valuation, and consequently that's why the goodwill multiple is so prominent for most small to medium-sized businesses that typically sell to entrepreneurs. In practical experience, goodwill multiples ranging from 1.5 to 3.0 are common, with 2.0 being widely used for simplicity.

As transaction sizes get a little bigger, beyond that $2 million range and into the $5 million range, EBITDA becomes more of a predominant valuation multiple. From a valuation perspective, it is a much more sophisticated valuation tool. Once the transaction size goes beyond $5 million, application of the goodwill multiple really begins to taper off, and certainly at $10 million, it is almost never used. At this level, purchasers become more sophisticated and EBIT or EBITDA becomes the big valuation driver.

In terms of EBIT multiples typically experienced in the marketplace, it is the authors' experience that for most transactions that are in the sub-$10 million or $20 million range, EBIT multiples ranging from 3.0 to 5.0 have been fairly typical. In the last couple of years leading up to the 2008 crash, these multiples were really getting pushed to the upper end of that range. Frequently, the transactions simply wouldn't get completed unless the purchase price was relaxed. If the transaction was completed at around the 5.0 range, it typically meant that you found the ideal purchaser, possibly a strategic purchaser, who was prepared to pay top end for the business. In general an EBIT multiple of 3.0 to 4.0 is fairly typical for transactions that were successfully completed.

For transactions that exceed $10 million in size, the EBIT multiples typically expand as the underlying risk of the business frequently decreases. EBIT multiples of 4.0 to 5.0 are not uncommon for a $10 million or $20 million transaction, provided the underlying balance sheet supports the valuation (that is, there are sufficient hard assets that balance out the tangible versus the intangible portion of the purchase price).

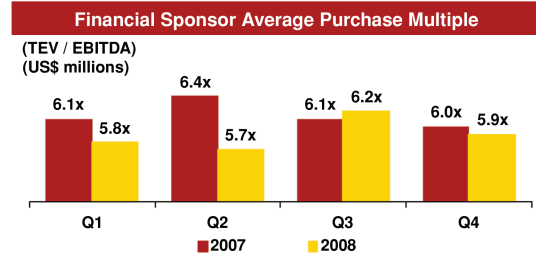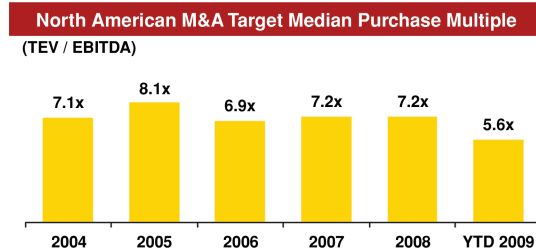**Figure 9**

Emerging Q2/Q3 Trends
Small Transactions

► A significant gap remains between Vendor & Purchaser valuation expectations

► Vendors
  ► Difficulty accepting lower valuation realities
    ► underlying EBIT is lower, plus,
    ► multiples have softened

► Purchasers
  ► Remain interested, but very cautious
  ► Increased scrutiny of current financial results
  ► Prepared to transact, but only if pricing expectations are realistic

► Alternative transaction structures becoming more prominent
  ► Higher Vendor Financing, Earn-outs to bridge valuation gaps and spread risk

As indicated on the "Purchaser Continuum" table in Figure 6, there are different classes of purchasers for each size of business. Most transactions that sell to entrepreneurs are typically less than $5 million in size, as the pool of private capital typically runs out at that point. Transactions that are larger than $5 million and less than $20 million will be targeted towards high net worth individuals, small-cap private equity groups and strategic buyers. Transactions that exceed $20 million will typically be targeted exclusively at strategic buyers and private-equity groups. In all cases, these purchasers typically require external financing, and Figure 10 demonstrates historical EBIT multiples and the underlying financing structures of those transactions.

Figure 10

Financing Environment

- ► Deteriorating economic conditions has created conservatism amongst Canadian banks
  - ► Cash flow / Liquidity covenants becoming more stringent
  - ► Shorter terms
  - ► Push from cash flow based to asset based lending

- ► Schedule A banks remain active
  - ► Smaller 'tier II / III' banks with US-based parents have pulled back to preserve capital
  - ► Close monitoring of portfolio exposure to certain sectors (ex. Real estate, oil and gas)

- ► Increased credit spreads across the board
  - ► Increased fees

- ► Smaller funding needs more easily met
  - ► Large syndicated deals remain challenging

North American M&A Target Median Purchase Multiple
(TEV / EBITDA)

2004	2005	2006	2007	2008	YTD 2009
7.1x	8.1x	6.9x	7.2x	7.2x	5.6x

Financial Sponsor Average Purchase Multiple
(TEV / EBITDA)
(US$ millions)

|	Q1	Q2	Q3	Q4
2007	6.1x	6.4x	6.1x	6.0x
2008	5.8x	5.7x	6.2x	5.9x

Source: CIBC

Over the past decade, both authors have noted the emergence and dominant presence of private equity in the M&A market. Private equity financiers are not well defined in the marketplace, and range from a small group of high net worth individuals who collectively want to invest in active businesses, to organized private equity pools that may invest in a handful of different business opportunities, right up to fairly sophisticated private equity funds – the largest being ONEX. These groups collectively have reshaped the M&A landscape, and have provided some welcomed liquidity to the entire industry – both large and small.

Public markets have rebounded from the low of March 2009. The restored economic confidence has resulted in increased transactions.

Figure 11

A Recovery of Sorts?

### 1 Year TSX Performance and Implied P/E
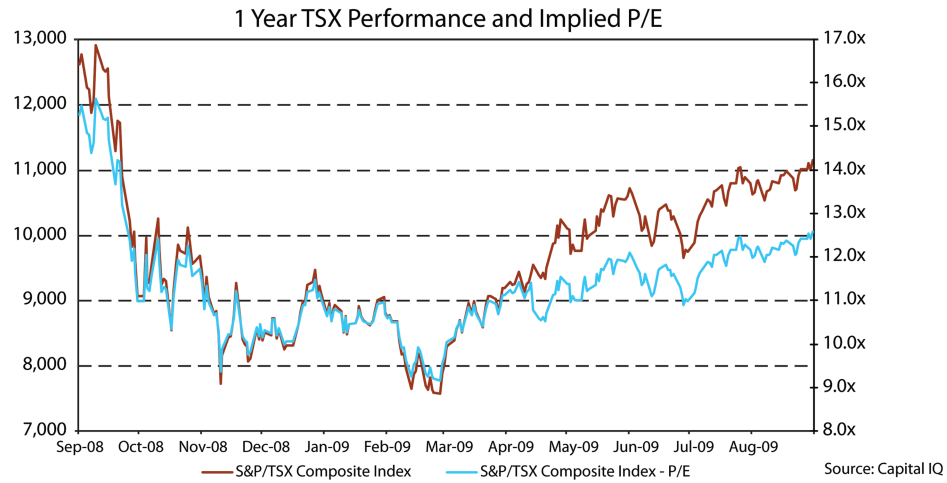
Valuation metrics appear to be returning to historically normal confidence intervals as investors redeploy capital back into equities

In particular, strategic purchasers that see the downturn as an opportunity to buy strong companies at reasonable prices have returned to the market. Private equity and entrepreneurial purchasers are also cautiously returning to the market. Financing availability, while not expected to return to the aggressive levels of two or three years ago, should return to historic norms. Pricing will continue to be a challenge.

Where companies go from here is really dependent on where one is on the stress pendulum of Figure 12.

Figure 12

Transaction Opportunities and Risks
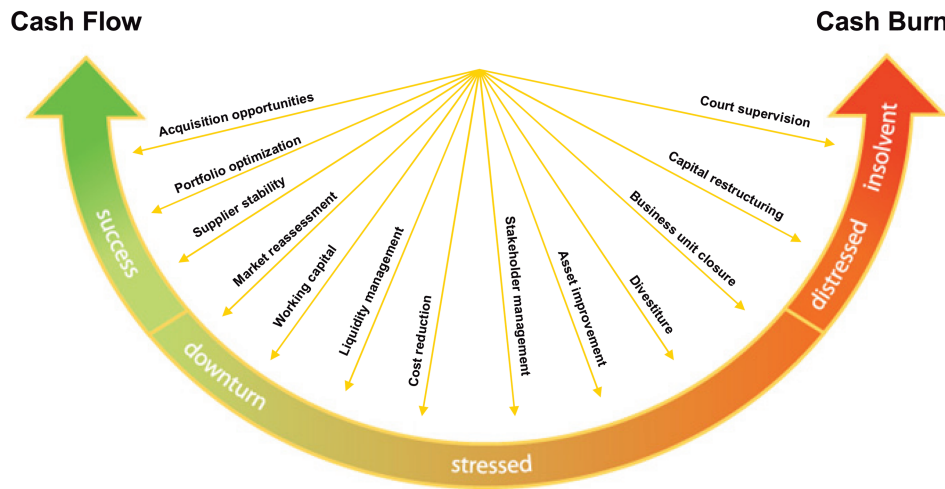
The authors would suggest that if a company is on the right side of the stress pendulum, they will be prey in M&A transactions and if one is on the left side of the stress pendulum they can be a predator in the current environment.

The Future

Is the M&A market currently in state of recovery? If one reviews Figure 2 of the TSX with the "skid marks" in the fall of 2008, and the subsequent climb back to buoyant levels, it would appear that the TSX is well on the road to a complete recovery. While that development is positive for the M&A industry, as it provides some liquidity for financing transactions and signals a renewed confidence in the underlying economy, there has been a lag. The authors have seen signs that a foundation has been established that will provide the basis for a recovery, but it may very well be a slow climb out of the hole.

We may be able to take a signal from the TSX in terms of what to expect in the future. By analyzing the historical and current TSX volumes and the price to earnings ratios experienced, the market may be giving us some signals in terms of its future expectations. Reviewing the TSX graph in Figure 13, you can see that the P/E ratio flat-lines around a 12-times P/E ratio. This could be a signal that the heady days of yester-year are over and we are going to turn back to more conservative valuation approaches.

Figure 13

A Recovery of Sorts?

► Since mid-March 2009, the TSX has been trending steadily upwards, topping 11,000 points in early September

► With reduced earnings expected for calendar 2009, this renewed optimism is bolstering the implied valuation metrics in the index

   ► A return to traditional valuations?

S&P/TSX Composite Index

43.2% recovery since March

S&P/TSX Composite Index
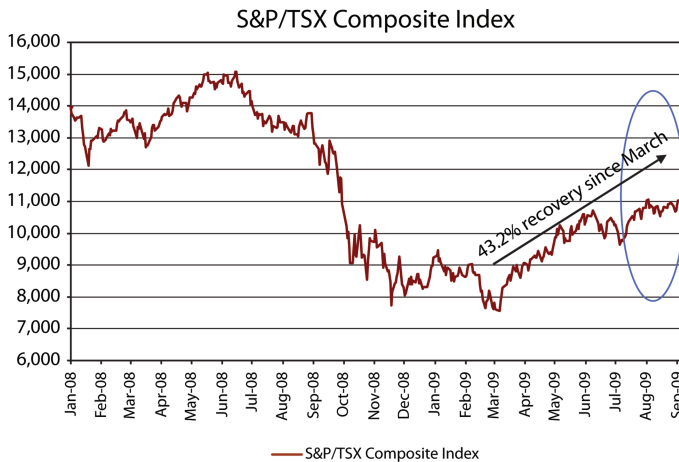
Renewed investor optimism is driving public markets valuations upward, offering significant opportunity to make accretive transactions.

In terms of the mid-market and large transactions, we are seeing strategics back in the market, improvements in their balance sheets, returned earnings, and climbing stock prices. Just as important, private equity is back. Similar to the banks, portfolio preservation was an issue last year; this year it is growing the portfolio. There are still billions and billions of dollars under management in private equity that needs to be invested. Combined with increased financing availability, we anticipate greater transaction activity in the next twelve months. We won't get back to what it was two or three years ago but it will be a lot better than it was six or eight months ago.

In the smaller cap markets, there are similar parallels. The authors believe that the most difficult component of future transactions will be the vendors, their response to recent economic events, and their expectations for the future. Are they going to return to the same valuation multiples as before? No vendor wants to hear that their business isn't worth as much as it was a year ago. That's where the authors are experiencing the most difficulty, in getting those vendors to accept that this is in fact the new reality. Purchasers remain cautious but they are prepared to do deals, but only if the price is right. The banks also appear to be coming out of the woods, preparing to finance good transactions if they are out there. The authors predict that we may see a renewed interest in alternative structuring mechanisms, such as earn-outs and other contingent consideration structures that share risk between the parties. Alternative financing structures will likely return to bridge that gap between risk and uncertainty that still exists in the marketplace.

In terms of privately held businesses, the demographics continue to dictate that there will likely be an unprecedented transfer of ownership of privately held businesses over the next ten years as the baby boom generation fully accepts that retirement is inevitable. The authors have recently received phone calls from some business owners who have said, "We know this isn't the best time to sell, but what's one year of retirement worth?"

Conclusion

The M&A market has recently experienced a catastrophic series of events that completely decimated the entire industry – for both large and small transactions. The economic fallout that ensued after the credit crisis in the fall of 2008 had a profound impact on the entire industry. Vendors retreated from the marketplace in order to focus on their own businesses. Purchasers were unwilling to purchase businesses during a period of high economic uncertainty. To top it off, banks and other financiers were unwilling to fund these transactions as they were too focussed on their own issues. This situation existed for most of the first two quarters of 2009.

However, the market appears to be showing signs of a recovery. The TSX has rebounded. Banks are again prepared to finance transactions. Although vendors are still shell-shocked, most understand that the worst is behind us, and the trough has been established. Purchasers have also returned to the marketplace, and are interested in new business opportunities, provided the valuation metrics make sense. We are still in the early stages of a fairly precarious recovery.

The authors believe that the winds of change point to brighter skies ahead. They don't think that we will witness a quick recovery, as the market will need some time to fully absorb the full impact of the past year and to fully appreciate the impact that these events will have on future earnings. The cloud of uncertainty that exists over the entire marketplace will dictate a more conservative approach to M&A transactions – a situation that may continue to exist for many years to come.

4

CURRENT FAMILY LAW ISSUES OF INTEREST TO BUSINESS VALUATORS*

by Paul M. Daykin, Q.C.
Aaron Gordon Daykin Nordlinger, Vancouver

In this paper, I will be addressing three issues that are "hot topics" in family law that may be of interest to business valuators:

1. Imputation of income under the *Federal Child Support Guidelines*;

2. Valuation of "special shares"; and

3. That part of the new *Supreme Court Family Law Rules* that applies to expert reports.

Imputation of Income

Prior to 1997, the system for determining child support and spousal support in Canada was largely budget-based. For child support, what family lawyers did was try to figure out how much it cost each month to raise the child and then they tried to apportion that responsibility as between the Mom on the one hand and the Dad on the other, in proportion to their respective abilities to pay. So, the battleground was largely about budget expenses. Then, in 1997, the *Federal Child Support Guidelines* were introduced. They created an income-based determination of child support, which many are aware of.

In 2006, a couple of professors, Carol Rogerson and Emily Thompson, both from Ontario, were engaged by the federal Department of Justice to write a paper about the proposed reform of spousal support and they produced something called the *Spousal Support Advisory Guidelines*. They are guidelines; they are not law. Neither the *Divorce Act* nor the *Family Relations Act* have been amended and the *Spousal Support Advisory Guidelines* are not the creature of a statute or a regulation. But I can tell you that in British Columbia, in particular, they have been endorsed wholeheartedly by our courts. Our Court of Appeal in *Yemchuk*[1] said that they are a useful tool—some might say are they a useful tool or a total tool—but then the Court of Appeal in *Redpath*[2] said that in fact it might be an error of law if you didn't have regard for the *Spousal Support Advisory Guidelines*.

So, what is the valuation- or accountant-related problem that arises from that? If a family lawyer has a client or a party who is paying support and they're a bus driver or a teacher, and earn a salary that goes into their tax return, then they look at line 150 of the total income tax return and that's the number, and it's simple. But, as most valuators know, that's seldom the situation in the cases that are fought about, and in the world that I live in, most clients do not get their income in this way. Most of them earn their income from a business that is

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* This paper is an edited transcript of an oral presentation delivered at the Canadian Institute of Chartered Business Valuators 2009 Western Regional Conference, held October 1-2, 2009 in Kelowna, B.C.

1 *Yemchuk v. Yemchuk* (2005), 16 R.F.L. (6th) 430 (B.C. C.A.).

2 *Redpath v. Redpath* (2006), 33 R.F.L. (6th) 91 (B.C. C.A.).

incorporated, and how much they pay to themselves is a product of a number of other factors. Section 18 of the *Child Support Guidelines* says we start with a proposition that your guideline income is your line 150 income on your T1. But then, section 18 says where a spouse is a shareholder, and the court is of the opinion that the amount of the spouse's annual income does not fairly reflect all of the money available to the spouse, then the court may, and I am going to emphasize the word *may*, determine the spouse's annual income to include all or part of the pre-tax income of the corporation.

What this means is that it gives discretion to the court to determine the person's real income available for the purpose of child support—is it just what they pay themselves from the corporation or is it in addition to some or all of the pre-tax income of the corporation?

What the cases used to say is that it is truly discretionary. There was a Court of Appeal case called *Kowalewich*[3] where the court said the guidelines allow a court to include all of the pre-tax income of a corporation for the most recent taxation year; they do not require it. I am not persuaded that they make the inclusion of all pre-tax income the default position. It seems to me that regard should be had for the nature of the company's business and any legitimate calls on its corporate income for the purposes of that business.

This seemed to me to be a reasonable approach. It said, let's look at the business, let's see how it really operates, let's see what income needs to be left in the corporation in order to conduct the orderly business of the company, and let's see how much is available to the shareholder. But that was about eight years ago, and I can tell you that since then there has been a movement in the other direction. We have had two decisions from our Court of Appeal in the last year, one called *Hausmann v. Klukas*,[4] and one called *Teja v. Dhanda*,[5] and I will tell you a bit about each of them.

Hausmann involved a lumber brokerage firm. He called himself a lumber re-manufacturer, but really what he did was bought wood, cut it up at mills that were not owned by him, and then re-sold them into the American market for housing projects and so forth. In *Hausmann*, it was interesting because there was a joint venture arrangement that he had with another company under which he was required to pay his joint venturer a certain portion of his earnings. There were also loan restrictions imposed upon him by his banker as to how much he could pay himself. But interestingly, in *Hausmann*, what the Court of Appeal said is that unless he can prove otherwise, the court is going to assume that his income is his salary plus all the pre-tax income of the company—all of it. This basically put the onus on the business owner to prove why that should not be the case.

In *Teja v. Dhanda,* we had a physician who had a professional incorporation of which he was required to be the sole voting shareholder, and he ran his practice through his professional corporation. The Supreme Court had said that it was just his T1 income and the Court of Appeal dumped all over that and said, no, it's his pre-tax income plus his salary and the onus was on him to show otherwise. So, you can see that as in the *Hausmann* case, the court in *Teja* says that the onus is on the payer to provide the necessary evidence that the corporation's pre-tax income is not available to the payer; the court should not have to ferret out the necessary information from inadequate or incomplete financial disclosure.

The reason I mention this is because it is becoming a growth industry for accountants, at least in British Columbia, and probably in other provinces in Canada as well because the income determination is now an important theme in all matrimonial cases. Further, I think that a lot of accountants and business valuators being called upon to write a report about the value of the business will also be asked to write a report about the determination of income. It is an area upon which two reasonable people may disagree. I think that given what is now emerging as the onus, it's going to be very important for the spouse who is the payer to make sure that his accountant or business valuator knows what the background facts are so that some sort of evidence can be called to talk about the calls on the company's cash. That might be loan obligations; it might be the requirements of

3   *Kowalewich v. Kowalewich* (2001), 19 R.F.L. (5th) 348 (B.C. C.A.).

4   (2009), 64 R.F.L. (6th) 54.

5   (2009), 64 R.F.L. (6th) 233.

principal repayments; it might be the restrictions put on the principal's salary by their lenders or by people who sold them the business if they are still paying out the previous owner; it may be a requirement to replace equipment; it may be a requirement for plant repairs or upgrades; it may be a requirement that they do research and development in order to keep up; and, of course, if it is the replacement of capital equipment it has to bear some difference from the amount already reflected on the financial statements of the company in relation to depreciation and amortization.

I argued a case in 2008 called *Bozak*[6] in which the client was a dentist who ran his practice through a professional corporation, and what I did was to call evidence on the equipment that he had to purchase each year in order to keep up with his competitors in his markets. In that case it was things like a new X-ray machine or a new CEREC milling machine or something as mundane as new cabinetry. The point is that it is no longer good enough to just look at the financial statements and say, this is the individual's income. Business valuators are going to have to dig into what the company actually does and what it spends its money on in order to provide cogent evidence to support one's opinion. That is the first trend.

The second issue that arises on the determination of income is what I would call the double dip. The double dip is a situation where you are both dividing the asset, which is the family business, and, at the same time, determining what the business owner's income is for the purpose of calculating child support and spousal maintenance. Why is this important?

Under the *Child Support Guidelines*, family lawyers base the support amount on income, as illustrated by the following example. Roughly, if you have two children, and your income is more than $150,000, then you will be paying $2,061 per month plus 1.22% per month on income over $150,000. So the swing, if you like, is about $1,220 per month per every $100,000 of income. Now in spousal support, it's even more dramatic than that because the spousal support advisory guidelines calculate support based upon a percentage of difference between the payer's income and the recipient's income. For example, the longer the marriage, the greater the spouses' incomes should resemble each other's after marriage, which is what some people call "Merger over Time."

For example, the range is 1.5-2% of the difference between the payer's income and the recipient's income for each year of marriage to a maximum of 46%. So, you can do the math yourself. If you have a twenty-year marriage, then the amount of spousal support being paid is between 30-40% of the difference between the payer's income and the recipient's income divided by twelve because it's expressed monthly. For example, if there's a $100,000 difference in income on a twenty-year marriage, that's roughly $3,333 per month in spousal support that would be paid for each $100,000. So what I'm saying is this double-dipping issue has become critical, but how does it arise?

As an example, I will use the case of a dental practice. Let's say that the experts have said that the dental corporation is worth $1,000,000, the goodwill component $500,000, and that the maintainable earnings of the company are $250,000 after allocating a reasonable management remuneration to the dentist of $250,000. What usually happens in a case like this, of course, is that it is inadvisable to have the husband and wife co-own the company post-divorce; so what happens is the dentist who owns the shares pays his wife compensation for her notional half interest in the business and that either happens by paying her cash or by her getting, for example, the matrimonial home. So, in that example, if he has paid to her $500,000 representing half of the value of the business, then how do we determine his income for the purpose of calculating spousal support? Is his income $500,000 because that's how much income the company can spin off to him every year, or is it $250,000 because of course he has already paid to the wife compensation for her share of the maintainable earnings of the company.

Unsurprisingly, the courts have struggled with this issue and there is no answer.

Of course the argument made by the business owner in this case is that they don't want to compensate their spouse for the same stream of income twice. Fair enough. The argument advanced by the recipient spouse is of

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6   *Bozak v. Bozak*, 2008 CarswellBC 2398 (S.C.).

course that the owner will still have the business. Even though he draws the amount of money out each year that is sufficient to pay support for his wife and his children, at the end of the day he still owns the business and he is probably still going to sell it upon his retirement or sell it to his associates, and he has not lost anything; therefore, he is really not paying twice.

The double-dipping argument was rejected in those cases, but Mr. Justice Victor Curtis in *Liggins v. Sikorski*[7] went the other way, and he said: "It must be remembered when considering the spousal support claim that in dividing the assets the value of the shares was arrived at on the basis that $100,000 per year would be a fair wage for the work that Mr. Sikorski does for the company and that what an owner would earn in excess of that is taken into account in fixing the share value of the company. Accordingly, for spousal support purposes, it is reasonable to regard Mr. Sikorski's salary as being $100,000 per year. Earnings over that are already accounted for in the attribution of share value to him."[8]

Now, I think that in the *Sikorski* case he was in direct sales marketing and it might be different in a case like that than it would be in, say, the case of a doctor, a dentist, an accountant, or lawyer, or others who have to sit at a desk and work all the time to produce the income as opposed to somebody who has got to the stage in life where they have a company running and all they have to do is phone in each morning and then spend the rest of the day at the golf club. In any case, this has become a real challenge for us; there is no consensus within the family law bar as to what the right answer is. I can tell you that it is an area that is poorly understood by judges.

In the *Bozak* case I mounted the double-dipping argument on behalf of the husband and was shot down in flames by Madame Justice Stromberg Stein, but she did something for me on the other side: she said that, even though the double-dipping argument didn't apply, "I'm going to base spousal support not on what is available to him from the company, but on how the parties lived during the marriage." And this was a couple who were savers, not spenders. He had accumulated earnings in his company and then dividends in the holding company and that was the pattern during the marriage. So what the judge said was that it is the marital standard of living that counts and I am going to base spousal support on that and what they really took out of the company rather than on really what it is earning. And so, even though we lost on the double-dipping argument, we won on the quantum. In *Bozak*, if he had to pay spousal support based on the full earnings of the company, his spousal support would have been in the $9,000 to $10,000 a month range. But the judge ordered him to pay $5,000 a month.

Special Shares

In the family law area, quite commonly of course we have a company where all the classes of shares are held by one person or by that person and their family trust. In those cases, there really isn't much debate about this issue. We ask the business valuator to value the person's interest in the company, which is usually the en bloc value of the company, and we don't really need to allocate the value amongst the different issued classes of shares. But, I can tell you that in my experience, family lawyers are now seeing much more sophisticated corporate structures because of the demographic make-up of our society. Many clients who are going through a divorce have already been through an estate freeze or two, and the structures that we're seeing are much more complicated than they used to be. Very commonly, a family trust owns a class of shares and very commonly the spouse who owns the company is not a beneficiary of the class of shares held by the family trust. Why? Because his advisors have told him not to be. His advisors have told him that if he is both a trustee and a beneficiary then (a) it is probably a family asset divisible with his spouse and (b) it is probably not subject to the same kind of protection from creditor proofing than you would get otherwise.

So, what are we seeing? We are seeing very commonly this kind of situation where someone owns the voting, but non-participating shares, and someone else owns the non-voting participating shares, and it might be a partner,

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7   2009 CarswellBC 1638 (S.C.).

8   *Ibid.*, at para. 40.

it might be a family member, very commonly it's adult children, and often it's a family trust of which the adult children are beneficiaries. And so, what do we do in a case like this?

I can tell you that I have not seen any consensus on this topic at all from the business valuation field. I do know that Canada Revenue Agency has started to take a run at this; the CRA is starting to say that even if one doesn't have a vote and can't determine whether they are going to get a dividend, but they have participating shares, those shares have value anyway. I have seen tax cases where CRA has said it's 30% or 40% as a discount, that those shares still have value. I think this runs contrary to common sense.

I do say that there are pieces of evidence or criteria that we should have regard to in trying to sort out this issue, and I have listed some of the considerations that I have come across and the valuations that I have had to grapple with on this topic.

The first one is obvious: who holds the other class of shares. Is it a mortal enemy or is it a trusted friend? Is it a family member or is it your adult child? In other words, is there really a difference in decision making power between the holder of one class of shares and the other, or does somebody really run the company? Secondly, how much remuneration is paid to management? If the person who has voting shares pays themselves a salary, is it reasonable? Is it commercially reasonable and does it bear some relationship to market management salary, or is it wildly different from that? Do they live like a rock star and draw tons of money out of the company and pay for expensive car leases and private jets and so forth; or, do they live frugally? Was there a history of dividends paid on the participating shares? That's a big one. If the participating shares don't have a vote and they have never had a dividend, then is someone in the marketplace going to pay money for them? What's the CRA's position? I say this only because there is so little case law on this topic from the matrimonial area or from the commercial litigation area, but there is case law on the CRA side. I don't believe that the CRA's position should be binding on anyone because it is just a position. But, there is case law out there in the tax area and it is going to have an impact.

Another consideration is terms of a shareholder's agreement. There may be an agreement on the way by which the profit of the company is to be distributed. The final consideration is whether there are any previous transactions among the shareholders. Did the shares in question trade at any time? Was there a sale, even one between family members or better still, between arm's length people? Was there some previous transaction that can be used as a guide? The short answer is, I have no answer. We do not know how to solve this problem; I can tell you that in the business valuations I have asked others to do recently, I have been told by people that there is no answer. I would love someone to write a paper on this topic and suggest an approach that is reasonable. It's up to valuators to get together to help us with this.

The New Supreme Court Rules as They Relate to Expert Reports

The Supreme Court rules are going to be changed effective July 1, 2010, and this applies just in British Columbia. There is a part of the changes to family law rules that is going to impact business valuation in a big way, and there are really two provisions that business valuators ought to know about. The first is what I would call "legislated neutrality". Everybody probably knows that the role of an expert in providing expert evidence to the court is supposed to be that of the helpful aide to the court and not that of advocate to one party or the other. Why? Because the expert is supposed to be independent. Why? The courts are not specialists. The judges, who might be hearing a matrimonial case one day, a criminal case the next, and a civil case the next, are not trained in business valuations, in how to read a financial statement, or in tax. So, because we hire generalists as judges, valuators are there to assist the court, not to advocate a position but to educate the court in order to help the court make its decision.

That has always been unspoken, but now it is in the rules: The new proposed Rule 13-2(1) says: "In giving an opinion to the court, an expert appointed under this Part by one or more parties or by the court has a duty to assist the court and is not to be an advocate for any party." It gets better. The rules go on to say that if an expert

is appointed, they have to sign a declaration saying that they know their role and prepared the report in conformity with that duty: Rule 13-2(2).

The jointly appointed expert is now a legislated requirement in family law. And just think of this: you've got two people who might have been married for ten or twenty years and they have loved each other. And now they hate each other and are supposed to agree on who to hire as a valuator. Not only are they supposed to agree on that, but also on what the terms of reference of the report are. So Rule 13-3(2) says "If any party wishes to present to the court expert opinion evidence on a financial issue, that evidence must be presented to the court by means of a jointly appointed expert, unless the court otherwise orders or the parties otherwise agree." Now, there's a good "unless" there. There's an out. But the out is that the other side has to agree or the court has to order you to be able to provide separate reports. Then, it goes on to say that the parties must agree upon certain things. Number one, the identity of the expert; that seems obvious. Number two, the issue; not so obvious. Number three, the assumptions or assumptions of fact agreed upon; this seems really unobvious. Number four, for each party, any assumptions of fact not agreed upon. That might be a long list. Number five, the questions to be considered by the expert. Number six, the deadline for the production of the report. Number seven, the responsibility for the expert's fees.

I think that with this change there is some good news and some bad news. The good news is that valuators will know how they are going to get paid and may have access to management that they might not have had access to before, and that's a good thing. Let's say, for example, that the valuator was called upon to give expert evidence for the spouse who didn't own the business, let's say the husband, and they were called upon to represent him. The valuator may not have access to management at all and might have to rely upon what they can get out of an examination for discovery or from documents that were required to be produced. But now if the valuator does a report, presumably the valuator is neutral and has access to management. Hopefully, if the lawyers do their job, the valuator will get clear instructions, so that's the good news. The bad news is it seems to me that there will be less work available for valuators because rather than having two valuators retained on most cases there is now going to be only one. The flip side to that is the reports are going to be longer and more complicated.

I say this because people are rarely going to agree on what the terms of reference are. For example, suppose a separation that occurred in 2007 had its trial in 2009. One person wants to value the company at September 30, 2008 and the other person wants to value the company at September 30, 2009. There might be a huge difference between those valuation dates. How is a valuator going to do that? The valuator is going to prepare a report that does it at both dates.

Let's say the valuator can't get agreement on what the facts or assumptions are. Let's say that one person says the equipment is equal to its book value and that's a reasonable assumption. And let's say the other person says, "that's ridiculous, all I've got is a bunch of servers and computers and they're worth no more than that armchair in the corner. I want a valuation to be done on the equipment and I say it's worth zero," just to give a ridiculous example. There might be all sorts of different facts and assumptions and what you are going to have to do as a joint valuator is prepare one report with a certain set of facts and assumptions proposed by one party and another report on another set of facts and assumptions. I believe that will result in a longer and a more expensive report.

The most important thing that falls into the bad news category is conflict. What makes matrimonial law different than any form of commercial litigation is, rather than two shareholders or two business partners or two competitors fighting, you've got two spouses fighting and there is, I think it is fair to say, a high degree of emotion. There is sometimes a high degree of acrimony. There is sometimes a great deal of mistrust. And so how does one get two people who have a high degree of mistrust of each other to agree upon valuation issues? I fear it will put the business valuator in the middle and if this happens, the valuator won't be dealing with husband and wife; they will be dealing with their counsel. Some counsel are good at maintaining their neutrality and their objectivity, but some are not and that makes the job of the valuator tougher. I am not personally a fan of this rule and think this will make things difficult, and that there will be a learning curve.

The one thing that is a bit lamentable about the new rule is in the family law area, because most family lawyers are not good at reading financial statements, or at understanding tax concepts, or valuation concepts, and we have relied pretty heavily on those in the valuation profession to help us through a case. That means the valuator will not just be engaged to do valuations, but that they will also be engaged to help family lawyers; that might mean valuators help lawyers prepare discovery, cross-examine witnesses, attend meetings, and negotiate settlements. Family lawyers like to have experts like business valuators in their camp through that process. Quite commonly, the most important role that valuators can play is not in writing a report, but in helping family lawyers through the process. I worry that that role of expert is going to be lost. For my part, I like to have a good expert in my camp from the very moment I get retained on a file and I use them for a variety of different reasons. It may be that what happens is I will retain someone to act as an advisor, and I will retain someone else to write a report.

When I get a draft report, I often wish it were more digestible and understandable. I know there are rules and that valuators have to put certain things and certain schedules into a report; however, what valuators need to realize is that those in the family law bar, and certainly judges, are not experts and will have trouble with technical concepts. So, the job of a valuator is to simplify, simplify, simplify. If the valuator is able to do that, then whether they are an advocate, which is probably not what a valuator is supposed to be, or whether they are simply assisting the court, the valuator is going to do a better job.

5

VALUATION DYNAMICS OF UPSTREAM OIL AND GAS INTERESTS*

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Introduction

This paper will give context to some of the attributes of oil and gas asset and corporate valuations by addressing three key themes. Firstly, how are valuations changing in the face of shifting commodity prices, costs of capital, and scarcity of capital. Secondly, how does market sentiment affect these factors. And finally, this paper will address the non-linear nature of market behaviour with some examples. It will conclude with a forecast to what lies ahead in 2010.

Upstream Oil and Gas Valuation Dynamics

This discussion will begin from the peer and buyer group analysis basis. One can do a detailed buyer analysis, looking at accretion for public companies, and then an ability to pay analysis. Cash-based transactions are different from stock-based transactions and not every asset is created equally. Often, when we are in the market with assets or companies we can get a pretty good understanding as to where valuations are going to land in any kind of a marketed process. Understanding the unique attributes of the assets plays a significant role in using precedent transactions to get a sense of how the market will value them.

One of the first places we start to scope the anticipated market value is with an independent engineering valuation. It is one of the most robust analyses that can be accessed in our business. These are very detailed forecast models that include commodity price, currency exchange, and the technical merits of the production or the underlying reserves in various categories. These categories are important. The reserve assignments that show up in these categories become the basis on which people communicate confidence to the bank and confidence with respect to the investment quality of additional capital that might need to be put into the ground to recover that extra molecule of gas or that extra barrel of oil.

The reserve report delivers a well-adopted means of valuation that people can take to their banks, shareholders, or investors as a measure of value. One thing that is really difficult, however, is that engineering valuations only measure value at a particular point in time. They come with an effective date. Price forecasts are implied from a particular date in time, and that price forecast, of course, runs out for a decade or more. It is thus imperative that valuators understand what the attributes are. Often the time of year when the report was generated is important because, like in the accounting business, the amount of time that a valuator has to invest in understanding a

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particular opportunity is often limited by the demand on their time and services. So, we always like to ensure that there has been a thoughtful approach to preparing the valuation, that it is fair, and that an experienced valuator has been chosen. At the end of the day, this helps to drive consensus. Whenever you can get consensus on value you can drive transactions with great efficiency.

While we use these considerations as a guide to value, they do not necessarily reflect the market value. First of all, to get there I do need to give you a little bit of a framework on the reserve categories. Proved reserves by definition reflect 90% confidence of being achieved. In a probable reserve category, confidence is reduced to 50%. People will talk about the reserve value as a fixed number; however, they will not give you a description of how that value is attributed between the various reserve categories. For example, if an asset is valued at a hundred million dollars and 80% of it is proved and 20% is probable, one's confidence level in the combined proven and probable value is quite high. If it were the other way around, then the asset is relatively immature and one only has high confidence in 20% of the value. One then has unspent capital at risk to get that value out of the ground.

Additionally, within proved reserves there are two further sub-categories—proved developed reserves and proved undeveloped reserves. The proved developed reserves are delivering dollars to the till every month; they've got cash flow associated with them and they're very bankable. The more bankable, obviously, the more access to leverage the company can get in a transaction and purchasers will have a reduced need to go and look at higher costs of capital to complete the transaction.

Buoyancy in the Gas Markets

There is some buoyancy in the gas markets. We are now up to $4.50 on the spot market, whereas in summer 2009 we were down as low as $1.85 on the spot. When there is a great deal of volatility in commodity prices, there is a significant influence on corporate viability and a resource company's ability to fund whatever development they may plan to do as their cash flow is limited. The quality of resource investment opportunities is critical with lower quality interests suffering significant loss of market appeal in a low price environment.

Net asset value

What is the definition of net asset value in respect to oil and gas companies? There is not a single definition but a common one, often used at the board level, and summarized in many information memoranda that are put out into the market, is the 2P (proven + probable reserves) articulated at a particular discount factor—10%. Additional value such as land, and seismic, will commonly be layered in. At the end of the day, any thread of value that is incorporated starts to skew the perception of value by the shareholders of those companies. We have all heard about the lack of buyers and sellers and about the disparity in points of view between buyers and sellers. These are often driven off of this particular effect of perception of value that gets locked down in corporate valuations. The author would say that the aggressive assignment of net asset value is more of a hindrance in private situations than it is in public situations. At least in a public situation you know how the market is responding to the quality of the portfolio and it is usually a pretty good reference point to asset value depending on the size of the company.

Implication for Transaction Value

When the public markets are very well supported, the cost of capital is low and capital in general is readily available. One can look at the lowest cost of capital which is typically bank debt; or, one can look at the highest cost of capital, which is typically private equity investment. You can then start to get a sense of how a counter-party to a transaction might be applying their notional value to the various investment classes of the assets. What we have seen in the market, particularly over the last 18 months with the capital markets retracting, is that the fundamental characteristics of the market are being driven by the cost of capital and determined by the type of party that is looking to acquire a particular type of asset.

Portfolio characterization is one of the more technical aspects of the work that we do to get a better sense of comfort around the base and opportunity value of the company. That is a very efficient and positive way for the market to deal with a transaction because it is really not an artificial market driven attribute. It is a fundamental valuation attribute of the assets themselves, and we think for the most part if the market is behaving fairly, they are treating the assets fairly across the various asset classes that you are going to get involved in.

In general, we look at the geological characteristics of the assets: how complex they are, how continuous they are, and how much recovery we might expect from various types of assets. We model in upside potential despite the fact that you can get an engineering valuation that has proven and probable reserves. A good current example of this is the Horn River Shales or the unconventional gas. They don't have a great deal of reserve attribution to them right now because it is at such an immature state of development; so, in order to get value from them, despite the fact that you can't put them into an engineering report, you can collect technical data that gives comfort to the quality of the resource and model the capital requirements for development.

When it comes to unconventional resources, whether it be oil sands, thermal projects, or unconventional gas, it is all about the quality of the resource and the ability to access that resource economically. If you can prove it commercial, then you've got some sizzle. If you can't, then you are not dealing with industry average class; you are dealing with below industry average class assets and they will have very limited appeal in a capitally constrained environment.

Technical Value/Opportunity Value

The geological attributes around thickness, structure and saturation of the hydrocarbons, the pay and the log character, the continuity, and the decline characteristics are complex and strong determinants of commercial value potential of oil and gas properties. A large part of trying to characterize value is defending that value and legitimately defending the value. Too often we see layers and layers of fantasy incorporated onto a base value that is not defendable and not financeable; yet people are trying to opine on that value potential and this erodes the confidence value of the assets.

Our view is that if you can put together a technically and financially defendable description of opportunity, then the market should be able to recognize you for that at an appropriate discount that considers the uncertainty and risk of these opportunities. Certainly some companies have a greater inventory of that kind of potential than others, and that is going to influence the appeal in the market.

Running sensitivity analysis also helps give comfort around viability of particular projects. If one project can deliver a 20-30% rate of return at $5 gas it is certainly going to have a whole lot more appeal when the price for gas is $7. But if you have a project that has negative value at $5 gas and yet is still a viable project at $7, you want to incorporate and consider it, but you may not be able to get paid for it as well as you would with a higher grade capital opportunity.

Valuation Changes and Implications

The recent high cost and scarcity of capital has had a significant influence on market valuations and transaction metrics. When you combine commodity price downturns, high volatility, a continued contraction of capital markets, and different costs of capital across peer groups, it profoundly affects the valuation of different styles of assets. Those market trends around the implied metrics start to be impacted because every barrel of production and reserve from the ground are now going to be traded differently than when the capital markets were strong and the industry was rich with opportunity. Implied market valuations are always going to be part quantitative and part qualitative and subject to market sentiment. When the flavour of the month is the Bakken oil resources and/or the Horn River shale gas there's a lot of piling on for the strategic value of those types of resources. It can drive the market value upward with a whole lot of ambition.

Levels of debt that companies are burdened with have a material influence on valuation. This is because a lot of companies in the energy sector in Canada have benefited from patience employed by the banks through the downturn in commodity prices. More recently, the banks were not looking to make huge write-downs on their lending portfolios so they have exercised great discretion in terms of the number of companies and groups that they have put calls on and forced into circumstances of resolve. We think that that is going to change and make the field of business valuations interesting and dynamic over the course of 2010.

Opportunity

What makes for a compelling opportunity? Compelling assets have the following attributes: meaningful land footprint; low-risk and repeatable development opportunities or investments; operational control over the pace of investment the company is going to undertake; assets that are going to benefit from the application of technology; a very well-managed cost structure, so the general and administrative cost is not grinding on the company's value. In addition, its value is resilient to price downside and the company has ownership and control of key infrastructure that the commodities are feeding into; it has a big inventory of projects, so the amount of running room the company has is multiple years and often decades. Finally, the company will have very low debt, and therefore balance sheet flexibility to take advantage of other opportunities in the marketplace; it can leverage its tax pools and has a very unique team expertise.

It is said that banks don't lend money to companies, but that they lend money to people. When times are tough the experiences and competencies of the people who are at the helm of these companies can often make the difference between who is going to be given a little bit more time to resolve their situations versus those on whom the hammer is going to come down very hard.

Buyer and Seller Expectations

2008 saw a retraction in the ambition to buy or sell assets as prices started to fall. As a result there was a sense the market was feeding on the perceived shortcomings of companies that were in the market. Bidders were under bidding offerings on a perception that transactions were available at an unrealistic discount, and few deals were done.

Strategies and Outlook for 2010

One thing the author can say with quite a bit of certainty is that opportunities in our marketplace are going to accelerate. The fire alarm did get pulled and we had about $500 million worth of assets in play in October of 2007. We ended up closing on about $200 million of transaction value in the following six to nine months. Let me tell you that things that should have taken three to four months to get done have taken nine months and some of them still are out there under consideration. So it has not been an easy year for anybody in this space, but it is going to get easier.

In general, rapid deals are made in the following situations: when you get consensus on the price forecasts; when the price is catching up to the forward curve; when the capital markets are starting to come back; when the interest rates are being managed into a more meaningful range; or when the marketplace gets impatient. We see all of those things coming together here for the balance of the year.

Buyer and seller expectations are converging. The biggest area of uncertainty was in gas prices. The fall is always a time when you see price momentum on the gas side. We come off the shoulder season and into some anticipated marketing drivers around supply: whether there are hurricanes or whether it is the average weather expectation on the eastern seaboard. These things are going to influence the spot price and give people comfort around the value they are going to garner in the market.

Differences in access to and costs of capital are going to influence which way a transaction is going to drive and who is going to be the acquirer. Smaller companies have less access to capital and their cost of capital is high. Large companies have more ready access to capital and a lower cost of capital.

New plays—these big resource investments in the unconventional gas part of the basin or in Saskatche-wan—are starting to emerge in unconventional gas. These are high dollar projects. We are not talking about drilling wells in southern Alberta for $300,000. We are talking about drill/ complete/ tie-in costs all in of between $4.5-9 million. A junior company can't afford to incur that kind of risk or access that kind of capital to develop those projects with any scale. But what we have seen is that a lot of these little guys that were out in the marketplace have found themselves in legacy positions where technology has come along and it is really making them attractive.

In the absence of cash, paper transactions have been more prevalent than in the past. Typically, it is smaller companies looking to differentiate themselves and get to a higher level of value in the market. They are motivated to move up in size against their peer group and getting out of the basket of minutia for the market.

The last aspect of this discussion pertains to cash transaction being distributed as proceeds. When you have a paper transaction the investors are riding along the future potential of the company. A lot of the investors in Western Canada have come out of private equity that made a bet on the potential of the company. These firms do not want to see their investments liquidated at a low point in the commodity cycle. So, if they can get their companies and their issues resolved through a paper deal, they don't have to distribute proceeds of a sale to the unit holders in their funds. Thus, they are motivated to push paper around, maybe drop a bunch of General and Administrative costs from the expense profile of the acquired company, and ride forward on the investment to live to fight another day.

The Technical Applications of Resource Fairways

Many companies that acquired a portfolio in the last five years had no view or vision to the potential that their mineral rights in certain parts of their portfolio would have as new technology introduced a whole new perspective on their value. Examples are the Montney, the Rock Creek, the Cardium, the Viking in Alberta, and obviously the Bakken and the Shaunovan in Saskatchewan. These are plays that generally are sitting either above or below the current productive horizons, though the land was not at risk for being lost back to the government within their lease terms. New technology comes along and re-introduces value potential in a lot of legacy portfolios. We are going to see that happen as we move through the next 24 months.

Juniors and microcaps face the biggest challenge. They have been sitting on their hands waiting and hoping for price recovery and I always like to say that "hope is not a corporate strategy." Before getting into the year end I think we will see reserve re-determinations, that is, many boards saying that they can't afford to go through a protracted downturn and get forced into CCAA or get their bank line retracted. This will push a lot of smaller projects with resolve to transact into the marketplace, and although they may not be treated fairly it is going to be relatively transparent that it is a distress situation. What we see in distress situations is that the assets typically garner a discount to other assets where people are more in control of their future.

Summary

Market depth and aggression is going to continue to remain the strongest in assets that are compelling. If, as a business valuator, you ever find yourself in a circumstance where you are asked to perform a valuation in this sector, don't under-appreciate the subtle differences in the asset quality of the clients that you are serving. There are a number of ways to get into trouble in this area: looking to a precedent that is not relevant; giving value to a reserve class which incurs a higher level of uncertainty; comparing a capital project that has positive value in the engineering and not appreciating the quality of capital investment in terms of its rate of return and putting them all into the same basket. This marketplace will not allow us to do that. The author encourages business valuators to consider these factors as a good basis for dialogue with clients. There is as much calculation and research as judgment and psychology involved in doing oil and gas transactions and valuations.

6

VALUATION FOR FINANCIAL REPORTING – KEEPING UP WITH CHANGING REQUIREMENTS*

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If we look at financial reporting standards, valuation is very prevalent all the way through the standards. I did a very crude count by doing a search through existing Canadian accounting standards as well as through international financial reporting standards (IFRS), and there are over 2000 references to "value" in the Canadian accounting standards; 1300 refer to "fair values", another 300 refer to "market values" and you get a very similar impression if you do the same to international financial reporting standards. In fact, the numbers are somewhat higher, as will become evident by some of the issues I will be covering in this paper. But just to give an example, there are over 3000 references to "value" through international financial reporting standards.

The other thing to bear in mind around valuation for financial reporting is that it isn't a new notion; value has been a part of international reporting standards since the 1970s going through into the 1980s. Gradually, over time, we have introduced more valuation requirements into accounting standards and certainly the opportunity to value things upwards and value things on an ongoing basis is a more recent phenomenon, but valuation has been with us for a long time. This has been the case with business combinations accounting, when we've had depressed values and impairments and the like. So the idea of having to do valuations for financial reporting purposes, and dealing with some of the challenges of valuation we are dealing with today, has been around for quite some time.

Valuation also represents a large part of financial reports. A Credit Suisse report issued in June, 2009, entitled "Focussing on Fair Value in Financial Reporting" estimated that in the US more than six trillion dollars in assets were reported on the balance sheet at fair value by the S&P 500 companies. That's a fair amount of value, and that's allowing for the fact this is as of December 31, 2008, and the values were already starting to be fairly depressed at that time. I think they estimated the number was more like eight trillion dollars before the current decline in values had occurred.

That said, there is an awful lot on the balance sheet that is not at fair value. Those numbers represent something like 27% of the total assets and 7% of the total liabilities. As such, there is a lot of financial reporting that it is not fair-value dependent. Financial reporting does not value the business as a whole; we are not trying to come up with the market capitalization of the business, nor the value you would come up with when valuing a business. There's a lot more still for you to do as a business valuator when you are looking at valuing a business. We are not going to full fair value financial reporting anytime soon. So yes, there is more fair value, but we are probably not going to value the whole lot in my lifetime.

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* This paper is based on a presentation delivered at the Canadian Institute of Chartered Business Valuators 2009 Eastern Regional Conference, held June 18-19, 2009 in Niagara Falls, Ontario.

If we look at where we are going with international financial reporting standards (IFRS) versus Canadian financial reporting standards, the following list identifies the international financial reporting standards that have some references to fair value in them, and a comparison with Canadian standards:

- IAS 16: Property, Plant and Equipment – optional FV

- IAS 17: Leases – similar

- IAS 18: Revenue – similar

- IAS 19: Employee Benefits – similar

- IAS 20: Government Grants – similar

- IAS 21: Foreign Exchange – similar

- IAS 32: Financial Instruments: Presentation – similar

- IAS 33: Earnings per Share – similar

- IAS 38: Intangible Assets – optional FV

- IAS 39: Financial Instruments: Recgn. & Meas. – similar

- IAS 40: Investment Property – optional FV

- IAS 41: Agriculture – additional

- IFRS 2: Share-based Payments – similar

- IFRS 3: Business Combinations – same

- IFRS 4: Insurance Contracts – additional

- IFRS 7: Financial Instruments: Disclosure – same

I think the couple of messages that come up when you compare where we are today, and the Canadian Standards with International Standards, are: one, there are more references to fair values, more use of fair values, in those standards, but in many cases the additional use of those standards and their IFRS are optional additional uses. So, many companies, when they move to IFRS, are not going to use significantly more valuation than they do today.

There are a couple of areas on this list where additional valuation will be required. Under IFRS the agriculture standard, for example, requires the valuation of biological assets—things that are growing—and that can be a whole new area in Canada. Additionally, the investment property standard requires disclosures of fair value for investment properties even if they're not used in the financial statements. What IFRS does add to the mix is it *allows* valuation of property, plant and equipment; it *allows* valuation of intangible assets for financial reporting purposes, and in some of the more specialist areas, insurance contracts, for instance, there are some more fair value requirements. More fair value requirements mean more opportunity for people like you to help in those kinds of areas.

As the International Accounting Standards Board (IASB) came to greater prominence internationally, the valuation profession has begun to organize itself much more significantly internationally as well. The International Valuation Standards Committee (IVSC) has restructured itself and positioned itself to become the major player in terms of providing valuation input and support related to reporting standards.

One of the triggers for that, I think, as well as globalization, was some work the IVSC did back in 2007. When they took a look at the valuation input to financial reporting for investment properties under IFRS they studied a fairly limited number of European companies. The IVSC came to the conclusion that in the financial statements and the underlying valuation work that had been done by outsiders in developing those values for

investment property, there were something like ten different valuation standards and guidelines that had been used to determine those fair values. And, perhaps more worryingly, a number of the valuations that had been done were arguably not in accordance with the valuation standards for financial reporting, with references to all sorts of different valuation bases that were not truly compatible with the definitions and requirements for fair value accounting under IFRS.

The IVSC saw an opportunity here to try and bring some of that closer together and to work toward the same kind of goal the International Board has on the accounting end of things. From a valuation perspective their objective was to try and improve the valuation end of things through the development of a single set of uniform global valuation standards. That's not something the IVSC is going to put together overnight; but to date they have developed some of these standards in some areas. And while they don't comprehensively cover all areas there is a key focus on trying to develop valuation standards that will work consistently with the accounting standards and hopefully get us away from multiple valuation bases in financial reporting and outright wrong valuation bases, or at least away from those that are not the required bases under financial reporting standards.

In recent years, specifically in recent months, valuation has been under attack, whether it has been for financial reporting purposes or elsewhere. The current market crisis has brought considerable challenges to determining valuations; coming up with a value in an imperfect market as opposed to a fully liquid market has certainly been a challenge. There have been so many challenges put forth that the values that financial reporting people are coming up with are not the true values. When you are looking at markets that are moving fast, some people will look at a particular value and say that it might have been the value at a particular point in time when the financial statements were drawn up, but is not a "real" fair value.

In a way, that's a weakness of financial statements—they are drawn up at a point in time. It's also a strength though, because it gives us a solid benchmark. But people might say that's not the real value or something along the lines of, "I know it's going to come back. I know it's going to change going forward. I know if I look at a range of values over a period of time, I'm going to come up with a different value than that depressed value" (or what they think is a depressed value at the reporting date). So there are a lot of challenges with the values on the financial statement.

I read a quotation this morning in a UK newspaper that talked about a CFOs concerns about a particular value of financial instruments. His concern was that it may highlight to the public financial weaknesses of the business. I think if the values are depressed, those are the values at that time and financial statements should be transparently providing that information, not obscuring or hiding it by coming up with smooth average values that make assumptions about what might be occurring in the future.

Values in financial reporting have also been challenged because of their volatility. CFOs preparing financial statements do not like volatility. They like nice steady trends of income numbers that show how well they are doing, and how things are going up over time. When the numbers are moving around, they don't like that. If the underlying economics are volatile it seems to me that it's reasonable enough that the valuations themselves should reflect that volatility.

The risks of being managed and hedged and the like can also be shown by financial statements. And valuation has also been blamed for so-called procyclicality, a word that wasn't even in my vocabulary until about six months ago, but now seems to be all over reports with finance ministers throwing it around here there and everywhere. The idea is that because you write down the reported value, that causes the people who look at that value to get more worried and then to sell the stock because they're more worried, which in turn pushes the value down again, which causes them to sell even more.

It has been claimed that this has exacerbated the current economic crisis. I think many of the people who have looked at this seriously conclude that has not been the case overall, but it is certainly a common belief.

There are other sides to some of those challenges and I will point out several of them. Estimation is a normal part of accounting and a normal part of valuation. Values are not necessarily precise. The number that one person

in this room comes up with will not necessarily be precisely the number that another person comes up with. We do expect that values will reflect the underlying market circumstances. When values are depressed, numbers in financial reports on a value basis will be themselves on the down side. To that end, as markets come back, hopefully values will as well.

The final point I'll make related to financial reporting is that the objective of financial reporting is to provide information for investors and creditors. It's to provide *balanced, neutral* information for those constituents to understand the financial statements. It is not to deal with managing liquidity and managing regulatory risks and the like, so some of the issues and concerns we see from financial institution regulators who are concerned about maintenance of capital in current markets, are not necessarily directly aligned with the objectives of financial reporting. Those regulators have other tools whereby they can require additional information and make additional adjustments for regulatory purposes to valuation information. But the focus of the valuation reporting is all about providing balanced, neutral information for investors and creditors, telling them what the value is, what the position is, at the date of valuation which for valuation purposes is the balance sheet date.

Notwithstanding the fact that I think there are a number of responses to criticisms of valuation financial reporting today, I think it's fair to say that some of the guidance in both Canadian and international standards to date can be beefed up. Some of it is scattered around a number of different standards. You don't necessarily find a single set of standards you can look at and say this is what I do. If you are doing valuation of a financial instrument you find that there will be one sort of guidance, and if you are doing valuation for business combinations, there will be guidance put in place but maybe something different. That's been a problem that standard setters are trying to fix. This is where I'd like to bring you up to date with what's changed with valuation guidance for financial reporting purposes.

There are really three main initiatives that have been going on. One is what the IASB has been doing through the expert advisory panel. Second is some Canadian guidance that we have issued, which I would say is somewhat of a stop-gap measure before longer term guidance is available. And third is the longer-term guidance, which the IASB has recently proposed and which we will also be issuing as the proposed guidance in Canada, not only for the IFRS world—once we pick up IFRS—but it's pretty likely that we will refer to similar types of guidelines whenever we use fair values for financial reporting.

So, the first one out of the blocks was the IASB expert advisory panel. This was established last summer (2008) as the financial crisis began to deepen and some of the challenges became clear. It was a group put together of measurement experts including users, auditors, preparers, a cross section of people from the business community with expertise in valuation and measurement. Its task was to identify the practices experts use for measuring and disclosing financial instruments in markets that are no longer active, and in October, 2008 it issued its guidance as a result of those deliberations.

The first leg of that guidance stressed that the objective of a fair value measurement is to determine the price at which an ordinary/orderly transaction would take place. What you are trying to do in determining a fair value for reporting for financial instruments is to focus on the necessary objective to determine what the price would be in an orderly market. The guidance went on to point out that a forced sale cannot be considered to be an orderly transaction because market participants are not willing to transact at that amount and that a price for a forced sale should not be used as a basis for measuring fair value. There's an important link to that and I will come back to it a little later.

Yet before some of this guidance came out, there were some particular issues related to the level one, level two, and level three hierarchies of fair values. They were reading them as if to say if there was any kind of market price out there, then one would have to use that market price rather than going to other sources. This was stressing that if that market price was a distressed price, a forced sale, you don't necessarily—and in fact you shouldn't—go to that price.

The guidance goes on to emphasize that you should take into account all market evidence in determining a value. So again, you don't just look in isolation at the market price; you've got to access all of the things that are going on, and if you are not using a market price but are using a valuation technique of some kind then you should be seeking to maximize the market inputs and minimize management entity specific unobservable inputs that go into that price.

The guidance explains that when you have an inactive market, transaction prices can still be used as an input to the fair value calculation. You wouldn't just use the transaction price, but in a fair value market it does not necessarily mean a distressed transaction. There may be prices available in inactive markets that can be used as the basis and input for fair valuation. They may need adjustment to take into account that the market was inactive, but they shouldn't necessarily be completely ignored because the market has become less liquid as opposed to it being a distressed or forced sale price.

The guidance goes on to discuss whether a market is active or inactive. It gives some guidance about the characteristics of an inactive market being one in which there's a significant decline in value or trading activity; significant price fluctuations over time; and non-current prices available. Like international financial reporting standards generally, it doesn't answer every question about every type of situation. It requires you to use your judgment in these situations. It discusses transactions taking place regularly on an arm's-length basis. It stops at that level, and there's some judgment that needs to be put into play to assess what the word "regularly" is. Accounting standards don't like to get into bright lines and precise rules; we don't say things like "regularly means once a month, once a week, once a year" because there's a judgment to be applied and people like you have the processes, the ability, and the professional expertise necessary to apply that kind of judgment.

It goes on to say that relevant observable market data does not exist or can't be used, so when market data is not capable of being used, then you go on to use a valuation technique. And that may be a valuation technique based primarily on internal assumptions from management, but if you are looking at management assumptions, and basing it on management assumptions, you have got to continue to be cognizant of making sure that those management assumptions are taking account of those kinds of things the market would take account of in developing a value because your objective *is* to determine a value in the market.

So, if you are looking at those management assumptions and you have a sense that they are, perhaps, biased in some way, or they have left out a factor you know the market would likely take into account in developing such a valuation that's required to be taken into account, you are correct in concluding that the valuation can't just be purely what management thinks the number will be.

The guidance points out that in some cases using unobservable input might be more appropriate than using observable input, particularly when you have got to make significant adjustments to the observable input. So again, coming back to the question of having an observable input, but it's a pretty bad observable input, and thereby needing to make so many adjustments to that observable input by factoring in all sorts of judgmental factors that you can actually do better by using a valuation technique with more solid adjustments, are you allowed to go to that valuation technique? You don't have to and are not forced to use the price just because it is there, especially if it's a very bad price and you've tried to adjust from it, and if you can get a "better" value, better meaning more reliable, from a private valuation technique.

The guidance also has a caution in it about broker quotes and using prices obtained from brokers, because brokers are no different from the rest of us in that often the quotes that they are giving derive from valuations rather than from open market inputs. Just because the quote comes from a broker doesn't necessarily mean that it is an open market price that can be looked at without thinking more about it and assessing whether it is a reasonable price to use. So that was the IASB's expert advisory guidance first step, mainly based on financial instruments and particularly homing in on inactive markets.

The next thing was the Canadian step. We felt we needed to put some guidance in place in Canada, so we issued a staff commentary in November, 2008. It doesn't sit in the accounting practice standards handbooks, but

it does sit on the accounting standards board website as a reference to all rather than a formal part of GAAP. What that commentary did was pick up a number of aspects of the expert advisory guidance, and it also looked at the US and some of the guidance coming out of the US, where the best practice was coming from as well.

I'll briefly now outline just a few highlights from that Canadian guidance, some of which is absolutely consistent with the expert advisory panel guidance. It gets into the characteristics of inactive markets and similar kinds of things you should think about, but stresses the point that you need to use judgment to assess whether the market price you are looking at is a price in an inactive market. It picks up on the same theme that when the market is inactive you would use valuation techniques, but when you are using valuation techniques you need to maximize the use of market inputs. And it also picks up on the theme that an inactive market does not necessarily imply that the transactions in that market are distressed transactions. They may still be a valid base for extrapolating and adjusting to what the price would be in an active market.

It also stresses that entity-generated inputs might in some cases be more appropriate than those from the market if significant adjustments are required to the available observed prices, a point I made previously on the IASB guidance. But again it also stresses that entity generated inputs must reflect the market's assumptions, not the entities', or managements' own assumptions going into that. It also stresses the point that just because it is difficult to determine a fair value, that doesn't mean you don't need to do it for accounting purposes, or that you can put "zero" in as the number. If the accounting requirements require a fair value, then it is incumbent upon the company with the assistance of whatever processes and people that are helping them to do so to come up with their best estimate, and not to just give up and say, "I can't do it, I'm just going to use historical cost or I'm just going to put a zero value."

Those were the stop-gap measures the IASB and the Canadian Accounting Standards Board put into place. For the longer term, the IASB has now just issued a comprehensive exposure draft of its proposed guidance on fair value measurement. This exposure draft was issued in May, 2009, for comment by the end of September, 2009, and they intend to put that into place as fast as they can after the comment deadline. It is intended to put into one place the guidance on fair value measurement going forward, so that wherever the standards say fair value is going, there wouldn't be guidance in those individual standards, but all point to this one location of fair value. I think that would make peoples' lives a little bit easier. If you are doing a valuation for financial reporting purposes, there will be one place to go to and look to see what the guidance is on that, instead of running the risk of having it scattered around with potential inconsistencies between that guidance and others.

There are, though, some differences in what they are proposing in that guidance, and I should stress, by the way, that this guidance would apply to more than just financial instruments. What they talked about in regards to the stop-gap measures were mainly focussed on financial instruments where the immediate problem was. This guidance would apply whenever fair value is being used, so it would apply for property, plant, and equipment, intangibles, business combinations, and the like.

So what does this guidance propose? First of all, if we look at today's definitions of fair value, either under Canadian GAAP, the Accounting Standards Board, or international standards, we have definitions that effectively direct us to be looking for an exchange price in an open market. We've been used to that for quite a number of years. What this guidance proposes is that the objective is slightly different. It may not be a different price in many cases, but in some cases it may be. It proposes that the objective of fair value is to determine the price that would be received to sell an asset—so if you've got an asset, the price at which you could sell it. Or if you have a liability, it's the price at which you could transfer it. And then again, it's an orderly transaction between market participants at the measurement date. But what you've got here instead of a balanced exchange price is that the focus is on the exit price, that is, the focus is on what the price would be to get that asset off your balance sheet in an orderly market, and that can give different results in some circumstances.

The guidance goes on to talk about the need to consider the characteristics of the assets and liabilities that market participants would consider in determining a price. That is again saying that it is a market focus to the price, it's not entity-specific. In particular it stresses that you need to consider the condition of the asset, the

location of it—if it's not *in-situ* location—restrictions on its use, and other factors that you need to take into account in making sure that the asset you are valuing, and if you are starting to look at comparators, is adjusted for things that are different between the comparator assets. So if you are valuing an asset *in–situ*, and your comparator is a value of an asset in another location, then there's an adjustment potentially to be made to allow for the fact that the other asset that you are using as a benchmark is not in the same location as the entity's asset. Or, if the comparator's asset is not in the same condition—newer or older—there are adjustments to be made there, to ensure you are valuing exactly the asset that you have in its current condition and location.

The proposals make the assumption that the transaction would take place in the most advantageous market to which the entity has access. This has caused some discussion as the proposals have been under development, and will likely continue to do so upon exposure I suspect, because it suggests that you have got to look around and figure out what that most advantageous market would be. The underlying logic is, of course, that if the entity is going to sell the asset, or get out of the liability, it's going to do it in the best way it possibly can. So if it's more advantageous to sell in the New York market rather than the Toronto market, that's the market it would look to.

Now, in looking at the most advantageous market, you've also got to take into account things like costs of access in that market. So, it may be a better price in New York, but there's higher transaction costs associated with transacting in New York. If it is a physical asset, and you sold it in New York, you'd have to transport it there to get rid of it. Those factors have to be taken into account in terms of the most advantageous market, but that's the objective that the standards are trying to get at.

That is a touch different from the US guidance that some of you may be familiar with in FASB 157 that was issued a year or two ago and upon which this guidance is based. FASB 157 takes a bit of a short cut to this and just says that you should look at the price in the primary market in which you've accessed the asset. So if your primary market was Toronto, you wouldn't have to bother to even evaluate or assess a New York market under the US guidance. This guidance would say you have got to look at what is the most advantageous market to exit that asset.

It discusses assets that may be used in the business and assets that can be sold as stand-alone assets. It says that if you are using the asset with other assets in the business, then the highest investment use of that asset—the most advantageous—is going to be the in-use valuation of using it with the other assets in your business. So if you are trying to value a piece of plant or machinery, or part of a production line that's being used in that business, then the maximum value is going to be that value as used as part of that overall production line or manufacturing operation. However, if the thing is a stand-alone asset, then you are going to be looking at the exchange value and figuring out what you can sell it for as the asset stands, like stocks and shares or stand-alone cars, things that you can just sell as an asset that's not integrated into other things while looking at the exchange value of those assets.

This part is likely not new or different, but it stresses that the market participants which it is considering are knowledgeable, independent, capable of entering into the transaction—meaning not looking into markets you can't access or people you can't do the transactions with because of restrictions on their ability; that they are willing, and not forced to enter the transaction; and that the assumptions you should be using when doing the value are those types that market participants would use as opposed to market participants who don't meet these types of criteria.

When we come over to the liabilities side, the definition proposes that a liability should assume a transfer of the liability. But if there is no price for a transfer of the liability, the assumption is to use what the counter-party would use for the corresponding asset. The point it stresses is that fair values of liabilities do take into account the entity's own credit risk. This has been a highly controversial issue in accounting because of some of the ways things work out if you do include a credit risk in a liability. What causes people the most difficulty in thinking about this is that if you have a liability on your books and your creditworthiness declines, the value of that liability declines as well, which is fine for your balance sheet. But on the other side of your entry is your income statement where you get a benefit from the decline in fair value, and that just doesn't sit very well with a large number of people—that you can get gains in income as a result of bad things going on related to your business and liabilities.

Some of the reasons for that are the imperfections in the overall accounting model. Whilst your liability is declining, probably what is also going on is that some of your intangible assets are getting impaired, but they may not be getting recognized at all in the first place. You may not be recognizing the impairments at the same time on the asset side of the balance sheet because they measure on a cost basis rather than on a value basis. As a result, you are getting mismatches, and there's a whole load of issues around why that's the case.

Nevertheless, it's a challenge that is being faced with a number of suggestions that we should exclude the credit risk component from the liability when we are valuing it for financial statement purposes. The difficulty of course is how do you do that. Do you exclude it when you initially recognize it, as well as subsequently, in which case you can again get the loss of initially recognizing something, you will have the liability holder carrying the asset at a different value from the corresponding asset holder, which certainly takes account of credit risk in the asset. So, there is no easy answer on the other side as well. The IASB has recently issued a discussion paper discussing the pros and cons of that issue while looking for input as to how to deal with that question as it moves forward with this fair value document. As a result of that, there will need to be some direction as to how the valuation of liabilities should be dealt with in that regard.

The document points out that the fair value on initial recognition—when you initially put something in your books—is not necessarily just going to be the transaction price. If the transaction you have done is a forced transaction, clearly that doesn't meet the definition of fair value. If it's done with related parties, if it was done with a different unit of account, or multiple assets, and you've now got single, or vice-versa, or if you are looking at different markets, then your transaction price is not necessarily going to be equal to the fair value of that item.

The result of that can be day-one gains and day-one losses on putting things on the financial statements. That too makes a lot of people uncomfortable, the idea that you can buy something and immediately recognize a gain or loss. What the fair value measurement standard has essentially done is to say they're going to leave that issue to the individual, other accounting standards to evaluate whether it's reasonable to recognize a day-one gain or loss immediately after a transaction. Sometimes it seems quite reasonable—you've transacted, added value, put the effort into doing the transaction—and you really have added something in getting to the transaction. In other cases it may be more debatable whether there's a real gain or loss in those situations.

When it comes to valuation techniques, it doesn't put anything much in the way of restrictions on which techniques could be applied. It discusses many of the most common valuation techniques that could be used including market-based approaches, income-based approaches, or cost-based approaches by which it is essentially referring to replacement cost valuation. What it stresses is that you should consistently apply those valuation techniques; so you shouldn't be jumping around using a market approach on one day, an income-based approach on the next, and a cost-based approach the next, and having the valuations move around potentially as a result of the different underlying techniques.

It emphasizes that point again, that whichever technique you are using, you are meant to maximize the use of observable inputs into that technique. It also picks up the three fair value driven hierarchies that have become more and more familiar to us, from US GAAP and imported into Canadian GAAP for disclosure purposes of financial instruments that your starting point is looking at un-adjusted prices in active markets. Your next step is to look at other observable inputs for similar items or observable interest rates, and if all of those don't work, then you go down to the so-called level three valuation techniques and other processes.

It also picks up that guidance referred to by the expert advisory group saying that you may go down to a level three valuation before necessarily using a level two if you are doing so many adjustments from the observable similar items that you can get a more reliable value by using a valuation technique starting from scratch. Interestingly, the Credit Suisse survey I referred to earlier did some evaluation on the extent to which those S&P 500 assets were based on different levels of the hierarchy and contrary to what I think some peoples' beliefs have been on what's happened in the current credit markets, as of December 31, 2008, it concluded that only 11% of the S&P 500 assets that were recorded at fair value were being recorded using level three type valuations. A vast

number of those, or at least those recorded by December 31, 2008, were still being recorded using level one and level two based valuations.

Since this is an exposure draft, it's valid to ask a few questions about whether this is going to work, whether this is going to be the best thing, which is why it's out there for comment, for people to respond to, and I hope that it will not only be accountants who respond on it, but also that people with expertise on valuation will provide input on it as well, including the IVSC and other bodies. A few questions that come to mind as I look at this: this has been developed very much deriving out of financial instruments' difficulties. It's meant to apply to everything other than financial instruments, but I asked myself the question, does this work as well and is it appropriate for property, plant and equipment or agricultural assets or other things that are at fair value? I'm not sure that the IASB has given as much thought or rigour to its application to those areas as it has done in the financial instruments world.

I also asked myself, where should accounting standards on valuation stop and valuation guidance take over? Where should we be putting valuation standards on accounting matters and where should you come in and be using your expertise and the IVSC and others be developing the guidance from the valuation end? And has the guidance drawn the line between those two in the right place? From an accounting perspective, I ask a question that actually goes beyond this exposure draft but it's a question that is being continually asked in accounting: when are fair value measurements appropriate? When should we be using fair value in accounting? When should we be using other measures that are not valuation-based? And I asked myself questions about the underlying assumptions as to whether we are transferring a stand-alone item or we are transferring things in conjunction with other items. It seems to me that that's quite difficult sometimes to evaluate, if I've got something that I *could* transfer as a stand-alone item, but I could also continue to use in my business. How do I evaluate whether I should be using an in-exchange premise or I could sell it independently or I should be using an in-use type premise because it's part of my overall business production or whatever it may be.

I also ask myself questions that come back to the dividing line between the valuation techniques, because the standard says nothing about the need for the valuation techniques to be supported by independent valuators, transparency reporting, and the like, and it doesn't seem to have all the focus I might like to see on what should be going into a valuation technique going forward.

A slight aside from the fair value measurement proposals, because this is about things that are changing in financial reporting related to valuation. I want to draw your attention to the fact that there are significant changes going on in the area of financial instruments reporting in the international world, and we'll come also to Canada. The IASB is working very fast under incredible political pressure from the European Union to re-write its financial instruments standards and move them from where they are today. They're planning on significantly simplifying the standards, building them down to essentially a two category set of standards whereby many financial instruments will be measured at fair value and only what they refer to as basic loan instruments, basic receivables and the like, will be measured at amortized cost. So, when we are dealing with the financial instruments world, we are going to see a difference in the instruments being measured at fair value going forward, and that's going to mean that if you are providing inputs for financial statements preparation there will perhaps be different ones that will need to be measured at fair value.

There will also be other instances as a user of the financial statements where you are going to find quite a different picture, perhaps coming out of the statement in terms of the financial instruments reporting. So I flag that one as something extra on top of valuation itself that you need to be aware of in financial reporting.

I'd like to conclude with a few thoughts on opportunities for valuators. Obviously assistance with valuations is going to be an area of potential opportunity. As well, as we move to IFRS there will be more opportunity to use fair values but also first time adoption under IFRS. One of the things that first time adoption allows is for people to use fair value on a one-time basis as they move to IFRS – they're allowed to do a valuation and then use that valuation as a cost base going forward.

So we may see entities looking for expertise and support in doing those one-time valuations as they move into the IFRS world, even if they're not going to value the items on an ongoing basis after the 2011 changeover. They say 2011, but the changeover date that some of those types of valuations might need is going to be effectively 1/1/2010 because the valuation date for those sorts of things is the start of comparative figures. So that date is coming up much sooner than you think from a 2011 IFRS adoption perspective.

Another area of opportunity is verification of valuation and litigation support. There are going to be instances when audit and litigation firms and the like will need assistance in verifying that the valuations that have been done are appropriate. Those using financial statements in doing valuations will need to understand the underlying financial reporting. But the important thing, I think, in all of these cases is that if you are doing valuation for financial reporting purposes they're going to have to be in accordance with the accounting requirements of valuations. So you are going to need to understand these new fair value standards and whether your valuation guidance that you are using is absolutely compatible with that guidance or not, or, if there are things that are a little different that you need to take into account.

I think it's fair to say that valuators' skills are in even greater demand in tough economic times. It may be relatively easy for someone to do their own valuation of things in liquid markets when they can look up prices quite easily, but when we get to these more difficult situations people need more help and expertise, and you are the ones that bring that expertise to help in that area. When we've got inactive markets, when we haven't got clear, smooth trends we need people with your expertise to help. One of the things you bring to valuation is a robust valuation methodology of your own, but you also bring the independence of objectivity to the process. You are a step away from management, and a step away from the non-neutral assumptions that might be taken into account: you can bring that extra expertise and objectivity to the process, which is valuable to the whole result at the end of the day.

Finally, I'd like to address something we are seeing increasingly in accounting standards, though I suspect it is also applies beyond financial reporting valuations: it is not good enough any longer to just provide a number. Accounting standards that require fair values generally come with a whole raft of additional disclosures about things like the methods, assumptions, the estimation uncertainty underlying those values. It's not sufficient for users of financial statements to simply look at it and know the number is 100, they want more information about how the 100 was determined or potential dispersion around 100, or the risks of movement, and we are seeing more and more of that coming into the requirements for financial reporting standards, and so that information is going to come from the kinds of valuations that you do. Additionally, there will be the expectation, I suspect, for more of that in your valuation reports, that people can then use in the financial reporting to satisfy some of these kinds of requirements.

In closing, I think it's clear that valuation remains significant for financial reporting and will remain so in spite of some of the attacks on fair value. It's not going to go away in the near future, and probably not in the long-term. If you are involved in valuations for financial reporting purposes, either in doing them or in understanding the results of them, I think you need to be up to speed with the changes that are going on, while making sure that you are understand the bases of valuation for financial reporting.

You need to keep to date. This creates challenges, but it also creates opportunities for valuation professionals to help out in new areas, to do valuations that weren't previously required, and to bring to the fair value financial reporting process their objectivity and independence and expertise.

7

OPENING THE KIMONO ON CONTRACT VALUATION

by David Wanetick, AVA
IncreMental Advantage, Princeton

Attempting to value contracts can be akin to an inaugural space exploration without the benefit of a travel plan or telescope. Your assessment can be in the right general direction, but still light-years away from any known landmarks.

One of the challenges with valuing contracts is that the valuation analyst does not have the benefit of a body of research to act as a roadmap. However, we can embark upon what many have described as "Mission Impossible" by making a determination as to whether one or more of the primary valuation methods (cost, market, income) provides a suitable framework for valuing contracts.

The Cost Method

The cost method would suggest that a contract's value is a function of the cost of producing it. This is not appropriate because the costs associated with drafting a contract are untethered to its value. When Henry Kravis was negotiating the acquisition of RJR Reynolds, RJR's Board could not decide which of its suitors it should sell itself to by the deadline that Mr. Kravis gave them. RJR's Board asked for more time to contemplate Mr. Kravis's acquisition offer. Mr. Kravis agreed and he and his lawyer quickly scribbled out a handwritten agreement on a legal pad that granted RJR's Board another 45 minutes to deliberate in return for $45 million option payment. Warren Buffett said that he made the decision to invest $5 billion in Goldman Sacks within a few hours as he was eating jelly beans and sipping Cherry Coke. On the other hand, business is rife with companies paying tens of millions of dollars in legal fees for business ventures and acquisitions that deliver negative shareholder returns.

The Market Method

The market method does not work for valuing contracts since there is no market for contracts. The limited efforts at selling contracts have been retarded by several factors. Charles McCormick, a lawyer with McCormick & O'Brien, LLP in New York City, points out that:

- Customer contracts can be terminable upon relatively short notice (30 – 90 days) for any reason. This optionality works against the potential transferor.

- Many contracts hold that such contracts can be immediately terminable by the customer if the vendor becomes insolvent or declares bankruptcy. (However, such provisions are not always enforceable due to the ipso facto principle.)

- Commercial contracts are not always assignable. Some contain outright restrictions on assignment. In

other cases, various state court decisions (such as those in New York) have held that if the services to be performed under a contract are such that the customer is relying on some particular or unique aspect of the provider, assignment may require the customer's consent. Seeking customer consent may also present an opportunity for the customer to renegotiate the contract, which could ultimately make the contract less valuable to the performing party.

Income Method

Contracts are both legal documents and intangible assets from which benefits are expected to be derived. In light of their definition and by process of elimination, the income method is most appropriate for valuing contracts.

The abbreviated formula for valuing contracts is:

Contract Value = Deposits + ((Anticipated Value of Contractual Income – Deposits) * Discount Rate) + Value of Ancillary Economic Benefits + (Recoveries * Discount Rate) – Transactions Costs

Overview of Contract Valuation Exercise

The complexity of valuing contracts can be crystallized by discussing a simple example that parallels an assignment that I recently completed.

Let us suppose that Seating Sisters has executed a contract with Bicycle Brothers in which the former will supply the latter with bicycle seats over the next four years, with an option to extend the contract by an additional two years.

A summary of this contract is provided in Table 1.

Table 1

<div align="center">

Contract Summary
Bicycle Brothers and Seating Sisters

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Customer   Bicycle Brothers   **Supplier**   Seating Sisters

Purpose of Contract   Seating Sisters will supply Bicycle Brothers with bicycle seats

Product Lines Affected by Contract   Adult and Children's Bicycle Seats

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A Review of Contract Terms

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	Initial Prices per Unit	**Annual Price Adjustments**	**Initial Annual Volume**	**Annual Volume Changes**
Adult Bicycles	$9.00	-6.0%	500,000	10%
Children's Bicycles	$7.00	-6.0%	250,000	12%
Deposit from BB to SS	$125,000			
	Contract Duration	**Option to Renew[1]**	**Right of First Refusal[2]**	**Retraction Clauses[3]**
Adult Bicycles	4 years	Yes, 2 years	No	Yes
Children's Bicycles	4 years	Yes, 2 years	Yes	No

Notes:

1 - Seating Sisters has an option to renew the contract on the same terms for an additional two years. Seating Sisters must be in compliance with all material terms of the contract and provide Bicycle Brothers with six months notice of its intention to exercise its option.

2 - Bicycle Brothers intends to expand its offerings of children's bicycles beyond its legacy markets in the northeastern United States. Should Bicycle Brothers manufacture bicycles for new geographic markets, Seating Sisters would have a right of first refusal to provide such seating requirements provided that it was in compliance with all material terms of its contract and its prices would be within 3% of the most competitve externa bid.

3 - Seating Sisters is required to meet a variety of standards in terms of product delivery, the winning of industry recognition rewards, safety testing, etc. in order to keep its contract intact. Should Seating Sisters' bicycle seats fail to meet their requirements, Bicycle Brothers can retract certain of its orders according to a schedule which was part of the initial agreement.

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DEPOSITS

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The first step in determining the value of a contract is to assess whether the buyer has made any deposits to the seller. Any such deposits made shortly after the execution of the contract should be recorded without any discounting for the time value of money. In our case study, deposits total $125,000.

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ANTICIPATED VALUE OF CONTRACTUAL INCOME

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The anticipated value of contractual income can be broken into two parts—performance related and contingency related. The performance related value is the product of prices that the buyer agrees to pay and the number of units the buyer agrees to purchase throughout the term of the contract. In our case study the total revenues

anticipated to be received from Bicycle Brothers are $26,513,157. These total revenues are reduced by deposits, fixed costs, variable costs and taxes.

The contingency value is determined by first assessing the expected values that could be derived if contract contingencies were exercised. The second step is to multiply these expected values times the probabilities that such contingencies will be exercised.

In our example, there are three contingencies that affect Seating Sisters contract value—renewal options, rights of first refusal on supplying bicycle seats to new markets, and retraction clauses that could result in Seating Sisters losing some of its markets if it does not deliver according to contract terms. Revenues associated with these contingencies are $7,438,046, $4,666,361 and ($2,191,225), respectively.

The difficulty in valuing contingencies lies in estimating their probabilities of occurrence. The following are among the indicators that can be assessed to determine the odds of the occurrence of such contingencies:

- **Historical Performance** – What has Bicycle Brothers' history been with respect to expanding its market geographically?

- **Expected Market Conditions** – Seating Sisters' willingness to exercise its option to renew its contract with Bicycle Brothers will be a function of expected economic conditions. Its contract calls for delivering its seats to Bicycle Brothers for an annual 6% discount. If costs of raw materials rise— or decline less than 6% a year—the renewal option may not be worth exercising.

- **Changes in Business Plans** – Have the parties changed their business plans? Perhaps, Bicycle Brothers has decided not to offer children's bicycles outside of its legacy markets. Thus, Seating Sisters' right of first refusal would be worthless.

- **Success of Competitors in the Industry** – What is the magnitude of product improvements expected to be introduced by competitors? If competitors' products render Seating Sisters' products uncompetitive, Bicycle Brothers could exercise its right to retract the markets currently awarded to Seating Sisters.

Guidance on these issues can be obtained through both first-hand and secondary research. The valuation analyst should interview industry authorities (such as executives and trade association officials) and conduct channel checks by speaking with suppliers, distributors, and retailers. This fundamental due diligence should be complemented by reading the trade press, local newspapers, relevant blogs and results from Internet searches. (See Table 2.)

Table 2

Anticipated Value of Contractual Income

	2010E	2011E	2012E	2013E	2014E	2015E
Contractual Revenues						
Adult Bikes Price per unit	$9.00	$8.46	$7.95	$7.48	$7.03	$6.61
Units	500,000	550,000	605,000	665,500	732,050	805,255
Revenues	4,500,000	4,653,000	4,811,202	4,974,783	5,143,925	5,318,819
Children's Bikes Price per unit	$7.00	$6.58	$6.19	$5.81	$5.47	$5.14
Units	250,000	280,000	313,600	351,232	393,380	440,585
Revenues	1,750,000	1,842,400	1,939,679	2,042,094	2,149,916	2,263,432
Baseline Revenues	**6,250,000**	**6,495,400**	**6,750,881**	**7,016,877**		
Total Baseline Revenues			**$26,513,157**			
Option to Renew Contract						
Value of Option - Pre-Probabilities					**7,293,842**	**7,582,251**
Probability of Renewing					50%	50%
Value of Option - Post Probabilities					**3,646,921**	**3,791,125**
Total Value of Renewal Option					**$7,438,046**	
Rights of First Refusal						
Size of Opportunity		2,210,880	2,327,614	2,450,513	2,579,900	2,716,118
Probability of Receiving		30%	40%	50%	40%	30%
Value of Opportunity		**663,264**	**931,046**	**1,225,256**	**1,031,960**	**814,835**
Total Value of Right of First Refusal						**$4,666,361**
Retraction Clauses						
Size of Potential Loss		-1,395,900	-1,443,361	-1,492,435	-1,543,178	-1,595,646
Probability of Occurring		50%	40%	30%	20%	10%
Value of Risk		**-697,950**	**-577,344**	**-447,730**	**-308,636**	**-159,565**
Total Value of Retraction Clause				**($2,191,225)**		
Total Revenues	**6,250,000**	**6,460,714**	**7,104,582**	**7,794,402**	**4,370,245**	**4,446,396**
				$36,426,340		
Costs						
Fixed Costs	**200,000**	**208,000**	**216,320**	**224,973**	**233,972**	**243,331**
Variable Costs						
Units	750,000	830,000	918,600	1,016,732	562,715	622,920
Cost per Unit	3.00	2.79	2.59	2.41	2.24	2.09
Total Variable Costs	**2,250,000**	**2,315,700**	**2,383,491**	**2,453,447**	**1,262,820**	**1,300,075**
Total Costs	**2,450,000**	**2,523,700**	**2,599,811**	**2,678,419**	**1,496,792**	**1,543,406**
Pre-Tax Earnings	3,800,000	3,937,014	4,504,771	5,115,983	2,873,453	2,902,991
Tax Rate	37%	37%	37%	37%	37%	37%
Net Profits	**$2,394,000**	**$2,480,319**	**$2,838,006**	**$3,223,069**	**$1,810,276**	**$1,828,884**
Discount Rate						35%
NPV						$5,963,964
Deposits						$125,000
NPV (net of deposits)						**$5,838,964**

DISCOUNT RATE

A discount rate should be applied to the Anticipated Value of Contractual Income in order to reflect Seating Sisters' costs of capital, opportunity costs and risks of inflation eroding the value of future income. To this value should be added the risks of the contract being violated. To gain more specificity as to what can go wrong with a contract—and thus what needs to be priced into the discount rate—I interviewed more than two dozen leading business, litigation and contracts lawyers. Among the most helpful in constructing a discount rate model for assessing contract value were Robert J. Feinberg, Shareholder with Giordano, Halleran & Ciesa in Red Bank, NJ and Francis J. Sullivan, Partner at Hill Wallack LLP, in Newtown, PA.

Based on interviews with seasoned contracts lawyers, I posit that the Model for Calculating Discount Rates for Contracts is:

Discount Rate = Risk Free Rate + Exposure to General Economic Factors + Exposure to Industry Economics + Exposure to Counterparty's Internal Factors + Impact of Legal Factors - Available Remedies

RISK FREE RATE – The risk free rate is a fundamental underpinning of cost of capital analysis. It is equivalent to the yield on the U.S. government debt with a duration that most closely matches the duration of the contract under review.

EXPOSURE TO ECONOMIC FACTORS – As recent years have demonstrated, all companies are at risk of being impacted by a deep recession. Companies that produce products for which their customers have an elastic demand (meaning they buy drastically less when income levels fall) will fare worse than companies whose customers have an inelastic demand for their products. Thus contracts covering customers who have elastic demand should have higher discount rates than contracts which cover end users who have inelastic demand.

The formula for elasticity is change in demand divided by change in price (or income). The analyst can review the extent to which demand was affected by past price hikes or drops in national income and project such trends on to future discount rates. Caution must be taken to avoid double discounting. Thus, if the Anticipated Value of Contractual Income part of the model factored in a recession, a smaller addition to the discount rate should be applied.

EXPOSURE TO INDUSTRY ECONOMICS – Entire industries are exposed to common competitive factors, legislation, regulation and government retribution. The more pressure that these externalities place on an industry's profits, the less economic it becomes to comply with the affected companies' contracts.

There are a host of competitive factors that can squeeze out an industry's profits including rising costs of materials or labor. Price wars—such as the incipient one between Amazon.com and Wal-Mart in the book space—and a company viewing its competitors' primary market as a loss leader can rapidly devastate the profitability of an industry. An entire industry can face a bleaker future when its suppliers forward integrate or its customers backward integrate. A scandal rocking a leading industry player or the announcement of it incurring a massive loss can make it much more difficult for other industry players to secure necessary capital. Technology can erase the rationale for an entire industry as happened to pagers when mobile phones became *de rigueur*.

Structural issues that impact the profitability of an industry are low switching costs (the less expensive it is for customers to switch vendors, the more competition will ensue) and the stakes of the existing players (the higher the stakes of the industry participants, the more fiercely they will compete). Low barriers to entry—such as nominal capital requirements or non-existent regulatory hurdles—are forerunners to more competitors. High barriers to exit accentuate inter-company rivalry and occur when government regulations (e.g. prohibiting insurance companies to fold-up their operations) or stranded costs (e.g. when a company has expensive machinery that it cannot liquidate) essentially force companies to remain in business.

Legislation and regulations—such as those requiring more environmental safeguards or facilitating the unionization of an industry's workforce—can raise costs of doing business for entire industries. When the government targets industries for higher taxes and less freedom of operation—as has happened to health insurance, pharmaceutical and oil companies in recent months—the profitability for the entire industry will be suppressed.

The analyst must keep current with news relating to the industry under review so as to determine the likelihood of these kinds of events impacting the reviewed company's (Seating Sisters) and its counterparty's (in our case Bicycle Brothers) ability to remain in compliance with their contracts.

EXPOSURE TO COUNTERPARTY'S INTERNAL FACTORS – A company that includes its contracts among its assets is vulnerable to the prevailing internal dynamics occurring with its counterparties. Foremost among the factors to consider in this regard is the likelihood that the counterparty will breach or cease to honor the contract. Companies are more likely to break their contracts under the following scenarios:

The demands placed upon them by their shareholders. If a privately held company sells part of its equity to a private-equity or hedge fund, its new institutional investors will push management to deliver more dramatic earnings growth. This pressure may cause management to re-evaluate its contracts.

Number of internal influencers at counterparty. Companies that have many access points for outside parties to influence changes in policy are more likely to break contracts than companies that have few decision makers. This is because it is easier for a special interest group to create internal pressure for a change in policy if the targeted counterparty has a large board of directors, foreign subsidiaries and franchisees than it is to effect change at a company whose sole shareholder makes all of the important decisions.

An example of how special interest groups can cause internal pressure is provided by Greenpeace's success in stopping Shell from dumping its Brent Spar oil rig in the North Sea in the mid-1990s. Even though Shell's UK operations were responsible for Brent Spar, Greenpeace targeted Shell stations in Germany because that nation's citizens were deemed to be more sympathetic to environmental causes. The result was that Shell stations in Germany suffered a 50% contraction in revenues which caused Shell's German operations to pressure Shell's UK operations to reverse course on the Brent Spar matter.

Peer companies' contracts have been broken without consequence. In our example, if other bicycle companies have broken their contracts with suppliers without any negative repercussions, then Bicycle Brothers may feel less risk and stigma with breaching its contracts with Seating Sisters. This is even more true when other customers have broken agreements with the company in question (i.e. Seating Sisters).

Better alternatives become available. If a better product or a product of comparable quality priced more competitively becomes available, the counterparty will become more inclined to find a reason to terminate the contract.

Reduced ability to perform. If Seating Sisters were to deliver faulty seats to Bicycle Brothers, Seating Sisters could be in breach of its contract. However, even when a vendor fails to perform to expectations in one dimension of its relationship with its customer, that lapse can be used as a justification to break a different contract. Mr. Sullivan explains that companies that cannot adhere to "meet or release" contract provisions are at risk of losing their contracts. Such meet or release clauses typically hold that suppliers (Seating Sisters) must either meet their customer's (Bicycle Brothers) volume and/or price demands or they must release their customers from their contracts.

The company in question has a known no litigation policy. Some managements have publicly stated that they are in the (bicycle seating) business, not in the litigation business. The articulation of this policy disinhibits counterparties (e.g. Bicycle Brothers) in terms of breaking their contracts.

Vendor's financial dependence on the contract. Customers who realize that their vendors are dependent on a contract are more likely to believe that they can breach various provisions of it without penalty. This situation could arise if the customer realizes that it is one of the vendor's largest customers; that the vendor would be in

breach of its loan covenants if it lost its contract; or, that the vendor's shareholders could move to replace management if it lost the contract in question.

Disparity in size. When the customer is much larger than its vendor, the customer is more likely to breach the contract because it will believe that the vendor has no recourse. One factor in this decision is that the vendor would not be able afford to defend itself against its much larger customer in litigation.

New management at counterparty's company. New management teams often want to shake things up. Foremost among the items to be shaken up are contracts with vendors. Holders of contracts (e.g. Seating Sisters) are especially vulnerable if the new management team (e.g. Bicycle Brothers) has worked with competitors to the contract holder for an extended period of time.

Likelihood of counterparty becoming acquired. If Bicycle Brothers were to be acquired, Seating Sisters would be confronted with a larger possibility of having its contract abrogated. This is due to the new management risk factors discussed above as well as the possibility that the acquiring company might wish to consolidate its bicycle making operations; terminate its bicycle making operations; or, renegotiate with Seating Sisters so as to exercise its enhanced bargaining power resulting from its larger scale.

Reputation of the counterparty. Counterparties who have a reputation for entering into contracts with no intention of honoring them carry tremendous risks for companies that consider their contracts to be assets.

How a Contract Differs from a Patent

Contrary to popular sentiment, a patent does not grant the patentee a monopoly. Rather patents only grant the patentee the right to exclude anyone besides the patentee to practice the invention covered by the patent. A patent is nothing more than a license to sue and the patentee is allowed to sue anyone who infringes on his patent.

However, Richard Collier, Partner at Collier & Basil P.C., in Princeton, NJ, points out that contracts cannot be viewed as licenses to sue even if one party entered into the contract with fraudulent intent as fraud requires reliance on a lie. Also, there is less of a tripwire with contracts as compared to patents. Any infringement of a patent is grounds for suit (although not necessarily a prudent reason if the expected damages from infringement are less than litigation costs). Contracts, on the other hand, are governed by the Uniform Commercial Code's Perfect Tender Rule. This rule holds that if the seller's delivery is less than perfect, the buyer must tell the seller what the problem is and the seller has the opportunity to cure the deficiency in a reasonable time.

The following are among the scenarios in which a counterparty is less likely to break contracts with its vendors:

Unacceptable concentration of suppliers. A dominant customer may not wish to injure its vendor (even if it could do so without triggering litigation) when doing so could result in the remaining potential vendors having excessive power over the customer.

Proprietary technology. Bicycle Brothers is less likely to break its contract with Seating Sisters if Seating Sisters has proprietary technology.

Customers associate value with the supplier's products. If a supplier advertises its components and creates demand for them, it then becomes more difficult for a customer to break an agreement and use another vendor. For instance, when *Intel* created quite a bit of demand for its semiconductors via its *Intel Inside* advertising campaign, the use of competing semiconductors by computer manufacturers would have been perceived as using lower quality processors.

Cross-ownership. Contracts are less likely to be broken when cross-ownership exists between customers and vendors. The same is true when there is overlap among the companies' boards of directors.

Relatively small component. Bicycle Brothers would be less likely to break its contract with Seating Sisters if such contract represented a small percentage of its purchased parts. Companies generally attempt to enhance their profitability rather than damage their competitors (let alone suppliers) and there is less upside to renegotiating small contracts.

Length and integration of business relationship. A customer would be less inclined to breach a contract with a long-term vendor, especially when the two companies depend on one another for a variety of products and services.

Position in the customer's value chain. Parts that are crucial for enabling the sale of end products are less vulnerable to contract renegotiation. For instance, a brakes manufacturer would typically have more leverage over an auto maker than a producer of coffee cup holders. Companies that manufacture parts that are installed at the beginning of an assembly process are less vulnerable to contract breaches than parts that are installed at the end of assembly lines.

Inability to accumulate inventory. Customers that have difficulty accumulating inventory produced by a particular vendor are less likely to violate their agreements with such vendors. Included in the characteristics of inability to accumulate inventory are services (such as air travel and consulting), products that have short shelf lives and products that are expensive to warehouse and insure.

LEGAL ISSUES – A host of legal issues can impact the probability that a contract will be violated or terminated. Among the metrics that can be used to estimate such probabilities are:

Construction of the contract. Typically, contracts that are shorter (in terms of word or page count) reflect a longstanding business relationship between the two signatories. On the other hand, longer contracts may indicate a lack of fundamental trust between the parties and are more exposed to human error in drafting. Thus, as a sweeping generality, shorter contracts (relative to contracts covering similar situations) are deserving of lower discount rates than longer contracts. Similarly, highly specific contracts are easier to break since there are more conditions that can be violated. In my experience, older contracts are more susceptible to being violated as the players that negotiated the original contract move on (and no longer administer it) and as economic realities deviate from the expectations underpinning the contract.

Who drafted the contract. Law firms that have an expertise in writing similar contracts and large law firms that bear the accoutrements of success signal that their contracts are more difficult to violate. Lawyers who have represented the client—or similar clients in the same industry—for an extended period of time are more likely to draft contracts in light of possible points of contention. If lawyers are integrated into initial rounds of business discussions, their comments can be more congruously woven into the agreements as opposed to when business people reach an agreement and then hand it off to lawyers to draft accompanying contracts.

Governing jurisdiction. The jurisdiction in which contract litigation is likely to be heard has an impact on the propensity of a counterparty to violate a contract. If contract disputes between Bicycle Brothers and Seating Sisters were to be heard in Seating Sisters home city, juries may be more sympathetic towards Seating Sisters. Thus, Bicycle Brothers may be more reluctant to violate its contract with Seating Sisters. However, if a judge were to hear the same litigation in a district where neither of the litigants had a major presence, Bicycle Brothers may believe that it has a better chance of convincing the judge of the merits of its actions. Thus, as Mr. Feinberg points out, it is important to ascertain which party (if either) has the right to select venue and whether a judge or jury will rule on the dispute.

Termination features. Contracts that allow one party to terminate the agreement merely by notifying the other party—say 90 days beforehand—have a higher risk of expiring prematurely than contracts that have more onerous termination provisions.

Potential damages. If there is a risk that a party that violates a contract will be liable for treble damages, there is less risk in a counterparty breaking the contract. Another factor that impacts the likelihood that a contract will be broken is the ability to cause a class action.

Personal guarantees and insurability. Contracts that require personal guarantees by principals of one party are less likely to be violated by that party. Contracts which are covered by insurance policies could be more likely to be violated by the party which has obtained the insurance because of adverse selection and moral hazard issues.

REMEDIES – The incidence of contracts becoming violated and the associated costs are mitigated when there are effective remedies for handling violated contracts. Among these remedies are:

Ability to transfer the contract. The easier it is to transfer the contract to another supplier, the larger should be the negative discount rate factor.

Reputation of contract holder. Contract holders that have earned reputations for their willingness to mount vigorous and sustained litigation against business partners that violate their contracts often benefit from the shield of deterrence to future violations of their contracts.

Politicization of potential litigation. While larger companies may feel freer to break their contracts with small suppliers, large companies are quite sensitive to the media attention that may accompany such litigation. A senior executive of Ford Motor told me that his company takes measures not to attract media attention. Larger companies have more to lose from media attention as they have more customers, are more exposed to regulators and have shareholders that would hold management accountable for attracting such media attention.

Game Theory remedies. If Seating Sisters had side agreements that—in the event that Bicycle Brothers violated its contract—enabled it to invoke remedies based on Game Theory, there would be less risk of its contracts being violated. Such permutations of Game Theory could include:

- Upon signing the contract, both parties could agree that each quarter that Bicycle Brothers remitted payment as stipulated by the contract, Seating Sisters would donate a small percentage of the proceeds to a charity of importance to Bicycle Brothers. A violation of the contract would result in a cessation of such charitable donations. Seating Sisters would have the right to disclose the reason for the cessation of donations.

- A violation of their agreement by Bicycle Brothers would allow Seating Sisters to publish a letter of resignation by Bicycle Brothers from its trade associations. Such letter would have been previously signed by Bicycle Brothers and would declare that Bicycle Brothers did not uphold business practices acceptable to the trade associations.

The total discount rate in our case study was computed to be 35%.

VALUE OF ANCILLARY ECONOMIC BENEFITS

Contracts represent value to businesses beyond the expected discounted earnings they are projected to deliver. Securing customers and vendors, as evidenced by executing contracts, enhances the predictability of sales and delivery of supplies. This predictability reduces volatility in earnings which is rewarded by the financial community. Contracts lend credibility to the signatories and buttress the reputations of the firms involved. This reputation enhancement can carry over to many facets of the signatories' businesses. The following are among the ancillary economic benefits that result from winning contracts:

Access to capital. Companies that can demonstrate to investors and creditors that they have binding contracts have an advantage in securing capital. This is a crucial consideration as the availability of capital and credit is often the difference between a company surviving and perishing.

Elevated market capitalization. The announcement of an important contract win can cause shares of a publicly traded company to spike upwards, elevating the contract winner's market capitalization. One method for determining the extent of any market capitalization enhancement resulting from a contract win is to take the average share price twenty days prior to the contract win and subtract from that amount the average price of the stock five days after the announcement of the contract. This difference should be multiplied by the number of shares outstanding.

New accounts wins. Winning contracts from reputable industry players validates the contract winner and makes it easier to win future accounts. This is especially true when the initial clients agree to serve as reference accounts for their vendors. Winning important contracts can also give existing customers the confidence to purchase other products from the contract winner, thus providing the company with more cross-sell opportunities.

Retention of key personnel. A company that is making progress in executing its business plan is not only attractive to investors and customers, but also to its own employees. Companies that win accounts also give their employees further reasons to remain with the company. Thus, contract wins can reduce the turnover of valued employees.

Enhance operating efficiency. Securing business from customers enables vendors to operate their factories and other assets at higher utilization levels. These higher utilization levels, in turn, reduce the costs of unit production which enables the firm to be more price competitive.

The value of ancillary economic benefits was calculated to be $2,472,610. (See Table 3.)

Table 3

Value of Ancillary Economic Benefits

	2010E	2011E	2012E	2013E	2014E	2015E
New Account Wins Due to Contract						
Bidding for new business	$20,000,000	$25,000,000	$32,000,000	$29,000,000	$26,000,000	$3,000,000
Average / historical win rate	28%	28%	28%	28%	28%	28%
Value of expected contract wins	5,600,000	7,000,000	8,960,000	8,120,000	7,280,000	840,000
Enhanced win rate	7%	7%	7%	7%	7%	7%
Enhanced expected contract wins	392,000	490,000	627,200	568,400	509,600	58,800
NPV of expected contract wins						**$1,108,641**
Value of Enhanced Reputation of Key Employees						
Employee count	275	290	320	325	330	345
Average annual turnover / valued employees (%)	12%	12%	12%	10%	10%	15%
Average annual turnover / valued employees	33.0	34.8	38.4	32.5	33.0	51.8
Salespeople retained because of technology (%)	10%	10%	10%	10%	10%	10%
Salespeople retained because of technology	3.3	3.5	3.8	3.3	3.3	5.2
Cost of Replacing Salesperson						
Recruiters Commissions	30,000	30,600	31,212	31,836	32,473	33,122
Upfront Bonus	15,000	15,300	15,606	15,918	16,236	16,561
Training Costs	20,000	20,400	20,808	21,224	21,649	22,082
Interruption in Customer Service	20,000	20,400	20,808	21,224	21,649	22,082
Total costs of replacing salesperson	**85,000**	**86,700**	**88,434**	**90,203**	**92,007**	**93,847**
Annual Value of Retention of Key Employees	280,500	301,716	339,587	293,159	303,622	485,658
NPV of Enhanced Retention of Key Employees						**$747,552**
Value of Enhanced Access to Capital						
Total debt load	4,000,000	4,250,000	4,500,000	5,000,000	5,250,000	5,500,000
Reduction in interest costs	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Total interest cost savings	8,000	8,500	9,000	10,000	10,500	11,000
NPV of Reduced Interest Costs Due to Enhance Access to Credit						**$21,417**

Enhanced Market Capitalization	
Average Price of Stock 20 trading days before licensing	$27.35
Average Price of Stock 5 trading days after licensing	$28.05
Price Difference due to License	$0.70
Number of Shares Outstanding	85,000,000
Market Capitalization Enhancement	$59,500,000
Discount Factor	99%
Net Market Cap Enhancement	**$595,000**

TOTAL VALUE OF ANCILLARY ECONOMIC BENEFITS **$2,472,610**

RECOVERIES

In situations where contracts are broken, all is not always lost. Recoveries in the form of collecting business interruption insurance proceeds, settlements (minus lawyers fees) and the proceeds from affected liquidated inventories should be added back to the value of the contract. We derive these values by multiplying pre-tax earnings by the product of risk of contract termination, percent of contract expected to be lost if contract is terminated and the percentage of contract recovery. Total recoveries are projected to be $201,850. (See Table 4.)

Table 4

Recovery in the Event of Contract Violation

		2010E	2011E	2012E	2013E	2014E	2015E
Pre-Tax Earnings		**3,800,000**	**3,937,014**	**4,504,771**	**5,115,983**	**2,873,453**	**2,902,991**
Risk of Contract Termination							
Discount Rate	35%						
Risk Free Rate	5%						
Risk of Contract Termination	30%	30%	30%	30%	30%	30%	30%
Percent of Contract Expected to be Lost		10%	14%	18%	22%	26%	30%
Value of Lost Contract		**114,000**	**165,355**	**243,258**	**337,655**	**224,129**	**261,269**
Percent of Contract Recovery							
Liquidation of Inventory		5%	5%	5%	5%	5%	5%
Insurance Proceeds		5%	5%	5%	5%	5%	5%
Settlements		5%	5%	5%	5%	5%	5%
Percent of Contract Recovery		**15%**	**15%**	**15%**	**15%**	**15%**	**15%**
Annual Recovery if Contracts are Violated		17,100	24,803	36,489	50,648	33,619	39,190
Total Recovery Potential							**$201,850**

TRANSACTION FEES

The value of the contract should be reduced by the amount expended on outside professionals (usually, lawyers and consultants) for their services in connection with consummating the transaction. In our case study, Seating Sisters incurred transactions costs of $235,000 in the first year of the contract and nominal $3,000 costs in the subsequent years. The net present value of these transaction fees in our case study is $241,660. (See Table 5.)

Table 5

Transaction Fees

	2010E	2011E	2012E	2013E	2014E	2015E
Transactions Fees	$235,000	$3,000	$3,000	$3,000	$3,000	$3,000
Discount Rate						35%
NPV of Transactions Costs						$241,660

TOTAL CONTRACT VALUE

In conclusion, we calculate the total contract value by applying the following formula:

Contract Value = Deposits + ((Anticipated Value of Contractual Income – Deposits) * Discount Rate) + Value of Ancillary Economic Benefits + (Recoveries * Discount Rate) – Transactions Costs

The total value in our case study is $8,396,763. (See Table 6.)

Table 6

Total Contract Value

Deposits	$125,000
Anticipated Value of Contractual Income	$5,838,964
Value of Ancillary Economic Benefits	$2,472,610
Recoveries	$201,850
Transactions Costs	$241,660
Total Contract Value	**$8,396,763**

CONCLUSION

While business valuation analysts must always apply their judgment to the unique circumstances that they are confronted with when valuing contracts, I hope that the methodology discussed above provides some guidance as well as standards around which contract valuation can be more consistently applied.

ABOUT THE AUTHOR

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THE VALUE OF A TRADE SECRET*

by Robert P. Schweihs
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INTRODUCTION

Any subject matter is eligible for trade secret protection as long as it:

1. gives a competitive advantage to its owner and

2. is being kept secret.

Legal protection of the other types of intellectual property—patents, copyrights, and trademarks—is available only when the attributes of that intellectual property are disclosed to the public.

Patent protection is available for new and useful machines, processes, manufacturers, and compositions of matter—as long as they meet the novelty and nonobviousness requirements. Clearly, in order to meet those requirements, the critical attributes of the invention must be made known.

Similarly, copyright protection is available for original literary, musical, and artistic expression which, of course, has been revealed.

Trademark protection extends to visually perceivable names, marks, or product features that consumers identify with particular sources.

In contrast, trade secrets are undisclosed. Therefore, trade secrets are not as well recognized as an asset class as are these other types of intellectual properties.

Any information, technical or nontechnical, can quality as a trade secret if:

1. the information is not generally known in the trade,

2. there have been appropriate steps taken to protect the secrecy of the information, and

3. there is an actual competitive advantage derived from the secrecy of the information.

Many companies make the deliberate decision to not patent certain technological advances. This decision is made because, in order to get legal protection as a patent, the technology must be revealed in detail in the patent application.

A patent and a trade secret cannot exist in the same idea at the same time. This is because the attributes of a patent have to be made public. And, a trade secret ceases to exist when it becomes public knowledge.

A patent protects against unlicensed use of the patent even by one who, through independent research, legitimately discovers it. However, unlike a patent, novelty and nonobviousness are not requisite characteristics of a trade secret.

COEXISTENCE WITH OTHER INTELLECTUAL PROPERTY

A trade secret can coexist with other intellectual property. A trade secret can exist based on confidential information that is:

1. misappropriated before the time that the patent gets issued or

2. related to the use of a patent.

Copyright and a trade secret often coexist in computer systems when vendors of a computer software program rely on:

1. copyright protection for the object code and

2. trade secret protection for the source code.

Trademark and trade secrets coexist when a product incorporating the trade secrets is sold under a label. If a counterfeit product is produced, the plaintiff may assert both:

1. a trade secret claim for the taking and use of the trade secrets and

2. a trademark claim for use of the label.

ILLUSTRATIVE EXAMPLES OF TRADE SECRETS

The type of business information that typically is considered a trade secret includes information about:

1. customers, such as customer order and credit characteristics, confidential customer lists, and proprietary mailing lists;

2. personnel, suppliers, or distributors, such as sources of supply;

3. the costs and pricing of goods, as well as the books and records of the business;

4. new business opportunities and current methods of doing business; and

5. know-how, such as databases and operating manuals.

Some commonly recognized commercial intangible assets may, in fact, be trade secrets. For example, under certain circumstances such common intangible assets as proprietary technology, customer relationships, formulas, chemical processes, and performance manuals may qualify as trade secrets.

The confidential information that is the basis of a trade secret generally relates to the continuous production of goods, as opposed to confidential information regarding a single event in the conduct of the business.

Examples of single-event confidential information that is not usually considered an intellectual property asset include the following:

1. the bid price of a contract

2. the bonuses of certain employees

3. the date of the announcement of a new policy

4. the price of an acquisition

Improper disclosure of these types of corporate information may be the subject of legal action. However, the claim is usually not brought as misappropriation of a trade secret intellectual property asset.

The legal interest in a trade secret arises somewhat spontaneously and perhaps broadly. The expected remaining useful life of a trade secret may not be obvious. This is because spontaneous, independent development of similar ideas by innocent third parties can shorten or end the life of the trade secret.

In many situations, trade secrets are not held precious. This is because, in our information-based economy, they are frequently created but are rapidly disseminated or become obsolete.

However, trade secrets can be extremely important and valuable. This is because the expected remaining useful life of a trade secret is potentially unlimited. A trade secret is protected as long as competitors fail to duplicate it by legitimate, independent research.

THE IDENTIFICATION OF THE SUBJECT TRADE SECRET

Having secret information is not the same as owning a trade secret. To be a trade secret, the secret has to provide an economic advantage to its owner. And, some information or knowledge must be accessible in order for the trade secret to generate an economic advantage.

When a trade secret is generally identified as an asset subject to valuation outside of a litigation context, the valuation analyst may seek some legal counsel (and other expert) advice to define the bundle of rights that are to be included as the trade secret asset. Important components of the trade secret intellectual property are that it is:

1. not known in the trade and

2. used to the owner's advantage in a business.

In many situations, those essential attributes of the trade secret intellectual property may not become known outside of the litigation.

Secrecy

Matters of public knowledge or of general knowledge cannot be appropriated as a trade secret.

Reasonable measures must be taken to protect secrecy. For example, if a company has already suffered a computer theft of trade secrets, one would typically expect subsequent security to be at a higher level. Typically, one would expect a larger corporation to have more sophisticated trade secret protection measures than a smaller operation.

The burden of establishing reasonable security rests on the trade secret owner. The type of security measures that are in place may help the analyst to define exactly what the trade secret is. For example, if the owner did not think much about providing security to protect the information, the trade secret may have less value.

The standard of care in the industry comes into play with respect to this "security" factor. So, the measures used by competitors in the industry may be one security standard to consider when analyzing the reasonableness of the care taken to protect the secrecy of what has been identified as the trade secret asset.

Competitive Advantage

Whether a trade secret provides a competitive advantage is usually determined by analyzing the economic benefit associated with the trade secret. The economic benefit may be based on the increased revenue or profit available to the trade secret owner. Or, the economic benefit may be based on the trade secret owner's ability to reduce competition.

The trade secret owner's competitive position is either better as a result of the trade secret, or the competitor's position is diminished because it lacks knowledge of the trade secret.

Competitors who lack knowledge of the trade secret would otherwise have to spend time, effort and money in trial and error to get into the position they would occupy if they had the trade secret knowledge.

Special Relationship

If the party who has allegedly misappropriated a trade secret can show that the trade secret was independently developed without access to or use of the owner's information, then the alleged infringer has the right to practice with the information embodied in the trade secret.

A trade secret is protected until it is revealed through innocent means or deliberately through reverse engineering. Reverse engineering is a process in which the competitor begins with the end product and, using only information that already exists in the trade, uncovers the secret information.

Trade secret protection is extended to owners of such secret information in order to prevent actions by employees or third parties who obtain access to the information in confidence and then breach that obligation of confidentiality. A special relationship may be formed between the owner of the secret information and employees or third parties who obtain access to the information in confidence.

Contractual agreements can provide evidence of the special relationship and help protect an owner from persons who have access to proprietary information. Employment agreements with confidentiality covenants or confidentiality agreements with subcontractors are examples.

A covenant not to compete may be different from a confidentiality covenant. This is because, for example, even after the term of a noncompete agreement expires, the obligation to protect a trade secret may survive.

COMMON REASONS FOR THE TRADE SECRET VALUATION ANALYSIS

There are numerous individual reasons for conducting a valuation or economic analysis of a trade secret. Typically, all of these individual reasons can be grouped into a few general categories of client motivations:

1. Transaction pricing and structuring for the sale, purchase, or license of the intellectual property.

2. Financing securitization and collateralization, for both cash flow-based financing and asset-based financing.

3. Financial statement reporting, taxation planning and compliance with regard to: reporting the value of assets acquired in a business combination, intangible asset amortization deductions, abandonment loss deductions, charitable contributions, and various other federal income taxation matters—as well as with regard to federal gift and estate tax compliance and estate planning.

4. Management information and strategic planning, including business value enhancement analyses, identification of licensing and other commercialization opportunities, identification of spin-off opportunities, and other long-range strategic issues.

5. Pre-bankruptcy and reorganization analysis and planning (because the bankruptcy process itself may require disclosure of the information).

6. Litigation support and dispute resolution, including infringement, misappropriation, fraud and misrepresentation, lender liability, marital dissolution, and a wide range of deprivation-related reasons (e.g., breach of contract, expropriation, etc.).

GATHERING TRADE SECRET OWNER/OPERATOR-SPECIFIC DOCUMENTATION

Trade secret ownership interests are routinely examined from many perspectives by corporate intellectual property owner/operators. The corporate legal, sales, accounting, and tax departments may maintain information that relates to the value of the trade secret.

The corporate legal department may retain documentation about previous license/sale transactions involving the information embodied in the trade secret. When prior transactions are used in a trade secret valuation analysis, controversy may arise as to whether, for example:

1. the property/information conveyed in the transaction is comparable,

2. there were contingencies attached to the transaction or

3. the transaction took place at arm's-length.

Information regarding the commercial applicability of the trade secret may be maintained in the corporate sales department in the form of trade association publications, brochures and catalogs, customer or supplier databases and files, contractual obligations, proposals, order backlogs, and budgets and forecasts.

The accounting and tax departments may apply intercompany transfer prices when information is owned in one state or country in which the company does business and is used in another state or country in which the company does business.

TRADE SECRET VALUATION APPROACHES AND METHODS

Regardless of the reason that the trade secret value is required, the valuation analyst may consider all three generally accepted approaches to estimating the value of the trade secret. However, the purpose to which the valuation is put may affect the valuation methods used or the emphasis placed on each valuation method.

Typically, valuation analysts attempt to apply the market approach to value trade secrets. Valuation analysts typically research "the market" for both sale transactions and license transactions that may be useful in estimating the value of the subject intellectual property.

When it comes to trade secrets, it is difficult to find and to analyze pricing data related to other trade secrets that have changed hands in arm's-length transactions. It is often difficult to apply the market approach to generate a meaningful trade secret value indication. This is because of the difficulty of comparing one trade secret to another.

The cost approach is based on the total cost to create, at current prices, a hypothetical trade secret that has utility equal to the subject trade secret. The cost approach may be difficult to apply to value trade secrets. This is because of the difficulty of demonstrating the costs that would be required to replace unique information.

The valuation analyst will typically apply one or more income approach valuation methods to value the trade secret. These income approach valuation methods include:

- Valuation methods that quantify incremental levels of economic income. That is, the subject trade secret owner will enjoy a greater level of economic income by owning the trade secret as compared to not owning the trade secret.

- Valuation methods that quantify decremental levels of economic costs. That is, the subject trade secret owner will experience a lower level of economic costs by owning the trade secret as compared to not owning the trade secret.

- Valuation methods that estimate a relief from a hypothetical license agreement royalty payment. That is,

the amount of a royalty that the trade secret licensee would be willing to pay to a third-party owner in order to obtain the use of—and the rights to—the trade secret.

- Valuation methods that quantify the difference in the value of the trade secret owner's business. The differential in the owner's business value is measured as the difference in two operating scenarios:

  – In the first operating scenario, the trade secret is owned and used in the subject business.

  – In the second operating scenario, the subject business does not own the trade secret and does not use it in the business.

- Valuation methods that estimate the value of the trade secret as a residual from the value of the overall business enterprise. These valuation methods may also estimate the value of the trade secret as a residual from the total intangible asset value of the business enterprise.

ESTIMATING A TRADE SECRET LOST PROFITS/ECONOMIC DAMAGES FOR LITIGATION SUPPORT PURPOSES

Trade secret infringement claims are usually brought under state laws. The exact tort under which a trade secret owner can seek relief is different from state to state.

Most states have adopted the Uniform Trade Secrets Act to protect trade secrets. Theft of a trade secret may be a federal crime under the Economic Espionage Act of 1996. This statute criminalizes receiving, buying, or possessing trade secret information that has been stolen.

When a trade secret has been misappropriated or is alleged to have been misappropriated, the owner may seek a remedy from the court. The owner of a trade secret who suspects misappropriation will first attempt to preclude its disclosure by telling the intruder to not reveal the proprietary information.

The first challenge is to determine whether or not the information qualifies as a trade secret. The evidence required to investigate this challenge requires disclosure from the owner of the secret of at least some proprietary information. This evidentiary process is intrusive and often discourages parties from pursuing claims of trade secret misappropriation.

Once in court, the first remedy the court may consider in the face of a threat of misappropriation of a trade secret is an injunction. Again, to get to this point, some proprietary information needs to be disclosed.

After the trade secret has been misappropriated, however, the cure is more likely to be a remedy of economic damages (i.e., money) than of an injunction. In the situation where the trade secret has already been misappropriated, the economic damages may be judged to be equal to the sum of the:

1. profits already lost,

2. disgorgement of the infringer's profits, and

3. future lost profits.

Claims for profits already lost (i.e., prior to the date of the trial) are analyzed beginning with historical evidence regarding the performance of the competitors and the action of customers in the relevant market. This information is considered in the lost profit analysis even if that information was not known or knowable on the date that the alleged misbehavior began.

Evidence for the existence and the amount of economic damages usually unfolds from the date of the alleged misappropriation. This is in contrast to a valuation analysis of trade secrets.

In the typical valuation assignment, the analysis usually excludes consideration of any information that was not known or knowable as of the valuation date.

The measurement of lost profits usually begins with an estimate of lost sales (either in dollars or in units). Spare parts, replacement parts, tools, and other products that have a functional relationship with and are sold in tandem with the trade secret are called "convoyed products."

In some cases, revenue from convoyed products that were sold or would have been sold along with the trade secret is included in the measurement of lost sales.

Some of the other valuation methods previously mentioned may be applicable in the process of estimating economic damages. For example, to determine the profit margin to apply to the lost sales, guideline prices, transactions, or royalty rates may be considered.

When estimating lost profits beginning with lost revenue, only incremental costs should be subtracted. An incremental cost is a cost associated with producing the additional number of units at the "but for" volume level. In this way, incremental costs are not the same as variable costs.

If the trade secret owner would have sold its units at prices higher than the actual historical prices "but for" the infringer's competition, then the trade secret owner has suffered damages from price erosion.

In many ways, the price erosion analysis is similar to the lost profits analysis: measure the difference in the intellectual property owner's revenue (and consequential profit) that is attributable to the infringement. Adjustments should be considered for "price elasticity," that is, the effect that the different price would have on the volume of sales.

Similarly, the effect that the price and quantity of units sold would have on the incremental costs should typically be measured.

The infringer would attempt to demonstrate that, instead of the infringer's competition, it was market forces (such as customer bargaining power and noninfringing alternative products) that prevented the trade secret owner from enjoying the higher product price alleged by the plaintiff.

When measuring lost profits by applying a royalty rate to lost revenue, it may be appropriate to award a reasonable royalty greater than or at the high end of the range of rates and terms that the parties would have negotiated had they met in the normal course of business. If the rate is simply equal to what the parties would have negotiated, then the infringer would be in a "heads-I-win, tails-you-lose" position.

If the remedy is no more than the normal rate that would have been paid, parties would be motivated to infringe. This is because all it would eventually cost them is what they would have had to pay in license fees anyway if they had negotiated in good faith from the outset.

Disgorgement of an infringer's profit may be part of an appropriate remedy for trade secret misappropriation. Many of the same factors considered when measuring lost profits are encountered when measuring the infringer's profits.

For example, it may be difficult to isolate the appropriate revenues of the defendant when the infringing product is bundled and sold in combination with other products or aggregated in the defendant's financial records.

Let's assume the court finds that infringement of a trade secret has occurred and an injunction preventing future use is not a reasonable remedy. In that case, to capture future lost profits, the court will often impose a reasonable royalty on future revenue generated by the infringer.

VALUING A TRADE SECRET FOR (NON-LITIGATION) TRANSACTIONAL OR NOTATIONAL PURPOSES

There is an obvious potential contradiction in the process of valuing a trade secret outside of a litigation context. Some kinds of information or knowledge must be disclosed in the normal course of business.

This information must be disclosed in order for the trade secret to generate an economic benefit for its owner. Disclosure of too much information would reveal the secret and eliminate the legal protections available to trade secrets.

Thus, some kind of special relationship is needed between the trade secret owner and at least certain workers. In the litigation context, a court will preserve the secrecy of an alleged trade secret by reasonable means by, for example:

1. granting protective orders in connection with discovery proceedings,

2. holding in-camera hearings,

3. sealing the records of the action, and

4. penalizing any person involved in the litigation who discloses a trade secret.

Preservation of the trade secret that is valued outside of the litigation context is more challenging. Therefore, confidentiality agreements are increasingly commonplace in order to protect information that may be judged to be trade secrets.

When a trade secret is to be valued for financing securitization and collateralization purposes, the lender is typically interested in knowing the value of the intellectual property in case of default on the loan.

In the event of a default, one of the typical lender's remedies is foreclosure on the intellectual property. And, to foreclose on a trade secret, the lender may need to be able to secure and disclose, if necessary, detailed information regarding the intellectual property.

For financial statement reporting and/or taxation planning and compliance purposes, it may not be necessary to disclose the details of the trade secret in order to report its value. However, auditors may be skeptical when the details of the trade secret cannot be disclosed.

Ordinarily, the bankruptcy and reorganization processes are intrusive and may require disclosure of the protected information. Here again, the stakeholders in the bankruptcy proceeding are inherently skeptical. Trade secrets are difficult to keep during the debtor reorganization process.

TRANSACTION PURPOSES AND MANAGEMENT INFORMATION PURPOSES

When trade secrets change hands in a transaction with a third party, the trade secrets are usually bundled with other assets. This is because they coexist with other assets that are included in the transaction.

Some intellectual property owner corporations carry out intercompany transactions among related corporate entities at intercompany transfer prices. These intercompany prices may reflect specific corporate goals and objectives that may not be consistent with arm's-length pricing.

For example, a domestic corporate entity may make trade secrets available to a foreign related party at a royalty rate that is greater than or less than what would result if the parties were negotiating on an arm's-length basis.

Valuation analysis for intercompany transfer pricing purposes may need to be presented in a format that conforms to the transfer price methods necessary for that purpose.

Transaction-based methods used in intercompany transfer pricing assignments prepared for federal income tax purposes include:

1. the comparable uncontrolled price method,

2. the comparable uncontrolled transaction method,

3. the resale price method, and

4. cost plus methods.

Income approach methods used in intercompany transfer pricing assignments include:

1. the comparable profits method, and

2. several profit split methods.

A detailed description of these transfer pricing methods is beyond the scope of this discussion.

SUMMARY AND CONCLUSION

Trade secrets enjoy special legal recognition. A trade secret is protected as long as competitors fail to duplicate it by legitimate, independent research. Confidentiality agreements to protect information that may be judged to be trade secrets are increasingly commonplace.

There are many reasons to conduct a valuation or economic analysis of a trade secret. Regardless of the reason that the trade secret value is required, the valuation analyst will typically consider all three generally accepted approaches to estimating the trade secret value.

The purpose and objective of the valuation may also affect (1) the valuation methods to be applied or (2) the emphasis placed on the each valuation method.

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VALUING CONTINGENT CONSIDERATION UNDER SFAS 141R, *BUSINESS COMBINATIONS:* ISSUES AND IMPLICATIONS FOR CFOs AND THE TRANSACTION TEAM*

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Statement of Financial Accounting Standards No. 141, Business Combinations (revised 2007) (SFAS 141R) overhauls the financial reporting requirements for business combinations. The implications are broad and numerous: The transaction price will change. The amount of goodwill will change. More items in the financial statements will be recorded at fair value. The time it takes for a transaction to become accretive will be different. New contributors to earnings volatility will emerge. The optimal structuring and terms of merger and acquisition transactions will change.

SFAS 141R takes effect for the first fiscal year starting on or after 15 December 2008. For calendar year-end companies the impact is already being felt: the new rules are affecting their business combinations for which the acquisition date is on or after 1 January 2009.

One of the changes in the new standard is the requirement to recognize contingent consideration at fair value on the acquisition date. Consequently, a contingent consideration asset or liability will be remeasured to fair value at each reporting date until the contingency is resolved; any corresponding change in recorded value will often impact earnings.

This is a big change. Under the old rules, contingent consideration was usually not recognized until the contingency was resolved.

The requirement to measure the acquisition-date fair value of contingent consideration raises a number of important valuation and merger and acquisition transaction issues. In this paper, we address the following topics:

- How to value contingent consideration

- Implications for chief financial officers (CFOs), the financial reporting function, and the transaction team

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Before discussing these issues, we begin with a definition of contingent consideration and a description of the guidance regarding contingent consideration in SFAS 141R, as issued.[1]

Definition of Contingent Consideration

As defined in SFAS 141R, **contingent consideration** is:

- An obligation of the acquirer to transfer additional assets or equity interests to the former owners of an acquiree as part of the exchange for control of the acquiree if specified future events occur or conditions are met

or

- The right of the acquirer to the return of previously transferred consideration if specified conditions are met.

Thus, contingent consideration can be a liability, as in the first bullet point above, or an asset, as in the second bullet point above.

Contingent consideration is a part of many transactions in which substantial uncertainties exist about how the acquired business will perform post-transaction. Contingent consideration can help achieve the objectives of both sides of a transaction negotiation by:

- Closing the gap in expectations for the business between the buyer and seller

- Allowing the buyer to share the risk associated with the future of the business with the seller by making some of the consideration contingent on future performance

- Allowing the seller to participate in the upside post-transaction

- Providing incentives for the seller to remain involved with, and help drive the future success of, the business.

A common example of a contingent consideration liability is an earn-out clause, with payments conditional on reaching milestones or on the magnitude of sales or profitability.

The Requirements of SFAS 141R Regarding Contingent Consideration

Under SFAS 141R, as issued, contingent consideration is to be recognized at acquisition-date fair value as part of the consideration transferred. SFAS 141R uses the fair value definition in Statement of Financial Accounting Standards No. 157, *Fair Value Measurements*, which 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.

The subsequent accounting for contingent consideration will depend on whether it is classified as equity or as an asset or a liability. An obligation to pay contingent consideration will be classified either as equity or as a liability based on applicable generally accepted accounting principles (GAAP).[2] A contingent right to the return of previously transferred consideration will be classified as an asset.

Classification of contingent consideration will not always be obvious. For example, some technology companies routinely structure contingent consideration with the option for the acquirer to pay the additional consid-

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1 We anticipate that over time, additional guidance will be provided and both practice and our thinking will evolve.
2 In particular, an obligation to pay contingent consideration is classified as a liability or as equity in accordance with Financial Accounting Standards Board Statement No. 150, *Accounting for Certain Financial Instruments with Characteristics of Both Liabilities and Equity*, Emerging Issues Task Force Issue No. 00-19, "Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock," or other applicable GAAP.

eration in cash or in equity. The classification of such arrangements will depend on the specific facts and circumstances incorporated in the transaction terms. However, the expectation is that such arrangements will more often be classified as a liability than as equity.

The guidance on subsequent accounting for contingent consideration under SFAS 141R is as follows:

- Contingent consideration classified as equity is not remeasured. Its subsequent settlement is accounted for within equity.

- Contingent consideration classified as an asset or a liability will be remeasured to fair value at each reporting date until the contingency is resolved. The changes in fair value will be recognized in earnings unless the arrangement is a hedging instrument for which SFAS 133, as amended by SFAS 141R, requires that the changes be recognized in other comprehensive income.

The Impact on Earnings

The impact of the requirement of SFAS 141R to remeasure contingent consideration assets and liabilities to fair value appears to be obvious; one might assume the volatility of earnings would increase. However, if we look below the surface, we see that remeasurement of contingent consideration to fair value actually may, in some situations, buffer earnings from the ups and downs of the acquired business. Consider the case in which a cash payment of additional consideration is to be made after twelve months, contingent on the performance of the business in each of the first four quarters post-acquisition. Suppose the acquired business succeeds in generating cash flows above some baseline expectations in the first quarter post-acquisition. Then the business will have a positive impact on quarterly earnings compared to expectations. At the same time, it will become more likely that the acquirer will be required to pay the contingent consideration and/or that the amount of contingent consideration paid will be larger. Thus, the fair value of the contingent consideration liability will rise. Remeasurement of the contingent consideration liability will have a negative impact on earnings, counterbalancing some of the positive impact from the good results. The net impact on earnings may be positive or negative. However, the remeasurement of the contingent consideration value *has the opposite effect on earnings* from the direct effect on earnings of the change in business performance. A similar buffering phenomenon can be observed for certain contingent consideration assets, e.g., clawbacks of consideration in case of poorer-than-expected performance.

Payment of consideration can also be contingent on changes in expectations for the *future performance* of the business. For example, consider the case in which a cash payment of additional consideration is contingent on the achievement of a certain research and development (R&D) milestone. Missing that milestone may reduce the likelihood that the acquirer will pay, lengthen the time frame for payment of, and/or decrease the expected payment amount of any contingent consideration related to achievement of the milestone. Negative changes in the expected amounts or delays in timing for payment of the contingent consideration would have a positive effect on earnings. However, under SFAS 141R, in-process R&D (IPR&D) projects acquired in a business combination are to be capitalized at their acquisition-date fair values and subsequently tested for impairment at fair value until completion or abandonment. Missing an important R&D milestone may lead to an impairment of the IPR&D project. Thus, any impairment charge related to IPR&D acquired in a business combination could be counterbalanced to some degree by a gain on any related contingent consideration liability.

While *missing* an important milestone for R&D acquired in a business combination may lead to both an impairment charge and a gain on a related contingent consideration liability, *achieving* that milestone may dampen current earnings without any contemporaneous mitigating effect. Achieving an important R&D milestone brightens future prospects for the business, but it may simultaneously dampen current earnings via the increase in fair value of any corresponding contingent consideration liability. Of course, this effect could also have occurred under the old rules.

Regardless of whether the consideration is contingent on actual performance of the business or expectations for its future performance, if positive business results having a less positive (or even negative) net impact on

earnings due to the new accounting required for contingent consideration, that can delay the time until a transaction is accretive.

Identifying Contingent Consideration

Before contingent consideration can be valued, it must be identified. While this sounds simple, it may not always be easy to determine.

The most obvious question is whether the business combination includes additional consideration (cash, equity, warrants, options, etc.) to be provided only if certain conditions are met. Examples include:

- Additional consideration if the acquired business meets certain revenue, profit, margin or stock targets and
- Milestone payments for product development or liquidity events.

Valuation Techniques

There are three traditional approaches to value: income, market, and cost. Be aware, however, that not all such incremental consideration will be classified as contingent consideration; an accounting determination must be made as to whether any such consideration is part of the business combination or part of a separate transaction that should be accounted for outside of the business combination.

One must also find out if any circumstances are present under which the transaction agreement requires consideration to be returned. Examples include failures to meet targets, pass regulatory reviews, and meet covenants. While this question may also seem somewhat obvious, it is perhaps less natural for many financial reporting teams to ask about return of consideration, as prior to SFAS 141R, contingent assets were rarely recorded.

Turning to the less obvious questions, one must ask (a) whether selling shareholders or management may gain any future performance-based compensation and (b) whether any other agreements are in place between the acquirer and any of the selling shareholders that are not at market rate. Such compensation and agreements may or may not be viewed as contingent consideration, depending on facts and circumstances.[3]

Factors in Valuing Contingent Consideration

When estimating the fair value of assets and liabilities, one may consider the income approach, the market approach, and/or the cost approach. With contingent consideration, however, there are often no similar traded assets, so it may not be possible to apply a market approach. Furthermore, since the value of a contingency is driven by future cash flows and/or future events, a cost approach, which is based on incurred cost or replacement cost, is usually not helpful. Thus, due to the unique aspects of contingent consideration, often the valuer will rely on an income approach.

Estimating the acquisition-date fair value of contingent consideration under the income approach involves the development of expected cash flows, to be discounted to the acquisition date at an appropriately chosen discount rate. Projecting the expected cash flows may entail:

- The estimation of the likelihood and timing of various possible outcomes (e.g., achievement of specified milestones) and/or
- The development of expected or scenario-based projections relevant to sales- or profitability-based payments.

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3   Paragraphs A86–A87 of SFAS 141R provide guidance on the indicators useful in judging whether an arrangement for payments to employees or selling shareholders is part of the exchange for the acquiree or is a transaction separate from the business combination.

A robust valuation process can mitigate the potential for biases and errors in probability estimates. One key step is to identify data that can support the projections and probability estimates. Historical adoption rates or sales of comparable products, R&D success rates, and other industry, acquirer, or acquiree historical data can provide support for assessments and reduce the degree of reliance on unobservable inputs. Where it is necessary to rely on management assumptions, tools from decision analysis, such as decomposition techniques, de-biasing procedures, and validation cross-checks can improve the reliability of probability assessments. In addition, these techniques can provide transparency for the auditors and ease the update process for subsequent remeasurements.

The choice of an appropriate discount rate depends on facts and circumstances. Target-specific and situation-specific risks are captured in the expected cash flows, but industry-specific risks are not. Thus, it may be appropriate to discount the expected contingent consideration cash flows at the weighted average cost of capital (WACC) for the industry most relevant to the events driving the contingent consideration.

If the risk of non-payment is present even in the upside scenario associated with payment of the contingent consideration, this should be taken into account. It is worth noting that for a contingent consideration asset, the non-payment risk might be substantial unless the funds are kept in escrow until resolution of the uncertainty. For a contingent consideration asset, it may be appropriate to consider market data on the securitization of risky receivables.

Example: Fair Value of an Earn-out

The following example is loosely based on a real situation, although we have simplified it and adjusted the numbers to highlight the key points. A mid-size technology manufacturer (the acquirer) acquired a young company (the target) in a market with evolving technology standards. The target's future product sales depend largely on how quickly customers in this market adopt the next-generation technology standard.

The terms of the transaction provide for a cash earn-out that is tied to cumulative sales of the target's product line in the twelve months following close of the transaction. No earn-out is paid unless sales exceed $20 million. If sales exceed $20 million, the earn-out is between $10 million and $30 million, based on a stepped formula that increases with sales.

The transaction agreement also has a provision to motivate the target to achieve a 15% market share with one of its products, which we will call product A. If that target market share is not met, then the earn-out is reduced by 40%.

Thus, two key uncertainties drive future earn-out payments in this example: total sales of the target's entire product line and the market share of product A. Note that these uncertainties are not independent; when market share is higher, sales are likely to be higher, and vice versa. Such interrelationships between probabilities can be important to consider; if they are ignored, the value conclusion can be incorrect.

To develop a probabilistic model of the earn-out as a function of sales and market share, we kept a few useful principles in mind. The first principle is that of decomposition. Often it is easier to provide estimates for something specific than for something broad. So, for example, if total sales represent the sum of sales of several products in different markets, it might be easier to project sales, or to estimate the likelihood of different sales scenarios, for each product separately than to project total sales directly. Disaggregation also can make it easier to tie the assessments to company or industry data. For example, sales of a given product might be likely to follow the pattern established by sales of the prior generation of that product, or of an earlier introduction of an analogous product in a related market.

"Keep it simple" is the second useful principle. The complexity of the model and associated data and assessments should be kept commensurate with the scale of the problem. A simpler analysis will be more transparent and thus easier to understand and to audit. Striving for simplicity will to some degree counterbalance the desire

to decompose the problem into smaller, bite-size pieces. Balancing these two criteria appropriately can lead to a reliable yet cost-effective valuation of the contingent consideration.

The third useful principle is to match how we *model* the problem to how the experts who will be asked to provide data or assessments *think* about the problem. If the model structure is a natural one, it will be easier to obtain a high-quality assessment from the expert and supporting data from the company. For example, it will be easier to estimate the likelihood of alternative sales projection scenarios if the sales are for product groupings and currency units that the target regularly examines as part of its business planning processes. It may also be easier for management to estimate the impact of a specific event, such as the timing of a competitor's entry into the market, or of multiple key events, such as the combination of a strong economy and the signing of a key partnering agreement, as a percentage change relative to the base case, rather than to estimate the resulting cash flows directly. As a side benefit, natural assessments will also be easier for the acquirer to update as time passes, new information is acquired, and the fair value of the contingent consideration is remeasured.

After considering these three principles, we kept the model in this example relatively simple. The acquirer had data to support assessments of total sales, so decomposition was not important in this case. Working with the acquiring company, we developed three scenarios for total sales: a base case, an upside scenario, and a downside scenario. We developed the two obvious scenarios for the market share of product A: above and below 15%. However, it was also important to capture the dependency between sales and market share. Since the acquirer was more comfortable thinking first about the uncertainty on total sales of the target's product and then, given total sales, thinking about the uncertainty on the market share for product A, we chose to model it this way. We led management through a formal assessment process to quantify the likelihood of each of the resulting six scenarios (all combinations of the three scenarios for total sales and the two scenarios for market share of product A). The probability assessments are shown in Figure 1. Note the gap between the base case and the downside is larger than that between the base case and the upside, illustrating that, like many real-world probability distributions, the outcomes are not symmetric around an average. Note also that the likelihood that product A will achieve the 15% market share is higher in the upside scenario and lower in the downside scenario.

Each of the six scenarios feeds the cash flows model, which includes the two earn-out drivers as variables. The earn-out payments are discounted at the weighted average cost of capital for the target's industry, 18% in this case. The expected earn-out payment is $17.4 million, and its present value is $14.7 million, as shown in Figure 2.

To illustrate the subsequent accounting, suppose that during the first quarter after the close of the acquisition, a major manufacturer adopts one of the target's products, product B, for use in that manufacturer's products. After this event, management's assessment of the likelihood that total sales of the target's products will achieve the base case or upside levels increases, as shown in Figure 3. (The sales estimate in one or more of these scenarios might also increase, but we have chosen to keep this example simple.) The expected earn-out payment increases to $20 million, an increase of $2.6 million over the acquisition-date expectation. The fair value of the earn-out is now an estimated $17.7 million, an increase of $3.0 million over the acquisition-date fair value. The change in fair value is larger than the change in the expected earn-out, because the payment is discounted for only nine months rather than for twelve months. The $3 million increase in the fair value of the liability is recognized in earnings.

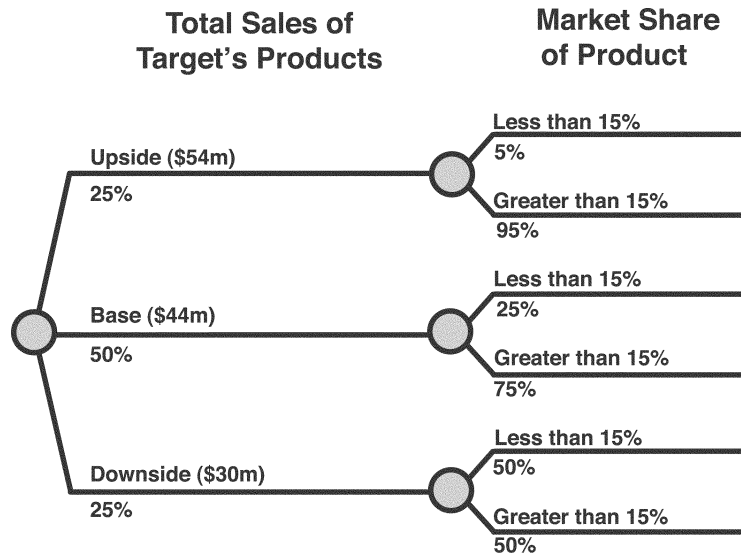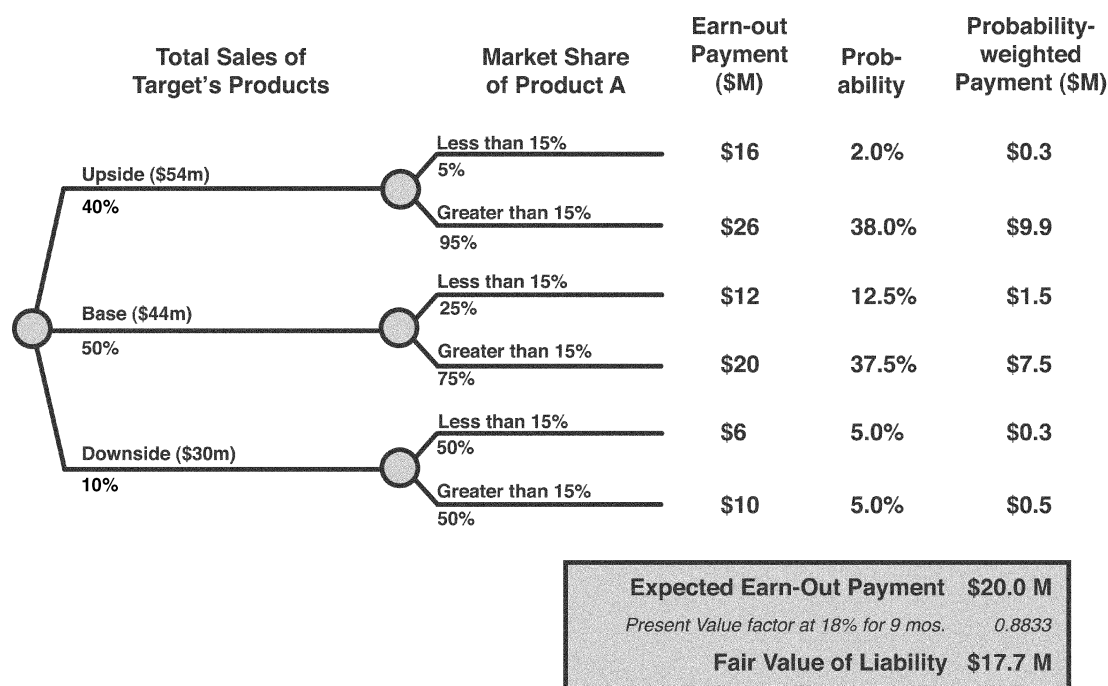**Figure 1. Scenarios for Total Sales and Market Share of Product A**

Figure 2. Valuation of the Example Earn-out as of the Acquisition Date

Figure 3. Valuation of the Example Earn-out One Quarter Later

Total Sales of Target's Products	Market Share of Product A	Earn-out Payment ($M)	Prob-ability	Probability-weighted Payment ($M)
Upside ($54m) 40%	Less than 15% 5%	$16	2.0%	$0.3
	Greater than 15% 95%	$26	38.0%	$9.9
Base ($44m) 50%	Less than 15% 25%	$12	12.5%	$1.5
	Greater than 15% 75%	$20	37.5%	$7.5
Downside ($30m) 10%	Less than 15% 50%	$6	5.0%	$0.3
	Greater than 15% 50%	$10	5.0%	$0.5

Expected Earn-Out Payment	**$20.0 M**
Present Value factor at 18% for 9 mos.	*0.8833*
Fair Value of Liability	**$17.7 M**

Note that in this example, after one quarter it is still possible that the earn-out payment at twelve months post-close could be as low as $6 million or as high as $26 million. In most cases, however, as time passes, the spread of potential earn-out payments will tend to narrow and/or the probabilities will shift toward a particular scenario, narrowing the gap between the accrued liability and the actual earn-out payment.

Consistency Issues

The valuation of contingent consideration raises some consistency issues. These consistency issues are not new, but they have greater prominence under SFAS 141R than they had under SFAS 141.

First, the assumptions underlying the valuation of contingent consideration should be consistent with the assumptions underlying the cash flows being used for the purchase price allocation. Many a transaction model has a base case set of cash flows, but not expected cash flows or a set of scenario-based cash flows. In the base case, the contingent consideration might always be paid. That could be inconsistent with the assumptions required to value the contingent consideration, because some scenarios may be possible in which the targets are not met and the contingent consideration would not be paid.

Moreover, the cash flows for valuing intangibles should not be inconsistent with the cash flows used to value the contingent consideration. This could occur when using a set of "base case" cash flows to value, for example, customer contracts or a brand name and a different set of cash flows to value the contingent consideration. More broadly, one should consider the consistency between the contingent consideration valuation and that of any intangible asset that is valued based on an income approach.

In some transactions, the internal rate of return (IRR) may differ from the WACC. The difference may be large, for example, when the transaction model cash flows represent an optimistic or "success case" scenario or exclude some of the anticipated synergies. The rationale underlying any difference between the IRR and the

WACC can provide additional information useful for the estimation of the expected contingent consideration cash flows or the choice of an appropriate discount rate.

Note that in some circumstances it may be appropriate for the valuation of the contingent consideration and the acquired net assets to differ with respect to assumptions about synergies. The value of the contingent consideration could include assumptions unique to the acquirer ("buyer-specific synergies"), if, for example, buyer-specific synergies increase the likelihood that the earn-out will be paid and therefore a market participant to whom the earn-out obligation is transferred would consider them. On the other hand, the cash flows underlying the valuation of the acquired assets and liabilities assumed would exclude buyer-specific synergies.

Second, the assumptions underlying the valuation of contingent consideration should be consistent with the assumptions underlying the valuation of any IPR&D. After adoption of SFAS 141R, IPR&D is to be (a) capitalized at acquisition-date fair value, (b) treated as an indefinite-lived asset, (c) tested for impairment under Statement of Financial Accounting Standards No. 142, *Goodwill and Other Intangible Assets* and (d) eventually written off or amortized. IPR&D is sometimes valued using success cash flows discounted at a high rate of return to represent the risk of achieving that success. However, it will not always be possible to represent all of the key future scenarios, their relative likelihoods, and the amounts and timing of contingent consideration payments in those scenarios with one single set of discounted cash flows. Thus, the valuation of contingent consideration may require a very different approach, such as the scenario-based cash flow projections discounted at the WACC in the example described above, in order to appropriately take into account the richness and complexity of the contingent consideration transaction terms. Implementing a scenario-based approach typically requires the collection of additional data and assessments; some of this additional information may also have implications for the value of the IPR&D. If the scenario-based projections imply a materially different value for the IPR&D, it may be necessary to adjust the IPR&D valuation methodology or assumptions to provide a value more consistent with the contingent consideration valuation methodology, assessments, and supporting data.

Implications

Contingent consideration will affect the purchase price, and any subsequent remeasurement to fair value will affect future earnings. What are some implications for the transaction team, for CFOs, and for the financial reporting team?

First, transaction structures and terms will have new consequences. Whether contingent consideration is to be paid in cash or equity matters to the subsequent accounting; the remeasurement of contingent consideration that will be paid in cash will affect future earnings and potentially can affect the time taken for the transaction to become accretive. Also, contingent consideration will be recognized at fair value on the acquisition date, affecting not only the purchase price but also possibly debt covenants. For the transaction team, these changes are likely to imply an increased need for pre-transaction modeling to quantify the value of contingent consideration under alternative structures—how much up front, for milestones, as a percentage of sales, etc., and how much in equity versus in cash.

CFOs will want visibility into future earnings impacts. Initially, CFOs will want to know the earnings impact under different future scenarios and the implications for the time it will take for the transaction to become accretive in these scenarios. Later, as new information is obtained, CFOs will want rapid turnaround on analyses. They will need quarterly updates on fair value for contingent consideration, and they may also want periodic analyses about the potential impact on earnings of alternative future scenarios.

For the financial reporting team, the key implementation needs are for contingent consideration valuation models that (a) can be developed expeditiously at the right level of detail, (b) are based on credible data and assumptions, (c) simplify and expedite auditor review, and (d) can be easily updated to meet ongoing reporting needs. Prior to the transaction, these models can be used to evaluate potential transaction terms to support negotiations and to help the CFO understand the earnings or debt covenant impacts of contingent consideration.

Post-close, these models can provide for transparent and sound valuation and easy updates to meet ongoing financial reporting requirements.

The valuation of contingent consideration poses a new challenge for the financial reporting team, which must now develop supportable bases for estimates of uncertain future outcomes. Valuation professionals experienced in developing financial projections and quantifying contingencies can help ensure this challenge is met.

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10

FAIR MARKET VALUE IN CONTINUED USE*

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In the course of our careers, appraisers are required to opine on various levels of value based on different premises. The typical buyer and seller are interested in one thing: "What's it worth?" They want to know what they can buy or sell something for in the free and open market. But it's just not that simple! Do they want to sell the asset quickly, as in a forced liquidation, or take their time and sell the asset for a likely higher price, as in an orderly liquidation or transaction, which is comparable to a value in exchange? At times, the asset being sold is an operating business composed of thousands of assets. While the operating business is the asset being sold at its value in exchange, the individual assets that make up that operating business are being sold at their value in use—in use as part of that operating business. The assets that constitute an operating business include the tangible assets (real property and personal property, such as machinery and equipment, office furniture, tooling, etc.), intangible assets (workforce, software, operating manuals and procedures, contracts and agreements, goodwill, etc.), and working capital (current assets less current liabilities).

At times, the level of value that is of particular importance to a corporation is the value that an item or entity contributes to the corporation (an operating business). This level of value is known as value in use, or more meaningfully, the fair market value in continued use as part of a going concern. The corporation has no intention of selling a single asset that is part of the operating business, so they don't want to know the value in exchange of any individual asset; however, they may need to know the value of an asset to the operating business.

Fair market value is "the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts." (Internal Revenue Service, Section 1.170A-1(c)(2), Income Tax Regulations; Section 20.2031-1(b), Estate Tax Regulations; Section 25.2512-1, Gift Tax Regulations.)

When fair market value is established on the premise of *continued use*, it is assumed that the buyer and the seller would be contemplating retention of the property at its present location as a part of the current operations. An estimate of fair market value determined on the premise of continued use does not represent the amount that might be realized from piecemeal disposition of the property in the marketplace or from an alternative use of the property. It represents the asset's value to the whole, the operating business. The premise of continued use is generally appropriate when:

- The asset is fulfilling an economic demand for the service it provides to the operating business.

- The asset has a significant remaining useful life expectancy.

- Responsible ownership and competent management are expected.

- Diversion of the asset to an alternative use would not be economically feasible or legally permitted.

- Continuation of the existing use by the present or a similar user is practical.

- Functional utility of the asset at its present use is given due consideration.

- Economic utility of the asset is given due consideration in the analysis.

In a continued-use appraisal, the individual assets that constitute the subject property are valued as part of an operating business. For example, the items of mechanical equipment that are utilized in a manufacturing plant would be valued based on their contribution to the entire plant's operating business. Financial and operating performance data furnished by the plant's management are examined for reasonableness. If the operations are viable (that is, if profits are high enough), it is typically concluded that prospective profits would be adequate to justify ownership of the subject property's tangible assets in an arm's-length exchange. If the value of the entire business, net of working capital and intangible assets, is not greater than or equal to the sum of the individual tangible assets (that is, if the sum of the values of the assets in continued use is greater than the net value of the operating business), various individual tangible asset values would need to be reduced for economic obsolescence.

In 1937, James C. Bonbright, a professor of finance at Columbia University, wrote in *The Valuation of Property*:

> A distinction that the economic textbooks have been at pains to make since the days of Adam Smith is that between the value of an object of wealth, and its utility or usefulness. Brief discussion of this point will suffice here, since the implications are now generally recognized.

> One of the apparent paradoxes that gave economists much concern is the relatively slight correlation between the values of different things, in any usual sense of "value," and their utilities. The distinction, as generally made, was between market value (more often called "value in exchange") and utility, or (as it was formerly called) "value in use." "Nothing," said Adam Smith, "is more useful than water, but it will purchase scarce anything; scarce anything can be had in exchange for it. A diamond, on the contrary, has scarce any value in use, but a very great quantity of other goods may frequently be had in exchange for it."

> It is clear, as John Stuart Mill pointed out, that Smith meant by "value in use," or "utility" as most economists now say, value according to some standard of ethics or welfare distinct from values that individuals actually attach to the ownership of things.

Bonbright is discussing scarcity. While diamonds may be scarce, they truly have little value in use unless a man is interested in impressing a potential bride. In the 21st century, although water may have more street value in exchange than it did when Bonbright wrote his book in the 1930s, diamonds are still more valuable. While water is abundant and generally considered inexpensive, diamonds are still scarce and generally considered expensive. Yet water is essential for the survival of all known forms of life; diamonds are a form of carbon—nice, but just decorative.

Likewise, assets may have more or less value to a particular entity or corporation depending on how they are being utilized. The value in exchange may be very different from the value in use. An example might be an old obsolete machine that is utilized by a plant to make small batches of a high-value product. That machine may have a value to that plant because it can make a profit producing a particular product. Because the machine has a very low capacity rating and is functionally obsolete, its value in exchange (that is, its value to others) might be zero. The machine has a unique use to that one plant and, hence, a value in use to that plant as an operating entity.

In *Industrial Real Estate*, Fourth Edition, William N. Kinnard, Jr., Stephen D. Messner, and Byrl N. Boyce, contributors (1984) discuss value in use as follows:

> In the industrial real estate field especially, the appraiser may be asked to estimate the "value-in-use" of a given parcel of real estate. Such value-in-use would be needed for asset valuation in a merger or in a "going-concern" situation (such as

a security issue) or simply as a judgment of the worth of a property to its owner(s). The problem becomes complicated when the property in question is not commonly exchanged in any identifiable market or there are insufficient rental data to constitute a basis for analysis resulting in a market value estimate.

Value-in-use computation may be justified when:

1. The property is fulfilling reasonable identifiable economic demand for the service it provides or which it houses.

2. The property improvements have a reasonable remaining economic life expectancy.

3. There is responsible ownership and competent management.

4. Conversion of the property to an alternate use would not be economically feasible.

5. Continuation of present use is expected.

The cost approach to appraisal must be relied on in such situations, but all measures of the economic contribution of the real estate to the total going-concern are considered relevant. "Value-in-use" appears to be valid in the following situations:

1. Valuation of a railroad station in a small city serviced by only one railroad.

2. Valuation of an electric power plant in a noncompetitive situation.

3. Valuation of public or quasi-public facilities such as sports arenas, technical facilities, etc.; less restricted types might include petroleum cracking plants, etc.

It may be expected that single-use, special-use, single-purpose or special-purpose properties are those subject to value-in-use appraisal. However, it must be emphasized that the value-in-use appraisal is not *required* in those circumstances. Rather, it may be considered appropriate if requested by the client. Strictly speaking, value-in-use does not fit the criteria discussed in the definition of market value above and should not be considered equivalent to or a substitution for market value.

The authors are clearly saying that value in use is not automatically equal to value in exchange (although of course it could be, for certain types of property or in certain situations). In addition, they state that value in use is developed by utilizing the cost approach, including the investigation of the assets' economics. That means the appraiser needs to investigate the economics of the assets, or economic obsolescence ("EO"), not just the value of the operating business. If a group of assets within an operating business can be identified as having EO independent of other assets of the operating business, the EO should be quantified and applied to that group of assets. For example, if a manufacturing line within a plant is underutilized because of an overcapacity in the industry, EO can be measured through an inutility calculation. Other assets in the plant may be fully utilized, and hence, the EO penalty would not apply to them.

Appraisers actually have two options: develop the value in use with assumed earnings or develop it with an earnings analysis. In the textbook *Valuing Machinery and Equipment: the Fundamentals of Appraising Machinery and Technical Assets*, Second Edition, published by the Machinery and Technical Specialties Committee of the American Society of Appraisers (2005), the authors discuss *fair market value in continued use* as:

The estimated amount, expressed in terms of money, that may reasonably be expected for a property in an exchange between a willing buyer and a willing seller, with equity to both, neither under any compulsion to buy or sell, and both fully aware of all relevant facts, including installation, as of a specific date and assuming that the business earnings support the value report. This amount includes all normal direct and indirect costs, such as installation and other assemblage costs to make the property fully operational.

This level of value can be more accurately titled *fair market value in continued use with assumed earnings* ("FMV-CU-AE"). It is important to note the footnote included by the writers of this definition:

The appraiser has two options for responding to the assumption that business earnings support the value reported for the underlying asset: one is to assume, without verification, that this is the case [this is the FMV-CU-AE discussed above]; the other is to actually determine whether there are sufficient earnings by using an income approach [this is more accurately

titled fair market value in continued use ("FMV-CU") with an earnings overlay]. If the first option is selected, the appraiser must ensure that the appraisal report clearly states that the value reported for the underlying asset assumes, without any verification [assumed earnings], that business earnings are sufficient to support the value conclusion.

The above definition for FMV-CU follows the logic discussed previously for a continued-use appraisal. The sum of the value of the total assets must be supported by the value of the operating business, net of working capital and intangible assets. The value of the operating business, net of working capital and intangible assets, is the highest possible sum of the values of all tangible assets, real property and personal property. Typically, appraisers base their determination of the value of land on the sales comparison approach (land's value in exchange is generally, but not always, the same as its value in use) and develop the value of the land improvements, buildings, and personal property (machinery and equipment etc.) on the basis of the cost approach, including deductions for any specific EO. For some types of operating property, it is possible to develop the value of the tangible assets using the sales comparison approach if comparable complete operating properties were transferred in the market.

A sample analysis using this valuation technique would be as follows. Let's say the value of the operating business was developed in a financial analysis to be $100,000,000. The economically justified value of the intangible assets was estimated at $20,000,000, and the working capital was determined to be $10,000,000. The real property was valued as follows: land, $1,000,000, and land improvements and buildings, $4,000,000. The personal property was valued at $65,000,000.

The FMV-CU therefore is allocated as shown below:

Land	$ 1,000,000
Land Improvements and Buildings	4,000,000
Personal Property	65,000,000
Total Tangible Assets	$ 70,000,000
Intangible Assets	$ 20,000,000
Working Capital	10,000,000
Grand Total	$100,000,000

In this example, everything fits nicely into the value of the operating business. Site-specific economic obsolescence would have already been deducted by the real property and personal property appraisers in their analyses. Examples could include inutility or excess, unused building areas. But if the values developed by the real property and personal property appraisers totaled $90,000,000, the $90,000,000 would have to be adjusted downward to $70,000,000 to fit into the value of the operating business. Because the value of the operating business cannot support a $90,000,000 value for the tangible assets, there is additional economic obsolescence within the business that further reduces the value of the tangible assets. Land, since it is valued using the sales comparison approach, would not require any adjustment.

If, on the other hand, the tangible asset value was only $50,000,000, the result would be a $20,000,000 shortfall. This shortfall would be considered to represent unidentified intangible assets, going concern, and/or goodwill.

If an earnings overlay is not developed, FMV-CU-AE basically assumes that the value of the business will support the values developed by the real property and personal property appraisers with no financial analysis, investigation of intangible assets, or deductions for working capital. Any values developed by the tangible asset appraisers would be accepted without any additional analysis, whether the conclusion was $70,000,000, $90,000,000, or $1,000,000,000. The reader of the appraisal report, whenever the premise of FMV-CU-AE is utilized, must be warned that if the earnings of the operating business do not support the concluded values of the tangible assets, the value of the tangible assets will need to be adjusted downward appropriately for economic obsolescence. This level of value can be misused or misunderstood by clients because it may not represent the

individual asset categories' values in the context of the economics of the operating business; no earnings analysis of the business was developed.

The FMV-CU-AE premise is valid when the assets are in demand and are being utilized by a nonprofit organization such as a government or a not-for-profit agency, or by users who are knowledgeable of the meaning of "assumed earnings." For example, FMV-CU-AE would be appropriate in the following appraisals:

- Allocation of overhead expenses by a government or not-for-profit agency.

- Allocation of a known purchase price for a group of necessary assets at various locations when individual location earnings analyses are not available.

- Valuation of a unique property when the seller is planning to sell the property to another user who will utilize it in an identical manner, and the property, by itself, is not an income-producing entity (e.g., a corporate headquarters, school, church, or unique residential mansion).

Many appropriate applications for FMV-CU-AE are possible; it is up to the appraiser to consult with the client as to the use of the appraisal and also to include any appropriate warnings in the appraisal report.

Again, economic obsolescence cannot be ignored; any site-specific issues still must be addressed in an assumed-earnings valuation. Now, if used to determine what a client could sell the property for in the market to an alternate user, FMV-CU-AE might be very misleading, especially if the property is so unique that only the cost approach was utilized. In such a case, fair market value in exchange would be more appropriate. Any special-purpose features, those which the current user needs but the market does not, would be given little value under the in-exchange premise.

As shown in the discussion above, the continued-use premise may be applied with or without an earnings overlay (income or earnings analysis). When an earnings overlay is applied, it is very important that the earnings analysis represent the earnings directly associated with the property being valued, not the earnings of the parent corporation, which may be more or less profitable. For example, if the subject property was a process plant located in North America, and the parent corporation owned hundreds of process plants and other types of businesses throughout the world, the corporate earnings would be meaningless in the valuation of the single process plant. The earnings of the single process plant must be investigated, not those of the parent corporation.

Because of these crucial distinctions between the definitions and applications of the various premises that can be associated with fair market value, an appraiser must clearly state in the report the definition of value and the premise utilized to derive the value conclusions; further, for a continued-use premise, the appraiser must clarify whether an earnings overlay was performed.

As always, the appraiser's work must reflect the marketplace, but not just any marketplace: the appropriate marketplace. When fully developed, the three approaches to value reflect all attributes of the marketplace, and that is why the most supportable appraisal utilizes all three indicators of value. Ideally, they all support the same value conclusion, or at least determine a narrow range. The marketplace is defined by the actions of buyers and sellers, that is, projections of product and raw material prices, operating expenses, future capital investments, the required returns of equity investors, the cost of debt, an industry capital structure, the cost of new modern construction, all forms of depreciation and obsolescence, and industry economics. When the market speaks, appraisers listen.

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