

BUSINESS VALUATION COMMENTARY



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Our website provides information, resources, contacts and links relevant to business valuation, business sales and acquisitions, and financial litigation.

The Capital Asset Pricing Model

It is commonly accepted that investors require a higher rate of return on equity investments than they do on investments in risk-free assets. The difference between a rate of return required on an equity investment relative to that on an investment in a risk-free asset is referred to as the 'equity risk premium'. Selecting an appropriate rate of return (and hence an appropriate equity risk premium) is a critical component of any business valuation. Accordingly the 'rates of return' section of any business valuation report should be reviewed closely by its reader(s).

It has been our experience (as supported by a survey conducted by us¹ of corporate acquirers) that corporate acquirers express acquisition objectives in terms of an internal rate of return where the starting point is a pre-determined nominal unleveraged return on equity (i.e. a 'hurdle rate'). Said hurdle rate includes an equity risk premium considered appropriate by corporate acquirers for the particular industry in which the company targeted for acquisition (i.e. the 'target company') operates. Corporate acquirers, depending on their assessment of each specific circumstance, may make adjustments to the hurdle rate to reflect risk specific to the target company in question.

Despite our experience, we have observed that some business valuers and particularly investment bankers rely on the capital asset pricing model ('CAPM') when providing opinions on the fair market value of the shares of public or privately-held companies. The discussion herein focuses on explaining the limitations and shortcomings of applying CAPM in fair market valuations.

¹ Source: Campbell Valuation Partners Limited, *A Survey of Corporate Acquirers*, April 1999. A summary of the results of our survey pertaining to rates of return is included herein.



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The CAPM Methodology

CAPM is a financial model used to determine rates of return based on historic public market returns. In theory, the model develops a rate of return founded upon a risk free rate of return plus a risk premium based on the risk associated with the particular asset being valued. CAPM measures risk in terms of the volatility of publicly traded stock prices relative to the overall volatility of the 'market portfolio'.

The Capital Market Theory, of which the capital asset pricing model is a component, divides risk into two types:

- systematic risk - the uncertainty of future returns due to the sensitivity of the return on the asset (e.g. a particular business) to movements in the return for the market as a whole; and
- unsystematic risk - relates to the specific characteristics of the subject business, the industry, and the type of business interest.

Therefore, the total risk to a particular business interest is the sum of its systematic and unsystematic risks. However, CAPM postulates that unsystematic risk can be eliminated by investors who choose to hold a totally risk diversified portfolio. Accordingly, the risk premium in the CAPM model relates solely to systematic risk.

The basic CAPM formula is as follows:

$$R_e = R_f + B (R_m - R_f)$$

Where:

- R_e is the rate of return on equity for a particular company;
- R_f is the risk free rate (normally the rate on long term government bonds);
- B is Beta, a measure of relative risk; and
- R_m is the long-term rate of return of the equity markets.

The CAPM formula is essentially one variation of a build-up approach to selecting an appropriate rate of return. That is, an equity risk premium is added to the risk free rate. However, in the case of CAPM, industry risk factors are assumed to be incorporated through the use of the Beta factor and specific company risk is considered irrelevant (as investors are assumed to have a totally risk diversified 'market portfolio' of assets).



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The Beta for a particular company is usually estimated based on some average of the Beta factors of selected so-called 'comparable' public companies, as reported in stock market services reports. This presumes that nonintegrated, single product companies in the same line of business must be available and have sufficient trading activity to permit an estimation of Beta. Where the equity risk premium is multiplied by Beta, the equity risk factor is adjusted for the price volatility of the 'comparable' companies.

Business Valuation vs. Security Analysis

CAPM is commonly used by individual and institutional investors in the management of their portfolios of public companies, and the model lends itself reasonably well to that purpose. That said, there are fundamental differences between the 'en bloc' valuation of the equity in a business and the analysis of daily trading prices of public companies whose shares are listed on an organized securities exchange. In summary, these differences principally relate to:

- information availability;
- liquidity;
- risk and return assessment, including different investment time horizons; and
- the valuation of controlling as opposed to minority interests.

Information Availability

In the public stock markets, stock traders generally act on a limited amount of available information. Such information normally includes quarterly and annual financial reports, press releases, annual information returns, and analyst reports. Investment bankers, large financial investors, and certain other individuals may be able to obtain additional information through discussions with company management and industry knowledgeable people. However, the information obtained pursuant to such inquiries seldom is of the same depth and quality as that available pursuant to an open market pricing or notional market valuation exercise. This principally is because of legislative restrictions against disclosure of sensitive 'inside information', which information is available through an open 'due diligence' process.

A corporate acquirer or a business valuator seeking to determine 'en bloc' value/price of the outstanding shares of a given public or private company in either an open or notional market context typically has access to a greater amount and better quality of information than is available to 'normal course traders' of publicly held company securities. This additional information:



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- typically includes detailed financial and operating data, details of strategic plans, long-term forecasts, and open access to management and key operating personnel; and
- normally is subject to either implicit or explicit confidentiality agreements that prevent it from being used except in either the notional context in which the valuation is required, or in the consummation of an open market transaction.

It follows that the corporate acquirer or valuer generally is in a better position to assess the prospective cash flows and the risks and opportunities for the subject business than are stock market analysts.

Liquidity

Liquidity can be viewed as the number of potential acquirers for a particular asset at any given time, and the resultant ability of a seller to convert an asset into cash at a known price within a very short time frame. Most widely and actively traded publicly traded securities offer holders of 'normal sized' trading lots a high degree of liquidity due to the organization and regulation of public securities markets. The holder typically can crystallize that value in a very short period of time (within minutes for many widely held companies) at a relatively minor cost (broker's commissions). The same degree of liquidity:

- may not be afforded thinly traded securities (including most of those listed on so-called 'third markets', also referred to as over the counter markets); and
- typically will not be available to public company shares that are escrowed, or otherwise restricted as to sale pursuant to Securities Acts or Stock Exchange Regulations.

A purchaser acquiring a business 'en bloc', accepts a different and normally greater degree of liquidity risk than does a purchaser of a normal sized trading block in an widely held public company whose shares are actively traded. This is because:

- a business purchased 'en bloc' cannot be disposed of with the ease that normally is attributed to the sale of normal sized blocks of publicly traded shares. For a business to be sold 'en bloc', the typical divestiture process may take several months or sometimes years, during which time significant events (either positive or negative) affecting the value of the business may occur;
- the divestiture of a business en bloc (particularly in the case of small private companies) may be more costly (viewed as a percentage of the sale price) than the disposition of normal sized trading blocks in the public markets. This is because a corporate divestiture normally is a



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major undertaking requiring significant advisory and intermediary expenditures and management time at (possibly material) opportunity cost;

- there usually is a degree of uncertainty regarding the ultimate price that will be fetched in an open market transaction because there are numerous reasons why the value of a business interest as determined in a notional market context may be significantly different from open market price. Until a business is exposed for sale, negotiations with prospective purchasers are held, and the ultimate proceeds and form of consideration are known, price is uncertain;
- as a general rule, due to the relative size of the financial commitment and nature of the investment there are fewer potential buyers for a business 'en bloc' than there are for normal sized trading blocks in publicly held companies;
- in circumstances of the required commitment of financial (and management) resources and legal documentation related to a purchase and sale of 100% or control of the outstanding shares or net assets of a business:
 - a purchaser generally conducts more detailed due diligence than does a buyer of a normal sized block of publicly traded shares, and
 - a vendor typically is required to provide indemnifications and warranties related to the financial position and underlying assets and liabilities of the business being sold, which a vendor of a normal sized trading block in a publicly held company does not do; and
- as a general rule, most corporate acquirers do not purchase businesses 'en bloc' with the intent of selling them in the near term. Rather, a corporate acquirer purchases businesses 'en bloc' pursuant to long term objectives.

Risk and Return Assessment

There are three principal broad investor categories, being:

- stock market investors, including mutual fund companies and pension funds, who typically seek a return on capital in the form of dividends and capital gains. Most pursue a diversified portfolio strategy, whereby the risk of losses in any particular security held is reduced pursuant to holding a portfolio of securities in a variety of industries and geographies. As such, stock market investors typically are more focused on the performance of their portfolio as a whole rather than with gains or losses on any particular security. The prices of normal sized trading blocks of publicly traded securities are known at any point in time. Accordingly, stock market investors can determine their return on investment on an intra-day or daily basis;



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- financial investors, including venture capital and 'mezzanine' funds, who invest debt and equity with a pre-determined investment horizon which generally ranges from five to ten years. Financial investors generally anticipate that their target return on invested capital will be realized pursuant to either a subsequent en bloc sale of the business, or in the public markets following an initial public offering; and
- corporate acquirers who, for the most part, purchase businesses 'en bloc' for their strategic value where post-acquisition returns are expected to include both the returns generated by the acquired company on a stand alone basis, and incremental returns expected from the business combination. Corporate acquirers typically seek to satisfy long term financial objectives, and measure returns in terms of monthly, quarterly and annual financial performance. Where an acquisition is motivated in part by anticipated synergies, significant capital or other expenditures may be required in order to realize those anticipated synergies over several months or years.

Given the differences in investment horizons, the risk perceptions and target rates of return of the three types of investors typically will be different for a given investment opportunity.

Controlling vs. Minority Shareholdings

Trades of publicly held securities typically reflect small blocks of shares, each of which constitutes a small minority shareholding. As such, the individual (external) shareholders of a public company usually have little or no direct influence on the management of the business.

Conversely, the acquisition (or valuation) of a business en bloc, or of a controlling interest therein, offers the purchaser the benefits of control. A controlling shareholder has the ability to elect the majority of the Board of Directors and, subject to possible limitations pursuant to shareholder agreements and legislative authority, to:

- establish or change the strategic direction or key operating decisions of the business, thereby altering the degree of operating and financial risk in the business;
- determine the quantum and timing of dividend distributions or other returns to shareholders;
- appoint themselves as management of the business; and
- decide whether to sell or wind up all or part of the business.

Although a minority shareholder is not in a position to determine one or more of these things, the risk associated with non-control is significantly mitigated in circumstances where the security is



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freely traded in the open market. Simply put, if the individual shareholder is not satisfied with the company's direction, management, dividend policy, and so on, and holds only a normal sized trading block, then the shareholding can be readily sold. This often is not the case where the shareholder is in a minority position in a privately held company.

Publicly traded securities do not necessarily trade at prices that reflect 'minority discounts', nor do purchasers of a controlling interest in publicly held companies necessarily pay a 'premium for control'. In most cases where an acquisition premium over market price is paid, the premium is based on the purchaser's analysis of post-acquisition results. Accordingly, whereas control of the subject business is necessary in order for the acquirer to realize post-acquisition net economic value added (synergies), it typically is perceived post-transaction economic advantage that commands the premium price and not 'control' per se.

Empirical Evidence

We conducted a survey of corporate acquirers to determine the methodologies and rates of return they used in assessing acquisition candidates. The responses generated regarding rates of return were, for the most part, diverse. However, the general conclusions that can be drawn based on the information received are as follows:

- most corporate acquirers either implicitly or explicitly use a nominal unleveraged return on equity (i.e. a nominal unleveraged discount rate including 2% inflation) in the range of 12% to 15%;
- when converted to a weighted average cost of capital basis, most corporate acquirers use a nominal weighted average cost of capital (either implicitly or explicitly) in the range of 10% to 15%;
- when using a discounted cash flow model, most corporate acquirers do not build in a real perpetual growth factor into their hurdle rates beyond the discount period. That is, the capitalization rate is most often expressed as the real discount rate;
- most corporate acquirers base their discount rates on long term corporate objectives (i.e. threshold rates of return). This is significantly more common than employing short term financial models such as CAPM; and
- the rate of return used by corporate acquirers in assessing acquisition candidates is usually the same as the rate used in evaluating capital additions.



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Issues with CAPM

There are many issues surrounding the use of the CAPM as a means to determining appropriate discount and capitalization rates. In general terms:

- there are fundamental differences between business valuation and securities analysis;
- empirical evidence (based on a survey conducted by us of corporate acquirers) suggests that most corporate acquirers base their discount rates on long term corporate objectives (i.e. threshold rates of return). This is significantly more common than employing short term financial models with discount rates base on CAPM;
- the identification of so-called 'comparable' public companies is a difficult and subjective task. It is our experience that they seldom exist;
- Beta is a measure of the relationship between the stock of a particular company and the 'market portfolio'. It is influenced by returns that are both better than and worse than market performance. However, investors are more concerned with inadequate performance and likely do not interpret excessive returns as "risk". Therefore, the semi-variance (i.e. returns below market) are likely a more appropriate measure;
- Beta figures for a given public company vary based on factors such as the 'market portfolio' to which individual stock returns are compared (e.g. Canadian, U.S., world, etc.) and whether they are computed based on weekly or monthly data². As a result, the Beta factor for a particular company can be different depending on the source of data that is used;
- information on Betas is often unavailable in Canada (particularly for smaller companies). Furthermore, the Canadian public stock market lacks the broadness of the U.S public stock market and therefore the quantity of 'comparable' companies is often insufficient;
- proponents of CAPM in Canada will advocate the use of U.S. data due to its consistencies with Canadian data. However, important differences between the two countries still exist (such as income tax rates and degree of market liquidity), which might have a significant impact on the application of U.S. data in Canada;
- the basic CAPM model ignores company specific risk. Although this may be acceptable for a portfolio manager or an adequately diversified individual investor, it is inconsistent with the basis upon which businesses are acquired in the open market. As an example, its is not uncommon for private company acquirers to risk a significant portion of their net worth in the asset being acquired. Accordingly, company-specific risk can not be dismissed;

² Reference to Reilly & Brown study.



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- CAPM adds a stock market premium (which is net of corporate taxes) to pre-tax risk free bond yields. Therefore, the model assumes either an individual investor (comparing two pre-tax returns) or a tax-free institution. In addition, the equity premium is influenced (over the long run) by income tax legislation at the personal level (i.e. capital gains vs. interest income), which is typically not a principal concern for corporate acquirers.

Conclusion

Determining the 'en bloc' fair market value of a company requires a valuator to accurately quantify risk that is specific to the company being valued. This risk may be different than that reflected in publicly traded stock prices of so-called 'comparable' companies. Accordingly, the Beta factor may not accurately reflect industry specific risk or fully reflect the risk specific to the company being valued. Applying CAPM by rote calculation without considering necessary adjustments and its limitations and shortcomings may result in a misstated (perhaps materially so) value conclusion. Further, using CAPM as a starting point in a build up approach to selecting rates of return is in our experience inconsistent with the behavior of most corporate acquirers buying businesses in the open market.

It is our experience that using hurdle rates as a starting point and adjusting them for company-specific risk is more common amongst corporate acquirers than is the use of CAPM. We believe a hurdle rate approach affords the valuator the discipline required in assessing the overall risk (and hence the appropriate rate of return) associated with the company being valued.

Recent Development at Campbell Valuation Partners Limited ('CVPL')...

H. Christopher Nobes, a principal at CVPL, recently attained his Chartered Business Valuator ('CBV') designation. The CBV designation is highly recognized in Canada for its rigorous standards with respect to business valuation and is widely accepted by the Courts as a basis for achieving expert witness status. Mr. Nobes has been with CVPL for over four years and has gained a breadth of knowledge on business valuation, particularly in matters involving shareholder disputes.

As a result of our practice growing, we are pleased to announce the addition of a new associate, Christopher Polson, to our firm. Mr. Polson recently completed his Honours Commerce degree with Distinction at McMaster University, where he graduated among the top 1% of his class. Mr. Polson currently is in the process of pursuing his designation as a Chartered Business Valuator.