# Business Valuation

**Learning Outcomes**

After completing this module, students will be able to:

1. Define different measures of value.
2. Identify situations in which business valuation techniques can be applied.
3. Value a business using the income approach based on either dividends, free cash flow to equity, or free cash flow to the firm.
4. Value a business using the market multiples approach based on either the price/earnings, price/book value, or price/sales ratios.
5. Describe how control premiums and marketability discounts are used in valuing a company.

**Introduction**

Accountants and financial analysts must frequently estimate the fair market value of a business enterprise, its specific assets and liabilities, or damages that it has caused or incurred as a result of actions such as breach of contract or patent infringement. Fair market value is the price that willing and rational buyers and sellers with full information agree upon.

Business valuation is a complex process that is prone to error because of the difficulty analysts have forecasting a company’s future operations. This is why having an experienced professional with a background in valuations is so important to an organization. In Canada, professionals can earn the Chartered Business Valuator (CBV) or Chartered Financial Analyst (CFA) designation to develop their skills in this critical area. Many public accounting firms offer business valuation services in addition to their traditional services in business advisory, taxation, financial reporting, and insolvency. Investment bankers apply valuation principles when advising clients on public offerings or corporate restructurings. Venture capitalists employ them to price start-up companies.

The income, market multiples, asset-based, and residual income approaches are used to value a business. With the income approach, a business’s future operating cash flows are forecasted and then discounted using an appropriate cost of capital. The market multiples approach is a more straightforward method that uses industry average ratios such as price/ earnings, price/book value, or price/sales. These ratios are multiplied by a company’s earnings, book value, or sales per share to determine its fair market value. The asset-based approach takes a business’s historical cost balance sheet and restates its total assets and liabilities at fair value and possibly includes an estimate of goodwill. Finally, residual income starts with a firm’s book value and adds the present value of any income a business expects to earn more than its required rate of return.

These business valuation methods are also used in Module: Mergers and Acquisitions and Corporate Restructuring to determine take-over bids for business acquisitions.

**1.1 | Business Valuation Basics**

**Definitions of Value**

The value of a business can be defined in several different ways.

**Market value.** The price that a business or its specific assets or liabilities trade at in efficient markets.

**Fair market value.** The price that a business or its specific assets or liabilities should trade at in efficient markets. Fair market value is estimated by business valuators when a market value is not available or when markets are not operating efficiently.

**Investment or acquisition value.** By combining two companies, the acquirer can realize synergies such as higher prices or economies of scale that justify paying more than the target firm’s fair market value.

**Intrinsic value.** This is what an equity analyst believes a firm is truly worth after considering all relevant information and eliminating any short-term pricing irregularities. If financial markets are efficient, the intrinsic value should match the market value or the fair market value, meaning there is no mispricing due to market inefficiencies. Passive investors believe markets are efficient and typically invest in stock index mutual funds or exchange-traded funds (ETFs) with minimal stock turnover. Active investors think that abnormal returns or alphas can be earned by identifying mispriced shares. If the current share price is lower than its intrinsic value, the analyst will issue a buy recommendation, believing the company is undervalued. The opposite will happen if the share price is above its intrinsic value. Continuous trading in search of alpha results in high stock turnover.

**Going-concern value.** The value of a company or its specific assets or liabilities, assuming it continues to operate, and management tries to maximize shareholder value. Companies trade at a premium to the value of their net assets and liabilities because of the goodwill that an organization can generate through its strong reputation, experienced workforce, and established systems and procedures. Market, investment, and intrinsic value all assume a business will continue to operate as a going concern.

**Liquidation or breakup value.** The value of a business or its specific assets or liabilities, assuming the company will discontinue its operations. The liquidation value is generally below the going-concern value, but in some cases, when a company is poorly managed, under competitive pressure, or experiencing financial distress, this may not be true. These firms are said to be worth more “dead than alive.”

**Applications of Business Valuation**

There are many situations where a company needs to value a business or its specific assets or liabilities. The most important include:

**Private company transactions.** The majority of corporations are privately held by a small group of investors, including the founder(s), their family members, managers, and employees. These investors may want to buy additional shares or sell them upon their death, disability, or termination of employment or if they decide to retire, change jobs, or diversify their investment portfolios. These shares do not trade publicly, so business valuators provide an estimate of their fair market value. Valuators also help improve the company’s operations before the sale, so shareholders receive the best possible price. This includes finding interested buyers, overseeing the bidding processes, and completing all formal purchase or shareholder/partner rights agreements.

**Initial or secondary public offerings.** Private companies go public to increase their access to capital and provide investors with greater market liquidity when selling their shares. Public companies use secondary offerings to raise additional equity capital to fund growth opportunities when retained earnings are insufficient. Business valuators help determine an appropriate offering price in both situations.

**Buy, sell, or hold recommendations.** Major public companies are followed on an ongoing basis by a group of equity analysts who regularly issue earnings forecasts and formal research reports. In these reports, analysts make buy, sell or hold recommendations to their clients based on a thorough review of the company, its industry, and the overall economy and an estimate of the share’s intrinsic value.

**Timing stock repurchases.** Stock repurchases provide management with greater financial flexibility as they are not committed to paying regular cash dividends. Repurchases are best made when a company’s shares are undervalued to benefit the remaining shareholders. A business valuation helps determine when these shares are mispriced.

**Internal management.** A manager’s primary goal is to maximize shareholder value, so they want to know if their firm’s share is undervalued. If it is, they will act to correct the market’s misperception. Management also wants to see the effect new strategic initiatives will have on the share price, so they can better sell these ideas to the firm’s board of directors, shareholders, and stock analysts.

**Take-over bids.** Companies sometimes buy other businesses to generate synergies for themselves or the target firm, leading to a higher share price post-acquisition. Business valuators carefully measure these synergies, so the acquirer does not overpay.

**Fairness opinions.** If shareholders receive a take-over bid from a potential acquirer, management must provide them with a fairness opinion before the offer expires. This opinion includes a valuation of the company and a recommendation on whether to accept or reject the offer.

**Ownership percentages for a venture capitalist.** Venture capitalists provide needed financing to risky start-up companies when other investors will not. The value of a start-up must be measured, so the venture capitalist receives an appropriate portion of the firm’s equity in exchange for their investment. This is particularly difficult for new companies as their growth prospects are uncertain and their shares do not yet trade publicly.

**Valuing divestiture, spin-off, or going-private transactions.** A company may sell or spin off part of its operations for a variety of reasons, such as focusing on its core business or raising needed capital. A majority owner or group of managers may also decide to take a public company private to avoid the scrutiny of the financial markets so they can focus on a business turnaround. A business valuator needs to determine an appropriate asking price.

**Liquidations or reorganizations.** When a company experiences financial distress and is declared bankrupt by the courts, it can either sell its assets and pay what it raises to its creditors (i.e. liquidation) or attempt to restructure its operations to re-emerge from bankruptcy (i.e. reorganization) successfully. Being able to value a business’s assets accurately is critical to getting the most possible for creditors in a liquidation. In a reorganization, valuation principles are used to determine the percentage ownership creditors will receive in a debt-for-equity swap or for new equity financing.

**Share-based compensation.** A large portion of management compensation comes from stock options and restricted shares to directly tie pay to share performance, thus reducing agency costs. Business valuation tools are used to design these plans, so they provide adequate compensation.

**Fair value accounting in financial reporting.** International Financial Reporting Standards (IFRS) allow companies to report many of their tangible and intangible assets and liabilities at fair market value instead of historical cost to improve the quality of financial reporting. Intangible assets like brand names or trademarks are particularly difficult to appraise. Valuation principles are also used to allocate the purchase price in a business acquisition between a company’s fixed assets, intangible assets, and goodwill and to measure any subsequent goodwill impairments.

**Transfer pricing.** Transfer pricing provides an accurate measure of a division’s or geographic area’s performance by fairly valuing intercompany sales. Companies may manipulate transfer prices to lower taxable income in a high-tax jurisdiction or increase profits in a particular business unit. Business valuators can help companies establish fair transfer pricing systems, mediate any company disputes, and provide expert testimony when the fairness of transfer prices is challenged in the courts.

**Fair value of assets for tax purposes.** Under the Income Tax Act (ITA), an asset’s fair market value is used to calculate any capital gains taxes owed in a deemed disposition of property or a non-arm’s-length transaction. A deemed disposition occurs when a person is considered to have disposed of property even though a sale did not occur. This is common with the transfer of property as a gift or when a business is given or sold to a family member upon the death of a taxpayer. Non-arm’s-length transactions are with related persons where the fairness of the consideration is usually questioned.

**Litigation support.** The fair market value of damages must be quantified for cases such as breach of contract, insurance claims, intellectual property infringement, business interruption, product or professional liability, asset expropriations, construction contract matters, personal injury, matrimonial property issues, or disputes with minority shareholders.If the parties cannot reach an agreement, the matter is referred to the courts, and a business valuation professional may be asked to provide expert testimony concerning appropriate damages.

**Sell-Side and Buy-Side Analysts**

Financial markets are divided into sell-side and buy-side activities. The sell-side primarily consists of investment bankers who construct, promote, and sell financial instruments such as stocks, bonds, and asset-backed securities. These securities are sold to the buy-side of the market, consisting of both retail and institutional investors, including pension plans, insurance companies, banks, trust companies, hedge funds, mutual funds, ETF companies, and other investment management firms.

Investment banks employ sell-side analysts to assist in pricing initial and secondary public offerings and provide ongoing coverage of these shares in the secondary market. The earnings forecasts, research reports, and buy, sell, or hold recommendations these sell-side analysts provide are valuable sources of information. The website of a large corporation typically lists the sell-side analysts that follow their firm.

Buy-side analysts work for institutional investors, making recommendations that are used in managing their funds. These analysts collect information from company financial disclosures, sell-side analysts, conference calls with management, company visits, and financial information firms such as Bloomberg or Thomson Financial. Any information is typically used by the institutional investor only and is not shared with the public.

Whether recommendations made by sell-side analysts are objective is a contentious issue in the investment industry. Investment bankers directly benefit from any favourable coverage provided by their sell-side analysts through a higher initial public offering price or a corporate client’s promise of future investment banking work. Many investment bankers also provide investment advisory services to individual and institutional investors. Financial firms do attempt to separate the activities of their investment banking and advisory units through strict ethical standards relating to the exchange of information. Despite this, investment advisory clients worry that financial advisors will be forced to purchase shares on their behalf to support a corporate client’s share price, contrary to their best interests. The movement of insider information between the investment banking and advisory units about possible corporate acquisitions, changes in dividend policy, or other corporate finance issues that will affect the share price is also a concern.

**1.2 | Income Approach – Dividend Discount Model**

The value of any asset equals the present value of the future cash flows investors will receive. For a rental property, the cash flows are the rental payments minus any cash expenses. For a bond, they are the regular interest payments plus the return of principal at the end of the bond’s life. Determining the value of a business and its equity securities is no different. The price of a common share equals the present value of all future dividends paid to the common shareholders. Preferred share dividends are not included as they are considered debt payments for valuation purposes. Preferred shareholders are not entitled to any of the business’s residual income, like common shareholders, but only fixed payments like bondholders.

It is impossible to tell exactly how long most companies will survive, so valuators adopt the going concern principle and assume that their dividends will grow indefinitely. Lower dividends now will mean higher dividends in the future as earnings are reinvested in the business. It is challenging to estimate the value of anything over an indefinite period accurately. To deal with this uncertainty, business valuators use three variations of the dividend discount model (DDM).

**Variations of the DDM**

**One-stage or constant growth.** This model assumes that dividends grow indefinitely at the same rate. Using the present value of a perpetuity with growth formula, the intrinsic value (V0) of a business today can be determined based on estimates of next year’s dividend (D1), the appropriate cost of common equity (kc), and the expected long-term growth rate of the company’s dividends (gd).

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This model is best used to value mature companies with stable long-term earnings and dividend growth rates and a consistent relationship of dividends to earnings (i.e. a stable dividend payout ratio) over time.

The growth rate cannot exceed the nominal growth rate of the economy, which is usually 2.0% to 3.0% or the company will essentially become the economy over the long term, but it can be less for slow-growth, no-growth, or negative-growth companies. The cost of common equity reflects the risk level of the asset being valued. Calculating the appropriate cost of common equity, cost of debt, and the weighted average cost of capital was examined in Module: Cost of Capital. For simplicity, the capital asset pricing model (CAPM) will be used throughout this unit to estimate the cost of common equity. CAPM states:

|  |  |
| --- | --- |
| kc = kf + Ba (km – kf) | kc = Cost of common equity  kf = Risk-free rate  Ba = Beta of an asset  km = Market rate  km – kf = Market risk premium |

**Two-stage.** This model is more flexible as it allows for a high-growth stage of varying lengths initially, possibly due to a new product innovation, followed by a mature-growth stage with lower growth once industry competition intensifies, new companies enter the market, and demand stabilizes. The value of the firm relating to the mature-growth stage only is called the investment’s terminal value.

Terminal Value

V0 = + + +

In practice, a valuator typically includes a supernormal growth rate estimate based on their research for the first stage, which is usually three to five years. Estimating growth accurately after that is difficult, so valuators typically assume a second-stage growth rate that approximates the long-term growth rate of the economy or less, as in the one-stage DDM.

**Three-stage.** This model improves on the two-stage model by allowing a more gradual transition from the high-growth to the mature-growth stage by introducing a middle stage where the growth rate declines in a linear pattern. In most cases, it is unreasonable to expect the change in the growth rate to occur in just one year. The length of this transition stage is subjectively determined and varies with each analyst. If the high-growth rate immediately starts to decline until it reaches the mature-growth rate, this is referred to as the H-Model.

**Estimating the Dividend Growth Rate**

The dividend growth rate can be estimated using a company’s historical growth rate, forward-looking growth rate, or sustainable growth rate (SGR).

**Historical growth rate.** This growth rate is calculated based on dividends, earnings, or sales. Dividends are typically more stable than earnings or sales, but the trend of substituting stock repurchases for dividends makes this amount less reliable. Stock repurchases can be incorporated into the DDM by using total distributions, which are cash dividends plus stock repurchases, but repurchases are typically unstable, making them difficult to forecast. The earnings or sales growth rate is often used as a proxy for the growth rate of dividends.

The geometric mean provides a more accurate measure of growth compared to the arithmetic mean, especially when the historical growth rates have been erratic. The geometric mean is less precise when only the first and last values are used or if either of these two values is negative, so regression smoothing should be employed. Always estimate growth over a full business cycle to average out yearly fluctuations. Adjust earnings for aggressive revenue recognition, excessive cost capitalization, deferral of discretionary costs, the timing of gains and losses, or non-recurring items if the information is available. Earnings should be expressed on a diluted per share basis.

Research indicates that historical growth rates are not highly correlated with future growth rates. More variable historical growth rates are poorer indicators of future growth. Historical growth rates are also not good predictors of future growth rates if a company is experiencing changing competitive forces, government regulations, business mix, operations, capital structure, or dividend policy.

**Forward-looking growth rate.** This growth rate is generally more accurate than a historical growth rate as it is based on forward-looking information that is not reflected in past earnings. Valuators can use their estimates, the estimates of a particular equity analyst who follows the company, or a consensus forecast of these analysts. Financial information service firms provide consensus growth forecasts. When using the future growth rate estimates of other analysts, be wary of sell-side analysts who work for financial firms that have a business relationship with the company being valued. Buy-side analysts are usually much more objective but often do not share their forecasts with the public.

Research shows that forward-looking growth rates are more accurate than historical growth rates in the short term, but provide no superiority past three to five years. Using a high number of quality analysts provides better forecasts, so select analysts with the most accurate past predictions. More disagreement among analysts means consensus forecasts are less reliable.

**Sustainable growth rate.** This is the growth rate of sales that a company can support using retained earnings only while maintaining constant financial fundamentals, including its rate of return on equity (ROE) and retention ratio (R). ROE is a function of a firm’s rate of return on assets (ROA) and debt ratio (DR), while ROA is determined by its net profit margin (NPM) and total asset turnover (TAT). The growth rate of sales is a proxy for earnings and dividend growth.

Formula 1

NPM

Debt ratio (DR)

TAT

ROA

Formula 2 =

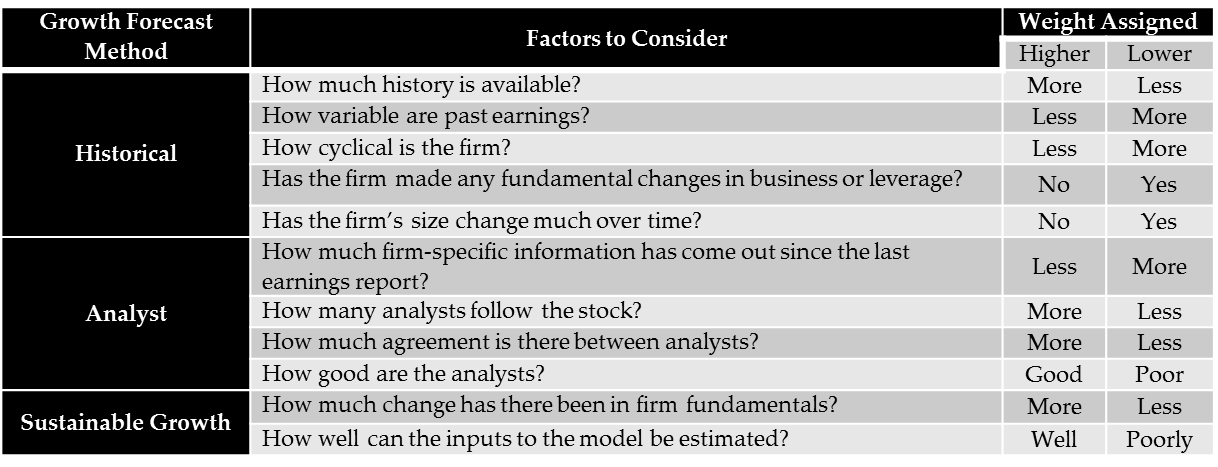
Most companies try to grow using retained earnings only because:

* Issuing new equity may create control problems for existing shareholders.
* Issuance costs for new equity are high, especially for start-ups and small businesses.
* Start-ups and small businesses may have exhausted all sources of new equity.
* Earnings per share are diluted in the short term as it takes time for new equity to be effectively utilized.
* Managers are concerned about raising new equity when their shares are undervalued, as it hurts existing shareholders.

SGR is also useful for valuing firms that have recently undergone significant operational and financial changes, as their historical data is not representative of the future.

The historical growth rate, forward-looking growth rate, or SGR can be used alone or combined by calculating a weighted average of the three methods. Exhibit 1 outlines the different factors that should be considered when choosing the best method or deciding on the appropriate weights.

**Exhibit 1: Selecting a Growth Rate**



Source: Damodaran, Investment Valuation, 1996.

**Applying DDM**

Other factors to consider when applying the DDM include:

* The higher the growth rate during the high-growth stage, the shorter the growth period will likely be as growth regresses to the mean faster.
* Multi-stage models allow for non-payment of dividends initially, but this is difficult to implement in practice because a lack of dividend history makes estimating future dividends difficult.
* Payout ratios, betas, growth rates, ROAs, and debt ratios vary by DDM stage. Spreadsheet modelling is used to deal with this complexity and ensure all estimates are consistently applied. As companies go from the growth to the mature stage, ROA falls as growth opportunities disappear and competition eliminates abnormally high-profit margins. Payout ratios rise as less funds are needed for expansion. Debt ratios rise as mature companies become more stable and appealing to lenders. Beta falls as investments become less risky.
* Business valuators typically put little effort into determining the terminal value of a company other than to estimate the long-term growth rate. Yet, it accounts for a very high proportion of the firm’s value.
* Small variations in inputs such as kc and gd result in significant differences in valuations, so great care must be taken when estimating these variables. Sensitivity or scenario analysis is used to evaluate the effect of any potential errors.
* DDM only determines the fair market value of a non-controlling stake in a business when investors cannot influence the dividends paid. If an investor acquires a controlling interest and sets the dividend, then another valuation approach should be adopted.
  1. **| Income Approach – Free Cash Flows**

**Free Cash Flow to Equity**

The present value of dividends does not always accurately measure a firm’s value. Some companies do not pay dividends, while others pay dividends that are either well below or above what they should be paying. Some reasons for this include:

* + Deceive the stock market into thinking their performance is better than justified (dividends are too high).
  + Increase their financial flexibility by maintaining high cash reserves and a sub-optimal debt level (dividends are too low).
  + Reduce issuance costs by using retained earnings only to fund growth (dividends are too low).
  + Retain cash for unprofitable investments and expensive management perks (dividends are too low).
  + Substitute stock repurchases for cash dividends to lower taxes paid by investors (dividends are too low).

To correct this problem, free cash flow to equity (FCFE) is substituted for dividends. FCFE is the residual cash remaining after a company pays for all its capital expenditures net of any financing. Agency theory says this cash should be paid out as dividends to the common shareholders since the company has no other positive net present value projects in which to invest. Shareholders can then redeploy this capital to other, more profitable investments. FCFE is useful when an investor acquires a controlling position in another company, enabling them to adjust the dividend to the level that maximizes shareholder value.

FCFE is calculated as:

Formula 1 FCFE = NI + NCC – Δ NWC – CE + NB

Explaining the FCFE formula, net income (NI) is converted into cash flow by adding back non-cash charges (NCC) such as depreciation (D) and gains/losses on asset sales and deducting any change in net working capital (NWC). Capital expenditures (CE) are then deducted. Only a portion of CE is paid for in cash, so new debt minus principal payments or net borrowing (NB) is added back.

FCFE can also be calculated using two other equivalent formulas:

Formula 2 FCFE = CFO - CE + NB

Formula 3 FCFE = NI – (CE – D) (1 – DR) – ΔNWC (1 – DR)

Formula 2 is equivalent to CFO, which includes adjustments for NCC and the change in NWC. Formula 3 is an algebraic manipulation of formula 1, except it only includes D instead of all NCC, as it assumes D is the largest component of NCC, which is usually true.1 Multiplying by one minus the debt ratio (1 – DR) provides the portion of CE or the change in NWC that is paid in cash. Multiplying by (1 – DR) also allows valuators to use an estimate of the forward-looking debt ratio instead of the current NB.

Once FCFE is estimated for future periods, it can be substituted for dividends in the one-stage, two-stage, or three-stage growth models to calculate the value of the firm. Like dividends, FCFE is carefully estimated for each of the next three to five years and then more generally in subsequent periods. Pro forma financial statements are prepared using the percentage of sales method based on a sales forecast. Inputs for any of the formulas can be taken from these proformas. These skills are developed in Module: Financial Planning and Growth and Module: Business Forecasting.

**Applying the FCFE Model**

Other factors to consider when applying the FCFE model include:

* Preferred shares are considered debt and not equity for valuation purposes, so any dividends or sinking fund payments should be treated as interest and principal.
* CE and NWC needs will vary with growth in sales.
* CE is usually greater than D in the growth stage, but this difference narrows and approaches zero as the company matures.
* Like DDM, slight variations in inputs such as kc and gd result in significant differences in valuations, so great care should be taken in estimating these variables. Sensitivity or scenario analysis is used to evaluate the effect of any potential errors.
* If an investor acquires a controlling interest in another company, any potential synergies can be included in FCFE to determine the firm’s investment or acquisition value.

**Free Cash Flow to the Firm**

Some analysts feel that using free cash flow to the firm (FCFF) produces a more accurate business valuation than FCFE. FCFF is the residual cash remaining for investors after making all investments in NWC and CE. Investors include not only common shareholders but also debtholders and preferred shareholders. FCFF can be calculated using either of the two equivalent formulas:

Formula 1 FCFF = EBIT (1-TR) + NCC – CE – Δ NWC

Formula 2 FCFF = CFO + (I) (1 – TR) – CE

Formula 1 is similar to the formula for FCFE except for interest (I), which is removed from NI by using earnings before interest and taxes (EBIT) times one minus the tax rate (1- TR). NB is eliminated as it relates to debt and preferred shareholders, who are now considered investors. When FCFF is substituted for FCFE in the one-stage, two-stage, or three-stage growth models, the value of the firm or its enterprise value is from the perspective of all investors. Because of this, the discount rate used is the company’s weighted average cost of capital (WACC) and not its cost of common equity.

WACC = (Wd) x (kd) + (Wp) x (kp) + (Wc) x (kc)

kd – Cost of debt

kp – Cost of preferred shares

kc – Cost of common shares

Wd – Weight of debt

Wp – Weight of preferred shares

Wc – Weight of common shares

To determine the value of the firm to the common shareholders only, the market value of the company’s debt and preferred shares are then deducted.

The income approach based on FCFF is similar to using FCFE, but it has several advantages. FCFF is less likely to be negative due to high financial leverage (i.e. higher interest costs) or the cyclical nature of the business. If financial leverage is expected to change significantly in the near term, FCFF will be easier to estimate than FCFE. Also, WACC is more stable than the cost of common equity, and reliable market values for debt and preferred shares are available if these securities trade in active secondary markets.

**1.4 | Market Multiples Approach** – **P/E, P/BV, and P/S**

When using the market multiples approach to value a firm, a benchmark multiple is first calculated that relates share price (P) to a measure of financial performance such as earnings per share (EPS), book value per share (BVPS), or sales per share (SPS). The benchmark is then multiplied by the company’s historical or estimated future EPS, BVPS, or SPS to determine its appropriate share price. Finally, this price is multiplied by the number of common shares to calculate the intrinsic value (V0) of the firm.

V0 = Benchmark () (EPS) (Number of common shares)

V0 = Benchmark () (SPS) (Number of common shares)

V0 = Benchmark () (BVPS) (Number of common shares)

Given the uncertainty of business valuations, analysts typically use more than one type of benchmark multiple to improve the accuracy of their results.

**Price/Earnings (P/E) Multiple**

A P/E multiple measures how much investors are willing to pay for each dollar of a company’s earnings. It is the most widely recognized and commonly used market multiple as earnings are the primary indicator of a firm’s financial performance, since it includes both revenues and costs. Over the long term, firms with low P/Es usually underperform the market while those with high P/Es outperform it.

Despite its popularity, using the P/E multiple to value a firm has several potential shortfalls. Many companies manipulate earnings to misrepresent their financial performance. Aggressive revenue recognition policies are adopted to record sales prematurely. Costs are reduced by excessive cost capitalization, altering accounting estimates like the bad debt percentage, or delaying discretionary costs such as advertising, maintenance, or R&D. Companies may not intentionally manipulate their financial statements, but the wide choice of accounting policies under IFRS may make them less comparable to other firms. P/E multiples also vary over the business cycle, especially with cyclical firms like automakers that experience large swings in sales and may have high degrees of operating and financial leverage that cause profits to be even more variable. Finally, earnings can sometimes be small, zero, or negative. Negative EPS is common for start-ups and cyclical companies, but is illogical when incorporated into a P/E multiple.

To apply the market multiples approach using P/E, analysts must calculate a firm’s EPS and then the benchmark P/E multiple.

**Calculating EPS.** EPS is calculated using either trailing EPS from the previous four quarters or leading (forward) EPS estimated for the next four quarters. Leading EPS is preferable as it is forward-looking and incorporates recent operational and financial changes, such as a company expansion or a revision to its capital structure. Trailing EPS should be used if reliable future earnings estimates are not available.

When calculating leading EPS, valuators can use their own earnings forecasts, forecasts of equity analysts who follow the company, or consensus forecasts of these analysts provided by financial information firms. The exact method used to calculate trailing and leading EPS varies among the information providers, so analysts must ensure all earnings data is measured the same way. Diluted EPS, which correctly includes the potential effect of convertible securities or options, should be used.

Earnings can be adjusted for aggressive revenue and cost recognition practices. Non-recurring accounting charges like discontinued operations, restructuring charges, and gains/losses on asset sales may also be eliminated so the P/E multiple reflects continuing earnings. Finally, adjustments can be made for differences in accounting policies adopted by companies, such as LIFO versus FIFO inventory. LIFO is not allowed under IFRS, but it is still regularly used by U.S. companies. In practice, making these adjustments is difficult due to a lack of information in the company’s financial disclosures, and it is also time-consuming.

Valuators typically normalize or average trailing EPS to compensate for the effects of the business cycle on earnings, including losses. The two methods used include:

**Average historical EPS.** Diluted EPS is averaged over the last business cycle.

**Average historical ratios.** The rate of return on equity () is averaged over the last business cycle. This average ratio is then multiplied by the company’s current BVPS. BVPS cancels out, leaving an estimate of EPS.

The average historical ratios method is preferred. If diluted EPS is normalized over the last business cycle, the older EPS figures will likely be smaller as they do not include the growth in the business over that period. Alternatively, ROE will not be affected by growth since both net income and shareholders’ equity rise as the company grows. Taking the average ROE over the last business cycle and then applying it to the current BVPS provides a more accurate measure of EPS. The opposite logic applies if a firm becomes smaller.

**Calculating the benchmark P/E multiple.** Once EPS is accurately measured, the benchmark P/E multiple is determined using one of the following methods:

**Comparable companies.** Companies with equivalent operational and financial characteristics should have similar financial ratios. As a result, the average or median P/E ratio for a carefully selected group of comparable companies (also called a peer group) should provide a reliable benchmark P/E multiple. Median values are typically used to eliminate the effect of outliers.

Industrial classification systems determine groupings of comparable companies. One commonly used system is the Global Industry Classification Standard (GICS) sponsored by Standard & Poor’s and MSCI. This system classifies companies by sector, industry group, industry, and sub-industry, with sub-industry being the most precisely defined category. Below is an example of how a company producing auto parts and equipment is categorized.

**Exhibit 2: Global Industry Classification Standard**

**Sector – 11 Categories**

Energy

Materials

Industrials

Consumer Discretionary

Consumer Staples

Health Care

Financials

Information Technology

Telecommunication Services

Utilities

Real Estate

**Industry Group – 24 Categories (Consumer Discretionary)**

Automobiles and components

Consumer durables and apparel

Consumer services

Media

Retailing

**Industry – 68 Categories (Automobiles and Components)**

Auto components

Automobiles

**Sub-industry – 157 Categories (Auto Components)**

Auto parts and equipment

Tires and rubber

To determine the most accurate benchmark P/E multiple, comparable companies should be selected from the relevant sub-industry group. If the number of companies in the sub-industry is insufficient to provide a reliable benchmark, the larger industry, industry group, or sector grouping may be used. However, these companies will be less representative of the firm being valued. P/E multiples for the industry, industry group, sector, or the stock market as a whole may be used for comparison if analysts feel a sub-industry is over- or undervalued relative to the larger economy. Mispricing sometimes occurs due to market inefficiencies that affect the entire sub-industry, such as the Internet-related stock bubble in the early 2000s.

**Historical average price multiples.** If reliable comparable company data is not available, the benchmark P/E multiple can be calculated using the company’s average or median P/E ratio over the last business cycle. By averaging the P/E ratio instead of EPS, changes in the business’s size are incorporated. Do not use this method if a firm’s business mix or level of financial or operational leverage has been altered, as past data will not be representative of future performance.

**Price/Sales (P/S) Multiple**

Some analysts prefer the P/S multiple to the P/E multiple because sales are easier to estimate, never negative, more stable than earnings over the business cycle, and subject to less accounting manipulation. Sales should still be normalized for the business cycle and adjusted for aggressive revenue recognition practices to provide the most accurate valuation possible.

The main problem with the P/S multiple is that it does not include operating expenses and interest, making it a poorer measure of a business’s overall performance. The P/S multiple is effective when valuing mature companies or firms with standardized operating procedures that result in similar cost structures. This is the case with franchises where P/S multiples are used to value individual outlets when they are traded between franchisees or with the franchisor. P/S multiples are also employed to value start-ups that are not yet generating profits.

**Price/Book Value (P/BV) Multiple**

Some analysts prefer the P/BV multiple to the P/E multiple because BV is nearly always positive, is more stable over the business cycle, and is harder to manipulate. The main problem with this multiple is that many assets and liabilities are recorded at historical cost instead of fair market value. Other assets, such as patents that are developed internally or off-balance sheet financing, such as take-or-pay contracts, are not included in the balance sheet at all. For the best results, book value should be recalculated to include all recognized and unrecognized assets and liabilities measured at their fair market value. This is difficult in practice because of limited company financial disclosures, and some intangible assets, such as superior employees, strong customer service, or superior product quality, are complicated to measure. Finally, the P/BV multiple is not suitable for service firms that have few fixed assets or companies in sub-industries with significant differences in cost structure due to varying labour or capital intensity. Remember that preferred shares and any preferred dividends in arrears need to be removed from book value, as only common equity is being valued.

**Final Valuation**

Business valuation is an imprecise process. Instead of relying on just one approach, most analysts employ several different valuation methods to improve the accuracy of their results. Some methods may be eliminated because their inputs are difficult to estimate or the final results are outliers. A weighted average of the remaining valuations is then calculated.

**Exhibit 4: Weight-Average Valuation**

|  |  |  |
| --- | --- | --- |
| **Method** | **Estimate**  **(CAD)** | **Weight** |
| DDM | 43.62 | 25% |
| FCFE | 36.42 | 30% |
| FCFF | 44.09 | 25% |
| P/E | 51.33 | 10% |
| P/BV | 53.87 | 10% |
| **Firm Value** | **43.37** | **100%** |

The weights are subjectively determined, and greater emphasis is placed on the methods an analyst feels are more reliable.

**1.5 | Control Premium, Marketability Discount**

The business valuation process is not complete when the value of a company is determined using the income, market multiples, asset-based, or residual income approaches. This value, which is referred to as the marketable minority interest value, may have to be adjusted upward or downward to incorporate a control premium or marketability discount.

**Exhibit 5: Control Premium or Marketability Discounts**

**Control Premium**

**Marketability Discount**

**Investment or Acquisition Value**

**Marketable Minority Interest Value**

**Non-Marketable Minority Interest Value**

**Control Premium**

A control premium is the additional consideration a buyer pays a seller over the marketable minority interest value to acquire a controlling interest. Investors with a controlling interest can make improvements to the company’s operations that a minority investor cannot, which results in synergies that increase the value of the firm.

Factors that increase potential synergies and the size of the control premium include:

* Poor management.
* Weak corporate governance.
* Excessive executive compensation and management perks.
* Ability to increase revenues and realize cost efficiencies.
* High discretionary expenses, such as advertising, that can be quickly reduced.
* Sub-optimal use of financial leverage.
* Low dividend payout resulting in unprofitable investments and large amounts of low-yielding, non-operating assets such as excess cash or real estate.
* Supermajority voting rules or weak non-controlling shareholder rights that entrench management and limit the likelihood of acquisition.
* Holding the balance of power between two competing shareholder groups (called a swing vote premium).

Control premiums average from 20% to 30% based on studies of share prices before and after corporate acquisitions. Acquisitions can be very lucrative for buyers as long as they do not overpay and give all the synergies to the seller. When the control premium is expressed as a percentage of a firm’s investment or acquisition value, it is referred to as a non-control discount. Synergies and control premiums, which are also called take-over premiums, are topics in the Module Mergers & Acquisitions and Corporate Restructuring.

**Marketability Discount**

A marketability discount is a reduction in the marketable minority interest value a buyer receives to fairly compensate them for the lack of a ready market for their shares. Marketability is not usually a problem for public companies whose shares actively trade in secondary markets, but it is for private firms whose shares are much less liquid. Marketability discounts typically range from 40% to 60% based on studies of share prices before and after initial public offerings. Going public is lucrative for shareholders in private companies due to the elimination of the marketability discount.

Liquidity is not the only factor that influences the size of a marketability discount. Any factor that makes a private company’s shares less appealing to potential buyers will increase the marketability discount. Many of these factors are measured separately and have specific names. Some examples include:

* A low prospect of a public offering or business sale by the current owner(s).
* High share issuance costs reduce the willingness to go public.
* Small firm size limits its access to capital, which raises the cost of borrowing.
* Weak performance due to poor governance and public financial oversight.
* Concentrated share ownership leads to abuses of power when dealing with minority investors.
* Limited access to financial information makes it difficult for investors to monitor the company’s performance.
* Low or infrequent dividends indicate low company profitability or agency problems such as excessive management pay or perks.
* Ownership of a large block of shares that are more difficult to sell (called a blockage discount).
* A small pool of potential buyers interested in buying the shares.
* A provision preventing investors from selling their shares for a specific period after an initial public offering to support the share price (called a lock-up agreement).
* Limited management depth so the departure of key staff exposes the company to considerable risk (called a key-person discount).
* Greater difficulty attracting strong managers due to lower salaries and fewer career opportunities within the firm.
* Limitations on the rights of certain shareholder groups, such as non-voting shares (called a restrictive shareholder agreement discount).
* Company actions are highly influenced by tax planning strategies and not by their business merit.

A private company does offer some advantages that help reduce the marketability discount. They are leaner and more flexible than public firms because of their limited access to resources and smaller size. A private firm is not as focused on short-term earnings and share price performance due to a lack of public oversight (i.e. the stock market), enabling them to concentrate more on long-term growth. Finally, agency costs may be lower as managers are also owners and will only hurt themselves if they choose not to maximize share price.

**1.6 | Professional Designations**

There are two professional designations available in Canada for those interested in a career in business valuations.

**Chartered Business Valuator.** These professionals focus on valuing individual transactions, assets, liabilities, or entire business enterprises, as well as litigation support, which includes quantifying business damages arising in legal disputes and providing expert testimony at trial if required. Most CBVs in Canada are also CPAs who work primarily as associates or partners in public accounting firms providing business valuation and other accounting services, including business advisory, taxation, financial reporting, and insolvency. Candidates usually complete their CPA designation and then pursue a CBV designation to expand their skill set. Public accounting firms provide excellent mentorship opportunities for candidates and allow them to participate in a variety of complex valuation engagements. After becoming a CBV, some members join firms specializing in business valuations, while others work as self-employed contractors.

To be accepted into the CBV program, candidates must have a degree or hold either a CPA or CFA designation. To earn a CBV, candidates must:

1. Complete six courses

Level I – Introductory Business Valuation

Level II – Intermediate Business Valuation

Level III – Advanced Business Valuation

Level IV – Special Topics in Business Valuation

Two electives from the following:

Litigation Support in Business Valuation

Corporate Finance

Valuation for Financial Reporting

Private Investments

2. Acquire a minimum of 1,500 hours of suitable experience

1. Pass the Membership Qualification Exam (MQE)

The 1,500 hours of work experience must contain at least 750 hours of Core Valuation Experience. According to the CBV Institute, this experience “… involves activities in connection with business valuation, corporate finance, private investments, and litigation support, where a conclusion as to the value related to a business, or where a conclusion of economic loss is reached.” The remaining hours consist of Non-Core Valuation Experience and are activities in similar areas that do not result in a conclusion of value. The MQE is four hours in length and is held every September. Candidates must complete their work experience within three years of writing the MQE to qualify for the designation. CPAs, CFAs, and graduates of some university courses in business valuations receive program exemptions.

**Chartered Financial Analyst.** CFAs manage the investment portfolios of high-net-worth individuals or institutions such as pension funds, endowments, insurance companies, or mutual funds and are experts in the different areas of investing, including equities, fixed income, and alternative investments like real estate, venture capital, and private equity. They are also skilled in risk management and hedging against commodity price movements, currency fluctuations, and credit risk. CFAs, unlike CBVs, focus primarily on the valuation of financial securities.

To be accepted into the CFA program, candidates must typically have a degree, but are allowed to enroll in and complete the first level of the program before graduating. They are also admitted if they have a combination of four years of post-secondary education and full-time work experience in an investment or non-investment area.

To earn the CFA designation, candidates must complete three levels of study over three years and pass a six-hour exam at the end of each level. The program requires well over 900 hours of self-study in 10 topical areas, including ethical and professional standards, quantitative methods, economics, financial reporting and analysis, corporate finance, equity investments, fixed income, derivatives, alternative investment, and portfolio management and wealth planning. The curriculum is based on an ongoing analysis of what practicing professionals feel is needed to succeed in the competitive investment industry.

To assist candidates in preparing for the very rigorous exams, the CFA Institute provides a detailed online curriculum and other learning resources such as end-of-reading problems and mock exams. Several private educational companies also provide preparation courses and practice exams to supplement what the CFA Institute offers. Before receiving their professional designations, candidates must complete 4,000 hours of qualified work experience and receive letters of reference from three professionals who attest to their experience and character. Compared to an MBA or Master of Finance, the CFA is a very affordable program that allows working professionals to complete a graduate-level credential in finance without taking time off work.

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1Proof: FCFE = NI + Dep – Δ NWC – CE + NB; FCFE = NI - (CE – D) – Δ NWC + NB; NB = (CE – D) (1 – DR) + Δ NWC (1 – DR); FCFE = NI - (CE – D) – Δ NWC + (CE – D) (1 – DR) + Δ NWC (1 – DR); FCFE = NI – (CE – D) (1 – DR) – ΔNWC (1 – DR)