

Chapter 8

Valuation

Learning Objectives

- To know the nuances of the concept of “value”
- To understand the valuation process
- To be able to do a valuation

Case: Franks Brothers LLC

Robert Franks was worried. Since his brother Bill died, Robert’s whole life had been turned upside down. He had lost his brother and trusted business partner, and now there were problems with Bill’s widow, Marta.

The business had been doing fine, but now Marta was faced with a potentially high and almost impossible-to-pay estate tax assessment. Because of this potential tax bill and her desire to get as much money as possible, Marta was demanding that Robert buy her out of the business. And she was asking a very high price, a much higher price than Robert had money to pay.

Seventeen years ago, Robert and Bill had gone to an attorney to have a “buy-sell” agreement written. The agreement specified that should one of them die or become incapacitated, then the remaining brother would have the option to buy out the interests of the brother who had died or who was incapacitated. If a buyout did not take place within 1 year, then the survivors had the right to sell their share of the business on the open market. There were 6 months left until the option expired.

The root of the present problem was that the price that was to be used in the buyout was to be determined by an appraisal of the business. Marta hired an appraiser who had determined that the price should be higher than anything Robert had felt was reasonable. This high value was also the cause of the high estate tax estimate. Lately, Marta was becoming more strident and vocal about her desire to be bought out, and the situation was beginning to cause general friction in the family as members of the family began to take sides in the matter.

When Robert talked with Marta’s appraiser about how the firm’s value was determined, Robert was told that the appraiser had looked at analogous public firms with similar growth rates to Franks Brothers and then applied a similar price to equity, price to book, and price to sales ratio to Franks Brothers LLC to determine the firm’s value without making any adjustments, such as the fact that Franks Brothers was privately held.

Seventeen years ago, when the buyout agreement was signed, the business had been struggling, but now it was growing rapidly. This rapid growth has been consuming more and more working capital. Since Bill’s death, Robert needed to pledge most of his personal assets to securing the working capital loan from the bank to finance this rapid growth. This loan also prevented the company from borrowing additional funds to pay Marta.

To complicate matters more, Bill owned only 45% of the business at the time of his death. Several years prior to his death, Bill had given shares representing 5% of the company to his alma mater. So the share of the business that Marta had to sell was not a controlling interest.

To further complicate the situation, a longtime employee of the company had felt that one of her supervisors had acted improperly toward her; she had quit and was suing the firm for

sexual discrimination and harassment. If the company lost the suit, the damages could be substantial.

Robert decided to become more knowledgeable about the process involved in valuing nonpublic businesses. He realized there were many aspects to the Franks Brothers situation that were unique:

1. The company was closely held, and Bill held the controlling interest. Marta was selling shares representing a minority interest.
2. The company did not trade in the public market and had no established market price to determine the firm's value.
3. The company was growing rapidly and was highly leveraged.
4. The employee lawsuit represented a substantial contingent liability.
5. Any appraisal would need to hold up in court, as there could be legal actions with respect to Marta and the employee suit.

Robert now knew that establishing the value of an entrepreneurial venture is complicated and definitely not straightforward. He was resolved to learn about valuing entrepreneurial privately held ventures.

Valuing any risky asset is not always as straightforward as it may seem. If no value can be established in a public market, then the problem of establishing value becomes more difficult. If there is no value that exists in a public market, then what does the concept of value entail? Is the value what two parties agree to? Is it what the accounting records of the firm indicate? Is value what an expert says it is? If valuing were as simple as providing answers to these questions, then parties would rarely disagree on what it is.

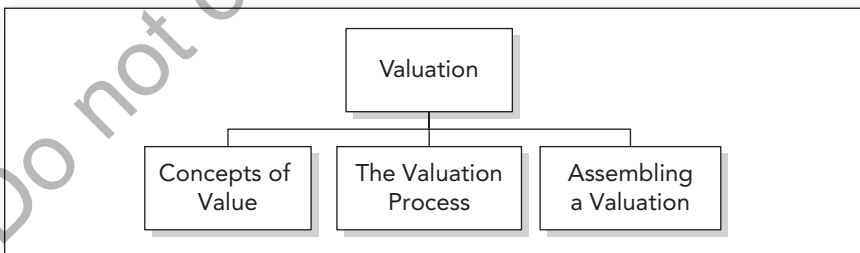
The most basic concept of value is that any risky asset is worth the present value of all expected future cash flows discounted back to the present at an appropriate risk-adjusted required rate of return. If we accept this concept, then two problems arise: What are those future cash flows (how certain are they, at what intervals do they occur, and how long do they last), and what is the appropriate risk-adjusted rate of return?

When valuing entrepreneurial privately held ventures, the inherent cash generation of the firm is important, but so are other features of the firm, such as technology, growth, management, industry sector, and strategy. Research into exit strategies for firms financed by private equity sources indicates that 74% of the exits are implemented through those firms being acquired by strategic buyers (i.e., another firm or investor with interest in the industry); about 20% of the exits are implemented through initial public offerings (IPOs) in the public market, and the remaining are through some specialized vehicle like a management buyout, Employee Stock Ownership Plan, trade sale, or a transfer to a family member (Dwivedi et al., 2012).

Since most entrepreneurial ventures are not ultimately sold in public market transactions, the concept of value and the constituents of value become even more key to the entrepreneur's understanding of the potential outcomes—a sale to another firm in the industry, a sale to another businessperson, a sale to a private equity firm, a conveyance to a family member, or a sale through an initial public offering.

Given these outcomes, except for the last one, a range of concepts is needed that describes value under different environments. Each of these concepts exists with the sole purpose of fulfilling a particular role in determining the standards that should be applied to the valuation process under different circumstances. Chart 8.1 presents a schematic representation of the material covered in this chapter.

Chart 8.1 Schematic of Chapter 8



Concepts of Value

Value is generated in many ways; each form may be a composite of one or more sources of value—for example, cash flow, intellectual property, tax impacts, enterprise control, liquidity, or marketability. All or any portion of

these sources of value may be relevant at a particular point in time or under a particular circumstance. Depending on the circumstances and context in which the question is being asked, value may take the forms identified below. According to Zukin (1990), the different concepts of value are situational and understood based on the context from which they arise:

Value cannot be used in isolation. The meaning of value can change, depending upon the context within which the term is used. Lack of clarity concerning these concepts often leads to material disagreements in specific valuations. Therefore, the term should never be used unless defined. (pp. 2–3)

The idea that there can be a number of interpretations of value is a critical first step in understanding valuation in general. Each valuation performed is situational and case specific, and each case drives the person doing the valuation to rely on different types of information, to emphasize different value streams, to consider different timetables over which those benefits occur, and to choose appropriate techniques to employ when considering the stream of benefits. In litigation, arbitration, tax appraisals, and face-to-face negotiations, the relevance of any specific estimate of value is highly dependent on the context and the audience. Ultimately, context drives the choice of valuation technique, type of data relied on, and certainty of conclusion. The American Society of Appraisers (ASA), various courts, government agencies (e.g., Internal Revenue Service [IRS]), and most authors in the field agree that seven types of value are routinely considered. Furthermore, these different valuation scenarios rely on different techniques and emphasize different sources of information and different aspects of value.

1. **Fair Market Value.** This is the most common definition of value. Fair market value is the value at which an asset will change hands when the exchange is between a willing buyer and a willing seller when neither is acting under compulsion and both have a reasonable knowledge of relevant facts. This definition is used by the IRS and the ASA and often referred to simply as *market value*. Market value implies a sale in an impartial market where it is not necessary for the buyer and seller to be face-to-face or to know each other but rather for the transaction to take place in an organized market that has a good supply of buyers and sellers (i.e., marketability) and where the trading action in the market produces regular price movements over time (i.e., liquidity). An example of such a market would be a public stock exchange like the New York Stock Exchange.

2. **Fair Value.** This concept of value often arises in the context of shareholder or owner disputes. This concept is usually related to some

judicial proceedings, for example, a shareholder derivative suit. When developing an opinion of fair value, the standard of practice associated with fair value is to consider all aspects of value that might reasonably affect the asset's value. Such factors would include the market value of comparable assets, cash flows, unique asset values, investment value, and any other factor that may affect the value of the asset subject to the proceeding.

3. Investment Value. This is the value that an enterprise has to a specific owner or purchaser. This concept of value is based on the purchaser or owner having special knowledge, expectations, or abilities that permit that purchaser or owner to generate enhanced value through exploitation of a specific niche or through synergy with another entity or firm.

4. Going-Concern Value. Two definitions of *going-concern value* are favored by the ASA:

- a. The value of an enterprise or an interest in an enterprise as a "going concern"
- b. The intangible value of a business enterprise that exists as a result of having a trained workforce, all of the necessary zoning and permits and licenses, having an operational plant with operational procedures, and systems in place.

The value implied under part "a" above is that there is value in being a part of an industry or community of firms within an industry. That value will be enhanced or diminished by other firm-specific characteristics, but first and foremost, there is value in simply being a part of the community of firms. With respect to part "b," the implication is that specific core competencies do, in fact, act as reservoirs of value.

5. Liquidation Value. There are two types of liquidation value: orderly liquidation and auction value. Conceptually, these two values differ in the time frame it takes to realize results and in the efficiency with which top values are obtained. The time frame is shortest for the auction, which can happen almost immediately, with an orderly liquidation consuming between 6 and 9 months. An estimate of the proceeds of an orderly liquidation is usually higher than the proceeds of an auction because an orderly liquidation presumes that end user purchasers can be found for the various assets of the firm, while the auction value is usually not as efficient at realizing top-dollar prices because many of the purchasers at an auction are usually not end users.

6. Book Value. The definitions of book value favored by the ASA are as follows:

- a. With respect to specific assets, it is the capitalized cost of the asset less accumulated depreciation or amortization as it appears on the books and records of the enterprise.
- b. With respect to a business enterprise, book value is the difference between total assets (net of depreciation, depletion, and amortization) and total liabilities as they appear on the books and records of the enterprise (it is synonymous with net book value, net worth, or stockholders' equity).

7. Enterprise Value. This is the value of the enterprise calculated as the Market Value of Total Equity (including preferred stock) + Market Value of Total Liabilities minus Cash and Cash Equivalents.

The Valuation Process

To generate value estimates for any firm, you need to consider a number of aspects of the firm value. While it is true that the theoretical value of any risky asset is the present value of all expected future benefits (i.e., free cash flows) discounted back at an appropriate “risk-adjusted rate” of return, the value propositions of a firm are not all locked up in one thing. Future benefits may take the form of free cash flow generated by operations or intangible property (IP), tax impacts or contingent events and premiums, or discounts related to marketability or liquidity. A detailed valuation methodology needs to consider all of these things.

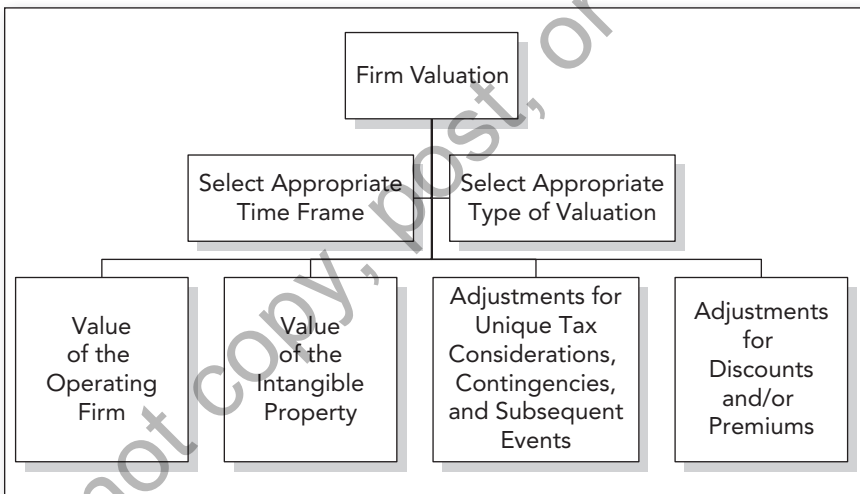
Valuation of a firm can be thought of as a process where various stores and forms of value need to be examined using techniques pertinent to the value therein. One needs to realize that the various categories of value may not initially be manifest in cash flow but may need to be analyzed and considered using appropriate methods to translate the value into cash flow (i.e., future benefits). Valuation should be determined by considering the operating aspects of cash flow generation, IP, tax issues, contingencies, and discounts or premiums for liquidity and marketability.

It is important to note that not all valuation systems and rules of thumb look at every aspect of the firm's value. They may in fact just examine specific aspects of firm value and assume that the measurement of just that part of the firm's value proposition is equal to use as a proxy for the entire enterprise. The best job of estimating firm value involves bringing to bear a

certain amount of skill and judgment; this means that the correct valuation techniques to apply to the various parts of the firm need to be used. Each category of value needs to be examined individually using techniques that are relevant to the particular type of asset. In this way, a complete picture of firm value can be obtained.

Chart 8.2 presents a schematic of this broader approach to value. Each of the various types of factors that can affect total firm value appears in its own box. Notice that the firm's operational value is in a box by itself; similarly, the value of the firm's IP, contingencies and taxes, and premiums (or discount) for control, liquidity, and marketability all appear in their own boxes. The firm's total value is the sum of all of these values or the summation of all of these factors.

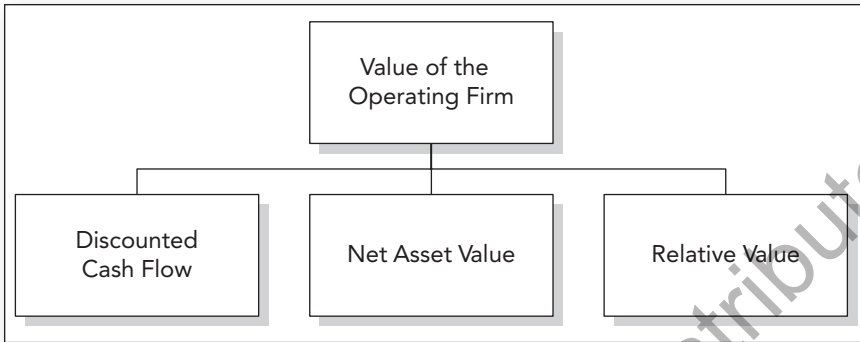
Chart 8.2 Firm Valuation



Three Main Valuation Methodologies of an Operating Firm

Generally, three types of methodologies are used to compute the value of an ongoing operation. Virtually all the valuation techniques can be categorized in one of these three methodological classifications. The material in this chapter is aimed at (1) performing a review, with several valuation methodologies available for use in estimating the value of an operational entrepreneurial venture, and (2) discussing the relative merits of these different techniques. Chart 8.3 provides a schematic of these three different valuation methodologies.

Chart 8.3 Value of the Operating Firm



When valuing the operating firm, we focus on the cash flow from operations, not the value of the firm's intangible property (IP), its real estate assets that are held for investment, any tax issues, or the impact of premiums or discounts. We are interested in the cash value the firm produces over time as an operating firm. Therefore, the first step in valuing the firm is to evaluate the cash flow-generating capability of the firm. This means that financial projections must be made, as discussed in Chapter 6. The primary methodology that can be applied to the valuation of operating companies is discounted cash flow analysis (DCFA).

Valuing the Operating Firm Using Discounted Cash Flow Analysis (DCF)

Mike Dinan, president of Dinan & Company (a large “buy-side advisory firm” in the private equity/venture capital space), stated at a lecture at the Thunderbird School of Global Management in April 2012 that discounted cash flow (DCF) “is the *gold standard* [emphasis added] of valuation techniques.” In his opinion, the “real value” of a venture is based on an analysis of the present value of the venture’s “free cash flow,” discussed in Chapter 3.

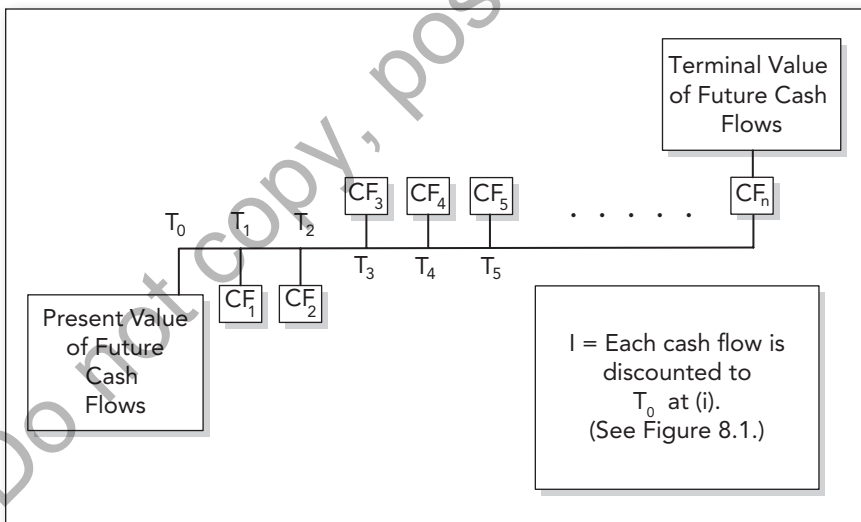
The DCF method is based on one of corporate finance's most fundamental concepts: The value of an asset (or bundle of assets) today is equal to the present value of the after-tax future cash flows expected to be provided by the asset over its economic life. This DCFA is an income approach to valuation and, when applied to a business venture, suggests that the value of a

venture today is the sum of the various future (but uncertain) cash flows to be generated by the operation of the venture, each discounted back to today at some rate of return that reflects the riskiness (and uncertainty) of those cash flows. To employ this method, there are three basic steps: (1) project the future cash flows generated by the each asset being valued, (2) estimate an appropriate discount rate (i.e., weighted average cost of capital), and (3) apply the estimated discount rate to the cash flows and sum up all of the present values.

The DCF process can be illustrated by placing expected after-tax cash flows on a timeline. Positive cash flows are plotted on the top of the line and negative flows on the bottom. Once the appropriate discount rate has been established, that discount rate can be used along with the forecast cash flow projection to compute the present value of all expected cash flows. This present value of expected cash flows is the DCF value of the venture.

Chart 8.4 schematically describes the DCF process, and the formula in Figure 8.1 mathematically describes it.

Chart 8.4 The Discounted Cash Flow Process



Most firms, even startups, expect to generate cash flows over long time horizons. Even when there is an expectation of long-term cash flows, it is not practical to make very long-term cash flow projections because

1. The accuracy of cash flows projected into the future degrades quickly as you go further out into the future.

2. The value of cash flows declines the further out they are; cash flows that are further away have less and less an impact on the present value of the expected cash flows.

Figure 8.1 The Discounted Cash Flow Formula

$$\text{Firm Value} = \sum_{i=1}^n \frac{CF_N}{(1+i)^N} + \frac{\text{Terminal } CF_T}{(1+i)^N}$$

where

- CF = the amount of cash flow generated in a particular period
- i = (WACC/number of compounding periods)
- N = the nominal period that the cash flow occurs
- CF_T = the terminal value of any future cash flows beyond CF_N

These two concepts indicate that cash flows should be broken down into two parts. Part 1 consists of the cash flows associated with the forecast period, and Part 2 is the estimated value of cash flows that are expected to be generated beyond this forecast period, as illustrated in Chart 8.4 and Figure 8.1. The first part of the timeline in Chart 8.4 and first part of the equation in Figure 8.1 explain how the present values of forecast cash flows are discounted back to the present; the second part of Chart 8.4 and the second part of the formula shown in Figure 8.1 explain how we provide for separate analysis of cash flows beyond the forecast period. When we are valuing the cash flow generated from the operating firm, the first decision is the time horizon of the analysis period. The second decision is the required rate of return that will be applied to those future cash flows. This concept is covered in Chapter 7. The third decision is the model to use to approximate the cash flows that occur beyond the forecast period chosen.

The Projection Period. For all of the reasons previously discussed, the initial forecast period should be as short as is practical. Three to 5 years should be the maximum forecast period given normal circumstances. If 3 to 5 years does not allow for firm profitability and positive cash flow to be achieved because of the nature of the industry, the forecast period can be extended to a point in time when firm profitability and positive cash flow are established and/or trends in profitability and positive cash flow can be assessed. The entrepreneur must remember that the longer the forecast period, the more error that will occur in the forecast.

Once the time horizon of the forecast is determined, the forecast should be made on a period-by-period basis. Making the forecast is part science and part art. All forecasts have inherent inaccuracies: Care should be taken to minimize these inaccuracies since time alone will inject even more error into the process. A discussion of the techniques that may be used when making a cash flow forecast was a part of Chapter 6.

Computing a Discount Rate. As discussed previously, in the most basic form, the value of any risky asset is the present value of all expected future benefits (i.e., free cash flows) discounted back at an appropriate “risk adjusted rate” of return. The two key questions are the following: (1) What are those “expected future benefits,” and (2) What is the “appropriate risk-adjusted rate of return”? While identifying the future cash flow is discussed in Chapter 6, computing the appropriate risk-adjusted rate of return is discussed in Chapter 7.

The required rate of return of risky asset-generating cash flows is referred to as the discount rate, and often this is equated with the firm’s weighted average cost of capital (WACC). The importance of WACC in asset valuation was discussed in Chapter 7 along with an outline of some of the widely used methods for estimating WACC, as well as examples of the approaches that may be used to calculate the WACC.

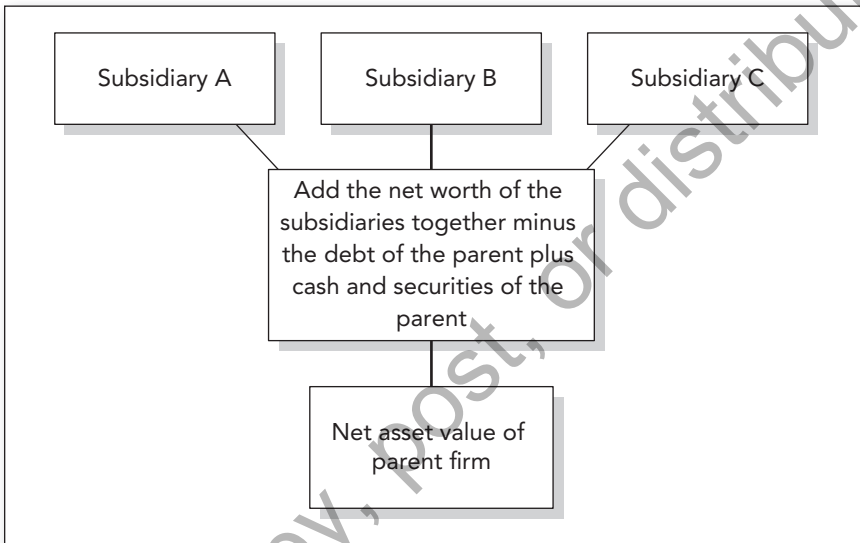
Summary of the DCF Approach. In its most basic form, the DCF approach is nothing more than computing the present value of all expected future benefits (i.e., free cash flows) discounted back at an appropriate “risk-adjusted rate” of return. The real work and struggle in calculating the DCF value of the firm are in making the projection of cash flows and in calculating the necessary WACC. The formula and a graphic representation of the technique are shown in Figure 8.1 and Chart 8.4, respectively.

Valuing the Operating Firm Using Net Asset Value (NAV)

The basic theory of the net asset value method of valuation is that the value of whole is the sum of its parts. In its most basic form, the **net asset value (NAV)** approach is an accounting-based concept. It is most often used to value firms where a holding company parent owns one or more asset-rich subsidiaries. Usually, this methodology is used to value firms where operational activity (like manufacturing or the provision of services) is not the key business of the firm. This model is best applied to situations that are repositories of tangible assets. This method is most appropriate in situations where assets such as real estate, oil and gas mineral rights, mining claims or properties, farmland, timber, or water are held as assets or inventory.

The first type of NAV calculation is based on a purely accounting concept. When viewing the problem from an accounting point of view, the procedure is simple; the solution is adding together the equity value of all of the firm's subsidiaries and subtracting the value of the parent company's debt while adding back any cash or securities (see Chart 8.5).

Chart 8.5 First Type of Net Asset Value Calculation



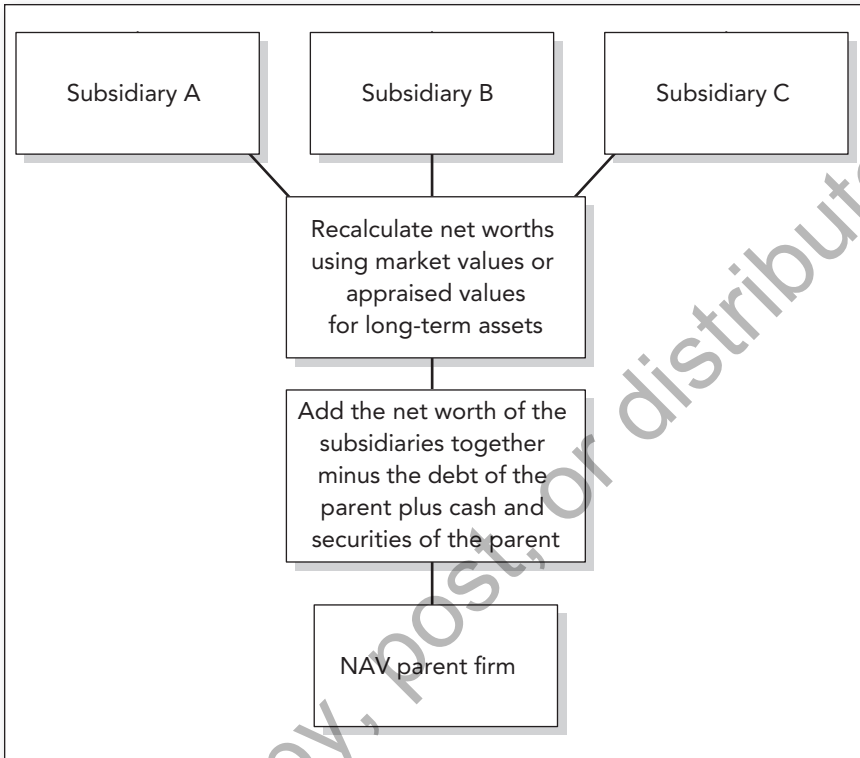
This approach is limited in that it identifies value only from an accounting perspective and is not representative of the actual storehouse of value at the firm. Using this technique means that value at the subsidiary firms is lost or understated because assets are not valued at market value, replacement value, or what appraisers would call their highest and best use.

The second type of NAV calculation is to replace the book values of the long-term assets at the subsidiary company level with market values, replacement values, or appraisals. This technique has the impact of expressing the net worth of each subsidiary company in terms of its contemporaneous asset value net of its current level of outstanding debt (see Chart 8.6).

If the subsidiary firms are operating firms, it is even possible to use the DCF method to value them individually and then to use that DCF value as a proxy for firm value by adding the value of the subsidiary firms together.

These two approaches to NAV are basic and are often used when firms are rich in assets.

Chart 8.6 Second Type of Net Asset Value Calculation



Relative Valuation. The last method that is used to value the operating firm is the **relative value (RV)** method. RV is the least descriptive method when it comes to uniquely considering the details of the firm's operation. However, without a doubt, it is the methodology that is most often employed by investment bankers, private equity principals, and venture capital principals.

Relative value measures are ubiquitous. Basically, they are used as readily available heuristics (i.e., rules of thumb) that are employed in shorthanded ways to estimate value. All of the market ratios discussed in Chapter 4 are forms of relative value and can, on their own, be considered relative valuation techniques. Other ratios not discussed in Chapter 4 also represent various relative value measures. Table 8.1 summarizes the most commonly used relative value measures.

Table 8.1 Various Relative Value Measures

Measure	Computation	Basis of Value
Price to book value (P/BV)	Price of share / book value per share	Expresses what an investor will pay for \$1 of book value
Price to earnings (P/E)	Price of share / net earnings per share	Expresses what an investor will pay for \$1 of earnings
Multiple of sales	$K * \text{sales (annual)}$	Estimate of firm value expressed as a multiple of annual sales
Multiple of net income	$K * \text{net income (annual)}$	Estimate of firm value expressed as a multiple of annual net income
Multiple of EBIT	$K * \text{operating earnings (EBIT)}$	Estimate of firm value expressed as a multiple of annual EBIT
Multiple of EBITDA	$K * \text{operating earning + noncash expenses (EBITDA)}$	Estimate of firm value expressed as a multiple of annual EBITDA

The various measurements where value is assessed as a multiple of some aspect of sales, cash flow, or profit are the relative value measures most widely used. The interpretation of these measurements is fairly straightforward. Firm value is expressed as a multiple (k) times some other aspect of the firm's financial performance. If the ratio is EBITDA and the multiple (K) is 4, then the firm is worth four times the firm's known EBITDA. The same analysis would hold true if other multiples were used to estimate value, such as ($K * \text{sales}$), ($K * \text{net income}$), ($K * \text{EBIT}$), and ($K * \text{EBITDA}$). In each case, firm value would be expressed as a multiple (K) of some measurement of the firm's income or cash flow statements. Higher multiples imply higher value, at least relative to the price investors are willing to pay for a dollar of EBITDA, EBIT, net profit, or sales.

To know what the appropriate multiple should be is the part of the process that requires the most skill. Investment bankers indicate that they acquire this information through experience. However, it is worth noting

that many sources of data accumulate and update this type of information. Firms like Preqin, Pitchbook, Thomson Reuters, Datamonitor, and Standard & Poor's all publish this type of data and can be relied on as a good source of current information.

Summary of Valuing the Operating Firm. Of the three forms of valuing the operating firm, the most time-consuming and involved method is the DCF method. It is most difficult to use because

1. making accurate and robust projections of a firm's sales, profits, and cash flow is very hard to do, and
2. computing the appropriate risk-adjusted rate of return (which we referred to as WACC) is also complicated and involved.

Being successful at both making an accurate projection of profits or cash flow and computing an appropriate WACC is as much art as science. However, the method is the best for valuing the firm because:

1. A good projection will closely duplicate the firm's business processes and will be the best proxy for describing future benefits from operations.
2. The WACC computation generates a rate of return geared at compensating all of the providers of firm capital on a risk-adjusted basis. Although it has some weaknesses, it does represent an appropriate way of associating an appropriate risk-adjusted rate of return to the firm's capital base.

It is best to use several methods to compute RRR_{equity} , covered in Chapter 7, to determine a range of WACC possibilities. This can be accomplished by generating a range of free cash flow (FCF) projections to produce high, low, and expected cash flow projections. By discounting the cash flow projections using the various WACC rates as the discount rate, the analyst will output a range of values that define a range of likely value for the operating portion of the firm. Computing the value of the operating portion of the firm in this manner will generate a combination of outcomes related to the level of WACC and the extent of FCF. This range of outcomes can be arranged in a matrix like the one in Table 8.2.

The value of this approach is that it generates a range of operating firm values that have been derived quantitatively from the firm's cash flow, and this value can serve as the basis for establishing an estimate of the firm's

ultimate value after considering IP, taxes, contingencies, subsequent events, and premiums or discounts.

Table 8.2 Range of Discounted Value of the Operating Firm at Different Cash Flow and WACC Levels

	WACC _{High}	WACC _{Average}	WACC _{Low}
CF _{High}			Highest discounted value
CF _{Expected}		Average discounted value	
CF _{Low}	Lowest discounted value		

Valuing Intangible Property (Intangibles)

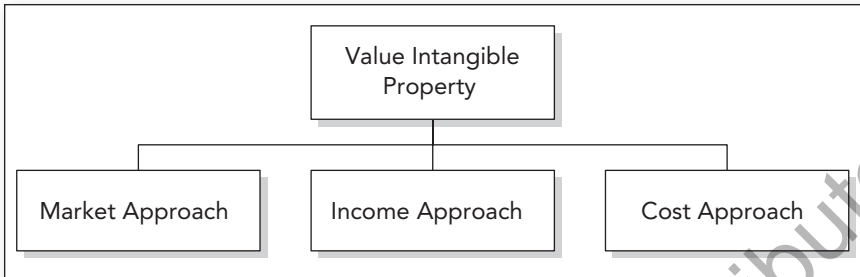
Intangible property is a class of assets that are not included in the process of valuing the operating firm and cannot generally be considered physical objects. These assets can be classified into the following:

1. Intellectual properties, which are assets related to either (1) copyrights, trade names, and trademarks or (2) patents.
2. Customer-related assets such as customer lists, unique customer contracts, or special customer relationships like sole supplier status.
3. Protected processes such as trade secrets, unique fabricating capability, or computer-processing capabilities.

All three of these various categories of assets can be valued, but not as easily as an asset-producing ongoing cash flow stream or an asset consisting of real estate or securities, any of which have more easily obtainable public market prices or comparables. Although sometimes there are publicly disclosed comparables that can be used as reference points for some IP, there is not an organized market in which they trade on a regular basis. There are three primary methods used in valuing intangibles (see Chart 8.7):

1. The market approach
2. The income approach
3. The cost approach

Chart 8.7 Value Intangible Property



The Market Approach. This method involves finding a similar type of asset that has been traded in a publicly disclosed transaction. There are not secondary markets for intangibles, so information about a comparable transaction is not always available; however, when intangible property is sold, it may generate a press release or report in a trade publication or be noted by the investment banking or business brokerage community. Some general or even a specific record of the sale may be found. These transactions can become the basis for a comparable analysis.

It is not often that intangibles can be valued in a market approach, but some types of intangibles are routinely valued this way. This is usually the case where certain key parts of the firm's profit-generating capability are being bought and sold. The following is a list of assets where the market approach is often applicable:

1. In banking:
 - a. Core deposits
 - b. Mortgage servicing fees
 - c. Loan portfolios
 - d. Trust accounts
2. In real estate:
 - a. Water rights
 - b. Mineral rights and leases
 - c. Easements
3. In communications and cable services:
 - a. Subscribers
 - b. Long-distance customers
 - c. Customers involved with data transmission and reception

4. In retail:
 - a. Liquor licenses
 - b. Franchise agreements (if transferable)
5. Other industries:
 - a. Landing rights (in aviation)
 - b. Certificates of need

The normal way for these types of intangibles to be valued is using some generally accepted ratio of revenue or cost or, in some cases, a flat amount per unit. For example:

1. Mortgaging servicing is usually valued at 1% to 2% of the principal amount of the mortgage portfolio being serviced. If a financial institution sells a mortgage portfolio with the servicing rights “released,” it should add an additional 1% to 2% of value in addition to the present value of the portfolio itself.
2. Water rights are usually valued as a flat amount per acre-foot of water. The exact amount may vary depending on factors like delivery means, type of environment, type of right, and/or end user, but usually there will be a current known price per acre-foot once these factors are accounted for.

Most of the time intangibles are not valued using the market approach, simply because pricing data are not usually available.

The Income Approach. The income approach is very analogous to the DCF approach previously discussed. The same basic model is useful for making the computations. The key questions when using this approach are the same as the key questions that affect DCF valuation. What are the benefits to be valued, and at what rate should they be discounted? In the case of intellectual properties, the benefits we wish to value can be globally organized into two broad categories: (1) the value of new or incremental revenue or (2) the value of avoided or diminished costs. In addition, the appropriate discount rate will be the same in principle but actually different. Some unique considerations need to be taken into account:

1. The time horizon is unique to the specific remaining useful life (RUL) of the intangible property. In other words, the number of future cash flows or benefits to be valued as benefits stemming from the licensing or sale of an intangible is not the same as the number of future cash flows

included in the analysis of the ongoing firm. The time horizons are quite different and need to be analyzed separately.

2. The rate at which the analyst discounts or capitalizes the future benefits is also unique. It is not the WACC of the firm that should be applied to the asset but a required rate of return that is inferred from the potential buyers, users, or industry characteristics to which the intellectual property is relevant. For example, if an unrelated firm intends to license a piece of intellectual property from the firm that owns it, then that third-party firm's WACC or other required rate of return should be used as the required rate of return. This is because the value of the intellectual property is determined by others' use of it. This means that an acquiring firm's WACC, the industry-based required rate of return or a specific firm-based required rate of return, may be used when computing the present value of the intellectual property. Sometimes a "capitalization rate" instead of a required rate of return is used. If a capitalization rate is used, then the annual benefit flow is treated as an amount "in perpetuity," and the capitalization rate is divided into the estimated annual benefit to approximate the value of the perpetual cash flow as discussed below.

3. Sometimes the stream of periodic benefits is not projected over a fixed time frame; instead, this future benefit stream is reduced to an estimate of the amount per year and "capitalized" at an appropriate rate. The capitalization rate is divided into the annual benefit estimate to provide an estimate of the value of the benefit on a perpetual basis. The problem with this method is that it treats the benefit as an amount that will be received in perpetuity when that is not true. Generally, the present value of a projected stream of cash flows or other benefits over a fixed time horizon is the preferred method for computing the value of intellectual property.

Two key issues need to be considered:

1. The capitalization rate or discount rate (or WACC) amount should be consistent with the tax status of the benefit that is being valued. For example, if the net income is being used as the proxy for the benefit of the intangible, then the after-tax rate of return such as WACC should be used as the discount rate in the present value calculation.

2. Care needs to be taken to avoid double counting the benefit of any intangible property. If intangible property contributes to the operating functions of the firm and the intention is to add the value of the intangible property to the value of the operating firm to produce a valuation of the firm,

then the analyst should not count the value of the intangible property that the firm is using when computing the total value of the firm. The value of the intangible property the firm is using is already captured in the form of either higher revenues or lower costs within the valuation of the operating firm. In this situation, the value of the intangible property that can be realized should be determined if it is sold or leased to third parties for their use while the firm continues to use the intangible property for its own purposes.

The Cost Method. The cost of creating an intangible property is another metric of value. Buyers particularly like using this method of valuing the intangible asset. The logic is very simple for the buyer; I can purchase an asset for “x” dollars today that took “y” amount of time and cost “z” amount of money to produce. Building a cost for an intangible is often difficult if only because many businesspeople and even accountants fail to correctly assess all the costs that went into creating the asset. The other issue that can be assessed is the premium for being able to take possession of the asset now.

When computing the cost of an intangible asset, the best guidance is to consider all costs. The actual costs are case specific. In determining the costs of producing an intangible asset, four elements should be considered in the analysis (Pratt & Niculita, 2008):

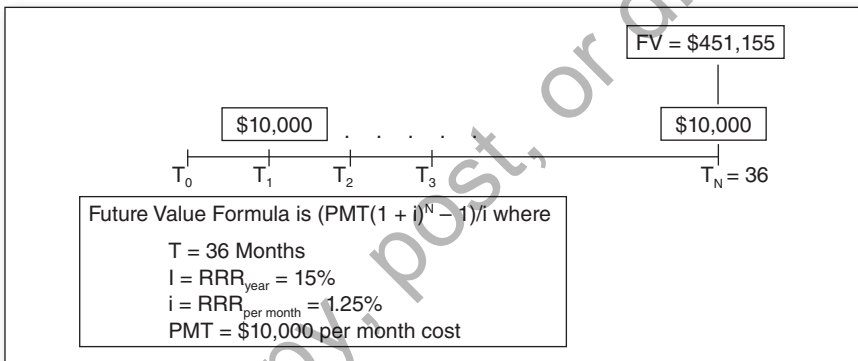
1. Direct costs (including material, labor, and overhead)
2. Indirect costs (including legal, registration, engineering, administration, etc.)
3. Developer’s profit (a fair return on the intangible asset creator’s time and effort)
4. Entrepreneurial incentive (the economic benefit required to motivate the asset development process)

Not only is there a physical cost to creating an intangible asset (above), but there is a required commitment of time. An additional feature of the value proposition regarding the intangible asset can be attributed to this time commitment. Not all analysts take this “time premium” into account. Acquiring firms often recognize that this time commitment will be avoided if they purchase rather than develop the intangible asset themselves. The immediacy of the purchase represents an additional form of value. One way to estimate the value of this “time premium” is to analyze the costs developed in Steps 1 to 4 above and then use time value analysis to consider their value.

Such a computation is easy to perform. This process is illustrated by using Firm ABC that is using the cost method to value its intangible assets in preparation for selling them to Firm XYZ:

Firm ABC performs an analysis of the costs of its intangible assets by building and adding together the cost elements above using historical cost information and, where needed, industry practice. The analysis indicates that the intangible assets are worth \$360,000 and that these costs were accrued in roughly equal monthly installments over a 3-year time horizon. Thus, for the purposes of this example, we will say the costs were incurred at the rate of \$10,000 per month. These benefits can be plotted on a time line (see Figure 8.2):

Figure 8.2 Benefits Timeline



Let's assume the buying firm's (Firm XYZ) required rate of return (RRR) on this type of investment is 15% (the Firm XYZ's WACC can be used if it is determined that it is the appropriate rate), so Firm XYZ's WACC is 15%. If the future value (FV) of this stream of benefits is computed at the end of the 36th month using 15% as the annual required rate of return, the result is \$451,155. This means that after considering the required rate of return of Firm XYZ, the \$10,000 per month cost spread out over a 36-month time frame would generate a time premium of \$91,155 (\$451,155 of time-adjusted costs minus \$360,000 of identified costs). Thus, the full value of Firm ABC's intangible assets to Firm XYZ is \$451,155. This amount represents the cost basis in the assets plus the time premium for the buyer being able to avoid the 36-month development period.

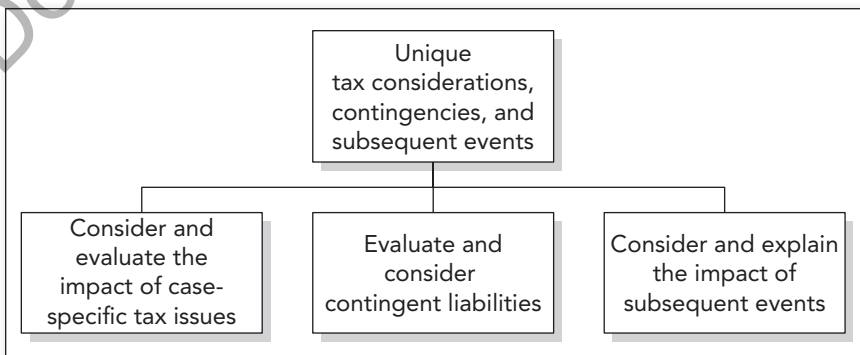
Some use this approach and others do not. This approach is certainly relevant in a selling situation, as it provides a basis for negotiation that covers both the cost and the time premium related to the intangibles.

Summary of the Valuation of Intangible Property. Valuing intangibles is similar to valuing the operating firm. The income method is similar to the discounted cash flow approach except that (1) the time horizon is tied to the remaining useful life (RUL) of the intangible asset and not the time horizon of the firm, and (2) the required rate of return used in the calculation is not tied to the required rate of return of the firm that owns the intangible asset but will originate within industry-standard practice or at the firm that desires to purchase the asset. The market value approach is most similar to valuing real estate where comparable values are heavily relied on. Finally, the cost method is closely associated with the NAV approach.

Unique Tax Considerations, Contingencies, and Subsequent Events

The value of an operating firm and its associated intellectual property represents an important yardstick for assessing the firm's value and its prospects, but it should be recognized as an incomplete measure. Other issues can have impact on what the firm is worth or what its prospects are. Ordinary or unique tax considerations can affect the firm value, as can contingent liabilities and subsequent events. When dealing with firms where ownership is privately held and the ownership does not trade in liquid public markets, liquidity/marketability discounts may apply. Also, at firms where the shares do not trade publicly, then the ownership is either controlling or a minority stake, and invariably a control premium or lack-of-control discount will apply. Chart 8.8 provides a conceptual representation of the elements of assessing these variables.

Chart 8.8 Unique Tax Considerations, Contingencies, and Subsequent Events



Tax Considerations. The potential for tax implications to affect firm value is normal. Because tax issues are so case specific, it is impossible to prepare a specific methodology aimed at including their impact in a valuation of the firm. As a preface to the following discussion, keep in mind that most valuations of entrepreneurial firms are used when negotiating a sale or the acquisition of another firm or raising capital (although damages for copyright or patent infringement or other disputes are also high on the list). Below are a few examples of some common issues.

1. **Built-in Gain.** This issue comes to the fore when a valuation is being used to set the acquisition price of assets held by a corporation where the assets have been fully depreciated. A sale of the assets by the corporation will trigger capital gains on the assets. The tax will be due at the corporate level. One solution is to have the buyer acquire the corporation that holds the assets instead of the assets themselves, but this approach merely defers the liability and does not solve the problem. Should the new buyer be expected to pay full value for assets within a corporation when the buyer will eventually be required to pay the capital gains tax that was racked up on those assets during the prior owner's ownership? In such a case, how is the present value of the company and its assets affected?

2. **Subchapter S Versus C Corporation Treatment.** Once in a corporation's life the corporation may elect to change its tax status from an LLC to either a Subchapter S or to straight C Corporation status. The type of tax treatment the election bring the corporation will depend on the original status of the company. There are only two choices. If the one-time election has been made at any time in the past, then the buyer cannot change the tax status of the corporation. The election has been used up. If the buyer does not or cannot function under the current status of the corporation, then there will be tax impacts that the buyer cannot remediate by switching status. Clearly, the value to the buyer is not optimal if he or she can't have the tax treatment he or she wants. Time and expense will have to be dedicated to restructuring the company to work out a solution. This extra effort affects firm value as far as a buyer is concerned.

3. **Existence of Tax Liens or Deferred Tax on the Balance Sheet.** Unpaid taxes will need to be paid, and there may be interest costs or penalties associated with them. These taxes should be deducted from the current valuation of the firm.

4. **Increasing Tax Assessments for Property or Changes in the Tax Code.** Sometimes special tax assessments, tax policy changes, or tax rate changes have not yet been implemented but will be put in place within the near term.

The impact of these changes may not yet have appeared on the firm's income statement, but they may represent an imminent material impact on the corporation's value. The value of the operating firm should be estimated using the most current tax rates that apply, or if changes can be foreseen, then the estimate should use the prospective rates.

Contingent Liabilities or Windfalls. Contingent liabilities are events that have the potential to affect value but have not yet done so, such as the potential sexual discrimination and harassment lawsuit in the Franks Brothers case. The outcome of legal action, the outcome of pending legislation or regulation, and the potential for some other form of environmental change are all examples of contingent liabilities or contingent windfalls. When considering the impact of contingent liabilities and windfalls, the probability-weighted outcome associated with the event needs to be considered. Normally, this means that some type of binomial analysis needs to be constructed to assess the potential impact on firm value. Contingent liabilities or windfalls are always case specific. The biggest problem with assessing the impact that contingent liabilities or windfalls may have on firm value is deciding what the probability is that they actually come to pass. Making the calculation is best described by example.

Assume that Firm ABC is currently engaged in a product liability dispute that is being settled via an arbitration proceeding. The arbitration is binding and is estimated to be decided in exactly 1 year. If the firm loses the arbitration, the loss will be \$1,000,000, which is an amount that includes the plaintiff's legal fees. Another possible outcome of the arbitration is that the firm wins and the plaintiff will have to pay the company \$200,000 for its legal fees. There is a third possible outcome—that an arbitration panel will decide that there is no award due but that the company should pay its own legal costs of \$200,000.

The situation may be summarized as follows:

- A. The company loses the arbitration and *pays* \$1,000,000.
- B. The company wins and *receives* \$200,000.
- C. There is no damage award but the company is ordered to *pay* \$200,000 in legal costs.

The expected value of these outcomes is a function of the combined probability of the three potential outcomes. If the firm's attorneys assess the likelihood of the various outcomes as 30% for Option A, 20% for Option B, and 50% for Option C, then the potential value of the

contingency is easily calculated as follows: Value of Contingency = $(30\% * A) + (20\% * B) + (50\% * C)$. This translates into $-\$360,000$ from the computation $[(.3 * -\$1,000,000) + (.2 * \$200,000) + (.5 * -\$200,000)]$. It is a negative number representing a cost.

Contingent liabilities and windfalls should be evaluated in this way; however, once evaluated, the liability or windfall must be considered in light of its time value, that is, the time until the liability or windfall is realized. In our example, the resolution to the arbitration case is exactly 1 year away; this means that the present value of the arbitration case must be discounted back at the firm's cost of capital (usually expressed as WACC) to understand the impact that the contingency has on firm value in terms of today. Given the terms in our example, the value of the contingency's impact today is the present value of $-\$360,000$ one year away. If we say that the firm's WACC is 15%, then this calculation is $FV = -360,000 * (1 / (1 + WACC))$, which is equal to $-\$313,043$.

One parting observation—probabilities associated with different contingent outcomes are best supplied by experts in the appropriate field. However, it is usually sufficient to discount contingencies at the firm's WACC.

Subsequent Events. Another type of factor that should be considered when doing a firm valuation is the procedure for considering what is referred to as a *subsequent event*. Basically, a subsequent event is an event or occurrence that has a *material* impact on firm value but has occurred at a time beyond the valuation date and before the completion date of the report. For example, if a valuation of the firm has been prepared using data through December 31 (valuation date) and the valuation is scheduled to be delivered on March 1 (report date), how should an uninsured \$1 million casualty loss of the firm on February 1 be dealt with? This loss is what is referred to as a material subsequent event. The loss has not been factored into the estimation of valuation as of December 31, but it is material as it does affect firm value.

When preparing any valuation report, several things must be done regarding subsequent events:

1. Establish a procedure for monitoring company events during the interval period between the valuation date and the delivery date of the report.
2. Should a subsequent event occur, there needs to be a method for determining the "materiality" of the event. A \$100,000 one-time write-off of an accounts receivable occurring during the interval between is not material when considering a firm where the estimated value as of the valuation date is \$100,000,000, but it is

highly material to a firm whose estimated value is \$1.5 million on the valuation date. What constitutes a material event is something that is prone to interpretation. Generally, anything that affects the firm's value by more than 1% is material.

3. As a part of any valuation process, management of the firm need to be asked to disclose and then certify the nature and magnitude of any subsequent events.

Unless there is a legal or regulatory reason for doing otherwise, if subsequent events have occurred and once they have been assessed, subsequent events should be included in the calculation of firm value as of the report delivery date. The basic logic behind this is (1) a determination is made of the firm's value on a particular day (i.e., the valuation date); (2) shortly after the valuation date, a subsequent event occurs that has a material impact on overall firm value; and (3) this material event is considered significant in the value.

Summary of Unique Tax Considerations, Contingencies, and Subsequent Events. All these factors contribute to firm value in some way. They affect value because of the effect on after-tax cash flow or asset value, they represent impacts on value that may or may not come true, or they represent impacts on value that have occurred outside of the period in which the firm is valued. All of these factors need to be considered along with the operating business and intangible property value inherent in the firm to correctly estimate a firm's value or worth.

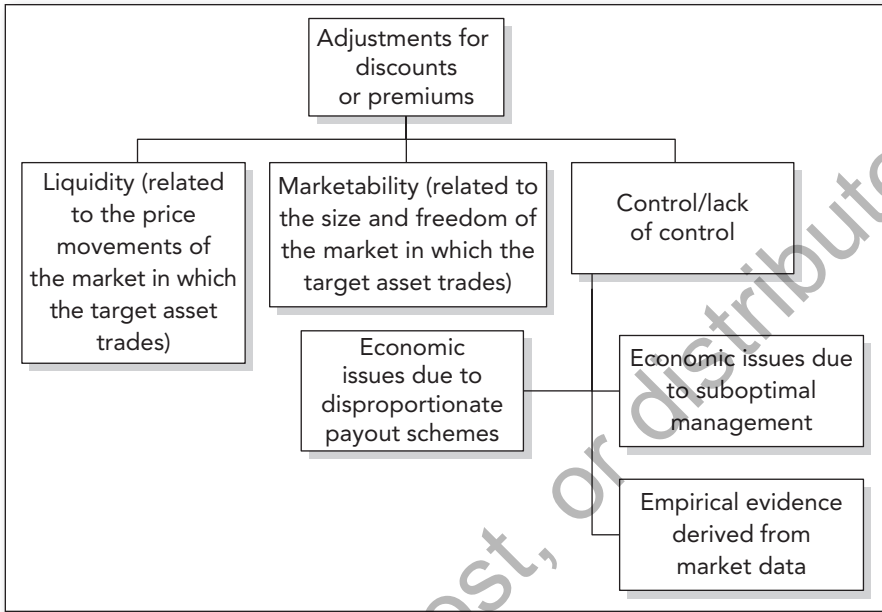
Adjustments for Discounts or Premiums

If a firm is privately traded, then the firm's value is fundamentally different than if it is traded on an active stock exchange. This difference is attributable to the liquidity and marketability of the firm's shares. If the shares owned represent control, then they are worth more than noncontrolling shares, or if they are not controlling shares, then they are worth less than control shares. Chart 8.9 provides a schematic view of this.

The questions that need to be considered are how and when discounts should be applied to the estimate of firm value. There are three instances when a discount or a premium should be applied:

1. When the firm is not publicly traded
2. If the valuation being prepared is for all or the portion of the firm that represents the controlling interest in the firm
3. If the valuation being prepared is for a minority interest in the firm

Chart 8.9 Adjustments for Discounts or Premiums



How much of an impact the firm's relative lack of liquidity and marketability affects the firm's value needs to be considered. The term *marketability* has to do with the ease with which an asset may be sold. The implication is that highly "marketable" assets trade in markets where there are many buyers and sellers and where the time to trade an asset is minimized relative to the asset's category (Downes & Goodman, 1995). The term *liquidity* implies that when the asset is sold, the price trend that is produced by the sale is regular and orderly. Put another way, a highly liquid asset can be sold without experiencing an excessively large change in price (Downes & Goodman, 1995).

It is important to note that there are differing concepts with respect to the terms *liquidity* and *marketability*. Some practitioners like Pratt and Niculita (2008) feel that marketability is the relative ease or promptness with which a security or commodity may be sold when desired, at a representative current price, a large drop in price. Pratt and Niculita, for example, consider liquidity to be a measure of the time it takes to execute a sale. These views are not the same as the view expressed here. But both opinions suggest that liquidity and marketability collectively refer to having a large organized market with many buyers and sellers and being able to sell an asset without suffering too great a loss when executing the trade. Both views suggest that

assets that are less liquid and less marketable are not as valuable as assets that are more liquid and more marketable. There is less flexibility in owning these impaired assets; they have the potential to have higher volatility in price, and because they do not trade in markets where instant execution is available, they might not be sold in a timely manner.

A number of studies attempt to capture appropriate discounts for assets having lower liquidity and marketability. These studies can be categorized as (1) studies that are based on prices of restricted stock or (2) studies that are based on analysis of private transactions that take place before initial public offerings in the subject security. The studies are quite elaborate in the way they summarize the results. For example, they can isolate discounts by firm size (measured by net income), total sales, transaction size, net income margin, or days until public trading is initiated. For restricted stock, the discounts themselves range from about 13% to 45% (some even show discount levels in the 80% range, but these kinds of results seem to be outliers).

As to discounts or premiums that should apply to transactions where a controlling share is being valued, there are relatively fewer studies. The studies that are available do demonstrate that, when acquisitions take place in the public market, about 85% of the time they are valued at a premium to market price. This indicates that whenever controlling firm interests are sold, they should be transacted with a premium. Some caution against this flat assumption. They question the idea that a “control” premium may be automatically inferred. They feel that a control premium should be determined relative to the power of the controlling interest itself. The degree of control and the value of that control are the key issues affecting whether a control premium should apply and, if so, how large it should be.

Some factors that should be reviewed are as follows:

1. How much of the company is being transacted?
2. What are the resources that the firm controls?
3. With the control shares that are being transacted, can the new owner reallocate firm resources as he or she sees fit?
4. Do minority shareholders have strong rights and remedies that can interfere with the control owner as he or she exercises his or her power?

The studies of control premiums show premium levels that range from 16% to about 33%. Of course, some of the studies show higher premiums, as high as 44%, but generally speaking, premiums that high are probably

outliers. It usually is appropriate that a control premium for 100% of a business entity's ownership (thus giving the buyer complete control over the firm) is at or near 33% if the firm has particularly valuable assets or prospects. The premium might decline as the nature of the firm's value proposition declines and/or as the level of control declines. Individual skill and judgment are needed to scale the premium to the level of control involved and value of the underlying asset being controlled.

Two closing remarks are needed: (1) Pratt and Niculita (2008) provide an excellent technical discussion of control premiums in their book *Valuing a Business*, and (2) the value of minority shares is the inverse of the value of controlling shares when measured in absolute dollars. If we value a firm at \$1,000 and if there are 100 shares outstanding and the control premium is 10% for 51% of the firm, then the value of the 51% control position is \$561 $((.51 * 1,000) * 1.1)$ (note: 1.1 represents the premium of 10% added to the identity factor 1) or \$11.00 per control share. If the entire firm is worth \$1,000 and the 51% control portion is worth \$561, then the 49% minority position is worth \$439 $(\$1,000 - \$561)$. This means that each minority share is worth \$8.96 per share $(\$439/49 \text{ shares})$. The lack of control discount for the minority share is -10.41% $((490 - 439)/490)$. This calculation is explained as follows: $((\text{the value of the minority position given no discounts or premiums} - \text{the value of the minority position after giving a premium to the control position}) / \text{the value of the minority position given no discounts or premiums})$.

Assembling a Valuation

The final step in the process of valuing the firm is to combine the analysis that has been done.

The Value of the Firm (or Portion Thereof):

Value of the operating firm	+ \$ _____
Value of the intangible property	+ \$ _____
The impact of taxes, contingencies, and subsequent events	± \$ _____
Total firm value before control premium or discount	\$ _____
Portion of firm being valued in dollars	\$ _____
Premium or discount for control or lack of control	± \$ _____
Value of all or a portion of firm being valued in dollars	\$ _____

The numeric combination is not the end but should also show a careful summary of the work and the underlying assumptions for each calculation, type of valuation being made, the purpose of the valuation, notes on the disclosures and certifications of management, the dates and time frames for all of the relied-on information (i.e., financial statements and projections), and finally, information on the calculation of the various premiums and discounts that have been applied. This provides true valuation.

Summary

Valuation is an important subject for all entrepreneurs. Most factors in the life cycle of the firm center on the firm's valuation: (1) the day the private (angel) investors commit capital, (2) the day the venture capitalist makes its investment, (3) the day a lender provides the mezzanine line of credit, and (4) the day the firm is sold or goes public. Often, valuations are performed using only the operating company being reviewed or only one method (e.g., the times EBITDA multiple), or no diligence is done on contingencies or no real thought is put into the premiums or discounts that are to be applied. The entrepreneur should know enough about the subject of valuation to defend these haphazard valuation approaches. The future of the firm and those who work there are significantly affected by its valuation.

A thorough valuation giving due consideration to the operating elements of the firm, any intellectual property owned by the firm, subsequent events, contingent liabilities, unique tax issues, and appropriate discounts for lack of control, marketability and liquidity, would provide Robert Franks with a complete perspective regarding the deceased Bill Franks' ownership in Franks Brothers LLC. If Robert Franks had commissioned such a careful and professional evaluation, most of the questions noted in the case would be resolved.