

### ***Control Issues***

When valuing a firm, you always need to consider the competence and strengths of the management of the firm. With private firms, where the owner is also the manager, this consideration carries special weight, since the owner has absolute control. In contrast, in a publicly traded firm, incompetent management can often be replaced, if enough stockholders can be convinced that it is in their best interests to do so.

There are implications for valuation, if a portion of a private firm is offered for sale. If that portion provides a controlling interest, i.e., the right to pick the firm's management, it should have a substantially higher value than if it does not provide this power. Normally, this would mean that 51% of a private firm's equity should trade at a substantial premium over 49%. This applies whether a firm is being sold to a private entity or a publicly traded firm, and may arise in an initial public offering. If, for instance, only non-voting shares or shares with diluted voting rights are offered to investors in the public offering, they should trade at a discount on shares with full voting rights.

While the intuition about the value of control is simple, estimating how much it is worth is a little more difficult. We will defer a full discussion of the topic until we get to the chapter on acquisitions, but we will value it as the difference between two values – the value of the firm run optimally and the value of the firm with the incumbent management. For instance, if the value of a private firm run by incumbent management is \$100 million and the value of the firm run optimally is \$150 million, the difference in values between the 51% and 49% shares can be computed.

Value of controlling interest = 51% of Optimal Value       $= 0.51 * 150 = \$ 76.5$  million

Value of non-controlling interest = 49% of Status Quo Value  $= 0.49 * 100 = \$ 49$  million

The additional 2% interest (from 49% to 51%) has a disproportionate effect on value because of control. This value of control will be greatest for private firms that are poorly run and will be close to zero for well run firms.

In fact, the same approach can be used to compute the discount that non-voting shares will trade at, relative to voting shares in initial public offerings. For instance, assume that the private firm described above creates 10 million voting shares and offers 70% to the public. Since the potential for changing management is created by this offering,

the value per share will fall between \$10 and \$15, depending upon the probability that is attached to the management change. Thus, if the probability of the management change is 60%, the value per share will be \$13.00.

$$\begin{aligned} \text{Value/Shr} &= \frac{\text{Status Quo Value}}{\text{Number of shares}} + \frac{(\text{Optimal} - \text{Status Quo Value}) * \text{Probability of change}}{\text{Number of Shares}} \\ &= \frac{\$100}{10} + \frac{(\$150 - \$100)(0.6)}{10} \\ &= \$13.00 \end{aligned}$$

Now assume that this firm had issued 9 million non-voting shares, with management retaining 1 million voting shares with complete control. In this case, the non-voting shares will get little or none of the estimated value change from optimal management. In fact, the values of the two classes can be estimated.

$$\begin{aligned} \text{Value: non-voting share} &= \frac{\text{Status Quo Value}}{\# \text{ voting shares} + \# \text{ non - voting shares}} \\ &= \frac{\$100}{9 + 1} = \$10 \text{ per share} \end{aligned}$$

Value per voting share =

$$\begin{aligned} &\frac{\text{Status Quo Value}}{\# \text{ voting shares} + \# \text{ non - voting shares}} + \frac{(\text{Optimal} - \text{Status Quo Value}) * \text{Probability of change}}{\# \text{ Voting Shares}} \\ &= \frac{\$100}{9 + 1} + \frac{(\$150 - \$100)(0.6)}{1} \\ &= \$40.00 \end{aligned}$$

The voting shares in this case would trade at an enormous premium over the non-voting shares, but that is because we have assumed that the probability of change is still 60%. If the incumbent managers are much more likely to fight a change in management, this probability will drop and reduce the premium with it.

*Illustration 24.13: Estimating a per-share value for InfoSoft*

In the last illustration, we valued the equity in InfoSoft at \$ 69.826 million. Assume that the firm decides to create 5 million shares – 4 million shares will be non-

voting shares and 1 million will be voting shares. In the initial offering, only the non-voting shares will be sold to the public and the current owners will retain all of the voting shares.

To value the voting and non-voting shares, we need to value InfoSoft under optimal management. Assume that the firm would be worth \$ 75 million under optimal management.<sup>12</sup> The value of the voting and non-voting shares can then be computed.

$$\begin{aligned} &= \frac{\text{Status Quo Value}}{\# \text{ voting shares} + \# \text{ non-voting shares}} \\ \text{Value: non-voting share} &= \frac{\$69.826}{4 + 1} \\ &= \$13.97 \end{aligned}$$

Assume that the fact that incumbent managers will retain the voting shares reduces the probability of management change to 25%.

Value per voting share =

$$\begin{aligned} &\frac{\text{Status Quo Value}}{\# \text{ voting shares} + \# \text{ non-voting shares}} + \frac{(\text{Optimal} - \text{Status Quo Value}) * \text{Probability of change}}{\# \text{ Voting Shares}} \\ &= \frac{\$69.826}{4 + 1} + \frac{(\$75 - \$69.826)(0.25)}{1} \\ &= \$15.26 \end{aligned}$$

### Pre-cash and post-cash valuations

When valuing private companies, many analysts draw a distinction between pre-cash and post-cash valuations. In general, this is done especially when an infusion of cash is anticipated either from venture capitalists or from an initial public offering. The pre-cash valuation values the firm before the cash influx and the post-cash valuation values it after.

There are two reasons why the two valuations may be different. The first is that the firm may face capital rationing constraints without the infusion of the cash, resulting

in a scaling down of how much the firm can reinvest. If the firm's return on capital is greater than the cost of capital, this will cause the value to be lower before the cash influx. The second is that the value of cash and marketable securities will be added on to the value of the operating assets to arrive at firm value. After a large cash influx, firms may have excess cash to invest in marketable securities, which when added to the value of operating assets, will increase value. If the cash is taken out of the firm, though, by the existing owners, you should not add the cash to the firm value.

Which of these two values should be used to estimate the value per share in a public offering? Since stockholders in the firm will hold stock in the post-cash firm, the post-cash value should be used. In the case of a venture capitalist, though, the answer may be different. If the venture capitalist has bargaining power – she is the only person who is interested in providing venture capital – she can ask for a share of the firm value based upon the pre-cash valuation, arguing that the increase in value is feasible only with the additional venture capital. If two or more venture capitalists are interested in the firm, odds are that the post-cash valuations will be basis for deciding how much of the firm will be yielded to the venture capitalist.

### **Valuing Private Equity**

Earlier in this chapter, we considered how venture capitalists value firms. In the last decade, private equity has emerged as competition to traditional venture capital. Private equity can come from a variety of sources – wealthy individual investors, private equity funds and corporations with excess funds to invest. Like venture capitalists, private equity investors invest in private firms (often early in the life cycle) in return for a share in the ownership in the firm.

In valuing a private equity stake, we confront many of the issues that we have raised in the chapter:

- While private equity investors tend to be more diversified than venture capitalists, the cost of equity used to value a private equity investment may still be higher than the cost of equity used to value a publicly traded firm. The degree of non-diversification can vary across investors. A publicly traded firm like Microsoft that makes private equity investments should not use a higher cost of equity, whereas an investor who

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<sup>12</sup> InfoSoft was revalued at its optimal debt ratio. We assumed that the existing investment policy was

is not diversified may have to make an adjustment similar to the one described for the owners of private firms.

- Private equity investors often provide cash to cash-starved firms in return for a minority stake in the firms. Consequently, the issues of pre-cash versus post-cash valuations and the value of control often come up with private equity valuations.

*Illustration 24.14: Valuing a Private Equity Stake*

Assume that you work for a publicly traded firm and have been asked to value a potential stake in a small, privately held firm that wants you to invest \$ 10 million in its equity, which it plans to use to expand operations.

First, you would value the private firm assuming that you do not invest the \$ 10 million. Based upon the projected cash flows, assume that you value the equity in the firm at \$ 30 million:

Pre-cash Valuation = \$ 30 million

Now assume that your investment of \$ 10 million will allow the firm to grow faster and that the present value of the expected cash flows is \$ 50 million for the equity. (This present value does not include the cash inflow of \$ 10 million from the private equity investment.)

Post-cash Valuation = \$ 50 million + \$ 10 million = \$ 60 million

The key question, assuming that you decide to make this investment, is the percentage of the private firm you should demand in return for the \$ 10 million investment. At the minimum, you would demand a share of the post-cash valuation

Share of ownership<sub>Minimum</sub> = Cash Invested/ Post-cash Valuation =  $10/60 = 16.66\%$

However, you would bargain for a larger share. At the limit, you could argue for a share of the pre-cash valuation:

Share of ownership<sub>Maximum</sub> = Cash Investment / (Pre-cash valuation + Cash Investment)  
 $= 10/(30 + 10) = 25\%$

## Conclusion

The value of a private firm is the present value of the cash flows it is expected to generate, discounted back at a rate that reflects both the risk in the private firm and the mix of debt and equity it uses. While this statement is identical to the one we used to describe the value of a publicly traded firm, there are differences in the way we estimate

these inputs for private firms, and even among private firms, depending upon the motive for the valuation.

When valuing a private firm for sale to an individual or private entity, we have to consider three specific issues. The first is that the cost of equity, which we have hitherto assumed to be determined purely by the risk that cannot be diversified, might have to be adjusted for the fact that the potential buyer is not well diversified. The second is that equity holdings in private businesses are illiquid, leading to a discount on the estimated value. The discounts on restricted stock issues made by publicly traded firms or the bid-ask spreads of these firms may provide us with useful information on how large this discount should be. The third is that a controlling interest in equity of a private firm can trade at a significant premium over a minority interest.

The valuation of a private firm for sale to a publicly traded firm or initial public offering follows a much more conventional route. We can continue to assume that the cost of equity should be based only upon non-diversifiable risk and there is no need for an illiquidity discount. There can still be a control value, if less than a controlling interest is sold to the publicly traded firm or if non-voting shares are issued in the initial public offering.

### Problems

1. You have been asked to value Barrista Espresso, a chain of espresso coffee shops that have opened on the east coast of the United States. You have collected the following information.

- The company had earnings before interest and taxes of \$10.50 million in the most recent year. However, the founders of the company had never charged themselves a salary, which would have amounted to \$1 million, if based upon comparable companies.
- The tax rate is 36%
- The capital expenditures in the most recent year amounted to \$4.5 million, while depreciation was only \$1 million.
- Working capital is expected to remain at 10% of revenues.
- Earnings, revenues and net capital expenditures are expected to grow 30% a year for 5 years, and 6% after that forever.
- There are three comparable companies, which are publicly traded.

	<i>Beta</i>	<i>D/E</i>	<i>k<sub>d</sub></i>
Starbucks:	1.74	9.53%	9.00%
Au Bon Pain:	1.21	31.43%	8.50%
Sbarro:	1.12	0.00%	NA

Barrista Espresso is expected to maintain a debt ratio of 12% and face a cost of debt of 8.75%.

- a. Estimate the value of Barrista Espresso as a firm.
  - b. Estimate the value of equity in Barrista Espresso.
  - c. Would your valuation be any different if you were valuing the company for an initial public offering rather than a private valuation.
2. What are some of the determinants of the size of the liquidity discount? Answer true or false to the following statements.
- a. There should be no liquidity discount attached to the value, if the valuation is being done for an initial public offering.

- b. The liquidity discount should be larger for a high-growth firm, with no current cash flows, than for a stable firm with positive cash flows.
  - c. The liquidity discount will become smaller for firms, when they start losing money.
  - d. The size of the liquidity discount will depend partly upon the buyer's characteristics.
  
- 3. You have valued a business, using discounted cash flow models, at \$250 million, for a private sale. The business, which does make money, had revenues of \$200 million in the most recent year. How much of a liquidity discount would you apply to this firm:
  - a. based upon the Silber regression.
  - b. based upon correcting the average discount (25%) for the size of the firm.
  
- 4. You are trying to value a bed-and-breakfast business in Vermont for its owner based upon the following information.
  - The business had pre-tax operating income of \$100,000 in the most recent year. This income has grown 5% a year for the last three years and is expected to continue growing at that rate for the foreseeable future.
  - About 40% of this operating income can be attributed to the fact that the owner is a master chef. He does not plan to stay on if the business is sold.
  - The business is financed equally with debt and equity. The pre-tax cost of borrowing is 8.00%. The beta for publicly traded firms in the hospitality business is 1.10. The treasury bond rate is 7.00%.
  - The capital maintenance expenditure, net of depreciation, was \$10,000 in the most recent year and it is expected to grow at the same rate as operating income.
  - The business is expected to have an operating life of 10 years, after which the building will be sold at an anticipated price of \$1.5 million, net of capital gains taxes.
    - a. Value the business, for sale.
    - b. How much would the value change if the owner offered to stay on for the next three years?