Module 3: The Venture Capital Negotiation and Investment Process Valuations

TABLE OF CONTENTS

1.0 Valuations

1. 01 Introduction

An important component of the venture capital investment process is the valuation of the business enterprise seeking financing. Valuation is an important input to the negotiation process relative to the percentage of ownership that will be given to the venture capital investor in return for the funds invested.

There are a number of commonly used valuation methods, each with their strengths and weaknesses. A brief summary of the commonly used methods will be provided below. A more detailed description is available in the assigned readings for this section. The most commonly used valuation methods are:

1. Comparables
2. The Net Present Value Method
3. The Venture Capital Method

Note: See assigned readings "A Note on Valuation in Private Equity Settings," HBS 9-297-050 for these and other methods.

1.02 Comparables

Similar to real estate valuations, the value of a company can be estimated through comparisons with similar companies. There are many factors to consider in selecting comparable companies such as size, growth rate, risk profile, capital structure, etc.

Hence great caution must be exercised when using this method to avoid an “apples and oranges” comparison. Another important consideration is that it may be difficult to get data for comparable companies unless the comparable is a public company. Another caveat when comparing a public company with a private company is that, all other things being equal, the public company is likely to enjoy a higher valuation because of its greater liquidity due to being publicly traded.

Refer to the example provided in Appendix 1, page 14 of the assigned reading **“A Note on Valuation in Private Equity Settings.”**

1.03 Net Present Value Method

The Net Present Value Method involves calculating the net present value of the projected cash flows expected to be generated by a business over a specified time horizon or study period and the estimation of the net present value of a terminal value of the company at the end of the study period. **Note: See assigned reading "A Note on Free Cash Flow Valuation Models," HBS 9-288- 023 for an in-depth description of this method**.

The net present value of the projected cash flows is calculated using the Weighted Average Cost of Capital (WACC) of the firm at its optimal capital structure. **Note: See Module 1 for a review of the Theory of Optimal Capital Structure, the cost of debt, the cost of equity, and WACC**.

Step 1: Calculate Net Present Value of Annual Cash Flows

Cash Flow for each future period in the time horizon or study period of the analysis is defined as follows:

$CF_n = EBITn*(1-t) + DEPR_n – CAPEX_n – .CNWC_n$

Where:

CF = cash flow or "free cash flow"

n = the specified future time period in the study period

$EBIT_n$ = earnings before interest and taxes

t = the corporate tax rate

$DEPR_n$ = depreciation expenses for the period

$CAPEX_n$ = capital expenditures for the period

$.NWC_n$ = increase in net working capital for the period

It should be noted that interest expense is factored out of the cash flow formula by using EBIT (earnings before interest and taxes). This is because the discount rate that is used to find the net present value of the cash flows is the WACC. The WACC uses the after tax cost of debt, which takes into account the tax shields that result from the tax deductibility of interest. By using EBIT in the cash flow calculation, double counting of the tax shields is avoided.

Step 2: Calculate the Net Present Value of the Terminal Value

The terminal value is normally calculated by what is often referred to as "the perpetuity method." This method assumes a growth rate "g" of a perpetual series of cash flows beyond the end of the study period. The formula for calculating the terminal value of the company at the end of the study period is:

$TV_t = [CF_t*(1 + g)]/(r – g)$

Where:

TV_t = the terminal value at time period t, i.e. the end of the study period

CF_t = the projected cash flow in period t

g = the estimated future growth rate of the cash flows beyond t

Refer to the example provided in Appendix 2, page 15 of the assigned reading **"A Note on Valuation in Private Equity Settings."**

1.04 The Venture Capital Method

Most venture capital investment scenarios involve investment in an early stage company that is showing great promise, but typically does not have a long track record and its earnings prospects are perhaps volatile and highly uncertain. The initial years following the venture capital investment could well involve projected losses.

The venture capital method of valuation recognizes these realities and focuses on the projected value of the company at the planned exit date of the venture capitalist.

The steps involved in a typical valuation analysis involving the venture capital method follow.

Step 1: Estimate the Terminal Value

The terminal value of the company is estimated at a specified future point in time. That future point in time is the planned exit date of the venture capital investor, typically 4-7 years after the investment is made in the company.

The terminal value is normally estimated by using a multiple such as a price-earnings ratio applied to the projected net income of the company in the projected exit year.

In the example provided in Appendix 4, page 19 of the assigned reading **"A Note on Valuation in Private Equity Settings,"** a price-earnings ratio of 15 is applied to the projected net income of $20 million in the planned exit year, year 7. This yields a projected exit value of $300 million in year 7. The choice of multiple for the valuation is something that will be a matter of discussion during the venture capital negotiations. PE ratios for comparable public companies will be used as a benchmark to select a PE for the company, recognizing that PE ratios for public companies are likely to be higher due to their greater liquidity relative to a private company.

Step 2: Discount the Terminal Value to Present Value

In the net present value method, the firm's weighted average cost of capital (WACC) is used to calculate the net present value of annual cash flows and the terminal value.

In the venture capital method, the venture capital investor uses the target rate of return to calculate the present value of the projected terminal value. The target rate of return is typically very high (30-70%) in relation to conventional financing alternatives. For a detailed understanding of why venture capital target rates of return are so high, see assigned readings **"How Venture Capital Works"** and **"A Method for Valuing High-Risk, Long-Term Investments"**.

In the example provided in Appendix 4, page 19 of the assigned reading **"A Note on Valuation in Private Equity Settings,"** the projected terminal value in year 7 of $300 million is discounted to a present value of $17.5 million using a target rate of return of 50%.

$PV = FV/(1+I)^n = \$300m/(1+.50)^7 = \$17.5$ million

Step 3: Calculate the Required Ownership Percentage

The required ownership percentage to meet the target rate of return is the amount to be invested by the venture capitalist divided by the present value of the terminal value of the company. In this example, $5 million is being invested. Dividing by the $17.5 million present value of the terminal value yields a required ownership percentage of 28.5%.

The venture capital investment can be translated into a price per share as follows.

The company currently has 500,000 shares outstanding, which are owned by the current owners. If the venture capitalist will own 28.5% of the shares after the investment (i.e. 71.5% owned by the existing owners), the total number of shares outstanding after the investment will be 500,000/0.715 = 700,000 shares. Therefore the venture capitalist will own 200,000 of the 700,000 shares.

Since the venture capitalist is investing $5.0 million to acquire 200,000 shares the price per share is $5.0/200,000 or $25 per share.

Under these assumptions the pre-investment or **pre-money valuation** is 500,000 shares x $25 per share or $12.5 million and the post-investment or **post-money valuation** is 700,000 shares x $25 per share or $17.5 million.

Step 4: Calculate Required Current Ownership % Given Expected Dilution due to Future Share Issues

The calculation in Step 3 assumes that no additional shares will be issued to other parties before the exit of venture capitalist. Many venture companies experience multiple rounds of financing and shares are also often issued to key managers as a means of building an effective, motivated management team. The venture capitalist will often factor future share issues into the investment analysis. Given a projected terminal value at exit and the target rate of return, the venture capitalist must increase the ownership percentage going into the deal in order to compensate for the expected dilution of equity in the future.

The required current ownership percentage given expected dilution is calculated as follows:

Required Current Ownership = Required Final Ownership divided by the Retention Ratio

In the example in Appendix 4, shares amounting to 10% of the equity are expected to be sold to managers and shares equivalent to 30% of the common stock will be sold to the public in an IPO.

In this case the Retention Ratio is [1/(1+0.1)/(1+0.3)] = 70%

Therefore, Required Current Ownership = 28.5%/70% = 40.7%

In other words, in order to preserve a 28.5% final ownership percentage at exit, the venture capitalist must get a 40.7% ownership interest going into the deal, given the expected future dilution.

The number of new shares that will have to be issued at the outset will therefore have to be 500,000/(1-40.7%) – 500,000 = 343,373

The price per share will therefore be $5 million/343,373 = $14.56 per share.

Open the Excel spreadsheet **Venture Capital Method**. The example provided on the spreadsheet is the example provided in Appendix 4, page 19 of the assigned reading **"A Note on Valuation in Private Equity Settings."** You may clear the values in the cells shaded yellow and use the spreadsheet for other Venture Capital Method valuations.