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# Valuation and Required Rates of Return

From *Financial Management for the Hospitality Industry*,  
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La Rochefoucauld once observed, "The greatest of all gifts is the power to estimate things at their true worth." That ability, from a financial perspective, is one that you now have the tools to achieve. In this chapter, we will show you how to estimate the value of decisions involving hospitality projects and investments "at their true worth." To do this, we will first take you on a theoretical exploration of the components of the valuation process. We will show you, in logical sequence, all of the major approaches that can be used to estimate a hospitality project's true worth. It will be important to note the differences in these approaches, as they can often be an area of confusion in real world application. Later in this chapter, we will show you how to apply the most commonly used of these approaches to an actual hospitality project.

## The Meaning of Worth or Value

There are many definitions of worth or value in the world of finance. Two common definitions are **book value** and **market value**. Book value refers to the dollar amount at which an asset is carried on the books. A building may have been purchased 10 years ago at \$500,000 and depreciated \$200,000 to date. This building would have a book value of \$300,000. Market value, on the other hand, is the amount for which the asset could currently be sold.

Another common distinction should be made between **liquidating value** and **going-concern value**. Liquidating value is the value assets have if they are sold apart from the business in which they are used. For example, if a restaurant owner decided to go out of business and sell his or her equipment, inventory, and building at an auction, the amounts received would equal the total liquidating value of the business. If this same owner sold the equipment, inventory, and building to someone who intended to operate the restaurant, the seller would receive an amount equal to the going-concern value of the business. We normally expect the going-concern value of the business to be more than the liquidating value.

In this chapter, we will focus on what is variously referred to as **fair market value**, **intrinsic value**, or **reasonable value**. This is the value that the asset ought to be worth based on its fundamentals. The fundamentals, depending on the nature of the asset, are things such as dividends or cash flows.

The concepts and models necessary for estimating the true worth or value of a firm or project relate to how the riskiness, timing, and magnitude of a future cash

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### Exhibit 1 Determination of Owner's Value Today

Assuming a firm goes on forever,  $V_0[\widetilde{DIV}_t]$  must be equal to:

$$V_0[\widetilde{DIV}_t] = \frac{\overline{DIV}_1}{(1 + k_E)} + \frac{\overline{DIV}_2}{(1 + k_E)^2} + \frac{\overline{DIV}_3}{(1 + k_E)^3} + \dots + \frac{\overline{DIV}_n}{(1 + k_E)^n}$$

$$\text{or } V_0[\widetilde{DIV}_t] = \sum_{t=1}^n \frac{\overline{DIV}_t}{(1 + k_E)^t}$$

where  $\overline{DIV}_t$  = the expected dividend at time  $t$

$k_E$  = discount rate or owner's required rate of return appropriate for the risk of  $\widetilde{DIV}_t$  (as determined from the SML)

Further, we can now write:

$$W_0 = DIV_0 + V_0[\widetilde{DIV}_t]$$

$$W_0 = DIV_0 + \sum_{t=1}^n \frac{\overline{DIV}_t}{(1 + k_E)^t}$$

flow affect its value today. In this chapter, we want to begin to incorporate these concepts and models into actual valuation models.

We will begin by stating the basic formulation of owner's value:

$$W_0 = DIV_0 + V_0[\widetilde{DIV}_t]$$

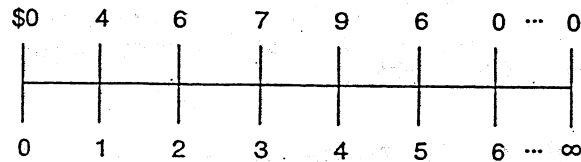
That is, owner's value today (share price, in the case of a corporation) is equal to any dividend to be paid to the owners today ( $DIV_0$ ) plus the value today of all future (risky) dividends to which their ownership in the hospitality firm gives them a claim ( $V_0[\widetilde{DIV}_t]$ ). In order to use this relationship to help us evaluate the effect of various managerial decisions, we need to understand more precisely how the financial markets actually determine  $V_0[\widetilde{DIV}_t]$ .

### The Present Value of All Future Dividends

The key to describing how the market establishes  $V_0[\widetilde{DIV}_t]$  for a particular hospitality firm or investment is to recognize that the market is simply determining the *present value* of a future dividend cash flow stream. The process for establishing  $V_0[\widetilde{DIV}_t]$  is thus the same process used for finding the present value of any future cash flow stream—that is, find the present value of each cash flow using an appropriate risk-adjusted discount rate or required rate of return and add the present values of the individual cash flows together (as illustrated in Exhibit 1). The timing and magnitude of the future dividends are accounted for by the present value process, and the riskiness of  $\widetilde{DIV}_t$  is accounted for by  $k_E$ . We now have a general model for hospitality ownership (or share price) valuation. This model for valuing a hospitality firm's ownership claims or shares is sometimes called the **dividend valuation model** and is illustrated in Exhibit 2.

## Exhibit 2 Dividend Valuation Model

Suppose the ABC Hotel Company is expected to pay the following future dividend stream ( $DIV_t$ ) per share:



How much should a share of the firm's stock be worth today? Assume that the beta of the shares is 1.0,  $k_m$  is 16%, and  $R_f$  is 8%.

First, determining  $k_E$ , we know:

$$\begin{aligned} k_E &= R_f + [k_m - R_f]\beta \\ &= .08 + [.16 - .08]1.0 \\ &= \underline{16\%} \end{aligned}$$

Thus:

$$\begin{aligned} W_0 &= 0 + \sum_{t=1}^5 \frac{DIV_t}{(1 + .16)^t} \\ &= 0 + \frac{4}{(1 + .16)^1} + \frac{6}{(1 + .16)^2} + \frac{7}{(1 + .16)^3} + \frac{9}{(1 + .16)^4} + \frac{6}{(1 + .16)^5} \\ &= 0 + 4(PV_{n=1, k=.16}) + 6(PV_{n=2, k=.16}) + 7(PV_{n=3, k=.16}) + 9(PV_{n=4, k=.16}) \\ &\quad + 6(PV_{n=5, k=.16}) \\ &= 0 + 4(.8621) + 6(.7432) + 7(.6407) + 9(.5523) + 6(.4761) \\ &= \underline{\$20.22} \end{aligned}$$

Since the present value of all dividends received from owning a share of ABC's stock is \$20.22, this must be its worth or  $W_0$ .

The dividend valuation model or variants of it based on simplifying assumptions are often used by analysts (at brokerage firms, for example) to establish the price at which a firm's shares should sell.\* If, based on their estimates, the present value of future dividends is greater than the current market price of the firm's shares, the analysts would conclude that the shares are undervalued and would recommend that the shares be purchased. Similarly, if the present value of the estimated future dividends is less than the current market price of the firm's shares (that is, the shares are overvalued), the analysts would recommend selling the shares.

For example, if the Goodbuy Hotel Corporation's stock were selling for \$25 per share and an analyst using the dividend valuation model estimated the stock's

\*Of course, the  $W_0$  they arrive at will be based on their own estimates of  $DIV_t$  and  $k_E$ .