

OPTION VALUATION

In the previous chapter, we examined option markets and strategies. We noted that many securities contain embedded options that affect both their values and their risk-return characteristics. In this chapter, we turn our attention to option valuation issues. To understand most option-valuation models requires considerable mathematical and statistical background. Still, many of the ideas and insights of these models can be demonstrated in simple examples, and we will concentrate on these.

We start with a discussion of the factors that ought to affect option prices. After this discussion, we present several bounds within which option prices must lie. Next, we turn to quantitative models. First, we examine one particular valuation formula, the famous Black-Scholes model, one of the most significant breakthroughs in finance theory in the past three decades. Next, we look at some of the more important applications of option-pricing theory in portfolio management and control. Finally, we examine an alternative option valuation approach, called “two-state” or “binomial” option pricing, and its extensions.

