market). In this particular case, the random walk model does not apply (nor, for that matter, do the submartingale and martingale models). Instead, the appropriate framework is the capital asset pricing model.

The capital asset pricing model is based on a number of assumptions. Earlier versions of the model assume that: (1) investors are price-takers who may borrow and lend any amount at an exogenously determined risk-free rate of interest; (2) investors are risk-averse; (3) investors form the same estimates of expected return and risk; (4) all assets are perfectly divisible and liquid, though in fixed supply; and (5) there are no transactions costs and taxes.

Many of these assumptions have recently been relaxed. As a result, there are many versions of the capital asset pricing model. The version to be described here is the more widely known version of the model based on the above assumptions.

The Efficient Frontier

One important element of this model is the efficient frontier, depicted by the curved line AB in Figure 1. In Figure 1, E(r) and $\sigma(r)$ represent the expected return and the standard deviation or risk, respectively. All points on or below AB are obtainable portfolios of assets given an individual's wealth. That is, an individual can obtain portfolio A, B or C, but not D, with his available wealth. Each portfolio is completely characterized by its expected return and standard deviation or riskiness. The efficient frontier AB thus contains portfolios with maximum expected return for any given level of risk, or, alternatively, with minimum risk for any given expected return.

