Net asset value and risk

In light of the growth of hedge funds and the recent mutual fund market-timing scandal, valuation has become a hot topic. David Rowe argues that a clear definition of what published valuations represent is essential, and that such valuations need to be supplemented with consistent risk information
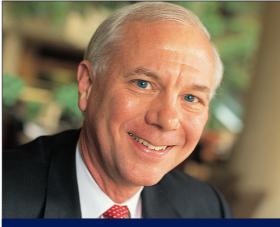
Few things stimulate public interest more effectively than crisis and scandal. The dramatic collapse of Long-Term Capital Management ignited broad interest in the esoteric process of how financial assets should be valued. This interest has been sustained by persistent growth of hedge funds (perhaps better described as relative value investment vehicles), and the increasing range of individuals and institutions investing in such funds. A further stimulus to this interest in valuation arose from the recent mutual fund timing scandal. One indication of the level of interest in valuation is that 160 people turned out on a miserable Friday morning in New York in early February for a half-day seminar on the topic.[1]

We are so deluged with financial valuation data that we sometimes take it for granted and casually ignore its limitations. It is important to recognise that, even in the most liquid and transparent markets, the total value of a stock of assets will differ with the context. Ignoring bid/offer spreads for the moment, the usual approach to valuation entails taking the price at which a standard market order quantity of an instrument can be bought or sold and multiplying it by a total holding of the instrument. But what is this market-clearing price? It is essentially the price at which (with very few marginal exceptions) those who hold the instrument do not want to sell and those who don't hold the instrument do not want to buy. We all know that demand curves are downward sloping to the right. That being the case, the market-clearing price is not the price at which either:
□ all, or even most, of the outstanding stock of the instrument could be purchased, or
□ all, or even most, of the outstanding stock of the instrument could be sold.

This is the essential reason that a premium must be paid when tendering for all the shares of a company. Essentially, the tender price is what the buyer estimates is needed to acquire a controlling proportion of all outstanding shares. With a downward-sloping demand curve, this will always be above the price needed to entice only the least enthusiastic holder

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to part with the number of shares in a standard market order.

Valuation and liquidity risk

It should therefore be clear that equilibrium prices, even in the best of circumstances, are only directly applicable to marginal transactions of typical market size. This immediately raises the issue of liquidity risk. How sensitive is the market-clearing price to a substantial change in the volume of buy or sell orders? Without knowing the full shape of the demand curve we cannot supply a complete answer to this question. Nevertheless, we can estimate this shape for some range around current market experience. Based on analysis of past trading volumes and associated price changes, one can derive a rough estimate of the sensitivity of the price to a shift in net demand.

The next step is to estimate the consequences of this for a fund's total holding of the instrument. One approach is to calculate a net liquidation value of the position after adjusting for the price move needed to induce sufficient willing buyers. On the other hand, it is important to recognise that the essential consequence of poor liquidity is reduced flexibility to respond to unexpected market moves.

Another useful derivation, therefore, is to begin with the maximum daily sale volume you believe can be absorbed without significantly moving the market and calculate how long it would take to dispose of a fund's total holding of an instrument within this constraint. Obviously, lengthening the implicit holding period increases the risk of loss due to adverse events.

Confounding value and risk

The net asset value of a fund is important because it represents the terms on which investors can both enter and leave the fund. Distortions in its calculation will work to the disadvantage of one and to the advantage of the other. It is important to recognise, however, that the open-ended nature of such funds creates a dilemma related to risk and value. A fund with oversized positions and limited liquidity will be more risky than a smaller and more liquid counterpart with an identical portfolio mix. If traded as a total entity in an informed market, the large illiquid fund would almost certainly be valued at a discount to its net asset value.

This raises the question of whether net asset value calculations should reflect this hypothetical discount. Some will argue that it should, but this seems to me to confound value and risk. While realising that these two concepts are inextricably intertwined, I think it is preferable to keep them distinct for fund valuation purposes. Net asset value can then be clearly defined as the best available estimate of the value of a marginal exchange applied to the full position. Investors would be put on notice that this concept does not reflect possible illiquidity of the total position. This information should be conveyed by more structured disclosure of the relationship between market sensitivity to increased volume and its risk implications for a fund's total holding. ∎

[1] The seminar was sponsored by the International Association of Financial Engineers and focused, in part, on a draft position paper entitled Valuation Concepts for Investment Companies and Financial Institutions and Their Stakeholders. The paper is available at www.iafe.org.