



New Abbott Analysis Aids Valuators in Assessing Liquidity Discounts

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DATA & PUBLICATION UPDATE

New Abbott Analysis Aids Valuers in Assessing Liquidity Discounts

By Ashok Abbott, Ph.D and BVR Staff

While there is a general consensus that liquidity is an important component of asset-pricing, there is a wide divergence of views regarding an appropriate discount for lack of liquidity. Precise measurement of the impact of block size, asset size, trading speed, and trading cost—as of a given valuation date—has been difficult. Recently, the debate and the difficulties have intensified as traditional benchmarks providing ‘one size fits all’ estimates for the cost of liquidity have come under increasing scrutiny by the courts and compliance authorities. The valuation community is being challenged to provide empirically supportable evidence for fact-based, case-specific levels of discounts for lack of liquidity (DLOL).

Quantifying liquidity can be elusive

Valuation practice relies heavily on data from public equity markets to estimate the underlying parameters for the appraisal of closely held businesses, by way of required rates of return, market multiples, or size premiums. In the past, the “gold standard” of liquidity has been described as “call the broker and receive your funds in three days.” While this conveniently assumes that blocks of all sizes for all publicly listed (marketable) firms are equally liquid—in practice, liquidity can be quite elusive. The apparently large volume of shares

trading daily on U.S. equity markets represents less than 1% of all listed (marketable) shares eligible for trading. Further, public equity markets show varying degrees of liquidity across a spectrum of both time and size.

Recent and rather abrupt changes in observed liquidity in the real estate markets provide a good illustration of the changing costs of liquidity. Just about one year ago, demand for real estate was exceeding available supply in a number of “hot” markets. The bid-ask spreads (the difference between listing and selling prices) started narrowing and then turned negative as buyers started outbidding each other and houses started selling at or above the asking price, often within a day or two of being put on the market. Fast forward to the current market, in which demand has declined and sales have slowed down. Tract builders in some of the formerly “hot” markets are reportedly auctioning new homes with reserve bids starting at 50% of last year’s listing prices.

Closely held businesses suffer a lack of liquidity in multiple dimensions with a similar and sometimes abrupt variability. A small pool of potential buyers decreases the competition inherent in an auction market, resulting in lack of depth and resiliency—and higher trading costs. If the owner of a large block attempts to sell all at once, for example, the market price will decline as the number of available shares outstrips the demand. Alternatively, a block holder can “dribble out” the shares slowly over time, but then faces the risk of price fluctuations during the prolonged selling period and incurs opportunity costs. An optimal liquidation pattern would minimize the total costs of price pressure and price risk. A rational buyer would estimate this cost and demand a discount for lack of liquidity at least equal to the cost of optimal liquidation. If the stock were perfectly liquid this cost would be zero.

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A new tool to quantify liquidity discounts

But of course, two factors impede “perfect” liquidity: the time to sell and the volatility of the underlying asset price. By extension, determination of DLOL has posed a significant problem for valuation practitioners, because there has been no empirically based tool for quantifying the range and variability of these discounts—until now. Discounts can now be calculated from directly observable, publicly available data for the universe of publicly traded securities. Beginning with this

issue, the *BVU* will feature the “Abbott Liquidity Factor,” a new measure derived from this liquidity database and designed to help quantify liquidity discounts (see next page).

The Abbott database tracks the market liquidity performance of common stocks of publicly traded operating companies listed on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), and Nasdaq National Market System (NASDAQ). Before deriving the Abbott Liquidity Factor, all closed-end funds, exchange-traded funds (ETF), holding company stocks, investment vehicles, or royalty trusts are excluded, along with all American Depository Receipts (ADRs) and American Depository Shares (Ads). Initial public offerings (IPOs) must have been listed for at least ninety days before inclusion in the Liquidity Factor. Changes in observed liquidity have been tracked for periods from 1996 to 2006 (2007 data will be available in March '08, and will appear in a spring issue of the *BVU*).

Appraisers generally expect larger DLOL during periods of lower liquidity, but the Abbott Liquidity Factor shows that the impact can be much larger—and more volatile—than many would predict from the S&P 500 Index for 1996 through the end of 2006. The ranges presented in *BVU* identify levels of small-stock liquidity and the resulting discounts over time. The Liquidity Factor also reflects the significant impact of block size. Notably, as discussed above, while the myth persists that publicly traded stocks are completely liquid, this analysis concludes that even the largest corporations suffer from discounted values because of costs associated with liquidating large blocks of stock. If the largest companies experience such discounts, then by extension all companies are subject to liquidity discounts.

The following steps are taken to cleanse the Abbott Liquidity data:

- Any changes in the number of shares outstanding during the month are reflected in the calculated value of the Liquidity Factor.
- Delisted companies are removed and newly listed companies are included after an initial IPO period of 90 days has passed.

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New Abbott Analysis

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- Secondary offerings of shares increase the number of shares outstanding and repurchases reduce the number of shares outstanding used for calculating the Liquidity Factor.
- Stock splits and reverse splits require D Liquidity LOL Factor divisor adjustments as the number of shares outstanding changes.
- Market value weights are adjusted at each month's end as market values of the component companies change.
- Each component's eligibility and market value weight is reviewed at the end of each month.

The Liquidity Factor is calculated on a lagged basis beginning when the month's end outstanding shares and trading volume data become available for the component stocks. While every reason-

able effort is taken to ensure high standards of data integrity, there is no guarantee against errors. The month end closing market value is calculated using the closing prices issued by the primary exchange for each component stock and the number of shares outstanding as reported in the company's latest SEC filing. If the primary stock exchange modifies the closing price of a component stock, the new price will be used to calculate the Liquidity Factor closing price.

Note on application: The Abbott Liquidity Factor is the first indicator by which appraisers can identify a rapidly changing but material discount, which until now has lacked empirical support. No one should apply the Liquidity Factor in the *BVU* without selecting an appropriate peer group for the specific engagement and completing further, independent analysis that turns on the specific facts and circumstances of the valuation engagement. For specific DLOL analyses, contact Linda Mendenhall at lindam@bvresources.com.

DISCOUNT METRICS

ABBOTT LIQUIDITY FACTOR

The Discount for Lack of Liquidity (DLOL) database compiled by Dr. Ashok Abbott, from which the Abbott Liquidity Factor is derived, provides the first complete tool for quantifying discounts for lack of liquidity specific to size of the block and the valuation period. It is based on directly observable, publicly available data. The reported results are representative of the small firm, publicly traded stock pool with an average market capitalization between \$16 and \$22 million during 2005-2006. The data represent the mean DLOL for the last month of the quarter and ignore SEC Rule 144 restrictions. If you are interested in using Abbott Liquidity Factor consulting services for a specific DLOL assignment, please contact Linda Mendenhall at lindam@bvresources.com.

Block size	Discount for Lack of Liquidity			
	2005		2006	
	Q2	Q4	Q2	Q4
10%	19.09%	14.87%	18.83%	12.59%
20%	23.23%	18.27%	22.86%	15.74%

The information contained in this Liquidity Factor is current as of December 31, 2006, and subject to change without notice. Ashok Abbott and BVR are not responsible for any damages, direct or indirect, caused by any error or omission in this Liquidity Factor.