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1338 HARDING PLACE • SUITE 200
CHARLOTTE, NORTH CAROLINA 28204
PHONE: 704-334-4932 FAX: 704-334-5770
Contact: George B. Hawkins, ASA, CFA, President

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SELLING OUT TO A PUBLIC COMPANY BUYER- BLOCKAGE, RESTRICTED SHARES, AND VALUE- THE STATED PRICE VERSUS REALITY

By: George B. Hawkins, ASA, CFA

Introduction. Sometimes a fortunate private business owner will hit the financial home run most entrepreneurs salivate over- a rich purchase price paid for his or her company in an acquisition by a public company. While the price may sometimes be paid all in cash, it is more common to receive part of the purchase price in cash and a portion in the shares of the acquiring public company. With public shares prices at an all-time high, public companies are eager to use their high priced share currency wherever possible to pay for some or all of the purchase. In such a transaction the company owner and his attorneys need to know the following:


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- What is the actual value of the public company shares the seller receives, such as in computing the amount of the taxable gain?

- What is the value of the shares for estate tax purposes if the seller dies?

It seems simple. Just look up the trading price of public company's shares in the paper. In reality, however, the public company shares might be worth significantly less than the actual trading value for the following reasons:

1. **Restrictions on Sale-** Shares received are often restricted from public sale for some period of time (up to two years).

2. **Not Registered For Public Sale-** Once restrictions on sale lapse, the shares cannot then be sold publicly unless they have undergone the expensive process of registration with the Securities and Exchange Commission. The smart business owner will typically require as a part of the transaction that the acquiring company agree to immediately undertake the efforts and costs to accomplish registration.

3. **Blockage-** The seller may now own a large block of the public company's shares. If they were to be immediately sold this could cause a demand/supply imbalance in the public stock (i.e., more shares being offered for sale than the daily trading activity could normally absorb). To induce buyers to acquire such a large block, a substantial "blockage discount" from the traded daily price may be required.

This article will deal primarily with the valuation impacts of a delay until the shares can be registered and sold in the public marketplace, although it will briefly address blockage. It will summarize how information on trading activity and the use of options pricing techniques might be used to estimate the actual fair market value of the public company shares received on the day of the transaction.

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Blockage Discount-The First Step. The valuation process begins by addressing the impact of blockage on the value of the shares received on the date of the acquisition. In other words, what price per share could be realized by a sale of the shares on that date, taking into account daily trading activity in the stock and market forces? A business valuator is usually not the best source to estimate this discount. Instead, the market maker in the shares of the public company is normally the best place to start. Market makers are specialists who actually serve as the intermediaries who match purchase and sell orders for the stock, maintaining an inventory on hand of the shares to match the needs of buyers and sellers and create an orderly market. Since they are in daily contact with the liquidity and supply and demand forces of the stock, they are normally the best equipped to estimate the price impacts of dumping a larger block of the shares on the market.

Impacts of Awaiting Registration. Next, the value of shares (adjusted for blockage) are adjusted for illiquidity by the business valuator, taking into account the impact of the time required until registration, and hence, marketability can be achieved. In a recent case where the acquirer agreed to undertake immediate efforts to register the shares and bear the costs involved, the minimum estimated time frame required was approximately 90 days. Thus, the entrepreneur cannot convert the shares to cash for at least 90 days and is exposed until that time to potential changes in the share price. While the shares might be worth more 90 days later, they might also be worth less. To guarantee that the owner will receive their stated value (net of blockage discount), insurance can be purchased in the form of a 90 day "put" option which effectively guarantees that the owner can "put" the shares to the holder of the put option (i.e., require them to buy the shares) at the stated price during the period of the option, here 90 days. The cost of purchasing a put option can be modeled using standard stock option pricing models, thus estimating the cost of the illiquidity during this 90 day time frame.

The subtraction of the blockage discount and the cost of purchasing a put option from the traded price per share (at the time of the transaction) results in the final cash equivalent fair market value of shares received at the time of transaction by the seller.

An Example of Blockage. As an example, assume the selling company owner ("Seller") receives a substantial minority share block (about 3%) in the traded shares of the acquiring public company ("Pubco"). Based on average daily trading volume during the previous twelve months, the block received by Seller would constitute approximately three times the total average of all trades in a given day, a major block of shares. Therefore, in addition to the average trades already occurring daily, the Seller's block of stock, if sold on the valuation date, would materially exceed typical trading volume causing a demand/supply imbalance which needs to be reflected in the price that could be received for the shares. The specialist firm that makes a market in the shares of Pubco was asked to estimate the discount that would required, if any, from the bid price for the shares to sell them, based on the size of the block. It was the specialist's indication that the discount for the block of shares would total approximately $5.00 per share below the traded bid price of the stock on the day of the transaction ($29.75 per share). Based on a price of the openly traded shares of $29.75, this indicates that the block would be worth $24.75 per share ($29.75 less $5.00 blockage discount), assuming marketability.

Restrictions on The Liquidity of the Shares. During the 90 day period the Seller's shares in Pubco are held until being registered with the SEC they are illiquid, and thus exposed to potential market changes in the share price until they can in fact be sold. Thus, until they can be sold it cannot be known what the Seller will actually receive for the shares, particularly since the shares of Pubco are highly volatile. Therefore, options pricing methodology is used to estimate the cost of a put option for this time period which will hedge the Seller against a potential decline in the value of the shares arising from their volatility.

Other methods are available to identify the costs associated with restricted stock and involve the use of so-called restricted stock studies which have been undertaken to estimate associated discounts. These studies, such as the *SEC Institutional Investor Study,* as well as those by *Maher* and *Moroney*, have typically found discounts for restricted stocks to be approximately 32% to 35% as compared to their unrestricted counterparts. This methodology was not employed for several reasons. First, the studies generally deal with Rule 144B stock which is restricted for up to two years from public sale, whereas Seller's shares are not covered by such restrictions. Second, since Seller's shares are to be registered, the likely time frame required to achieve registration is substantially less than the two years in restricted stocks, therefore limiting the time frame to which Seller would be exposed to share price fluctuations. Finally, the publicly traded shares of Pubco

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are highly volatile. Options pricing techniques can reliably quantify the direct impact of this volatility and how it affects the cost of insuring against a change in value, in effect a cost associated with the illiquidity. The greater the volatility of the underlying stock, the more expensive it is to hedge against changes in the share price.

Option Valuation Methodology- an Overview. A widely used tool for pricing the value of put and call options on a stock is the so-called Black-Scholes options pricing model.[1] This model has been shown in academic studies to reasonably predict the value of shorter term put and call options of publicly traded stocks. A "put" option gives the holder the right to "put" the underlying shares to the counter-party at a predetermined price (the 'exercise price") at any time during the term of the option (up to its "expiration date") despite what changes have occurred in the underlying price of the traded stock. Thus, the holder of a put can insure against downside changes in the stock price through the ability to put those shares to the buyer at the predetermined price. The cost of using a put option is the "option premium" paid by the buyer. A call option is just the opposite of a put, giving the holder the right to "call" (buy) the stock during the option period at a predetermined price. Thus, if the price of the traded stock price rises, the holder can acquire the shares at the lower exercise price per share.

Black-Scholes Option Pricing Model. The Black-Scholes options pricing model is based on the assessment that an option derives it value from the following variables[2] :

1. The current traded price of the underlying stock.
2. The exercise price of the shares in the option agreement.
3. The alternative risk-free interest rate that can be earned on investments during the duration of the option period (continuously compounded rate).
4. Time to option maturity in years (or fractions thereof).
5. Natural logarithm.
6. Standard deviation of the annualized, continuously compounded rate of return on the stock.
7. Value of the call option.

This article is too short to go into the mathematics of the calculations using the above variables. As an overview, the Black-Scholes method is based on options deriving their value from two sources- time value and intrinsic value. Intrinsic value is the profit to be realized if the holder of the option were to exercise the option today. In the case of a call option, suppose the holder has the right to buy shares of IBM for $100.00 per share and the current traded price of IBM shares is $110.00 per share. Thus, the holder could call the stock for $100.00 and simultaneously sell the shares for $110.00, realizing a $10 per share profit. $10.00 per share is the intrinsic value of the option.

In addition, options also have time value. Time value arises because the option gives the holder the right to purchase the stock in the future at a fixed price. Since stocks fluctuate in value over time this volatility gives the potential to realize additional profits in the future. This time value of an option can be valued by two well known valuation methods, the Black-Scholes and Thorp-Kassouf models. Options traded on an exchange are typically of short duration to expiration (typically 180 days or less) and are readily and reliably valued by the Black-Scholes method.

Calculating the Cost of a Put Option in Pubco. Data on the trading activity and price of Pubco shares was obtained for the twelve months prior to the transaction date. Next, the standard deviation of the share prices was computed as a measure of volatility. The conclusion is that the shares of Pubco are highly volatile. As noted earlier, the greater the volatility of the underlying stock, the greater the cost of the option to insure against a change in the value of the underlying stock.

Conclusion of Option Value. Use of the input variables in the Black-Scholes options pricing model results in an estimated cost of a put option for each share of Pubco as shown at the bottom of the following table:

Calculation of Cost of Put Option To Hedge Pubco Share Price Until Shares Can Be Sold (Assumed To Be 90 Days To Registration)

VARIABLES:	
Stock Price	$24.750
Exercise Price	$24.750
Term (90 days) (Expressed As Fraction Of A Year)	0.246
Volatility	93.33%
Annual Rate of Quarterly Dividends	0.00%
Annual Risk Free Interest Rate	5.020%
Put Option Value	**$4.35**

[1] Fisher Black, and Myron Scholes, "The Pricing of Options and Corporate Liabilities," *Journal of Political Economy* 81 (May/June 1973).

[2] *Investments*, 2nd Edition, by Zvi Bodie, Alex Kane, Alan J. Marcus, Irwin Publishing.

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Bringing the Pieces Together To A Final Value. Therefore, the final fair market value of Seller's shares in Pubco is estimated by subtracting the blockage discount and the cost of purchasing a put option from the traded price per share. As shown below, the actual final cash equivalent value is $20.40 per share, or a discount of 31.43% from the traded share price at the time of the transaction:

Final Calculation of Fair Market Value Per Share	
Transaction Price Per Share	$29.75
Less: Blockage Discount Estimated By Market Maker	($5.00)
Equals: Adjusted Value Per Share After Blockage	$24.75
Less: Cost of Put Option	($4.35)
Equals: Final Fair Market Value Per Share For Pubco Shares Received	**$20.40**

Conclusion. Blockage and restrictions on shares received from a public company in a purchase might cause the shares to be worth substantially less than what they appear to be at face value. The techniques described can be used to quantify the true cash value of what is being received, whether for taxation or estate purchases, or simply to make a better and more informed decision in deciding what type of offer to take from the acquiring public company. It is important to note, however, that the case law involving blockage and restricted stock discounts is complex, so the aforementioned techniques may not be warranted in specific situations. ♦

George B. Hawkins is co-author of the *CCH Business Valuation Guide* and a Managing Director of Banister Financial, Inc., a business valuation firm in Charlotte, North Carolina. He can be reached at ghawkins@businessvalue.com or 704-334-4932.

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