Direct Market Data Method: Value Disparity Issues

by Robert M. Clinger III, AVA

The direct market data method (DMDM), using transaction data from the IBA database, Pratt's Stats, Bizcomps* or other transactional data providers, is an effective and intuitively logical approach to valuing a privately held business. After all, the transaction data represent actual transactions of similar privately held businesses in the selected industry, and the multiples at which these transactions took place. It is relatively simple to apply the DMDM to produce an indication of value for the subject of a business valuation. The business appraiser must use reasoned, informed judgment in selecting an appropriate multiple (price to sales or price to earnings) to be applied to the subject company.

However intuitive the approach seems, in reality there are some challenges to using the DMDM effectively to provide a reliable indication of value. For example, what happens when the DMDM produces a value indication that is substantially different from the value produced under the multi-period discounted earnings method, due to high growth expectations over the next several years?

Example

A simple example will illustrate this problem. Triumvirate Oilfield Services, Inc., is a (fictional) regional firm that has experienced modest growth over the last several years, during which time oil prices were stable and drilling activity was average. Revenues for the most recent fiscal year ended December 31 were $5,000,000 and net cash flow to invested capital was $200,000. Given the increased activity in oilfield drilling stemming from rising oil prices, Triumvirate is expecting revenues (and net cash flow to invested capital) to grow substantially in the next few years, as illustrated in Table 1.

In preparing a valuation of Triumvirate, the appraiser decides to use a market approach and an income approach to develop the indication of value. Under the market approach, the appraiser selects the DMDM, after a search for publicly traded companies yields no firms that are comparable to Triumvirate. A search of several transactional databases provides a statistically significant sample of similar and relevant privately held companies in the oilfield services industry. From these data, the appraiser determines that the price to sales ratio is a more reliable measure for developing an indication of value, considering (a) the relatively few price to earnings ratios reported, (b) the wide range of such reported ratios, and (c) the potential disparities in how different

Table 1:
Triumvirate Industries, Inc., Forecast

	2004	2005	2006	2007	2008	2009
Gross Revenue	$5,000,000	$6,500,000	$7,475,000	$8,223,000	$8,881,000	$9,325,000
Growth		30%	15%	10%	8%	5%
Net Cash Flow to Invested Capital	$200,000	$300,000	$375,000	$400,000	$425,000	$446,000
Growth		50%	25%	7%	6%	5%

* For more information about those resources, visit the following websites: Insitute of Business Appraisers: www.go-iba.org, Pratt's Stats: www.bvmarketdata.com, Bizcomps: www.bizcomps.com

Robert M. Clinger, III, AVA, is the co-founder and managing director of Highland Global, LLC, in Miami. He has strong experience in the fields of business valuation and financial analysis.

levels of earnings are calculated. The average price to sales multiple is .50 with a median of .45 and a standard deviation of .10.

After analysis of Triumvirate's financial statements and risk characteristics, the appraiser determines that the company outperforms the industry with respect to numerous financial ratios, has a strong financial position and earnings capacity, and exhibits average risk characteristics. Nothing in the analysis would cause the appraiser to recognize an above-average level of risk for the company. Therefore, based on the financial analysis and risk assessment, the appraiser elects to use a price to sales multiple of .60 to develop an indication of value under the DMDM. Since the transactional data are based on historical financial performance, conventional appraisal theory applies the price to sales multiple to the most recent fiscal year-end for the company, in this case December 31, 2004. Table 2 provides the indication of value based on this multiple.

The transaction database indicates that the transactions did not include the acquired companies' cash, accounts receivables and accounts payable. The adjustments for cash, accounts receivable and accounts payable are necessary to reflect the packaging differences between Triumvirate and those companies in the database. The figures are from the company's 2004 balance sheet.

Table 2:
Triumvirate Industries, Inc., Forecast
Direct Market Data Method
Price to Sale Multiple

2004 Revenues	$	5,000,000
Price to Sales Multiple		0.60
Subtotal (rounded)	$	3,000,000
Adjustments		
+ Cash	$	50,000
+ Accounts Receivable	$	450,000
- Accounts Payable	$	(400,000)
Enterprise Value Indication on a Control, Non-Marketable Basis (rounded)	$	3,100,000
Less Long-Term Debt	$	(1,000,000)
Equity Value Estimate	$	2,100,000
Discounts		0%
Equite Value Inidication on a Control, Non-Marketable Basis (rounded)		$2,100,000

In addition, the value of the company's long-term debt ($1 million as of December 31, 2004) must be subtracted from the enterprise value indication in order to arrive at an equity value indication. Since the interest being valued is a 100% interest, no discount for lack of control is required. The price to sales multiple was based on transactions in similar privately held companies. Therefore, the data are implicitly adjusted for the lack of marketability of privately held companies. No further discount for lack of marketability is required.

As a result, the appraiser determines that fair market value of the company's equity is roughly $2,100,000 under the DMDM.

The appraiser then calculates the value indication of the company's equity using an income approach. Given the rapid growth in revenues and net cash flow to invested capital expected over the next several years, the appraiser decides to use the multi-period discounted earnings method to develop an indication of value. Within the multi-period discounted earnings method, the appraiser decides to use an invested capital model. This method will produce an indication of value at the enterprise level for the company. From this, the value of the company's long-term debt will be subtracted to derive an indication of the company's equity value.

Through the analysis of Triumvirate and the appraiser's financial models, the company's weighted average cost of capital is estimated at 10 percent. The appraiser will use this to discount the company's net cash flow to invested capital to a present value.

Based on a weighted average cost of capital of 10 percent and an estimated 5 percent perpetual growth rate of net cash flow to invested capital beginning in the terminal year, the appraiser calculates an appropriate capitalization rate of 5 percent, which equates to a capitalization multiple of 20. This will be used to develop the terminal

Table 3:
Triumvirate Industries, Inc., Multi-Period Discounted Earnings Method

	2005	2006	2007	2008	2009	Terminal Year 2010
Net Cash Flow to Invested Capital	$300,000	$375,000	$400,000	$425,000	$446,000	$468,000
Discount Rate	10%	10%	10%	10%	10%	
Time	1	2	3	4	5	
Present Value	$273,000	$310,000	$301,000	$290,000	$277,000	
Sum of Present Values	$1,451,000					
Terminal Value Growth Rate	$5.0%					
Terminal Value Capitalization Multiple	20					
Terminal Value	$9,360,000					
Present Value of Terminal Value	$5,812,000					
Estimate Fair Market Value of Invested Capital	$7,263,000					
Less Long-Term Debt	($1,000,000)					
Equity Value Estimate	$6,263,000					
Less Discount for Lack of Marketability (15%)	$939,000					
Equity Value Indication on a Control, Non-Marketable Basis (rounded)	$5,324,000					

value, which will then be discounted back to a present value using the weighted average cost of capital.

Table 3 illustrates the appraiser's calculation of the value indication for Triumvirate using the multi-period discounted earnings method.

From the enterprise value indication of $7,263,000, the company's long-term debt is subtracted. This value is then adjusted to reflect the company's relative lack of marketability. The risk premia used to develop the company's cost of equity capital, as part of determining the weighed average cost of capital, were derived from data associated with publicly trade companies that possess a much higher degree of marketability. Through an analysis of factors impacting the company's marketability and using reasoned, informed judgment, the appraiser determines the appropriate lack of marketability discount to be 15 percent. As a result, the fair market value of the company's equity is estimated at $5,324,000.

Disparity in Value Conclusions

It is clear that there is a substantial disparity in the value conclusions reached using the DMDM ($2,100,000) and the multi-period discounted earnings method ($5,324,000). Theoretically, the two approaches employed should produce value indications that are fairly similar. Given that the multi-period discounted earnings method produced a value indication that is 2.5 times higher than the DMDM, the appraiser should consider what factors led to such a value disparity.

It would seem that the main reason for the greater value estimate produced using the multi-period discounted earnings method is the rapid growth expectations for the next several years, which provide the basis for the value indication. The DMDM developed an indication of value based on last year's revenues of $5,000,000. Recall that revenues are expected to increase by 30 percent in 2005, 15 percent in 2006, 10 percent in 2007, 8 percent in 2008 and 5 percent thereafter. The DMDM, therefore, does not produce an indication of value that reflects the tremendous growth anticipated over the next several years.

Potential Solutions

The appraiser is confronted with a difficult challenge: how to best address the value disparity. There are several options from which the appraiser may choose, including:

1. Do nothing, but explain the difference as discussed above and weight the methods equally.
2. Apply a higher weight to the value indication developed using the multi-period earnings method.
3. Use the company's forecasted 2005 revenues to develop an

Table 4:
Option 1—Value Reconciliation

Method	Value Indication	Weighting	Weighted Value
Multi-Period Discounted Earnings Method	$5,324,000	50%	$2,662,000
Direct Market Data Method	$2,100,000	50%	$1,050,000
Fair Market Value Estimate of Equity on a Control, Non-Marketable Basis			$3,712,000

Table 5:
Option 2—Value Reconciliation

Method	Value Indication	Weighting	Weighted Value
Multi-Period Discounted Earnings Method	$5,324,000	70%	$3,726,800
Direct Market Data Method	$2,100,000	30%	$630,000
Fair Market Value Estimate of Equity on a Control, Non-Marketable Basis			$4,357,000

indication of value under the direct market data method.

4. Use an average (simple or weighted) of the company's forecasted revenues to develop and indication of value under the direct market data method.
5. Adjust the price to sales multiple under the DMDM using the traditional most recent year's revenues.

OPTION 1

The appraiser could elect to merely explain why the large difference occurred and weight the methods equally, producing an indication of value as illustrated in Table 4.

Though the lower value under the DMDM would serve to suppress the overall value indication, the value estimates are likely to converge over the forecast period. As revenues increase, the value indication under the DMDM will exhibit an upward bias, narrowing the gap between the value conclusions, *ceteris paribus*. In addition, forecasts developed by a company's management are notoriously optimistic. In reality, the forecast may change dramatically over the next several years, which could have an adverse impact on the value conclusion arrived in the valuation, further narrowing the disparity in value estimates under the two methods.

OPTION 2

Many appraisers and other professionals accord a higher weight to the value indication derived using earnings, as earnings are a key value driver for companies. In addition, it has been argued that the transaction data may not actually reflect fair market value and may be biased upwards by strategic transactions that produce values with implicit synergies. Therefore, the appraiser could use reasoned, informed judgment to place a higher weight upon the multi-period earnings method in reconciling the value estimates. Table 5 illustrates how this may impact the value.

However, this approach may suffer an upward bias, given the strong projected earnings growth of Triumvirate. Should the company not meet its forecasted target revenues or earnings, the value could be materially, adversely impacted in subsequent years. In addition, there is no method to quantify a higher weighting for one approach; this is totally at the discretion of the appraiser, whose experience and judgment are the basis for the selection of the appropriate weightings. This approach could suffer from accusations that the weighting scheme is arbitrary.

OPTION 3

Rather than use the most recent year's revenues in the DMDM, the appraiser could break with conventional practice and apply the price to sales ratio to the forecasted revenues for the first year of the forecast period. This results in an indication of value under the DMDM as illustrated in Table 6.

This approach has merit in that it incorporates some of the growth that is expected in the future and that will ultimately drive value. However, should the company fail to achieve the level of forecasted revenues, the value indication could be upwardly biased.

Table 6:
Triumvirate Industries, Inc., Forecast
Direct Market Data Method
Price to Sale Multiple

Forecast 2005 Revenues	$	6,500,000
Price to Sales Multiple		0.60
Subtotal (rounded)	$	3,900,000
Adjustments		
+ Cash	$	50,000
+ Accounts Receivable	$	450,000
- Accounts Payable	$	(400,000)
Enterprise Value Indication on a Control, Non-Marketable Basis (rounded)	$	4,000,000
Less Long-Term Debt	$	(1,000,000)
Equity Value Estimate	$	3,000,000
Discounts		0%
Equite Value Inidication on a Control, Non-Marketable Basis (rounded)	$	3,000,000

Table 7:
Triumvirate Industries, Inc., Forecast
Direct Market Data Method
Price to Sale Multiple

	Simple Average	Weighted Average
Revenues	$ 8,080,800	$ 7,610,000
Price to Sales Multiple	0.60	0.60
Subtotal (rounded)	$ 4,848,000	$ 4,566,000
Adjustments		
+ Cash	$ 50,000	$ 50,000
+ Accounts Receivable	$ 450,000	$ 450,000
- Accounts Payable	$ (400,000)	$ (400,000)
Enterprise Value Indication on a Control, Non-Marketable Basis (rounded)	$ 4,948,000	$ 4,666,000
Less Long-Term Debt	$ (1,000,000)	$(1,000,000)
Equity Value Estimate	$ 3,948,000	$ 3,666,000
Discounts	0%	0%
Equite Value Inidication on a Control, Non-Marketable Basis (rounded)	$ 3,948,000	$ 3,666,000

OPTION 4

Along the lines of the previous option, the appraiser could use a simple average or weighted average of the company's revenues during the forecasted period. This makes intuitive sense, since it would incorporate growth in revenues. A fundamental element of financial theory is that the value of any asset is based on the future expectations of the asset's performance and return.

Table 7 provides the indication of value using a simple average of the forecast period and a weighted average of the Triumvirate's forecasted revenues.

These calculations, using the simple average or weighted average, provide value indications that are fairly similar. However, this option could also be upwardly biased by aggressive forecasts developed by management or in conjunction with management. Also, the value indication could be materially impacted by the company's future performance, should that vary significantly from the forecast.

OPTION 5

The final option discussed here for dealing with the disparity in value between the DMDM and the multi-period discounted earnings method is perhaps the least attractive alternative, yet it is the simplest. The appraiser could merely increase the price to sales multiple applicable to the company's most recent fiscal year's revenues. The increase in the multiple would be justified as a result of the significant growth prospects of the company. Table 8 illustrates the effect of increasing the price to sales multiple.

Many appraisers widely accept that adjusting the multiple is the best course of action when the subject company performance is likely to differ substantially from those companies included in the transaction data. However, given that the transaction data do not provide for the companies' potential growth, there is no way to determine if the subject company really outperforms

Table 8:
Triumvirate Industries, Inc., Forecast
Direct Market Data Method
Price to Sales Multiple

2004 Revenues	$	5,000,000
Price to Sales Multiple		1.20
Subtotal (rounded)	$	6,000,000
Adjustments		
+ Cash	$	50,000
+ Accounts Receivable	$	450,000
- Accounts Payable	$	(400,000)
Enterprise Value Indication on a Control, Non-Marketable Basis (rounded)	$	6,100,000
Less Long-Term Debt	$	(1,000,000)
Equity Value Estimate	$	5,100,000
Discounts		0%
Equite Value Inidication on a Control, Non-Marketable Basis (rounded)		$5,100,000

Table 9:
Value Estimate Comparison

Option	DMDM Value Indication
2004 Revenues	$ 2,100,000
2005 Forecasted Revenues	$ 3,000,000
Weighted Average of Forecasted Revenues	$ 3,666,000
Simple Average of Forecasted Revenues	$ 3,948,000
Increased Price to Sales Multiple	$ 5,100,000

the companies included in the transaction data. Therefore, to increase the price to sales multiple without any quantitative means places the selection of the multiple completely on the appraiser's experience and judgment. This could be criticized as nothing more than manipulation of the data or "fuzzy math" intended to produce a specific outcome.

Employing one of the five options discussed above may bring the value indication arrived at under the DMDM closer to the value arrived at under the multi-period discounted earnings method. Table 9 provides the breakdown of the various value indications for each option.

Adjusting the price to sales multiple can easily have the largest impact on decreasing the value disparity between the DMDM and the $5,324,000 value indication arrived under the multi-period discounted earnings method. The option selected for determining the value estimate under the DMDM could have a significant impact on the final value estimate.

For example, if the DMDM and the multi-period discounted earnings method were weighted equally in the value reconciliation (50 percent each), the traditional DMDM calculation using the most recent fiscal year's revenues would contribute $1,050,000 to the value indication ($2,100,000 times 50 percent). Using the option whereby the price to sales multiple is increased, the DMDM contributes $2,550,000 in value. The $1.5 million difference based on the option selected is significant. Table 10 illustrates the value contribution for each option based on a 50 percent weighting, as

Table 10:
Value Estimate Comparison

Option	DMDM Value Inidication	50% Value Contribution	50% Value Contribution Multi-Period Method
2004 Revenues	$ 2,100,000	$ 1,050,000	$ 2,662,000
2005 Forecasted Revenues	$ 3,000,000	$ 1,500,000	$ 2,662,000
Weighted Average of Forecasted Revenues	$ 3,666,000	$ 1,833,000	$ 2,662,000
Simple Average of Forecasted Revenues	$ 3,948,000	$ 1,974,000	$ 2,662,000
Increased Price to Sales Multiple	$ 5,100,000	$ 2,550,000	$ 2,662,000

compared to the value contribution of the multi-period discounted earnings method.

The calculation of the value estimate under the DMDM using the simple average and the increased price to sales multiple produce value indications that are more closely aligned with the value indication produced by the multi-period discounted earnings method.

Conclusion

The question remains: Which option is the most suitable? There is not one right answer to this, nor is there a consensus as to which approach is the most appropriate.

I believe the traditional calculation using the most recent fiscal year's revenues and weighting the DMDM equal to the other methods or less than the other methods is an attractive alternative, in that the value disparity should disappear over time, assuming the company is able to reach the forecasted performance level. I believe that the use of the forecasted data is also a reasonable approach. It may also be appropriate for the appraiser to select more than one option under the DMDM in developing an indication of value.

This perplexing issue is one that each appraiser must consider when confronting a disparity between value indications produced under the DMDM and the multi-period discounted earnings method. Each appraiser must select the most appropriate option based on the data set and circumstances with which they are confronted, as well as an understanding of the various options available. VE

Additional Resources

Articles

- "Cyber-Comparables: Private Company Transaction Data Sources," by Lisa Doble, *National Litigation Consultants' Review,* October 1, 2001
- "Business Valuation Secrets Unveiled in the Market Approach," by Carl L. Sheeler, *The Value Examiner*, July/Aug 2003
- "Market Approach—Using Guideline Companies and Strategic Transactions in Valuation for M&A," by Frank C. Evans and David M. Bishop, *The Value Examiner*, Sept/Oct 2001

Books

- *The Market Approach to Valuing Businesses, Second Edition,* by Shannon P. Pratt, ISBN 0-471-69654-4 (available from NACVA)