

Size Matters: Valuation of Small and Micro Businesses

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This column focuses on valuation issues unique to small or “micro” businesses. These businesses often have less financial and management information available, much of which may be deficient by GAAP or other standards. Therefore, valuers must do more qualitative review and apply greater professional judgment.

Market Method for Valuing Small Businesses—Selecting the Multiplier



Problem: I have a very well-run company that I believe is a 75th percentile company compared to similar businesses, but my market data does not really make sense to me. The variance between methods is just too large.

This article describes a practical approach for solving this problem and calculating reliable multipliers.

Table 1: Market Method Example

Example			
Auto Repair—Nice Company		75 th Percentile	
Method	Revenue or Cash Flow	Multiplier	Value Found
Market—Revenue	\$1,040,000	0.53	\$551,200
Market—SDE Cash Flow	\$243,600	3.1	\$755,160
Variance			\$203,960

In the market method example shown in Table 1, the value based on seller’s discretionary earnings (SDE) cash flow is 37 percent higher than the value based on revenue. In

other data searches, this variance becomes even larger as revenues increase for companies with very small cash flows. However, by using a more detailed analysis we can reduce the gap and make sense of the two methods.

The market method works by comparing actual sales transaction data for companies that are comparable to the subject company. This method is not perfect, but for many small and micro businesses (typically less than \$10 million in revenue) it is the best method because, for most industries and SIC or NAICS codes, there is sufficient relevant data.

As a reminder, the market method formula is:

$$\text{Value} = \text{Multiplier} \times \text{Future Cash Flow}^1$$

Of course, this starting-point formula is then modified to reflect discounts, premiums, and balance sheet adjustments as appropriate. The following discussion describes an approach for selecting the appropriate multiplier to solve the problem of what appears to be irreconcilable variances between market method valuations based on revenue and cash flow.

Comparable Data Search

The first step is to perform an appropriate search of the available data. Many analysts believe in searching multiple databases, but I believe it makes more sense to focus on understanding the data in the best market data source. Currently, the best source of comparable transaction data for small businesses is DealStats, published by Business Valuation Resources (BVResources.com). There will always be issues with the data. The fact that we can understand the issues allows us to review the data and adjust. In most cases, multiple transactions are used to develop guideline data and only very rarely would individual comparables be selected and used to determine a multiplier.

¹ Revenue may also be used as a measure of cash flow.

Occasionally, a key word will bring up useful data. Often, the sample is too small to use on its own but will still yield useful information. "Franchise" can be a good choice because franchises often sell for more than non-franchises.

A typical comparable sort from DealStats data may be based on the following criteria:

- Transactions from January 1, 2013, to the current date. More recent data is preferred because it is more current and is likely to be more complete.
- NAICS Code. You may have to include similar industries, not just the subject company's industry, depending on the code. Usually, I look for 10 to 25 comparables with as tight a revenue range as possible.
- Revenue range. Similar revenue usually means similar companies. Typically, I use a revenue range from about one-third below to two-thirds over the subject company's revenues. For example, if the subject company has revenues of \$1 million, I might search for comparable companies with revenues ranging from \$700,000 to \$1.6 million. This usually produces median data similar to the subject company.

- Minimum cash flow—usually SDE or earnings before interest, taxes, depreciation, and amortization (EBITDA).
- A keyword, such as "franchise." Occasionally, a key word will bring up useful data. Often, the sample is too small to use on its own but will still yield useful information. "Franchise" can be a good choice because franchises often sell for more than non-franchises.

Sometimes I perform multiple sorts with different NAICS or SIC codes, different revenue ranges, and other variations to gain a better understanding of the data.

To perform the required charting, the data must be downloaded into Excel. I always download all data for all comparables. Table 2 shows a portion of the DealStats "statistics" tab output. Note: the 75th percentile SDE and revenue multiplier are highlighted. As described above, I would no longer typically download 100 data points.

Table 2: Select DealStats Data from "Statistics" Tab

Statistic	Count	Range	Median	75 th Percentile
Sale Date	103	08/03/1995–07/15/2019		
Net Sales	103	\$751,000–\$1,677,451	\$1,041,245	\$1,254,423
MVIC Price	103	\$93,500–\$2,250,000	\$445,000	\$610,000
EBITDA	85	(\$71,024)–\$650,000	\$97,867	\$180,000
Seller's Discretionary Earnings (SDE)	103	\$56,730–\$850,000	\$188,275	\$260,152
Gross Profit Margin	90	19.5%–100.0%	56.0%	69.7%
SDE Margin	103	6.2%–100.0%	17.9%	23.4%
EBITDA Margin	85	(5.8%)–76.5%	10.1%	15.7%
Operating Profit Margin	103	(6.3%)–76.5%	8.8%	15.2%
Net Profit Margin	98	(6.4%)–76.5%	8.1%	14.2%
MVIC/Net Sales	103	0.09x–1.51x	0.44x	0.53x
MVIC/Gross Profit	90	0.19x–4.47x	0.72x	1.01x
MVIC/EBIT	97	0.6x–416.7x	4.7x	9.0x
MVIC/EBITDA	81	0.6x–106.2x	3.7x	7.0x
MVIC/SDE	103	0.6x–7.7x	2.4x	3.1x
MVIC/Book Value of Invested Capital	26	0.9x–12.9x	2.7x	5.0x

Source: DealStats, 2023 (Portland, OR: Business Valuation Resources, LLC), www.bvresources.com/dealstats.

What The 75th Percentile Column Really Means

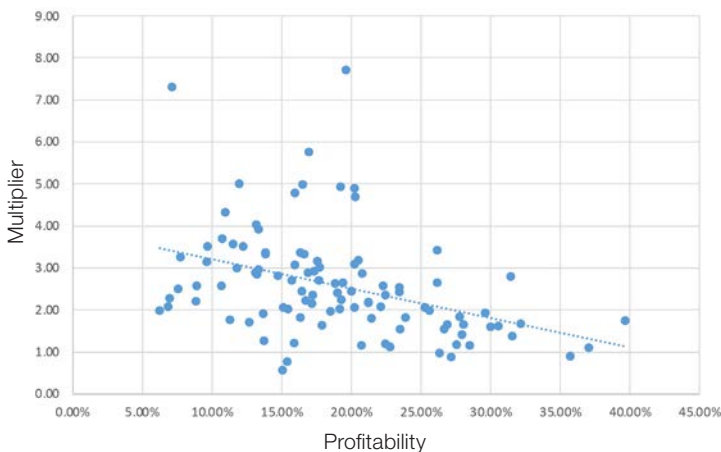
The most important thing to understand when reviewing DealStat data is that the 75th Percentile performance column (and all other columns with the possible exception of the median and mean) is not comparable within itself. In other words, the 75th percentile is measured for each item individually, so a 75th percentile company in net sales or profitability does not translate to using a 75th percentile cash flow multiplier.

In fact, higher cash flow multipliers usually relate to lower-performing companies. Keep reading even if you are sure I am wrong:

- Unless you really have a median company, you must graph your cash flow multiplier by an estimate of profitability. How many companies are really median? The pervasive use of the median when applying the market method is another common error that produces misleading results.
- Try this graphing several times. It will change your view of the market method.

The process of graphing the cash flow multipliers by a measure of profitability is explained below.

Figure 1: Cash Flow Multiplier



The cash flow graph in Figure 1, which shows the multiplier falling as the profitability indicator increases, is not an exception. I have graphed hundreds of businesses and this is the norm. Again, with small businesses, as companies become more profitable, the multiplier usually decreases. Note that the Y variable (in this case, the multiplier) is the dependent or unknown variable. We determine it by looking at the X variable. The X variable (profitability) is the independent variable.

I graph revenue multipliers the same way, as shown in Figure 2. This probably looks as you would expect.

Figure 2: Revenue Multiplier



How to Create a Graph

The first step is to create a simple chart in Excel.

Table 3 is a partial chart plotting the multiplier by profitability. Profitability is determined by dividing cash flow by revenues. The first three columns are derived from DealStats. The next three columns are simple calculations: SDE or other cash flow/revenues; Revenue multiplier = MVIC price/revenue; and cash flow multiplier = MVIC price/cash flow.

In some cases, I will also include other information in additional columns to allow an easier understanding of other components of the multiplier to be selected. Examples include closing date and inventory or other asset and liability accounts transferred. These columns can help me understand how my subject company compares to the comparable set.

Table 3: Multiplier by Profitability

MVIC Price*	NetSales*	SDE*	SDE/Rev %	Rev Mult	Cash Flow Mult
\$225,000	\$751,727	\$122,954	16.36%	0.30	1.83
\$295,000	\$888,023	\$253,286	28.52%	0.33	1.16
\$400,000	\$767,000	\$194,000	25.29%	0.52	2.06
\$475,000	\$1,144,495	\$168,812	14.75%	0.42	2.81
\$2,250,000	\$1,488,122	\$291,890	19.61%	1.51	7.71
\$625,000	\$1,366,000	\$259,696	19.01%	0.46	2.41
\$850,000	\$1,605,273	\$360,188	22.44%	0.53	2.36

*Source: DealStats, 2023 (Portland, OR: Business Valuation Resources, LLC), www.bvresources.com/dealstats. MVIC=market value of invested capital.



Next, the chart is used to create a graph in Excel. I make two scatterplots, one for the revenue multiplier as the Y variable and one with cash flow (in this case SDE) as the Y variable. The profitability indicator (in this case SDE/revenue %) is the X variable in both graphs.

If you are not familiar with how to create a scatterplot with a trend line, here are two suggested resources (although many others are available through a Google search). A simple introductory article on creating a scatterplot with a trend line can be found here: <https://www.statology.org/add-regression-line-to-scatterplot-excel/>. A more thorough and easy-to-follow video on the subject can be found here: <https://www.youtube.com/watch?v=kLROcLFzH8o>.

Note that once developed, with simple modifications, the same chart can be updated with new data to create new graphs. Reusing the chart and graph set-up as a template will greatly speed up this process.

Statistics For the Market Method—Regression Analysis

Many valuers use regression analysis to determine the correlation of the trend line (hence, the likelihood that the multiplier will be close to the trendline). Some resources on performing regression analysis using Excel are listed on page 42.

Correlation is shown when R-square is between 0.5 and 1. Keep in mind, however, that statistical correlation does not reflect causation. For example, many sick people can be found at hospitals—a high correlation—but that does not mean that hospitals make people sick. A case for causation must be established first.

If your points are dispersed (an R-square below 0.5), that does not mean your data is bad. If your selected multiplier is farther from the trend line, you must use more professional judgment. (Professional judgment is why a kid with a calculator cannot do proper business valuations.)

Table 4 shows a regression calculation output from Excel for SDE cash flow multipliers for auto repair shops. It shows that the data correlation is inconsistent (R square under 0.5).

Table 4: Regression Calculation for Auto Repair Shops

SUMMARY OUTPUT									
Regression Statistics		ANOVA***							
Multiple R	0.395193399		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>		
R Square	0.156177823	Regression	1	24.8128912	24.8128912	18.50838092	3.94461E-05		
Adjusted R Square	0.147739601	Residual	100	134.0630026	1.340630026				
Standard Error	1.157855788	Total	101	158.8758939					
Observations	102								
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%	
Intercept*	3.908007861	0.328670489	11.89035216	7.56731E-21	3.255934972	4.56008075	3.255935	4.560081	
X Variable 1**	-6.991300803	1.625076364	-4.302136785	3.94461E-05	-10.21540602	-3.767195582	-10.2154	-3.7672	

*The intercept is where the null variable (essentially 0 value) would cross through the 0 value of the Y axis of the graph.

**The X variable is the angle of the line graph generated. It can be viewed as the base "multiplier" starting from null. In this case, the R-square, and therefore correlation, is very low, perhaps because cash payments and possible underreporting of income is pervasive in auto repair.

***ANOVA = Analysis of variance.

Statistics For the Market Method—Coefficient of Variation Analysis

Coefficient of variation can be used to compare the reliability of different possible multipliers. In other words, which is more reliable: SDE, EBITDA, or revenue? It is a "numberless" number—that is, a ratio scale similar to common size financial statement data. It is not really reliable for comparing different market data cash flows, but the use persists and DealStats even shows the result for the complete data set. The problem is that with small mean values, the measure becomes unreliable. In addition, the coefficient of variation does not measure confidence levels. Finally, remember we still need causation; statistics do not show causation. For instance, we know revenues may be a questionable cash flow to use to estimate value in many cases, as it does not measure earning power, yet it will almost always have the lowest coefficient of variation.



Useful Links for Statistics and the Market Method

- Analysis ToolPak (necessary to estimate regressions in older Excel versions)
 - o <https://www.excel-easy.com/data-analysis/analysis-toolpak.html>
- Regression Analysis
 - o <https://www.spreadsheetweb.com/regression-analysis-better-predictions/>
- Coefficient of Variation
 - o How to calculate coefficients of variation in Excel—<https://exceltable.com/en/analyses-reports/coefficient-variation-in-excel>
 - o Limitations of coefficients of variation—<https://www.itl.nist.gov/div898/software/dataplot/refman2/auxillar/coefvari.htm>

In assessing risk, it is important to consider "soft" factors. These factors can indicate company strength and resilience, protecting cash flow.

Assessing Risk, Soft Factors

Finally, we need to evaluate the subject company with reference to the comparable set. Risk in business valuation is the likelihood that a future cash flow will not be achieved. We may adjust the multiplier or the cash flow to reflect this risk. You must be careful not to overcompensate, but the two parts must work together and make sense together.

In assessing risk, it is important to consider “soft” factors. These factors can indicate company strength and resilience, protecting cash flow. There are many soft factors, but the following should be given great weight:

- Trend of cash flows, including revenues and measures of profitability
- Management structure and size of company
- Organization and systems
- Recurring revenues
- Concentrations or unusual risks (or reduction of risk)

- Clarity of comparables
- Known local market comparables (reported or not)
- Profitability charting
- Timing of economic cycle
- Industry trends

One note: concentrations greatly increase risk for small businesses and they cannot be avoided. They are the primary reason why small businesses are riskier than larger businesses, but they are underestimated in many valuations. Recent supply chain and labor issues support this view.

Adjust the multiplier up or down, based on various soft factors, to see how the subject company compares to the comparable set.

Adjusted Calculations

Compare Table 5 to Table 1 and note how small the variance is. It is not always this close, but graphing and charting as described above will usually produce a workable variance.

Table 5: Market Method Example with Charting

WITH CHARTING			
Auto Repair—Nice Company			
Method	Revenue or Cash Flow	Profitability Adj Multiplier	Value Found
Market—Revenue	\$1,040,000	0.5	\$520,000
Market—SDE Cash Flow	\$243,600	2.2	\$535,920
Variance			\$15,920

This company has a 23 percent profitability ratio. Use the graphs above to estimate the percentile.

Profitability was determined by dividing SDE by revenues. For purposes of this illustration, I assumed the company should receive a multiplier near the trend line. See the graphs above and you select the multipliers. **VE**



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