Timing of a Sale

The transactions used for business valuations are often several years old. Most of us exposed to real estate appraisals on private residences have been told that proximity to the subject house and timing of the comparable's sale are critical to the valuation. Business valuations, however, are not calculated by looking at the actual selling price of the comparables. Instead, the subject company's financial ratios are compared with the ratios of the comparable businesses. As noted below, some of these financial ratios have a tendency to be fairly consistent over time.

Secondly, small-business investors base their investment decisions primarily on a long-term view of the market. Unlike purchasing stock, where the holding period may be weeks or months, buyers of small businesses are often looking for career-length opportunities. Therefore, when comparing businesses that sold several years ago, the effects of recessions or bull markets on the revenue multiples of the business are somewhat minimalized. Again, by using financial ratio comparisons, the relationship between selling price and gross sales tends to be fairly stable over time. The time element that is so critical in real estate appraisals is not nearly as significant a factor in business appraisals.

The following research was discussed in the book *Understanding Business Valuation* by Gary Trugman,:[1]

> *Raymond C. Miles, C.B.A., A.S.A., executive director of the Institute of Business Appraisers, published a paper entitled, "In Defense of Stale Comparables," in which Miles examined the almost 10,000 entries in the database, and demonstrated that most industries are unaffected by the date of the transaction when smaller businesses are involved. Miles performed a study that examined the multiples across various industries and time periods to see if, in fact, the multiples changed. The conclusion reached was that the multiples do not appear time-sensitive, since inflation affects not only the sales prices, but also the gross and net earnings of the business. Therefore, this information can be used to provide actual market data.*

More recently, similar results were cited by Jack Sanders, the creator of BIZCOMPS database:[2]

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[1] Gary Trugman, *Understanding Business Valuations: A Practical Guide to Valuing Small to Medium Sized Businesses*. New York: American Institute of Certified Public Accountants, 1988, p. 150

[2] Jack Sanders, "BIZCOMPS User Guide," (Las Vegas, NV, 2004), p. 7

> *Recently, the author [Jack Sanders] compared current study data with the data over ten years old. First the Gross Sales to Selling Price ratio was compared. In the current National Database that ratio was available in 6,748 out of 6,851 transactions. The arithmetic mean of this ratio was .46, while the median was .38. A similar analysis of 879 transactions out of 954 transactions older than ten years was made.*
>
> *The arithmetic mean was .44 and the median was .37. The same analysis was made of the Seller's Discretionary Earnings (SDE) to Selling Price ratio. The arithmetic mean for the current study was 1.95 while the median was 1.8. In the over 10 year-old data, the arithmetic mean was 2.0 and the median was 1.8.*

Granted, the above two quotes go back many years, but that was the conventional thinking in the pre-recession days. In 2012 Gary Trugman updated his comments on Ray Miles research, noting that transactions that were 15 years old were still valid. However, there were some industries where that thinking did not hold true.[3]

Recently, there have been some concerns raised by Toby Tatum that the recession has produced a significant amount of volatility in transactional multipliers during, and for several years after the recession, which may skew one's results when employing the market approach[4]. To test that theory, I assembled a sample of transactions obtained from the DealStats database. The sample was filtered for all transactions between 1999 through 2018 with revenues under $3 million. Stock sale transactions were eliminated as were companies with breakeven cash flow (identified as transactions with cash flow multiples greater than 10.0) or negative cash flow.

The revenue multipliers and cash flow multipliers were calculated from each transaction's revenues, seller's discretionary earnings (SDE, or cash flow), and selling price. The data

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[3] Gary Trugman, *Understanding Business Valuations: A Practical Guide to Valuing Small to Medium Sized Businesses.* 4th Edition. New York: American Institute of Certified Public Accountants, 2012, p. 353.

[4] Toby Tatum, "Analysis of Bizcomps Database: Past and Present, Business Appraisal Practice-Qtr IV," 2013, p. 19.

Date Range		Count	Average Revenue Multipliers	Average Cash Flow Multipliers	Average SDE%
1-1-1999	12-31-1999	339	0.566	2.908	22.9%
1-1-2000	12-31-2000	414	0.580	3.144	21.9%
1-1-2001	12-31-2001	501	0.538	2.703	24.3%
1-1-2002	12-31-2002	594	0.558	2.835	24.7%
1-1-2003	12-31-2003	526	0.570	2.975	23.8%
1-1-2004	12-31-2004	765	0.576	3.014	23.7%
1-1-2005	12-31-2005	815	0.587	3.058	23.9%
1-1-2006	12-31-2006	839	0.588	3.045	23.7%
1-1-2007	12-31-2007	976	0.576	2.829	25.3%
1-1-2008	12-31-2008	1147	0.556	2.539	26.6%
1-1-2009	12-31-2009	788	0.561	2.437	27.9%
1-1-2010	12-31-2010	880	0.527	2.201	28.7%
1-1-2011	12-31-2011	855	0.552	2.423	26.9%
1-1-2012	12-31-2012	902	0.524	2.353	27.0%
1-1-2013	12-31-2013	965	0.551	2.411	26.6%
1-1-2014	12-31-2014	1065	0.572	2.489	27.3%
1-1-2015	12-31-2015	1127	0.548	2.539	25.5%
1-1-2016	12-31-2016	1250	0.553	2.542	25.4%
1-1-2017	12-31-2017	1019	0.580	2.664	24.7%
1-1-2018	12-31-2018	964	0.547	2.456	26.4%
	Averages	16,731	0.560	2.678	25.4%

Exhibit 8.9: Multipliers by Year of Transaction. Source - DealStats

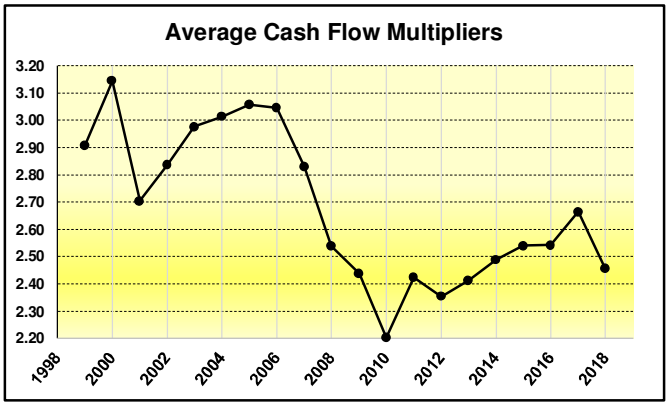

Exhibit 8.10: Average Cash Flow Multipliers 1999 to 2018

was sorted by the year in which the sale took place and the resulting average value of the multipliers from each year was determined. The resulting sample of 16,731 transactions is listed in the table in Exhibit 8.9. The cash flow multipliers for the last twenty years are plotted in Exhibit 8.10 to illustrate the volatility the multipliers have experienced since the recession.

From the peak in 2006, just before the start of the recession, cash flow multipliers declined 28% by 2010. If we were using the conventional medians to estimate the subject's

appropriate multiplier and if our sample had a concentration of transactions that sold between 2010 to 2015, we would likely undervalue our subject.

Revenue multipliers, however, have remained fairly stable during the last twenty years. From the chart below we can see that revenue multipliers have fluctuated within a fairly tight range of less than plus or minus 10% from year to year. Even during the recession revenue multipliers held up remarkably well.

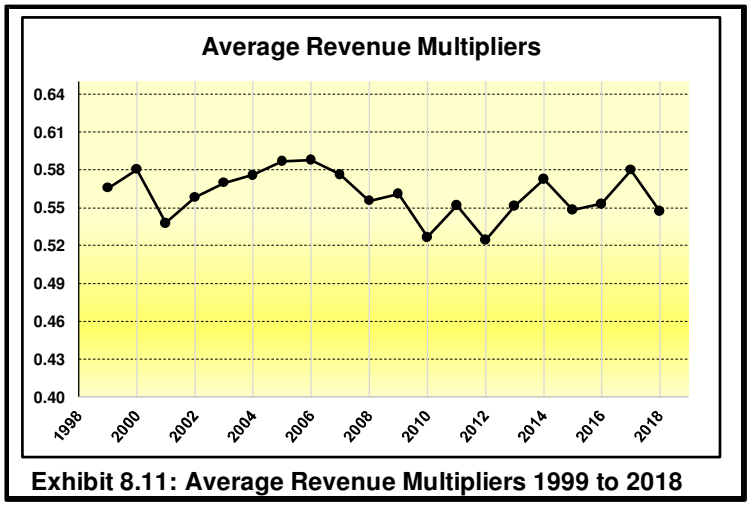

Exhibit 8.11: Average Revenue Multipliers 1999 to 2018

One's initial reaction is that appraisers should only use cash flow multipliers of transactions occurring during the most recent years to avoid undervaluing a business. Toby Tatum advanced an approach where an index would be created that reflects the current level of the multiplier with respect to its long-term average. The index would then be applied to the subject's calculated multiplier to adjust it to the current trend. [5]

Another alternative involves the use of regression analysis which will allow us to use transactions over the last twenty years regardless of the level of multipliers of any one year.

As we learned in prior chapters, there is generally a moderate correlation between a company's operating profit margin (SDE%) and its corresponding cash flow multiplier. As such, we regressed the SDE% and the cash flow multipliers from Exhibit 8.8 for the last twenty years.

The results illustrated in Exhibit 8.12 were quite compelling. Visually we note that the dots representing the twenty years of multipliers were clustered tightly about the regression trend line. The regression produced a very high R^2 of 0.86, suggesting there is a strong

[5] Toby Tatum, "Analysis of Bizcomps Database: Past and Present, Business Appraisal Practice-Qtr IV," 2013, p. 19.

correlation between a company's operating profit margin and the multiplier it earned, regardless of the effects of the recession.

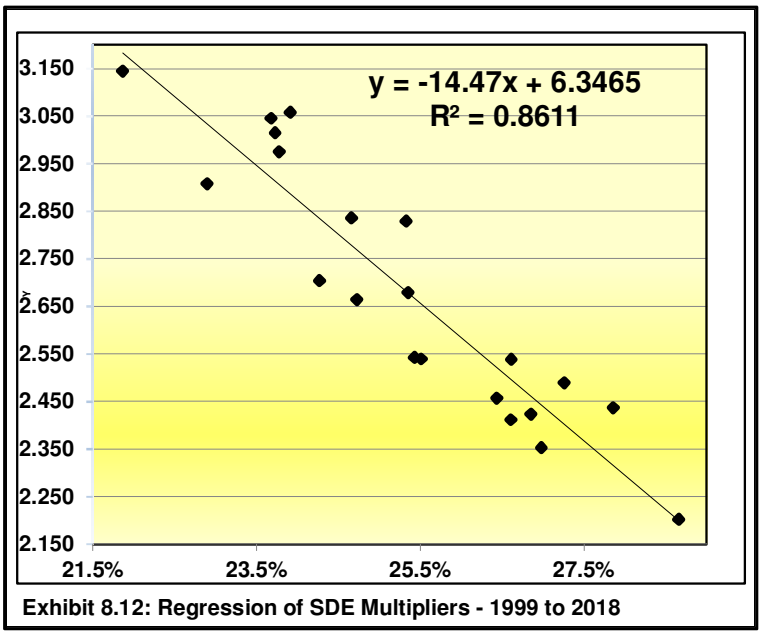

Exhibit 8.12: Regression of SDE Multipliers - 1999 to 2018

To demonstrate we take the above regression formula and plug in the 28.7% SDE% value from 2010, the low point for cash flow multipliers during the recession years:

y = -14.47x + 6.35

y = -14.47 x 0.287 + 6.35 = 2.20

The actual multiplier for 2010 was 2.201.

The regression equation almost exactly predicted the average cash flow multiplier for 2010, the low point during the recession. Taking the 23.7% SDE% for 2006, the peak year for multipliers prior to the recession, and applying the same regression formula we find:

y = -14.47x + 6.35

y = -14.47 x .237 + 6.35 = 2.92

The actual multiplier for 2006 was 3.04

The regression formula's 2.92 prediction for the peak year was only 4% less than the 3.04 actual value.

Clearly the regression methodology can accurately calculate multipliers regardless of the age of the transaction; medians cannot.

Page 6 Selection of Transactions in the Sample

If we look closely at the operating profit margins (SDE%) over the last twenty years, we note that during the recession years profit margins actually increased. That seems to be counterintuitive. However, as we learned in the prior chapters, as a company's SDE% profit margin increased, its cash flow multipliers decreased, which is what happened during the recession.

I was a business broker before, during, and after the recession and I witnessed firsthand one reason for this apparent anomaly. Prior to the recession small-business owners were living the good life. Profits were abundant. The owners played golf twice a week. They could afford to hire a manager so that they wouldn't have to work more than 30 hours a week. When the recession hit, the owners immediately did everything they could to protect their lifestyles. They jumped back into the trenches, worked 60-hour weeks, cut every expense, and fired the manager. From the example below, we observe that sales may have declined 25% by the depths of the recession, but the owner's efforts to protect his lifestyle held profits to a 17% decrease. Sales and cash flow both declined. However, the end result was that the company's SDE% increased from 30.0% in 2006 to 33.0% in 2010.

	2006	2010	Decline
Sales	$2,000,000	$1,500,000	-25.0%
SDE	$600,000	$500,000	-17%
SDE%	30.0%	33.3%	

Had the owner sold his business in 2006, he could have earned $600,000 x 3.04 = $1,824,000. By 2010 the business was only worth $500,000 x 2.2 = $1,100,000—a higher profit margin, but a lower multiplier.

I must offer a modest disclaimer for the events that occurred during the recession as I described them. I found the highest correlation between profit margins and cash flow multipliers in companies with less than $3 million in revenue. The significance all but disappeared when analyzing companies over $3 million in revenue. I believe the reason is that the small business owners have far more control over the day-to-day decision making when it comes to deciding how and when to cut expenses. Hence, those owners were able to protect profit levels better. Larger companies have many layers of bureaucracy, multiple owners, and often have board members who have different agendas than the prime owner. Thus, expenses often did not get cut as deeply as a small business owner could make.