Analysis of the BIZCOMPS® Database: Past and Present

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Oh Toto, I've a Feeling We're Not in Kansas Anymore

In a recent discussion I had with another appraiser regarding acceptable assumptions that can be made about comparable sales data in the BIZCOMPS® Database, this individual maintained that the central tendency in the selling price to seller's discretionary earnings ratios remain fairly constant over time. Thus, he maintained that it's perfectly okay to use comparable sales data from several years past without making any allowance for changes in the central tendency of this ratio in past years compared to the most recent year.

There was a time when I would have agreed with him. Indeed, in *Transaction Patterns: Obtaining Maximum Knowledge of the Bizcomps Database*[1], published in 2000, I stated the following on pages 35 (see Figure 1)

The purpose of Figure 1 is to plot a regression line through the historical data in order to see the trend in the price/earnings ratios of small business transactions over the last 10 years. The story this figure tells us is that there has been no increase or decrease whatsoever in the price/earnings ratios of small businesses over this time period.

Identifying this fact is significant. It means that, unlike historical real estate transaction data that goes stale generally
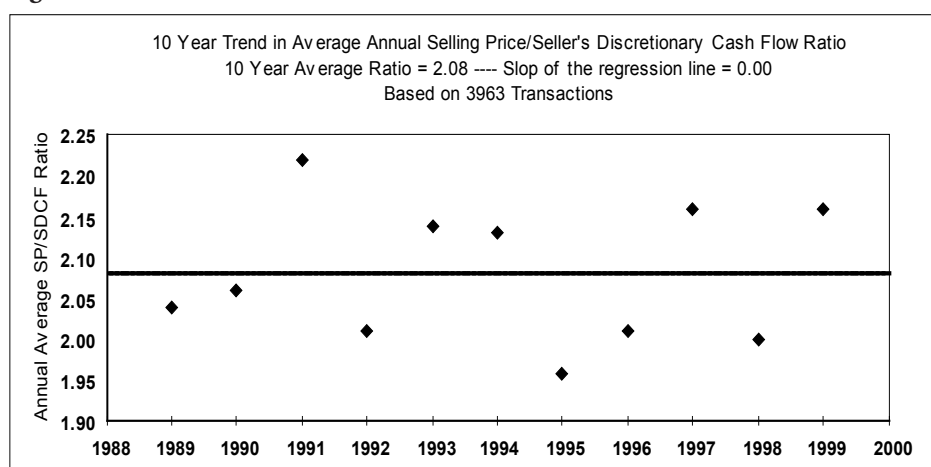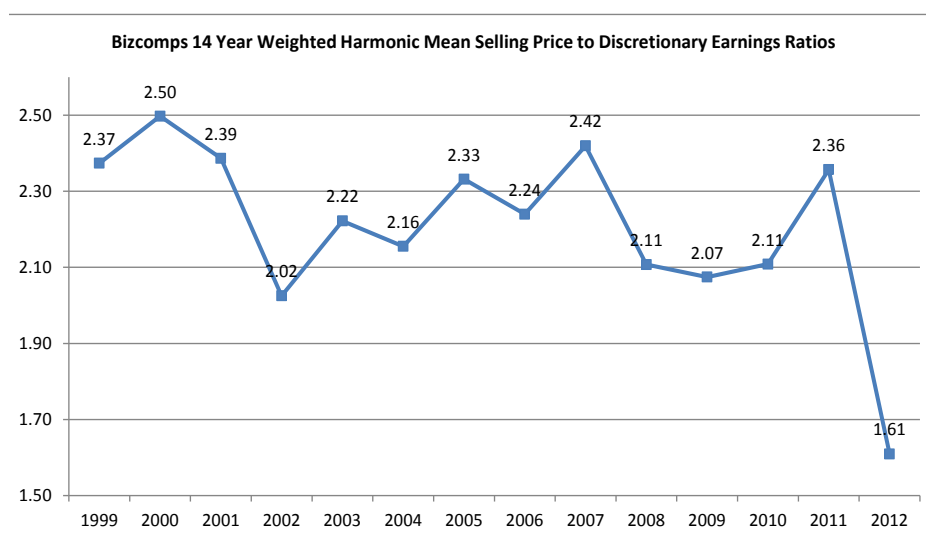
Figure 1

10 Year Trend in Average Annual Selling Price/Seller's Discretionary Cash Flow Ratio
10 Year Average Ratio = 2.08 ---- Slop of the regression line = 0.00
Based on 3963 Transactions

Figure 2

Bizcomps 14 Year Weighted Harmonic Mean Selling Price to Discretionary Earnings Ratios

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1   Toby Tatum, *Transaction Patterns: Obtaining Maximum Knowledge From the Bizcomps Database,* copyright 2000 by Toby Tatum, p. 35.

within six to 12 months, or the P/E ratios of publicly traded companies, which have been climbing upward almost daily, the historical business transaction data for small businesses dating all the way back to 1989 is absolutely flat. For business appraisers, this means that when selecting comparable P/E ratios, one need not be concerned with the date of the transaction. For small business owners, buyers, and brokers this means that despite the enormous increase in the average price/earnings ratios of publicly traded companies over the last ten years, there has been virtually no tendency for the P/E ratios of small businesses to follow the same track. The only factor that has affected, and we must assume will continue to affect the value of small businesses will be their level of earnings.

We find agreement with my conclusions in *The Market Approach to Valuing Businesses, Second Edition* by Shannon Pratt:

"Ray Miles did a study of the *IBA Database* and concluded that there were no long-term secular changes over time in the multiples in industries represented in that database, and, therefore the whole 20 years of data are relevant."[2]

Now, fast-forward to 2013 and let's take a fresh look at this aspect of comparable transaction data for the 14 year period of 1999 through 2012. Figure 2 presents the central tendency of the SP/SDE ratios obtained from the BIZCOMPS Database for 1999 through 2012.[3] Figure 3 reflects the number of reported transactions by year.

Figures 2 and 3 combined seem to be telling the story that the aftermath of the so-called "great recession" of 2008 has had a profound downward effect on
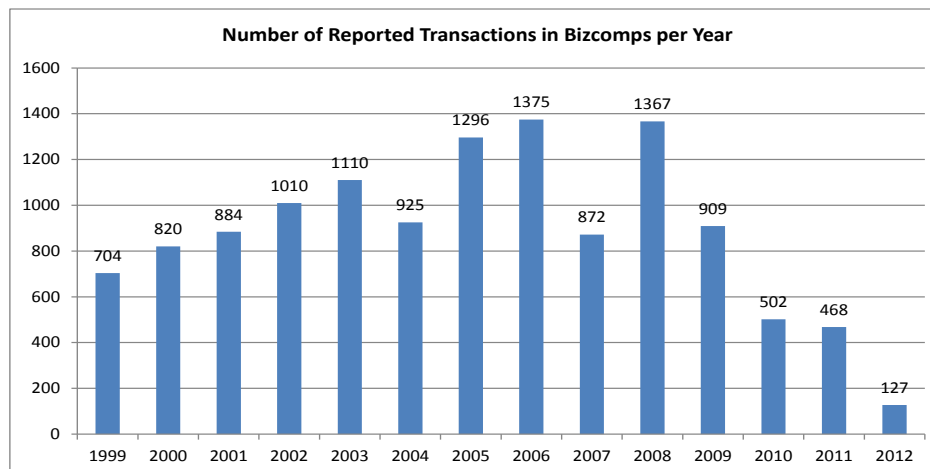
Figure 3

Number of Reported Transactions in Bizcomps per Year

Figure 4

Bizcomps 14 Year Weighted Harmonic Mean Selling Price to Discretionary Earnings Ratios for All Cash At Closing Transactions

Figure 5

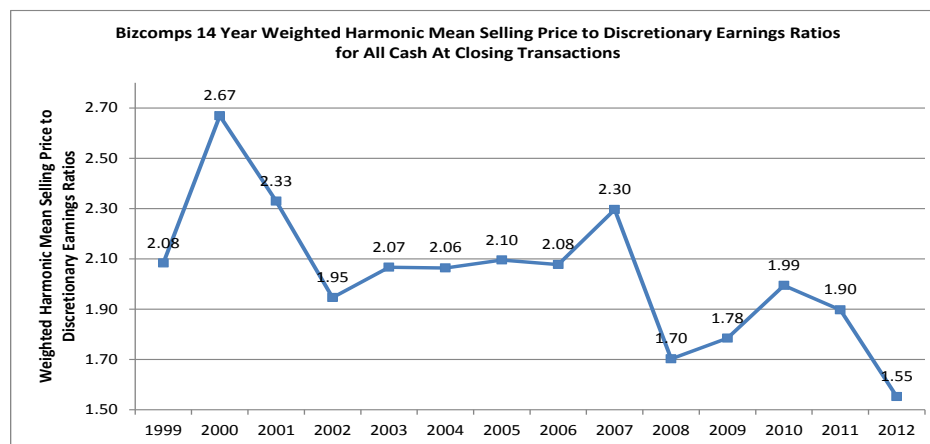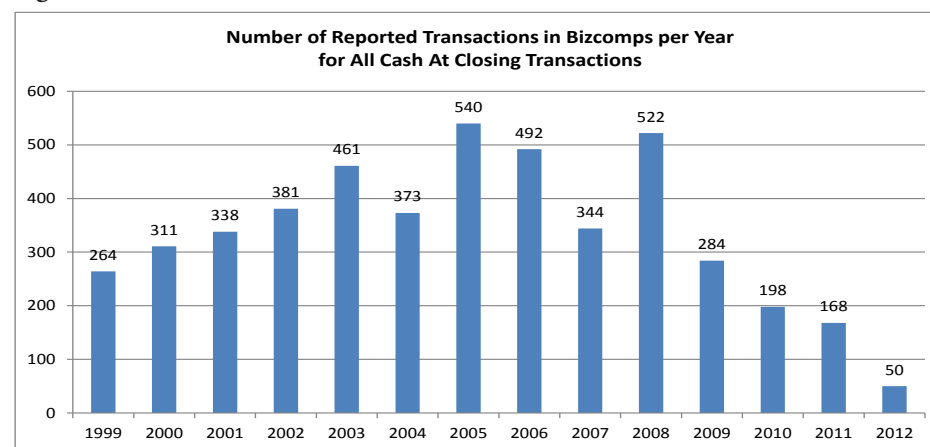Number of Reported Transactions in Bizcomps per Year for All Cash At Closing Transactions

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2   Shannon Pratt, *The Market Approach to Valuing Businesses, Second Edition,* copyright 2005 by John Wiley & Sons, p. 40.

3   Another thing that has changed is my analytical methodology. All current analyses of the BIZCOMPS data have been cleansed of comparables where SDE is equal to or less than zero. Then, all SP/SDE ratios that are greater than three standard deviations from the mean are assumed to be outliers and have been eliminated. And finally, I now compute the weighted harmonic mean value of an array of comparable sales ratios rather than the arithmetic mean value. This is why the indicated average value of the SP/SDE ratio for 1999 in *Transaction Patterns* is different from Figure 2. For a detailed (and fascinating) explanation of why the *weighted harmonic mean* is the correct way to calculate the central tendency in an array of ratios, see *Valuing a Small Business via the Bizcomps Database* by Toby Tatum in the forthcoming edition of *Valuation Strategies*, *Vol. 17 No.3*, copyright by Thomson Reuters/Warren Gorham & Lamont. In the meantime, note that the concept of the harmonic mean and weighted harmonic mean may be new to some people; however, this measurement of the central tendency in an array of ratios has been around for a long time. "The harmonic mean is one of three measurements of central tendency known collectively as the "Pythagorean means" named after Pythagoras (c. 500 BCE), who is generally considered the first to expound them. The Pythagorean Means are the arithmetic mean, geometric mean and the harmonic mean." http://www.cs.uni.edu/~campbell/stat/pyth.html

Figure 6

	Adjustment percent.
1999	74.51%
2000	58.16%
2001	66.63%
2002	79.77%
2003	75.11%
2004	75.22%
2005	74.08%
2006	74.72%
2007	67.61%
2008	91.19%
2009	86.98%
2010	77.84%
2011	81.83%
2012	100.00%

Figure 7

Frequency Distribution of Transactions based on Sales Revenue

Figure 8

Cumulative Frequency Distribution of Transactions based on Sales Revenue

Figure 9

Frequency Distribution of Transactions based on SDE
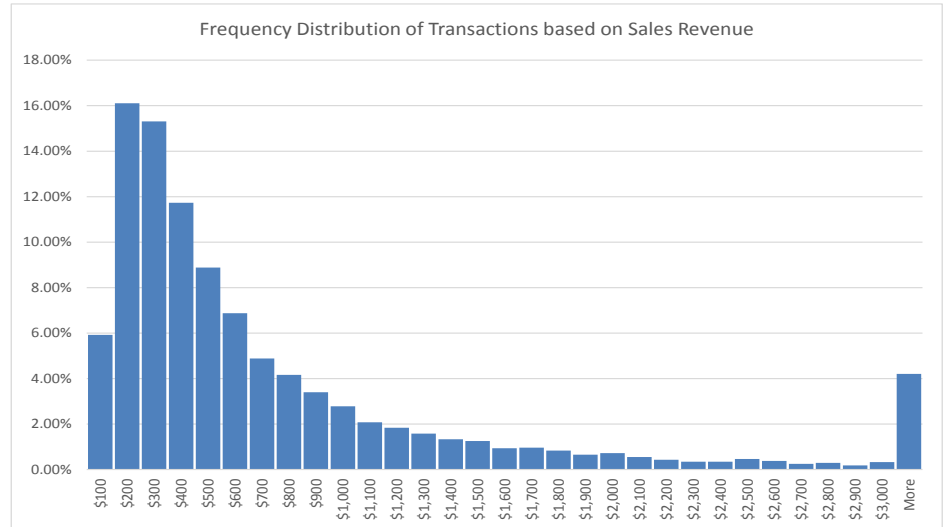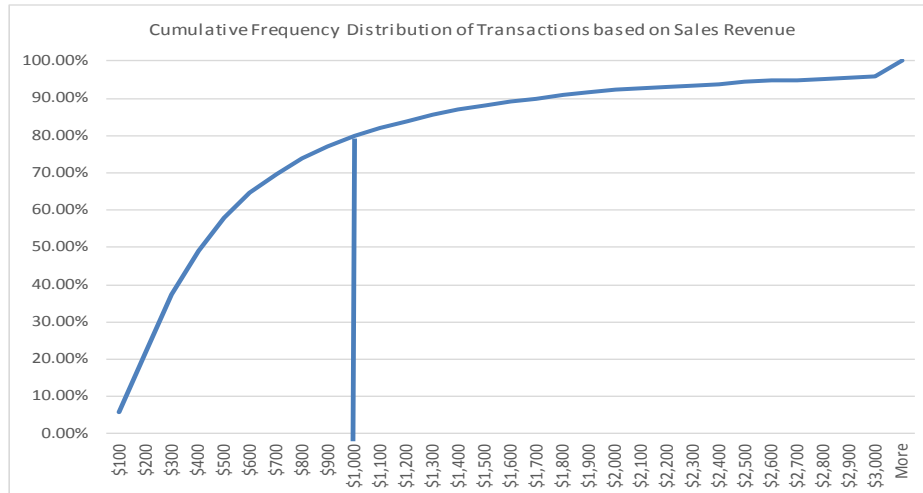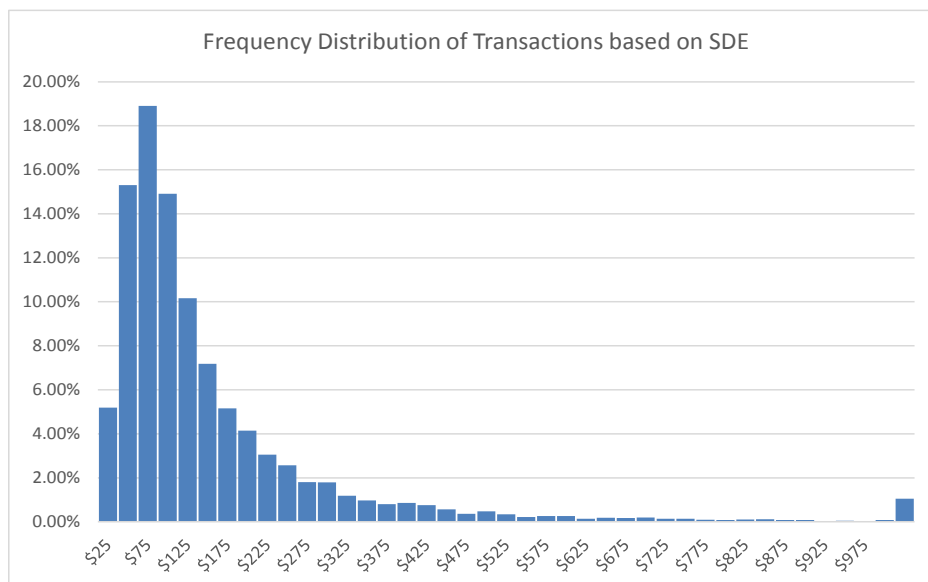
the selling price multiples of earnings for small businesses and that transaction activity has significantly stalled. One may wonder if what we are seeing here is just a temporary glitch in the market or the "new normal." Only time will tell.

For now, however, I feel it is incumbent on appraisers and business brokers to take what we see here into consideration. As a point of departure in this suggestion, Figures 4 and 5 present the same analyses as above except that they are based exclusively on all-cash-at-closing transactions.

The question now is how might one employ a comparable transaction that occurred, for example, in 2000 in developing a current indication of value for a subject company? Should it be excluded, included unadjusted, or included

but adjusted? It is my belief that just as it is necessary to adjust the selling prices (*not the SP/SDE ratios*) of seller-financed comparable transactions to their all-cash-at-closing equivalent selling prices, it is now necessary to additionally adjust the selling prices of prior year transactions to their as though sold in 2012 equivalent selling price. This adjustment should be based on Figure 2. For example, assume the selling price for a comparable in 2000 adjusted to its all-cash-at-closing equivalent price was $250,000 and Discretionary Earnings was $125,000. This equates to an SP/SDE ratio of 2.00. Now we have to further adjust that $250,000 selling price to its 2012 equivalent value which would be 1.55 ÷ 2.67 = .58 x $250,000 = $145,131. This results in an SP/SDE ratio of $145,000 ÷ $125,000 which equals 1.16.[4] This adjustment should be made for every comparable transaction in your array of comparables. Based on Figure 2, an adjustment schedule is presented as Figure 6.

BIZCOMPS' published selling prices in years 1999 through 2011 should be multiplied by the adjustment percent in Figure 6 to yield the theoretical as-though-sold-in-2012 equivalent price. Moreover, this adjustment would be in addition to whatever adjustment is made to a partially seller financed transaction to reflect its theoretical all-cash-at-closing equivalent value.
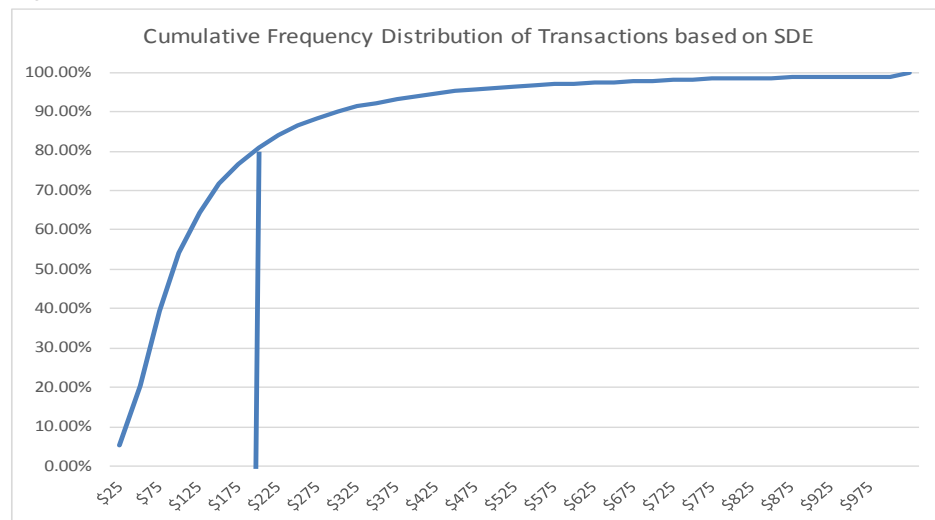
Figure 10

Cumulative Frequency Distribution of Transactions based on SDE

Figure 11

Bizcomps 14 Year Weighted Harmonic Mean Selling Price to Discretionary Earnings Ratios for SIC Codes 2000 --3999 (Manufacturing)

Figure 12

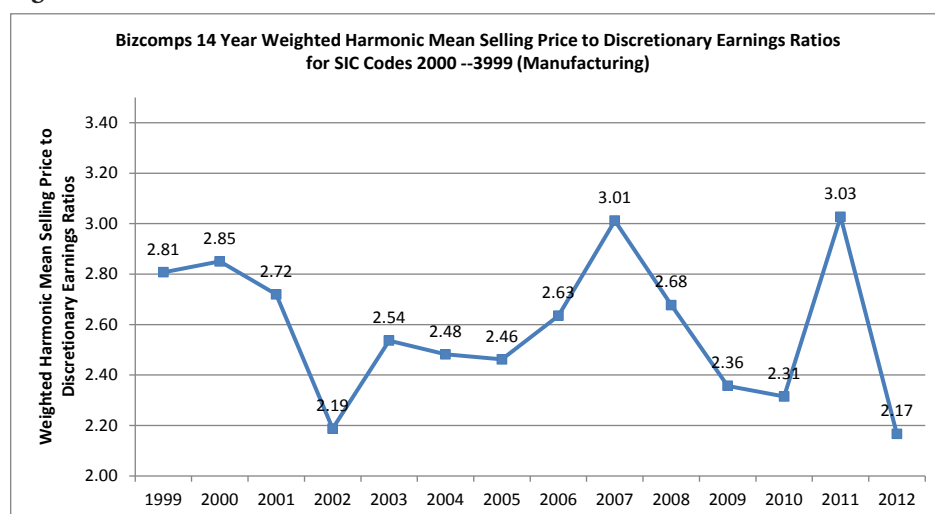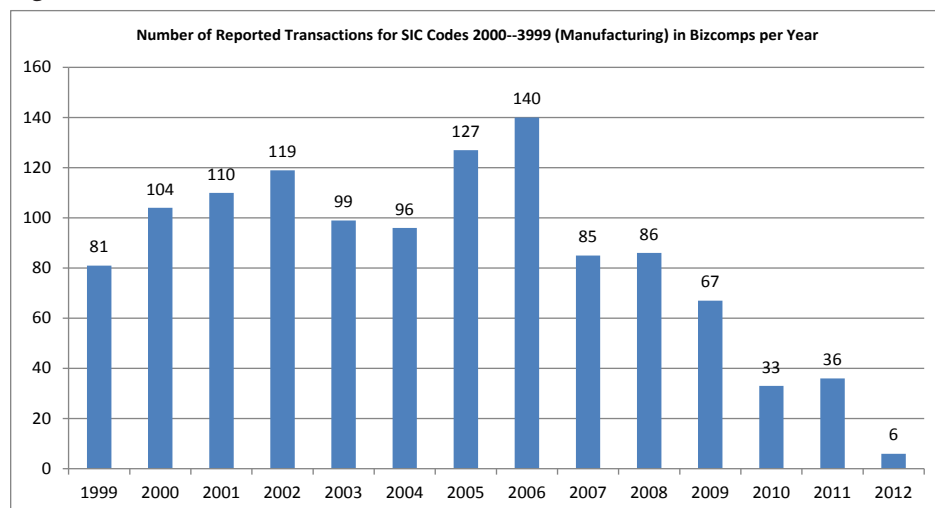Number of Reported Transactions for SIC Codes 2000--3999 (Manufacturing) in Bizcomps per Year

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4. Note that the weighted harmonic mean SP/SDE for the entire database in 2000 was 2.50 and that this ratio based exclusively on the all-cash-at-closing transactions is 2.67. One would expect that the latter ratio should be less than the former. For all other years, this is the case. I see no obvious reason for this anomaly.
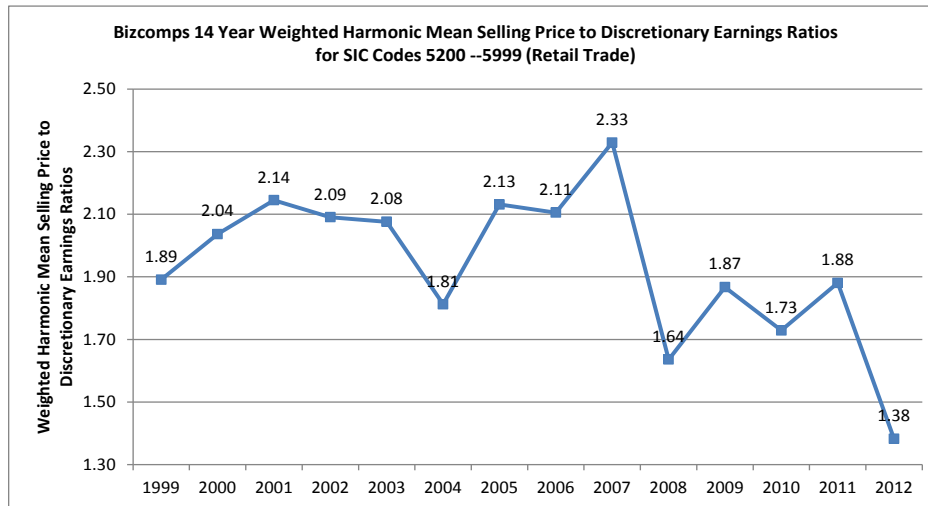
Figure 13

Bizcomps 14 Year Weighted Harmonic Mean Selling Price to Discretionary Earnings Ratios for SIC Codes 5200 --5999 (Retail Trade)

Figure 14

Number of Reported Transactions for SIC Codes 5200--5999 (Retail Trade) in Bizcomps per Year

Figure 15

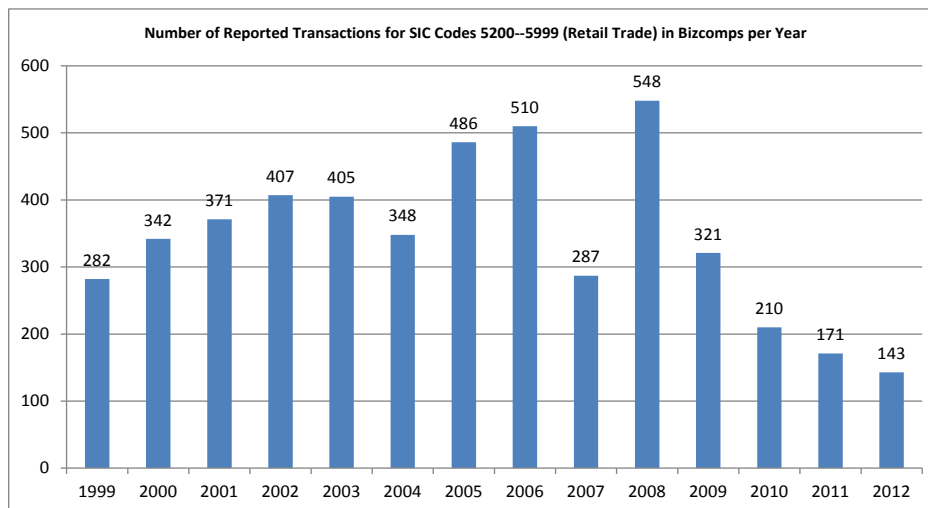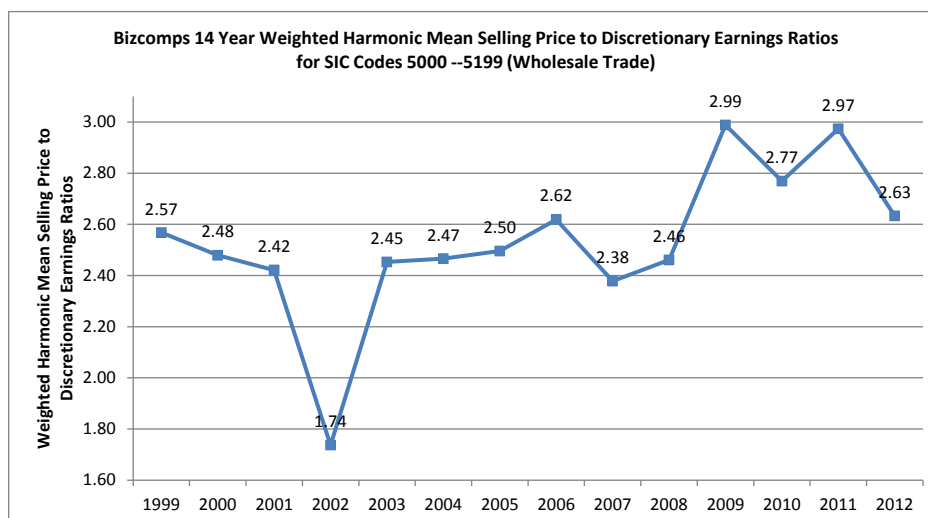Bizcomps 14 Year Weighted Harmonic Mean Selling Price to Discretionary Earnings Ratios for SIC Codes 5000 --5199 (Wholesale Trade)

I performed these same analyses on subcategories of the entire BIZCOMPS database presented below as Figures 11 through 22. In theory, the following annual average SP/SDE ratios developed for specific sectors of the economy would be better suited as the basis for adjusting prior year transactions to their as-though-sold-in-2012 equivalent value. However, in some cases, the number of reported transactions in 2011 and 2012 are too few to use the industry-specific annual average SP/SDE ratios. For example, in SIC code category 2000-3999 (Manufacturing) only six comparables were submitted for 2012. For Wholesale Trade, only seven comparables were submitted in 2012 and for Construction, there are only three comparables for 2012. Because there are so few comparables for these industry sectors, a single exceptionally high or low SP/SDE ratio will render the calculated average for that year unreliable. Moreover, there are some industry sectors where there are too few comparables in several years to use sector-specific averages such as SIC codes 4000-4999 (Transportation) and 6000-6999 (Finance, Insurance & Real Estate). Ultimately, it becomes a matter of analyst judgment of when industry-specific annual average SP/SDE ratios are suitable for the basis of adjusting prior years' reported selling prices as opposed to employing the overall averages presented in Figure 2. As a

rule of thumb, I recommend that every year should include at least 30 reported transactions in order to use industry-specific annual average ratios.

There are two other matters that require analyst judgment regarding the analysis of the BIZCOMPS data. The first is the sample size. As I stated in my article "Some Observations on Statistical Analysis Sample Size" published in the second quarter 2012 edition of *Business Appraisal Practice,* "it's best to strive to achieve a minimum sample size of 30 comparable transactions." This advice is particularly imperative once adjusting reported selling prices is incorporated into an analysis, because the adjustment methodology recommended here is essentially a "one-size-fits-all" approach. By this, I mean that adjusting all prior years' comparables' selling prices to their current year equivalent value using a single adjustment percentage will over-adjust some prices and under-adjust others and, therefore, it requires a large enough sample size to balance out these estimating errors. This same logic applies to adjusting seller-financed transactions to their all-cash-at-closing equivalent value if you employ the adjustment methodology I recommended in my article "Adjusting Seller-Financed Selling Prices to Their All Cash Equivalent Value" in the third quarter 2012 edition of *Business Appraisal Practice.*[5]
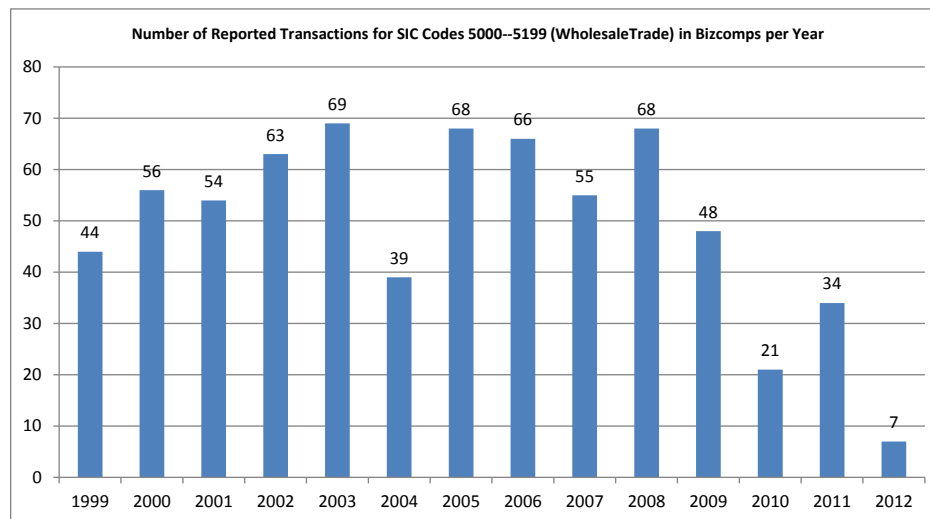
Figure 16

Number of Reported Transactions for SIC Codes 5000--5199 (WholesaleTrade) in Bizcomps per Year

Figure 17

Bizcomps 14 Year Weighted Harmonic Mean Selling Price to Discretionary Earnings Ratios for SIC Codes 7000 --8999 (Services)

Figure 18

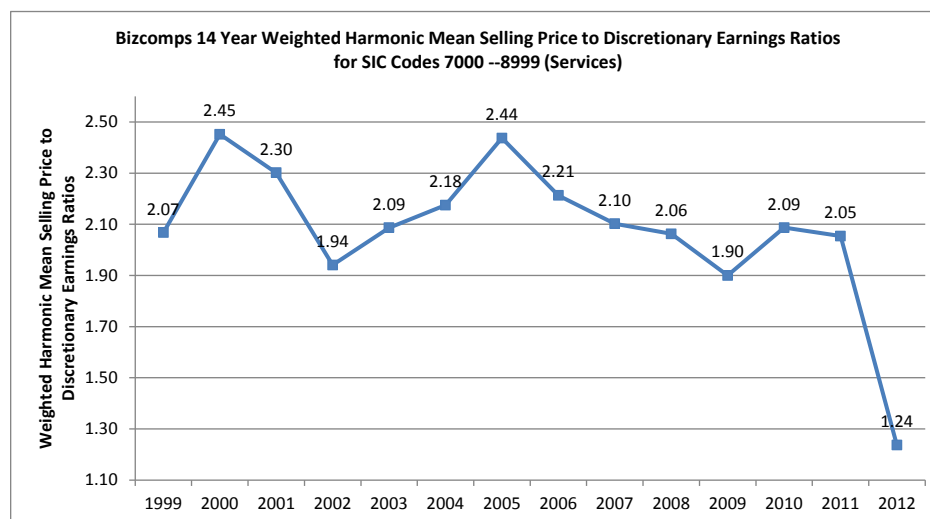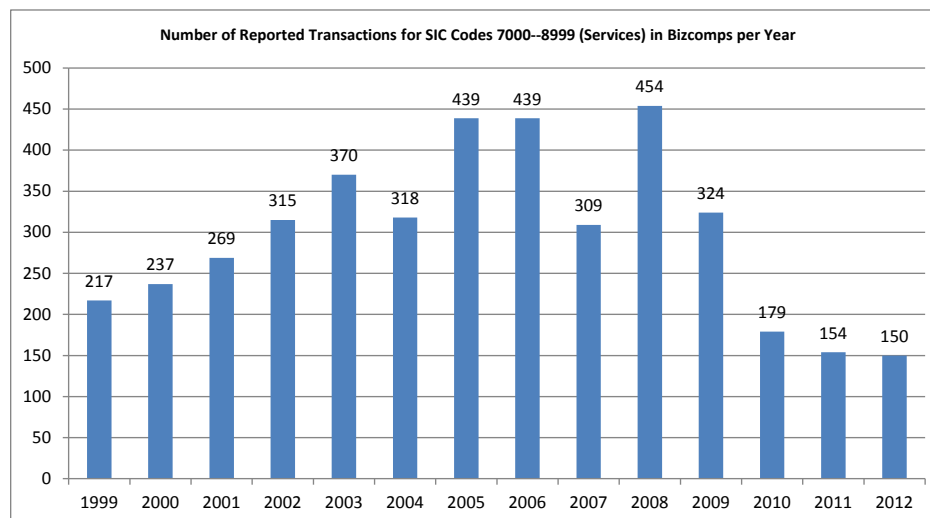Number of Reported Transactions for SIC Codes 7000--8999 (Services) in Bizcomps per Year

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5. Both of my previously published articles in *Business Appraisal Practice* cited here are available for review on the National Association of Certified Valuators and Analysts (NACVA) website in their Business Valuation Articles Archive and on my website at www.TobyTatum.net.

Figure 19

Bizcomps 14 Year Weighted Harmonic Mean Selling Price to Discretionary Earnings Ratios for SIC Codes 1500 --1999 (Construction)

Figure 20

Number of Reported Transactions for SIC Codes 1500--1999 (Construction) in Bizcomps per Year

Figure 21

Bizcomps 14 Year Weighted Harmonic Mean Selling Price to Discretionary Earnings Ratios for SIC Code 5812 (Restaurants)
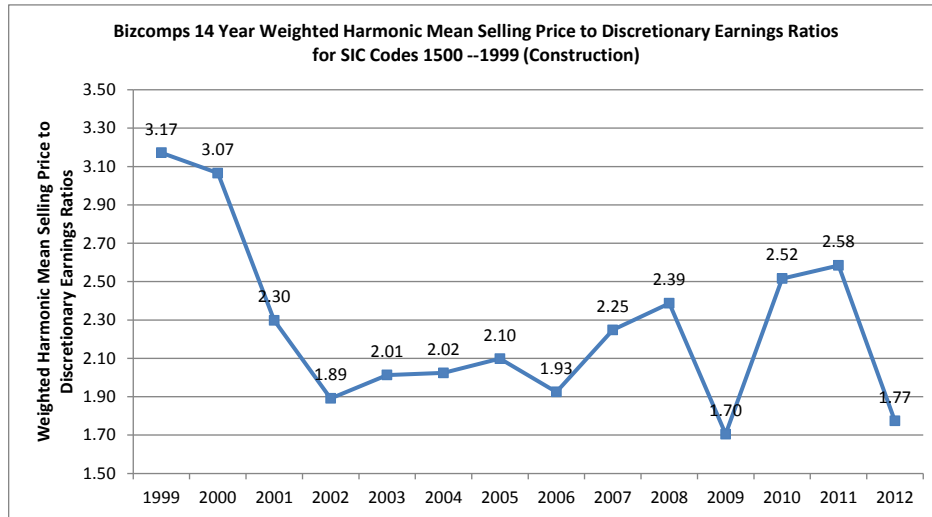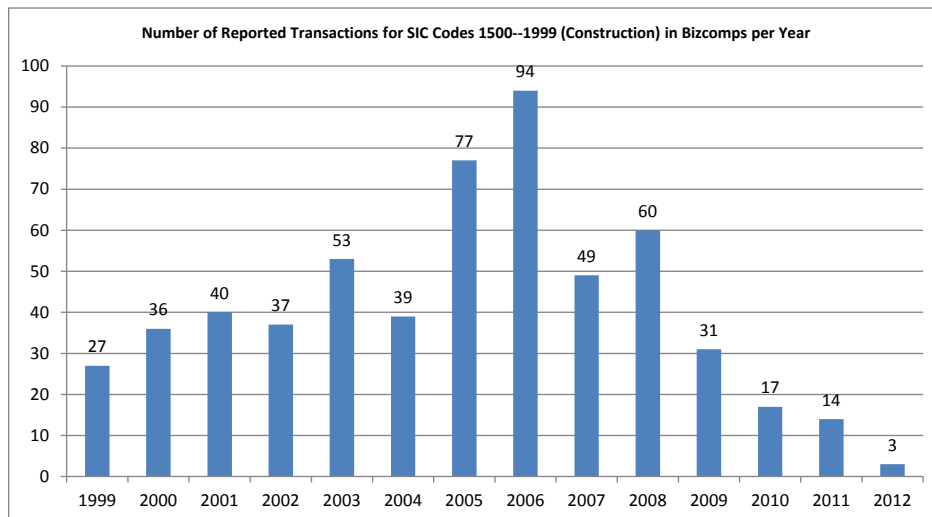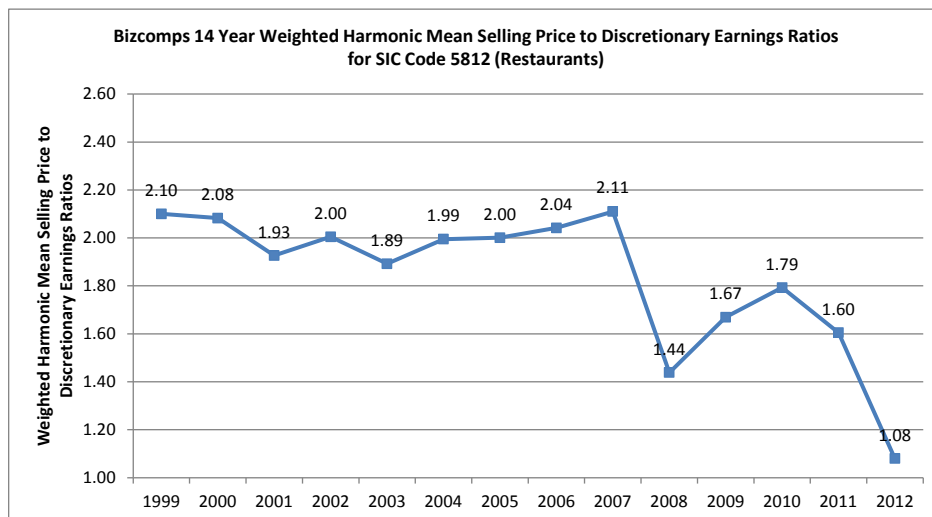
The second matter regarding the BIZCOMPS data is the size of businesses represented. Figure 7 presents the distribution of comparables based on sales revenue and Figure 8 presents the cumulative distribution of this data. The point of Figure 8 is to illustrate that 80 percent of the businesses in this database have sales revenue at or below $1,000,000. Figure 9 is a frequency distribution of reported Seller's Discretionary Earnings and Figure 10 shows us that 80 percent of the businesses in this database have SDE at or below $200,000

Recall that the point of departure in this article was calling into question a long-held belief that the central tendency in the selling price-to-seller's discretionary earnings ratios in small businesses remain fairly constant from year to year. As I have shown, based on an analysis of these ratios published in the most recent edition of the BIZCOMPS database, it appears that the financial crisis of 2008 has upset this apple cart (along with a few others I'm sure). This fact creates an additional degree of complexity into valuing small businesses via the market approach that I think must be considered. My purpose here was twofold: first, to alert everyone to this significant change to the status quo; and, second, to offer advice on how one might deal with it. To be sure, the adjustment methodology I have

presented here is not perfect. On the other hand, I think that a greater error lies in denying that our world has changed and therewith blindly employ historical small business selling price multiples when the available evidence clearly indicates that, for now at least, they're too high.

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Figure 22

Number of Reported Transactions for SIC Code 5812 (Restaurants) in Bizcomps per Year
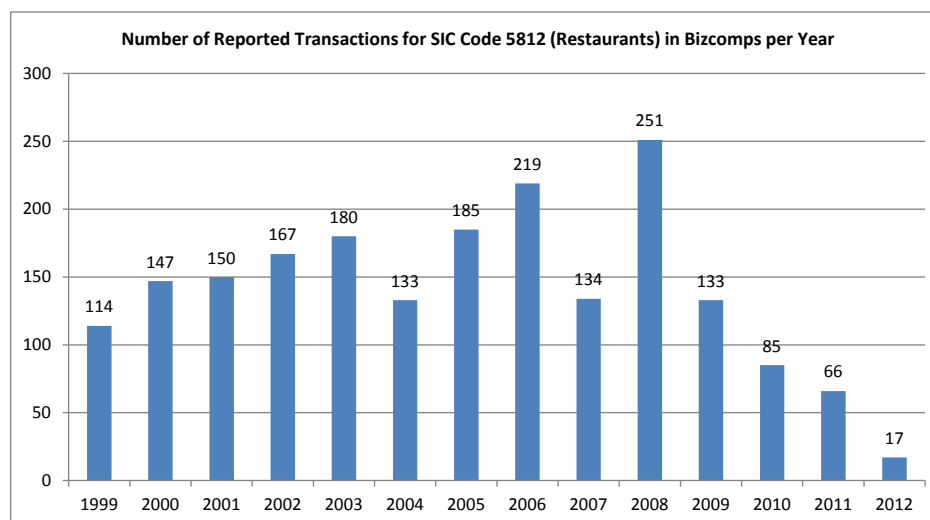
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