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THE MARKETING PERIOD OF PRIVATE SALES TRANSACTIONS

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> The concept of *marketability* deals with the liquidity of the interest – that is, how quickly and certainly it can be converted to cash at the owner's discretion.[2]

How quickly and certainly an owner can convert an investment represents two very different variables. The "quickly" variable represents the period of time it will take the seller to liquidate his investment. This period of time can vary greatly depending on the standard of value in play. For example, liquidation sales can occur quickly and generally reflect lower prices, while orderly sales usually take longer to explore the marketplace of reasonable buyers and generally reflect greater than liquidation prices. In every instance, however, the "quickly" variable commences with a decision by the seller to initiate the sales process. The "certainty" variable represents the probability that the seller will realize the estimated sales price (value) of the investment. Therefore, the "certainty" variable represents the price volatility of the investment during the period of time that it is being offered for sale. If market prices for similar investments fall dramatically while the marketplace is being explored, then the seller will have lost the opportunity to lock in the higher price that existed at the time the sell decision was made. Conversely, if the sales price is fixed for some reason (e.g., a listing agreement) and market prices for similar investments rise dramatically during the marketing period, the seller will have lost the opportunity to realize the increased value.

The "quickly" and "certainty" variables work together when determining the value of an investment. Relative to immediately marketable investments, the value of illiquid investments (regardless of the level of value) must be discounted to reflect the fact that selling them is uncertain as to both time and price. This fact is reflected in business valuations by what is commonly known as the "discount for lack of marketability" ("DLOM").

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[1] Mr. Vianello thanks Paul Murray, CPA, for his assistance writing this article. Mr. Murray is a consultant with Vianello Forensic Consulting, LLC.

[2] Pratt, Reilly, and Schweihs, <u>Valuing a Business, The Analysis and Appraisal of Closely Held Companies</u>, Third Edition, page 332.

Logically, the economic costs of time and uncertainty can be reduced to the price risk faced by an investor during the particular period of time that an illiquid investment is being offered for sale. In the market for publicly traded stocks, risk reflects the volatility of stock prices. Investments with no price volatility have no DLOM, because they can be arbitraged to negate the period of restricted marketing. Conversely, volatile investments that are immediately marketable can be sold at the current price to avoid future volatility.[3] The illiquidity experienced by the seller of a non-public business interest during the marketing period therefore represents an economic cost reflective of the risk associated with the inability to realize gains and to avoid losses during the period of illiquidity.[4] The longer that time period, the more the value of the business is exposed to adverse events in the marketplace and adverse changes in the operations of the business.

The economic cost associated with a period of illiquidity can be estimated using the VFC Longstaff Methodology.[5] This method is based on a formula developed by Francis A. Longstaff, Ph.D. in 2002,[6] which relies on estimates of price volatility (i.e., the *certainty* variable) and marketing time (i.e., the *quickly* variable). This paper addresses only the *quickly* variable: that is, the period of time it might reasonably take to sell an interest in a business.[7] In considering this issue, we assumed that the marketable value of the investment has been reasonably estimated. We then hypothesized that any consistency of the marketing time period of illiquid investments may be influenced by the industry, price, and marketing dates of the investment.

To test our hypotheses, we obtained a database of 5,423 private company sale transactions from BV Resources.[8] The transactions occurred from February 1992 through May 2009, and reported an associated Standard Industrial Classification ("SIC") code; sale initiation date; sale closing date; asking price; and market value of invested capital ("MVIC"). The average time that elapsed from the initial offering date to the closing date of these transactions is 185 days, or a little over six months. The standard deviation of the reported time periods is 98.8%, or 183 days. Graph 1 shows the distribution of the amount of time it took to sell each sale transaction in the database. Since the marketing time period cannot be less than zero days, the

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[3] Marc Vianello, CPA, ABV, CFF, "Calculating DLOM Using the VFC Longstaff Methodology."

[4] Id.

[5] For an in-depth discussion of the VFC Longstaff Methodology see our article entitled, "Calculating DLOM using the VFC Longstaff Methodology."

[6] Francis A. Longstaff, "How Much Can Marketability Affect Security Values?", The Journal of Finance, Volume I, No. 5, December 1995.

[7] For a discussion of methods of estimating price volatility for a privately held business interest, please refer to our paper entitled, "Estimating Private Company Price Volatility."

[8] We did not investigate the accuracy with which transactions are reported in the database.

distribution of the database obviously skews to the right. The data is split into 30-day increments for presentation and analytical purposes.

Graph 1
**Distribution of Days to Sell**
5,423 Private Sale Transactions
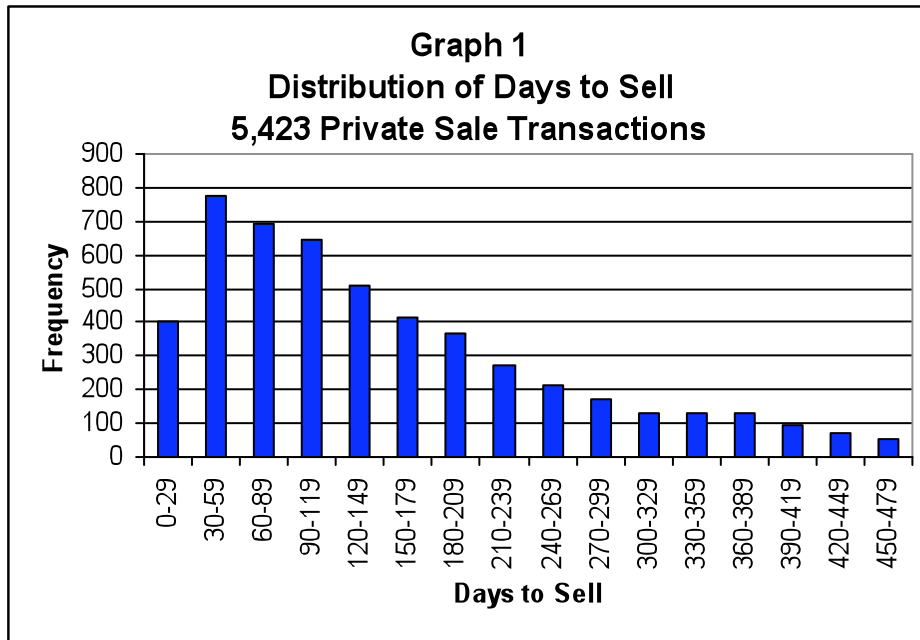
Graph 1 shows that the population of sale transactions follows a logarithmic distribution. The peak of the graph is 773 sale transactions that occurred from 30 to 59 days to sell, which is 14% of the database.[9] The database analysis indicates that one standard deviation to the right of the mean encompasses marketing periods of up to 368 days, which is 88% of the database population.

Graph 1 is then compared to a distribution created using the population's mean and standard deviation in Oracle's *Crystal Ball* software. Graph 2 shows the *Crystal Ball* output using a log-normal distribution[10]:

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[9] When the sales are presented on single-day time periods, spikes in the frequency of sales transactions occur about 30 days apart. This could be the result of faulty information supplied by brokers, or a tendency of sales to occur at the end of listing agreements. We used 30-day periods to eliminate the distortion of the spikes.

[10] A log-normal distribution is positively skewed, with most values near the lower limit and is based on natural logarithms.

Graph 2
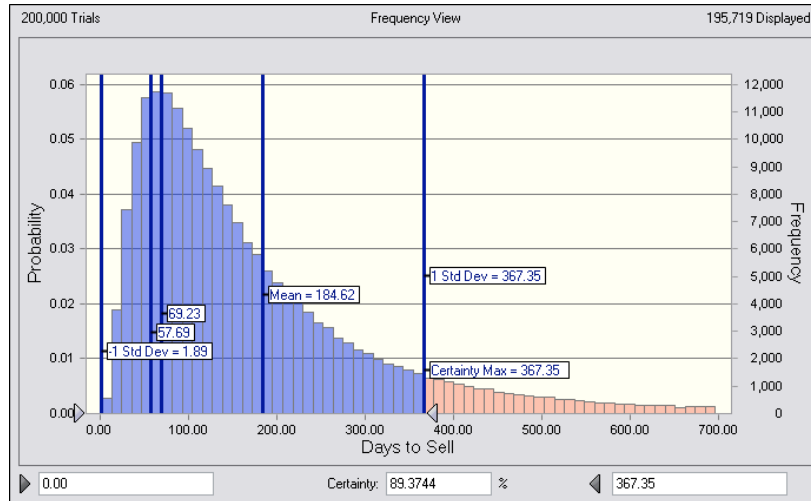
Graph 2 shows that the peak frequency of sales events is 5.9%, which occurs from the range of approximately 57.7 to 69.2 days. But Graph 2 is based on 12-day, not 30-day, intervals. Adjusted ratably to a 12-day interval, the peak frequency of Graph 1 is 5.7%. And as with the actual database, the *Crystal Ball* analysis indicates that one standard deviation to the right of the mean encompasses marketing periods of up to 367 days, representing 89% of the database population.[11] Therefore, the database population follows the log-normal distribution of *Crystal Ball*, which we will use for the remainder of this article.
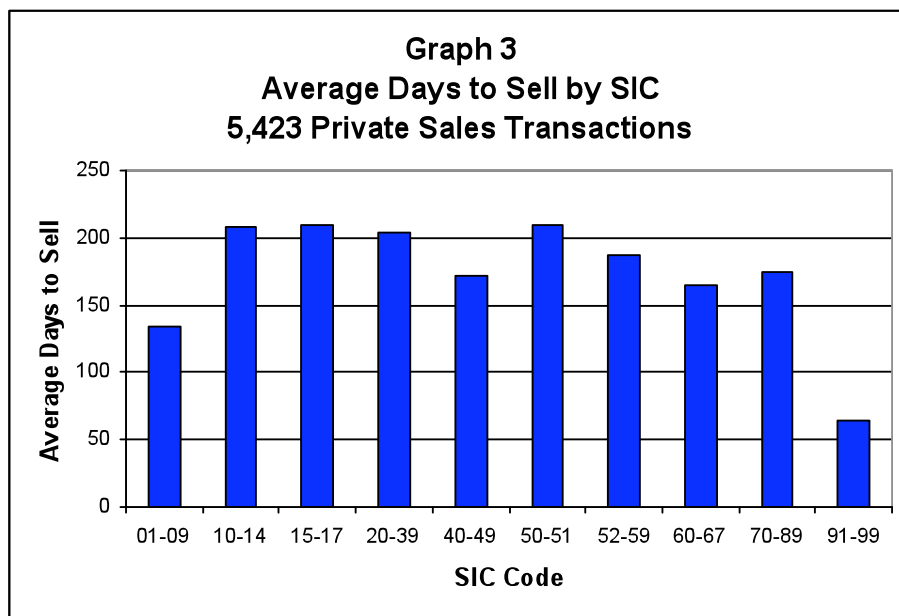
Marketing Periods Based on Industry

Now let's see what happens when we dig deeper. We separated the sales transactions into the ten two-digit SIC code divisions corresponding to the broad industry groupings shown in Table 1 and Graph 3. For each industry group, the group description, average days to sell, and number of private sales transactions are listed. The standard deviations of these industries range from 123 days to 222 days.

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[11] The 89.3744 "certainty" shown in Graph 2 is not a probability certainty. Instead it is an absolute measure of the percentage of the population represented by one standard deviation to the right of the mean. See Crystal Ball User Manual at p.100.

Table 1

SIC Code	Industry	Number of Sale Transactions	Average Selling Time in Days
01-09	Agriculture, forestry, and fishing	126	134
10-14	Mining	6	208
15-17	Construction	278	209
20-39	Manufacturing	643	204
40-49	Transportation, communications, electric, gas, and sanitary services	150	172
50-51	Wholesale trade	335	209
52-59	Retail trade	1919	187
60-67	Finance, insurance, and real estate	51	164
70-89	Services	1914	175
91-99	Public administration	1	64
	All industries	5,423	185

Graph 3
Average Days to Sell by SIC
5,423 Private Sales Transactions

The four industry groups of construction, wholesale trade, mining, and manufacturing had the longest marketing periods, with averages of 209, 209, 208, and 204 days, respectively. But the standard deviations of the marketing periods of these industries varied greatly. Businesses reported in the agriculture, forestry, and fishing industries sold quickly in an average of 134 days. Meanwhile, businesses in the four remaining industry groups fall in the middle in terms of average

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marketing time.[12] On average, businesses in the retail trade industry group sold within 187 days; businesses in the services industry group sold within 175 days; business in the transportation industry group sold within 172 days; and businesses in the financial, insurance, and real estate industry group sold within 164 days.

There appears to a difference in the marketing periods required to sell businesses that sell goods versus those that provide services. In general, the goods-selling industries (mining, construction, manufacturing, and wholesale trade) took longer on average to sell, and had greater standard deviations, than businesses in the services industries. The agriculture, forestry, and fishing industries and the retail trade industry are the exceptions to this rule.

Regardless, the 75-day spread between the 209-day average selling period of wholesale trade and construction businesses and the 134-day average selling period of agriculture, forestry, and fishing businesses demonstrates that industry makes a material difference in how long it is likely to take to close a sale of the business. Adding widely varying standard deviations of marketing periods to the various mean marketing periods of different industries highlights the very different marketing period risks faced by owners of businesses engaged in different industries.

Marketing Periods Based on Sale Year

The next factor explored is the affect on the marketing period of the calendar year in which the businesses were listed for sale. In the database, sales transactions commenced in 1991 and extended through 2009. The years 1991 to 1995 were not used in the calendar year analysis since there were very few listings from these years. Excluding 1991 through 1995 reduced the database population from 5,423 to 5,346. Calendar years 2008 and 2009 were also not used in the calendar year analysis because the closing dates of these listings are not yet known. Excluding 2008 and 2009 reduced the database population from 5,346 to 5,037.

Table 2 shows the average marketing period and number of transactions by year for sales listed from 1996 through 2007:
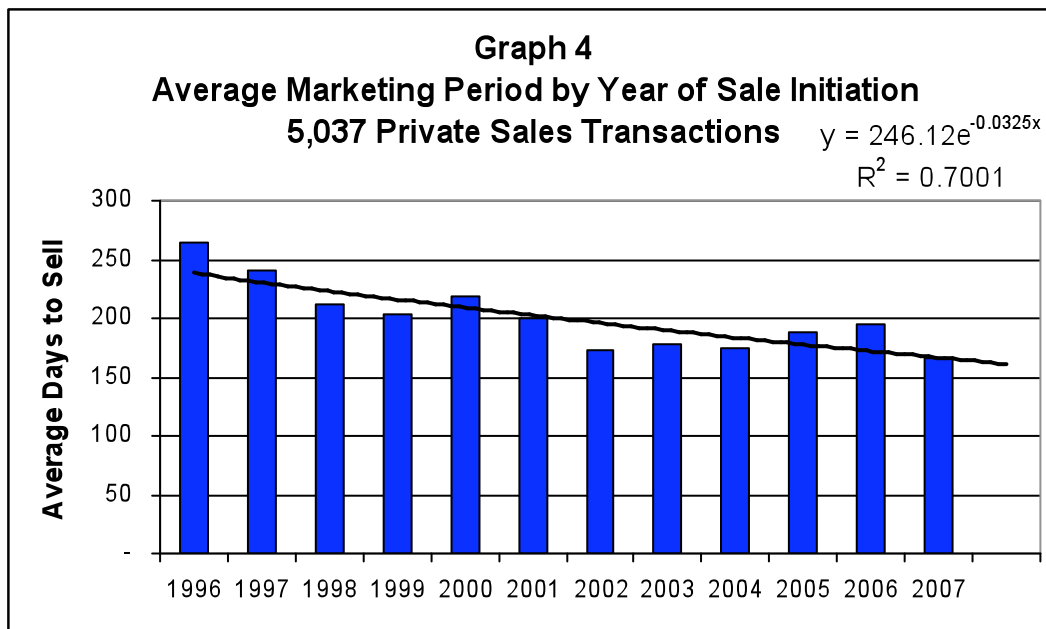
Table 2

If Listed In	Number of Transactions	Average Selling Time in Days
1996	60	265
1997	122	240
1998	234	211
1999	244	204
2000	322	218
2001	401	200
2002	468	172
2003	477	178

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[12] We are ignoring the public administration industry group since it represents the sale of a single business.

2004	636	175
2005	614	189
2006	675	195
2007	784	166
Total	5,037	

Graph 4 shows the declining trend of average selling periods over time. The average number of days it took to sell the privately held businesses in the study gradually decreased from 265 days in 1996 to 166 days in 2007. An exponential regression[13] of the results indicates that the average number of selling period days decreased by 3.25% each year. The analysis yields a fairly strong R-square of 70%.[14] Based on the regression formula, the average marketing period in 2008 is predicted to be 161 days.

Graph 4
Average Marketing Period by Year of Sale Initiation
5,037 Private Sales Transactions

$$y = 246.12e^{-0.0325x}$$
$$R^2 = 0.7001$$

We surmised that annual fluctuations in GDP, inflation, money supply, and demographics could explain the declining trend of the marketing periods. Correlation analysis of selling time and these factors yielded low R-squares, with inflation resulting in the highest R-square of 48%. Real GDP, nominal GDP, M1 money supply, M2 money supply, U.S. population of men over 55 years of age, U.S. population of white men over 55 years of age, and U.S. population of white men over 55 years of age with bachelor degrees all resulted in R-squares of 28% or less. The low R-squares suggest that annual fluctuations in real GDP, nominal GDP, money supply, and demographics provide little explanation of the declining trend of private business marketing

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[13] Exponential regressions reflect a constant percentage change in the slope for the resulting trend line.

[14] A linear regression resulted in an R-square value of 69%. The slope was -6.78, meaning for every year, the average days to sell decreases by -6.78 days.

periods from 1996 to 2007. Although declining inflation offers a stronger correlation with the decline in marketing periods, there is no intuitive connection between declining inflation as a cause and declining marketing periods as an effect.
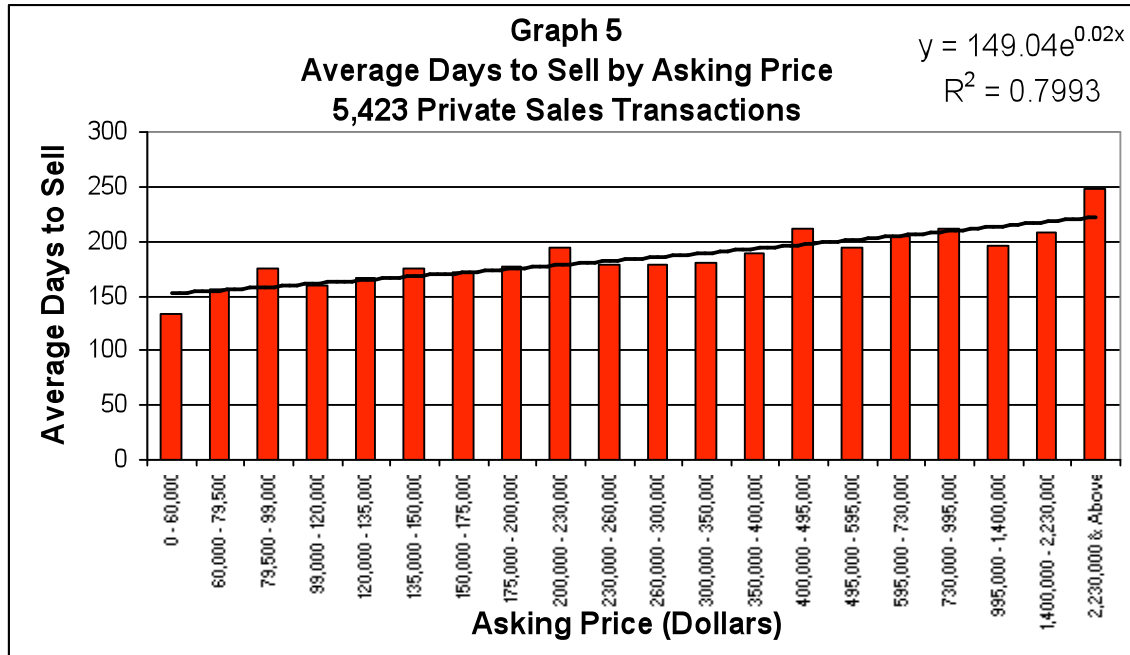
During the period of the analyzed database, there was a recession from March to November in 2001. This possibly explains the longer selling times for those sales that were listed in 2000 and closed in 2001, but the explanation is seemingly contradicted by the decline in average days to sell in 2001. Despite the recession, the average business sold faster during 2001 than in 2000. A recession also started in December 2007, but there is not enough data to see its effects as of the date of this article.

Marketing Periods Based on Price

Our database of transactions also provided the asking price and MVIC of each transaction. MVIC is the market value of invested capital comprised of all stock classes and interest-bearing debt.[15] The price and MVIC factors were used to separately analyze the database.

The range of asking prices was from $10,000 to $70,000,000. The mean and median asking price of the companies was $669,021 and $262,500, respectively. First, the sales transactions were split into twenty equal groups based on asking price for the sale. Since the transactions are more concentrated towards lower asking prices, the groupings were adjusted so that the size range of the group intervals becomes larger as the asking price increases. Each size group contains 271 sales transactions except the largest group, which contains 274. Graph 5 shows the average days to sell for each asking price group.
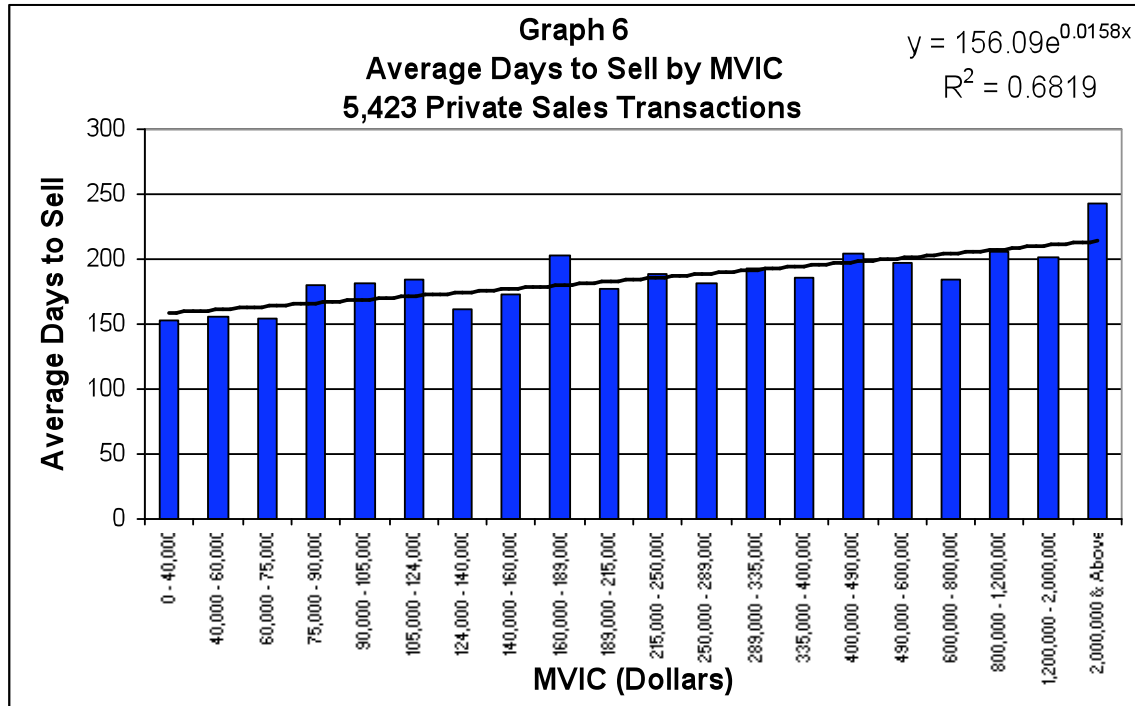
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[15] Pratt, Reilly, and Schweihs, <u>Valuing a Business, The Analysis and Appraisal of Closely Held Companies</u>, Third Edition, page 207.

Graph 5
Average Days to Sell by Asking Price
5,423 Private Sales Transactions

$$y = 149.04e^{0.02x}$$
$$R^2 = 0.7993$$

Y-axis: **Average Days to Sell**

X-axis: **Asking Price (Dollars)**

Generally, the average days to sell increases with the rise in asking price. When the asking price is under $60,000, the average days to sell is 134 days. The length of the marketing period gradually increases until the average days to sell is 247 days when the asking price is greater than $2,230,000. A trend line was calculated between the average marketing period for each asking price group using an exponential regression. The trend line yields a fairly strong R-square of 80%.[16] The regression formula shows that between each asking price group, the average days to sell increases by 2%. According to the trend line, it takes 152 days to complete a sales transaction when the asking price is below $60,000. When the asking price is above $2,230,000, the trend line is at 222 days to sell. However, note that the average marketing period for businesses priced higher than $2.23 million is significantly above the trend line, being at 247 days.

Next the transactions were sorted into twenty equal groups by MVIC. The mean and median MVIC of the transactions was $595,698 and $215,000, respectively. On average, the MVIC is $73,323 lower than the asking prices, which may reflect negotiated price reductions. The group ranges used to sort MVIC differ from those used for asking price. However, each size group contains 271 sales transactions except the largest group, which contains 274. Graph 6 shows the average days to sell for each MVIC group.

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[16] A linear regression resulted in an R-square value of 79%. The slope was 3.7, meaning for each increase from one asking price group to another, the average days to sell increases by 3.7 days.

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Graph 6
Average Days to Sell by MVIC
5,423 Private Sales Transactions

$$y = 156.09e^{0.0158x}$$
$$R^2 = 0.6819$$

Average Days to Sell

300
250
200
150
100
50
0

MVIC (Dollars)

0 - 40,000
40,000 - 60,000
60,000 - 75,000
75,000 - 90,000
90,000 - 105,000
105,000 - 124,000
124,000 - 140,000
140,000 - 160,000
160,000 - 189,000
189,000 - 215,000
215,000 - 250,000
250,000 - 289,000
289,000 - 335,000
335,000 - 400,000
400,000 - 490,000
490,000 - 600,000
600,000 - 800,000
800,000 - 1,200,000
1,200,000 - 2,000,000
2,000,000 & Above

The fluctuations in the MVIC graph generally follow the movements in the asking price graph. When the MVIC is under $40,000, the average days to sell is 153 days. The length of marketing periods gradually increases until the MVIC price is greater than $2,000,000, when the average days to sell is 243 days.

An exponential regression trend line is shown on Graph 6. The regression formula shows that the average days to sell increases by 1.6% as the trend progresses from group to group. According to the trend line, it takes 159 days to complete a sales transaction when the MVIC is below $40,000. When the MVIC is above $2,000,000, the trend line is at 214 days to sell.

The MVIC trend yields a more moderate R-square of 68%[17] compared to the more robust asking price trend R-square of 80%. The lower R-square value associated with MVIC may be due to reporting inaccuracies that we did not investigate. But it may also reflect that asking price is determinative in drawing potential buyers to the sale opportunity. Assuming no database adjustments are warranted, the asking price is the better statistical predictor.

Marketing Periods Based on Seasonality

We also considered whether the time of year a sales transaction is initiated makes a difference. To analyze this factor, the sales transactions were grouped based on the month the company was listed to sell. Table 3 reports the mean number of days to sell that elapsed from

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[17] A linear regression resulted in an R-square value of 66%. The slope was 2.9, meaning for each increase from one MVIC group to another, the average days to sell increases by 2.9 days.

the listing date based on a distribution of the sales transactions according to the calendar month the businesses were listed for sale:

Table 3

If Listed In	Number of Sale Transactions	Average Days to Sell
January	526	178
February	433	207
March	492	189
April	456	176
May	428	180
June	484	184
July	461	188
August	467	200
September	434	187
October	458	191
November	404	171
December	380	171
Total	5,423	

Graph 7 depicts the variation in the calendar month averages from Table 3:

Graph 7
Average Days to Sell by Month
5,423 Private Sales Transactions
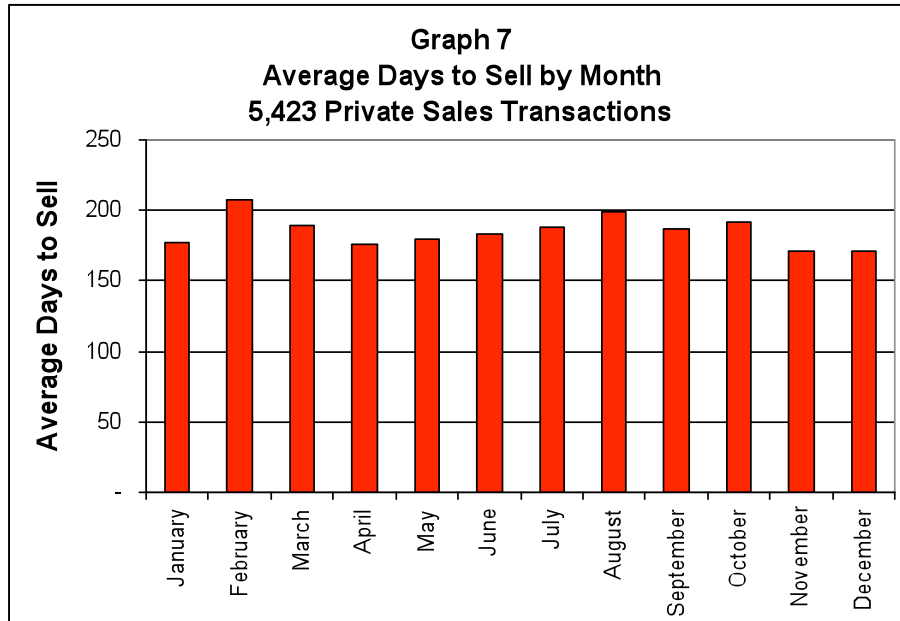
On average, sales transactions originally listed in February took the longest time to sell, with a mean of 207 days. February listings also had the highest volatility of time to sell. Sales transactions originally listed in August also were lengthy, averaging 200 days to sell. The months with the shortest marketing periods were November and December averaging 171 days each and April averaging 176 days. November and April also exhibited the lowest volatility of the selling time period. Possible explanations for these phenomenons are proximity to year end numbers for November and December listings, and proximity to completion of tax filings for April listings. These aspects tend to offer buyers enhanced transparency through more timely financial reporting.

Conclusion

While the time needed to market and sell a privately held business has been trending downward, there is no doubt that many factors contribute independently to the length of the period. Industry, price, and month of listing appear to be key contributing factors that need to be explored to arrive at an appropriate opinion regarding marketing period. Broader economic and demographic factors do not appear to be determinative of the time period. But, while our analysis includes a mild recession, it does not include transactions during a major economic dislocation such as has existed from late 2007 and continuing into 2010 and perhaps beyond. It will be interesting to see the effects the present circumstances have on subsequent analyses.