

The Five Year Low as a Trading Strategy: The Kitchin Cycle Revisited

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Abstract

Consistent with the Kitchin inventory cycle, MSN Money routinely reports the five-year low stock price as a standard investment parameter. This paper analyzes quarterly returns to the strategy of buying a stock at its five-year low price and compares them with comparable returns to investing in either the S&P 500 Index or NASDAQ Composite Index. Consistent with the weak form of the Efficient Markets Hypothesis, the authors find no value in using the five-year low as a buying strategy. However, the five-year low appears to have considerable merit as a tool for short sellers.

Introduction

The allure of low priced stocks has fascinated investors since stocks became publicly traded. Many an investor has dreamed of buying stocks and later selling them for five, ten, twenty, or even one hundred times the initial purchase price. John Templeton, one of the most famous investors of all times, got his start by investing \$100 in 1939 in each of the 104 companies selling on the New York and American stock exchanges for \$1 or less. Four years later, Templeton's investments were worth almost four times what he had paid for them.

Even though this study doesn't deal directly with stocks priced as low as those purchased by John Templeton during the early years of his investment career, it does explore the investment implications of investing in stocks whose prices have reached a five-year low. Given that the five-year low price is reported as a standard investment measure by a major information source and that it corresponds to a fundamental business cycle measure, would a strategy of buying a stock when it hits the five-year low lead to better returns than simply investing in an index such as the S&P 500? Or if the five-year low would not be beneficial to an investor buying long, would it have value to an investor selling short? These are the questions which this study attempts to answer.

Literature Review

Technical analysis, or the use of past trends in prices, volume, etc., to predict future prices in an effort to discern turning points and thereby buy low and sell high, has a long history in finance. Early efforts in determining business cycles such as Mitchell (1927), gave rise to trading rules used by speculators to "time the market." Technical analysis manuals including Pring (1991) and Arnold (1993) are at odds with the weak form of market efficiency espoused by Cootner (1964), Fama (1965, 1970), and Malkiel (1973), among others. More recently, researchers have claimed that perhaps technical analysis is capable of producing excess returns. Why do we consider the five-year low in particular in this paper? The five-year low price is intriguing because it is the regularly reported measure from MSN Money that comes closest to

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After all (see Bessembinder and Chan 1998, Avramov, Chordia, and Goyal 2006, and Hong, Stein, and Yu 2007).

approximating a purchase strategy in a Kitchin cycle (Kitchin 1923). The Kitchin cycle is a three to five-year cycle that has been the subject of much speculation in the stock trading literature (see DeStefano 2004 and Wall 2001). Joseph Kitchin, a British statistician who first observed the cycle, found that the price level and short term interest rates in the United States and Great Britain during the period from 1890 to 1922 tended to move together through 40 month cycles on average, even though individual cycles varied dramatically (Glasner 1997). Kitchin offered little explanation for the 40-month cycles; however, modern economists theorize that they occur due to the excessive investment and the subsequent disinvestment in business inventories.

Joseph Schumpeter (1939) later referred to the 40-month cycle discovered by Kitchin as the “Kitchin cycle.” Over time the Kitchin cycle became a stock market technical indicator focusing on the time from when the market reaches a low, recovers from the low, and later plunges below the low established at the beginning of the cycle. Technicians have found such cycles to average three to five years. However, some advocates of technical analysis believe the Kitchin cycle has been lengthening during the past few decades (see Berentson (2002, p. 1), Branson (2002, p. 2), and Pring, (1991, pp. 255-258) so that the five-year parameters are now consistent with the Kitchin cycle. Our own investigation of the Kitchin cycle, the period between stock market lows, indicates that the average period for the cycle during the past 47 years has been four years and three months, with the individual cycles shown in Table I (displayed after the conclusion to this paper). Using S&P 500 data, we found no convincing lengthening of the cycle, but did observe lengths of about five years. Fama and French (1988) found evidence of mean reversion in stock prices in three-to-five year intervals, consistent with the Kitchin cycle, although Fama and French did not link the two and our own research indicates that the cycle is not always stationary. Certainly the last two Kitchin cycles using the S&P 500 Index have been stationary, indicating mean reversion.

Data Collection and Analysis

In spite of the lack of value afforded technical analysis by the Efficient Market Hypothesis, there has been increasing interest over the past several years in technical analysis as a method of selecting stocks. As a result, more and more Web sites have begun to offer tools designed to expedite technical analysis. One such site is moneycentral.msn.com. Through what it calls its “Power Searches,” MSN Money offers several fundamental and technical analysis screens. This study utilizes one of the technical analysis screens, “New 5-Year Lows.” The five-year low screen, as well as many others, can be found by accessing the Web address, <http://moneycentral.msn.com/investor/research/welcome.asp>, and clicking on “Stock Power Searches.”

To test the hypothesis that the five-year low price may be used to earn high returns, the authors collected data from the “New 5-Year Lows” screen posted each trading day from June 27, 2007 to September 10, 2007. The first time a company appeared its name, symbol, and market capitalization were entered in a spreadsheet; subsequent listings were ignored as it was assumed an investor monitoring the “New 5-Year Lows” screen would buy a stock upon first observing it in the screen.

In the midst of the gathering of data, it was discovered that not all stocks listed in the “New 5-Year Lows” screen had five years of trading history. For example, Blackstone Group, which went public on June 23, 2007, was listed in the results of the screen on June 26, 2007. Of the 310 stocks listed in the screen during the term of the study, only 129 actually had five years of trading history and therefore truly set five-year lows. The historical quote feature at the Yahoo Finance website was used to determine if five years of trading history were available. Only the 129 companies with five years of trading history were ultimately included in the study. Pink sheet companies and over-the-counter bulletin board companies were excluded from the study since most investors would not be interested in investing in them; closed-end investment companies and real estate investment trusts were excluded also.

For the purposes of this study, an assumption was made that an investor would buy the stock at a price equal to an average of the high and low price during the first trading day following its inclusion in the screen. This was felt to be a reasonable assumption since very few investors would be able to consistently buy stocks at the opening price due to the constraints of work and other activities. Plus, several of the stocks in the study were thinly traded and therefore might not begin trading for several hours into the market session.

Three, six, nine, twelve, fifteen, and eighteen months following the assumed date of purchase, the price of each stock was calculated in the same manner. The Yahoo Finance historical quote feature was used as the basis for determining these prices. If price data on a particular stock was not available at Yahoo Finance, the historical databases at the Big Charts or MSN websites were utilized. Three month intervals, rather than monthly and weekly periods, were selected due to the enormity of the task of gathering prices on the stocks in the sample (a database from which the prices could be easily retrieved was not available to the authors).

Results

Table II compares the performance of the sample from one quarter to the next. For example, the Quarter 2 results were found by comparing the price of each stock after being held for three months to the price which prevailed after a six-month holding period. The table clearly demonstrates that the chances of realizing gains, at least after the first quarter, would have been approximately three to four times greater for an investor shorting the stocks rather than buying long (an exception is Quarter 3). Of course, this result must be tempered by the fact that the NASDAQ Composite Index over the entire period of the study (June 28, 2007, the first day an investment would have been made, to March 11, 2009--the day on which prices were recorded for the last few stocks invested in eighteen months earlier) lost 47.35%. The NASDAQ Composite Index was cited since only fourteen of the companies in the study had a market capitalization of \$1 billion or more.

Table III shows the cumulative statistics for the sample at the end of each of the six quarters. For instance, Quarter 6 figures were derived by comparing the initial purchase price of each stock with its price eighteen months after purchase. The table illustrates very vividly the potential for gains from shorting the sample stocks rather than buying them long; by the end of

Quarter 6, 119 of the 129 stocks (92 percent) had fallen in price. Of course, as was mentioned earlier, the NASDAQ Composite Index fell 47.35 percent, thus greatly contributing to the downward trend in sample share prices. However, the 119 stocks which lost value plummeted 70.35 percent, an almost 50 percent greater decrease than the market in general.

Table IV provides mean cumulative returns, along with the standard deviations and coefficients of variations of the excess returns of both large cap and small and medium cap stocks over the appropriate market index. Since all these results would prove disastrous for an investor who added only stocks reaching their five-year lows to a portfolio, it appears that the five-year low is a better sell signal than it is a buy signal.

In addition to the analysis portrayed in Tables II, III, and IV, the three, six, nine, twelve, fifteen, and eighteen month holding period returns of each stock were compared to the returns on either the S&P 500 Stock Index or NASDAQ Composite Index. Figures I through XII plot the returns on stocks minus the comparable returns for appropriate stock indices over the six quarters following the buy decision. Figures I through VI show the excess returns for large cap stocks from the sample (versus the S&P 500 Index over the same periods). Figures VII through XII show the excess returns for small and mid-cap stocks from the sample (versus the NASDAQ Index over the same periods). Each figure shows that an evenly-weighted portfolio of either type of stock would have fared worse over the time period evaluated than would the simple strategy of shorting a stock market index.

Conclusion

Of course, the time period under consideration matters. Fortunately, this study which ran from June 28, 2007 to March 11, 2009 captured returns in both a bull and bear market. However, an examination of sample stock performance during the great rally subsequent to March 9, 2009 (when the major indexes reached their lows in this bear market cycle) would have further tested the validity of the five-year low buying strategy. The five-year low in combination with other buying strategies should probably also be analyzed.

Notwithstanding these considerations, the results of this paper affirm the weak form of market efficiency and do not support the use of the five-year low as a stock trading strategy for an investor buying long. A larger implication of this result is the finding that Kitchin cycles either do not appear to be useful in characterizing stock prices or that their periodicity is considerably different than five years. Nevertheless, the results of the study do support the five-year low as a method for earning excess returns through short selling over the time period sampled.

Table I – Length of Kitchin Cycles Using S&P 500 Index, 1962-2009

Beginning Low Date	Ending Low Date	Years Elapsed
October 2002	March 2009	6.41
October 1998	October 2002	4.02
December 1994	October 1998	3.80
October 1990	December 1994	4.17
October 1987	October 1990	2.98
August 1982	October 1987	5.19
February 1978	August 1982	4.45
October 1974	February 1978	3.40
May 1970	October 1974	4.36
October 1966	May 1970	3.63
June 1962	October 1966	4.28

**Table II - Comparison of Stocks with Positive and Negative Returns on a Quarterly Basis
(N = 129)**

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6
Number and Percentage of Stocks with Positive Returns	43 (33%)	23 (18%)	59 (46%)	31 (24%)	21 (16%)	30 (23%)
Range of Returns	66.37% to .50%	61.72% to .29%	232.67% to 2.01%	89.58% to 1.71%	495.16% to .78%	351.35% to .47%
Average Return	14.79%	18.82%	28.66%	22.47%	40.86%	43.43%
Number and Percentage Not Changing	1 (1%)	0 (0%)	2 (2%)	4 (3%)	2 (2%)	4 (3%)
Number and Percentage of Stocks with Negative Returns	85 (66%)	106 (82%)	68 (52%)	94 (73%)	106 (82%)	95 (74%)
Range of Returns	-.63% to -93.87%	-.67% to -94.22%	-.1.18% to -73.64%	-.67% to -97.93%	-1.46% to -100%	-.34% to -100%
Average Return	-27.34%	-24.67%	-26.25%	-30.10%	-44.45%	-40.98%

**Table III- Comparison of Stocks with Positive and Negative Returns on a Cumulative Basis
(N = 129)**

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6
Number and Percentage of Stocks with Positive Returns	43 (33%)	23 (18%)	33 (26%)	22 (17%)	18 (14%)	10 (8%)
Range of Returns	66.37% to .50%	58.59% to .16%	87.03% to .65%	119.92% to 1.54%	70.21% to .97%	70.21% to 2.42%
Average Return	14.79%	19.72%	26.39%	35.53%	19.92%	25.88%
Number and Percentage Not Changing	1 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Number and Percentage of Stocks with Negative Returns	85 (66%)	106 (82%)	96 (74%)	107 (83%)	111 (86%)	119 (92%)
Range of Returns	-63% to -93.87%	-80% to -99.11%	-35% to -99.74%	-1.10% to -99.72%	-3.64% to -100%	-1.30% to -100%
Average Return	-27.34%	-36.54%	-44.31%	-51.56%	-65.24%	-70.35%

Table IV – Comparison of Large and Small/Mid-Cap Stocks with Market Indexes

Excess Returns from Using 5-Year Low to Buy Stocks Versus Buying S&P 500 Index							
		One Quarter Return	Two Quarter Return	Three Quarter Return	Four Quarter Return	Five Quarter Return	Six Quarter Return
LARGE CAP n = 15	Mean	-16.08%	-30.08%	-27.68%	-30.36%	-32.04%	-28.97%
	Standard Deviation	20.36%	25.42%	34.87%	35.21%	26.07%	24.79%
	Coefficient of Variation	-79.00%	-118.32%	-79.38%	-86.24%	-122.90%	116.86%

Table V

Excess Returns Using 5-Year Low to Buy Stocks Versus Buying NASDAQ Index							
		One Quarter Return	Two Quarter Return	Three Quarter Return	Four Quarter Return	Five Quarter Return	Six Quarter Return
SMALL / MID CAP n = 114	Mean	-17.80%	-17.29%	-18.06%	-21.54%	-19.17%	-19.54%
	Standard Deviation	27.42%	32.49%	40.75%	55.26%	42.17%	40.17%
	Coefficient of Variation	-64.92%	-53.22%	-44.31%	-38.99%	-45.46%	-48.64%

Figure I - Excess Returns One Quarter Later--Large-Cap

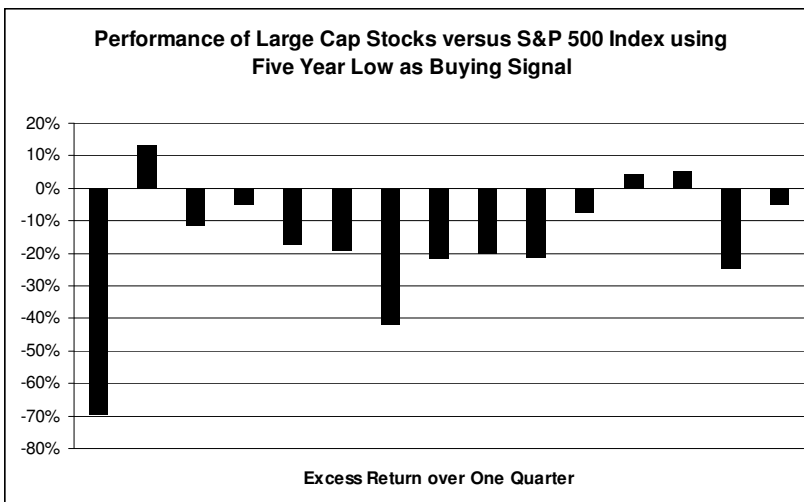


Figure II – Excess Returns Two Quarters Later—Large Cap

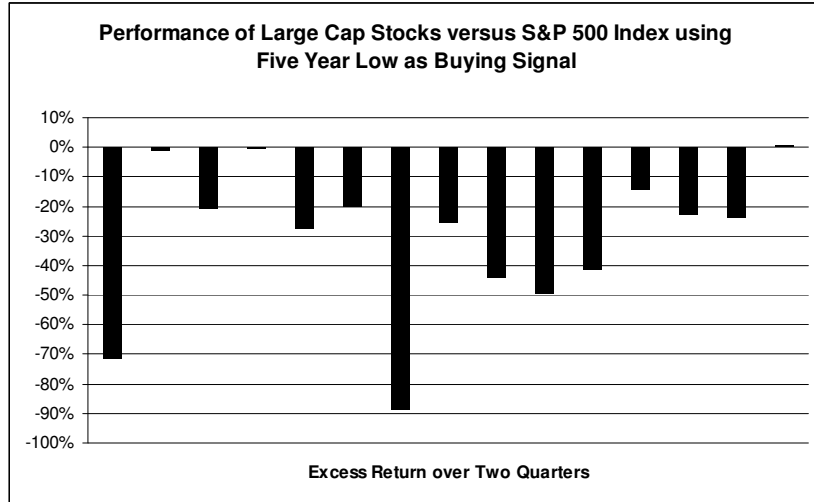


Figure III – Excess Returns Three Quarters Later—Large Cap

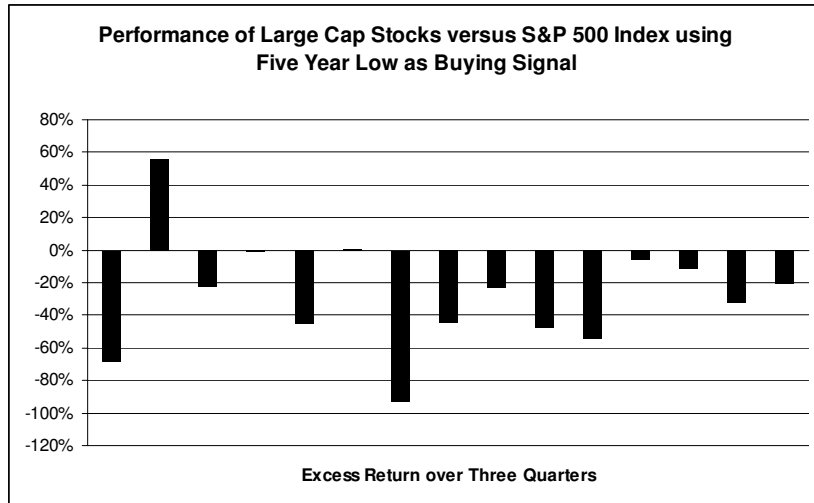


Figure IV – Excess Returns Four Quarters Later—Large-Cap

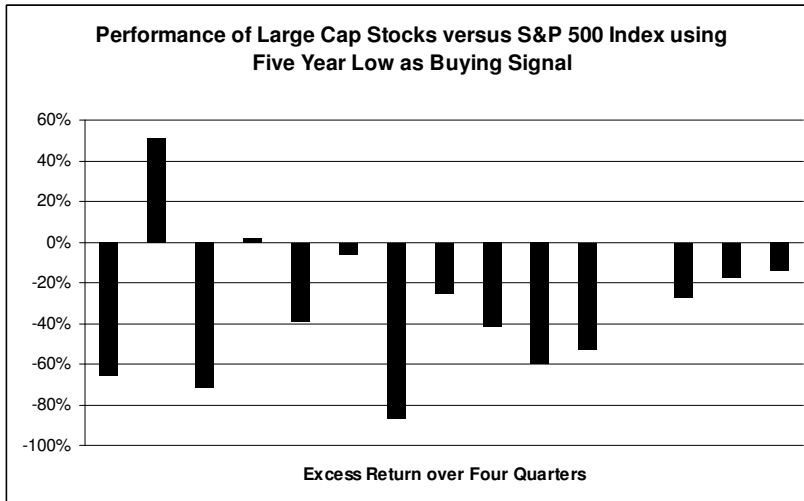


Figure V – Excess Returns Five Quarters Later—Large-Cap

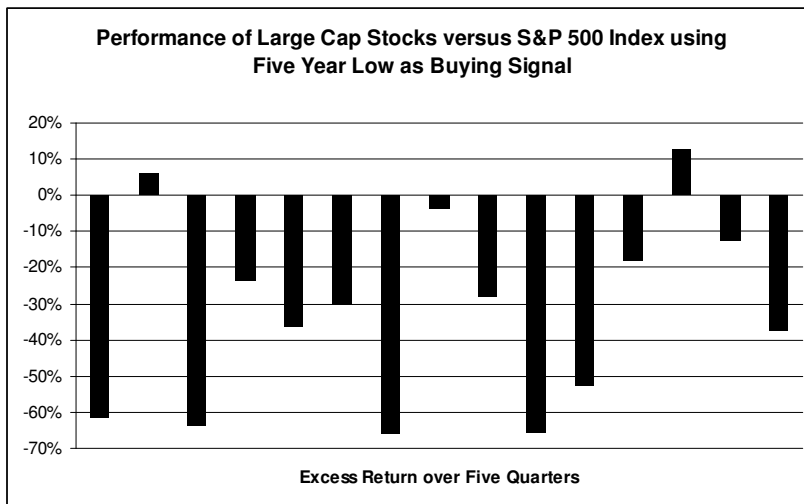


Figure VIII – Excess Returns Two Quarters Later—Small and Mid-Cap

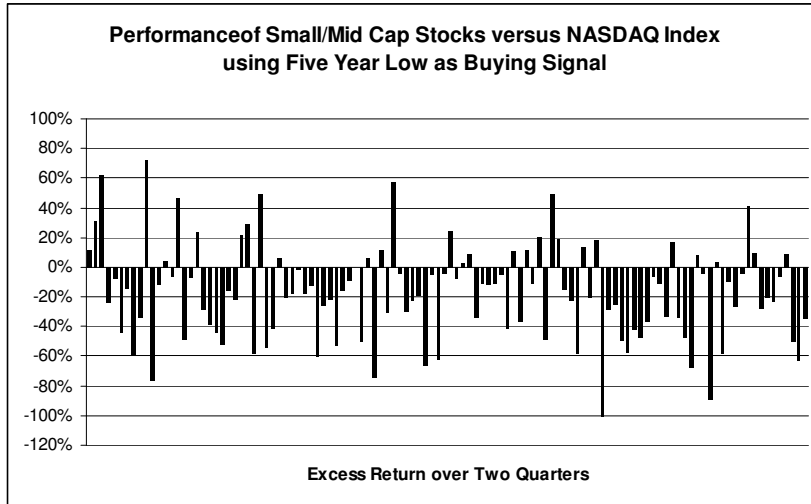


Figure IX - Excess Returns Three Quarters Later—Small and Mid-Cap

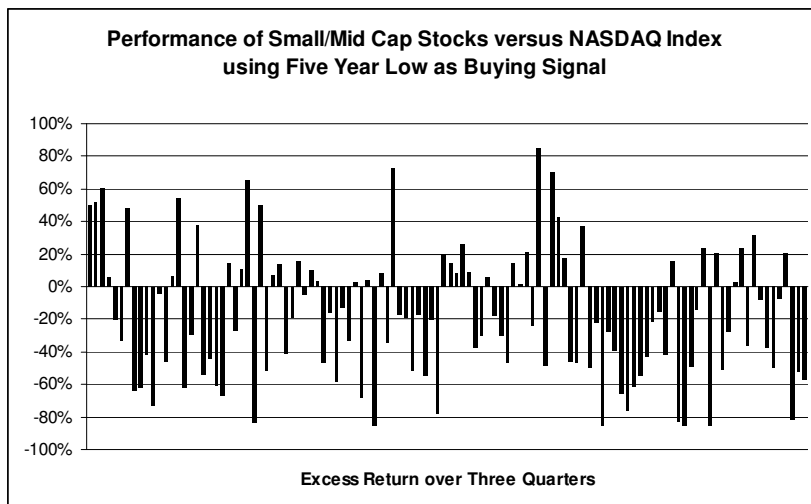


Figure X - Excess Returns Four Quarters Later—Small and Mid-Cap

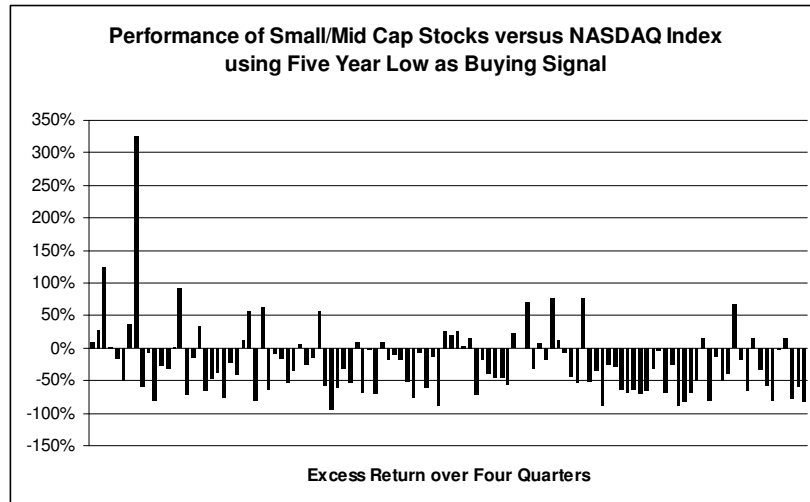
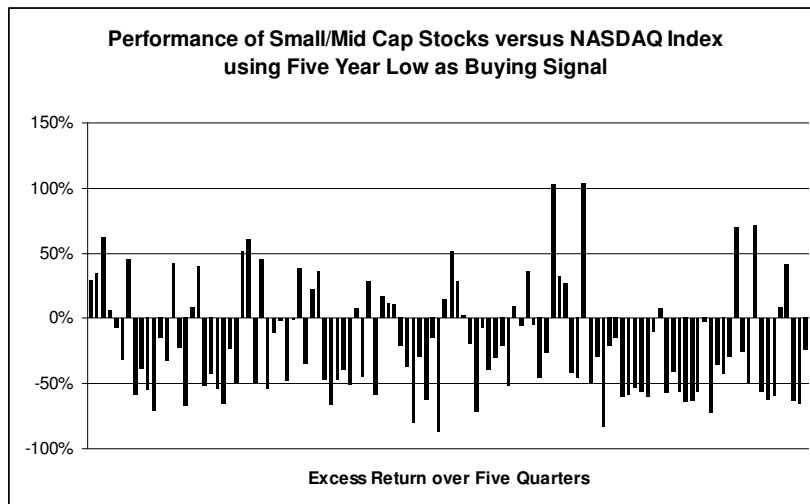


Figure X1 - Excess Returns Five Quarters Later—Small and Mid-Cap



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