



Ned Davis Research, Inc.

## Using IPOs to Identify Sector Opportunities

by Kevin Lapham, CMT

### **Abstract:**

The number of initial public offerings (IPOs) is a well-known, long-term stock market indicator. With the popularity of sector investing and the increased use of exchange traded funds, it would be advantageous to employ a new IPO-based indicator to assess sector health, improving upon available technical market measures. This study will examine how the number of IPOs within the ten market sectors can be used to help identify overbought or oversold conditions in each respective sector.

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## Introduction

The number of initial public offerings (IPOs) is a well-known, long-term indicator that can help confirm peaks and troughs in the stock market. Previous studies documented by Timothy Hayes (2001) have explored the relationship between an increase or decrease in the number of initial public offerings and the corresponding peak or valley in the broad market that often follows.<sup>1</sup> However, there is a lack of available information about the use of IPOs to perform sector analysis. Demonstrating the value of using a narrower perspective, this study will winnow the number of IPOs down to the sector level to provide a new market metric.

The theory behind the success of this indicator is twofold. First, investor sentiment can be gauged by the number of IPOs brought to market. Companies, venture capitalists, and investment banks will not benefit from the issuance of new shares unless there is ample investor interest in such an offering. In studies by Norman G. Fosback (1985), he stated "Companies sell stock to the public primarily when they need capital for expansion and related purposes. This usually occurs when business prospects are bright and companies view their stocks as generously priced by the market."<sup>2</sup> This can only happen effectively when investor sentiment is bullish and stock prices have been rising. In a 2006 Bloomberg news story, it was reported "Chief executive officers are turning to stock markets for financing now that the Standard & Poor's 500 Index is near a four-year high."<sup>3</sup>

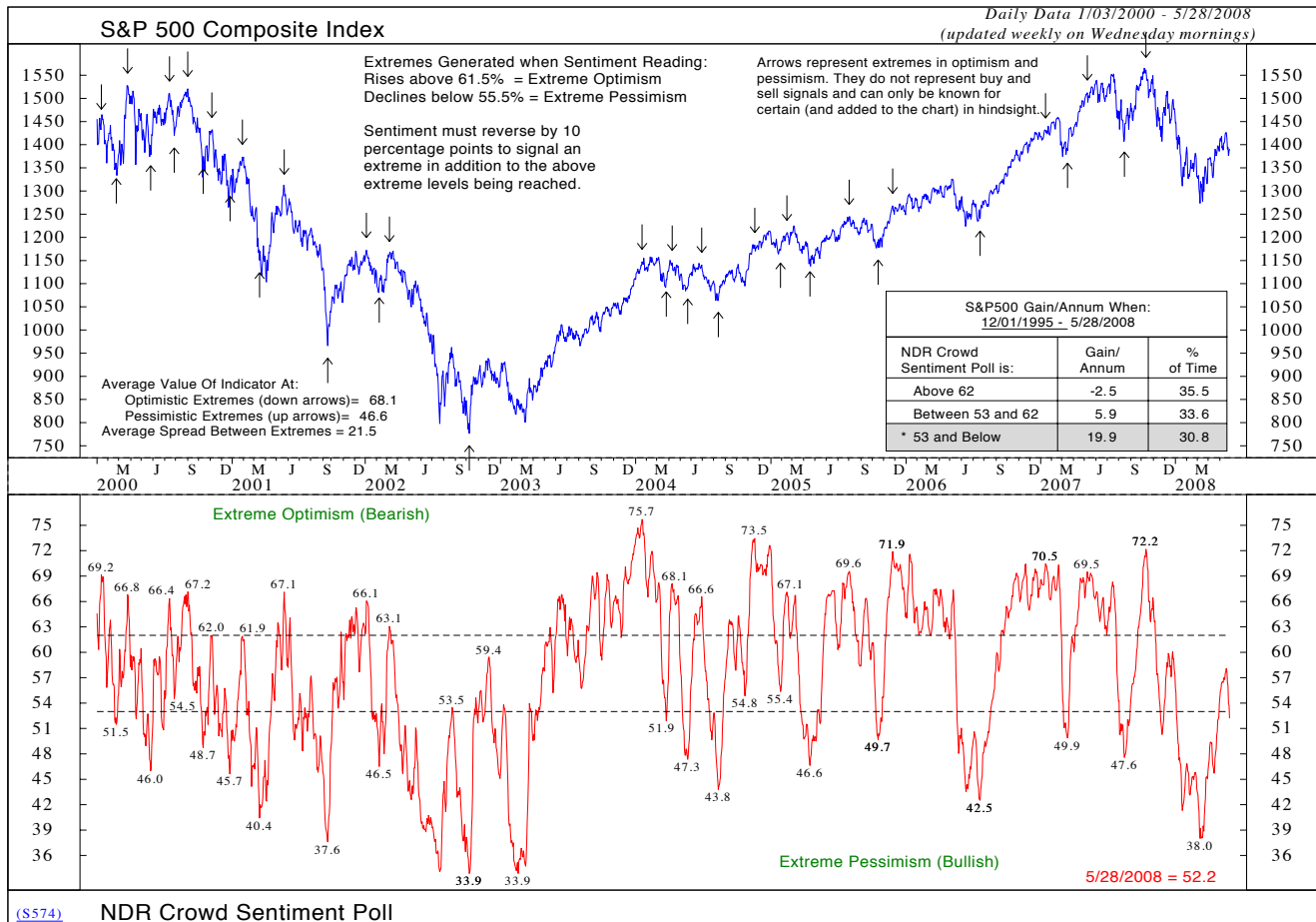
Second, the number of IPOs provides a measure of supply and demand. Norman G. Fosback (1985) also stated, "The new source of supply introduced into the market's supply-demand equation also has the effect of diverting investment funds away from other stocks, thus exerting downward pressure on prices."<sup>4</sup>

Since stocks in a sector typically move in concert with one another, a number of IPOs within the same sector that begin to falter due to lack of buying interest and excess supply will weigh on all stocks in that sector. This study will examine how the use of the number of IPOs within a sector can be successfully applied to help identify overbought or oversold conditions in each respective sector.



# I. Investor Sentiment

A variety of methods can be used to measure investor sentiment for the broad market, such as: Market-vane<sup>5</sup>, The American Association of Individual Investors<sup>6</sup>, Daily Sentiment Index<sup>7</sup>, Consensus, Inc.<sup>8</sup>, and the Ned Davis Research Crowd Sentiment Poll<sup>9</sup> (a composite that includes these aforementioned and other sentiment indicators -- **Figure 1.1** below). While each provides useful predictions of overbought and oversold levels for the broad market, none of these sentiment indicators provide sentiment readings for a specific market sector.

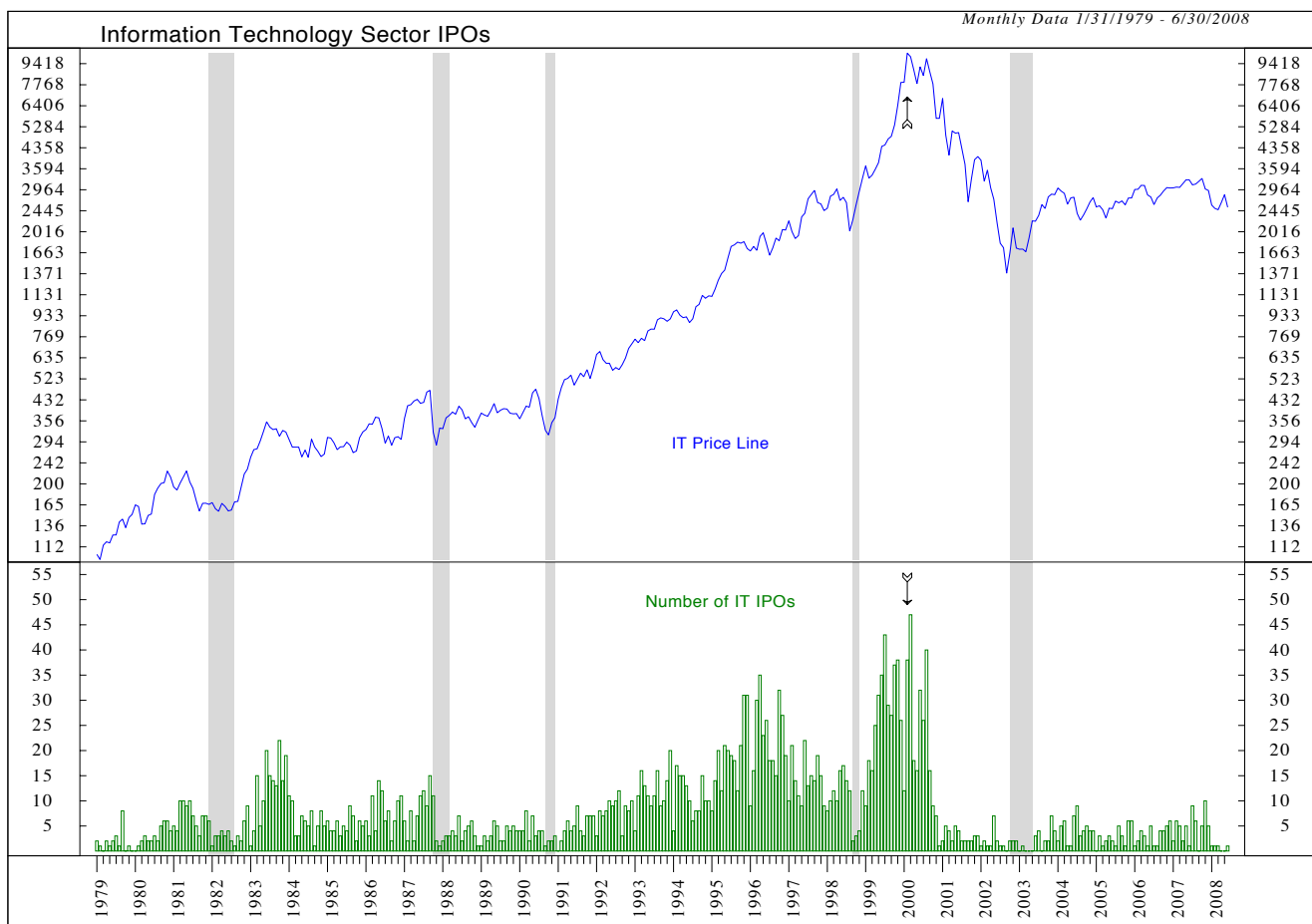


**Figure 1.1** NDR Crowd Sentiment Poll, Courtesy of Ned Davis Research

Utilizing IPOs from a sector perspective fills in this missing link. As a market advances at a healthy pace, investors will feel comfortable buying up shares of IPOs, especially in hot sectors. During times of high investor interest, prices may be driven to unsustainable levels. Markets will do their best to take advantage of the escalating demand. A peak in prices may be looming on the horizon when buying interest exhausts, crowd opinion reaches an extreme, and the focus increasingly turns to profit-taking. As quoted from Ned Davis (2003) "The speculative trader historically has tended to be more influenced by sentiment and is most often on the wrong side of the market at extremes."<sup>10</sup> As a result, investor sentiment can be gauged by measuring the number of IPOs by sector on a monthly basis. The IPO by Sector Indicator is a contrarian indicator; hence, high volumes of offerings in the same sector are bearish for that respective sector, while low levels of offerings often coincide with buying points.



A clear example of investor exuberance related to a specific market sector is that associated with the Year 2000 tech bubble (**Figure 1.2** below). In 1999, this sector outperformed all others with record momentum and an astounding 140% annual return. An emerging internet/tech industry could not have existed without the huge investor appetite for shares of new issues. This unrestrained enthusiasm drove prices to unforeseen levels, resulting in one of the worst bubbles in decades. The lower clip in **Figure 1.2** illustrates the spike in the number of technology IPOs per month in February 2000 (indicated by a down arrow). The solid line in the upper chart clip represents the NASDAQ-100 Index bubble top (indicated by an up arrow). This is a unmistakable example of an increase in the number of IPOs correctly forecasting a bearish outcome which was realized after the year 2000. There were also successful sell signals during the early 1980's. However, during the mid-1990's, there was a peak in the number of IPOs, but no distinct tech sector pull-back. A plausible reason for this may be due to the secular bull market of that time where ample investor demand was gobbling-up all the new supply. This is an important caveat the analyst must take into account while using this indicator. Use of IPO relative strength may be used to help sort out early sell signals due to heavy demand (see part **IV. Applications**).



**Figure 1.2** Relationship between Tech sector IPOs and NASDAQ-100 Index

Also illustrated in 1982, 1987, 1991, 1998, and 2002 are a very low number of IPOs compared to surrounding activity (shaded areas in **Figure 1.2**). These periods coincided with good buying opportunities.



## II. The IPO Study

### A. Sector IPO Data Compilation

For the purposes of this study, Initial Public Offerings (IPOs) are defined as a new issue of an equity listed on a major U.S. exchange. Only IPOs for the major exchanges have been included in this study:

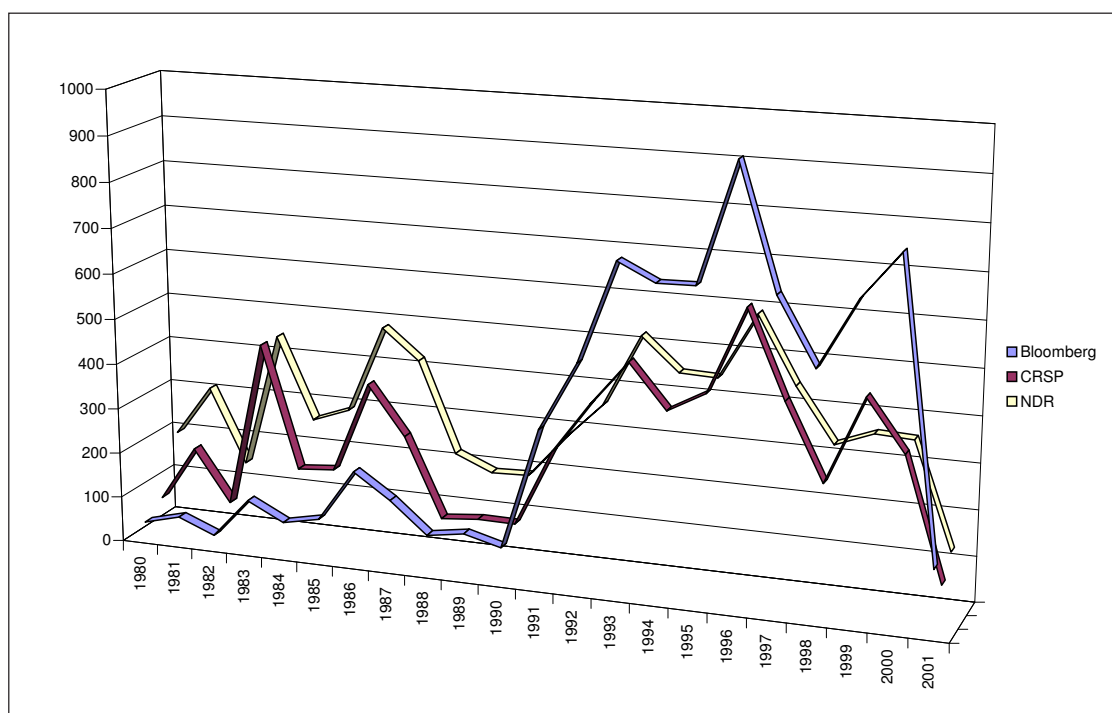
- » New York Stock Exchange
- » American Stock Exchange
- » NASDAQ

IPOs do not include: bonds, mutual funds, unit trusts, exchange-traded funds, or other hybrid securities. New listings as a result of a spin-off, stock dividend, or other corporate action have also been excluded. New listings of foreign companies on a major U.S. exchange, as well as American Depositary Receipts (ADRs), are included if the underlying foreign company is indeed issuing new stock for the first time.

The IPO totals were computed monthly. The date the issue begins trading on a major exchange is the inclusion month of the issue. Upon adding the new issue into the monthly totals, a determination was made whether the issue had a corresponding Standard & Poor's<sup>11</sup> GICS (Global Industry Classification Standard) code. If a GICS code was not available, each new issue was researched and a determination was made as to the appropriate sector placement.

One of the major hurdles in this study was the lack of available IPO data by sector in a uniform and useable format. Some vendors offering IPO data misclassified events which made it necessary to create a completely independent historical IPO database. The number of IPOs per month compiled for this study was found to generally have an 80+% correlation level to other sources such as CRSP (Center for Research in Security Prices) and Bloomberg as illustrated in **Figure 2.1**.

Data differences can be attributed to several types of errors common amongst the vendors: misclassifying IPOs events, timing differences (using IPO announce date vs. IPO trade date), and tally errors. This study only uses the date when the new issue was listed and began trading which provides emphasis as to when IPOs may truly affect supply in a sector.



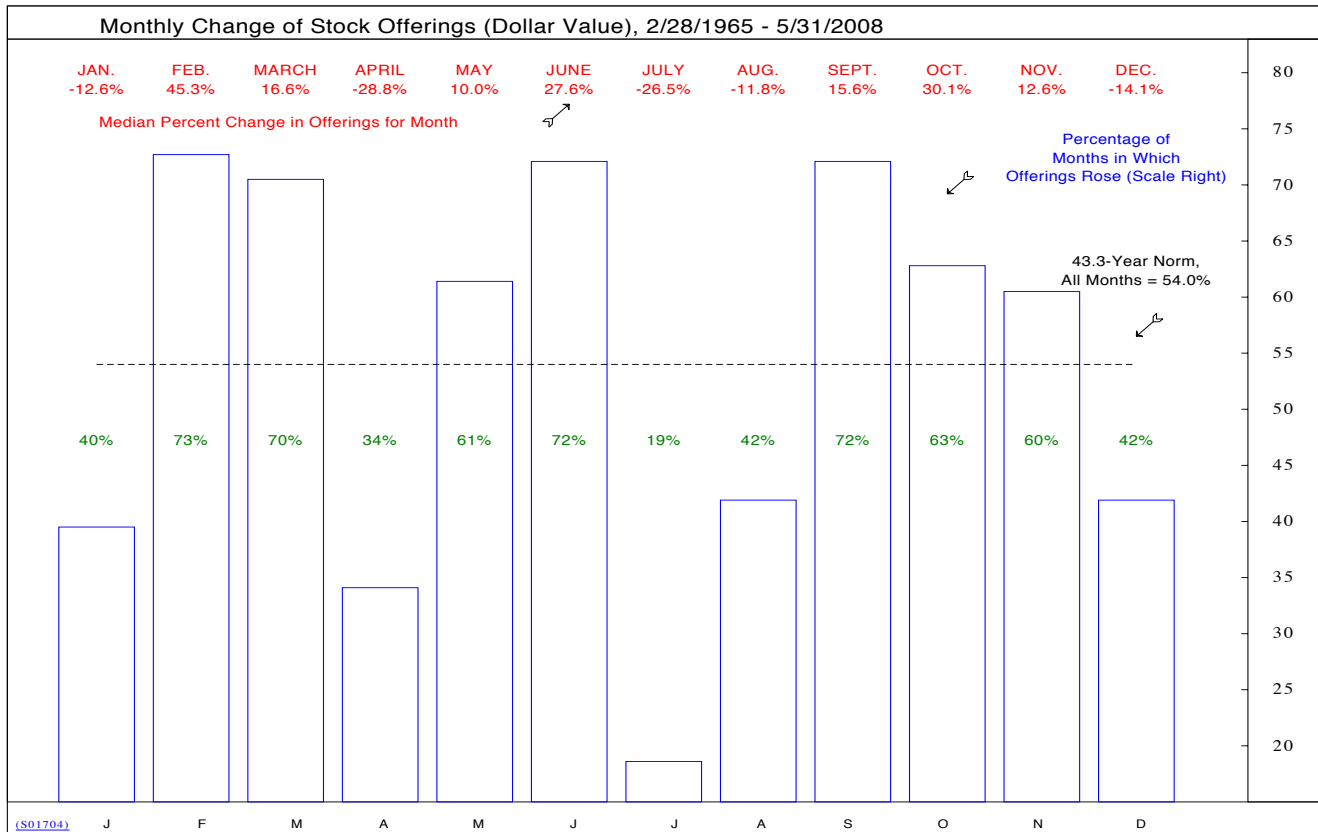
**Figure 2.1** Correlation of number of IPOs by year



### B. IPO Sector Study Parameters and Methodology

IPOs are seasonally strong in February, March, June, and September and weak in January, April, July, and December. (illustrated in **Figure 2.2**).

Due to this cyclic nature of IPOs<sup>12</sup>, deviation from trend was determined to be the most appropriate means to identify overbought and oversold areas. Deviation from trend is calculated by dividing a short-term moving average of the total number of sector IPOs per month by a longer moving average of the total number of sector IPOs per month and plotting the ratio of the two.<sup>13</sup> In this study, a 3/12-Month deviation



**Figure 2.2** Stock Offering Seasonality, Courtesy of Ned Davis Research

from trend was applied to each of the IPO counts from the 10 sectors. These parameters were employed to normalize the IPO data for the aforementioned seasonal cycle (historically, IPOs have generally tended to experience a trough every third month). As the deviation from trend passed below a bracket (i.e. buy zone line), a buy signal was generated and when passing above a bracket (i.e. sell zone line), a sell signal was generated. The next signal was not generated until there was a crossover of the opposite bracket. Consecutive signals on the same end of a bracket were ignored.

Several variations in bracket parameters and deviation from trend were tested and have been included in the study analysis section. Through programmatic testing and optimization, upper and lower brackets were refined to affect the buy and sell signals. See **Appendix A** for the charts illustrating these optimized signals. An example of bracket parameter analysis results can be found in **Appendix C**. The IPO by Sector Indicator performed well using varying deviation from trend and bracket parameters, exemplifying the robustness of this indicator.



### III. Study Analysis

The IPO by Sector Indicator resulted in an average excess return of 23.4% per annum in mode basis. Mode basis gauges the effectiveness of the IPO model based on the degree of bullishness or bearishness as determined by the deviation from trend signals. The tables appearing on each of the charts noting “Gain/Annum When” (see **Appendix A**) show three perspectives on how the sector’s returns have historically performed with the model’s bullish, bearish, or neutral readings (the modes). The bullish modes have been summarized in **Table I** below.

Sector	Buy/Hold	IPO % Return*	Excess Return
Energy	10.5	23.9	13.4
Materials	9.4	15.8	6.4
Industrials	11.1	37.7	26.6
Consumer Discr	11.1	25.9	14.8
Consumer Staples	11.2	17.1	5.9
Health Care	14.2	46.1	31.9
Financials	10.8	10.3	-0.5
Information Tech	11.4	23.2	11.8
Telecom Services	8.2	17.8	9.6
Utilities	4.8	16.2	11.4

*\*when DT is in bullish mode*

**Table I.** Mode basis performance of IPO DT model



### III. Study Analysis

(continued)

**Tables II-V** summarize the gain per annum on a trade signal basis for each of the ten GICS sectors compared to a buy and hold strategy for in-sample, out-of-sample, and the complete history periods.

In Sample Period, 1/31/1979-1/31/1995, Brackets 50/110, DT 3/12							
Sector	# Obs. in mos.	Auto-correlation*	# Trades	% Profitable	Buy/Hold	IPO % Return	Excess Return
Energy	192	0.81	8	88%	3.6	6.5	2.9
Materials	192	0.78	7	71%	11.5	10.4	-1.1
Industrials	192	0.86	4	100%	12.6	45.0	32.4
Consumer Discr	192	0.86	4	100%	16.2	30.0	13.8
Consumer Staples	192	0.74	11	82%	14.9	29.7	14.8
Health Care	192	0.83	6	83%	16.3	41.2	24.9
Financials	192	0.82	7	71%	14.0	29.3	15.3
Information Tech	192	0.80	7	86%	15.9	29.9	14.0
Telecom Services	192	0.70	15	73%	13.3	20.5	7.2
Utilities	192	0.59	20	65%	5.5	7.9	2.4

\*Autocorrelation for each table refers to IPO count data series.

Out of Sample Period, 2/1/1995-6/30/2008, Brackets 50/110, DT 3/12							
Sector	# Obs. in mos.	Auto-correlation*	# Trades	% Profitable	Buy/Hold	IPO % Return	Excess Return
Energy	160	0.76	7	86%	19.1	33.4	14.3
Materials	160	0.75	10	70%	6.5	10.1	3.6
Industrials	160	0.74	8	88%	9.0	23.6	14.6
Consumer Discr	160	0.83	4	100%	5.0	14.0	9.0
Consumer Staples	160	0.69	12	50%	6.8	-2.4	-9.2
Health Care	160	0.77	8	86%	11.5	16.3	4.8
Financials	160	0.84	4	75%	6.8	9.9	3.1
Information Tech	160	0.84	4	75%	5.8	-0.6	-6.4
Telecom Services	160	0.68	11	82%	2.1	2.3	0.2
Utilities	160	0.64	15	47%	4.0	7.0	3.0

\*Autocorrelation for each table refers to IPO count data series.

**Tables II-III.** Signal basis performance of IPO DT model (in/out sample periods)



Complete History, 1/31/1979-6/30/2008, Brackets 50/110, DT 3/12							
Sector	# Obs. in mos.	Auto-correlation*	# Trades	% Profitable	Buy/Hold	IPO % Return	Excess Return
Energy	353	0.79	16	87%	10.5	17.7	7.2
Materials	353	0.77	17	71%	9.4	10.8	1.4
Industrials	353	0.80	12	92%	11.1	32.8	21.6
Consumer Discr	353	0.85	8	100%	11.1	22.2	11.1
Consumer Staples	353	0.72	23	65%	11.2	12.9	1.7
Health Care	353	0.80	13	85%	14.2	27.5	13.3
Financials	353	0.83	11	73%	10.8	21.4	10.6
Information Tech	353	0.82	11	82%	11.4	14.4	3.0
Telecom Services	353	0.70	26	77%	8.2	13.3	5.1
Utilities	353	0.61	35	57%	4.8	7.5	2.6

\*Autocorrelation for each table refers to IPO count data series.

Table IV. Signal basis performance of IPO DT model (complete history)

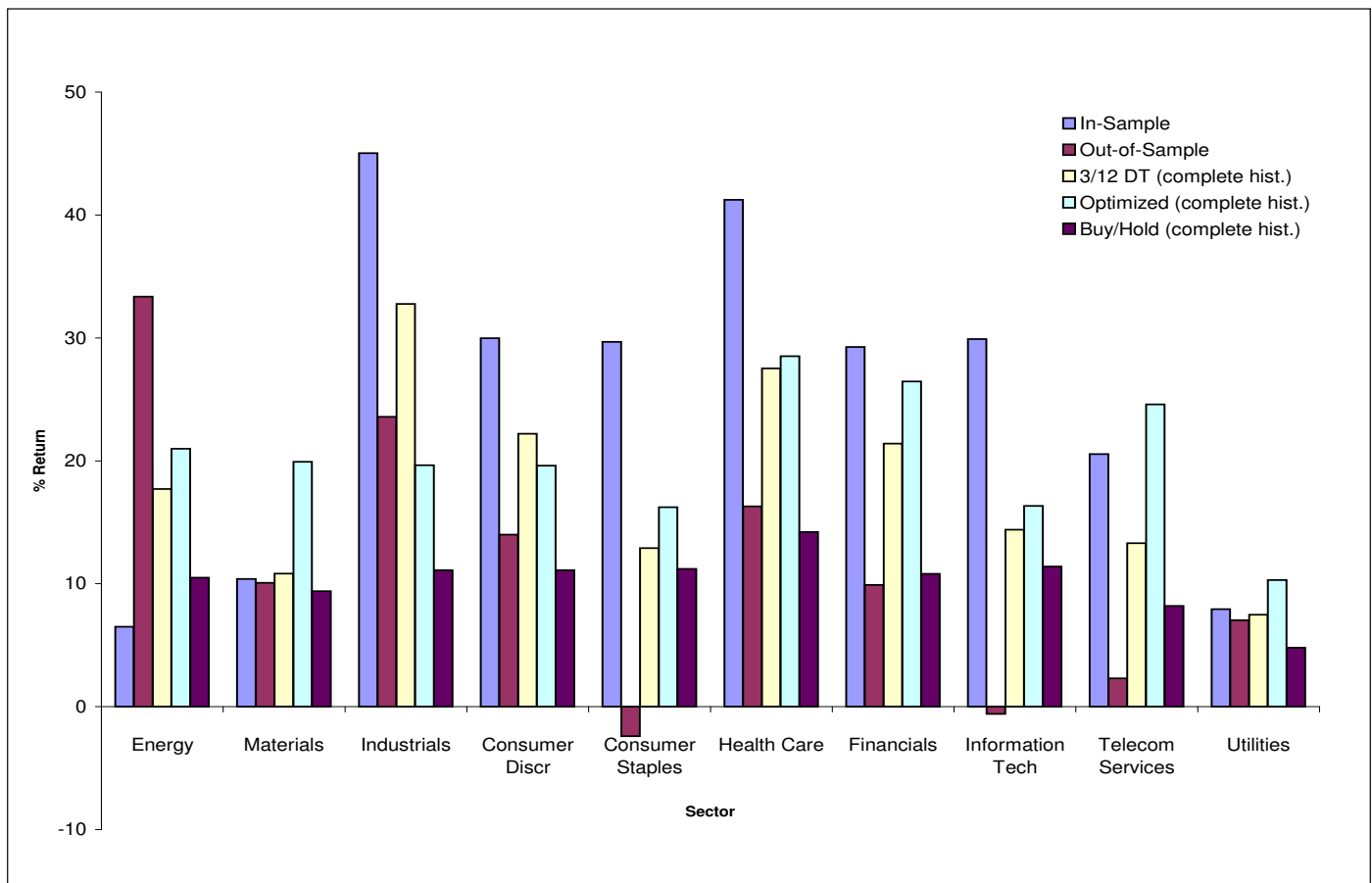


Figure 3.1 Performance Comparison



Complete History, 1/31/1979-6/30/2008, Various Brackets & DT (optimized)									
Sector	# Obs. in mos.	Auto-correlation*	# Closed Trades	% Profitable	Buy/ Hold	IPO % Return	Excess Return	# Open Trades	IPO % Mark Mkt*
Energy	353	0.85	4	100%	10.5	21.0	10.5	0	21.0
Materials	353	0.88	3	100%	9.4	19.9	10.5	1	13.0
Industrials	353	0.62	12	92%	11.1	19.6	8.5	1	16.8
Consumer Discr	353	0.63	17	82%	11.1	19.6	8.5	1	18.1
Consumer Staples	353	0.61	19	68%	11.2	16.2	5.0	1	14.6
Health Care	353	0.63	12	83%	14.2	28.5	14.3	1	27.5
Financials	353	0.47	7	86%	10.8	26.5	15.7	1	21.1
Information Tech	353	0.61	13	77%	11.4	16.3	4.9	1	16.0
Telecom Services	353	0.65	18	83%	8.2	24.6	16.4	1	22.7
Utilities	353	0.75	11	82%	4.8	10.3	5.5	0	10.3

\*Autocorrelation for each table refers to IPO count data series.  
 \*\*IPO % Return including open trades. Open trades were closed by marking to market on 06/30/2008 (end of the study).

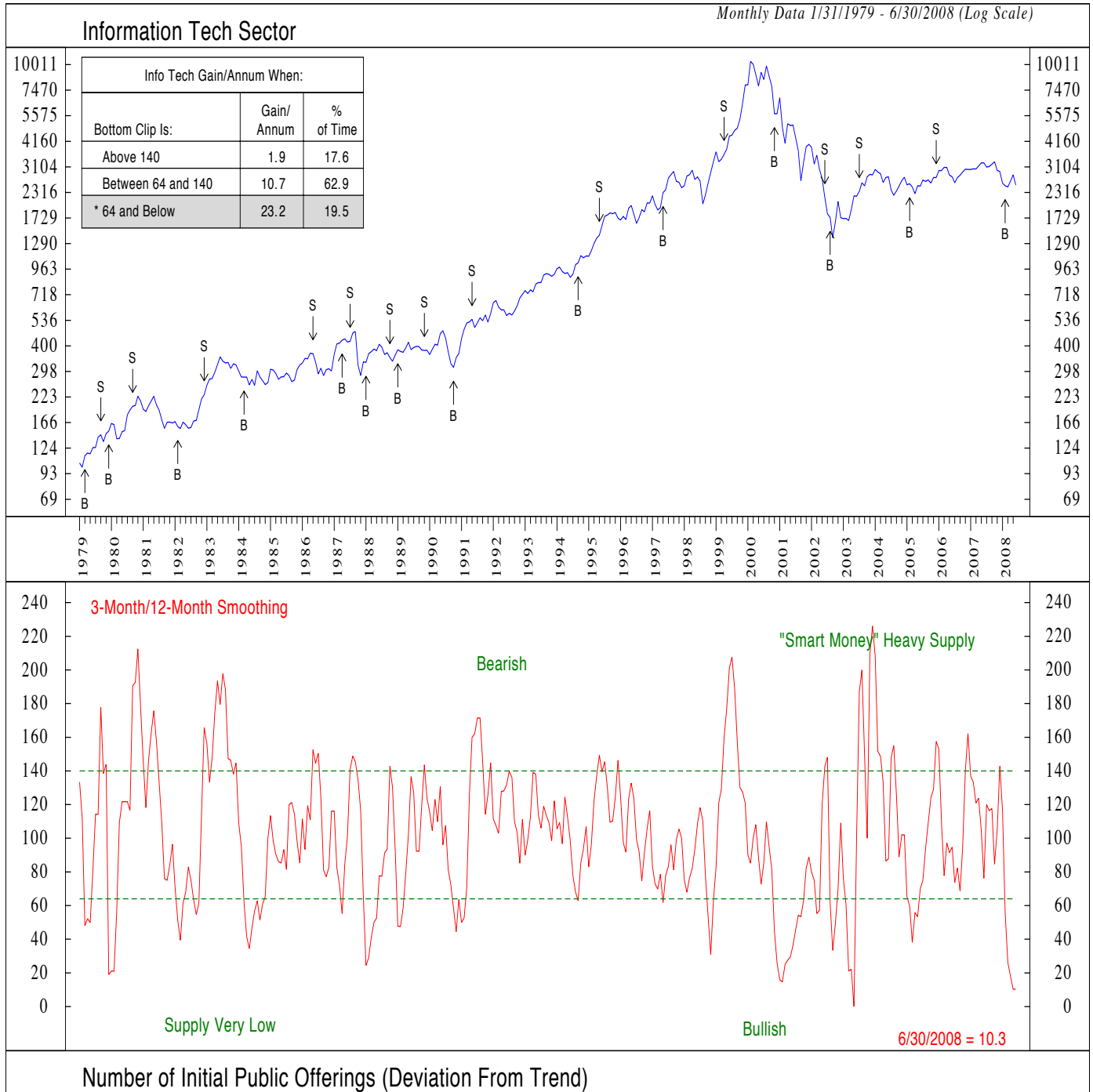
**Table V.** Signal basis performance of IPO DT model (complete history optimized)

In both the standardized (all sector parameters set with DT 3/12, BR 50/110) and optimized complete history results, all ten sectors beat a buy and hold strategy illustrating the effectiveness of the IPO by Sector Indicator and supporting the underlying sentiment and supply/demand premise. See the performance comparison in **Figure 3.1** and data in **Tables IV & V**. However, underperformance in the standardized out of sample period occurred in two sectors: Consumer Staples and Information Technology. During this period, Information Technology returned a small loss of 0.6% resulting from one bad trade. Although not used in this study, risk management would be an effective means to minimize these types of losses. In Consumer Staples, half of the trades during the period lost due to whipsaws from the trade signals. As is often the case in sector studies, each sector had unique cycle characteristics with varying success rates using the IPO by Sector Indicator. Consequently, modifying the DT parameters or the brackets (buy/sell levels) would aid in the reduction of these whipsaws. By using a harmonic of the initial 3-month/12-month DT and various bracket parameters, more consistent results could be achieved for Consumer Staples and other sectors (see **Table V**).

Long trades encountered smaller draw downs and better performance than shorts due to the earlier discussed caveat of increasing demand absorbing an increased IPO supply. These periods typically coincided with strong positive price momentum. For example, in the Information Technology sector, the average profit per long trade was 20.4% with 77% of trades profitable. Conversely, the average loss for short trades was 14.3% with only 38% of the trades profitable.



The following chart illustrates the information technology sector signals using a 3-Month/12-Month deviation from trend (Figure 3.2). Charts for all sectors can be found in Appendix A.



**Figure 3.2** Information Technology Sector (GICS 45), 3-Month/12-Month DT



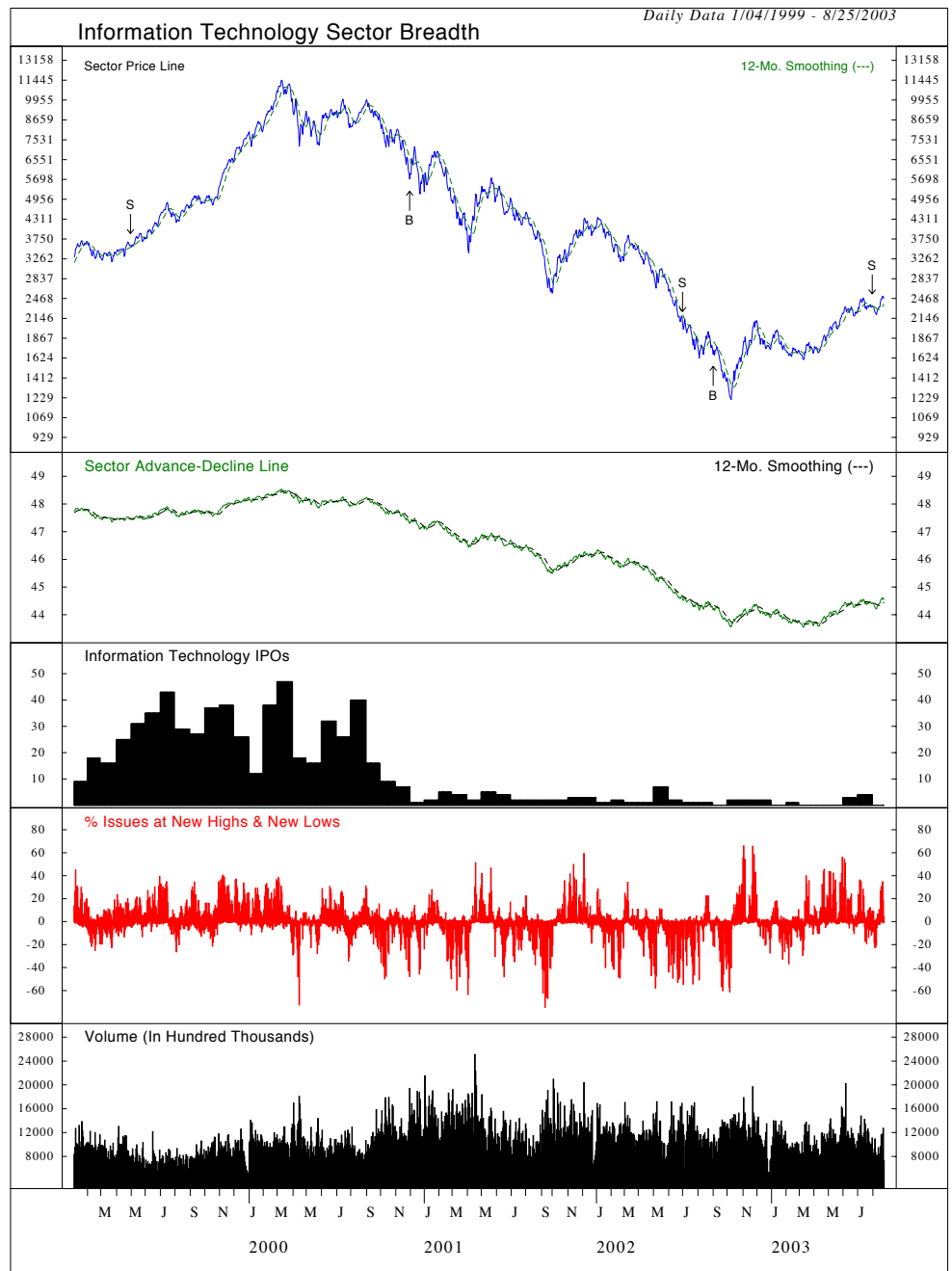
## IV. Applications

The use of the IPO by Sector Indicator is a tool that may assist the analyst with spotting buying and selling opportunities in the medium and long-term time frame for the ten market sectors. Although satisfactory trading signals have been generated strictly from the underlying IPO data itself, it is always prudent to obtain confirmation from other market indicators. **Figure 4.1** provides an example of a breadth chart for the Information Technology Sector which could be used for this purpose. Analyzing trend and breadth in conjunction with the IPO indicator can provide a picture of the sector's underlying strength or weakness.

For example, it may not be necessary to get too bearish on the 4/30/1999 sell signal as the sector advance/decline line had not reversed, the price uptrend remained intact, and the percent of issues at new highs were rising – all in favor of the bulls. Alternatively, the buy signal on 11/30/2000 was not confirmed by breadth as the advance/decline line was trending downwards on increasing volume, a negative sign.

Additionally, the analyst should consider relative strength. This commonly used means of assessing the strength of a stock to an index can also be applied to IPOs. In this study, the number of sector IPOs is plotted as a percent of the total number of IPOs. IPO Relative strength charts for each sector can be found in **Appendix B**.

The IPO by Sector Indicator can be easily integrated with other technical indicators or be used as a component in other technical and fundamental models.



**Figure 4.1** Information Technology Sector Breadth Indicators



## V. Conclusion

The IPO by Sector Indicator improves on broad market sentiment indicators by providing a more detailed view point of sentiment at the sector level. This study illustrates that as the number of IPOs peaked in a particular sector, so did the risk that a price zenith was near. Moreover, the lack of IPOs in a sector was a strong indicator of an approaching base in that respective sector.

As demonstrated, even a trading model that relies solely on IPO data itself has historically been profitable. Using the IPO indicator in conjunction with other indicators or models can aid the technician in achieving a better perspective of sentiment and/or supply and demand forces that may come to influence the posture of the ten market sectors.



## Endnotes

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9. Ned Davis Research , 600 Bird Bay Drive W, Venice, FL 34287, [www.ndr.com](http://www.ndr.com)
10. p. 52, *The Triumph of Contrarian Investing: Crowds, Manias, and Beating the Market by Going Against the Grain*.
11. Standard & Poor's, 55 Water Street, New York, New York 10041, [www.standardandpoors.com](http://www.standardandpoors.com)
12. Ned Davis Research , 600 Bird Bay Drive W, Venice, FL 34287, [www.ndr.com](http://www.ndr.com)
13. p. 393, *Technical Analysis Explained: The Successful Investor's guide to Spotting Investment Trends and Turning Points*.



## Figures

**Figure 1.1** NDR Crowd Sentiment Poll, Courtesy of Ned Davis Research

**Figure 1.2** Relationship between Tech sector IPOs and NASDAQ-100 Index

**Figure 2.1** Correlation of number of IPOs by year

**Figure 2.2** Stock Offering Seasonality, Courtesy of Ned Davis Research

**Figure 3.1** Performance Comparison

**Figure 3.2** Information Technology Sector (GICS 45), 3-Month/12-Month DT

**Figure 4.1** Information Technology Sector Breadth Indicators



## Tables

**Table I.** Mode basis performance of IPO DT model

**Tables II-V.** Signal basis performance IPO DT model



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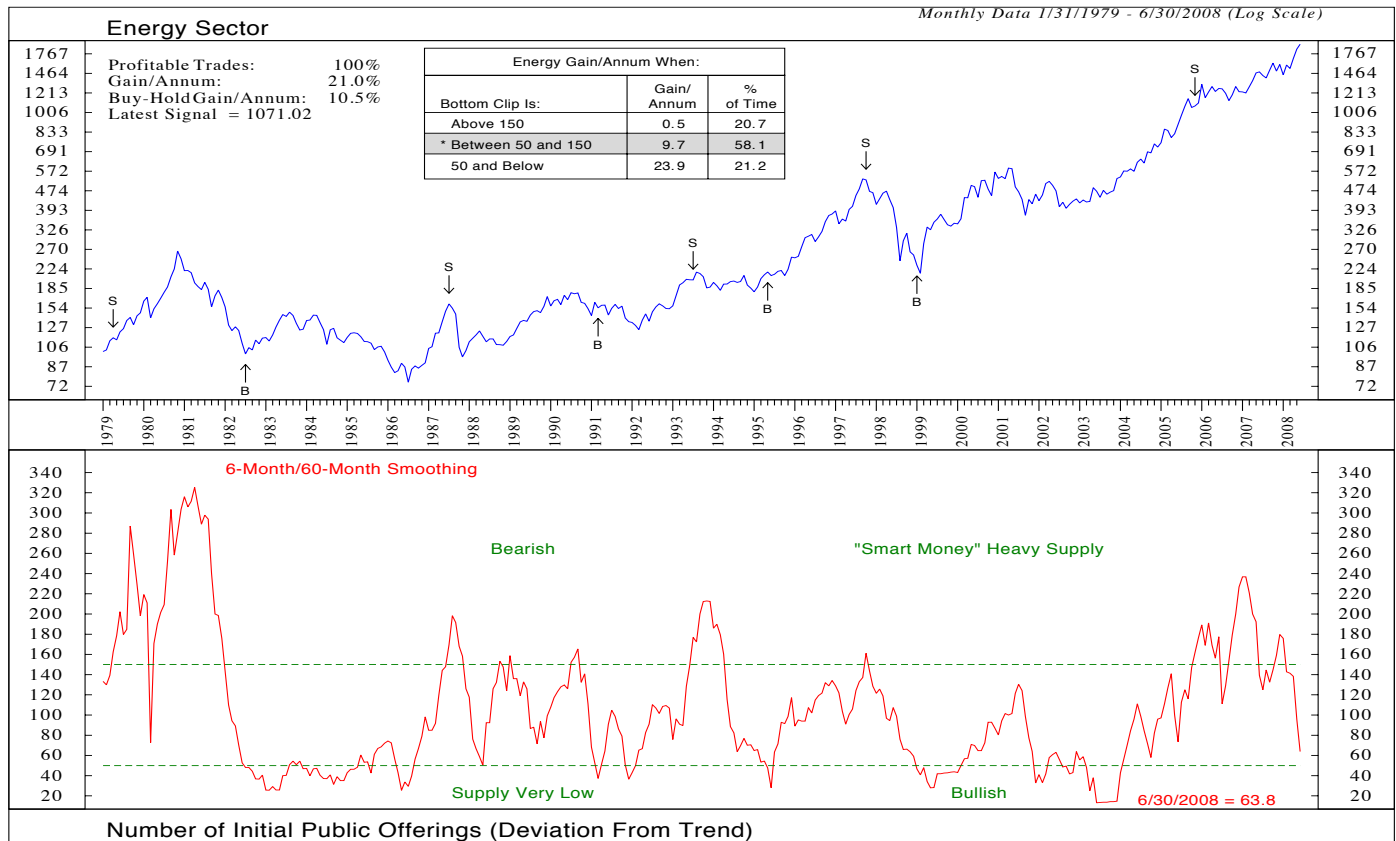
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Fosback, Norman G., 1985, *Stock Market Logic: A Sophisticated Approach to Profits on Wall Street* (The Institute for Econometric Research, Fort Lauderdale, Florida).

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# Appendix A - Sector IPO Trade Analysis



**MARKET SECTOR:** Energy

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	7/31/1982	98.96	Sell	7/31/1987	159.90	61.59	1826	16,159
Long	3/31/1991	154.09	Sell	7/31/1993	201.51	30.78	853	21,132
Long	5/31/1995	217.32	Sell	10/31/1997	526.30	142.18	884	51,178
Long	1/31/1999	231.85	Sell	11/30/2005	1071.02	361.95	2495	236,417

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	0.00	0	0.00		
GAINS	596.50	4	149.12		
Net	596.50	4	149.12	6058	20.99

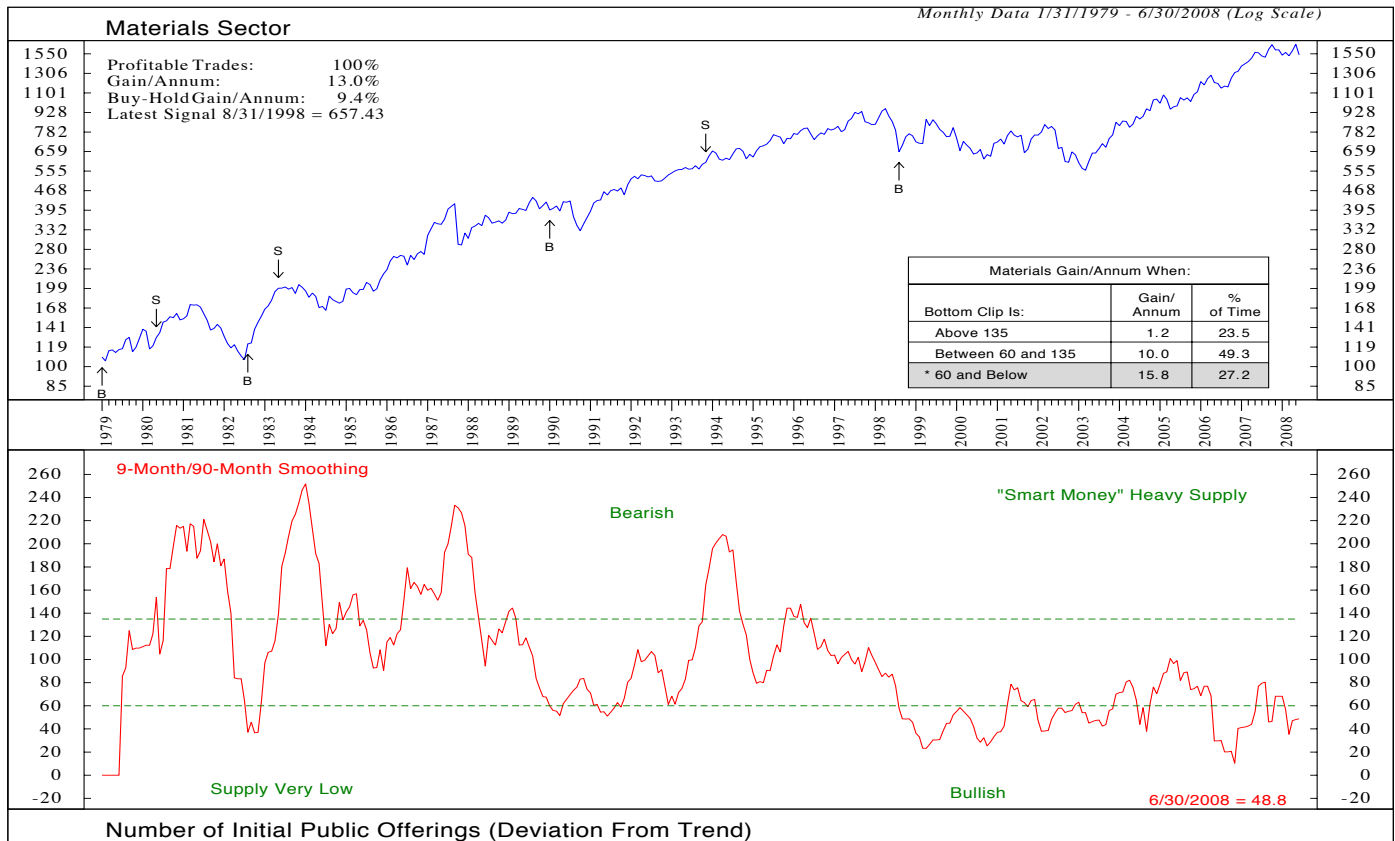
**RESULTS OF ALL TRADES (Closed + Open)**

\$10,000 became \$236,417 in 6058 days (16.60 years).  
21.0% per annum compounded annually.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Materials

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	1/31/1979	109.25	Sell	5/31/1980	129.63	18.65	486	11,865
Long	8/31/1982	122.52	Sell	5/31/1983	.40	62.74	273	19,310
Long	1/31/1990	395.52	Sell	11/30/1993	599.82	51.65	1399	29,284
Long	8/31/1998	657.43	(Open)	6/30/2008	1536.59	133.73	3591	68,445

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	0.00	0	0.00		
GAINS	133.05	3	44.35		
Net	133.05	3	44.35	2158	19.93

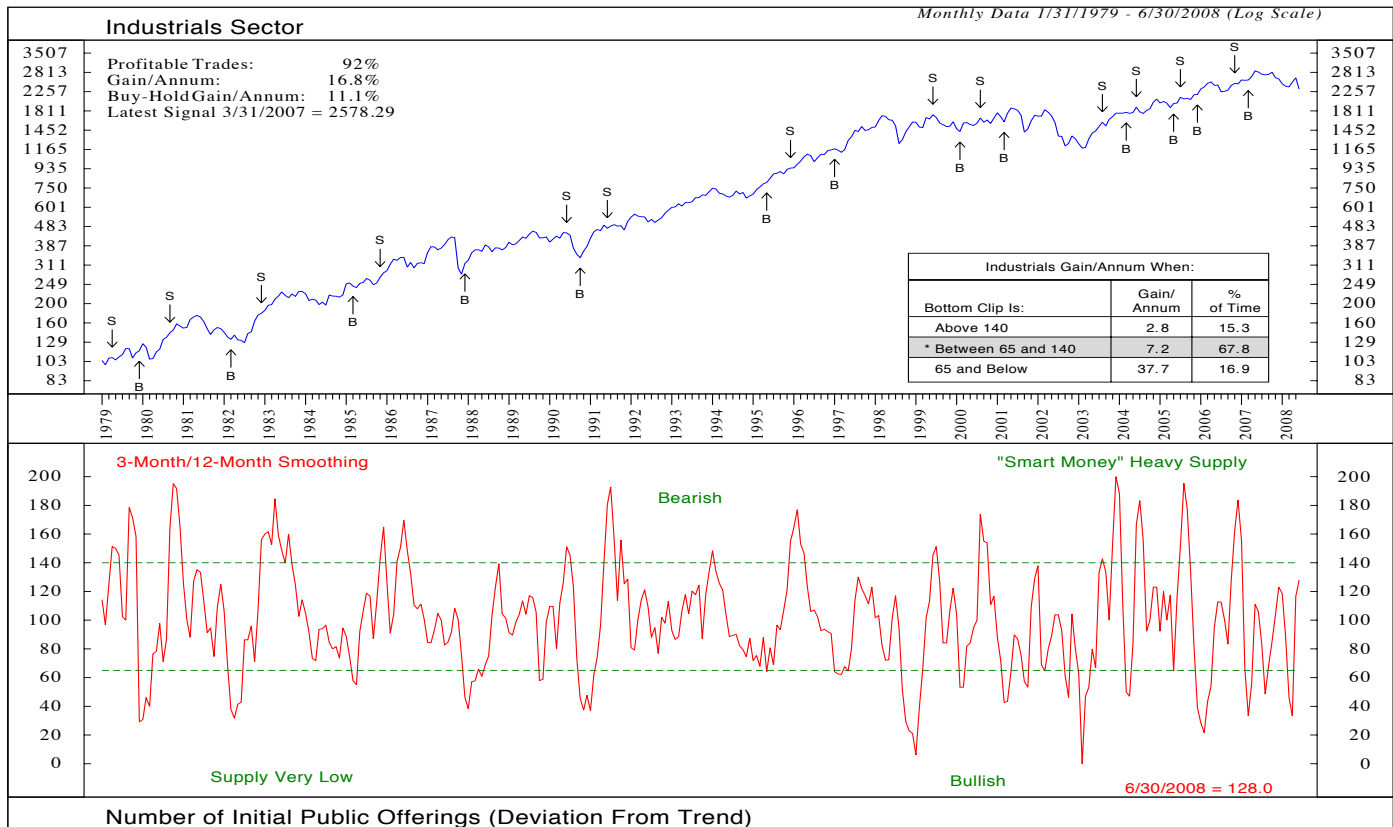
**RESULTS OF ALL TRADES (Closed + Open)**

\$10,000 became \$68,445 in 5749 days (15.75 years).  
 13.0% per annum compounded annually.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Industrials

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	12/31/1979	116.54	Sell	9/30/1980	143.32	22.98	274	12,298
Long	3/31/1982	132.88	Sell	12/31/1982	179.00	34.71	275	16,566
Long	3/31/1985	244.33	Sell	11/30/1985	270.72	10.80	244	18,355
Long	12/31/1987	316.49	Sell	6/30/1990	448.69	41.77	912	26,022
Long	10/31/1990	338.17	Sell	6/30/1991	473.30	39.96	242	36,421
Long	5/31/1995	799.27	Sell	12/31/1995	941.53	17.80	214	42,904
Long	1/31/1997	1173.95	Sell	6/30/1999	1732.85	47.61	880	63,330
Long	2/29/2000	1429.61	Sell	8/31/2000	1670.37	16.84	184	73,995
Long	3/31/2001	1595.50	Sell	8/31/2003	1590.18	-0.33	883	73,748
Long	3/31/2004	1779.80	Sell	6/30/2004	1890.31	6.21	91	78,327
Long	5/31/2005	1968.65	Sell	7/31/2005	2113.61	7.36	61	84,094
Long	12/31/2005	2185.19	Sell	11/30/2006	2481.27	13.55	334	95,488
Long	3/31/2007	2578.29	(Open)	6/30/2008	2326.02	-9.78	457	86,145

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	-0.33	1	-0.33		
GAINS	259.59	11	23.60		
Net	259.25	12	21.60	4594	19.64

**RESULTS OF ALL TRADES (Closed + Open)**

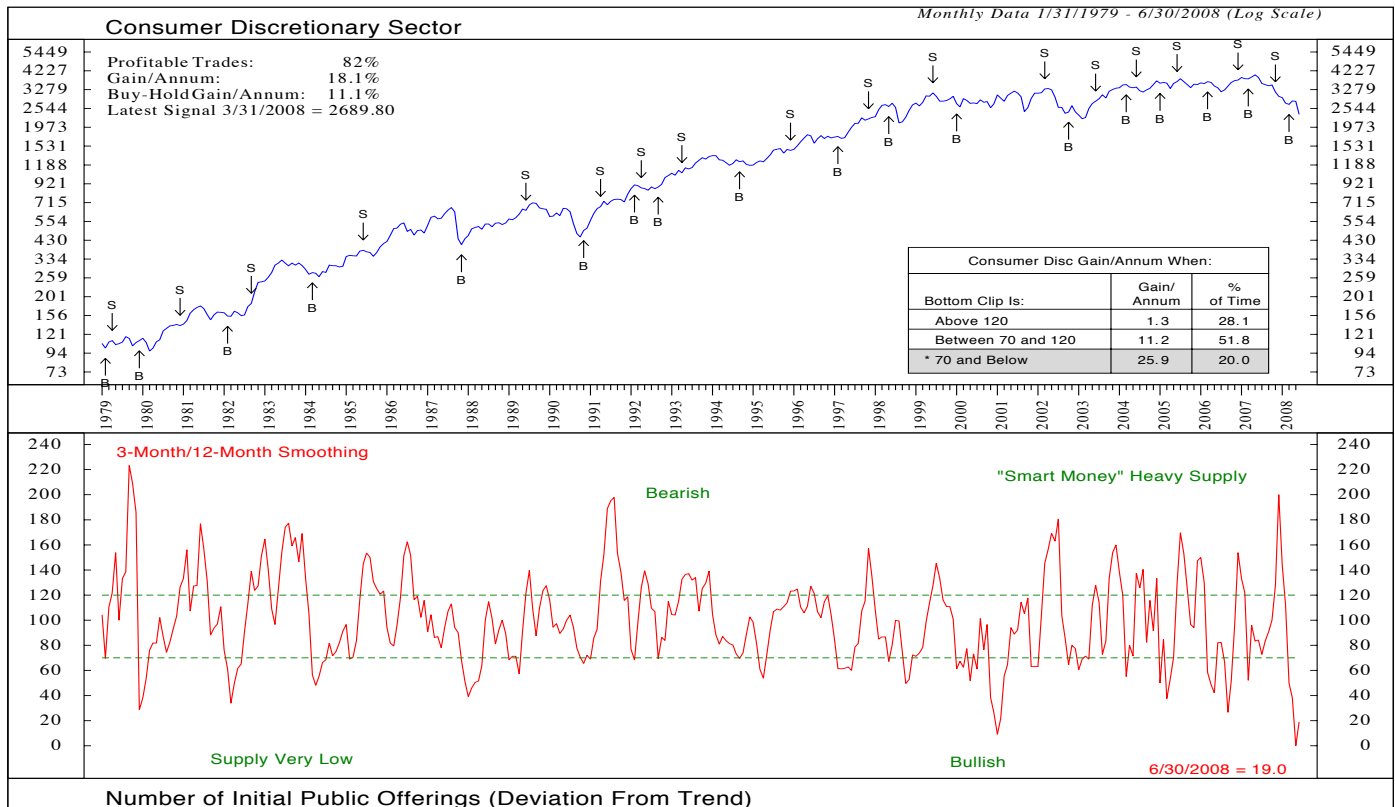
\$10,000 became \$86,145 in 5051 days (13.84 years).

16.8% per annum compounded annually.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Consumer Discretionary

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	2/28/1979	100.44	Sell	4/30/1979	111.05	10.56	61	11,056
Long	12/31/1979	111.03	Sell	12/31/1980	136.18	22.66	366	13,562
Long	2/28/1982	154.68	Sell	9/30/1982	183.28	18.49	214	16,069
Long	3/31/1984	277.97	Sell	6/30/1985	375.85	35.21	456	21,727
Long	11/30/1987	405.51	Sell	6/30/1989	643.49	58.69	578	34,478
Long	11/30/1990	490.99	Sell	4/30/1991	677.76	38.04	151	47,593
Long	2/29/1992	907.33	Sell	4/30/1992	872.19	-3.87	61	45,750
Long	9/30/1992	882.15	Sell	4/30/1993	1068.92	21.17	212	55,435
Long	9/30/1994	1241.49	Sell	12/31/1995	1446.27	16.49	457	64,579
Long	2/28/1997	1742.85	Sell	11/30/1997	2209.07	26.75	275	81,854
Long	5/31/1998	2614.12	Sell	6/30/1999	3135.41	19.94	395	98,177
Long	1/31/2000	2711.41	Sell	3/31/2002	3308.48	22.02	790	119,796
Long	10/31/2002	2424.79	Sell	6/30/2003	2804.16	15.65	242	138,539
Long	3/31/2004	3509.81	Sell	6/30/2004	3393.81	-3.30	91	133,960
Long	1/31/2005	3573.56	Sell	6/30/2005	3653.57	2.24	150	136,960
Long	3/31/2006	3650.42	Sell	12/31/2006	3732.26	2.24	275	140,030
Long	3/31/2007	3796.50	Sell	11/30/2007	3175.00	-16.37	244	117,107
Long	3/31/2008	2689.80	(Open)	6/30/2008	2348.05	-12.71	91	102,228

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	-23.55	3	-7.85		
GAINS	310.15	14	22.15		
Net	286.60	17	16.86	5018	19.60

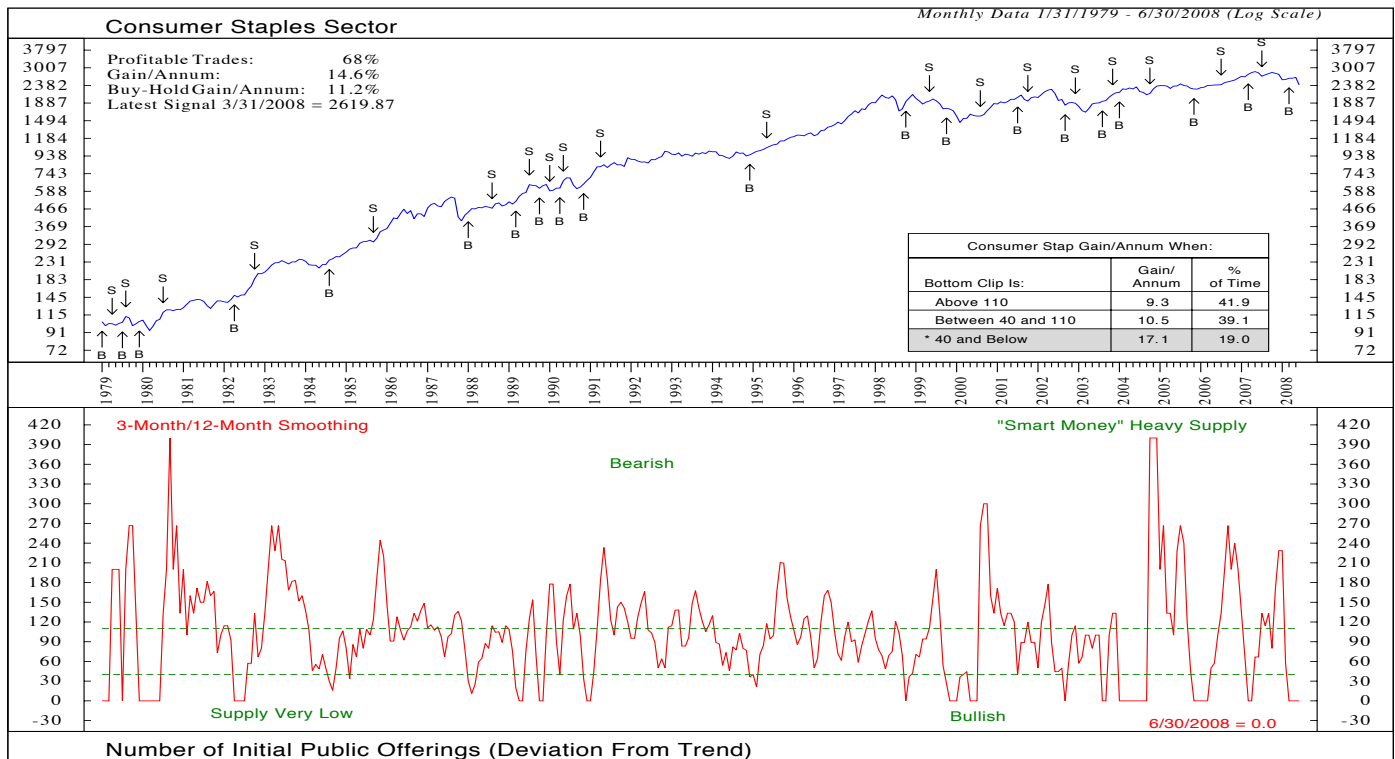
**RESULTS OF ALL TRADES (Closed + Open)**

\$10,000 became \$102,228 in 5109 days (14.00 years).  
 18.1% per annum compounded annually.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Consumer Staples

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	1/31/1979	105.28	Sell	4/30/1979	102.36	-2.77	89	9,723
Long	7/31/1979	104.34	Sell	8/31/1979	112.72	8.03	31	10,504
Long	12/31/1979	105.56	Sell	7/31/1980	119.07	12.80	213	11,848
Long	4/30/1982	149.06	Sell	10/31/1982	185.56	24.49	184	14,750
Long	8/31/1984	237.57	Sell	9/30/1985	301.41	26.87	395	18,713
Long	1/31/1988	447.03	Sell	8/31/1988	470.71	5.30	213	19,705
Long	3/31/1989	515.05	Sell	7/31/1989	642.18	24.68	122	24,568
Long	10/31/1989	611.93	Sell	1/31/1990	592.24	-3.22	92	23,778
Long	4/30/1990	614.03	Sell	5/31/1990	676.40	10.16	31	26,193
Long	11/30/1990	648.46	Sell	4/30/1991	815.40	25.74	151	32,936
Long	12/31/1994	953.35	Sell	5/31/1995	1047.34	9.86	151	36,183
Long	10/31/1998	1922.31	Sell	5/31/1999	1939.71	0.91	212	36,510
Long	10/31/1999	1760.03	Sell	8/31/2000	1589.09	-9.71	305	32,964
Long	7/31/2001	2033.17	Sell	10/31/2001	1940.64	-4.55	92	31,464
Long	9/30/2002	1835.71	Sell	12/31/2002	1883.05	2.58	92	32,276
Long	8/31/2003	1931.03	Sell	11/30/2003	2113.78	9.46	91	35,330
Long	1/31/2004	2173.87	Sell	10/31/2004	2142.80	-1.43	274	34,825
Long	11/30/2005	2271.35	Sell	7/31/2006	2406.10	5.93	243	36,891
Long	3/31/2007	2761.46	Sell	7/31/2007	2688.43	-2.64	122	35,915
Long	3/31/2008	2619.87	(Open)	6/30/2008	2398.30	-8.46	91	32,878

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	-24.33	6	-4.05		
GAINS	166.81	13	12.83		
Net	142.49	19	7.50	3103	16.23

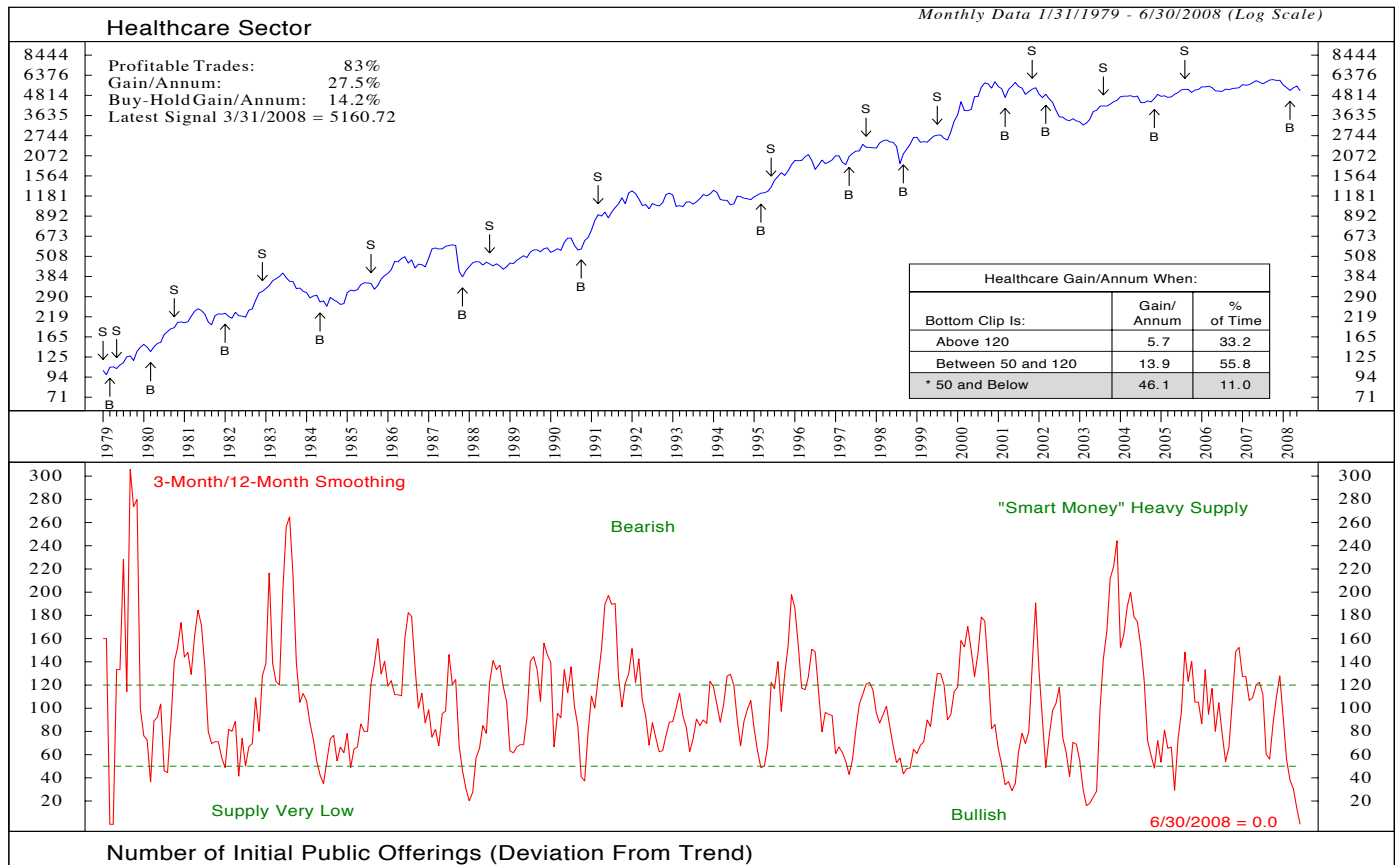
**RESULTS OF ALL TRADES (Closed + Open)**

\$10,000 became \$32,878 in 3194 days (8.75 years).  
 14.6% per annum compounded annually.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Health Care

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	3/31/1979	108.14	Sell	5/31/1979	106.12	-1.86	61	9,814
Long	3/31/1980	134.49	Sell	10/31/1980	187.78	39.62	214	13,702
Long	1/31/1982	229.68	Sell	12/31/1982	311.08	35.44	334	18,558
Long	5/31/1984	268.85	Sell	8/31/1985	348.33	29.56	457	24,044
Long	11/30/1987	381.40	Sell	7/31/1988	458.15	20.12	244	28,883
Long	10/31/1990	563.59	Sell	3/31/1991	909.95	61.46	151	46,633
Long	3/31/1995	1228.91	Sell	6/30/1995	1338.09	8.88	91	50,776
Long	5/31/1997	2053.36	Sell	10/31/1997	2333.65	13.65	153	57,708
Long	9/30/1998	2127.37	Sell	7/31/1999	2759.95	29.74	304	74,867
Long	3/31/2001	4678.75	Sell	11/30/2001	5243.49	12.07	244	83,904
Long	3/31/2002	4885.88	Sell	8/31/2003	4155.37	-14.95	518	71,359
Long	11/30/2004	4606.75	Sell	8/31/2005	5234.81	13.63	274	81,087
Long	3/31/2008	5160.72	(Open)	6/30/2008	5138.36	-0.43	91	80,736

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	-16.81	2	-8.41		
GAINS	264.18	10	26.42		
Net	247.36	12	20.61	3045	28.52

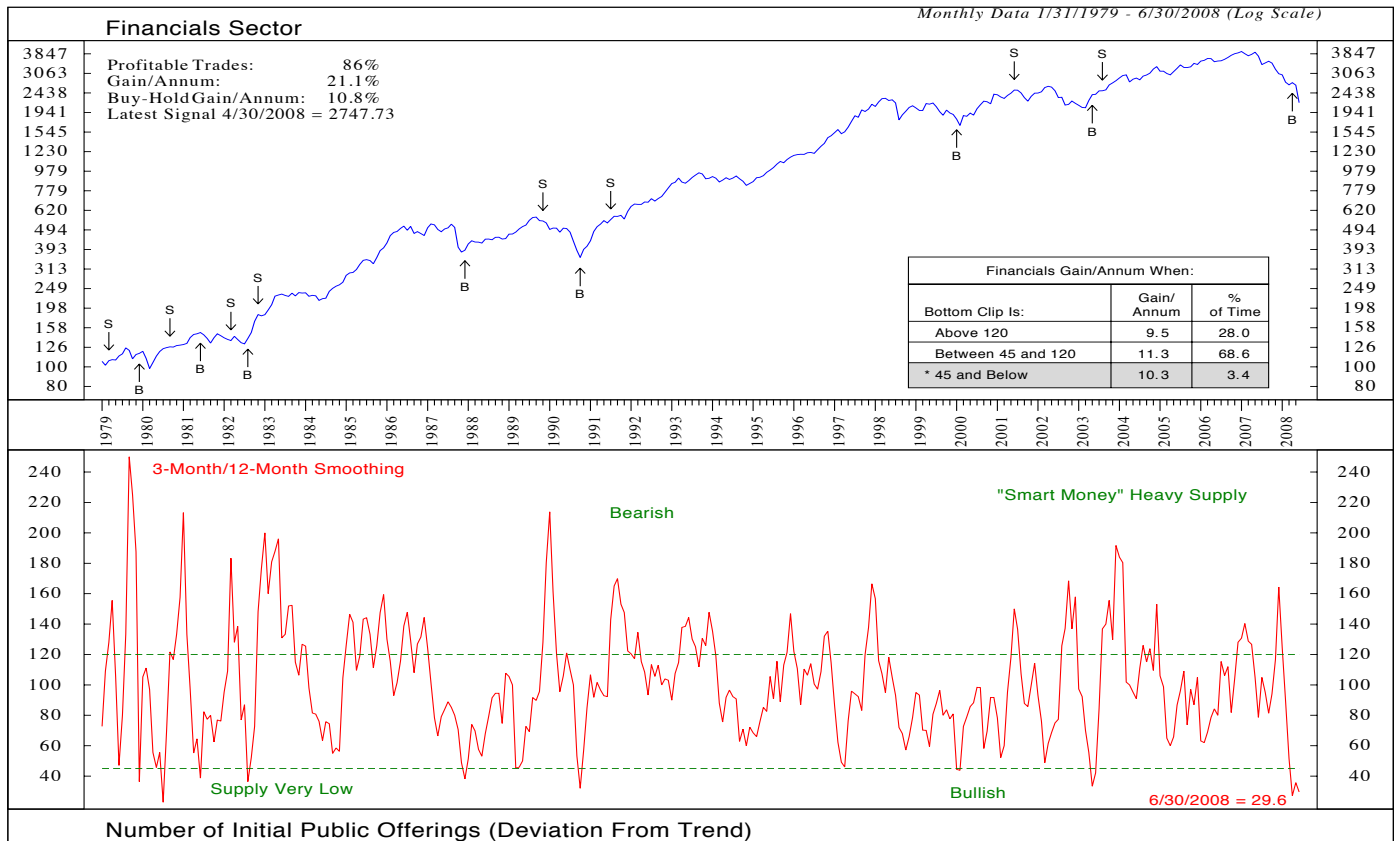
**RESULTS OF ALL TRADES (Closed + Open)**

\$10,000 became \$80,736 in 3136 days (8.59 years).  
 27.5% per annum compounded annually.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Financials

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	12/31/1979	117.13	Sell	9/30/1980	126.36	7.88	274	10,788
Long	6/30/1981	149.33	Sell	3/31/1982	136.03	-8.91	274	9,827
Long	8/31/1982	139.33	Sell	11/30/1982	184.01	32.07	91	12,979
Long	12/31/1987	390.29	Sell	11/30/1989	547.85	40.37	700	18,219
Long	10/31/1990	357.94	Sell	7/31/1991	557.00	55.61	273	28,351
Long	1/31/2000	1796.93	Sell	6/30/2001	2521.99	40.35	516	39,790
Long	5/31/2003	2388.53	Sell	8/31/2003	2501.82	4.74	92	41,677
Long	4/30/2008	2747.73	(Open)	6/30/2008	2176.27	-20.80	61	33,009

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	-8.91	1	-8.91		
GAINS	181.03	6	30.17		
Net	172.12	7	24.59	2220	26.45

**RESULTS OF ALL TRADES (Closed + Open)**

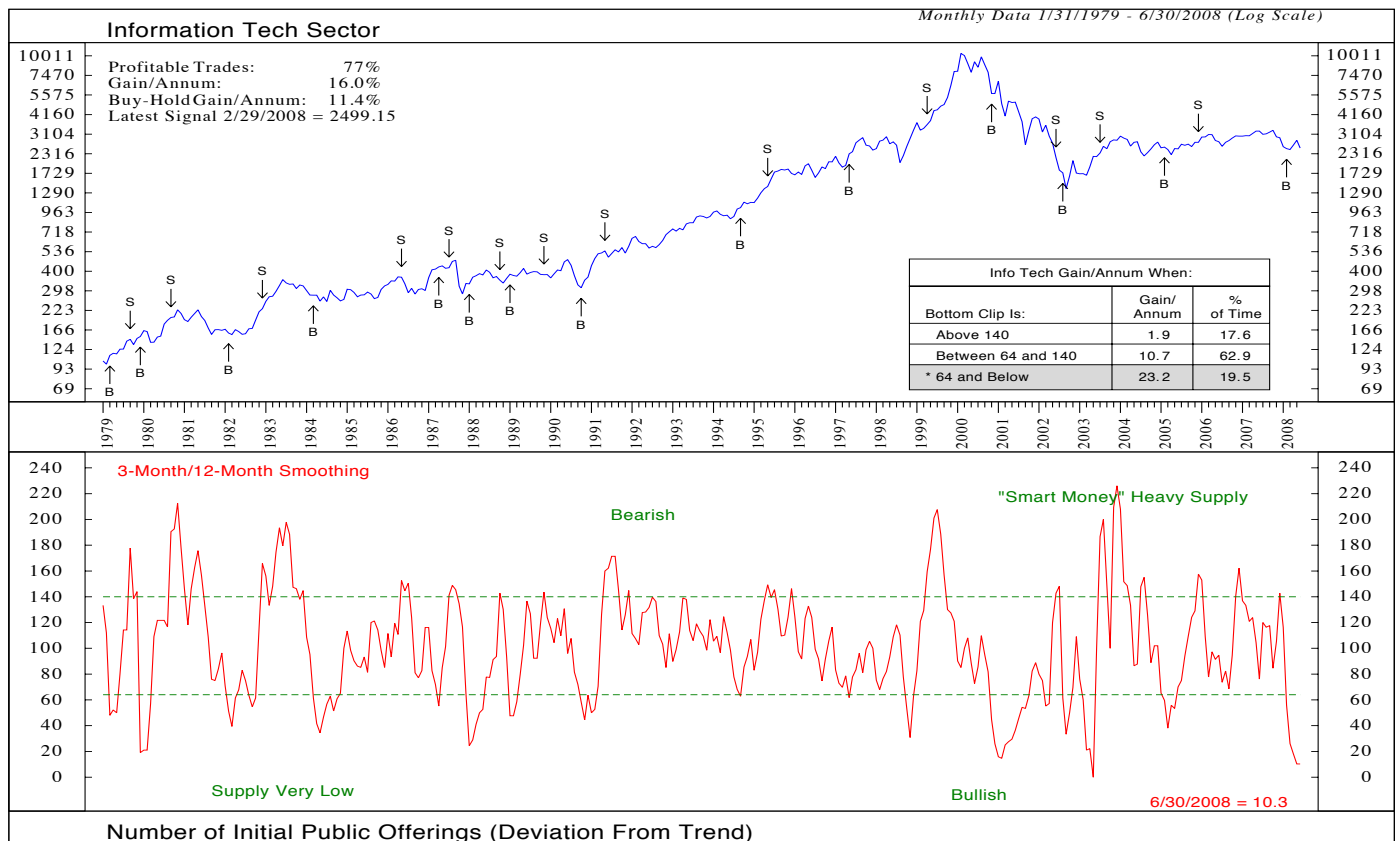
\$10,000 became \$33,009 in 2281 days (6.25 years).  
 21.1% per annum compounded annually.

\*NOTE: Accelerated crash in Financials significantly effected mark to market close of open trade and mode analysis performance. Risk management may reduce losses.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Information Technology

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	3/31/1979	113.73	Sell	9/30/1979	144.49	27.05	183	12,705
Long	12/31/1979	150.79	Sell	9/30/1980	200.28	32.82	274	16,874
Long	2/28/1982	158.83	Sell	12/31/1982	228.61	43.93	306	24,288
Long	3/31/1984	279.47	Sell	5/31/1986	365.72	30.86	791	31,783
Long	4/30/1987	426.97	Sell	7/31/1987	421.35	-1.32	92	31,364
Long	1/31/1988	331.11	Sell	10/31/1988	349.94	5.69	274	33,148
Long	1/31/1989	382.26	Sell	11/30/1989	379.69	-0.67	303	32,925
Long	10/31/1990	312.77	Sell	5/31/1991	541.67	73.19	212	57,023
Long	9/30/1994	1035.22	Sell	5/31/1995	1418.96	37.07	243	78,160
Long	5/31/1997	2310.17	Sell	4/30/1999	3581.65	55.04	699	121,177
Long	11/30/2000	5703.39	Sell	6/30/2002	2185.70	-61.68	577	46,439
Long	8/31/2002	1740.64	Sell	7/31/2003	2342.98	34.60	334	62,508
Long	2/28/2005	2557.84	Sell	12/31/2005	2748.01	7.43	306	67,156
Long	2/29/2008	2499.15	(Open)	6/30/2008	2523.75	0.98	122	67,817

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	-63.67	3	-21.22		
GAINS	247.68	10	34.77		
Net	284.01	13	21.85	4594	16.34

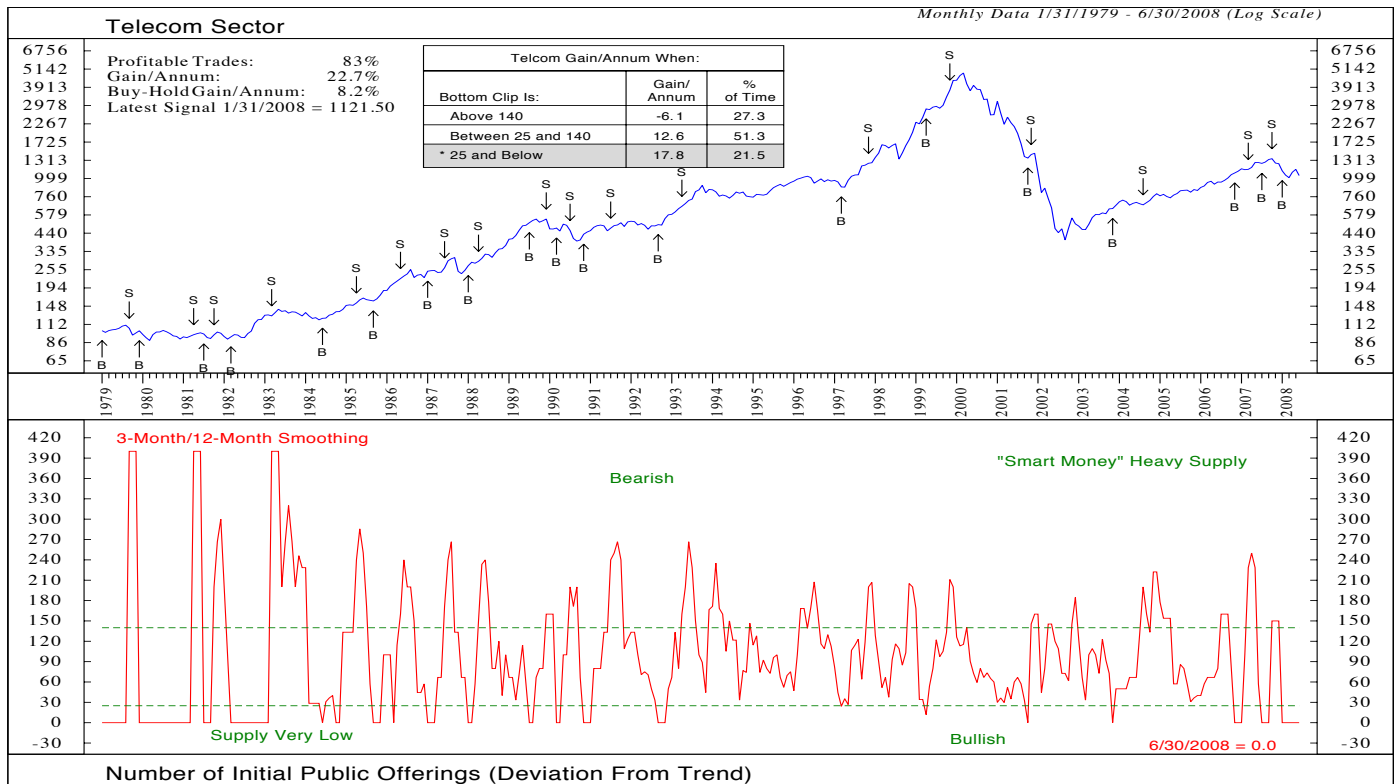
**RESULTS OF ALL TRADES (Closed + Open)**

\$10,000 became \$67,817 in 4716 days (12.92 years).  
 16.0% per annum compounded annually.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Telecommunications Services

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	1/31/1979	102.28	Sell	9/30/1979	106.24	3.87	242	10,387
Long	12/31/1979	102.17	Sell	4/30/1981	96.27	-5.77	486	9,788
Long	7/31/1981	97.40	Sell	10/31/1981	96.15	-1.28	92	9,663
Long	3/31/1982	93.31	Sell	3/31/1983	127.79	36.95	365	13,233
Long	6/30/1984	123.23	Sell	4/30/1985	155.01	25.79	304	16,645
Long	9/30/1985	159.61	Sell	5/31/1986	223.40	39.97	243	23,298
Long	1/31/1987	249.38	Sell	6/30/1987	262.20	5.14	150	24,496
Long	1/31/1988	270.96	Sell	4/30/1988	289.21	6.73	90	26,145
Long	7/31/1989	514.90	Sell	12/31/1989	544.54	5.76	153	27,650
Long	3/31/1990	475.91	Sell	7/31/1990	458.87	-3.58	122	26,660
Long	11/30/1990	433.57	Sell	7/31/1991	474.75	9.50	243	29,193
Long	9/30/1992	500.47	Sell	4/30/1993	658.56	31.59	212	38,414
Long	3/31/1997	880.41	Sell	11/30/1997	1255.28	42.58	244	54,770
Long	4/30/1999	2830.23	Sell	11/30/1999	3755.36	32.69	214	72,673
Long	10/31/2001	1357.29	Sell	11/30/2001	1431.64	5.48	30	76,655
Long	11/30/2003	637.08	Sell	8/31/2004	673.56	5.73	275	81,045
Long	11/30/2006	1085.03	Sell	3/31/2007	1145.15	5.54	121	85,536
Long	7/31/2007	1252.55	Sell	10/31/2007	1343.66	7.27	92	91,757
Long	1/31/2008	1121.50	(Open)	6/30/2008	1043.93	-6.92	151	85,410

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	-10.63	3	-3.54		
GAINS	264.58	15	17.64		
Net	253.95	18	14.11	3678	24.60

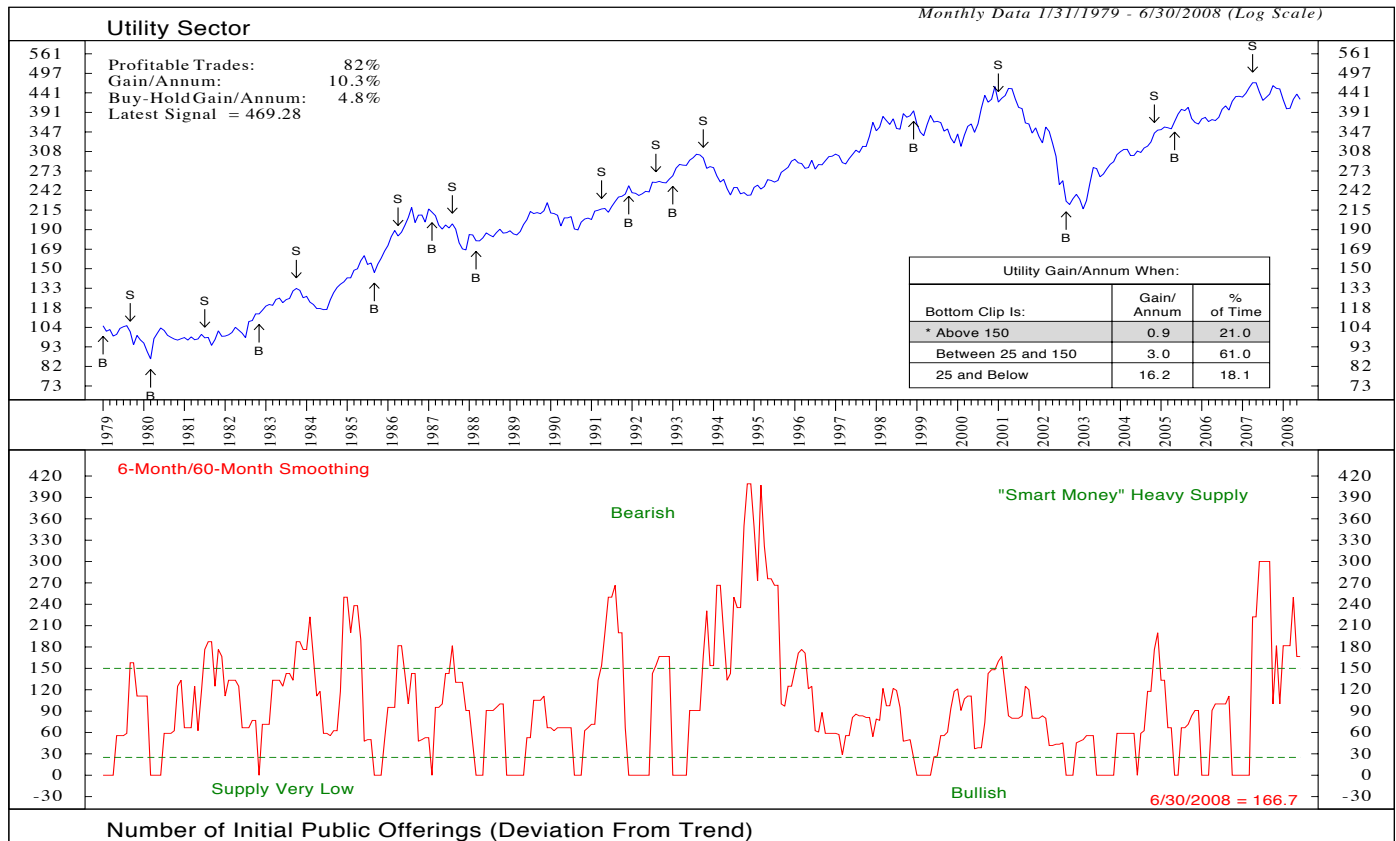
**RESULTS OF ALL TRADES (Closed + Open)**

\$10,000 became \$85,410 in 3829 days (10.49 years).  
 22.7% per annum compounded annually.



# Appendix A - Sector IPO Trade Analysis

(continued)



**MARKET SECTOR:** Utilities

**SIGNAL ANALYSIS**

**DATES:** 1/31/1979 through 6/30/2008 (Monthly)

ACTION	DATE	PRICE	ACTION	DATE	PRICE	PROFIT%	DAYS	\$10,000
Long	1/31/1979	105.41	Sell	9/30/1979	101.63	-3.59	242	9,641
Long	3/31/1980	86.00	Sell	7/31/1981	97.96	13.91	487	10,982
Long	11/30/1982	113.40	Sell	10/31/1983	132.63	16.95	335	12,844
Long	9/30/1985	146.23	Sell	4/30/1986	183.01	25.16	212	16,075
Long	2/28/1987	211.94	Sell	8/31/1987	197.28	-6.92	184	14,963
Long	3/31/1988	177.71	Sell	4/30/1991	216.07	21.58	1125	18,192
Long	12/31/1991	249.31	Sell	8/31/1992	254.47	2.07	244	18,569
Long	1/31/1993	264.88	Sell	10/31/1993	295.73	11.65	273	20,732
Long	12/31/1998	394.93	Sell	1/31/2001	416.59	5.48	762	21,869
Long	9/30/2002	226.63	Sell	11/30/2004	344.37	51.95	792	33,231
Long	5/31/2005	369.80	Sell	4/30/2007	469.28	26.90	699	42,170

**BATTING AVERAGE**

	Total Profit	Number Trades	Profit/Trade	Number Days	Profit/Annum
<b>LONG</b>					
LOSSES	-10.50	2	-5.25		
GAINS	175.65	9	19.52		
Net	165.15	11	15.01	5355	10.31

**RESULTS OF ALL TRADES (Closed + Open)**

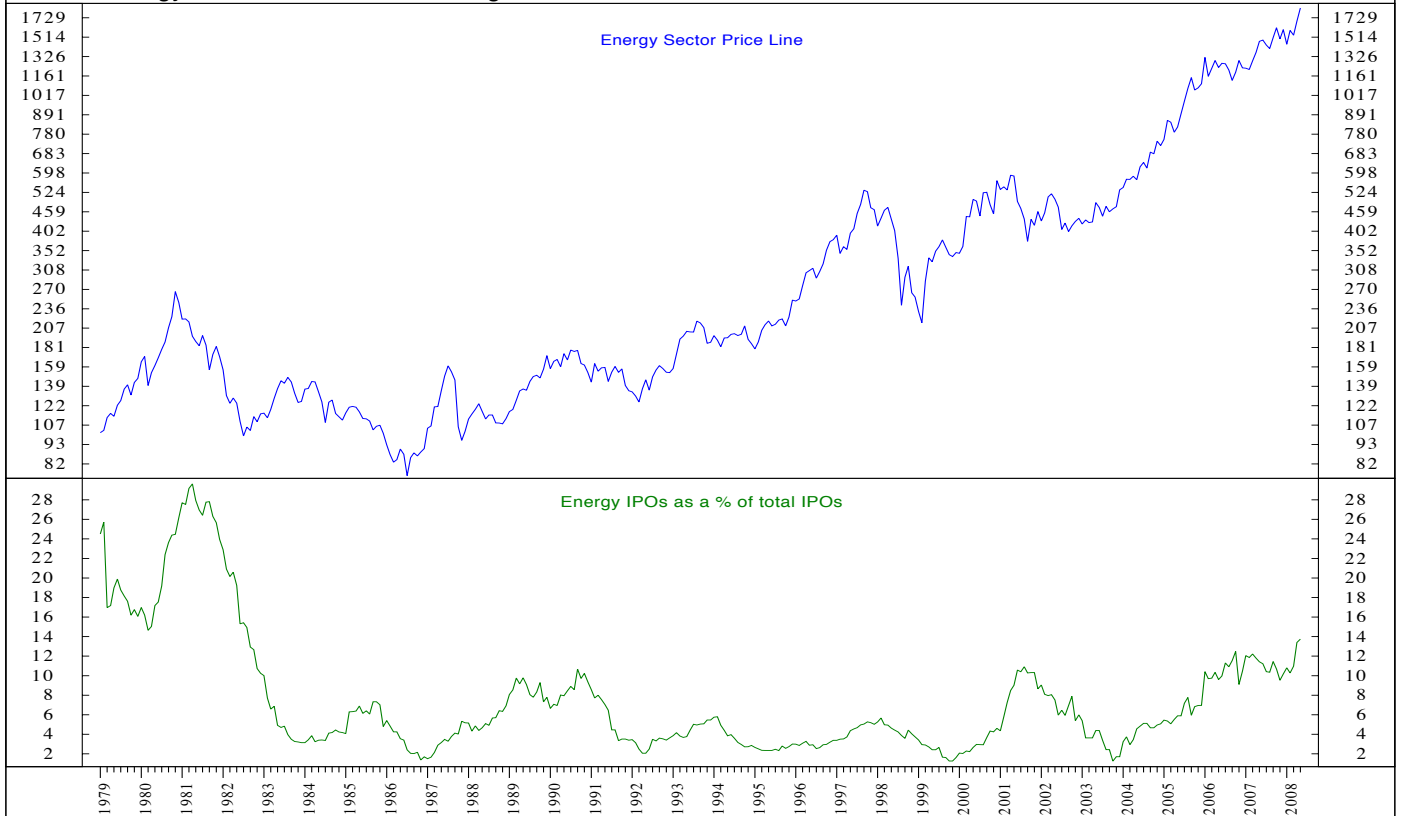
\$10,000 became \$42,170 in 5355 days (14.67 years).  
 10.3% per annum compounded annually.



# Appendix B - Sector IPO Relative Strength

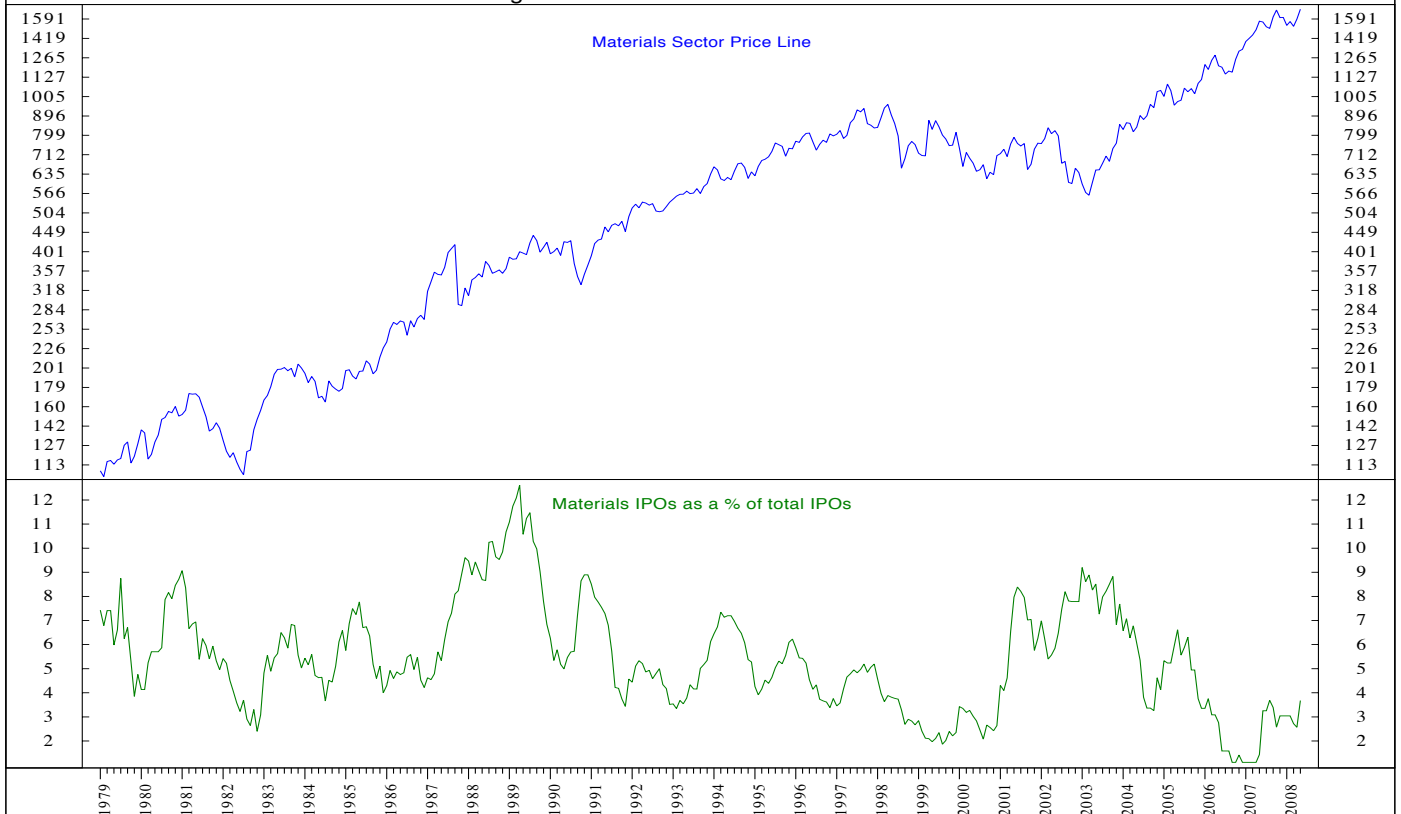
Monthly Data 1/31/1979 - 5/31/2008 (Log Scale)

## Energy Sector IPO Relative Strength



Monthly Data 1/31/1979 - 5/31/2008 (Log Scale)

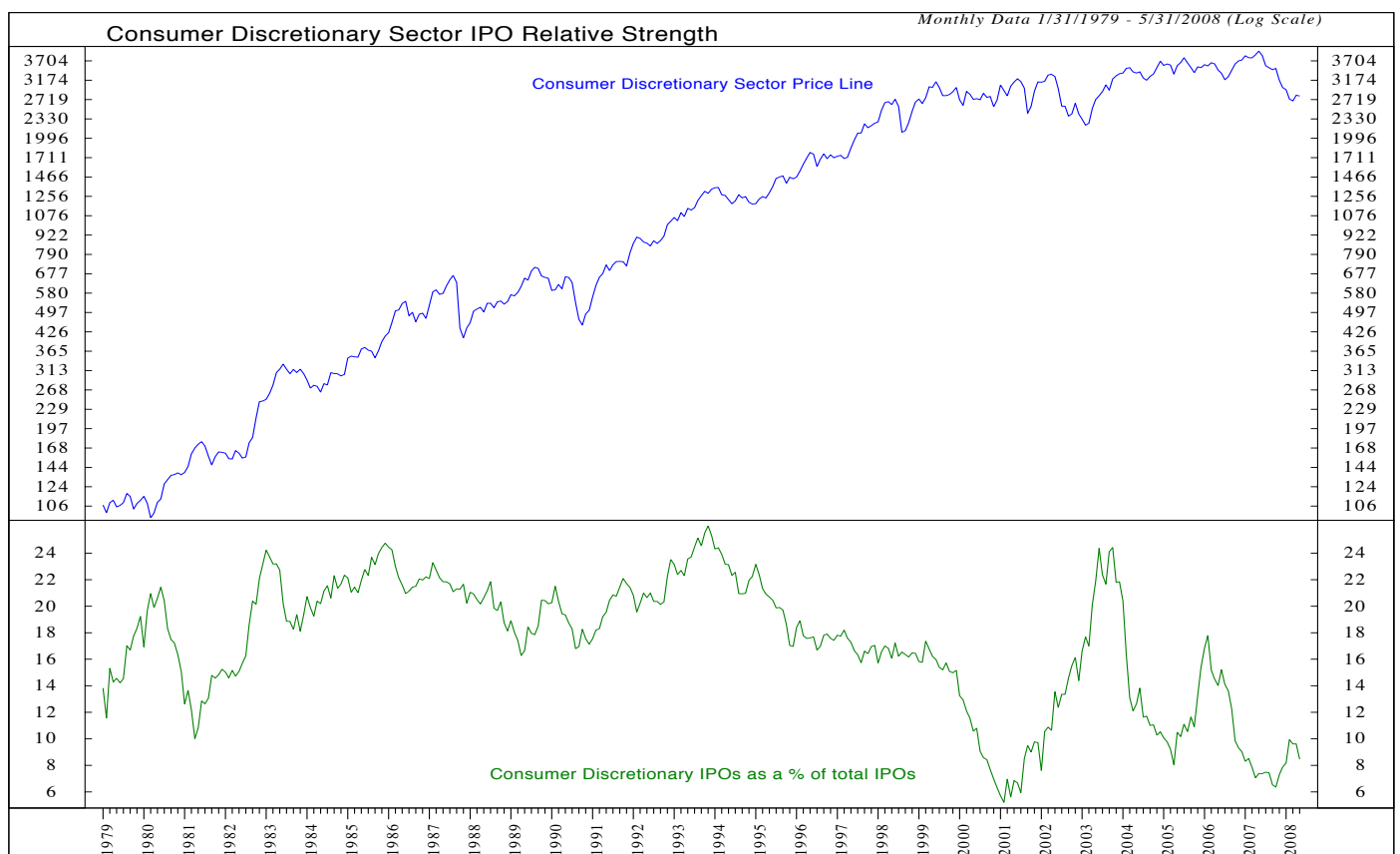
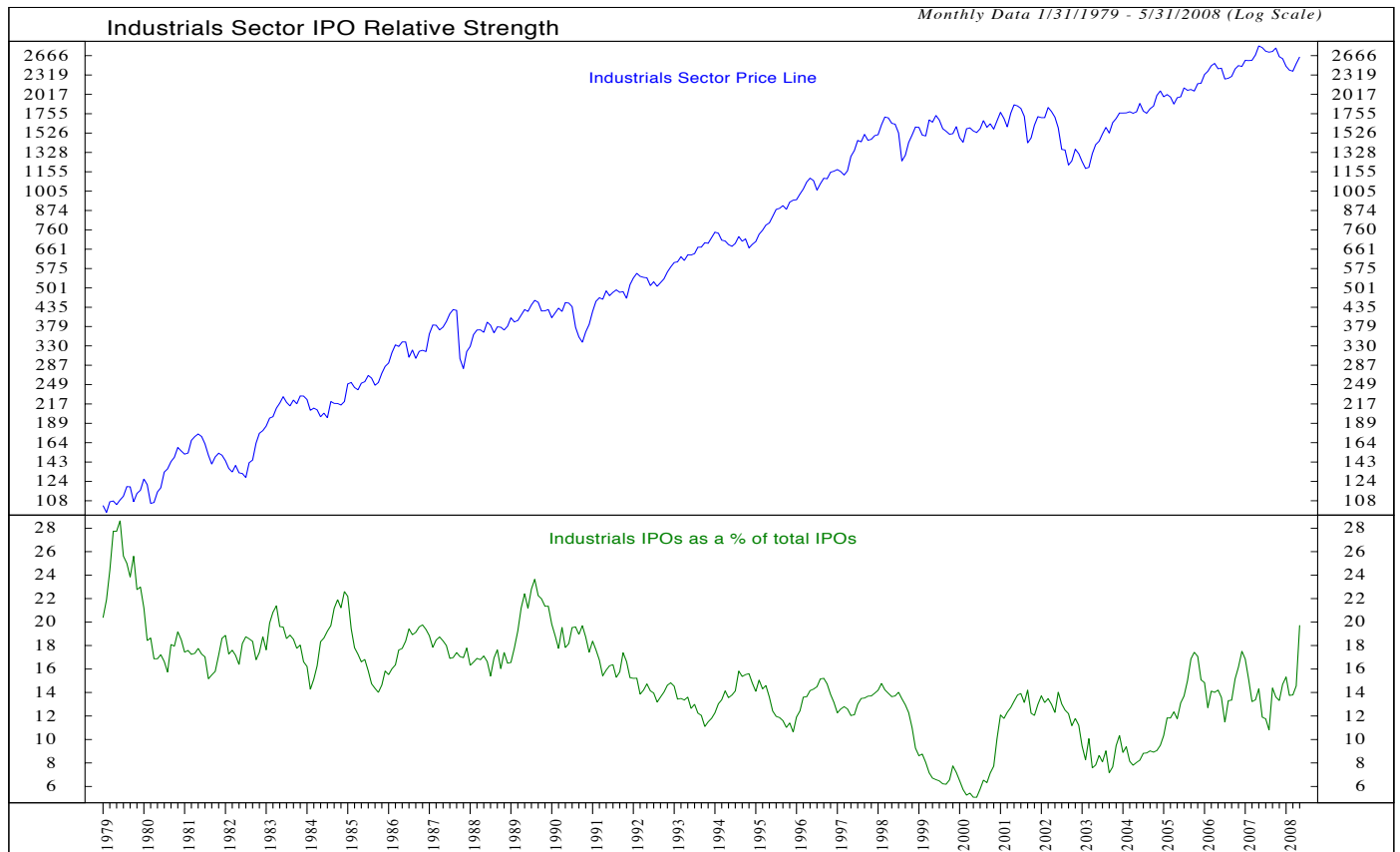
## Materials Sector IPO Relative Strength





# Appendix B - Sector IPO Relative Strength

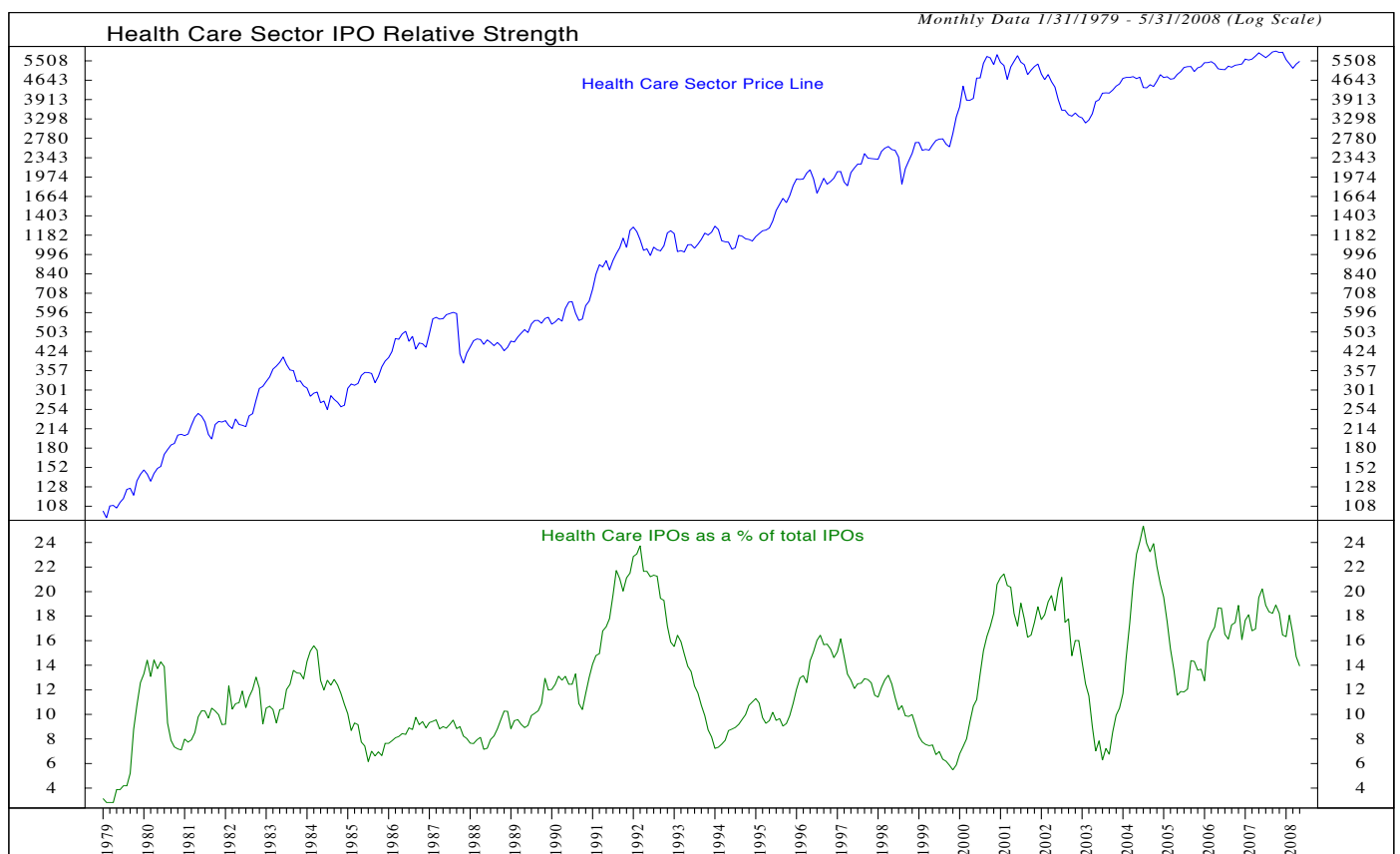
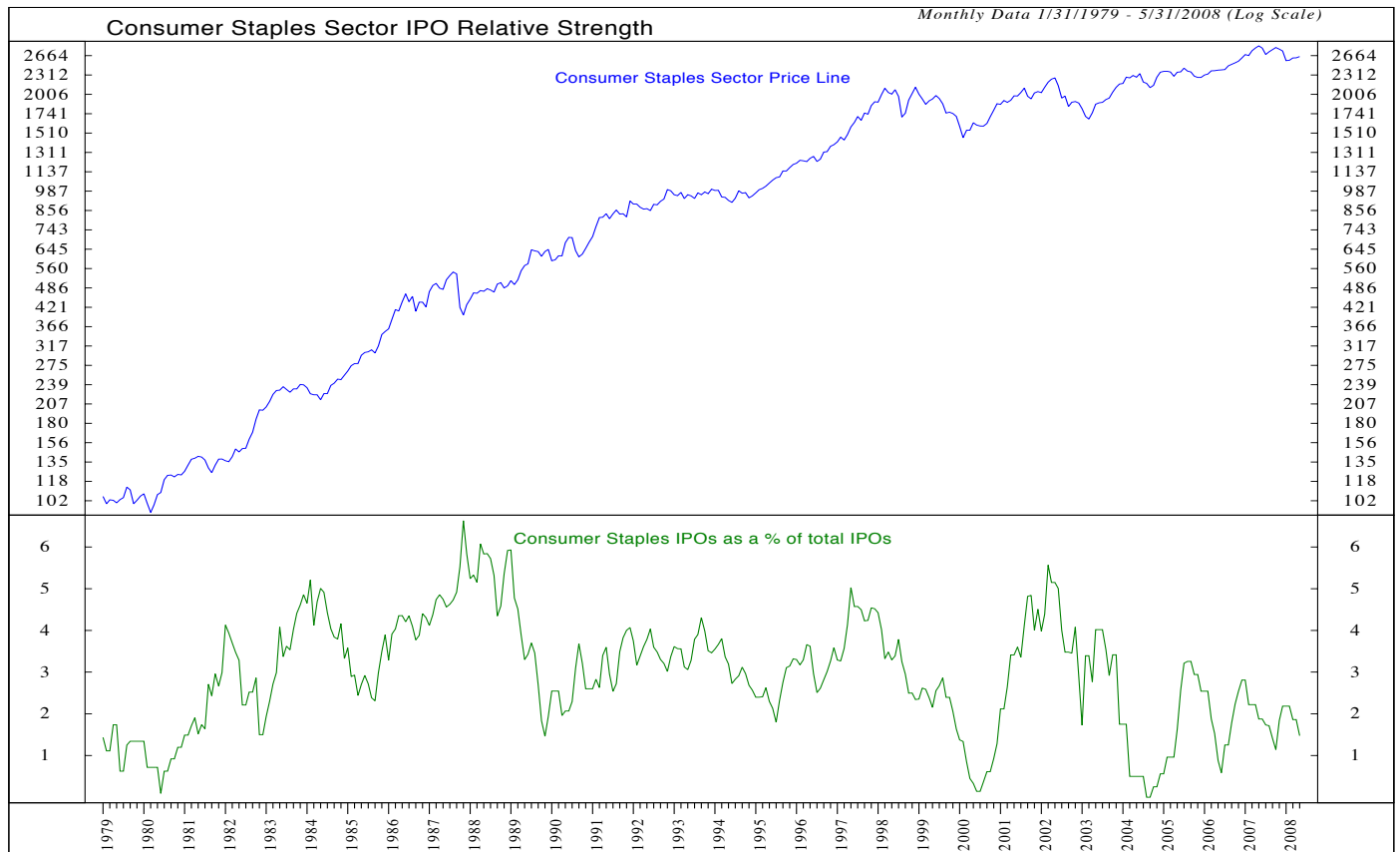
(continued)





# Appendix B - Sector IPO Relative Strength

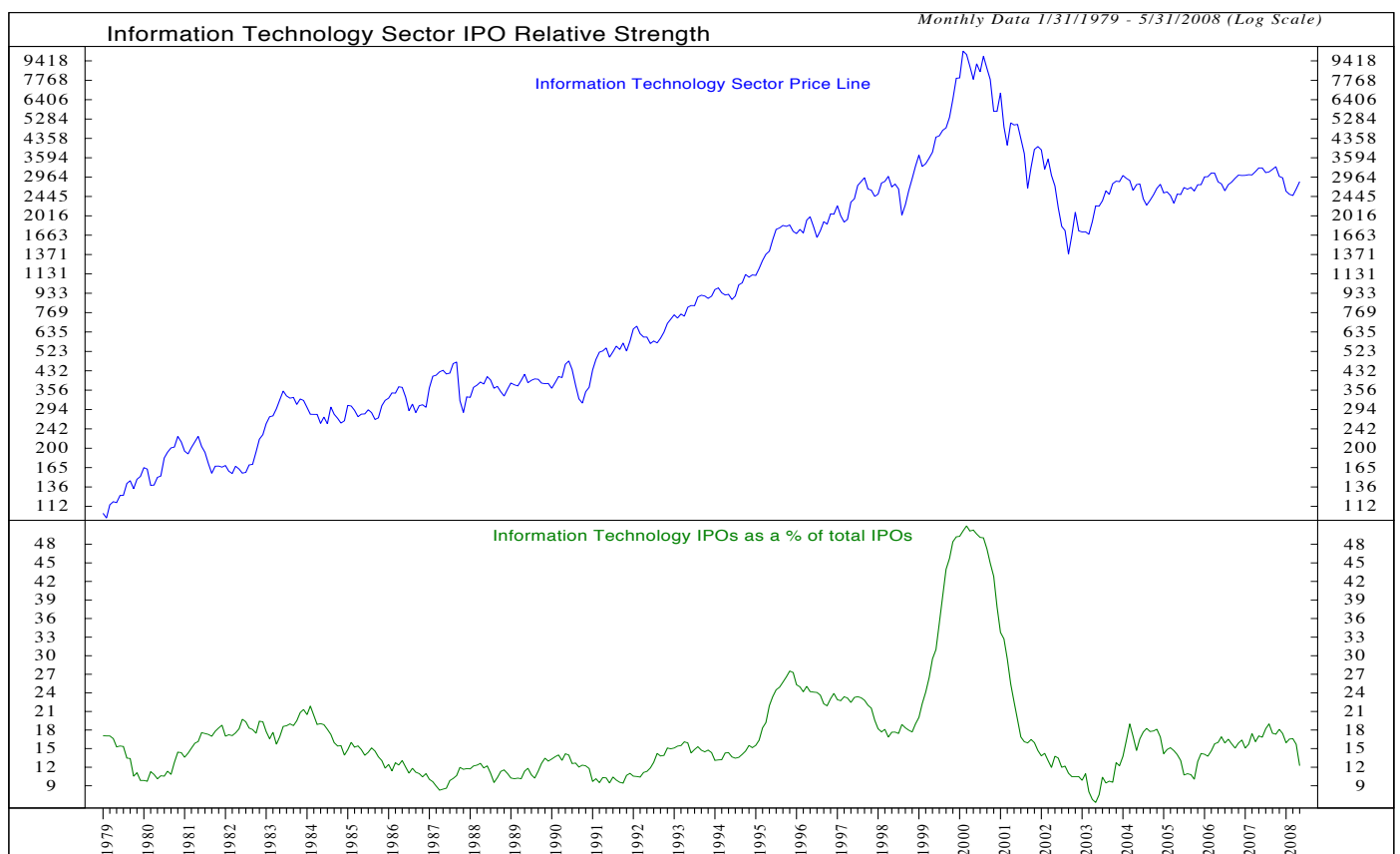
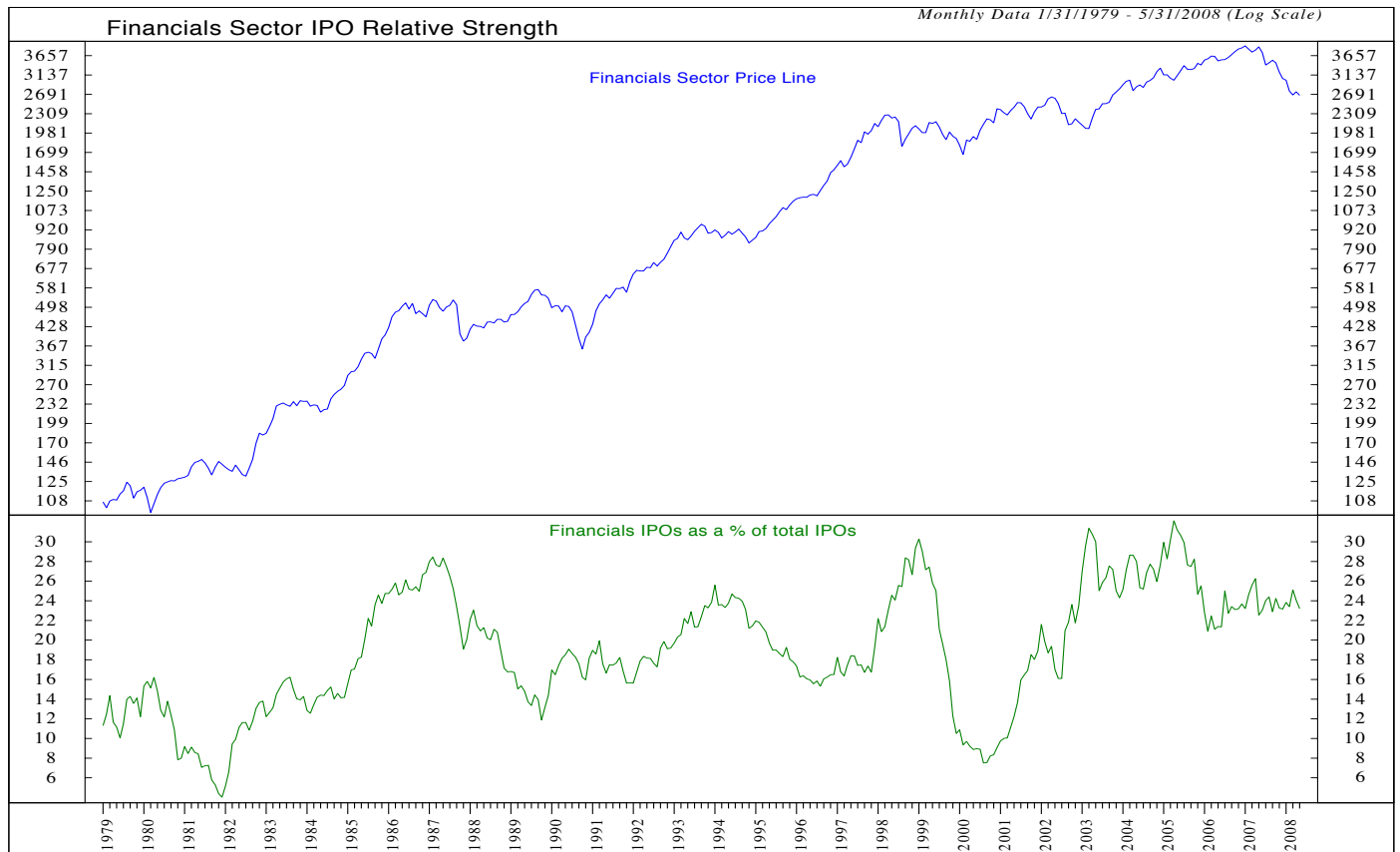
(continued)





# Appendix B - Sector IPO Relative Strength

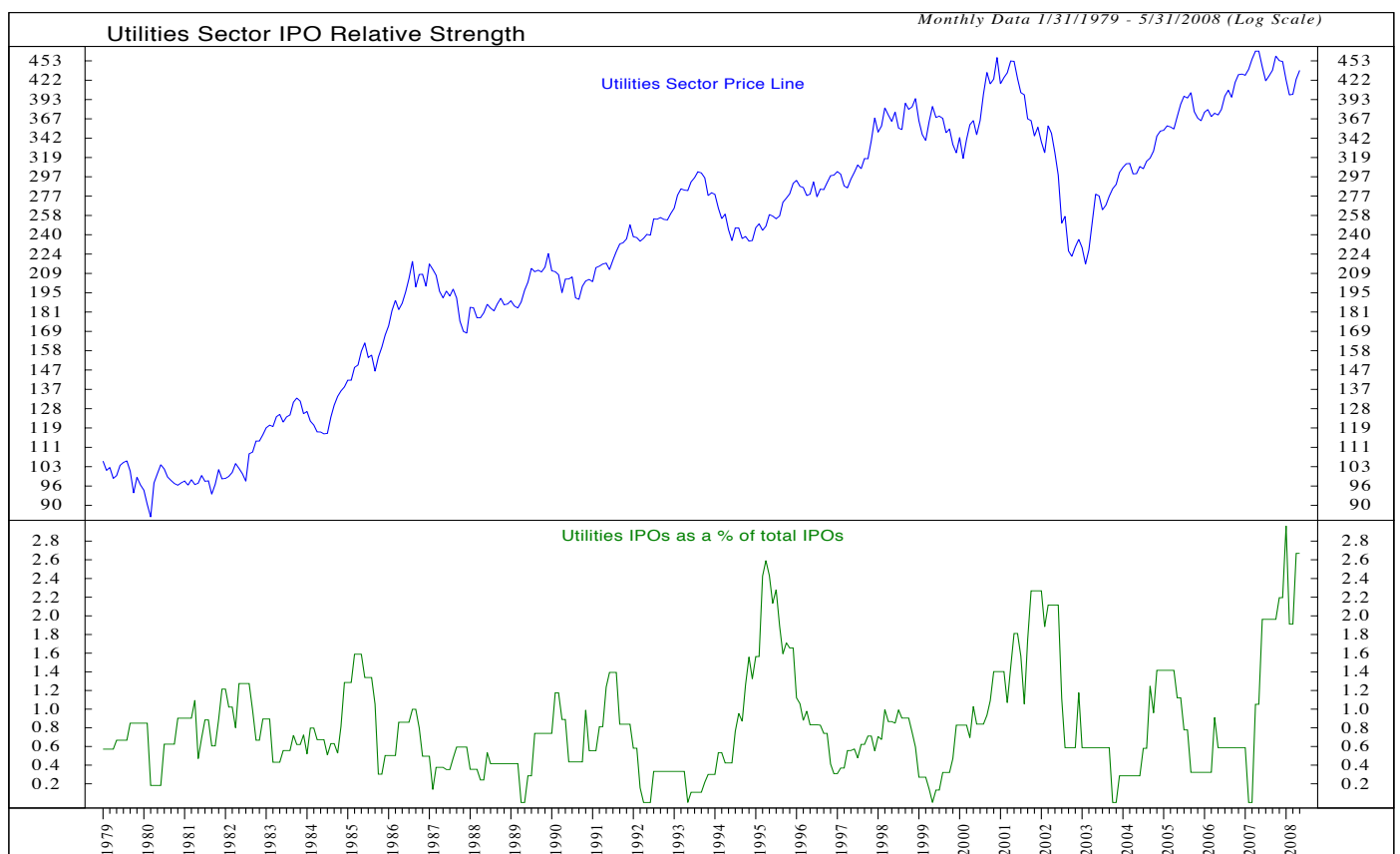
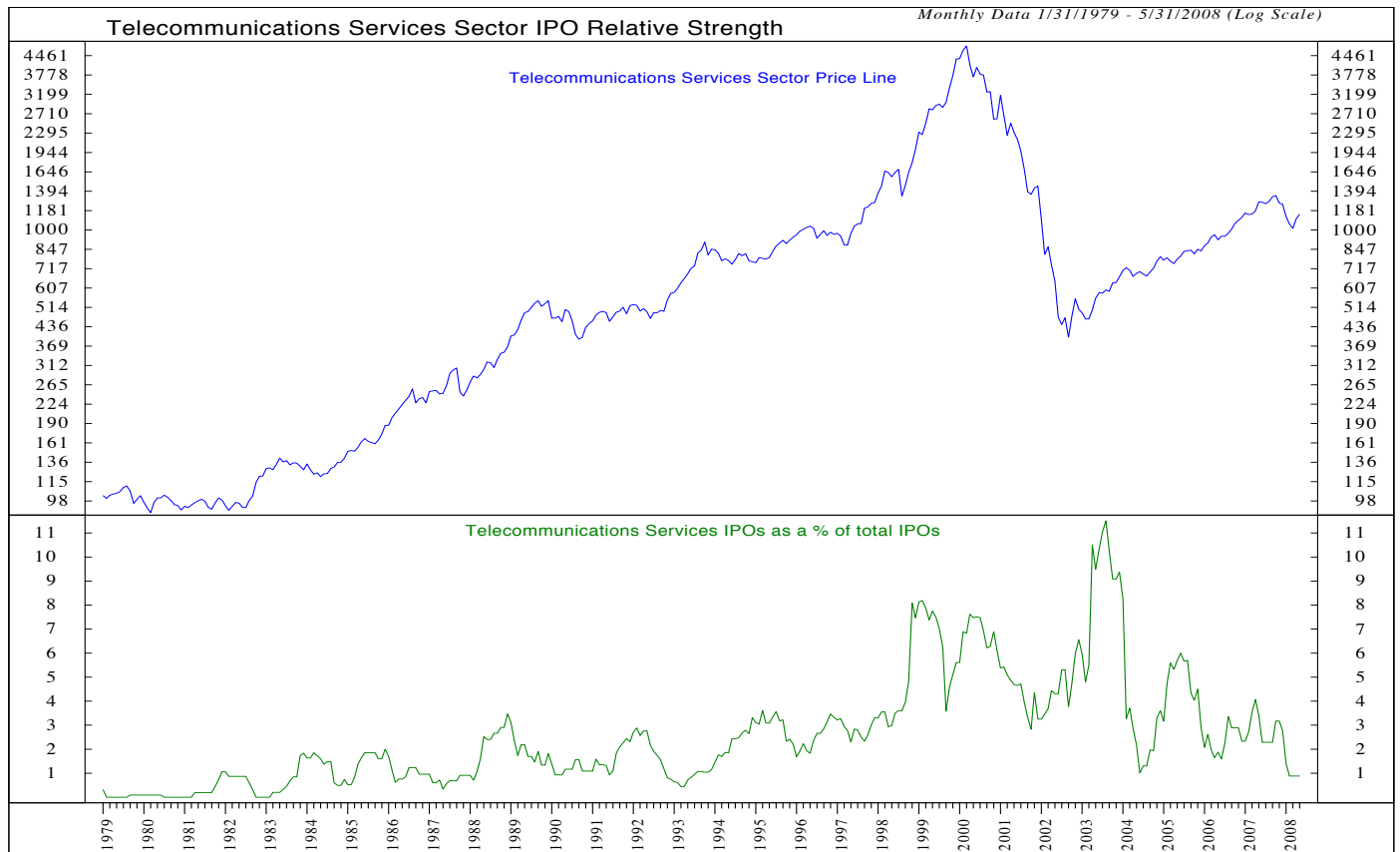
(continued)





# Appendix B - Sector IPO Relative Strength

(continued)





## Appendix C - Example Bracket Analysis/Optimization Results

<b>Deviation from Trend and Bracket Parameter</b>	<b>Gain Per Long</b>	<b>Gain Average</b>
DTS 4 9,BR 64.00 132.00	12.89	42.86
DTS 4 9,BR 64.00 133.00	12.85	42.86
DTS 4 9,BR 64.00 134.00	12.85	42.86
DTS 4 10,BR 62.00 131.00	12.83	42.86
DTS 4 10,BR 62.00 134.00	16.39	42.86
DTS 4 10,BR 62.00 135.00	16.39	42.86
DTS 4 9,BR 65.00 132.00	12.43	42.86
DTS 4 9,BR 65.00 133.00	12.38	42.86
DTS 4 9,BR 65.00 134.00	12.38	42.86
DTS 1 5,BR 40.00 146.00	12.69	33.33
DTS 1 5,BR 40.00 147.00	12.69	33.33
DTS 1 5,BR 40.00 148.00	12.69	33.33
DTS 1 5,BR 40.00 149.00	12.69	33.33



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