



Earnings Models in the Post-Internet Bubble Period

After very strong performance during the bull market of the 1990s, earnings-driven strategies in general performed poorly in the wake of the internet bubble meltdown. In this study, we document the perverse earnings model performance from September, 2000, through mid-2003 and offer various opinions as to the causes of this anomaly. Additionally, we compared and contrasted the performance of the Shenandoah earnings models with that of various, publicly available earnings models over this difficult period; the full study is available by request.

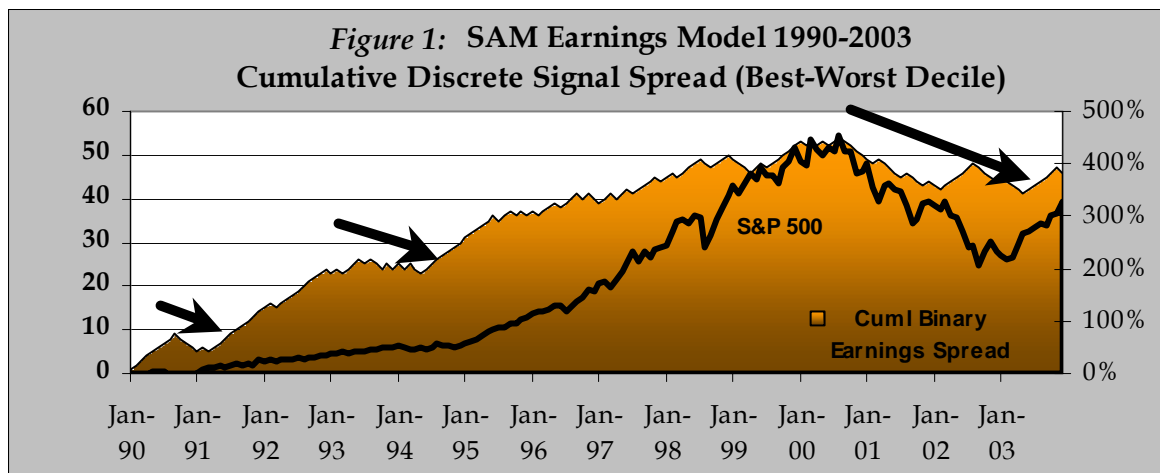
SUMMARY POINTS:

- Earnings models (estimate revision and earnings surprise) worked very well during the raging bull market of the 1990s with only minor periods of perverse performance in 1991 (recession) and 1994 (near recession).
- Earnings-driven strategies performed extremely poorly beginning in September, 2000; this coincides with the peak of the S&P 500 performance and subsequent bear market. Stocks with the most unattractive revision and surprise profiles actually out-performed the S&P 500 by approximately 6600 basis points (an average of +43% vs. -23% for the S&P) from September, 2000, through December, 2003! We believe this perverse performance was caused by three factors:
 - When the internet bubble burst in 2000, investors quickly retreated to the safety of deep value stocks (selling growth stocks). A value bias is evident over most of this period.
 - Investors exhibited a lack of faith in Wall Street research given the endless stream of SEC investigations and allegations of fraud.
 - As the economy and market began to recover in late 2002 (and throughout 2003), investors favored low-quality stocks; they chose to buy beta rather than fundamentals as they speculated on the timing and duration of the market recovery. See how the “bottom decile” returns accelerated after September, 2002.
- **The Shenandoah Earnings model, which contains multiple sub-models including estimate revision (FY0, FY1 and FY2), earnings surprise and Standard Unexpected Earnings (SUE), out-performed other available earnings measures by a wide margin, even though all produced significantly negative returns.**
- **By including an analysis of the trading of corporate insiders (the Shenandoah Opt E/I model is the optimal combination of our Earnings and Insider models), we were able to minimize the damage over this difficult period.**

Earnings Models in the Post- Internet Bubble Period

Earnings-driven strategies generally performed poorly in the wake of the internet bubble meltdown, and our Earnings model was no exception. The chart in Figure 1 depicts a simple binary analysis of the performance of the Shenandoah Asset Management (SAM) Earnings model from 1/1/1990 through 12/31/2003.

- Stocks are deciled monthly by the SAM Earnings model
- Top decile stocks are those with the most positive earnings surprises and analyst estimate revisions. Bottom decile stocks exhibit the most negative earnings surprises and negative estimate revisions.
- In each month when the top decile out-performs the bottom decile, a score of +1 is awarded. When the bottom decile out-performs the top, a score of -1 is awarded.
- The cumulative S&P 500 return is included for reference (right axis).



OBSERVATIONS

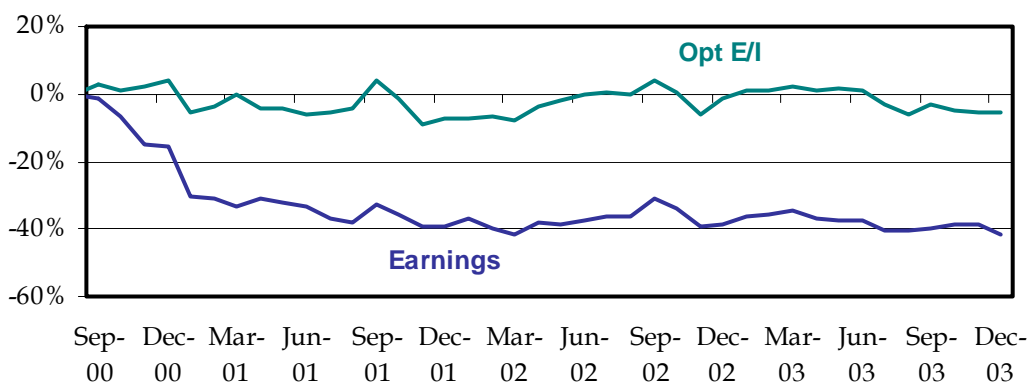
- The Earnings model worked very well during the raging bull market of the 1990s with only minor periods of perverse performance in 1991 and 1994.
- The model performed extremely poorly beginning in September, 2000; this coincides with the peak of the S&P 500 performance and subsequent recession, bear market and recovery.
- From 9/2000 to 2/2002, the stocks that exhibited the worst earnings performance (negative earnings surprises and falling analysts' estimates) out-performed the best decile in 15 of the 18 months!
- The model staged a recovery in the second and third quarters of 2002 only to give way to the low-quality stock rally that drove the market returns from 10/2002 through mid-2003; beginning in 9/2002, the worst decile again out-performed the best in 8 out of the next 9 months as investors ignored fundamental measures in favor of speculation (beta) as to the duration and timing of the eventual recovery of the economy and stock market.
- The Earnings model returned to favor in June, 2003, as the market rally began to broaden beyond the low-quality (high beta) stocks.
- The severe under-performance of earnings-driven strategies, in our view, was due to a unique confluence of circumstances, including the emergence of a highly skeptical and reluctant investor - not because of the economy - but because of the structure of what they viewed as flawed distribution of research and information about equities. Given the long list of transgressions trotted out by the government and accentuated by the press, it is not surprising that investors lost faith in Wall Street analysis.
- Other factors contributing to the perverse performance, we believe, included the shifting of investor preference from growth in the 1990s to deep value as the market plummeted after the dot-com bubble burst, and finally to low-quality (high beta) stocks as the market began to recover in late 2002.
- **We studied the performance of the Shenandoah earnings models in the context of various publicly-available earnings models during this period; this segment of the study is available upon request.**

Shenandoah Earnings Models: 9/2000 through 12/2003

The chart in Figure 3 shows the performance of the Shenandoah Earnings and Opt E/I models over the period from 9/2000 to 12/2003. The returns in the chart are the cumulative return spreads for the extreme deciles by each individual model; they are the returns that an investor might have achieved if he/she had bought (long) the top (best) decile and sold short the worst decile monthly by each individual model, rebalancing monthly. *(Note: Our full study, including various publicly-available earnings models, is available by request.)*

- **SAM Earnings Model:** Includes estimate revisions (FY0, FY1 and FY2), earnings surprise and SUE.
- **SAM OPT E/I:** Shenandoah's proprietary earnings expectation model is the optimal combination of the our Earnings and Insider Transactions models. The most highly ranked stocks by this model are those with a strong earnings profile AND aggressive buying by corporate insiders; the weakest stocks have a poor earnings profile AND insiders are selling.

Figure 3: Combining Earnings with Insider Transactions
Cumulative Long/Short Return Spread



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- Returns for earnings-driven strategies were horrific over this period.
- **The Shenandoah Earnings model, which contains multiple sub-models including estimate revision (FY0, FY1 and FY2), earnings surprise and Standard Unexpected Earnings (SUE), out-performed other available earnings measures by a wide margin, even though all produced significantly negative returns.**
- **By including an analysis of the trading of corporate insiders (the Shenandoah Opt E/I model is the optimal combination of our Earnings and Insider models), we were able to minimize the damage over this difficult period.**
- The returns data is presented in the table below, including calendar year spreads:

Period	SAM Earnings	SAM OPT E/I
Source	Shenandoah	Shenandoah
Aug'00 to Dec'00	-15.8%	3.8%
2001	-27.8%	-10.9%
2002	0.9%	6.4%
2003	-4.8%	-4.1%
Total Period	-41.6%	-5.7%

Data Sources and Definitions

Model	Source	Definition
<i>Est. Revisions FY1</i>		% change in Fiscal Year 1 EPS estimates (First Call and IBES) over prior 4 wks.
<i>Est. Revisions FY2</i>		% change in Fiscal Year 2 EPS estimates (First Call and IBES) over prior 4 wks.
<i>SUE</i>		Standard Unexpected Earnings (SUE) is a normalized earnings surprise model based on a number of indicators, including quarterly surprises relative to estimates in place over prior 100 days.
<i>SAM Earnings</i>	<i>Shenandoah (MPT)</i>	Market Profile Theorems (MPT) variable that includes 6 different points of view including FY0, FY1 and FY2 estimate revisions, quarterly EPS surprises and SUE. H-L Spread = Cumulative monthly return spread between high (most positive Earnings score) and low (most negative Earnings score) deciles.
<i>SAM Insider</i>	<i>Shenandoah (MPT)</i>	Shenandoah's proprietary version of the Market Profile Theorems (MPT) variable which analyzes the trading of corporate officers and directors as they buy/sell their own firm's stock; the model is seasonably adjusted and includes the rank of the insider, s
<i>SAM OPT E/I</i>	<i>Shenandoah</i>	Proprietary combination of Earnings and Insider models. Spread = Cumulative monthly return spread between the highest (strongest Earnings and Insider buying) minus lowest (weakest Earnings and Insider selling) deciles.