The Purchasing of Naming Rights for Sports Stadiums: A Harbinger of Bad Corporate Governance or Just Bad Timing?

Edwin D. Maberly
Professor of Finance
University of Canterbury

Raylene Pierce
Senior Lecturer
School of Business
Christchurch College of Education

Oleg Vornik
Department of Economics
University of Canterbury

Abstract

The Purchasing of Naming Rights for Sports Stadiums: A Harbinger of Bad Corporate Governance or Just Bad Timing?

The literature on corporate governance and the market's delayed reaction to news events proliferated over the last two decades. This paper examines return patterns surrounding the event date for firms purchasing naming rights for North American sports stadiums. One argument appearing in the financial press is that such acquisitions are a harbinger of widespread corporate mismanagement and hubris at the highest levels of corporate governance. Purchases of stadium naming rights provide side-benefits to executives such as "being in the limelight" and the use of supplementary corporate boxes. Thus, management has a strong incentive to undertake such investments even if their decision is not value enhancing to shareholders. The extent to which these agreements are associated with negative risk-adjusted returns is an empirical question, which this study addresses. On average, negative risk-adjusted returns are observed over the three years following the event date, and these results are significant at standard levels of significance. The efficient market hypothesis suggests that these results are not due to a cause and effect relationship but represent data snooping or just bad timing.

The Purchasing of Naming Rights for Sports Stadiums: A Harbinger of Bad Corporate Governance or Just Bad Timing?

Call it the stadium-naming jinx. As soon as you put your name on something, you might as well go to the lawyers and draw up the bankruptcy petition

[MSNBC, "100 Million Strikes and You're Out," December 4, 2001]

Recent news associated with the collapse of several high-profile United States (U.S.) firms including WorldCom, Enron and Adelphia question the effectiveness of corporate governance, and more so after various senior executives of these firms were served with federal felony changes. A recent article entitled "Distress Call" appearing in the August 19, 2002 issue of *Barron's* states that "the failure of highfliers like WorldCom, Enron and Adelphia has struck fear in the hearts of many investors, raising worries about the stability of corporate America as a whole." Besides being in financial distress, WorldCom, Enron and Adelphia have the distinction of having recently purchased the naming rights to sports stadiums. Articles appearing in *MSNBC* and *Barron's* suggest that a relationship exists between the purchase of sports stadium naming rights and subsequent corporate distress. The implication is that the purchase of stadium naming rights is associated ex post with weak corporate governance or other value destroying managerial activities. With the advantage of hindsight, the purchase of stadium naming rights was a signal for shareholders to unload their shares or to engage in appropriate risk reducing strategies—buy puts or sell in-the-money call option on the underlying firms.

This paper examines the signalling effect of firm's purchasing naming rights for North American sports stadiums covering four sports—football, baseball, hockey and basketball. With the exceptions of Wrigley (Chicago Cubs) in 1926, Busch (St. Louise Cardinals) in 1967 and Rich Foods (Buffalo Bills) in 1973, all other naming rights were purchased after 1990, which is this study's starting point. Daily return

data for the forty-two corporations that purchased naming rights after 1990 are collected for the four years surrounding the event date.

Several companies including America West Airlines, XCEL Energy and WorldCom are excluded from the data modelling section due to data problems associated with mergers. In particular, pre-event data associated with mergers involving these companies is suspect as to its accuracy. However, many of these firms experience major price declines in the post-event period and inclusion actually strengthens this studies empirical findings. It can generally be argued that a purchase of naming rights should produce a non-negative effect, since there are numerous benefits of such transaction, e.g., a broader name recognition, an improved reputation of corporate responsibleness, etc. The results of this paper show the opposite. There are negative results observed for 3 years and beyond past the contract date. It is argued that such effects are due to value-diminishing corporate governance for the shareholders, with the stadium deals serving as a credible signal. Managers know more about the prospects of the firm than outsiders, and need to send signals to the investment community in order to raise the corporation's stock price, thereby raising the value of their own shareholdings and enhancing their managerial reputations (Bhattacharya (1979)).[1] Generally such signalling is performed through increased dividend and capital expenditure announcements, as well as stock splits. It would appear that naming rights should achieve the same objective. After all, the company is committing itself to pay large sums of money on an annual basis for 5-20 years, which should serve as a signal of corporate strength. However there is a caveat involved. The companies' executives are enjoying side-benefits such as supplementary corporate boxes brought by such transactions, which provide an incentive for them to enter into these agreements, even if they are not in the best

interests of shareholders. Extending the concept, such transactions are projected as only the tip of the iceberg of weak corporate governance, with other, less visible but still value-destroying projects that managers undertake to enhance their interests at the expense of shareholders (e.g., Enron, WorldCom and Adelphia are recent examples). An exception to the rule discussed above is when management is also substantial owners of shares as in the case of Microsoft.

The second notion pursued here is in regard to underreaction. More recently, the process by which new information is incorporated into stock prices has come under scrutiny. A wide body of research has argued that markets tend to initially underreact to a set of specific news announcements. The most common area studied is stock splits. Ikenberry and Ramnath (2002) have reported a drift of 9% in a year following the split announcement; examining a shorter time window, Ikenberry, Rankine and Stice (1996) have reported excess returns of 3.38% in a 2-day announcement period around the split. Using a similar methodology, this study documents the existence of statistically significant negative abnormal returns over the post-announcement for the companies purchasing naming rights. This result has two possible explanations. The first hypothesis is of underreaction. The phenomenon of negative abnormal returns continuing for a significant period post-event indicates that investors appear to be underreacting to the news of stadium sponsorship. Such underreaction would be consistent with new theoretical articles such as the model by Daniel, Hirshleifer and Subrahmanyam (1998), which analyses how analysts might overweight their own priors when valuing firms and thus underweight new information such as split announcements. For pedagogical purposes the second hypothesis is referred to as the Marginal Negative Effect (MNE) hypothesis. Under the MNE hypothesis, stadium name purchase is only one symptom of a larger

problem of corporate mismanagement, and it takes several years for the mismanagement to grow sufficiently large to be significantly reflected in stock prices. However, according to either of the hypotheses, rational investors will discount the information associated naming rights and sell the stock, which should be reflected in immediately downward adjustment in prices. However, the empirical findings of this study do not support market efficiency as a delayed reaction is observed.

It should be noted that many studies find negative post-event drifts in self-selected corporate events. Ikenberry and Ramnath (2002) provide an extensive review of such literature and cite studies by Agrawal, Jaffe and Mandelker (1992), Loughran and Vijh (1997), and Rau and Vermaelen (1998). These papers document negative long-horizon abnormal returns for merger deals. Other studies cited by Ikenberry and Ramnath include Michaely, Thaler and Womack (1995) who examine omission of dividends, and Dharan and Ikenberry (1995) who examine firms moving from one trading market to another. More recent findings by Lee and Loughran (1998), and Spiess and Affleck-Graves (1999) are concerned with timing of the issuance of straight and convertible bonds.

Finally, this study is not trying to claim a hard "proof" of bad governance or of market underreaction. Researchers tend to look for interesting results, hence often performing some form of data-mining giving rise to spurious output, and hence committing Type I errors or rejecting the null hypothesis when the null is true (see Merton (1985)). Also, there is no robust asset pricing model that could be used. Researchers are both beneficiaries and victims of the academic progress, using ad hoc models that may be having statistical power, yet no theoretical justification.

1. Dataset and Methods

1.1 Dataset

Corporate stadium-sponsorship is a relatively new phenomenon, and this study's observations occur over the 1990 to 2001 period. As mentioned previously, three stadium-sponsorships were signed prior to 1990, as well as three others signed over the 1990 to 2001 period, but with data-collecting difficulties. Thus this paper covers the population of stadium-naming events with exception of six instances. Return data plus other firm specific data is obtained from *Data Stream*, *Value Line Investment Survey*,Yahoo-dot-com, and the annual reports or other reports filed with the United States Securities and Exchange Commission. Thus the data collection process is extensive especially the task of identifying the list of companies purchasing stadium-sponsorship, the timing of the deals, and the corresponding stock prices. Data is collected entirely from primary sources, as no ready data sets exist. Hence the time and effort associated with data collection is extensive. Entries are recorded weekly, one year prior to the event month, and three years posterior to the event month.[2] The approach for choosing this timeframe is consistent with standard methodology used in event studies (for example, see MacKinlay, (1997) and Ikenberry, Rankine and Stice, (1996)).

1.2 Methodology

First a matching benchmark index is selected to reflect each stock's risk characteristics. The two indices selected are the S&P 500 and Nasdaq100 indices. Next a $1,000 zero-cost portfolio is created consisting of the stock and the matching index one year prior to the event. This portfolio is carried without rebalancing to the event month, thus obtaining pre-event cumulative abnormal returns (ARs). In the

event month, the zero-cost portfolio is rebalanced and held for three years, and post-event cumulative ARs are calculated based on this data. The entire set of stadium sponsorships are outlined in appendices I to IV. Several firms do not have a complete set of return observations, which include one-year prior and three years after the event date. In some cases, the initial public offering (listing) of shares on an exchange is within one year of the event date. For other cases, the event occurs after June 1999, and three years of post-event returns are unavailable. In either case only the available observations are used. Once the zero-cost portfolios are obtained, an array of tests is performed on the data set, which includes non-parametric, time series, and analysis based on Wiener processes. One of the firms in the population, Nasdaq listed Qualcomm (QCOM), is considered an outlier due to QCOM's inclusion in the S&P 500 index after it purchased the stadium naming rights, which created tremendous buying pressure on the stock. Therefore QCOM is classified as an outlier.[3]

1.3 Analysis: Non-parametric approach

It is well known that financial data is non-normally distributed, and hence standard parametric methods, which assume normality, produces biased results. Thus a non-parametric approach is more desirable. ARs are estimated for five subperiods surrounding the event date: (1) one-year pre-event; (2) six-months post-event; (3) one-year post-event; (4) two-years post-event; (5) three-years post-event. In analysing the groups several different tests are employed. For example the Wilcoxon Signed-Rank test is used on each of the groups to determine whether they are significantly different from zero; Wilcoxon Matched-Pairs Signed-Ranks test examines whether there is a significant difference between the pre-event returns and post-event return groups; sign tests examine randomness of positive/negative returns within each group; Kolmogorov-Smirnov Two-Sample examines whether there is a

significant difference between pre-event and three-years post-event returns. All of the tests are performed with and without QCOM in order to examine QCOM's impact as an outlier.

1.4 Wiener Process

A standard procedure is to model abnormal stock returns using a generalised Wiener process:

$$dCAR = (a)dt+(b)dz,$$

where the coefficient "a" indicates the drift rate, and "b" indicates volatility. This process is also often called a Brownian motion with drift. It is a Gaussian Process with expectation and covariance functions,

$$a_X(t) = at \text{ and } c_X(t,s) = s^2 \min(t,s), \quad s,t > 0.$$

Generally, a Wiener process has the following necessary condition (their union constitutes a sufficient condition):

A process $B = (B_t, t \in [0,\infty))$ is a Wiener process if:

i) It starts at zero: B(0) = 0. This holds in the current study since the zero-cost portfolio is rebalanced at the event month.

ii) It has stationary, independent increments. While cumulative abnormal returns are not stationary, their differences (abnormal returns) are.

iii) For every t > 0, B(t) follows a normal N(0,t) distribution. This is one assumption that is necessary to make about the behaviour of abnormal returns.

iv) The process has continuous paths over time that is "no jumps." Since pre- and post-returns are analyzed separately, there is no rebalancing within Wiener process. Hence the path satisfies the continuity requirement.

Therefore, the drift coefficient is estimated using the statistical package Eviews-4.1 with Newey-West correction for time series heteroskedasticity, producing estimators

that are consistent in the presence of both heteroskedasticity and autocorrelation of unknown form. The Newey-West estimator is given by,

$$\hat{\sum}_{NW} = \frac{T}{T-k}(X'X)^{-1}\hat{\Omega}(X'X)^{-1},$$

where

$$\hat{\Omega} = \frac{T}{T-k}\{\sum_{t=1}^{T} u_t^2 x_t x_t' + \sum_{r=1}^{q}((1-\frac{v}{q+1})\sum_{t=v+1}^{T} x_t u_t u_{t-v} x_{t-v}' + x_{t-v} u_{t-v} u_t x_t'))\}$$

The truncation lag is a parameter representing the number of autocorrelations used in evaluating the dynamics of the ordinary least squares (OLS) residuals.

Given that the data set for each stock is relatively small, the underlying volatility process cannot be estimated in an unbiased and consistent manner by a process such as GARCH. Hence, as estimate for smaller samples is used (see Hull (2000)),

$s^* = \frac{s}{\sqrt{t}}$, where τ is the length of interval (in weeks), and

$$s = \sqrt{(\frac{1}{n-1}\sum_{i=1}^{n} u_i^2 - \frac{1}{n(n-1)}(\sum u_i)^2)}$$

and u(i) = ΔS/S(i-1) for i = 1 … n.

N+1 is the number of post-event observations for each stock. Since negative values are feasible (which is different to the standard scenario with price levels), the notion of log-returns for u(i) is not used as a proxy for returns.

It should be noted that the underlying volatility of a Wiener process on a finite interval [0,T] is *not* required to be finite. That is,

$\sup_t \sum_{i=1}^{n} \left| B_{t_i}(w) - B_{t_{i-1}}(w) \right| = \infty$, where the supremum is taken over all possible

partitions $\tau : 0 < t(0) < \ldots < t(n) = T$ of $[0 \ldots T]$. However, while one can expect abnormal returns to vary within significantly larger bounds than their underlying securities (since they are, in a sense, derivatives), the prospects of boundlessness are unlikely since the volatility of AR is a composite of the volatility of a security and its underlying index, both of which are known as finite based on the analysis of historical data.

Once the drift and volatility coefficients are estimated for the 1-year prior and 3-year post-event windows, their discrepancies are calculated with the corresponding t-statistic using the values of the coefficients and the standard errors. If the t-value for the change in drift was significant, I conclude there was a significant change to the benchmark-adjusted returns during the period of the stadium name purchase.

Using a similar methodology I also test for the comparative magnitudes of post-event trend and volatility across different groups of stocks, excluding stocks that declare bankruptcy. Firstly, I separate the stocks by market capitalisation at the time of the event (using Value Line data). The three groups used are small-cap, mid-cap and large- cap. The priors are that corporate mismanagement would decrease with the size of the firm, since large firms tend to experience more scrutiny from the market, and have less scope for inefficient corporate governance. Another comparison is carried out on stocks according to their book-to-market quintile. Three quintiles out of five are chosen: the lowest (glamour stocks), mid-range, and the highest (value stocks). The priors are that glamour stocks are more susceptible to corporate mismanagement, and thus would have the lowest post-event volatility. The next comparison is for firms audited by Arthur Andersen versus others auditors. Here I expect the firms that were audited by Andersen to be more likely affected by bad corporate governance and have a lower post-event drift. Finally, I compare post-event

drift coefficients and volatilities for firms across different sports. Companies that have purchasing naming rights for stadiums that involve more than one type of sport were excluded. Using the established priors, this would establish the ranking amongst the four sports in terms of prospect of their stadium sponsors to have bad corporate governance.

3.1 Wiener results

The following table displays the results of modelling pre- and post-event drift coefficients for returns using Wiener processes for the forty stocks. Individual pre- and post-event stock charts and a more comprehensive table including values of coefficients, standard errors and t-statistics are supplied in appendices X and XI.

Table 1 goes here

Summarizing Table 1, out of 40 companies in our sample, six have experienced either a bankruptcy or a quasi-bankruptcy, with their stock moving below the $1 threshold. Out of 34 remaining companies, 4 experienced quasi-bankruptcy past the 3-year observation period, and only 7 had a significantly positive drift post-event. We exclude Qualcomm as an outlier, since it entered the S&P500 list during the post-event observation window, and thus was subject to buying pressure during that time. Amongst the seven companies with a significant positive post-event drift, two companies (HNZ and CAL) had a significant decrease in drift between pre- and post-event windows, hence conforming with our priors even while their post drift was positive. Thus in our sample of 40 companies only five have performed against our priors. This is sound evidence that the companies that sponsored a stadium have experienced declines in their stock price comparative to a corresponding benchmark.

We can also use Table 1 to test for the EMH. If markets are efficient, then there should be a random proportion of positive and negative drift coefficients showing an insignificant test statistic in a corresponding sign test. The results are displayed below:

Table 2 goes here

These results support our priors, with pre-event signs being randomly distributed, while rejecting randomness (in a favour of a negative drift) post-event.

The following charts display pre- and post-event benchmark-adjusted returns for all forty stocks:

First 2 graphs go here

If we exclude Qualcomm the diagrams are as follows:

Graphs 3 and 4 go here

Next we use parametric methods to test whether there was a significant different between pre- and post-event drift rates:

Table 3 goes here

As we see from Table 3, we obtain a *significant decrease* in the drift rate regardless of Qualcomm's presence.

We can also analyse the effect of the event on the volatility of abnormal returns using the methodology described in the previous section. The following table summarizing the findings in a similar way to the drift analysis:

Table 4 goes here

From Table 4 we observe that there was a significant decrease in the volatility regardless of Qualcomm's presence. Here we do not make any conclusions since the event's impact on the underlying volatility is ambiguous.

3.2 Non-parametric results

The following results obtained through the non-parametric approach have produced similar results to the Wiener processes output. The main conclusions are listed below, and detailed tables of results are supplied in appendices VI through to IX.

The timeframe is split into 5 groups: 1 year pre-event, 6 month/1 year/2 year/3 year post event, with tests done on individual groups and their combinations.

We used Wilcoxon Signed-Rank test on each of the groups to determine whether they are significantly different from zero. The set that included Qualcomm produced a significantly negative result (z=3.048) for the 3 year post-event group, while the set excluding Qualcomm has produced significantly negative results for 2-year and 3-year post-event groups (z=1.6810 and z=3.5078 respectively).

Wilcoxon Matched-Pairs Signed-ranks Test has tested whether there was a significant difference between the pre-event returns and post-event return groups. Tests on both the full data set and excluding Qualcomm produced a significant difference between the pre-event and 3 year post-event returns (z=2.84 and z=3.29 respectively).

Kolmogorov-Smirnov Two-Sample test produced a similar result- a significant difference between pre-event and 3 years post-event returns.

We have also performed a sign test similar to the one used in the previous section, but now separating post-event returns as mentioned above. As found earlier, pre-event returns were random, while post-event returns were significantly negative for the 3-year post-event period (excl QCOM), and 1-year and 3-year post-event periods (including QCOM).

Clearly, these results provide further support to the parametric section, indicating a significant decrease in drift post-event, and a violation of EMH.

3.3 Groups

In this section, we compare post-event returns of firm groups, aggregated by their size (small cap, mid cap, large cap), book-to-market quintile (value vs. glamour stocks), firms in the set audited by Andersen, as well as comparing firms across categories of different sports they sponsored.

3.2.1 Post-event ARs by size

Small market capitalisation firms in the set are represented by Corel, Gaylord and Network Associates (data obtained from Value Line).

Their average post-event abnormal returns are displayed below:

Small groups graph+table go here

Medium market capitalisation firms are represented by COMS, CMGI, CNC, CAL, RKY, EIX, MOLA and RJF. Their average post-event abnormal returns are as follows. We exclude CMGI since it has effectively gone bankrupt within the estimation period.

Mid-group graph+table go here

Large market capitalisation firms are represented by the rest of the set. Their summary statistics are below. The bankrupt firms are excluded, as well as QCOM.

Large group graph+table go here

Comparing the stocks across size groups, we are hence able to conclude that post-event small cap firms had a lower drift rate, followed by mid cap firms (margin=-8.55468, t= -14.5429). Large cap firms had the worst post-event drift (margin=-1.52927, t=-5.26967). Hence we conjecture here *that larger the firm, higher its drift coefficient after putting its name on a stadium.* This is in line with theory, since larger firms tend to experience more scrutiny from the market, and have less scope for an inefficient corporate governance.

3.2.2 Post-event ARs by Book-to-Market quintile

In this section we split our sample into groups based on their book-to-market quintile. Here we are selecting three quintiles- the lowest (glamour stocks), mid-section, and the highest (value stocks). The ratios were obtained at the event month from Value Line. Bankruptcies are excluded from each group since they represent measurement difficulties for post-event statistics.

The glamour stocks set was as follows: CORL, NET, HNZ, TGT, CPQ, COMS, MEL, ONE and SPLS.

The post-event statistics for this set were as follows:

Glamour stocks graph+table go here

The mid-range quintile set was as follows: EIX, RJF, SAFC, FBF. Its post-event statistics are:

Mid-range graph+table go here

The set of non-bankrupt value stocks had only one company in it: Continental Airlines (CAL).

Value stocks graph+table go here

Summarizing the data in this section, we have the following results: value stocks have a higher post-event drift of the three groups, followed by mid-range stocks (Δ=-3.16284, t=-10.523), which in turn had a higher drift than glamour stocks (Δ=-5.5113, t=-5.88635).

These results allow us to conjecture that the managers of "value" companies are less susceptible to the practices of bad corporate governance than those of "glamour" companies.

3.2.3 Post-Event ARs for firms audited by Arthur Andersen vs. Others

This section compares the post-event abnormal performance of the firms audited by Andersen at the time of the event. Since the firm has now been numerously shown to perform corrupt audits and this paper is testing for an inefficient and corrupt corporate governance, it is a reasonable conjecture to ask whether the firms audited by Andersen have performed worse then the rest in our set.

These firms in our set are: Alltel, Bank One, Cinergy, Delta Airlines, Enron, FedEx, and United. We are excluding Enron from our post-event analysis, since it has since gone bankrupt since.

Then the post-event behaviour of the Andersen-audited firms was as follows:

Andersen graph+table go here

The other firms (non-Andersen audited) have displayed the following post-event behaviour:

Non-Andersen graph+table go here

As we conjectured, Andersen-audited firms had a significantly lower drift (Δ=4.806999, t=9.601038).

We can also do a comparison with non-Andersen firm set excluding Qualcomm. The statistics in that case were:

Non-Andersen (no QCOM) graph+table go here

While the set of non-Andersen audited firms with QCOM excluded had a negative post-event drift, it was still significantly higher than the drift of Andersen-audited firms (margin= 1.820663, t=10.92646).

3.2.4 Post-Event ARs for firms sponsoring different sports

In this section we are comparing post-event abnormal returns for firms grouped by the sport they used in their naming rights purchase. Here we exclude firms that have their name on a stadium that plays more than one of the four sports we consider in this paper.

The distribution between the sets is as follows (similar to the previous analysis, bankruptcies, CMGI and QCOM are excluded):

Sports distribution tables goes here

The post-event statistics for each group are:

Football:

Football graph+table go here

Post-event abnormal returns for the football sponsors were insignificantly negative (t=-0.999715).

Baseball:

Baseball graph+table go here

Baseball sponsors have experienced a significant average negative post-event abnormal return.

Hockey:

Hockey graph+table goes here

Hockey sponsors have also experienced negative abnormal returns post-event.

Basketball:

Basketball graph+table go here

Basketball sponsors have also experienced significant negative abnormal returns post-event.

Comparing across the four sports, the following table displays the rankings with respect to post-event drift coefficients:

Table 5 goes here

As we observe from Table 5, football had the higher drift (insignificant negative), and the lowest volatility, followed by baseball and basketball with the second and the third ranks respectively, while hockey had the worst abnormal post-event returns, significantly lower than of those of basketball sponsor firms.

4. Concluding Remarks

In this paper I have examined whether purchasing naming rights for a major sports stadium is an indicator of bad corporate governance. Out of 40 companies in the sample, six have experienced either a bankruptcy or a quasi-bankruptcy, with their stock moving below the $1 threshold. Out of 34 remaining companies, 4 experienced quasi-bankruptcy past the 3 year observation period, and only 7 had a significantly positive drift post-event. Amongst the seven companies with a significant positive post-event drift, two companies (HNZ and CAL) had a significant decrease in drift between pre- and post-event windows, hence conforming with my priors. Thus in my sample of 40 companies only five have performed against the priors. This is a sound evidence that the companies that sponsored a stadium have experienced decline in their stock comparative to a corresponding benchmark. This is not surprising: since the actual amount paid for the naming rights is small comparative to the market capitalisation of the company, the large negative abnormal returns experienced were not (at least, mainly) the result of poor return of the advertising dollar, but rather an indication of bad corporate governance, yielding inferior returns due to the inefficient managerial behaviour. Since the negative returns are observed 3 years post-event, this is also an indication of under-reaction by the public to the self-selected event of stadium sponsorship.

I have also done comparison by categories and found that small cap firms had a larger negative post-event reaction than mid-cap firms, which in turn had a larger negative reaction than large cap firms. This was also in line with expectations, since large firms are more likely to be under a close scrutiny of the market. Glamour stocks were also found to have a larger negative reaction than value stocks, in line with the expectations that managers of glamour stocks are more susceptible to a mismanagement than those managers of value stocks.

Andersen-audited firms were found have a worse reaction post-event, again in line with expectations, since the managers using Andersen for their auditing are more likely to be engaged in bad governance. Comparing across categories, football was found to have the least of the worst effects on its sponsor-firm (insignificantly negative returns), followed by significant negative returns (in increasing order of magnitude) for baseball, basketball, and hockey.

Footnotes:

* I would like to express gratitude to my project supervisor Professor Maberly for providing useful guidance, Abey Gunasekarage for developing my interest and endowing me with the essential knowledge for research in the area of corporate finance, and Irene Hudson for her advice on the non-parametric methods section of this paper.

1. I have made substantial use of Dr.Gunasekarage's Graduate Corporate Finance course notes in the theoretical base of this paper.

2. In most instances, this was the month when the sponsorship deal was signed. For the events when it was infeasible to find, this was the month when the first game at the new-name stadium was played.

3. Qualcomm was announced to be included into S&P500 index on 08/071999, trading at $35.56. On 21/071999 it closed at $39.16, a fortnightly return of 10.12%. Its high price was at January 3, 2000 at $179.31 a return of 504.25%, while trading at $36.52 on 24/10/02. A similar impact was experienced by Yahoo (YHOO) which was announced to be included into S&P500 index on 29/11/99, when its shares were trading at $113.07. Its closing price at 07/12/99 was $174.00, a weekly return of 53.4%. Its high price was at January 10, 2000 at $218, constituting a return since the announcement date of 92.8%. Its price at 24/10/02 was $14.92.

References

Agrawal, A., J.F. Jaffe and G.N. Mandelker, 1992, "The Post-Merger Performance of Acquiring Firms in Acquisitions: A re-examination of an Anomaly," *Journal of Finance*, 47, 1605-1621.

Asquith P., P. Healy and K. Palepu, 1989, "Earnings and Stock Splits", *Accounting Review*, 64, 387-403.

Bhattacharya, S. (1979) ``Imperfect information, Dividend Policy, and the 'Bird in the Hand' Fallacy", *Bell Journal of Economics*, vol. 10, pp. 259-70.

Daniel, K., D. Hirscheifer and A. Subrahmanyam, 1998, "Investor Psychology and Security market Under- and Overreactions", *Journal of Finance*, 53, 1839-1885.

Dharan, B., and D. Ikenberry 1995, "The Long-Run negative Drift of Post-Listing Stock Returns", *Journal of Finance*, 50, 1547-1574.

Hull, J., 2000. "Options, Futures and Other Derivatives", *Prentice Hall*, p.241-244

Ikenberry, D., G. Rankine and E.K. Stice, 1996, "What do Stock Splits Really Signal?", *Journal of Financial and Quantitative Analysis*, 31, 357-375.

Lee, I., and T. Loughran, 1998, "Performance Following Convertible Bond Issue", *Journal of Corporate Finance*, 4, 185-207.

Loughran, T., and A. M. Vitj, 1997, "Do Long-Term shareholders Benefit from Corporate Acqusitions?", *Journal of Finance*, 52, 1765-1790.

MacKinlay, C., 1997. "Event studies in Economics and Finance". *Journal of Economic Literature*, Vol. XXXV, pp.13-39.

Merton, R., 1985, "On the Current State of Stock Market Rationality Hypothesis", Working Paper 1717-85, Harvard University.

Michaely, R., R. H. Thaler and K.L. Wormack, 1995, "price reactions to Dividend Institutions and Omissions: Overreaction or Drift?", *Journal of Finance*, 50, 573-608.

Rau, R., and T. Vermaelen, 1998, "Glamour, Value and the Post-acquisition Performance and Acquiring Firms", *Journal of Financial Economics*, 49, 223-253.

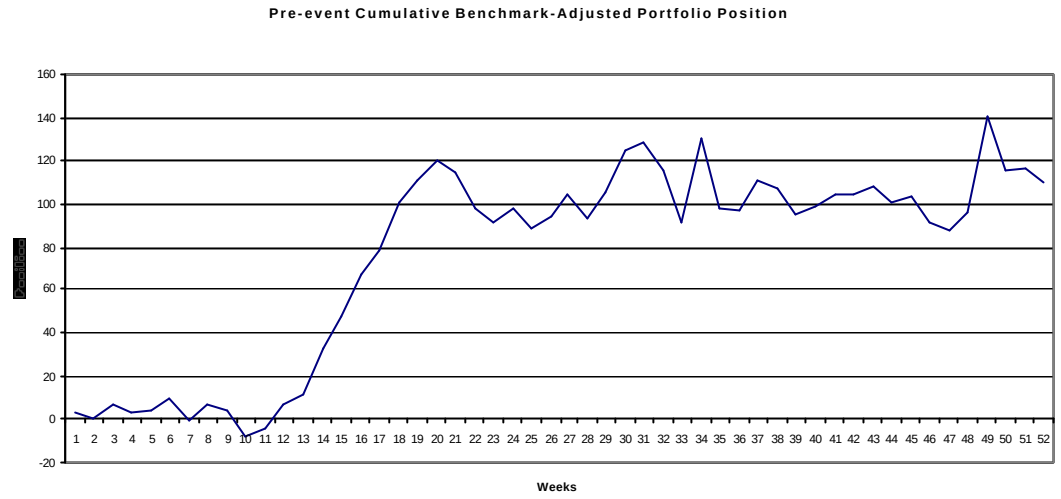
Spiess, D., and J. Affleck-Graves, 1999, "The Long-Run Performance of Stock returns Following Debt Offerings", *Journal of Financial Economics*, 54, 45-73.

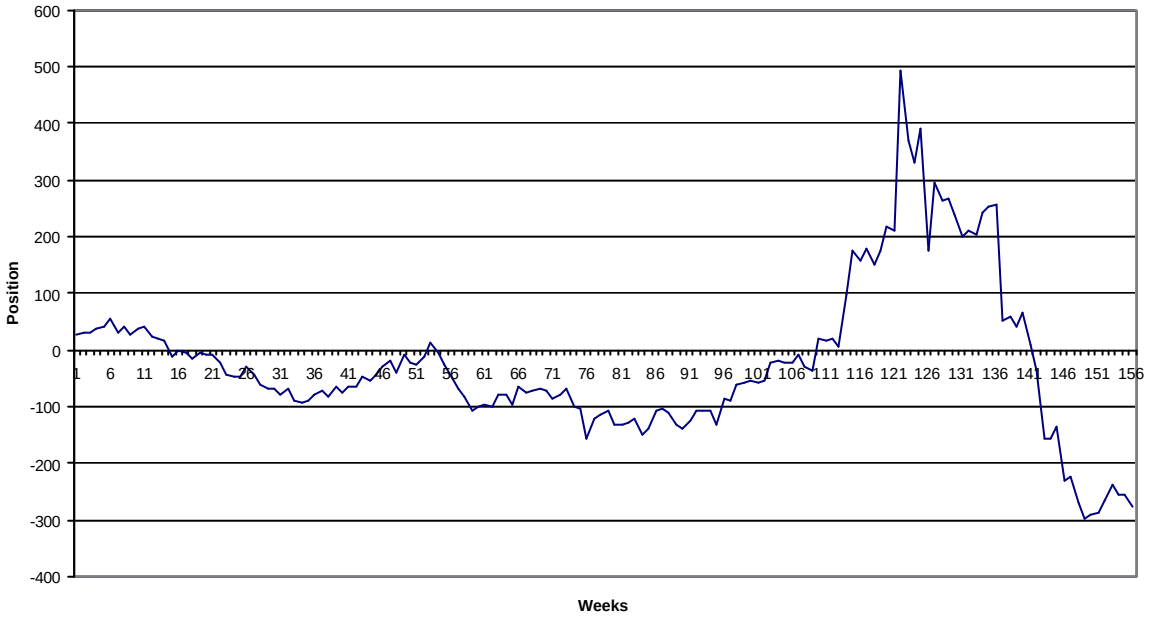
Table 1: Drift Coefficients

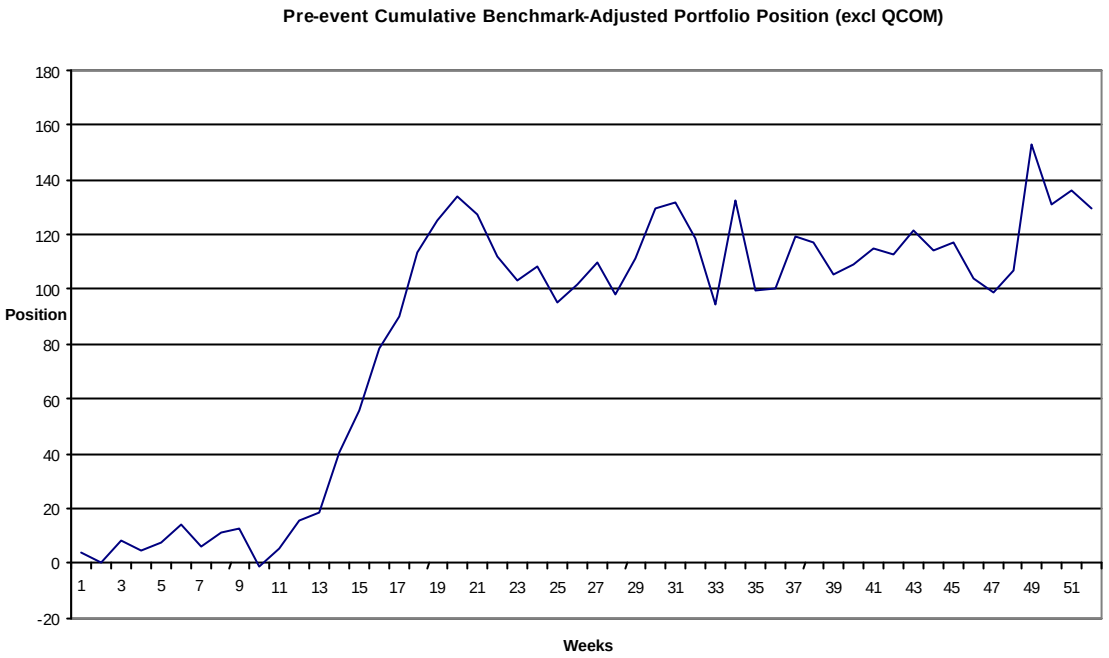
				Table 1						
				Drift Coefficients						
Symbol	**Pre**	**Post**	**? t-value**	**Comment**	**Symbol**	**Pre**	**Post**	**? t-value**	**Comment**
AMR	-	-	-1.15		FTBAQ	+	-	N/A	Bankruptcy
COMS	+	-	-27.21*		GET	-	-	5.24*	
ADLAC	+	-	N/A	Bankruptcy	GM	-	-	7.82*	
AT	-	-	1.04		HNZ	+	+	-15.18*	
ONE	-	-	-8.21*		KEY	-	+	13.90*	
CIN	+	-	-15.46*		MEL	-	+	12.94*	
CMA	-	-	-3.65*		MOLA	-	-	-10.40*	
CMGI	+	-	N/A	Quasi-bankruptcy	NFS	-	-	1.22	
CPQ*	+	-	-7.84*	Takeover	NET	+	-	-8.08*	
CNC	-	-	2.59*	Quasi-bankruptcy$^{\psi}$	PEP	-	-	-8.37*	
CAL	+	+	-19.59*		PHG	-	+	7.01*	
CORL	-	-	-15.71*	Quasi-bankruptcy$^{\psi}$	PNC	+	+	-3.66*	
RKY	-	-	4.02*		PSIXQ	+	-	N/A	Bankruptcy
DNT	-	-	-4.96*		QCOM	-	+	6.78*	Outlier
EIX	+	-	-16.45*		RJF	+	+	-2.25*	
ENE	+	-	N/A	Bankruptcy	SAFC	-	-	6.94*	
ERICY	-	-	0.54	Quasi-bankruptcy$^{\psi}$	SVVS	-	-	4.75*	Quasi-bankruptcy
FDX	-	+	4.06*		SPLS	+	+	-0.17	
FBF	-	+	18.98*		TGT	+	-	-3.37*	
F	-	+	1.95**		UAL	-	-	-0.04	
Notes:	**1. Quasi-bankruptcy indicates the stock moving below $1 mark within 3 years post-event**								
	2. t-value carrying an asteric indicates a significance at 5% level (2-tailed)								
	3. t-value carrying 2 asterics indicates a significance at 10% level (2-tailed)								
	4. Qualcomm is an outlier for the reasons specified below								
	5. Stock's comment field carrying ψ indicates the effect occured outside the observation								

Table 2: Statistical Test

	Table 2		
Sign test for randomness of pre-event and post-event drift rates			
Pre-event		**Post-event**	
N(+)=	16	N(+)=	12
N=	40	N=	40


Pre-event Cumulative Benchmark-Adjusted Portfolio Position
Positions
160
140
120
100
80
60
40
20
0
-20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
Weeks


Post-event Cumulative Benchmark-Adjusted Portfolio Position
Position
600
500
400
300
200
100
0
-100
-200
-300
-400
1 6 11 16 21 26 31 36 41 46 51 56 61 66 71 76 81 86 91 96 101 106 111 116 121 126 131 136 141 146 151 156
Weeks



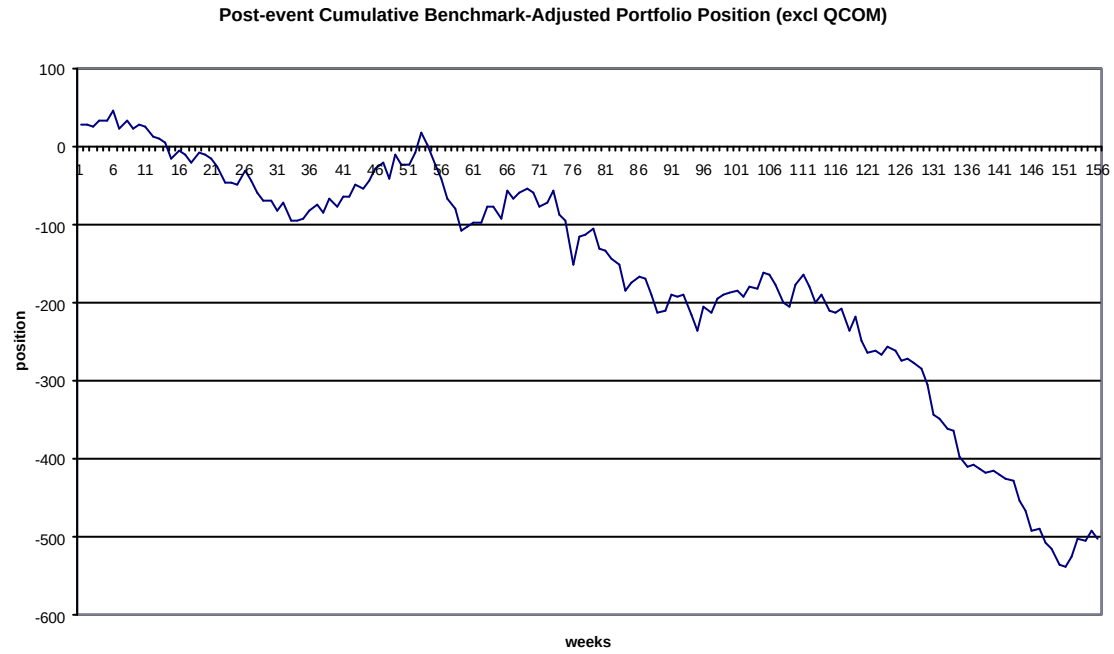
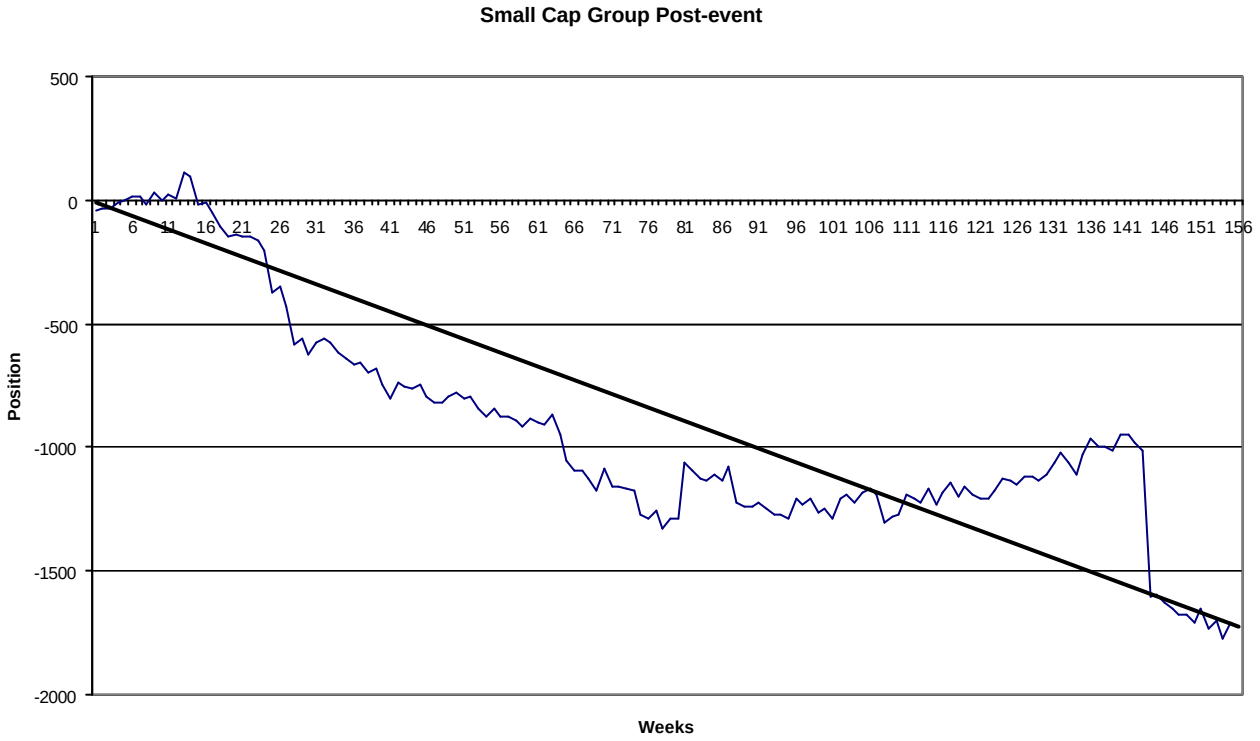
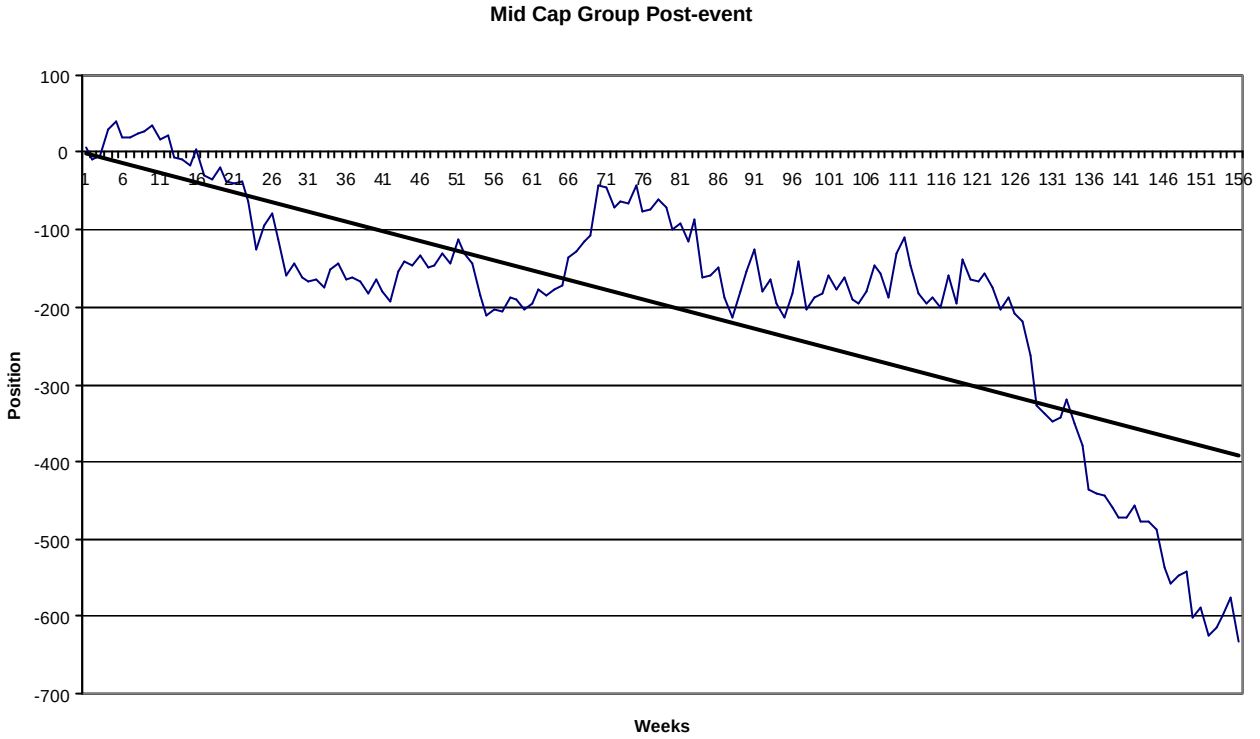


		Table 3		
t-test for comparing pre-event to post-event drift rates				
	With QCOM		Without QCOM	
	Pre event	Post event	Pre-event	Post-event
Coefficient	2.78	**-0.17**	3.05	-2.36
St. Error	0.13	0.12	0.13	0.06
Difference	-2.94		-5.41	
t-stat	-16.71		-37.11	

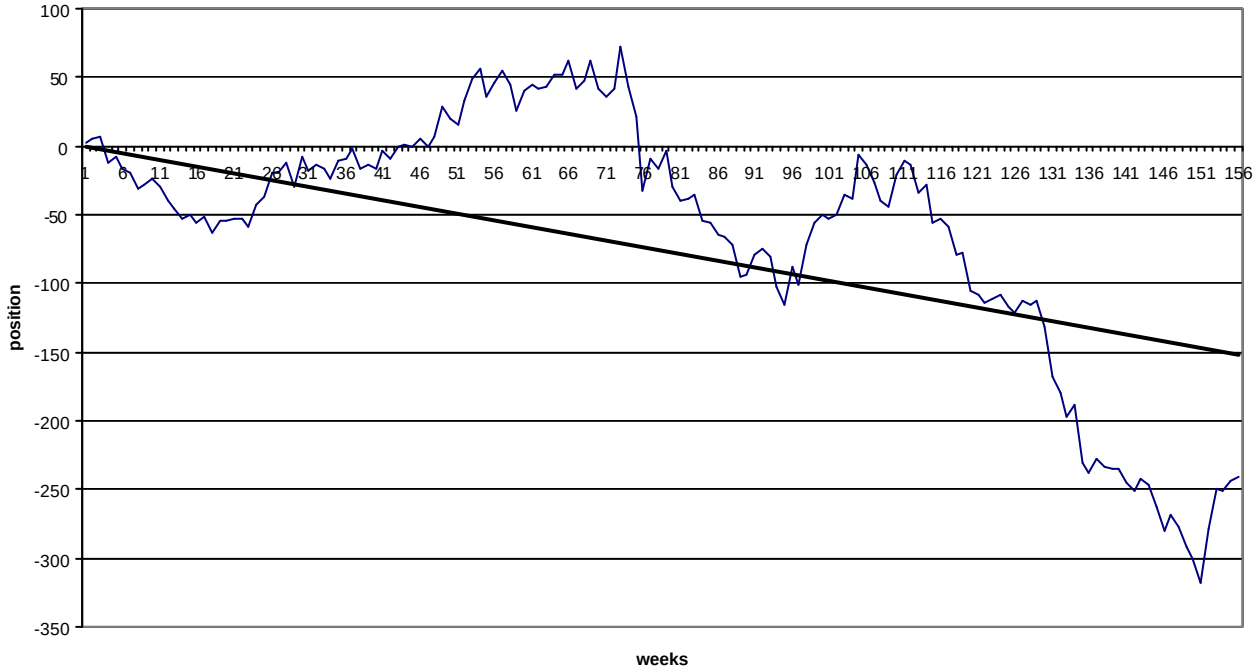
		Table 4		
t-test for comparing pre-event and post-event volatility				
	With QCOM		Without QCOM	
	Pre event	Post event	Pre-event	Post-event
Coefficient	0.45	0.12	0.32	0.10
St. Error	0.04	0.01	0.03	0.01
Difference	-0.33		-0.22	
t-stat	-7.42		-6.73	



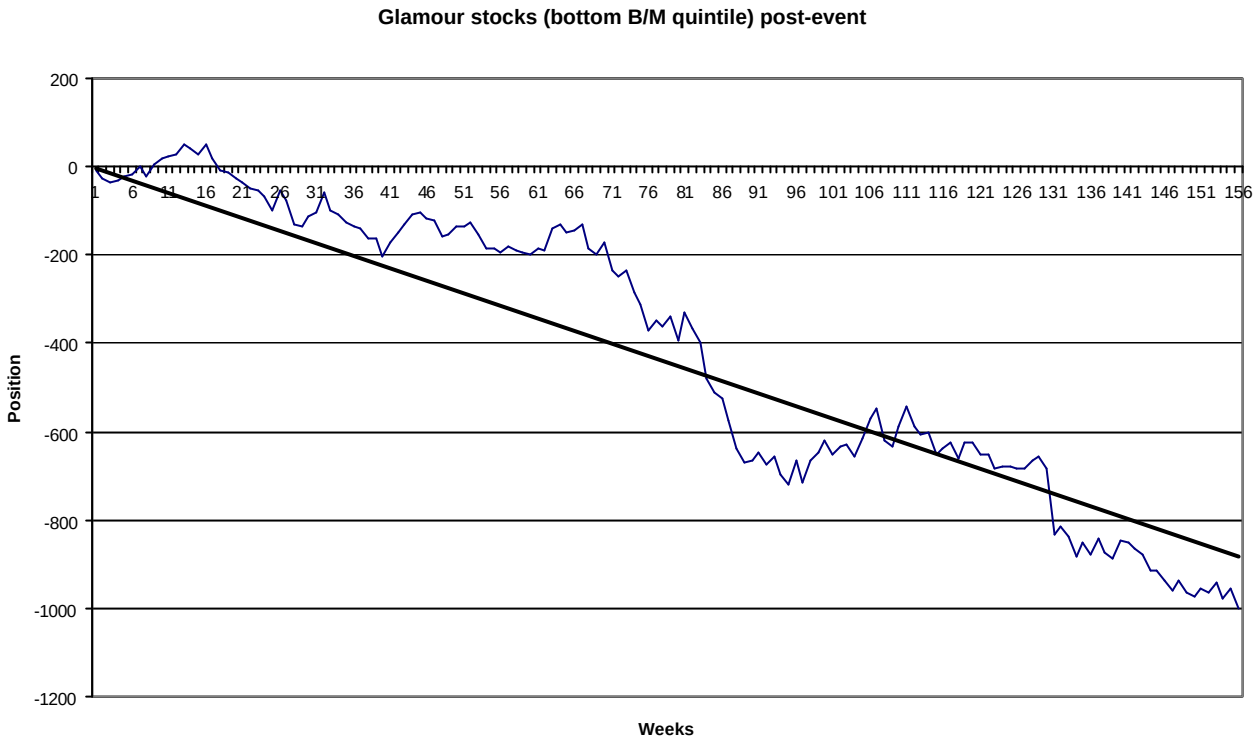
Small Cap	drift	vol
diff	-11.0606	0.396865
t=	0.537548	0.02254



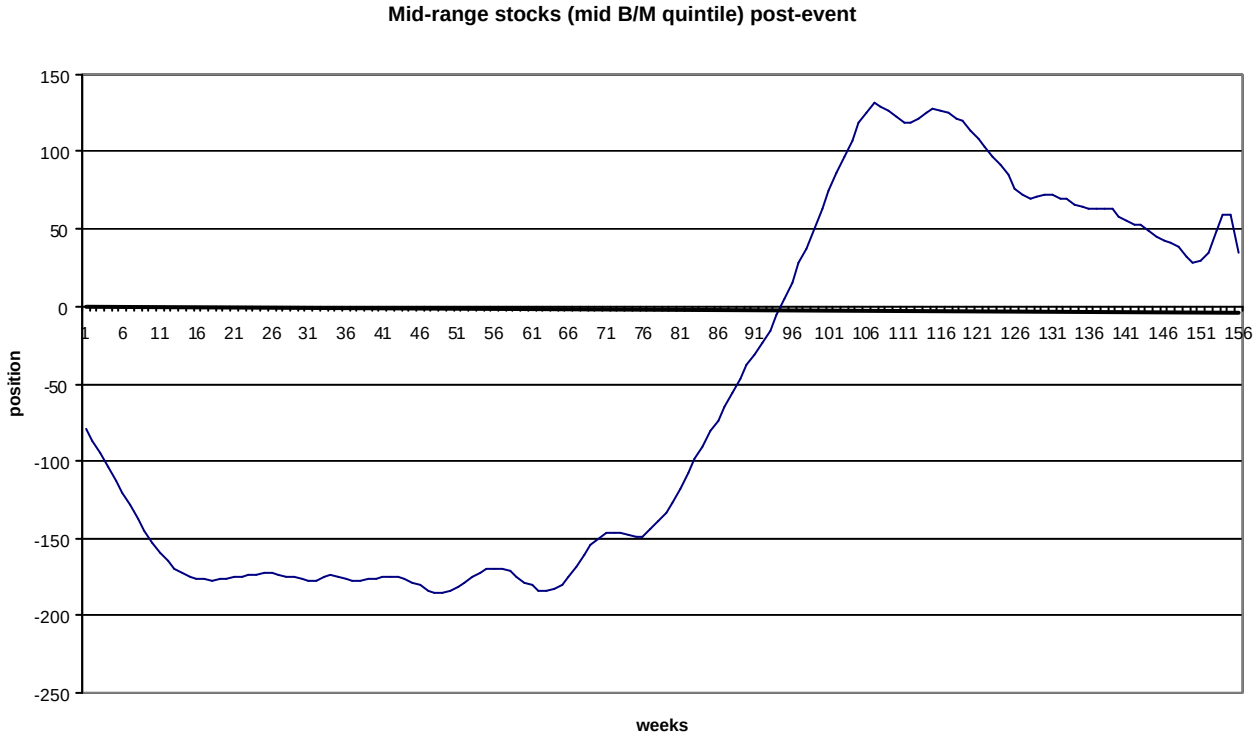
Mid Cap	drift	vol
diff	-2.50592	0.074664
t=	0.238885	0.004241



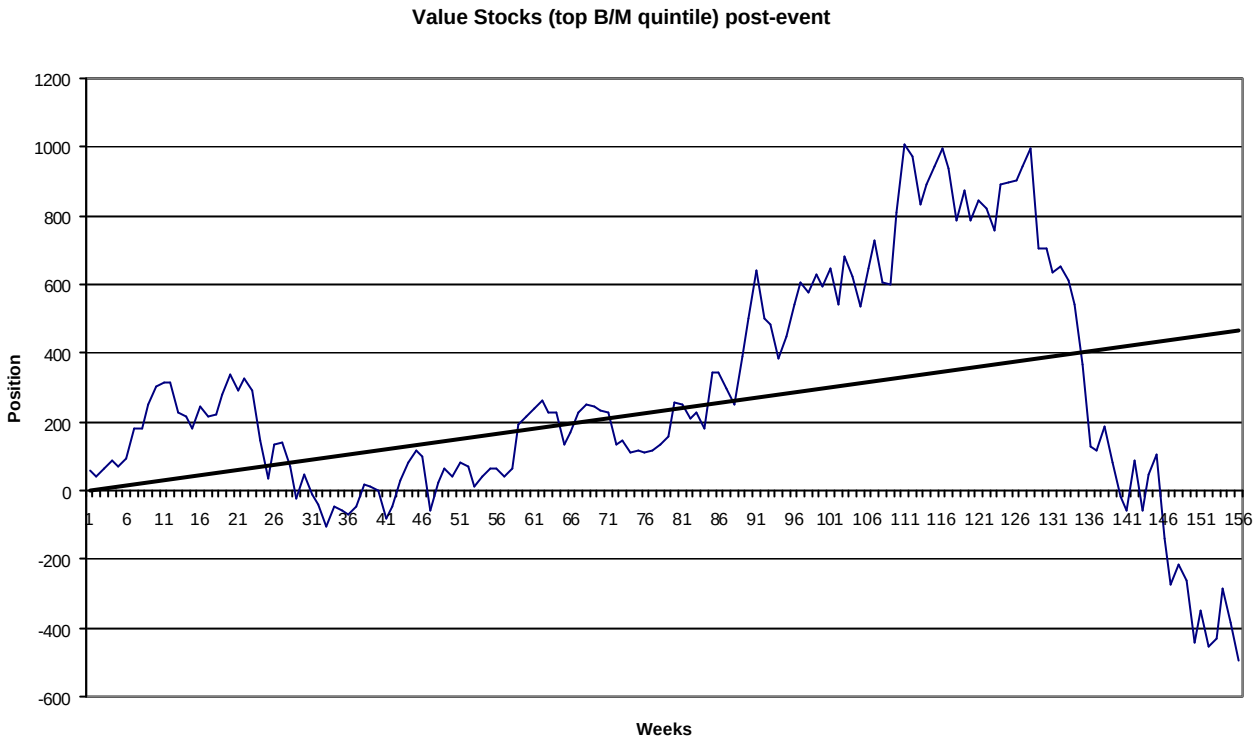
Lg Cap	drift	vol
diff	-0.976655	0.120361
t=	0.164775	0.006836



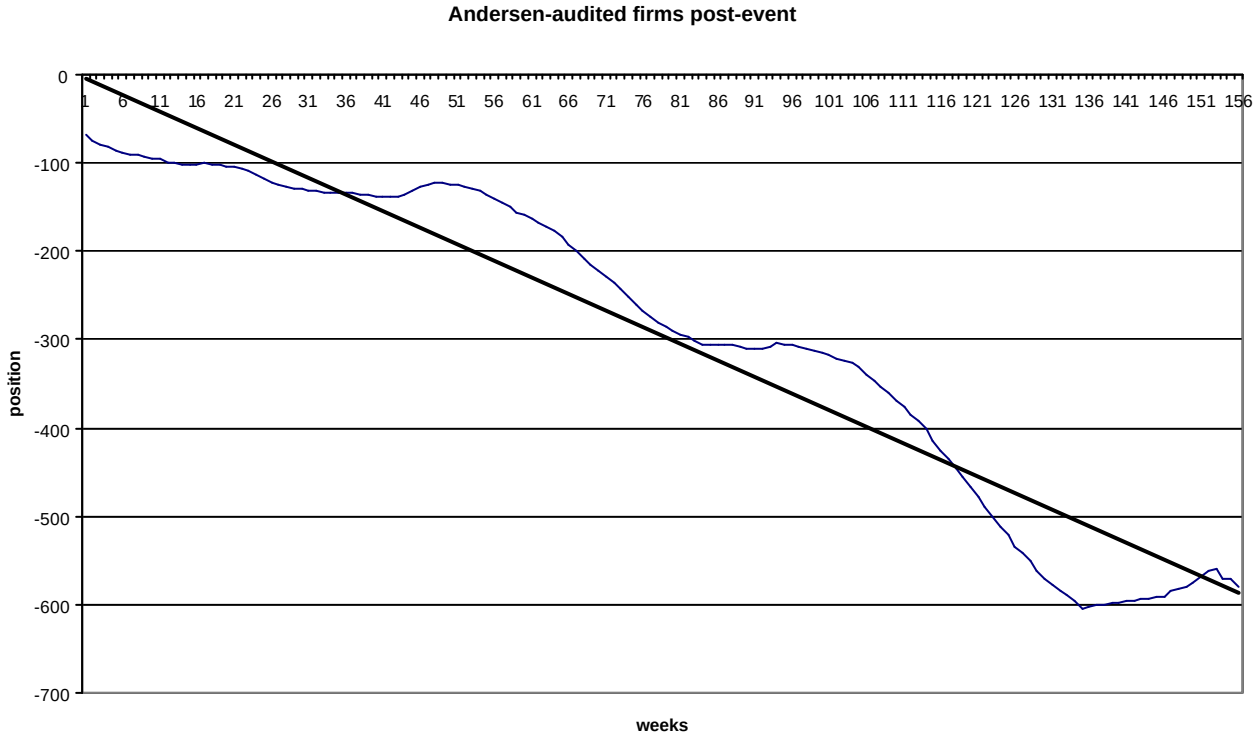
Glamour	drift	volatility
estimate	-5.67	9.75
st.error	0.18	0.55



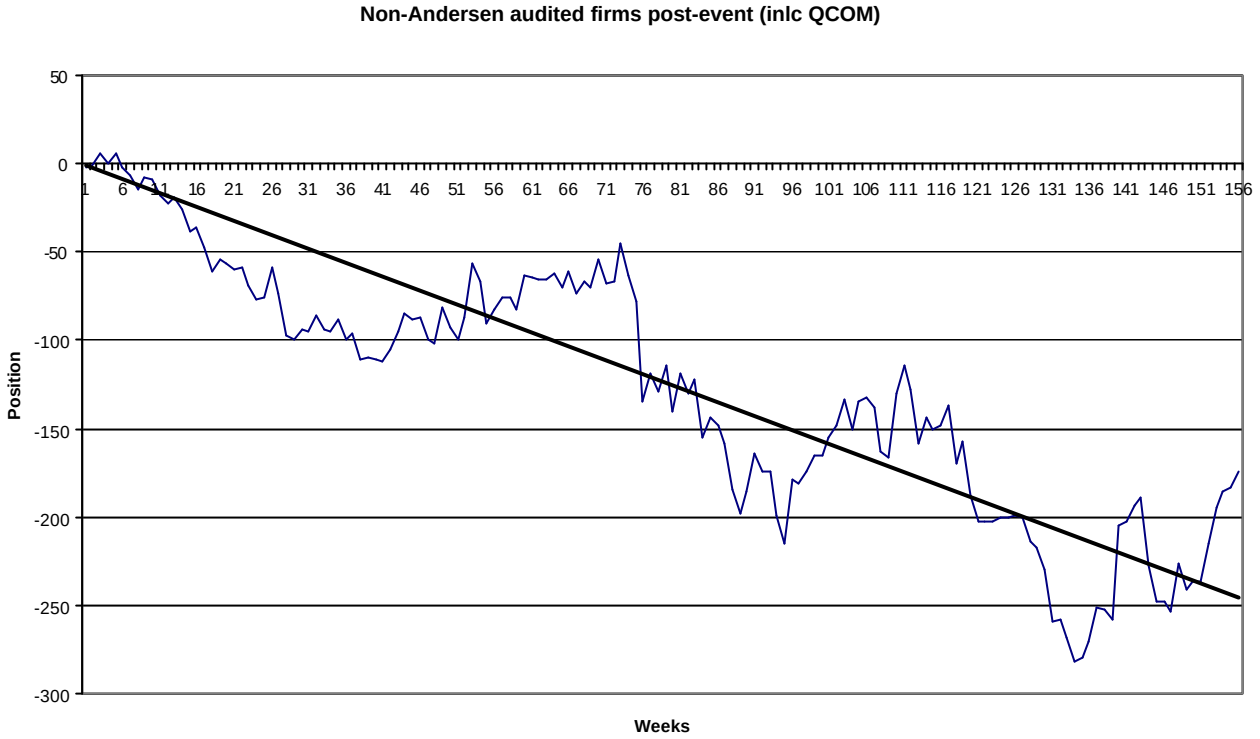
Mid sect	drift	volatility
estimate	-2.51	0.02
st.error	0.24	0.00



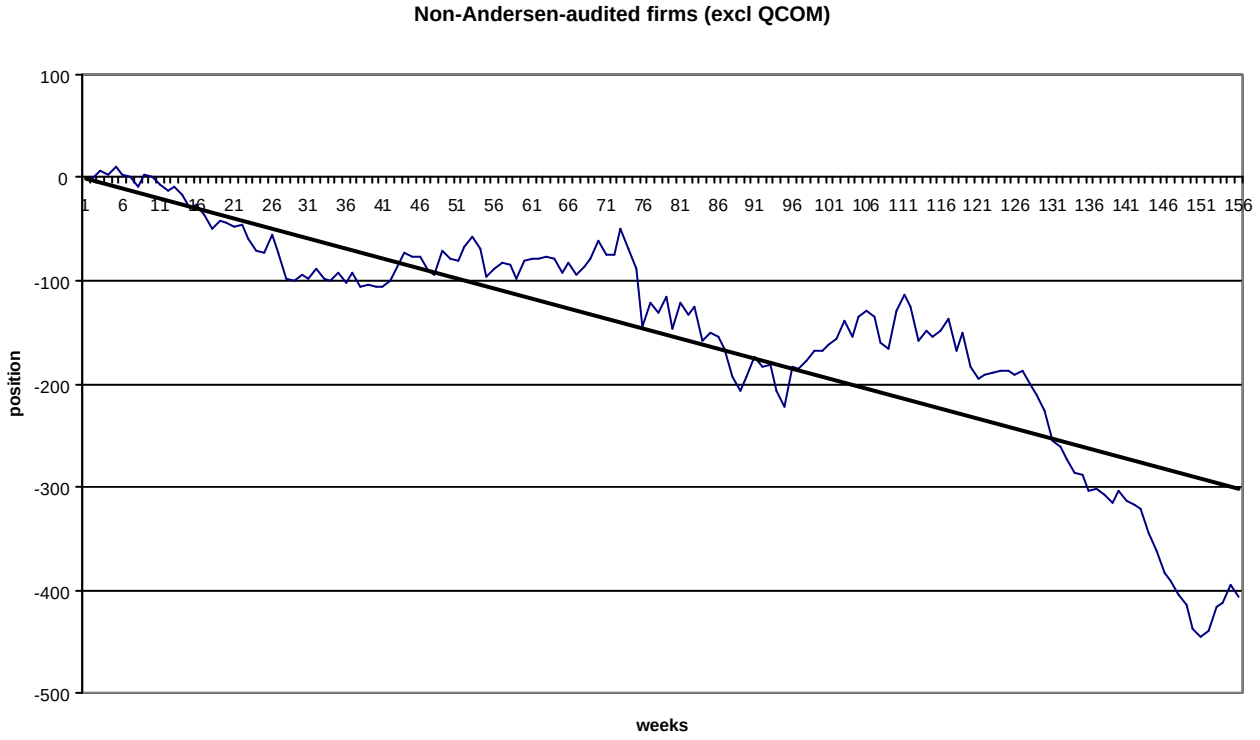
Value	drift	volatility
estimate	3.01	0.23
st.error	0.91	0.01



Andersen	drift	volatility
estimate	-3.76	0.00
st.error	0.10	0.00

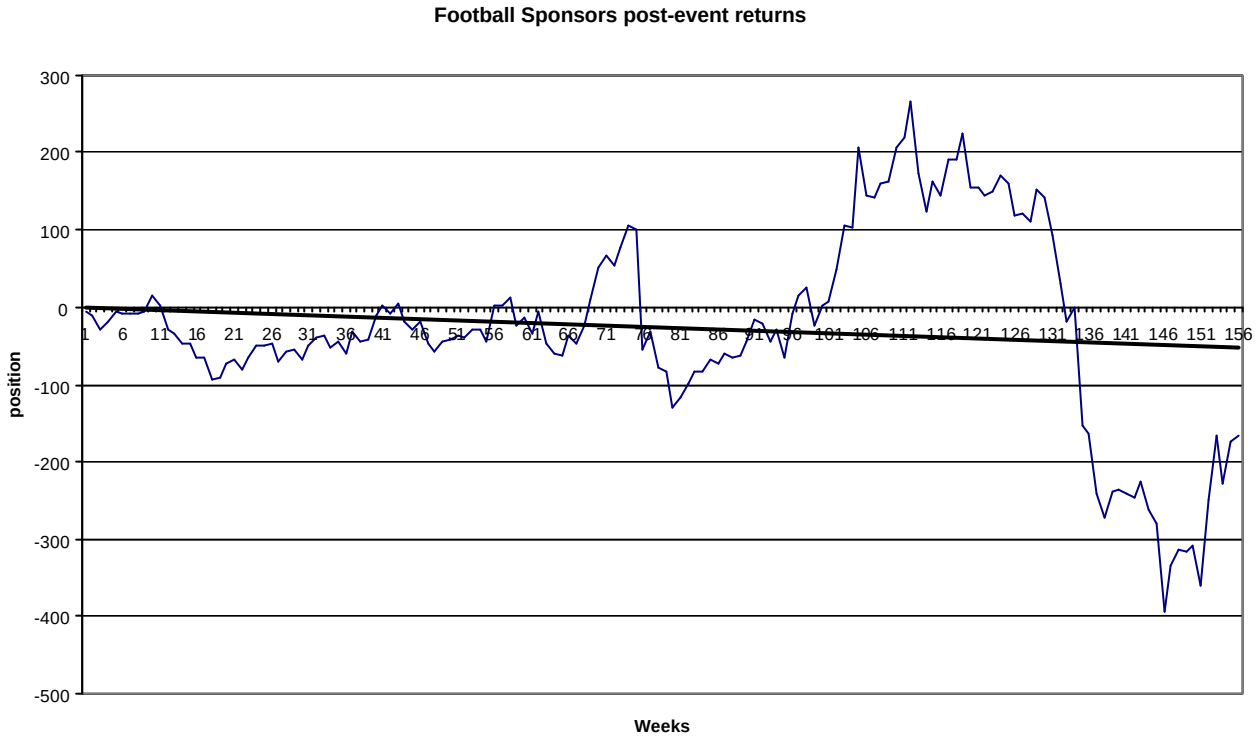


Non-Ander	drift	volatility
estimate	1.05	0.16
st.error	0.49	0.01

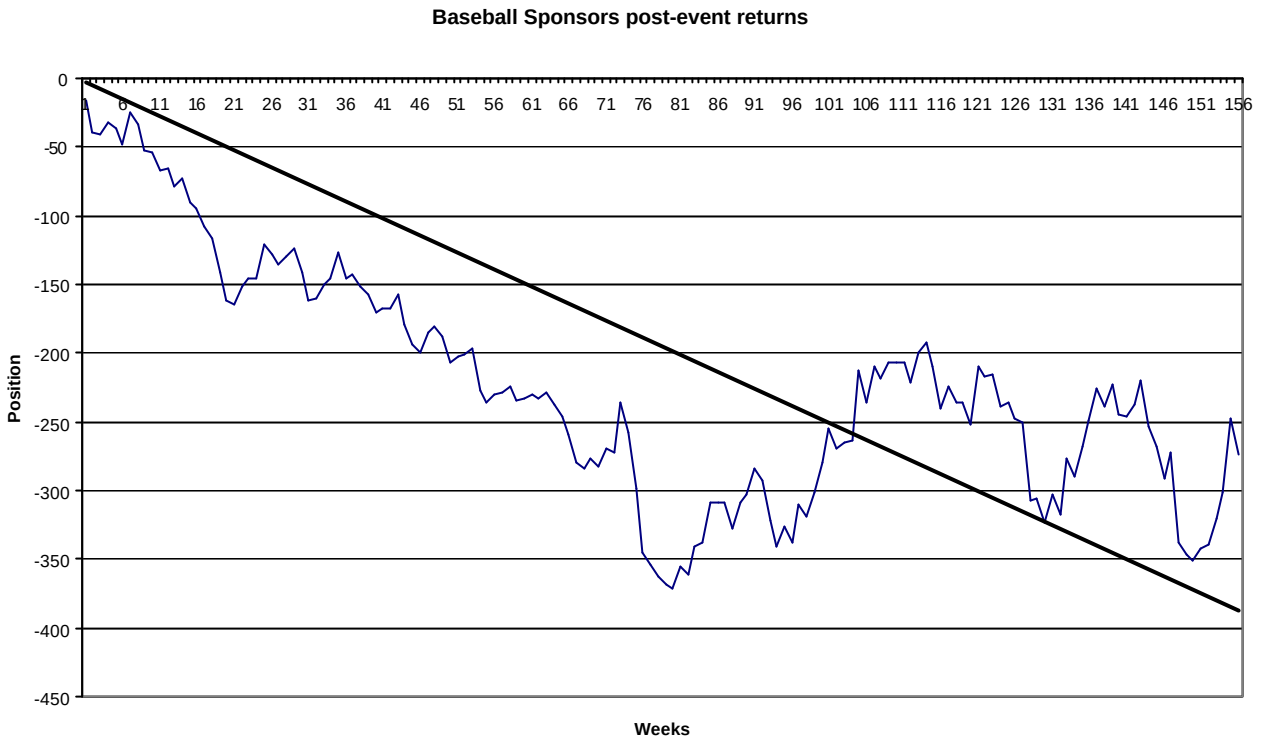


Non-Ander	drift	volatility
estimate	-1.94	2.70
st.error	0.13	0.15

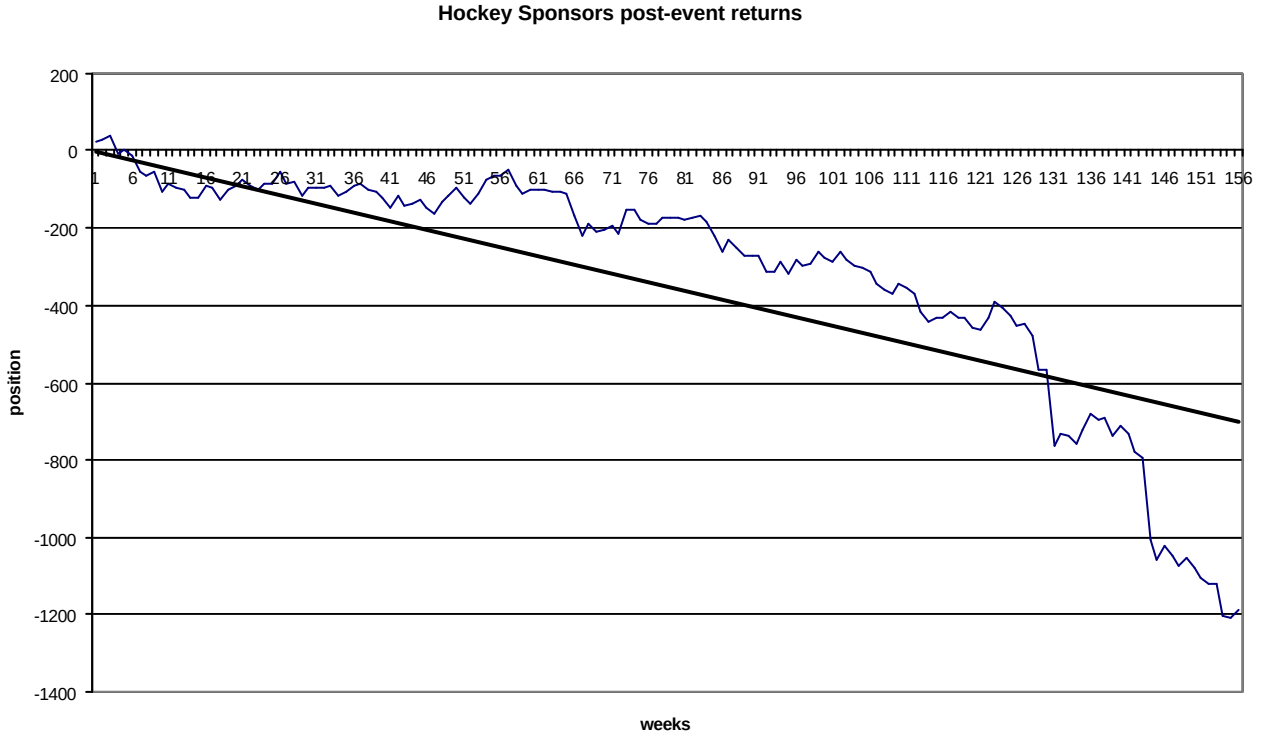
Football	Baseball	Hockey	Basketball
ERICY	EIX	NFS	CNC
F	ONE	MOLA	TGT
AT	CIN	GET	DNT
HNZ	RKY	CORL	
RJF	CMA	MEL	
FDX	PNC	SVVS	
	SAFC	GM	



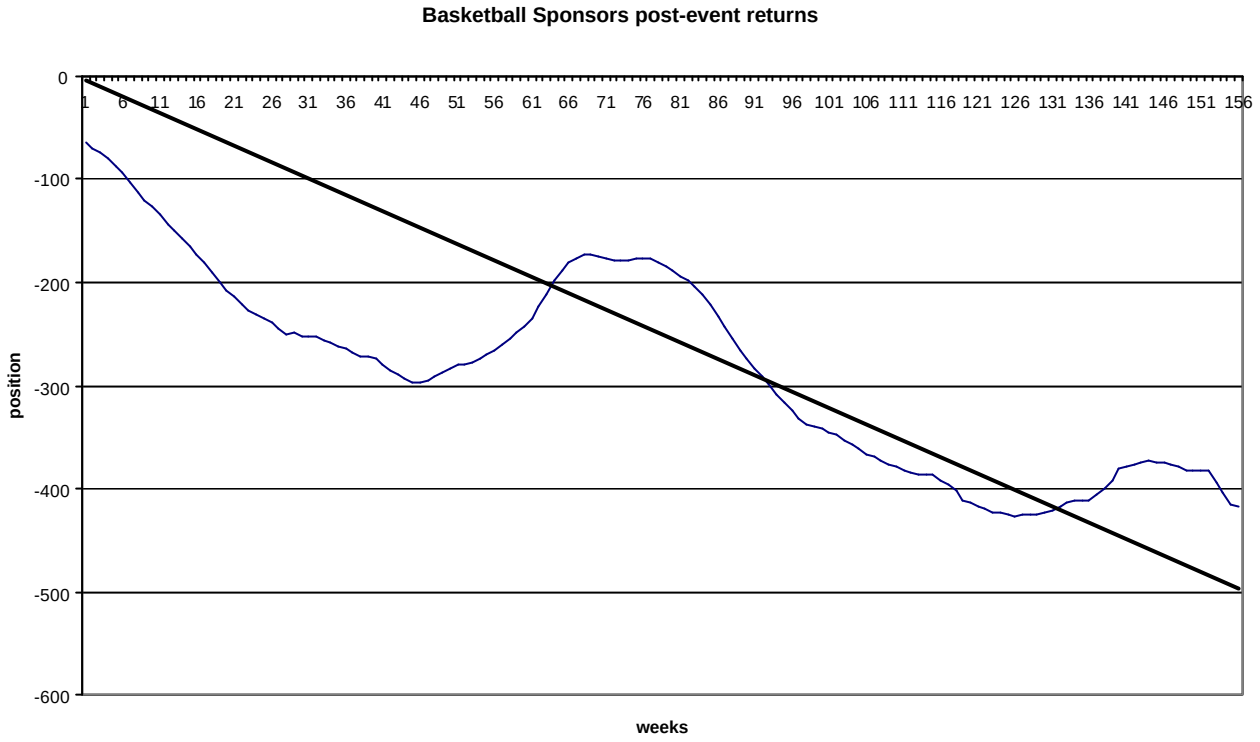
Football	drift	volatility
estimate	**-0.333409**	9.546186
st.error	**0.333504**	0.542187



Baseball	drift	volatility
estimate	-2.478993	0.012489
st.error	0.156711	0.000709



Hockey	drift	volatility
estimate	-4.496135	0.054959
st.error	0.444433	0.003121



Basktball	drift	volatility
estimate	-3.182772	0.337615
st.error	0.119338	0.019175