Daily Trading Behavior and the Performance of Investment Managers*

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Abstract

Utilizing a unique database of daily trading activity, this paper examines the ability of active Australian equity managers to earn superior risk adjusted returns attributed to stock selection. We find evidence of superior trade performance, where performance is a function of trade and stock size. Our findings indicate that active equity managers are able to successfully exploit private information more readily in mid-cap stocks where the degree of analyst coverage, information flows and market efficiency are lower than large-cap stocks. Our evidence provides further support to the value of active investment management in Australian equities.

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Can active investment managers successfully exploit private information? This controversial question has long been debated by academics, institutional and retail investors, investment consultants and the financial press as a means of aiding investors to select an appropriate investment strategy that maximises the net returns accruing to users of investment products. The debate commences in that theoretically, in a perfect capital market, there is little room for active investment management. Among the foundation assumptions of the Capital Asset Pricing Model (CAPM) include the existence of costless information, frictionless markets and homogeneity of investor expectations as central tenets of capital market theory. However in reality, information is indeed costly, markets do exhibit frictions (such as execution costs and information search costs), and investor expectations are rarely homogenous. Within imperfect markets, active portfolio management has the potential of successfully exploiting such market frictions and inefficiencies. However, the literature widely documents the inability of active managers, on average, to earn superior risk-adjusted returns after expenses (for example, Jensen (1968), Malkiel (1995), Gruber (1996), Ferson and Schadt (1996)). In light of this evidence, Gruber (1996) highlights an important puzzle, given that the overwhelming majority of assets are actively managed (i.e. in Australia, 89 percent of assets are actively managed).

However, recently a number of studies find evidence that active funds earn higher returns relative to appropriate market indices before expenses, or that funds exhibit superior stock picking ability (i.e. Grinblatt and Titman (1989b), Daniel, Grinblatt, Titman and Wermers (1997), Wermers (2000), and Cesari and Panetta (2002)). These studies are

consistent with the Grossman and Stiglitz (1980) hypothesis, which articulates that active funds only operate in an environment where they can outperform by a magnitude approximating their management fees. Importantly, Wermers (2000) reports evidence somewhat consistent with the Grossman-Stiglitz (1980) informational efficiency theorem, where the average active mutual fund outperformed the market by 1.3 percent per annum before costs. However, Wermers (2000) documents that net of costs, the level of underperformance relative to the market is equivalent to −1 percent per annum. This differential of 2.3 percent was found to be attributable to management expenses, transaction costs and the lower returns derived from non-stock holdings of mutual funds. The Grossman-Stiglitz equilibrium is also supported empirically by the findings of Daniel *et al.* (1997), where their study reports the average mutual fund outperforms by a similar magnitude to the average management fee levied. Carhart (1997) also finds that top-decile funds delivered returns commensurate with their management expenses, whereas other funds in the sample underperform (on average) by a magnitude equivalent to their expense ratio. In terms of mutual fund incentive fees, Elton *et al.* (2003) report evidence identifying that funds offering incentive fee arrangements exhibit better stock selection ability.

In order to justify the fees and costs associated with investing in actively managed funds, an accurate assessment of the level of outperformance (or value added) is required. Aggregate performance is a product of the stock holdings of an investment manager, which are themselves the sum of the individual trading decisions made by the investment manager over time. As such, the null hypothesis of zero outperformance can be tested at a

number of levels; aggregate performance at the fund level, stock holdings and individual trades. The literature has traditionally examined returns-based measures of fund performance, predominantly measured using either monthly or quarterly observation periods (e.g. Jensen (1968), Malkiel (1995), Gruber (1996)). Kothari and Warner (2001) and Pastor and Stambaugh (2002a, 2002b) however a number of studies identify possible biases in performance measurement where returns-based measures are employed in the estimation of risk-adjusted performance (measured as the intercept in a returns regression). Alternative performance measures employed by U.S. studies have relied on portfolio holdings information, where quarterly holdings have provided finer breakdowns of stock selection ability (Grinblatt and Titman (1989b, 1993)); Chen, Jegadeesh and Wermers (2000); Ferson and Khang (2002); Grinblatt *et al.* (1995); Daniel *et al.* (1997)). In terms of the few studies to have examined stock selection ability using transaction-based performance measures, these have relied on inferring trade direction from changes in aggregate portfolio holdings at either monthly or quarterly intervals (i.e. a fixed point in time). One such example is Chen, Jegadeesh and Wermers (2000), who find evidence that mutual funds earn significantly higher returns from aggregate stock purchases than sales on a quarterly basis. In terms of Australian research, Pinnuck (2003) infers trades from changes in monthly portfolio holdings of active equity managers, and finds evidence consistent with the U.S. evidence.

While improvements in performance measurement have arisen by inferring trades from monthly or quarterly portfolio holdings, one inherent limitation is that inferred trades are obtained from aggregate trading activity at period end. Therefore, the degree of overall

trading activity executed by investment managers intra month will not be accurately quantified. For example, investment managers may have almost identical portfolio weights for securities held at two successive quarter-ends, however intra-period, the manager may have altered their portfolio substantially, realising significant profits or losses. If managers are indeed capable of timing their trades to earn profits over time horizons of greater frequency than either monthly or quarterly holdings intervals, then manager skill can be significantly understated when an inferred trade methodology is adopted. An important contribution made by this study is that performance measurement biases can firstly be quantified, and secondly mitigated through the use of daily trading data. Indeed Bollen and Busse (2001) highlight the benefits of performance studies that employ data with higher frequency. Their work shows the use of daily data enhances the power of statistical tests of market timing ability, both positive and negative. While Bollen and Busse (2001) examine market timing with daily fund return data, this paper contributes to the literature by examining stock picking ability at an individual trade level, and our results indicate that data of higher granularity provides additional support for the value of active investment management.

In addition to analysing the mean outperformance of manager trades, this paper examines the relationship between fund outperformance, stock characteristics and investment manager attributes. Falkenstein (1996) indeed shows that mutual fund managers exhibit preferences for stock characteristics. There may be a number of reasons why fund managers exhibit preferences for stock characteristics. For example, managers may be expected to prefer highly liquid stocks over less liquid stocks since trading in less liquid

stocks represents a higher risk in terms of transaction costs. However, perhaps the most important driver of any stock characteristic preference is the ability to earn significant abnormal returns. Falkenstein (1996) argues that in light of capital market frictions, mutual fund managers are more likely to trade in stocks in which they have a competitive advantage *vis-a-vis* their ability to reduce information search costs. Therefore, if managers have preferences for specific stock characteristics due to competitive advantages in terms of the collection of private price sensitive information, then these same stock characteristics should be important determinants of the abnormal returns accruing to manager trades. Indeed, this paper shows that market capitalisation, book-to-market, and momentum are all important factors influencing risk-adjusted fund returns. The characteristic preferences of active investment managers are also likely to be a function of manager style. For example, value managers (oriented towards high book-to-market stocks) should be expected to exhibit expertise and experience in trading value stocks, and therefore may be expected to display a competitive advantage in the selection of value stocks in comparison to growth managers. As such, growth managers should be less likely to trade in value stocks, but when they do, we may not expect them to trade as successfully in these stocks as the case should be for value managers. This paper examines the influence of manager style on the characteristic preference of book-to-market ratio, as well as the ability of active investment managers to earn abnormal returns.

The main finding of our study is that active Australian equity managers are able to outperform (on a gross basis) passive characteristics-matched benchmark portfolios in

terms of their trading ability. Active manager information content (as measured by cumulative abnormal returns) increases with trade size and decreases with stock size (i.e. the larger stocks yield lower abnormal returns). These findings are consistent with the hypothesis that managers trade a higher volume of stock when they possess more valuable information. We also find that managers are more skilful in exploiting private information in mid-capitalization size stocks that exhibit lower analyst coverage and lower levels of efficiency compared to large stocks. In addition to trade and stock characteristics, this paper also examines the influence of manager characteristics on trading performance. Consistent with their investment style, growth managers are more adept in trading low book-to-market equity stocks (i.e. growth stocks) than high-book-to-market ratio stocks (value stocks).

The remainder of the paper is organised as follows. Section I provides a description of the data and a summary of daily trading activities of the active investment managers in our sample. Section II outlines the research design. Section III provides the empirical results examining the daily trading ability of active managers. Section IV concludes the study and provides suggestions for further research.

I. Data

A. Description of Databases

Investment manager trading data is sensitive, confidential and proprietary information, and accordingly, independent studies utilizing the actual trading data of professional

investors are scarce. To our knowledge, this is the first study to examine daily investment manager trades in Australia. The sample comprises 26 active Australian equity managers, sourced from the *Portfolio Analytics Database.* This database was constructed with the support of Mercer Investment Consulting, whereby daily holdings and trade information was provided by the individual managers under strict conditions, including confidentiality. While the database includes all transactions in equity stocks, futures contracts and options securities, this study provides an evaluation of trading performance related to equity securities. The sample period examined is 2 January 1995 to 31 December 2001.

The *Portfolio Analytics Database* was constructed using an 'invitation' approach to the largest Australian equity managers in Australia, measured on the basis of funds under management. In aggregate, 45 individual data requests were sent to the investment managers, and the number of contributing managers participating in this process numbered 33. Of the 33, 26 provided data in a suitably usable format. The investment managers were each requested to provide information for their largest pooled active Australian equity funds (where appropriate) that were open to institutional investors. The definition of an 'active' fund was explicitly deemed as funds exhibiting a target ex-ante tracking error greater than 100 basis points per annum. The term 'largest' was defined as the marked-to-market valuation of assets under management as at 31 December 2001, and was used as an indicative means of identifying portfolios that were truly representative of the investment manager.

The *Portfolio Analytics Database* includes historical portfolio holdings and trading data on a daily basis for active equity funds since fund inception, however some managers were not able to provide all historical information in a cost efficient manner. For several managers, the transaction data sample began when information archiving systems permitted the extraction of the requested information. The study also relies on stock price information that is sourced from the ASX Stock Exchange Automated Trading System (SEATS) for consistency (provided by SIRCA). The SEATS data includes all trade information for stocks listed on the ASX. Accounting information for the book-to-market ratio was obtained from the ASPECT database.

Due to the nature of the collection procedure, several data issues are likely to arise – survivorship and selection bias. Survivorship bias occurs when a sample only contains data from funds that have continued to exist through until the collection date of this sample period. As a consequence, if data from failed funds are not included in the sample, conclusions drawn from the pool of "successful" funds having survived the sample period will overstate overall performance. The second form of bias in managed fund studies is selection bias. This occurs when the fund sample contains data that has been selected for inclusion based on specific criteria. In this case, it is possible that managers managing multiple funds may present information for their most successful funds, skewing the sample as a result. However, we may gain insight into the extent of the survivorship and selection bias by comparing the performance of the data sample against that of the population of investment managers which also includes non-surviving funds. This data is sourced from the Mercer Investment Consulting Manager Performance

Analytics (MPA) database. Over our entire sample window, the average outperformance of the average manager over the ASX/S&P 200 index is 1.78 percent with a standard deviation of 1.39 percent. For our sample the mean manager outperformed the average manager, weighted by manager years, by 0.34 percent per annum. While this indicates that our sample outperforms the industry, since the magnitude of the outperformance is low compared to the dispersion of performance, selection bias is unlikely to be a significant problem. The more recent data, over the 2001 calendar year, also exhibits a similar magnitude of outperformance. The mean performance of the industry wide population was 12.42 percent with a standard deviation of 3.8 percent, while the mean performance of our sample was 12.68 percent with a standard deviation of 5.5 percent.

In terms of market representation by funds under management (at 31 December 2001), the sample includes 6 of the top 10 managers, 4 from the next 10, 4 from the managers ranked 21-30, and 12 managers outside the top 30 managers. The sample includes 4 boutique firms managing less than $A100 million each. Our sample is indeed representative of the Australian investment management industry in terms of manager size and the number of institutions operating in the financial services industry. In terms of style representation, our sample includes three growth managers, six value managers, seven GARP (growth at a reasonable price) managers, and ten style neutral managers.

B. Descriptive Statistics

Acknowledging that managers are likely to break up trades into smaller parcels (to reduce market impact), Chan and Lakonishok (1995) aggregate trades into trading packages. Ideally, trading packages should be formed according to the trading intent of the investment manager, however such data is unavailable. Accordingly, trades made by the same manager, in the same stock, in the same direction and made with a gap of no less than 4 trading days of each other, are aggregated into one trading package. For example if a particular manager purchases shares in a stock on a Monday, and does so again on the following Monday, the number of consecutive days between these trades is 4 and therefore these trades are considered part of the same package. Trades in the same trade package are assumed to originate from a single trading decision made at the start of the package and should therefore be considered as a single event rather than a series of individual or unrelated trades. Table I gives descriptive statistics on the duration and size of trade packages in the sample. Comparing our results with Chan and Lakonishok (1995) we find a higher proportion of single day trade packages (in terms of both the number and value of packages) and a lower proportion of packages with a duration of greater than or equal to 6 days. In unreported results, we redefine trade packages according to various length thresholds (3, 4, 5, and 6 days) and find very similar results to those reported in the paper.

[Insert Table I]

For the purposes of this study, 26 investment managers provided data in a suitable format that could be employed in this research. Table II provides descriptive statistics of the

sample of managers. The sample of funds accounted for assets in excess of $A18.2 billion in funds under management at 31 December 2001. The data sample contains some managers providing as much as 8 years of data, while some provided only one year of time series data. The data indicates that the sample of managers traded almost $A60 billion in securities during the 7-year period. The mean number of ASX-listed stocks traded in the universe is 168. The median transaction size (not trade packages) was $A507,000 and $A350,000 for buys and sells respectively. The statistics in Table II include trades in investment trusts, options, futures, and various other securities not listed on the ASX, however in Table I we provide statistics only for ordinary shares listed on the ASX.

Panel B of Table II provides summary statistics for the period 2 January 2001 to 31 December 2001 for the individual managers in the sample. This time period is important as all funds have complete daily trading data that both commence and end at the same time, and is therefore independent of the age of the portfolio. The number of buy trades exceeded the number of sell transactions, both in aggregate and for the majority of managers. This is in part related to the cash inflows experienced by managers in the period. Buy transactions tend to be of a larger magnitude (in dollar terms), with the average manager exhibiting a median buy trade of $A660,360 compared with $A484,670 for sells.

[Insert Table II]

In order to gain an understanding of the importance of intra-period trading, we conduct a study designed to compare the overall outperformance of a fund against the outperformance obtained from trading intra-month. For example, a particular trade made in the middle of a month will earn outperformance during the remainder of the month, and this outperformance contributes to intra-month trading gains. However, gains accruing after the end of the month will be captured by changes in holdings, and so any performance gained post end-of-month is not directly examined in this paper - since it is adequately covered by the literature. In addition to intra-month gains obtained from active trading, a manager may make a decision to *not* trade a particular security, and this decision may add to outperformance. For example, if a manager receives cash inflow from new applications, but does not invest those cash flows into a particular stock, then relative to the value weighted benchmark, a potential source of outperformance exists if that stock underperforms the index.

Table III shows the contribution to outperformance provided by intra-month trading. This is calculated by comparing two portfolios. The first is constructed from the series of trades provided by the manager. The second is a benchmark portfolio constructed by receiving all cash flows from the manager, and distributing them according to a value weighted benchmark as at the time of trade. The difference in performance of the two portfolios gives the outperformance associated with the manager's trading strategy. The outperformance gained intra-month can be obtained by taking the difference between the trading in the actual manager portfolio and the benchmark portfolio within a month.

For example in a universe of two stocks, A and B, a particular manager purchases, on say, day *t* during the month. Assuming the price and market capitalisation of stocks A and B are equal, the dollar value benefit received from the trade intra-month is simply the return of stock A until the end of the month multiplied by the dollar value of shares purchased as at day *t*. The dollar value foregone by choosing not to invest according to the benchmark portfolio is the average of the return on stock A and B held from day *t* until the end of the month multiplied by the dollar value of the purchase at day *t*. The difference is the net dollar value gain of the trade as at the end of the month. Continuing this calculation for every trade made by the manager during the month, we can calculate the total intra-month trading gain in excess of the benchmark allocation of trades. This total net trading gain can be divided by the total fund size to obtain the approximate proportion of funds earned through that month of trading. This proportion can be compared to the proportion of funds earned through outperforming the benchmark index. Continuing this process for every month in the sample yields the performance results that are presented in Table III.

It is important to note that even without active trading, a fund manager may add value by not investing in stocks that subsequently depreciate in price. Therefore a *net* trade in a stock may result from cash flows being received without any actual investment in the particular stock. The sum of the *net* trading activity on an intra-month basis contributes on average 25.4 percent of the total outperformance delivered by a manager (the remainder is inter-month). Of this 25.4 percent, 88.2 percent is obtained by actual active trading, and the remainder is due to inactive or passive *net* trading.

[Insert Table III]

The figure of 25.4 percent indicates that while monthly holdings studies capture the majority of the outperformance obtained by managers, it leaves a substantial proportion unaccounted for. Hence, this paper's contribution to the literature is an examination of the short term intra-month trading ability of active investment managers as a means of determining whether they exhibit superior stock selection skill.

Table III also shows that the majority of the intra-month trading gain is obtained from the top (i.e. largest) 100 stocks (i.e. the most actively traded securities), with *net* trading outside the top 100 actually reducing outperformance. For example, of the 25.4 percent of outperformance earned through intra-month trading, 85.5 percent of this is obtained in the top 100 stocks, while that obtained in the top 300 stocks is lower at 77 percent. This may be due to managers not investing in ex-top 100 stocks that subsequently perform well, or from making poor trading decisions in ex-top 100 stocks.

II. Research Design

A. Information Content

This paper investigates the information content of manager trades. If managers possess superior information, then we would expect manager transactions to exhibit predictive

power regarding future stock price movements over and above any market impact costs. Therefore, in order to isolate the pure information effects of manager trading activity, we follow Chan and Lakonishok (1995) in measuring price impact over an extended period of time relative to the close at the end of the trading package. The end of the package is chosen as the reference point for calculated abnormal returns, since returns during the package may be due to market impact. Further research (that is currently underway) will examine the market impact of active Australian equity managers in greater detail.

The start of a trade package can be seen as an instance in a series of events (trading decisions), and as such this paper adopts an event study research design. For each trade package, returns before the start and after the end of the package are compared against a benchmark portfolio constructed following Daniel, Grinblatt, Titman and Wermers (1997) (hereafter DGTW). The DGTW benchmark construction technique involves triply sorting the universe of stocks listed on the Australian Stock Exchange by size, book-to-market ratio, and momentum. We limit the stock universe to the largest 500 stocks where 98 percent of the trades occur. This is performed in order to ensure the benchmark portfolios are representative of the universe of stocks chosen by the investment managers. We form four size portfolios at the end of each month by dividing the universe of stocks into quintiles based on prior month-end market capitalisation. Within each size portfolio, we similarly form three portfolios by sorting on the prior month-end book-to-market ratio. Within each size/book-to-market portfolio, we then form two portfolios based on the prior month-end momentum factor. The momentum factor is the return over the previous one year. The benchmark return for each triply sorted portfolio is then

calculated by value weighting the portfolio at month-end and holding those weights constant for the next month. Thus, we have daily returns for 24 portfolios triply sorted on size, book-to-market, and momentum. Each benchmark portfolio $R_{benchmark,t}$ is formed on a monthly basis using data from the previous month to construct the composition and weighting of the portfolio.

The daily abnormal returns for the trading days following the end of the package are therefore the difference between the stock return on day *t* and the return on the benchmark to which the stock belongs. The time series of abnormal returns for each trading package can then be summed to measure cumulative abnormal returns which are then averaged to obtain the mean cumulative abnormal returns.

$$CAR_i = \sum_{t=0}^{T} R_{s,t} - R_{benchmark,t} \qquad (1)$$

In unreported results, we compare the mean correlation of stock returns with various expected returns obtained through other risk adjustment mechanisms. Comparing the DGTW model with a Carhart (1997) four factor model adjusted for non-synchronicity (Dimson (1987)), a single factor market model, and a size partition model (as per Chan and Lakonishok (1995)), we find the DGTW triple sorted returns to be most correlated with stock returns and therefore present results using the DGTW risk-adjusted performance approach. In terms of the robustness of the DGTW approach, our findings are also largely consistent with these other factor models.

In the standard event study methodology the abnormal returns are assumed to be uncorrelated through time. However, if the event windows are overlapping, then the disturbances are serially correlated (see Campbell, Lo and MacKinlay (1997)) and the standard errors will be understated. Gregory, Matatko and Tonks (1997) suggest a procedure for correcting standard errors for overlapping events. Following their notation, given a series of abnormal returns XM_{jt} for stock j at time t, the standardized daily abnormal returns (SM) are given by:

$$SM_{jt} = \frac{XM_{jt}}{\sqrt{V(XM_{jt})}} \qquad (2)$$

The variance of abnormal returns, $V(XM_{jt})$ is estimated using the abnormal returns from t-130 to t-1, where t=0 is the start of the package.

The multi-period standardized abnormal return aggregating over K periods is given by:

$$SM_{jt}(K) = \frac{1}{\sqrt{K}} \sum_{i=1}^{K} SM_{j,t+i} \qquad (3)$$

The mean multi-period standardized return can be calculated as follows:

$$\overline{SM}(K) = \frac{1}{D} \sum_{j=1}^{L} \sum_{t=1}^{D_j} SM_{jt}(K) \qquad (4)$$

where there are L stocks, and each stock is traded D_j times. Now, if another event occurs *h* periods after trade package *j* within the event window, Gregory et al. (1997) note that:

$$Cov[SM_{jt}(K), SM_{j,t+h}(K)] = \frac{1}{K} E\left(\sum_{i=1}^{K} SM_{j,t+i} \sum_{t=1}^{K} SM_{j,t+h+i} \right) = \frac{K-h}{K} \qquad (5)$$

Therefore, $V\left[\overline{SM}(K)\right] = \frac{1}{D^2}\left[D + 2D_1 \frac{(K-1)}{K} + 2D_2 \frac{(K-2)}{K} + \ldots + 2D_{K-1} \frac{1}{K} \right]$ (6)

The test statistic is standard normally distributed as follows:

$$Z = \frac{\overline{SM}(K)}{\sqrt{V\left[\overline{SM}(K)\right]}} \qquad (7)$$

III. Empirical Results

A. Stock Size

Since small firms are less likely to be followed by security market participants, the effects of private information is likely to be greater than that for large firms, thus it is important to understand the relationship between firm size and manager trading success. Table IV provides the descriptive statistics and abnormal returns of manager trade packages partitioned according to stock size. Stock size is measured as the market capitalization of the stock as at the time of trade. Panel A presents the mean values and

standard deviations of various package descriptors: the mean dollar value of the trade package, the percentage of the fund represented by the package, the benchmark weight of stocks traded, the stock rank, the number of days until the next package is transacted (as measured from the start of the first trade in the package), the proportion of instances where the following trade is a purchase, the total value of purchase and sale activity (as a proportion of funds under management) over the month following the trade, the book-to-market ratio (as percentile ranks) and the momentum statistic (measured over the prior half year).

The data suggests that active managers are far more aggressive in smaller stocks, trading a relatively large percentage of funds under management, despite the smaller benchmark weight. On average, the smallest quintile of purchase packages ranked by stock size represent 0.42 percent of total funds under management, despite the low benchmark weight of 0.02 percent. This is in comparison to the largest quintile of packages ranked by stock size, where the mean package represented 0.75 percent of total funds under management with a mean benchmark weight of 3.91 percent.

[Insert Table IV and Figure 1]

In terms of trading behaviour, managers traded large stocks more frequently, trading on average 17.4 days after every buy package, and 18.9 days after every sale, while smaller stocks were traded every 35.9 days and 38.5 days for purchases and sales respectively. The data also shows that investment managers generally continue trading in the same

direction. For example, over all stock size quintiles, purchases are more likely to be followed by another purchase than a sale. In addition, in the month following a purchase, managers were net purchasers, while following sales, managers were net sellers.

Panel B presents the mean CARs accruing to investment manager trade packages. Generally, in the 40 days subsequent to the end of the trade package, stocks the managers purchased outperformed stocks that investment managers sold. This indicates that fund managers have a degree of predictive power in being able to anticipate future price movements. These findings are consistent with Ersoy-Bozcuk and Lasfer (2001) who find U.K. investment trusts were able to earn significantly positive abnormal returns of 2.07 percent over the 40 day period after a trade. Our evidence is also consistent with Chen, Jegadeesh and Wermers (2000) and Pinnuck (2003) who both find changes in portfolio weights have predictive power in forecasting future share price movements. However, Chan and Lakonishok (1995) find no evidence of predictive power in fund manager trading activity after the conclusion of a trade package. However, since their study is based on U.S. institutional managers, it is a possibility that some of the discrepancy may be sample specific.

Our results suggest that active equity managers are less successful in purchasing the very large and very small stocks, and are more successful in exploiting information associated with medium sized firms. Over the 10 days following the end of a purchase package, the second, third and fourth quintiles of packages ranked according to stock size yield CARs of 0.35, 0.60, and 0.39 percent (statistically significant at the one percent level)

respectively, compared to that of 0.25 and 0.26 percent (not statistically significant at the 10% level) for the bottom and top quintiles respectively. Examining the abnormal returns at further time horizons post the end of the package also yields similar results, however, given this paper focuses on short term intra-month trading, we emphasize the analysis which concentrates on shorter time horizons.

These results in Table IV also reflect the increased market participation (and scrutiny) of very large market capitalisation securities, ultimately leading to a more efficient market for these types of stocks. As such, the identification and exploitation of successful trading opportunities in large stocks becomes increasingly difficult. On the other hand, trading in small stocks may be less profitable since the cost of gathering information for small stocks is likely to be greater than that of large stocks. Furthermore, since the benchmark weight of small stocks is on average much lower than that of large stocks, the ability of managers to increase aggregate outperformance relative to the passive value-weighted benchmark index through trading in small stocks is limited. As a consequence, managers have less incentive to allocate resources to researching very small and illiquid stocks. In turn this should lead to lower mean abnormal returns post trade. While this seems to be the case for purchases, the results show that after sales, the mean CAR is more negative for packages in small stocks than that of any other quintile of sales. This appears to contradict the proposition that active investment managers should trade poorly in small stocks.

The results also show that the sale of small stocks is preceded by a significant fall in price. Furthermore, the fall in price continues after the end of the trading package (see Figure 1b). This may be caused by investment managers acquiring strongly negative information, which in turn leads them to sell such stocks aggressively. This aggressiveness is exhibited in the statistics for the mean percentage of funds under management sold. In small stocks the proportion of funds traded is 0.44 percent which is the same as that of the second smallest quintile of stocks despite the benchmark weight of the smallest stocks being much lower. Additionally, sales of the smallest stocks are more likely to be followed by continued selling (29.7 percent of sales in smallest quintile stocks are followed by purchases, compared to 33.9 percent for the second smallest quintile of stocks).

In analysing the results, it is important to note that the Portfolio Analytics Database of manager trades includes only the active decisions of managers to trade in particular stocks. As such, our event study approach also captures the value added by active managers in choosing not to trade in specific stocks. Therefore, if managers exhibit an ability to select stocks that on average outperform, then the mean CAR before and after purchases or sales may be positive. Table AII in the appendix shows the performance of stocks that managers actively trade versus stocks not traded by managers (on a manager by manager basis). Our results show that actively traded stocks outperform securities that are not traded. This indicates that the decision *not* to trade at all in a particular stock can itself be a value-adding decision. Therefore the positive mean CAR after sales may also reflect the ability of managers to select superior stocks. Furthermore, managers may

choose to sell a stock not necessarily due to negative information, but simply to fund the purchase of another stock in which the manager has a *more* positive outlook. Indeed, positive abnormal returns for both purchases and sales have been documented for active Australian equity managers by Pinnuck (2003).

Given that stock selection and liquidity reasons for selling may cause positive mean CAR for sales, we present a measure of reversal in Panel C pf Table IV. If managers possess superior information, then we may expect fund managers to exhibit price reversals in both purchases and sales. The measure of reversal is the mean CAR post trade less the mean CAR pre trade (in the table we present the degree to which pre trade prices (adjusted for risk) are higher than the price at the start of the package, and therefore the measure of reversal is actually the mean CAR post trade *plus* the figure given pre trade). This measure is useful in light of the fact that managers may possess stock selection skills that influence the mean CAR pre and post trade. For example, the mean CAR 20 days subsequent to a sale in quintile 3 are 0.16 percent, however we know that 20 days prior to the sale, the stock experienced a mean positive CAR of 1.07 percent. Therefore relative to the strong positive performance pre-trade (which may be due to the superior stock selection capabilities of managers to trade stocks that on average outperform), the 0.16 percent abnormal return post trade represents a reversal. This relative reversal may be the motivation for selling the stock in order to fund a purchase in another stock. The measure of reversal for sales can be added to the measure of reversal for purchases to give the results presented in Panel C.

The measure of reversal 10 days after the end of a trade package is largest for the third (or mid) quintile of trades ranked according to stock size, and is smallest for the largest and smallest stock quintiles. This indicates that managers are more able to identify relative reversals in mid-cap stocks. This ability may be due to managers making most effective use of private information in stocks that are not as efficient as the large stocks, but are not as costly (in terms of information search costs) as small stocks.

Our findings that stock size is an important influence concerning the ability of active managers to earn excess returns is inconsistent with Chen, Jegadeesh and Wermers (2000), who find little evidence that stock size influences abnormal returns. It is possible that the difference may be sample specific; however the difference in the methodology may also play an important role. Chen, Jegadeesh and Wermers (2000) infer trades from quarterly portfolio holdings, while we directly measure the abnormal returns subsequent to trade packages, utilising actual daily trading data. This finer granularity in data frequency is an important contribution to the performance evaluation literature, since a significant proportion of the abnormal returns accruing to manager trading packages occurs within the first 10 days following the end of a package. For example, in the 10 days subsequent to the end of a purchase, the mean CAR for the third quintile (mid) is 0.60 percent, while that of 40 days subsequent is 1.18 percent. Thus, the majority of the abnormal returns are earned in the first 10 days subsequent to the end of the package.

B. Book-to-Market Ratio

The book-to-market ratio for stocks proxies the degree to which the value of the stock is related to future projected growth, compared to current tangible assets. Accordingly, value stocks are stocks that have high ratios of book value to market value, indicating a high proportion of firm value is associated with tangible assets. On the other hand, growth stocks are securities that have low book-to-market ratios. The importance of this stock characteristic is evidenced by the fact that investment managers classify their own investment management style according to this characteristic. That is, value (growth) managers exhibit investment philosophies oriented toward value (growth) stocks. Hence, it may be expected that value (growth) managers should display both a higher propensity to trade value (growth) stocks, as well such managers executing stock picking skills that are more successful across stocks that are consistent with the style of the manager.

Tables V and VI provide descriptive statistics and CARs for both value and growth managers. Manager style is defined as the self declared style identified by the investment manager. Since only a sub-sample of the database comprise managers of either growth or value styles, the partitions according to book-to-market ratio are performed into thirds rather than fifths in order to preserve the number of observations in each partition.

[Insert Tables V and VI and Figures 2 and 3]

As expected, value managers are more likely to trade in stocks exhibiting high book-to-market ratios. The mean book-to-market ratio percentile rankings for the three partitions according to book-to-market ratio for purchases by value managers are 19.5, 41.6, and

64.5 as compared to 13.3, 32.5, and 56.2 for growth managers. In terms of trading behaviour, value managers traded larger parcels of stocks relative to their fund size, however, they also traded much less frequently than growth managers. This is consistent with value managers trading on long term stock fundamentals information.

Consistent with the theory that managers possess specialized skills in selecting style specific stocks, the CARs in the 10 days subsequent to the start of the package for purchases by value managers (i.e. in high book-to-market ratio stocks) is 0.78 percent, compared to 0.46 percent for the lowest third of purchases ranked by book-to-market ratio. This pattern is continued for all event observation periods examined. The data also supports the theory of specialized manager skills for growth managers. The CARs in the 10 days after the start of purchases ranked in the bottom third of packages sorted by low book-to-market ratio stocks is 0.62 percent as compared to 0.20 percent for purchases in high book-to-market ratio stocks. For sales, all three partitions of packages ranked according to book-to-market ratio yield negative CARs.

Interestingly, the results also show that in the 10 days subsequent to a trade package, value managers are able to sell low book-to-market ratio stocks more proficiently than high book-to-market ratio stocks. This indicates that although value managers are comparatively better at purchasing value stocks, they are also comparatively better at selling growth stocks. To some extent, this may reflect value managers exploiting market mispricing of value stocks they hold that appreciate in value, and hence these stocks becoming more like growth (low book-to-market ratio) securities. The market correction

of the mispricing yields the large negative abnormal returns post sale. Indeed the results show that low book-to-market (growth stock) sales are on average preceded by a significant increase in stock price. On the other hand, it may be interpreted that value managers do not have any specialised skills in trading value stocks, since they appear just as adept at trading high and low book-to-market ratio stocks. To some extent, since the book value of stocks change according to an accounting period, while stock price changes are daily, then value managers should behave like contrarian traders since they purchase stocks that are low in price compared to book value, and sell stocks that are high compared to book value. This may explain the pronounced reversals exhibited in Figures 2a and 2b

Growth managers however (see Figures 3a, and 3b) do not exhibit this curious pattern of being comparatively better at purchasing low book-to-market (growth) stocks and more adept at selling high book-to-market (value) ratio stocks. Instead, growth managers are more skillful at both buying and selling growth stocks. These results are consistent with Chen, Jegadeesh and Wermers (2000) who find growth managers exhibit higher ability to earn abnormal or risk-adjusted returns from growth stocks.

C. Momentum

Momentum refers to the stock return over the prior six months. Unlike book-to-market ratio and stock size, momentum is not a stock characteristic that managers explicitly identify when describing their investment process. While managers may claim to trade

according to specific investment style, as well as trading stocks of exhibiting a certain size, momentum is a characteristic that changes over time and does not describe any fundamental aspect of a stock. As such, *a priori* we might not expect managers to exhibit any ability to identify trading opportunities on the basis of momentum. However, if managers' possess specialized skills in the collection and analysis of private information in stocks that they select to trade in, then it may be expected that managers will more quickly identify market mispricing (and hence stock price reversals). For example, if managers can identify mispricing and time their trades appropriately, then stocks that have previously performed poorly should subsequently outperform after manager purchases, and vice-versa for sales. As such, a consideration of momentum is given in Table VII.

[Insert Table VII and Figure 4]

Studies examining momentum show that stocks exhibit momentum continuation (at least in the medium term), and indeed many risk factor models use momentum as a risk characteristic. As such, the momentum results at longer term horizons reflect a mixture of both momentum continuation and manager information. This study concentrates on the short term results, since it is over the short term where the influence of private information exceeds the influence of the momentum stock characteristic.

In terms of price impact, managers exhibit the ability to identify price reversals, and the evidence suggests that managers are able to time their trades to exploit such reversals.

However, the reversal seems to be of a short term nature. For example, 10 days after manager purchases, the mean CAR for a reversal is 0.49 percent (statistically significant at the 5% level) while after 40 days, the mean CAR is only 0.15 percent. For sales, fund managers seem to be able to identify longer lasting reversals; the mean CAR reversals after 10 days is -0.30 percent while after 40 days the mean CAR is -0.29 percent. These results are consistent with the hypothesis that managers possess superior information and are able to successfully identify price reversals. However the duration of the reversal for purchases seems to be quite short lived.

D. Manager Size

[Insert Table VIII and Figure 5]

On a theoretical basis, the effect of manager size on trading performance is controversial. On the one hand, large managers should have access to a larger pool of resources, thus enabling superior information gathering capabilities *vis-a-vis* small managers (e.g. Fredman and Wiles (1998)). On the other hand, diseconomies of scale in terms of trading costs associated with market liquidity may cause larger managers to underperform smaller manager (e.g. Chen, Hong, Huang and Kubik (2003)). Smaller managers are also less likely to encounter legal restrictions on the amount of stock they may hold and so will be permitted to invest in a larger stock universe as compared to large managers. Therefore, it is unclear whether small or large managers should provide superior abnormal returns. Empirically, Grinblatt and Titman (1989) show gross fund returns are a

decreasing function of fund size, however on a net basis, they do not find returns are a function of fund size.

In terms of trading behaviour, small managers are much more aggressive than large managers. While the average size of the stocks invested in by both large and small managers are similar, the percentage of funds under management traded in each package is much larger for small funds. Trade purchases ranked within the bottom two quintiles of fund size accounted for 1.43 and 1.15 percent of the fund respectively, while for purchases by the largest two quintiles trade packages represented just 0.23 and 0.09 percent of funds under management. A similar pattern emerges for sale packages. Small managers also traded much less frequently, with the mean time between packages by the smallest quintile of managers being 34.4 and 40.2 days for purchases and sales respectively as compared to 22.5 and 23.8 for trades by the largest quintile of managers.

The results show that to a certain extent, the more aggressive trading strategy of smaller managers add value, where the mean CAR of purchases for the bottom two quintiles of funds after 40 days being 0.57 and 0.92 percent as compared to 0.56 and 0.43 percent for the largest two quintiles of managers.

E. Regression Results

While univariate results offer some insight into the factors that influence abnormal returns accruing to manager trading decisions, multivariate regression results are able to

decompose the incremental effects of each characteristic in the presence of the others. Separate regression results are presented for buy and sell trade packages. Each of the characteristics are divided into quintiles and represented as dummy variables where the benchmark quintile is the smallest partition of the characteristic. We present two sets of regression results. In Table IX results are presented for all managers, while Table X reports results partitioned according to investment style.

Since we are examining the trading performance of managers with reference to daily trading data, and are thus able to identify abnormal returns with high granularity, we choose to analyse short term trading performance rather than long term strategic trading. Long term performance is examined adequately by the literature using inferred trades from monthly holdings data and therefore in order to save duplication, we present results on short term trading performance. Hence, the dependent variable is either the CAR 10 days after the end of the package, or the CAR 20 days after the end of the package.

The regression results for all managers are reported in Table IX and are largely consistent with the univariate results. In terms of stock size, both end + 10 CAR and end + 20 CAR for purchases record higher abnormal returns for trades in the mid quintiles of stocks ranked by stock size. This confirms the hypothesis that managers possess superior private information, however in large stocks where market participation and analysis is likely to make the market for such stocks more efficient, active managers are less able to capture abnormal returns. This pattern is not continued for sales and may reflect the ability of active managers to select stocks that outperform on average, so that even after sales, they

earn abnormal returns. It may also be that sales may be made in order to fund the purchase of another stock. If so, then although the manager may still hold a positive outlook on the stock sold, the manager may hold a more positive outlook on the stock purchased. Therefore, when we measure the mean CAR after sales, we may not strictly be measuring negative information; rather, we may be measuring *less* positive information.

[Insert Table IX]

If active managers hold superior information, then we may expect managers to commit a larger proportion of funds to take advantage of that information. As such, trade size should be related to information. We measure trade size as the dollar value of the package, relative to the fund size and the benchmark weight (total trade value divided by benchmark weight multiplied by fund size). By adding the trade size variable, we control for liquidity trading, since liquidity trades should be relatively small in magnitude compared to information-motivated trading. The results in Table IX show that an increase in trade size is accompanied by an increase in mean CAR. The coefficients of the trade size quintile dummy variables (for both the end + 10 and end + 20 regressions) are all positive and generally statistically different from zero – indicating larger packages yield larger mean CAR. Evidence from the sale regressions however are not as strong, indicating that sales occur following *less* positive information, rather than strictly negative information. The coefficient for the highest quintile of trade size not statistically different from zero for both regressions, and may reflect the propensity of managers to

aggressively trade (unsuccessfully) in very small stocks (resulting in a high trade size accompanied with low abnormal returns). This is supported by the univariate results which indicates that trading in small stocks do not yield the highest abnormal returns. Furthermore, Table AII shows that managers are less successful in trading small stocks.

In terms of momentum, Table IX also shows that for purchases associated with reversals indeed leads to superior abnormal returns. For purchases, all coefficients of momentum are negative (with the coefficient on the fourth quintile statistically significant at the 5% level) indicating that abnormal returns following trades in the lowest quintile of momentum (negative prior returns) yield greater CARs. However, this pattern does not extend to sales, and indicates the potential existence of higher information content of purchases over sales.

In Table X, we report regression results for growth and value managers. Since fund size provides an opportunity to identify each of the investment managers, and in light of the need to maintain confidentiality, we omit the fund size variable. The results show that growth managers indeed earn superior abnormal returns when purchasing low book-to-market ratio stocks (growth). The coefficients on book-to-market for growth managers are all negative indicating that trades in the lowest quintile of book-to-market ratio earn the highest abnormal returns. Value managers, however, show no such pattern. This result is consistent with Chen, Jegadeesh and Wermers (2000) who find growth managers earn higher abnormal returns in growth stocks.

IV. Conclusion

This study examines the ability of active Australian equity managers to outperform the market by examining their daily trading activities. We provide the first comprehensive analysis of daily trading ability by active Australian equity managers, as well as arguing that improvements in performance measurement can be achieved where studies utilize data with higher granularity. This research finds that on average, stocks that active investment managers buy subsequently outperform on a risk-adjusted basis. Similarly, stocks that managers sell subsequently underperform. While the risk-adjusted or abnormal returns may appear to be inconsistent with the efficient markets hypothesis, our findings are consistent with the Grossman-Stiglitz (1980) proposition of market efficiency, which accounts for costly information acquisition. However this study does not provide direct analysis of the magnitude of the outperformance *vis-à-vis* management fees and fund expenses. However, our results lend further support to other studies that find value in active fund management (i.e. Wermers (2000), Chen *et al.* (2000) and Pinnuck (2003)).

Falkenstein (1996) argues that managers trade stocks in which they have a competitive advantage in terms of collecting private information. These stock characteristic preferences should in turn lead to higher abnormal returns in stocks exhibiting these characteristic preferences. Therefore, stock characteristic preferences should be important factors that explain abnormal returns derived from active trading. We find that risk-adjusted returns are indeed a function of a fund manager's trade and institutional

characteristics. Trade size and the market capitalization of the traded stock (stock size) have important effects on the abnormal returns subsequent to a trade package. Abnormal returns increase as trade size increases, lending support to the hypothesis that active managers hold superior information. Stock size also affects the abnormal risk-adjusted performance of trade packages, with purchases in mid-cap stocks performing better than purchases in very large or small stocks. We also find consistency in performance according to a fund manager's investment philosophy, in that growth managers exhibit a competitive advantage in trading stocks that have low book-to-market ratios. Therefore, we find growth managers have greater skills in identifying private information associated with growth stocks.

Future extensions to this research should examine additional systems in the evaluation of an investment manager's trade performance. In particular, the event study methodology disregards the fact that managers may trade with the intention of holding the stock for varying time horizons. This problem is made more acute when managers trade at a higher frequency. For example, a buy which is quickly followed by a sell may indicate that the original buy package was made with the intention of taking advantage of short term mispricing. However, the current event study method fixes a point in event time to evaluate the trade performance irrespective of the fund manager's intentions. Research is currently underway which is designed to enhance performance evaluation of daily trading behavior to better understand trade sequences that are executed as a means of earning superior returns on behalf of investors.

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Table I
Frequency Distribution of Trade Packages, by Package Length and Stock Size

The numbers under the columns headed "Packages" refer to the percentage of trade packages completed within the indicated number of days. The numbers under the columns headed "Value" refer to the percentage of total trading activity (buy or sell) measured by dollar value. A buy (sell) package is a series of purchases (sales) made in the same stock, by the same manager where the number of trading days where the manager has not traded between each trade is less than 4. The results are partitioned by stock size where size is measured by the market capitalization of the stock at the time of the trade. The sample comprises daily trading data from 26 active Australian equity managers from the Portfolio Analytics Database from 2 January 1995 to 31 December 2001.

Stock Size	1 Day		2-3 Days		4-6 Days		6-10 Days		11-20 Days		>20 Days	
Percentile	Packs	Value	Packs	Value	Packs	Value	Packs	Value	Packs	Value	Packs	Value
Panel A - Buys (37190 trade packages, total value = AUD $32,387 Million)												
0th - 80th	10.24	5.91	1.84	1.86	0.97	1.18	0.61	2.04	0.27	0.95	0.04	0.49
80th - 85th	2.63	0.88	0.45	0.19	0.18	0.13	0.14	0.09	0.06	0.06	0.01	0.00
85th - 90th	5.57	1.38	1.06	0.54	0.49	0.18	0.41	0.40	0.12	0.10	0.02	0.05
90th - 95th	13.80	5.72	3.09	2.33	1.24	1.14	1.10	1.73	0.39	0.97	0.04	0.28
95th - 99th	25.67	17.48	5.52	7.19	2.65	3.86	2.06	5.97	0.90	3.87	0.11	1.33
99th - 100th	13.14	14.53	2.51	5.21	1.40	3.86	0.84	4.00	0.40	3.34	0.03	0.75
All Buys	71.05	45.90	14.47	17.32	6.93	10.35	5.17	14.23	2.13	9.29	0.25	2.90
Panel B - Sales (27318 trade packages, total value = AUD $25,536 Million)												
0th - 80th	10.53	5.69	2.13	2.07	1.06	1.80	0.78	1.50	0.31	0.45	0.04	0.08
80th - 85th	2.83	0.68	0.55	0.20	0.24	0.12	0.20	0.08	0.09	0.09	0.01	0.04
85th - 90th	4.94	1.82	1.09	0.69	0.50	0.33	0.42	0.32	0.19	0.33	0.04	0.14
90th - 95th	12.65	5.72	3.50	2.54	1.35	1.23	1.18	1.89	0.46	1.61	0.10	0.43
95th - 99th	26.02	16.81	6.32	8.28	2.62	4.20	2.15	6.45	0.78	3.59	0.08	1.39
99th - 100th	12.40	13.72	2.29	5.23	1.12	2.84	0.78	4.55	0.20	2.07	0.04	1.05
All Sales	69.38	44.44	15.88	19.01	6.88	10.52	5.51	14.79	2.03	8.14	0.32	3.13

Table II
Descriptive Statistics

Panel A of the table provides descriptive statistics of the daily trading activities of 26 active equity managers in the period 2 January 1995 to 31 December 2001. Panel B presents summary statistics for the calendar year 2001.

	Total	Mean	Std. Dev.	Median
Panel A: Descriptive Statistics for Entire Period (2 January 1995 to 31 December 2001)				
Dollar value of all trades ($A millions)	59,827	2,301	2,512	1,016
Number of buy trades	76,295	2,934	3,028	1,416
Number of sell trades	59,376	2,284	2,551	1,115
Total number of trades	135,671	5,218	5,490	2,518
Number of securities traded	-	168.38	108.27	129.00
Median buy size ($A thousands)	-	507.63	1,149.10	155.89
Median sell size ($A thousands)	-	-349.98	595.08	-144.73
Average daily trade volume ($A millions)	-	2.05	3.56	0.92
Percentage of buys to total (%)	-	57.00	10.00	56.00
Panel B: Descriptive Statistics for Period 2 January to 31 December 2001				
Dollar value of all trades ($A millions)	26,050	1,002	1,199	492
Number of buy trades	19,948	767	677	577
Number of sell trades	19,501	750	686	508
Total number of trades	39,449	1,517	1,299	1,106
Number of securities traded	-	125.92	174.08	76.00
Median buy size ($A thousands)	-	660.36	2,443.54	150.89
Median sell size ($A thousands)	-	-484.67	1,468.97	-160.48
Average daily trade volume ($A millions)	-	3.85	4.61	1.89
Percentage of buys to total (%)	-	53.55	12.23	52.92

Table III
Proportion of Outperformance Due to Intra-Month Trading

This table gives descriptive statistics on the proportion (in percent) of outperformance obtained intra-month. Outperformance is the gross performance of the fund less the performance on the value weighted market index. Intra-month outperformance is calculated by taking the difference between the portfolio value of the actual fund manager trading series, and a benchmark portfolio that trades the manager cash flows in the proportion of the value weighted index over the calendar month. Active trading is defined as any trading that occurs in a stock within a moth. Gains due to inactive trading are gains obtained by not trading stocks in the index despite receiving cash flows. The percentage of intramonth trading obtained by stock rank is a percentage of the proportion of outperformance due to intramonth trading. For example, of the 25.4 percent of outperformance due to intramonth trading, the mean percentage of intramonth trading obtained from top 20 stocks is 27.6 percent.

	Mean	St. Dev.	25th Percentile	Median	75th Percentile
Proportion of outperformance due to intramonth trading	25.4	55.3	-4.1	7.5	36.3
Percentage of intramonth trading obtained from top 20 stocks	27.6	122.9	-16.4	15.8	51.4
Percentage of intramonth trading obtained from top 50 stocks	65.3	91.3	22.7	49.8	90.0
Percentage of intramonth trading obtained from top 100 stocks	85.5	101.9	38.2	80.8	116.3
Percentage of intramonth trading obtained from top 200 stocks	66.0	128.3	38.7	76.9	110.1
Percentage of intramonth trading obtained from top 300 stocks	77.0	123.2	37.5	76.3	109.2

Table IV
Mean Cumulative Abnormal Returns (CAR) Partitioned According to Stock Size

CAR (in percent) are calculated as the sum of the abnormal returns accruing post trade package. A trade package is a series of trades with no more than 4 consecutive days in between trades. Abnormal returns are calculated as stock returns less the benchmark characteristics matched portfolio. The benchmark characteristics matched portfolio is a value weighted portfolio of stocks triply sorted along 4 market capitalization, 3 book-to-market ratio, and 2 momentum dimensions.

	PURCHASES										SALES									
	SML		Q2		Q3		Q4		LRG		SML		Q2		Q3		Q4		LRG	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
Panel A - Descriptive Statistics																				
Number of Packages	7,430		7,430		7,430		7,429		7,429		5,453		5,453		5,452		5,452		5,452	
Dollar Value ('000s)	532	1,701	440	1,092	745	1,915	852	2,177	1,218	2,845	-524	1,792	-537	1,423	-763	1,969	-1,013	2,577	-1,289	2,969
Percent FUM Traded	0.42	1.73	0.35	1.17	0.57	2.26	0.58	2.07	0.75	2.74	-0.44	1.78	-0.44	1.71	-0.56	2.33	-0.64	2.54	-0.67	2.37
Benchmark Weight	0.02	0.03	0.14	0.12	0.39	0.17	1.00	0.40	3.91	1.75	0.02	0.02	0.13	0.08	0.37	0.12	0.92	0.33	3.66	1.78
Current Stock Rank	411	316	120	74	58	65	28	22	6	6	447	322	126	90	60	58	29	21	8	7
Days to next Package	35.9	53.2	28.7	40.9	23.8	34.9	20.8	30.4	17.4	24.9	38.5	76.1	38.1	74.7	32.3	65.2	27.6	56.5	18.9	34.6
Percent Buys next Pack	61.9	48.6	66.8	47.1	61.6	48.6	62.6	48.4	62.4	48.4	29.7	45.7	33.9	47.3	40.2	49.0	43.0	49.5	50.8	50.0
Buys over next month	0.12	0.40	0.12	0.42	0.17	0.54	0.20	0.58	0.27	0.73	0.05	0.25	0.04	0.26	0.09	0.43	0.12	0.51	0.22	0.73
Sells over next month	-0.07	0.37	-0.06	0.34	-0.11	0.45	-0.13	0.53	-0.17	0.63	-0.12	0.47	-0.13	0.49	-0.17	0.54	-0.17	0.49	-0.26	0.73
BM Ratio Percentile	41.18	32.44	39.79	21.03	35.68	18.55	34.79	16.51	40.20	16.90	45.82	33.40	39.27	22.06	35.08	18.49	33.84	15.86	37.53	16.40
Momentum Percentile	41.80	31.78	54.65	27.67	58.48	24.82	61.98	22.53	60.85	22.09	39.89	31.60	53.87	27.72	61.75	24.04	63.89	22.36	61.99	22.44
Panel B - Cumulative Abnormal Returns																				
Event Time -40	0.14		-0.80		-0.64		-1.04		-0.80		2.04		-0.41		-1.75		-1.88		-1.56	
Event Time -20	0.33		-0.12		-0.11		-0.42		-0.23		1.05		-0.32		-1.07		-1.26		-0.88	
Event Time -10	0.39		0.07		0.17		-0.11		-0.08		0.49		-0.31		-0.61		-0.87		-0.60	
Event Time +0	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Event Time +5	0.28	***	0.28	***	0.43	***	0.32	***	0.13	**	-0.15		-0.20		-0.07		-0.04		-0.13	
Event Time +10	0.25	**	0.35	***	0.60	***	0.39	***	0.26	**	-0.62		-0.28		0.05		-0.05		-0.17	
Event Time +20	0.17		0.41	***	0.86	***	0.53	***	0.44	***	-1.26	***	-0.32		0.16	***	0.10		-0.22	
Event Time +30	-0.04		0.36	***	0.98	***	0.73	***	0.60	***	-1.73	***	-0.34		0.37	***	0.21		-0.21	
Event Time +40	-0.12		0.44	**	1.18	***	0.91	***	0.56	*	-1.99	***	-0.18		0.62	***	0.28		-0.26	
Panel C - Measure of Reversal																				
CAR t-5 to t+5	0.45		0.85		1.18		0.97		0.64											
CAR t-10 to t+10	0.77		1.01		1.34		1.20		0.94											
CAR t-20 to t+20	0.71		0.94		1.66		1.28		1.31											

***,**,* indicate significance at the 1, 5, and 10 percent levels respectively.

Table V
Mean Cumulative Abnormal Returns (CAR) Partitioned According to Book-to-Market Ratio (Value Managers)

CAR (in percent) are calculated as the sum of the abnormal returns accruing post trade package. A trade package is a series of trades with no more than 4 consecutive days in between trades. Abnormal returns are calculated as stock returns less the benchmark characteristics matched portfolio. The benchmark characteristics matched portfolio is a value weighted portfolio of stocks triply sorted along 4 market capitalization, 3 book-to-market ratio, and 2 momentum dimensions.

	PURCHASES						SALES					
	LOW		M2		HIGH		LOW		M2		HIGH	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
Panel A - Descriptive Statistics												
Number of Packages	3,272		3,271		3,271		2,156		2,155		2,155	
Dollar Value ('000s)	522	1,046	712	1,430	534	1,016	-591	1,233	-646	1,173	-526	1,195
Percent FUM Traded	0.96	1.83	1.09	2.12	0.86	1.56	-1.12	1.95	-1.08	1.69	-0.95	1.53
Benchmark Weight	1.30	1.93	1.24	1.81	0.89	1.38	1.22	1.73	1.27	1.80	0.79	1.31
Current Stock Rank	104	178	78	106	143	237	104	177	73	107	191	286
Days to next Package	22.5	31.7	21.8	31.0	25.0	37.1	27.2	57.8	27.2	56.4	29.7	57.9
Percent Buy next Pack	65.2	47.6	68.0	46.6	67.8	46.7	40.8	49.2	43.2	49.5	38.5	48.7
Buys over next month	0.43	0.90	0.41	0.89	0.33	0.74	0.30	0.85	0.30	0.78	0.19	0.58
Sells over next month	-0.26	0.76	-0.28	0.84	-0.20	0.63	-0.48	0.99	-0.47	0.99	-0.39	0.88
BM Ratio Percentile	19.53	11.51	41.63	4.90	64.53	12.32	19.36	10.39	39.95	4.87	65.01	13.25
Momentum Percentile	54.36	28.68	54.86	22.03	45.64	24.48	60.50	29.27	60.54	21.99	53.27	25.38
Panel B - Cumulative Abnormal Returns												
Event Time -40	0.06		0.79		2.71		-4.03		-2.41		-1.91	
Event Time -20	0.47		0.63		1.77		-2.54		-2.03		-1.66	
Event Time -10	0.61		0.59		1.25		-1.86		-1.33		-1.25	
Event Time +0	0.00		0.00		0.00		0.00		0.00		0.00	
Event Time +5	0.38	**	0.36	***	0.61	***	-0.30		-0.12	***	-0.06	**
Event Time +10	0.46	**	0.45	***	0.78	***	-0.62		0.02		-0.05	***
Event Time +20	0.41	*	0.65	***	1.13	***	-0.73	***	0.10		-0.01	
Event Time +30	0.36		0.90	***	1.35	***	-0.90	***	0.18	**	0.32	**
Event Time +40	0.54		1.23	***	1.55	***	-1.00	***	0.30	***	0.63	**
Panel C - Measure of Reversal												
CAR t-5 to t+5	2.26		1.79		2.55							
CAR t-10 to t+10	3.56		2.36		3.33							
CAR t-20 to t+20	4.16		3.21		4.56							

***,**,* indicate significance at the 1, 5, and 10 percent levels respectively.

Table VI
Mean Cumulative Abnormal Returns (CAR) Partitioned According to Book-to-Market Ratio (Growth Managers)

CAR (in percent) are calculated as the sum of the abnormal returns accruing post trade package. A trade package is a series of trades with no more than 4 consecutive days in between trades. Abnormal returns are calculated as stock returns less the benchmark characteristics matched portfolio. The benchmark characteristics matched portfolio is a value weighted portfolio of stocks triply sorted along 4 market capitalization, 3 book-to-market ratio, and 2 momentum dimensions.

	PURCHASES						SALES					
	LOW		M2		HIGH		LOW		M2		HIGH	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
Panel A - Descriptive Statistics												
Number of Packages	1,945		1,945		1,945		1,175		1,174		1,174	
Dollar Value ('000s)	558	1,849	781	2,253	696	2,088	-407	2,038	-522	1,607	-769	2,846
Percent FUM Traded	0.13	0.27	0.18	0.35	0.18	0.38	-0.13	0.27	-0.20	0.40	-0.23	0.48
Benchmark Weight	1.01	0.95	2.15	2.28	1.59	1.79	0.89	0.77	2.03	2.15	1.69	1.90
Current Stock Rank	74	140	39	58	111	222	88	168	39	57	129	244
Days to next Package	11.9	16.5	12.2	20.4	14.0	19.0	13.0	33.9	15.3	40.6	19.1	59.5
Percent Buy next Pack	60.8	48.8	63.0	48.3	65.9	47.4	53.8	49.9	53.9	49.9	51.4	50.0
Buys over next month	0.07	0.09	0.11	0.19	0.09	0.16	0.04	0.07	0.07	0.29	0.06	0.24
Sells over next month	-0.05	0.16	-0.08	0.24	-0.06	0.19	-0.06	0.10	-0.10	0.22	-0.09	0.18
BM Ratio Percentile	13.28	8.23	32.54	4.29	56.17	14.46	12.73	7.93	31.66	3.90	56.73	16.20
Momentum Percentile	59.09	31.34	63.67	20.17	53.05	23.80	56.33	32.26	64.06	20.66	49.96	24.67
Panel B - Cumulative Abnormal Returns												
Event Time -40	-3.30		-0.96		0.52		-1.65		-1.21		2.20	
Event Time -20	-1.41		-0.27		0.28		-0.55		-0.71		1.31	
Event Time -10	-0.64		-0.13		0.11		-0.25		-0.33		0.73	
Event Time +0	0.00		0.00		0.00		0.00		0.00		0.00	
Event Time +5	0.41	***	0.11	*	0.17	*	-0.12		-0.14	**	-0.01	
Event Time +10	0.62	***	0.04		0.20	***	-0.35		-0.19		-0.22	
Event Time +20	0.80	***	0.15		0.38	***	-0.26		-0.42		-0.38	
Event Time +30	0.84	***	0.26		0.35	***	-0.41		-0.58		-0.32	
Event Time +40	0.88	***	0.14		0.19	*	-0.71		-0.65		-0.36	
Panel C - Measure of Reversal												
CAR t-5 to t+5	0.41		0.44		0.09							
CAR t-10 to t+10	0.58		0.43		-0.19							
CAR t-20 to t+20	0.20		1.01		-0.27							

***,**,* indicate significance at the 1, 5, and 10 percent levels respectively.

Table VII
Mean Cumulative Abnormal Returns (CAR) Partitioned According to Momentum (past 6 months stock return)

CAR (in percent) are calculated as the sum of the abnormal returns accruing post trade package. A trade package is a series of trades no less than 5 trading days apart. Abnormal returns are calculated as stock returns less the benchmark characteristics matched portfolio. The benchmark characteristics matched portfolio is a value weighted portfolio of stocks triply sorted along 4 market capitalization, 3 book-to-market ratio, and 2 momentum dimensions. Reversals for purchases have low (negative) momentum, while reversals for sales have high (positive) momentum.

	PURCHASES										SALES									
	Reversal		Q2		Q3		Q4		Continuation		Reversal		Q2		Q3		Q4		Continuation	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
Panel A - Descriptive Statistics																				
Number of Packages	7,404		7,404		7,403		7,403		7,403		5,434		5,434		5,434		5,434		5,434	
Dollar Value ('000s)	690	1,753	780	2,062	754	2,021	830	2,332	733	2,035	-930	2,445	-953	2,508	-891	2,283	-774	2,180	-585	1,652
Percent FUM Traded	0.48	1.61	0.62	2.49	0.54	1.97	0.57	2.38	0.43	1.72	-0.60	2.70	-0.58	2.41	-0.58	2.23	-0.56	1.90	-0.42	1.43
Benchmark Weight	0.80	1.40	1.04	1.63	1.24	1.72	1.44	1.85	1.07	1.63	1.00	1.50	1.42	1.84	1.18	1.63	0.95	1.54	0.64	1.28
Current Stock Rank	157	238	118	183	99	180	92	182	112	199	113	210	91	179	102	187	131	204	194	257
Days to next Package	27.4	41.7	25.1	36.7	25.7	40.9	24.3	37.6	24.2	36.2	25.88	50.16	27.90	56.98	29.53	60.11	33.43	69.62	37.08	75.25
Percent Buy next Pack	62.2	48.5	65.4	47.6	62.8	48.3	62.6	48.4	62.4	48.4	39.95	48.98	42.55	49.45	40.65	49.12	40.74	49.14	33.77	47.30
Buys over next month	0.15	0.45	0.22	0.63	0.19	0.60	0.17	0.55	0.13	0.48	0.10	0.48	0.12	0.56	0.11	0.49	0.12	0.51	0.06	0.30
Sells over next month	-0.11	0.46	-0.12	0.49	-0.11	0.48	-0.11	0.48	-0.10	0.46	-0.17	0.59	-0.17	0.55	-0.19	0.61	-0.18	0.55	-0.13	0.46
BM Ratio Percentile	38.62	29.03	43.35	20.05	39.82	19.75	36.92	18.97	32.97	19.48	33.58	19.86	36.46	19.34	39.00	20.10	43.05	21.07	39.50	29.77
Momentum Percentile	13.47	11.29	41.34	5.78	59.94	4.80	74.61	3.76	88.41	4.69	89.05	4.36	75.67	3.76	61.21	4.65	42.26	6.34	13.21	11.06
Panel B - Cumulative Abnormal Returns																				
Event Time -40	8.50		2.59		-0.65		-3.06		-7.68		-8.53		-3.50		-1.38		2.11		10.29	
Event Time -20	4.75		1.31		-0.20		-1.27		-3.63		-4.62		-1.79		-0.91		0.67		5.60	
Event Time -10	2.71		0.80		-0.06		-0.53		-1.68		-2.64		-0.96		-0.69		0.21		2.98	
Event Time -5	1.39		0.50		0.02		-0.18		-0.80		-1.51		-0.54		-0.44		-0.01		1.36	
Event Time +0	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Event Time +5	0.47	***	0.29	***	0.33	***	0.18	***	0.21	***	-0.19	***	-0.14		0.08	***	-0.09		-0.33	***
Event Time +10	0.49	***	0.39	***	0.53	***	0.25	***	0.24	***	-0.30		-0.20		0.23	***	-0.13		-0.74	***
Event Time +20	0.38		0.74	***	0.75	***	0.36	***	0.22	***	-0.39		-0.31		0.43	***	0.07		-1.45	***
Event Time +30	0.22		0.94	***	1.06	***	0.26	***	0.17	*	-0.42		-0.39		0.56	***	0.24	*	-1.76	***
Event Time +40	0.15		1.12	***	1.18	***	0.32	**	0.21	*	-0.29		-0.49		0.81	***	0.45	**	-2.11	**
Panel C - Measure of Reversal																				
CAR t-5 to t+5	3.56		1.47		0.72		0.10		-1.62											
CAR t-10 to t+10	6.15		2.35		0.93		-0.36		-3.68											
CAR t-20 to t+20	10.15		4.15		1.03		-1.64		-7.56											

***,**,* indicate significance at the 1, 5, and 10 percent levels respectively.

Table VIII
Mean Cumulative Abnormal Returns (CAR) Partitioned According to Fund Size

CAR (in percent) are calculated as the sum of the abnormal returns accruing post trade package. A trade package is a series of trades with no more than 4 consecutive days in between trades. Abnormal returns are calculated as stock returns less the benchmark characteristics matched portfolio. The benchmark characteristics matched portfolio is a value weighted portfolio of stocks triply sorted along 4 market capitalization, 3 book-to-market ratio, and 2 momentum dimensions.

	PURCHASES										SALES									
	LOW		Q2		Q3		Q4		HIGH		LOW		Q2		Q3		Q4		HIGH	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
Panel A - Descriptive Statistics																				
Number of Packages	7,430		7,430		7,430		7,429		7,429		5,453		5,453		5,452		5,452		5,452	
Dollar Value ('000s)	605	1,344	473	1,928	414	927	938	1,935	1,357	3,198	-522	1,259	-548	2,233	-438	905	-1,042	2,249	-1,578	3,410
Percent FUM Traded	1.43	2.60	1.15	3.77	0.25	0.51	0.23	0.58	0.09	0.21	-1.48	1.94	-0.98	4.19	-0.25	0.48	-0.25	0.68	-0.10	0.26
Benchmark Weight	1.19	1.77	1.11	1.63	1.30	1.76	1.09	1.61	0.95	1.57	1.11	1.69	1.10	1.61	1.15	1.63	1.03	1.58	0.85	1.43
Current Stock Rank	100	170	110	188	107	203	112	197	142	222	115	182	121	207	117	211	121	214	148	235
Days to next Package	34.4	44.4	22.4	34.0	19.8	29.3	27.5	41.4	22.5	40.4	40.2	76.8	26.3	55.0	24.1	52.0	39.5	73.3	23.8	51.3
Percent Buy next Pack	66.9	47.0	59.6	49.1	58.7	49.2	64.5	47.9	65.6	47.5	40.6	49.1	39.3	48.8	43.6	49.6	37.0	48.3	37.2	48.3
Buys over next month	0.25	0.80	0.38	0.82	0.12	0.27	0.10	0.34	0.03	0.09	0.26	0.89	0.13	0.40	0.08	0.23	0.05	0.34	0.02	0.17
Sells over next month	-0.12	0.61	-0.28	0.77	-0.07	0.19	-0.06	0.33	-0.02	0.11	-0.42	1.01	-0.24	0.61	-0.11	0.23	-0.07	0.28	-0.03	0.10
BM Ratio Percentile	39.77	21.27	38.63	21.47	37.25	21.87	38.71	21.65	37.27	23.78	37.99	20.79	38.63	22.26	38.51	22.58	38.42	22.36	37.99	24.81
Momentum Percentile	53.22	27.06	53.39	26.41	57.86	26.40	54.83	26.40	58.45	28.41	57.76	27.13	55.27	27.44	57.22	26.94	55.83	27.10	55.32	28.10
Panel B - Cumulative Abnormal Returns																				
Event Time -40	-0.34		0.07		-0.55		-0.93		-1.61		-1.63		-1.44		-1.15		-0.53		0.32	
Event Time -20	-0.05		0.33		0.04		-0.38		-0.62		-0.95		-1.02		-0.82		-0.35		0.18	
Event Time -10	0.04		0.35		0.21		-0.09		-0.16		-0.56		-0.74		-0.60		-0.41		0.17	
Event Time +0	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Event Time +5	0.27	***	0.40	***	0.30	***	0.22	***	0.25	***	-0.15	**	-0.06		-0.18		-0.08		-0.12	
Event Time +10	0.33	***	0.54	***	0.39	***	0.28	***	0.35	***	-0.24		-0.11		-0.25		-0.10		-0.25	
Event Time +20	0.44	***	0.72	***	0.52	***	0.32	***	0.52	***	-0.17		-0.18		-0.26		-0.19		-0.46	
Event Time +30	0.52	***	0.76	***	0.62	***	0.40	***	0.50	***	-0.04		-0.23		-0.07		-0.26		-0.69	
Event Time +40	0.57	***	0.92	***	0.70	***	0.56	***	0.43	***	0.06		-0.23		0.04		-0.27		-0.63	
Panel C - Measure of Reversal																				
CAR t-5 to t+5	0.72		1.28		1.17		0.62		0.41											
CAR t-10 to t+10	1.17		1.74		1.46		0.70		0.28											
CAR t-20 to t+20	1.50		2.26		1.64		0.48		0.18											

***,**,* indicate significance at the 1, 5, and 10 percent levels respectively.

Table IX
Regression Results for All Managers

This table presents regression results where the dependent variable are; the cumulative abnormal return (CAR) from the End of the package to End + 5, 10 and 20 trading days. CAR (in percent) are calculated as the sum of the abnormal returns accruing post trade package. A trade package is a series of trades no less than 5 trading days apart. Abnormal returns are calculated as stock returns less the benchmark characteristics matched portfolio. The benchmark characteristics matched portfolio is a value weighted portfolio of stocks triply sorted along 4 market capitalization, 3 book-to-market ratio, and 2 momentum dimensions. Independent variables are partitioned into quintiles and represented as dummy variables. The benchmark quintile is the smallest quintile.

	CAR over End to End + 10		CAR over End to End +20	
	Buy	Sell	Buy	Sell
Panel A - Adjusted R-Squared				
With Manager Effects	0.28	0.33	0.37	0.53
Without Manager Effects	0.15	0.14	0.26	0.29

Panel B - Regression Coefficients

	Purchases		Sales		Purchases		Sales	
	Coefficient	*t-stat*	Coefficient	*t-stat*	Coefficient	*t-stat*	Coefficient	*t-stat*
Intercept	0.00	0.00	**-0.85**	-2.43	-0.09	-0.19	**-1.47**	-3.00
Stock Size Q2	0.17	1.37	**0.45**	2.98	0.07	0.44	**0.78**	3.72
Stock Size Q3	**0.32**	2.51	**0.66**	4.21	**0.60**	3.41	**1.27**	5.77
Stock Size Q4	0.20	1.49	**0.64**	3.95	0.33	1.79	**1.22**	5.33
Stock Size Q5	**0.29**	2.09	**0.66**	3.78	**0.50**	2.59	**0.93**	3.82
Trade Size Q2	**0.25**	2.55	-0.08	-0.74	**0.30**	2.26	-0.14	-0.89
Trade Size Q3	**0.24**	2.22	-0.01	-0.05	**0.37**	2.52	0.00	-0.02
Trade Size Q4	**0.27**	2.19	0.17	1.21	**0.45**	2.65	0.00	0.02
Trade Size Q5	0.01	0.05	0.35	1.92	0.12	0.55	0.38	1.45
Fund Size Q2	0.10	0.63	-0.23	-1.47	0.09	0.40	**-0.50**	-2.30
Fund Size Q3	0.17	0.94	-0.24	-1.35	0.31	1.27	-0.42	-1.72
Fund Size Q4	0.12	0.58	-0.23	-1.01	0.16	0.57	-0.26	-0.82
Fund Size Q5	0.32	1.39	-0.18	-0.72	0.44	1.41	-0.04	-0.10
Momentum Q2	-0.06	-0.56	0.12	1.03	0.04	0.29	**0.44**	2.62
Momentum Q3	-0.09	-0.89	0.12	1.08	-0.09	-0.70	**0.48**	2.93
Momentum Q4	**-0.24**	-2.42	-0.07	-0.58	**-0.38**	-2.79	-0.02	-0.11
Momentum Q5	-0.12	-1.07	-0.10	-0.79	-0.29	-1.99	-0.07	-0.41
BMRatio Q2	-0.18	-1.74	0.11	0.93	**-0.39**	-2.71	-0.06	-0.36
BMRatio Q3	-0.09	-0.86	**0.41**	3.44	-0.09	-0.64	0.27	1.62
BMRatio Q4	-0.14	-1.34	0.15	1.23	**-0.29**	-1.97	-0.02	-0.12
BMRatio Q5	0.19	1.68	**0.32**	2.40	0.22	1.40	**0.47**	2.49

Coefficients in bold font are statistically significant at the 5% level or better.
t-statistics are adjusted using White's (1980) heteroskedasticity consistent standard errors.

Table X
Regression Results Partitioned By Manager Style

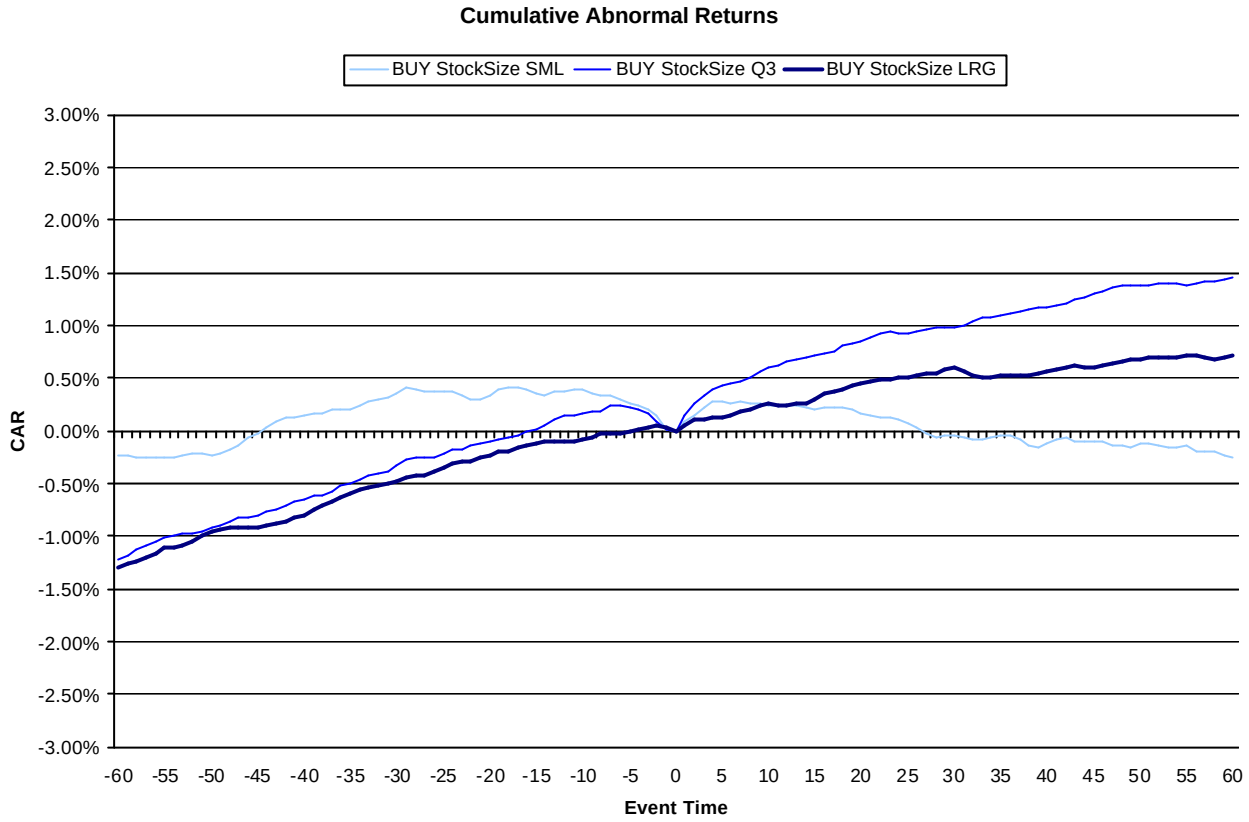
This table presents regression results where the dependent variable are; the cumulative abnormal return (CAR) from the End of the package to End + 5, 10 and 20 trading days. CAR (in percent) are calculated as the sum of the abnormal returns accruing post trade package. A trade package is a series of trades no less than 5 trading days apart. Abnormal returns are calculated as stock returns less the benchmark characteristics matched portfolio. The benchmark characteristics matched portfolio is a value weighted portfolio of stocks triply sorted along 4 market capitalization, 3 book-to-market ratio, and 2 momentum dimensions. Independent variables are partitioned into quintiles and represented as dummy variables. The benchmark quintile is the smallest quintile. Manager style is the self proclaimed investment style. We present results for Growth, and Value managers.

	Growth Managers over End to End + 10		Value Managers over End to End + 10	
	Buy	Sell	Buy	Sell
Panel A - Adjusted R-Squared				
	0.29	0.23	0.47	0.11

Panel B - Regression Coefficients

	Purchases		Sales		Purchases		Sales	
	Coefficient	*t-stat*	Coefficient	*t-stat*	Coefficient	*t-stat*	Coefficient	t-stat
Intercept	0.46	1.24	-0.23	-0.42	0.03	0.09	**-1.17**	-2.95
Stock Size Q2	0.34	1.33	**0.86**	2.07	0.36	1.57	0.03	0.12
Stock Size Q3	-0.21	-0.79	0.55	1.32	0.27	1.15	**0.67**	2.06
Stock Size Q4	0.15	0.56	0.51	1.19	0.43	1.71	0.50	1.49
Stock Size Q5	0.16	0.58	0.64	1.42	**0.73**	2.82	**0.77**	2.20
Trade Size Q2	**0.42**	2.06	0.38	1.36	**0.53**	3.05	0.05	0.24
Trade Size Q3	**0.44**	2.09	0.00	0.00	**0.98**	5.30	0.03	0.13
Trade Size Q4	0.25	1.11	-0.02	-0.06	**0.82**	4.11	0.18	0.77
Trade Size Q5	-0.14	-0.52	0.17	0.44	**0.75**	2.89	0.48	1.45
Momentum Q2	0.00	-0.02	-0.23	-0.75	-0.33	-1.65	0.14	0.63
Momentum Q3	-0.05	-0.24	**-0.80**	-2.64	-0.27	-1.38	0.08	0.39
Momentum Q4	0.04	0.19	**-0.79**	-2.51	**-0.50**	-2.52	0.05	0.25
Momentum Q5	-0.17	-0.74	**-0.89**	-2.69	**-0.57**	-2.74	-0.09	-0.39
BMRatio Q2	-0.38	-1.65	-0.05	-0.16	-0.06	-0.33	0.31	1.46
BMRatio Q3	**-0.68**	-2.88	0.24	0.73	-0.16	-0.88	0.34	1.61
BMRatio Q4	-0.37	-1.52	-0.07	-0.22	-0.11	-0.58	0.40	1.79
BMRatio Q5	**-0.54**	-2.16	-0.18	-0.52	0.09	0.44	0.33	1.41

Coefficients in bold font are statistically significant at the 5% level or better.
t-statistics are adjusted using White's (1980) heteroskedasticity consistent standard errors.



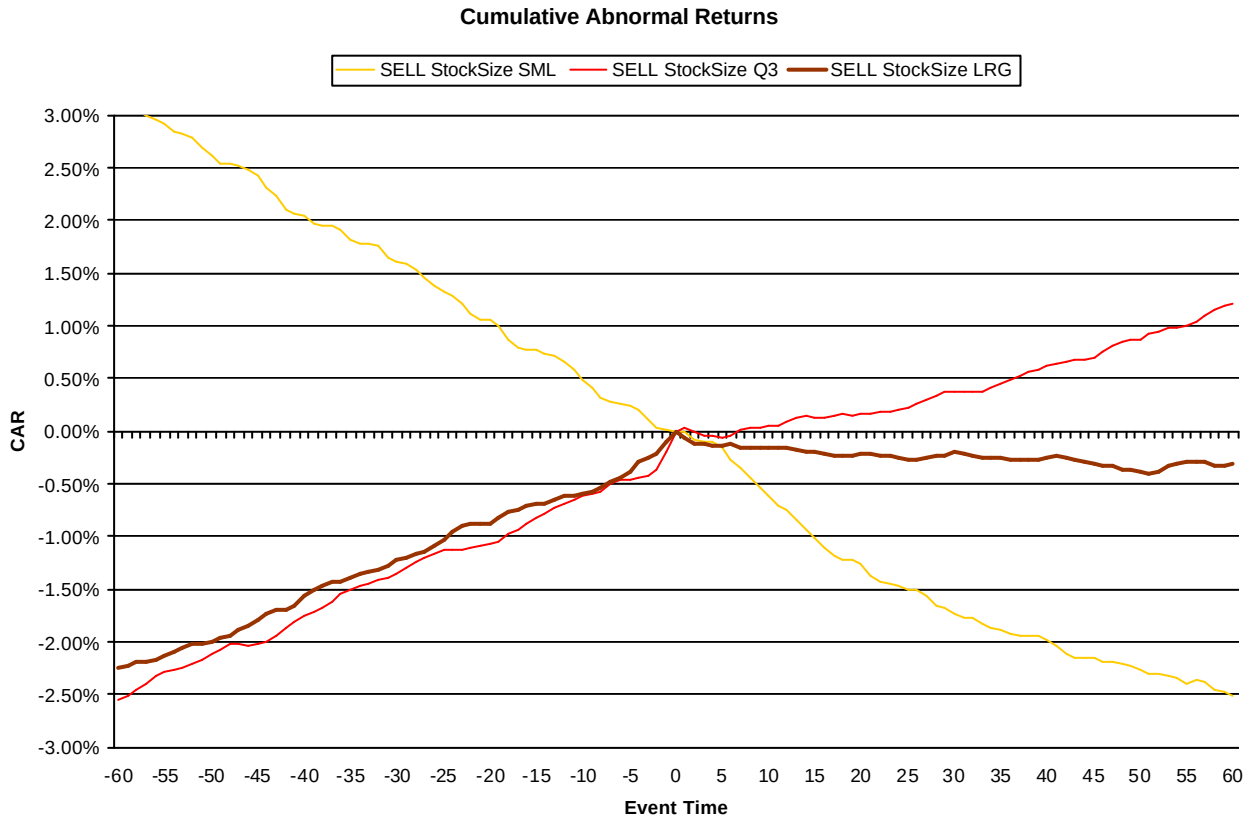
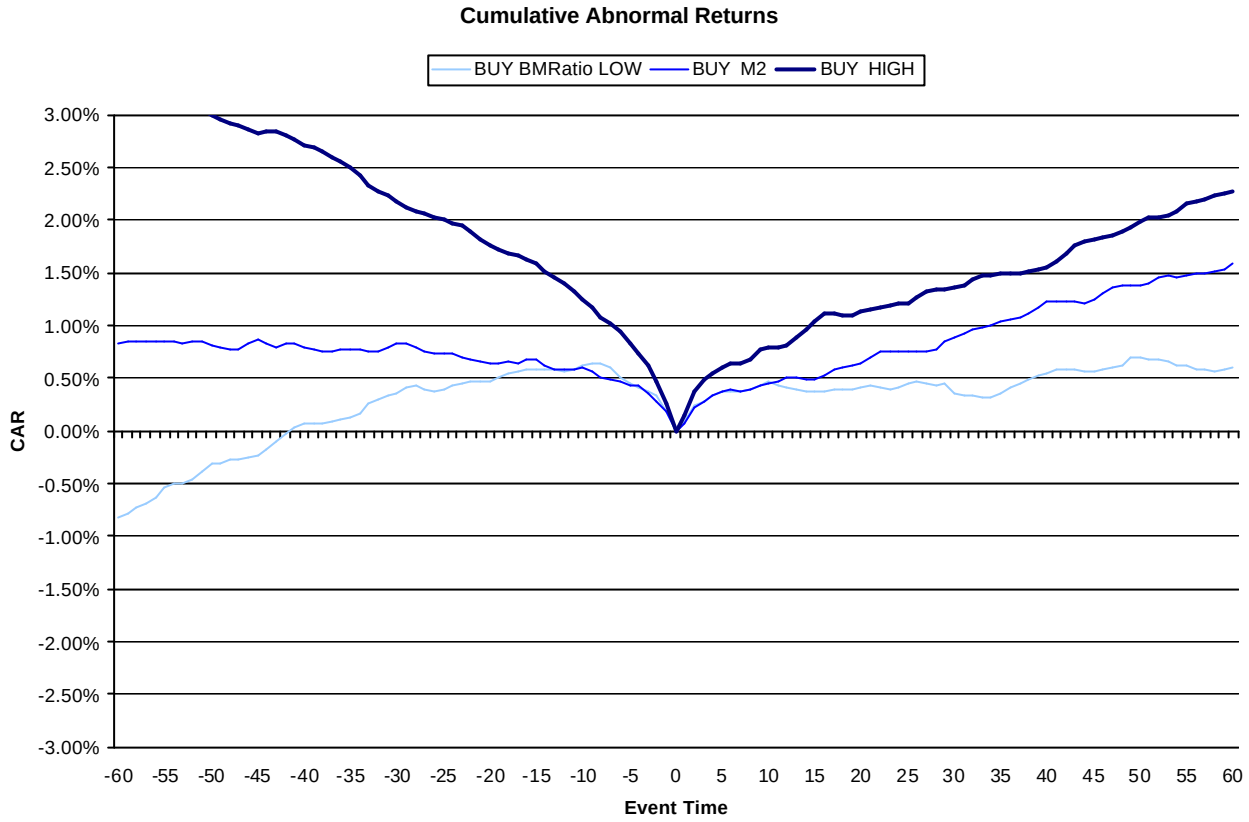


Figure 1a and 1b: Mean CAR partitioned by Stock Size. CAR is the summated abnormal returns. Abnormal returns are calculated as the difference between stock return and a benchmark portfolio matched on stock size, book-to-market ratio, and momentum (prior 6 month stock return).



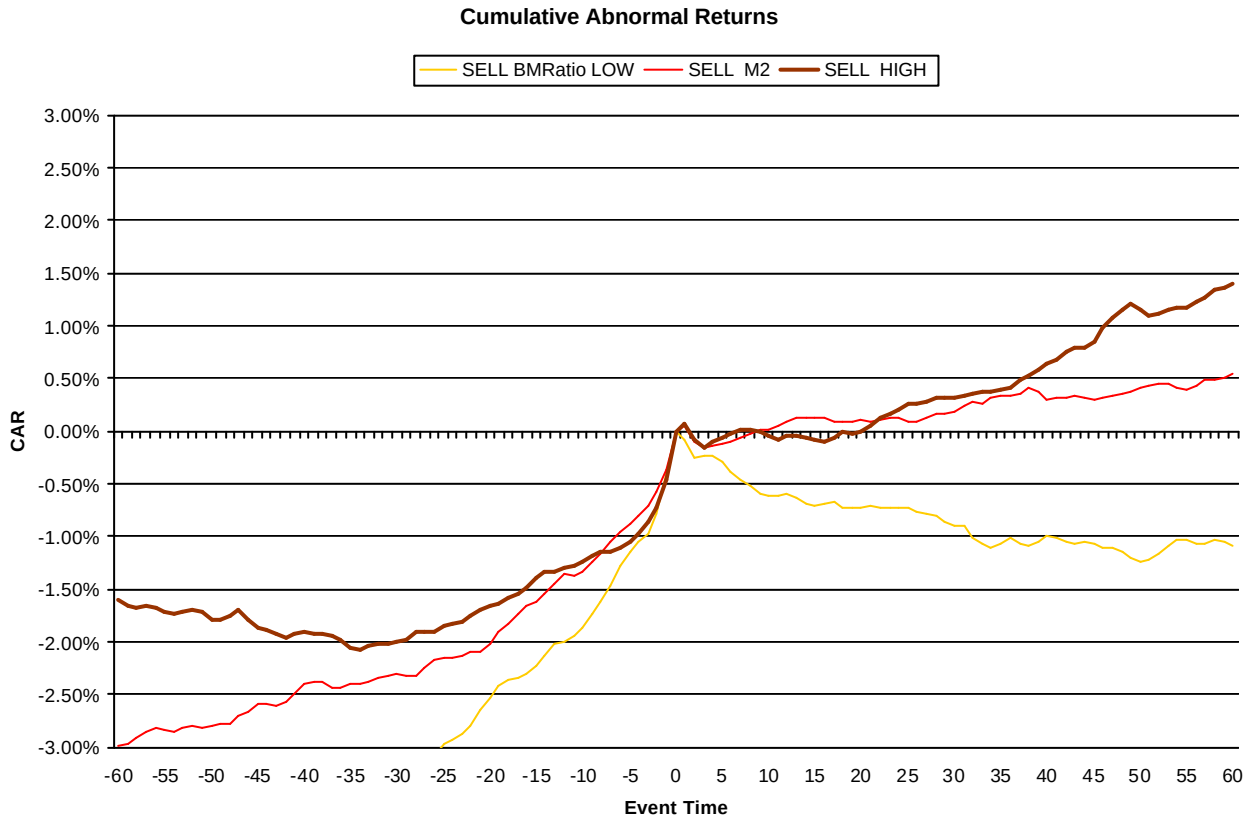
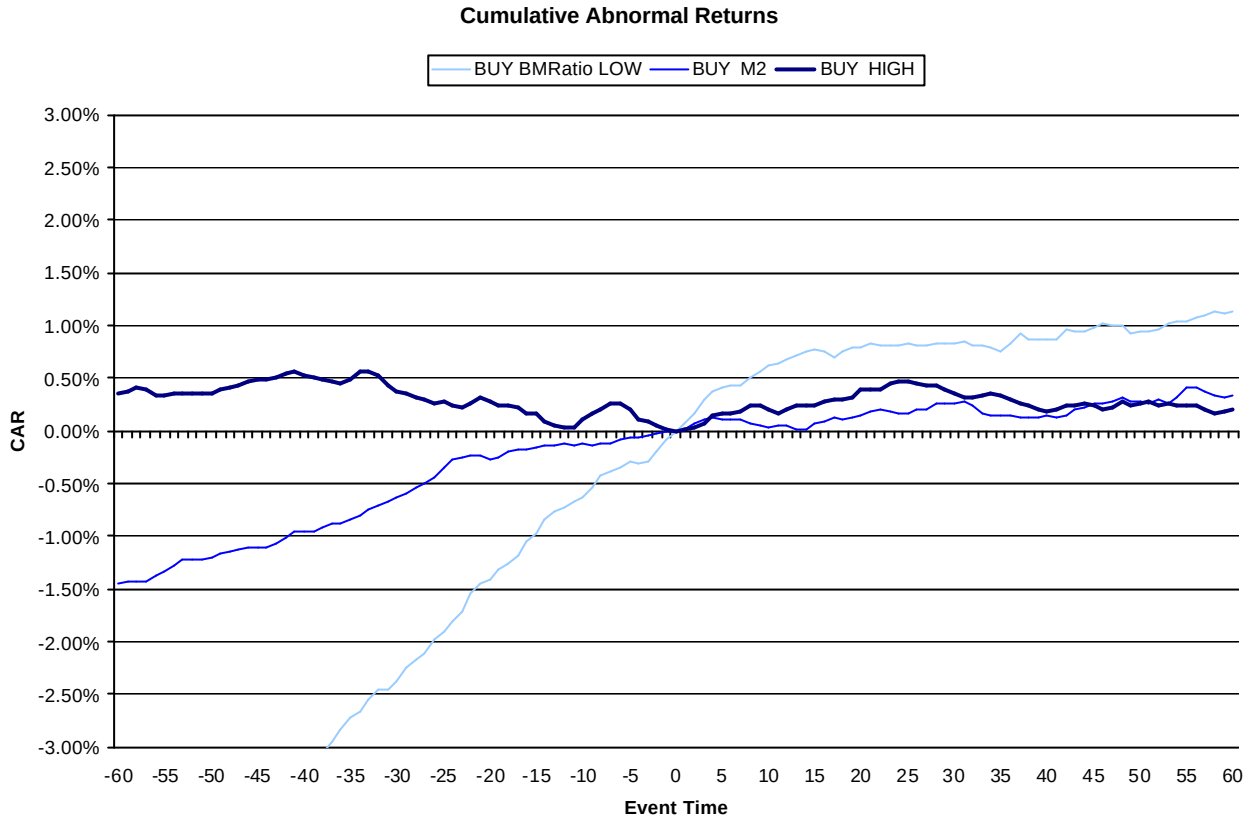


Figure 2a and 2b: Mean CAR partitioned by Book-to-market ratio (Value Managers). CAR is the summated abnormal returns. Abnormal returns are calculated as the difference between stock return and a benchmark portfolio matched on stock size, book-to-market ratio, and momentum (prior 6 month stock return).



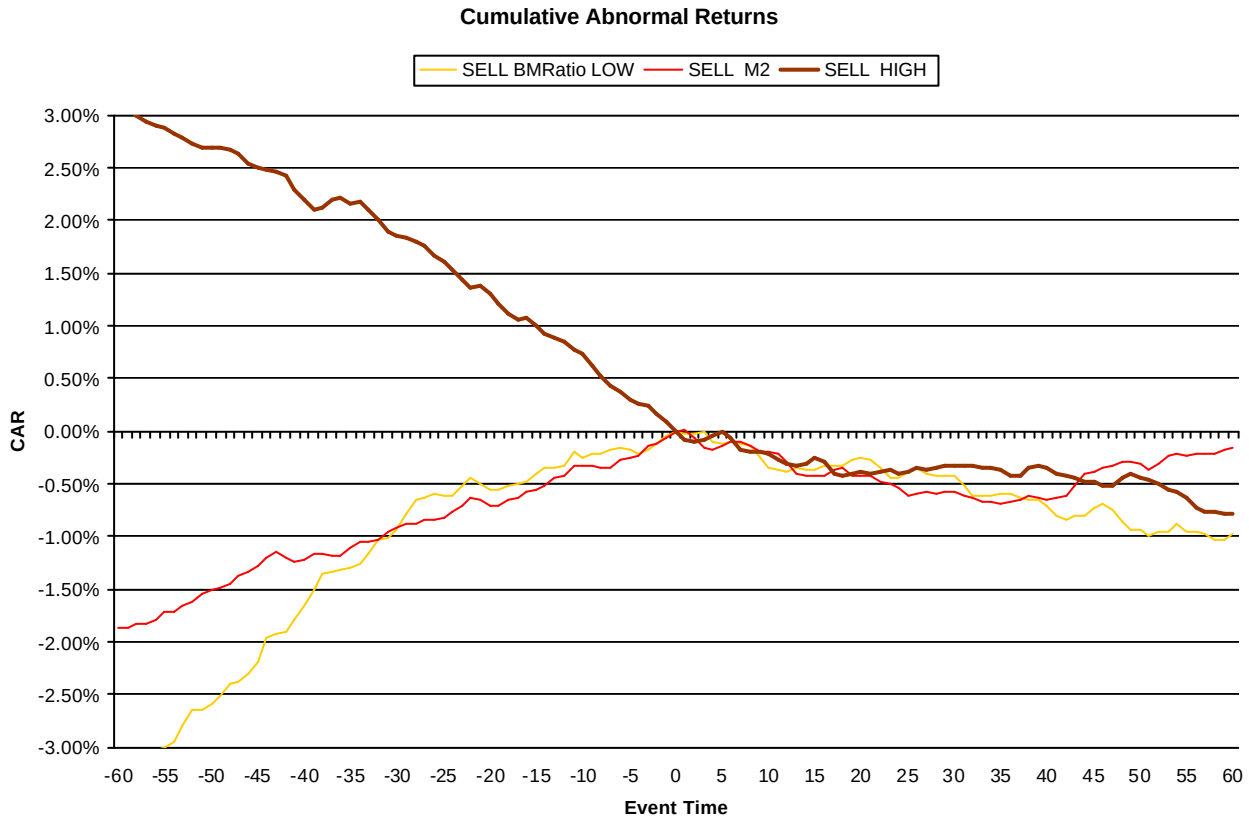
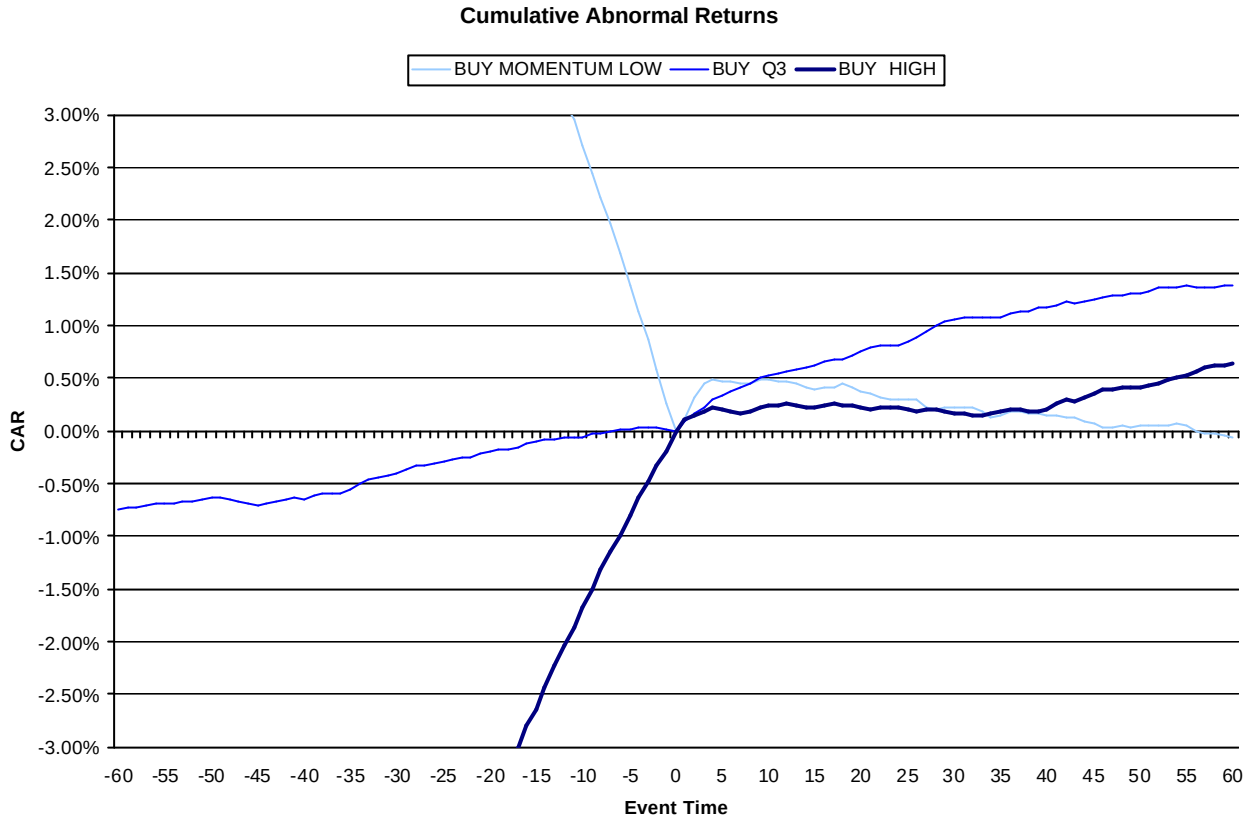


Figure 3a and 3b: Mean CAR partitioned by Book-to-market ratio (Growth Managers). CAR is the summated abnormal returns. Abnormal returns are calculated as the difference between stock return and a benchmark portfolio matched on stock size, book-to-market ratio, and momentum (prior 6 month stock return).



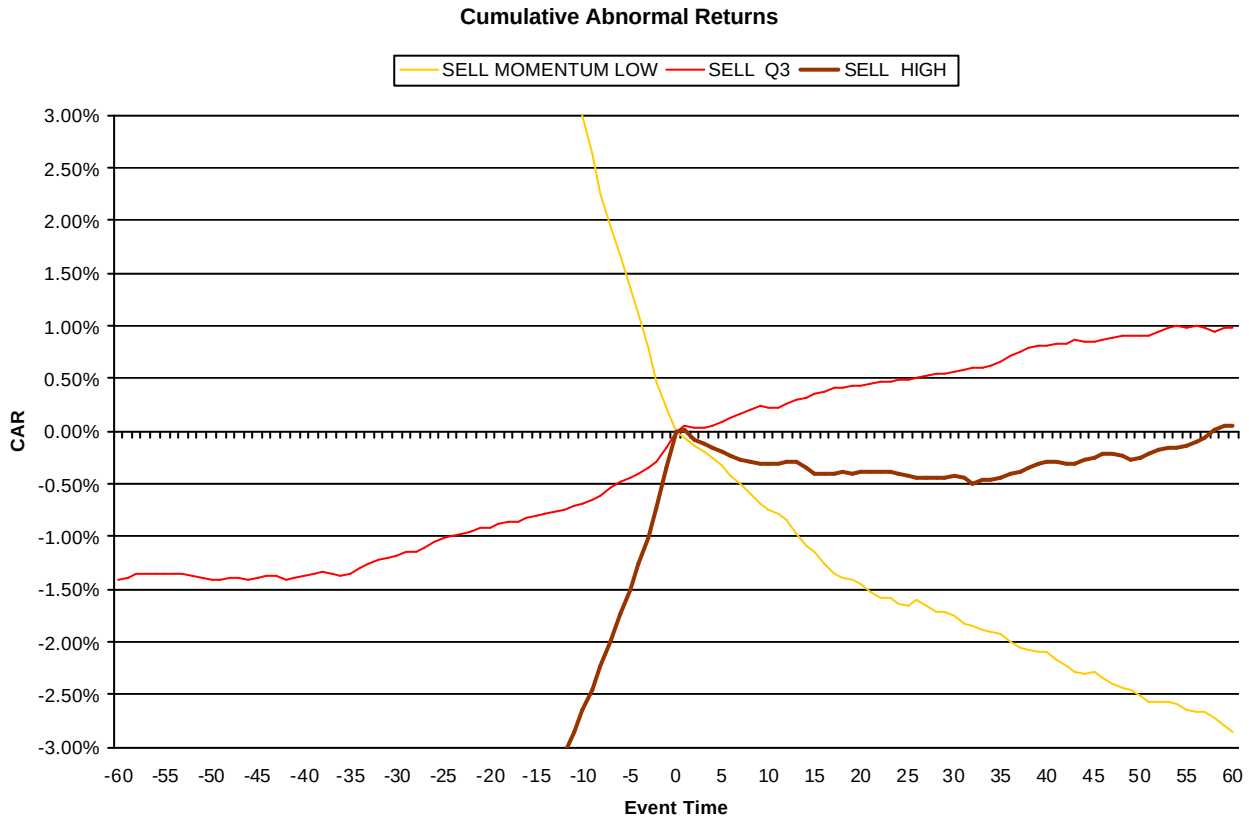
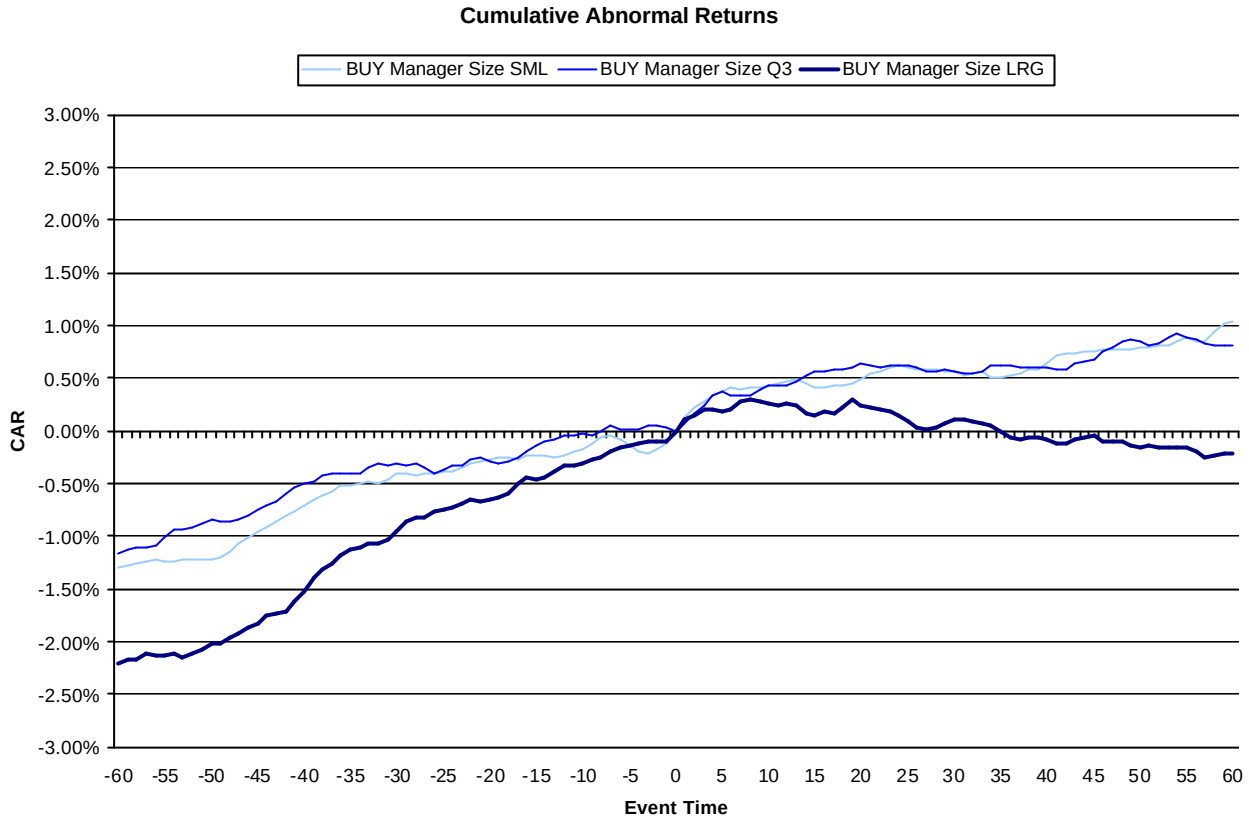


Figure 4a and 4b: Mean CAR partitioned by Momentum (prior 6 months stock return). CAR is the summated abnormal returns. Abnormal returns are calculated as the difference between stock return and a benchmark portfolio matched on stock size, book-to-market ratio, and momentum (prior 6 month stock return).



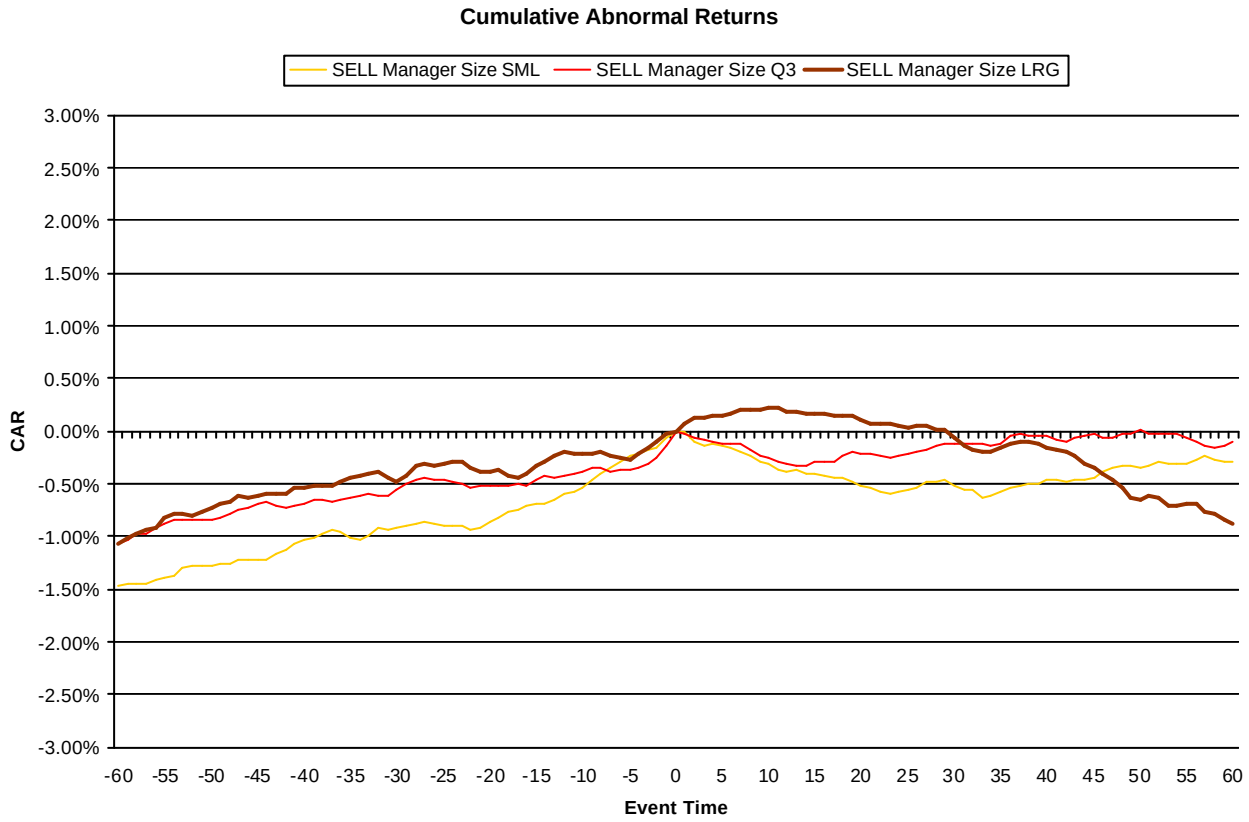


Figure 5a and 5b: Mean CAR partitioned by Manager Size. CAR is the summated abnormal returns. Abnormal returns are calculated as the difference between stock return and a benchmark portfolio matched on stock size, book-to-market ratio, and momentum (prior 6 month stock return).

Appendix

Table AI
ASX Composition

This table gives the composition of the ASX as at the 31st of December 2001 in terms of stock size rank. Market capitalization is given by (a) the ratio of firm value over the value of the entire market and (b) the market capitalization of a firm in dollar terms.

Stock Rank	1 to 20	21 to 50	51 to 100	101 to 200	201 to 300	301+
Panel A - Market Capitalisation (In Percentage Terms)						
20th Percentile	1.510	0.401	0.137	0.036	0.014	0.000
40th Percentile	1.865	0.495	0.176	0.050	0.017	0.001
60th Percentile	2.805	0.625	0.236	0.067	0.019	0.001
80th Percentile	4.300	0.903	0.272	0.086	0.024	0.004
Panel B - Market Capitalisation (In Million Dollar Value)						
20th Percentile	10,624	2,818	964	251	101	2
40th Percentile	13,121	3,484	1,242	355	116	4
60th Percentile	19,740	4,396	1,661	469	136	9
80th Percentile	30,259	6,352	1,915	606	171	25
Panel C - Mean and Standard Deviation of Market Capitalisation						
Mean Percentage of Market	3.035	0.624	0.210	0.062	0.019	0.002
Stdev Percentage of Market	2.033	0.238	0.067	0.025	0.005	0.003
Mean Market Capitalisation	21,357	4,390	1,477	434	133	14
Stdev of Market Capitalisation	14,306	1,676	468	177	34	18

Table AII
Stock Returns for Actively Traded Stocks

This table gives the mean annualised stock returns for actively traded stocks. Actively traded stocks are any stock which the manager trades in at any stage. Non-actively traded stocks are any stocks that have never been traded by the manager. The participation rate is the percentage of stocks (weighted by number of days) actively traded by the manager.

	Mean	25th Percentile	Median	75th Percentile
Panel A - Top 50 Stocks				
Traded Stocks	13.66	13.24	13.63	14.11
Non-Traded Stocks	7.85	6.55	7.60	9.00
Participation	67.72	57.14	71.00	77.71
Panel B - Stocks Ranked 51 to 100				
Traded Stocks	11.90	10.40	11.91	13.24
Non-Traded Stocks	4.94	4.12	5.53	6.18
Participation	41.72	27.11	37.43	49.44
Panel C - Stocks Ranked 101 to 200				
Traded Stocks	11.08	9.14	10.63	12.69
Non-Traded Stocks	10.34	9.86	10.25	10.67
Participation	22.64	11.94	18.19	27.93
Panel D - Stocks Ranked 201 to 300				
Traded Stocks	-0.01	-1.82	2.81	6.35
Non-Traded Stocks	8.71	8.23	8.40	9.00
Participation	10.17	3.27	6.09	9.80
Panel E - Stocks Ranked 301 to 500				
Traded Stocks	4.39	0.53	3.76	7.53
Non-Traded Stocks	8.04	7.77	7.85	8.25
Participation	4.66	1.54	2.39	5.29
Panel F - Stocks Ranked above 501				
Traded Stocks	0.76	-6.89	-2.14	9.43
Non-Traded Stocks	-6.39	-6.44	-6.38	-6.35
Participation	1.64	0.54	1.03	1.81