Institutional Investors and Information Processing Skill

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ABSTRACT

Firms that maintain business operations in multiple industries (i.e. conglomerate firms) demand high levels of information processing from investors. This study examines the ability of financial institutions to exploit return predictability in conglomerate firms in an attempt to determine whether institutional investors possess and utilize information processing skill. On average, institutional investors fail to attain significant profits in conglomerate firms and institutional trading profits are concentrated in firms that demand relatively low levels of information processing. A significant barrier to profitable institutional trading in conglomerate firms is the concentration of conglomerate firms in the institution's portfolio. When demands for institutional investor attention are high financial institutions fail to demonstrate information processing skill. This study provides insight into how attention constraints and information processing costs impact the effectiveness of institutional investor skill.

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It has been well documented that costly information processing and limited attention are challenges faced by market participants (Ben-Rephael et al., 2017; Gupta-Mukherjee and Pareek, 2015; Barinov et al., 2014; Cohen and Lou, 2012; Menzly and Ozbas, 2010; Hirshleifer et al., 2009; DellaVigna and Pollet, 2009; Barber and Odean, 2008; Cohen and Frazzini, 2008; Huang and Liu, 2007; Peng and Xiong, 2006; Hou and Moskowitz, 2005). Information processing costs impact the speed at which information is incorporated into stock prices. One particular setting in which delays in information processing are severe, leading to return predictability, is in conglomerate firms (Cohen and Lou, 2012). Corporations that maintain business operations in multiple industries (i.e. conglomerate firms) are more difficult to analyze than corporations that operate in one industry (i.e. standalone firms). Cohen and Lou (2012) find that there is a significant delay in impounding information into conglomerate firm prices in comparison to their standalone firm counterparts. According to Barinov et al. (2014), the delay in information processing also increases post earnings announcement drift for conglomerate firm stock prices. Return predictability in conglomerate firms appears to be ripe for sophisticated market participants to arbitrage the perceived mispricing. The purpose of this study is to explore whether financial institutions possess skill sufficient to rapidly process information regarding conglomerate firms and actively exploit return predictability in these firms.

Financial institutions are the focus of this study because they have widely been regarded as skilled investors (Pastor, Stambaugh and Taylor, 2014; Berk and van Binsbergen, 2014; Amihud and Goyenko, 2013; Puckett and Yan, 2011; Cremers and Petajisto, 2009; Alexander, Cici and Gibson, 2007; Kacperczyk and Seru, 2007; Kacperczyk, Sialm and Zheng, 2005; and Chen, Jegadeesh and Wermers, 2000). Recent research has shown that some financial institutions exhibit superior ability to analyze and process information (Alldredge and Puckett, 2016; Gupta-

Mukherjee and Pareek, 2015; Kacperczyk and Seru, 2007). The conglomerate firm environment presents a unique setting in which to more directly test whether institutional investors have the requisite skill to quickly process and trade on value relevant information in the presence of attention constraints. Since Cohen and Lou (2012) suggest that difficulties in information processing reduce the ability of market participants to arbitrage mispricing in conglomerate firms, it is reasonable to question whether sophisticated financial institutions are capable of profiting from the pricing delay in the conglomerate firm environment.

Using quarterly holdings from 13f filings, I test whether financial institutions are more profitable in their trading of conglomerate firm stock than they are in their trading of standalone firm stock. If financial institutions, on average, possess information processing skill then they would likely be able to accurately and speedily map revealed information into conglomerate firm stock price, which would lead to profitable trading in these firms. Following Cohen and Lou (2012), I define conglomerate firms as firms with business operations in multiple industries and standalone firms as firms with business operations in one industry. I find that, in aggregate, financial institutions obtain trading profits insignificantly different from zero when trading in conglomerate firm stock. On the other hand, financial institutions achieve significant abnormal trading profits in standalone firm stock. Specifically, a long-short calendar time portfolio that buys standalone firm stocks most heavily bought by financial institutions over the prior quarter and sells standalone firm stocks most heavily sold by financial institutions over the prior quarter attains abnormal returns of 65 basis points per month. Moreover, I find that the profitability of institutional trading decreases as the complexity of their business operations increases. These results suggest that, on average, financial institutions are unable to take advantage of the return predictability in conglomerate firms. Consistent with recent findings by Edelen, Ince and Kadlec (2016), these

results indicate that institutional investors fail to exploit another well documented asset pricing anomaly.

I also explore whether financial institutions are able to predict firm fundamentals in conglomerate firms. If financial institutions are unable to process the complicated information relevant to conglomerate firms, I would expect them to be unable to accurately forecast the future earnings of conglomerate firms. Consistent with my prior findings, I find that institutional trading predicts future earnings announcement returns for standalone firms, but fails to predict future earnings announcement returns for conglomerate firms. In aggregate, the information processing necessary to predict future earnings is not evident by institutional trading in conglomerate firms.

I propose that the lack of institutional trading profits in conglomerate firms is because of the conflict between limited manager attention and costly information gathering and processing (Gupta-Mukherjee and Pareek, 2015; Huang and Liu, 2007 and Peng and Xiong, 2006). Financial institutions could be skilled at processing information, but the demands on their attention are too high to effectively apply their information processing skill when trading in conglomerate firms. I hypothesize that financial institutions with portfolios containing a relatively high concentration of conglomerate firms (i.e. high conglomerate concentration portfolios), are less effective at utilizing their information processing skill because they are overwhelmed with the high information processing costs associated with a portfolio largely composed of conglomerate firms. I find that institutions with high conglomerate concentration portfolios are the less profitable in their trades than institutions with low conglomerate concentration portfolios. Not only are institutions with low conglomerate concentration portfolios profitable in their trades in standalone firms, but they are also profitable in their trades in conglomerate firms. Low conglomerate concentration portfolios demand lower information processing, therefore institutions with low conglomerate

concentration portfolios are able to dedicate more resources to processing information about conglomerate firms in their portfolio. On the other hand, financial institutions with high conglomerate concentration portfolios have high demands on their attention and are subsequently unable to utilize information processing skill to profitably trade in conglomerate firms or standalone firms. Though Cohen and Lou (2012) suggest that the persistence of the return predictability in conglomerate firms is due to high limits to arbitrage, these findings suggest that the anomaly persists, in part, because investors create portfolios that demand such high levels of information processing that investors are unable to allocate the necessary attention resources to the conglomerate firms in their portfolios.

This paper contributes to the finance literature in two ways. First, it is the first attempt at identifying whether market participants profit from the return predictability in conglomerate firms. Second, this paper identifies one way in which some financial institutions reduce the effects of limited attention on information processing. If institutional investors simplify their portfolios, the demands on their attention are reduced, such that they can utilize their information processing skill to profitably trade in conglomerate firms. This paper complements the recent research by Gupta-Mukherjee and Pareek (2015), Huang and Liu (2007) and Peng and Xiong (2006) that finds that limited attention impacts the portfolio selections of financial institution managers. I show that financial institution portfolio conglomerate concentration is an additional portfolio characteristic that has an impact on the ability of financial institutions to profitably trade in firms that demand high information processing effort.

The remainder of this study proceeds as follows. Section II discusses the data and sample selection for the study. Section III contains the discussion of empirical results of the study. Finally, Section IV contains a summary and conclusion of the research findings.

II. Data & Sample Selection

I attain data for this study from several sources. Compustat Segments Database provides firm sales, broken down by industry. In accordance with the Statement of Financial Accounting Standards (SFAS) No. 14 and No. 131, public companies are required to annually disclose sales from business operations in each industry. The Thomson-Reuters Institutional Holdings (13F) Database is used to extract the quarterly institutional holdings.[1] In an effort to screen out institutional managers that passively create investment portfolios, I exclude quasi-indexers, in accordance with the Bushee (2001) "quasi-indexer" classification.[2] Stock price and returns data are obtained from the Center for Research in Security Prices (CRSP) monthly dataset and financial statement data are collected from Compustat Annual.[3]

In accordance with Cohen and Lou (2012), I define complicated firms as firms with business operations in multiple industries (i.e. conglomerate firms) and easy-to-analyze firms as firms that operate in a single industry (i.e. standalone firms). Industries are classified based on the two-digit Standard Industrial Classification (SIC) code. If the industry segment sales reported in the Compustat segments dataset fail to sum up to at least 80% of the total annual sales reported in the Compustat database for any individual firm, the firm is eliminated from the sample. This screening eliminates firms that may have business operations in multiple industries, however fail to report sales from some of the industry segments.

[1] Institutional investment managers with more than $100 million in stock must disclose their holdings in the SEC Form 13F. Managers with holdings of fewer than 10,000 shares and less than $200,000 in market value are exempt from disclosing holdings.

[2] The Bushee (2001) "quasi-indexer" classification identifies institutions with low turnover in their diversified portfolios. These institutions are likely passive investors following a diversified buy-and-hold strategy.

[3] We include only common stocks (CRSP share codes 10 and 11) from NYSE, AMEX and NASDAQ. Further, to eliminate the effect of outliers we winsorize stock returns and other variables at the 1% and 99% levels.

Figure 1 shows the number of industries in which each firm operates. Sixty-nine percent of firm-quarter observations in the sample are standalone firms and 31% of firm-quarter observations represent conglomerate firms. Of the conglomerate firms, 60% of the firm-quarter observations represent conglomerate firms that operate in two industries and 26% of the firm quarter observations represent conglomerate firms that operate in three industries. The maximum number of industry segments within a firm in the sample is ten industries.

Once restricted to the corresponding institutional holdings data, stock returns and financial statement data, my sample includes 2,451 conglomerate firms and 7,751 standalone firms over the 1981 to 2012 time period. The summary statistics presented in Panel A of Table I show that the average conglomerate firm in the sample is much larger, has a higher book-to-market ratio, is older and pays higher dividends than the average standalone firm, consistent with the findings of Cohen and Lou (2012). On the other hand, standalone firms have higher share turnover and higher stock price volatility. Lastly, conglomerate firms have higher total institutional ownership than standalone firms, which suggests that, on average, financial institutions do not shy away from the high information processing demands of conglomerate firms.

The distribution of conglomerate firms and standalone firms in the portfolios of financial institutions is presented in Panel B of Table I. The average financial institution in the sample holds 231 different stocks in their equity portfolio. For the average financial institution, 47% of their equity portfolio consists of conglomerate firm stock and 53% of their portfolio consists of standalone firm stock. However, on average, financial institutions have a greater dollar value invested in each conglomerate in their portfolio than in each standalone firm in their portfolio. These summary statistics further indicate that financial institutions do not have an aversion towards conglomerate firm stock. In fact, given that there are more than twice as many standalone firms

than conglomerate firms in the universe of stocks available to financial institutions, the near parity between the percentage of conglomerate firm stock and standalone firm stock in the portfolios of financial institutions suggests a preference for conglomerate firm stocks by financial institutions.

III. Empirical Results

According to Cohen and Lou (2012) information is impounded into standalone firm stock prices more quickly than conglomerate firm stock prices, which leads to return predictability. They suggest that this return predictability is due to the high cost of processing information about conglomerate firms relative to that of standalone firms. If institutional investors exhibit sophistication in their trading and utilize trading skill, it is possible that some institutional investors are able to profit from the pricing delay evident in conglomerate firm stocks.

III.A. Do Institutional Investors Profitably Trade in Conglomerate Firms?

The first method for testing the profitability of institutional trading in conglomerate and standalone firms is through a calendar time portfolio methodology. I look at monthly abnormal returns (months t+1, t+2 and t+3) following quarterly changes in institutional holdings ending in month t. At the end of month t, stocks are sorted into decile portfolios based on aggregate changes in institutional holdings over months t-2, t-1 and t. A zero-cost long-short portfolio is also created to simulate purchasing the decile of stocks most heavily purchased by institutions and selling the decile of stocks most heavily sold by institutions. Then the portfolio monthly abnormal percentage returns are observed over months t+1, t+2 and t+3. I partition the sample into conglomerate firms and standalone firms and run the analysis independently for the two subsamples.

Three abnormal return measures are calculated on an equal weighted and value weighted basis. Excess returns are measured as the raw return less the risk free rate. The three-factor returns

are the alphas from regressing excess returns on Fama and French (1993) market, size and book-to-market risk factors. DGTW benchmark adjusted returns are calculated by subtracting DGTW benchmarks from the raw returns for the stocks within each of the benchmark portfolios. The DGTW benchmarks are characteristic-based benchmarks established by dividing all firms into 125 portfolios based on size, book-to-market and momentum quintiles (Daniel, Grinblatt, Titman and Wermers, 1997; Wermers, 2004).

Table II documents the results from the calendar time portfolio analysis that attempts to mimic institutional trading from the prior quarter in conglomerate and standalone firms and identify subsequent trading profits. The long-short portfolio equal weighted monthly excess returns following institutional trading in conglomerate firms are 0.181% (p-value=0.144) per month. In contrast, the corresponding portfolio returns following institutional trading in standalone firms are 0.653% (p-value=0.000) per month.[4] These results indicate that institutional trading profits are concentrated in standalone firms and institutions are unable to attain statistically significant trading profits in conglomerate firms.

Though the contrast between institutional trading profits in conglomerate firms and standalone firms is consistent with financial institutions being unable to process complex information about conglomerate firms, there could potentially be an endogenous variable that is highly correlated with conglomerate firms that is driving the result. To address this endogeneity concern I create pseudo-conglomerate firms that represent portfolios of standalone firms weighted according to conglomerate firms' industry segment participation. Institutional trading in pseudo-conglomerate firms serves as a counterfactual to institutional trading in conglomerate firms. If

[4] The 0.47% difference between the long-short portfolio equal weighted excess return of institutional trading in conglomerate firms and standalone firms is statistically significant (p-value=0.014).

institutional traders profitably trade in pseudo-conglomerate firms then the failure to profitably trade in conglomerate firms is driven by the difficulty to process information from firms that maintain business operations in multiple industries.

Table III presents pseudo-conglomerate abnormal returns following changes in institutional holdings. I incorporate the same calendar time portfolio methodology used in Table II, with the exception that I observe institutional trading in pseudo-conglomerate firms as opposed to conglomerate firms. The long-short portfolio equal weighted excess returns are 0.302% (p-value=0.016) per month.[5] These results show that institutional traders obtain trading profits in pseudo-conglomerate firms, therefore the poor institutional trading profits in conglomerate firms documented in Table II are a function of the challenge financial institutions face processing information related to firms that have business operations across industries.

If the high costs of information processing in conglomerate firms is hindering financial institutions from profitably trading in these firms, then the level of complexity of the conglomerate firm should directly impact the trading profits of financial institutions. To further explore whether trading profits are a function of the complexity of the conglomerate firms, I analyze institutional trading profits in conglomerates of varying levels of industry segment participation. I partition conglomerate firms into three groups: 1) conglomerates with business operations in two industries 2) conglomerates with business operations in three industries and 3) conglomerates with operations in more than three industries. I run the calendar time portfolio analysis for each of these three groups of conglomerate firms.

[5] The 0.35% difference between the long-short portfolio equal weighted excess return of institutional trading in pseudo-conglomerate firms and standalone firms is statistically significant (p-value=0.068).

Table IV presents the institutional trading profits in conglomerate firms, sorted by number of industry segments. The long/short portfolio equal weighted excess return for institutional trading in conglomerates with business operations in two industries is 0.257% (p-value=0.090). Long/short portfolio excess returns for institutional trading in conglomerates with operations in three industries and greater than three industries are -0.021% (p-value=0.906) and -0.177% (p-value=0.465), respectively. If the number of industry segments of the conglomerate firm is a proxy for the level of complexity of the firm, then the results in Table IV indicate that institutions are less profitable in their trading in firms that have higher levels of complexity.

I continue the analysis by incorporating Fama-MacBeth style regressions into the study, which provides an opportunity to control for other determinants of institutional trading. Table V reports cross-sectional regressions of quarterly buy-and-hold abnormal returns (months t+1 to t+3) on quarterly changes in institutional holdings (months t-2 to t). The benchmark for the buy-and-hold abnormal return is the equal weighted NYSE/AMEX/Nasdaq CRSP market return. Using this multivariate methodology I control for the following determinants of institutional trading: *Short Momentum* is the cumulative abnormal return over the prior quarter. *Long Momentum* is the cumulative abnormal return over the prior year excluding the prior quarter. *Size* is the log of the market capitalization at the end of the fiscal year. *B/M* is the book to market ratio, in which the book value is calculated for the prior fiscal year and the market value is calculated as of prior calendar year end. *Dividend Yield* is the cash dividend for the prior fiscal year divided by the market capitalization as of the prior calendar year end. *Price* is the stock price. *Turnover* is total trading volume divided by shares outstanding. *Age* is the number of months since the firm is listed in CRSP. *Volatility* is the variance of monthly returns over the previous two years. *S&P 500* is an indicator equal to one if the firm is a member of the S&P 500 and zero otherwise.

Table V reports the results from the cross-sectional regression tests. In Column 3 of Panel A I document that a 1% increase in institutional holdings in conglomerate firms yields an insignificant 0.82% (p-value=0.607) three-month abnormal return. On the other hand, in Column 4 of Panel A I find a 1% increase in institutional holdings in standalone firms yields a significant 7.33% (p-value=0.000) three-month abnormal return. The negative and significant coefficient (p-value=0.000) on the interaction term *Change*Conglomerate* in Column 2 of Panel A indicates that institutional trading profits in standalone firms are significantly higher than institutional trading profits in conglomerate firms. These results are consistent with the findings from the calendar time portfolio tests. In aggregate, financial institutions are more profitable in their trading in easy-to-analyze firms than they are in relatively more complicated firms.

Panel B of Table V extends the buy-and-hold abnormal return analysis for conglomerate firms and standalone firms over a twelve-month horizon. Following a 1% increase in institutional ownership at conglomerate firms there is an insignificant 6.26% (p-value=0.117) twelve-month abnormal return and following a 1% increase in institutional ownership at standalone firms there is a 16.4% (p-value=0.000) twelve-month abnormal return. Over the twelve-month horizon, the difference between institutional trading profits in conglomerate firms and standalone firms becomes slightly less pronounced. These results suggest that, in aggregate, financial institutions are unable to profit from the short-lived return predictability of conglomerate firms, but the profitability of trading in conglomerate firms somewhat improves over a longer horizon.

If the trading profits generated by institutional trading in standalone firms are due to the ease in which financial institutions can digest financial information about standalone firms relative to conglomerate firms, I would expect that financial institutions would be better able to forecast firm fundamentals in standalone firms than in conglomerate firms. To investigate this proposition

I empirically test whether institutional trading predicts subsequent earnings announcement returns for standalone firms and conglomerate firms. Table VI documents quarterly cross-sectional multivariate regressions of earnings announcement abnormal returns following quarterly changes in institutional holdings. The dependent variable in this regression analysis is the three-day cumulative abnormal return (CAR) around the quarterly earnings announcement and the variable of interest is *Change*, the quarterly percentage change in institutional holdings in the stock in the quarter preceding the earnings announcement. The three-day CAR is calculated by subtracting the equal weighted NYSE/AMEX/Nasdaq CRSP market return from the daily stock return and summing over days t-1 to t+1 where day t is the earnings announcement date. In Column 3 of Table VI the insignificant 0.010 coefficient for *Change* (p-value=0.210) suggests that institutional trading in conglomerate firms does not predict future earnings announcement responses. On the other hand, in Column 4 of Table VI the significant 0.029 coefficient for *Change* (p-value=0.000) indicates that a quarterly increase in institutional ownership of 1% yields a 2.9% earnings announcement return. These results support the hypothesis that financial institutions are unable to forecast the earnings of conglomerate firms, but they excel at forecasting the earnings of standalone firms.

The ability of financial institutions to quickly process complicated information about firm fundamentals is not evident to this point in the study. Instead, the results suggest that financial institutions attain economically large trading profits in standalone firms, which demand less costly information processing. Further, the institutional trading profits in standalone firms are a function of financial institutions' ability to forecast future earnings.

III.B. Institutional Trading in Conglomerate Firms and Portfolio Composition

The composition of financial institution portfolios could have an impact on institutional trading profits in conglomerate firms. Potentially, the poor performance of institutional trading in conglomerate firms is a result of the conflict between investor's limited attention and the high cost of information gathering and processing. Prior research by Gupta-Mukherjee and Pareek (2015), Huang and Liu (2007) and Peng and Xiong (2006) finds that limited attention impacts investors' portfolio selections. Gupta-Mukherjee and Pareek (2016) suggest that mutual fund managers that have large active positions in stocks that demand greater information gathering effort have better future performance. It is possible that managers at financial institutions are skilled at processing information, however they are too busy to effectively use their information processing skill when trading in conglomerate firms. I posit that institutions with simple portfolios, containing a high concentration of standalone firms as opposed to conglomerate firms, are more effective at utilizing information processing skill because the simple portfolios require less attention and information processing.

I explore whether the complexity of the financial institution portfolio, as measured by conglomerate concentration of their portfolio, impacts their ability to profitably trade in conglomerate firms and standalone firms. Each quarter, I divide financial institutions into quartiles based on the conglomerate concentration of their portfolios. Conglomerate concentration is measured as the ratio of the quantity of conglomerate firms in the financial institution's portfolio divided by the total number of firms in the portfolio. Institutions with the highest conglomerate concentration are in Quartile 4 and institutions with the lowest conglomerate concentration are in Quartile 1.

Results from calendar time portfolio analysis of institutional trading by institutions with varying levels of conglomerate concentration are presented in Table VII. Institutional trading by institutions with the lowest conglomerate concentration is a better predictor of future returns than institutional trading by institutions with the highest conglomerate concentration. The long-short calendar time portfolio monthly returns based on institutional trading by institutions with the lowest conglomerate concentration portfolios is a significant 0.490% (p-value=0.000). On the other hand, the long-short calendar time portfolio monthly returns based on institutional trading by institutions with the highest conglomerate concentration portfolios is an insignificant -0.001% (p-value=0.973).[6] According to these findings, the proportion of an institution's portfolio represented by conglomerate firms has a direct impact on the return predictability of the institution's trading. Financial institutions with a high concentration of conglomerate firms in their portfolios are faced with high demands on information processing and attention. Institutional trading by institutions with low demands on their attention and information processing are better able to predict future returns than institutional trading by institutions with high demands on their attention and information processing.

Table VIII presents the results from cross-sectional regression tests of institutional trading by institutions with varying levels of conglomerate concentration. Panel A of Table VIII shows that institutional trading profits are monotonically decreasing in conglomerate concentration. Financial institutions with the lowest conglomerate concentration portfolios (Quartile 1) have quarterly abnormal returns of 11.2% (p-value=0.000) following a quarterly change in institutional holdings of 1% at all firms. In contrast, financial institutions with the highest conglomerate

[6] The 0.49% difference between the long-short portfolio equal weighted excess return of institutional trading by institutions with the lowest conglomerate concentration portfolios and institutions with the highest conglomerate concentration portfolios is statistically significant (p-value=0.000).

concentration portfolios (Quartile 4) have quarterly abnormal returns of -10.3% following a quarterly change in institutional holdings of 1% at all firms, which is 21.5% *(*p-value=0.000) lower than Quartile 1 financial institution trading profits. These results suggest that conglomerate concentration is a significant determinant of institutional trading profitability. Financial institutions that maintain portfolios with high demands on information processing effort drastically underperform financial institutions that maintain portfolios with relatively low demands on information processing effort.

Next, I observe how conglomerate concentration impacts institutional trading profits in conglomerate firms and standalone firms, independently. At conglomerate firms financial institutions with the lowest conglomerate concentration portfolios (Quartile 1) have quarterly abnormal returns of 10.1% (p-value=0.018) following a 1% increase in institutional ownership and financial institutions with the highest conglomerate concentration portfolios (Quartile 4) have quarterly abnormal returns of -13.8% following a 1% increase in institutional ownership, which is 23.9% (p-value=0.000) lower than Quartile 1 financial institution trading profits. At standalone firms financial institutions with the lowest conglomerate concentration portfolios have quarterly abnormal returns of 12.5% (p-value=0.000) following a 1% increase in institutional ownership and financial institutions with the highest conglomerate concentration portfolios have quarterly abnormal returns of -4.3% following a 1% increase in institutional ownership, which is 16.8% (p-value=0.026) lower than Quartile 1 financial institution trading profits. These results indicate that financial institutions with low conglomerate concentration portfolios not only profitably trade in standalone firms, but they also profitably trade in conglomerate firms. Institutions that hold a small number of positions in conglomerate firms relative to standalone firms are subject to less attention demand by their portfolio. Therefore, institutions with simple portfolios are able to utilize their

information processing skill to profitably trade in conglomerate firms and standalone firms. In contrast, institutions with a large number of conglomerate firms relative to standalone firms in their portfolio are overcome by the great demands of their attention and are less able to profitably trade in any of the firms in their portfolio.

As a matter of robustness, I test institutional trading at conglomerate firms and standalone firms using an alternative measure of conglomerate concentration. I sort financial institutions into quartiles based on the dollar value of the institution's portfolio invested in conglomerate firms relative to the total dollar value of the institution's portfolio. I calculate the aggregate change in institutional holdings in each quarter for each quartile. In a cross-sectional regression framework I explore whether the change in institutional holdings from each of the quartiles has an impact on future returns.

According to results presented in Panel B of Table VIII the profitability of trading by institutions with low conglomerate concentration portfolios is robust to the dollar value measure of conglomerate concentration. Institutions with the lowest conglomerate concentration portfolios (Quartile 1) achieve significant abnormal returns in their trades in conglomerate firms, standalone firms and the sample of all firms, and institutions with the highest conglomerate concentration portfolios (Quartile 4) attain significantly smaller abnormal returns than Quartile 1 financial institutions. These results indicate that conglomerate concentration of financial institution portfolios greatly increases the cost of information gathering and processing for the institutional manager. High conglomerate concentration portfolios stretch the cognitive resources of institutional investors, which limits their ability to profitably trade in stocks. The results are consistent with institutional traders possessing trading skill, however their ability to effectively

use their skill is contingent on maintaining portfolios simple enough to ease the demands on their attention such that they can effectively implement their information processing skill.

Lastly, I investigate which types of institutions have portfolios with high conglomerate concentration. Table IX presents OLS regression output from a test of conglomerate concentration as a function of other institution characteristics. This analysis is performed at the institution-quarter level. Two measures of conglomerate concentration are incorporated into this analysis (*CC1* and *CC2*). *CC1* represents conglomerate concentration measured as the ratio of the number of conglomerate firms in the portfolio divided by the total number of firms in the portfolio. *CC2* represents conglomerate concentration measured as the dollar value invested in conglomerate firms divided by the total dollar value of the portfolio. The dependent variables are as follows: *ICI*, is the industry concentration index according to Kacperczyk, Sialm and Zheng (2005). *Institution Size*, is the log of the total dollar value of the institution portfolio. *Institution Age*, is the log of the number of months since the institution was recorded in Thomson Reuters 13f database. *Transient,* is an indicator equal to one if the institution is classified as a "transient" investor according to Bushee (2001) and zero otherwise.[7]

The results in Table IX show that all of the dependent variables significantly impact the conglomerate concentration measures. The negative and significant coefficient on *ICI* (coefficient=-0.245; p-value=0.000) indicates that institutions with higher industry concentration have lower conglomerate concentration. The negative and significant coefficient on *Institution Age* (coefficient=-0.0076; p-value=0.000) indicates that older financial institutions have a lower conglomerate concentration of their portfolios than younger financial institutions. The negative

[7] The transient classification reflects institutions that have diversified, high turnover portfolios. These characteristics represent institutions that actively manage portfolios based on anticipated changes in short-term performance.

and significant coefficient on *Transient* (coefficient=-0.015; p-value=0.000) suggests that institutions with a higher turnover in their portfolio are more likely to have a lower conglomerate concentration portfolio. Larger institutions have a lower ratio of the number of conglomerates in their portfolio relative to the number of firms in their portfolio, however, they have a higher ratio of the dollar value of conglomerate holdings in their portfolio relative to the total dollar value of their portfolio. These results suggest that older, more transient institutions with higher industry concentration are likely to have lower conglomerate concentration. High turnover institution and high industry concentration firms likely benefit from the efficiencies gained by having low conglomerate concentration portfolios (Yan and Zhang, 2007 and Kacperczyk, Sialm and Zheng, 2005).

IV. Conclusion

It has been documented that high information gathering and processing costs leads to return predictability in conglomerate firms (Cohen and Lou, 2012). I use the conglomerate firm environment to explore whether financial institutions, which are often characterized as skilled investors, exhibit a particular type of skill – the ability to rapidly process and trade on complicated information. I find that, in aggregate, financial institutions do not profitably trade in conglomerate firm stock, but their trading profits are concentrated in standalone firms. The lack of profitable trading in conglomerate firms is a function of the composition of financial institutions' portfolios. Institutions that have portfolios with a high concentration of conglomerate firms are unable to profitably trade in conglomerate firms, while institutions that have portfolios with a low concentration of conglomerate firms are able to profitably trade in standalone firms and conglomerate firms.

These findings provide unique and direct evidence suggesting that attention scarcity limits investors' ability to process information. Institutions with high conglomerate concentration portfolios are attention constrained and unable to allocate the necessary attention to the conglomerate firms in their portfolios to effectively utilize their information processing skill, which hinders investment performance. On the other hand, institutions with low conglomerate concentration portfolios experience a lower attention demand and are able to allocate more attention to the limited number of conglomerate firms in their portfolio which benefits investment performance.

Cohen and Lou (2012) argue that the persistence of the return predictability in complicated firms is a result of high limits to arbitrage, however this study suggests that the anomaly persists, in part, because some investors are subject to high demands on their attention which hinders their ability to utilize their information processing skill and profitably trade in complicated firms. These results provide insight into how attention constraints and information processing costs impact the effectiveness of institutional investor skill.

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Figure 1: Number of industry segments per firm

This figure illustrates the number of industry segments in which each firm operates. Standalone firms operate in one industry and conglomerate firms operate in multiple industries. Following Cohen and Lou (2012) an industry is defined based on two-digit Standard Industrial Classification (SIC) codes.

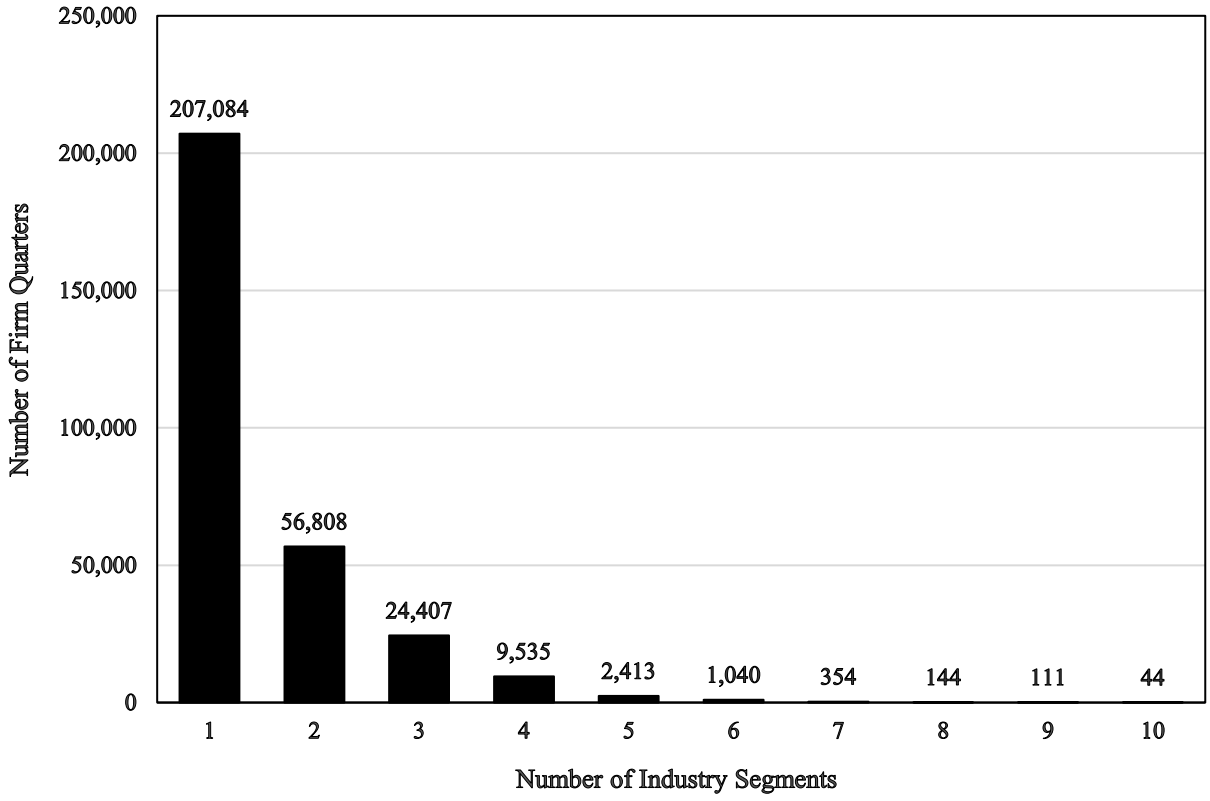

Table I: Univariate statistics

This table shows summary statistics for the conglomerate firms and standalone firms used in the study. Conglomerate firms operate in multiple industries (two-digit SIC code) and standalone firms operate in a single industry. Panel A presents firm characteristics for conglomerate firms and standalone firms. The sample consists of all firm-year observations between 1981 and 2012 with non-zero institutional ownership, excluding quasi-indexer institutions. Panel B shows the institution portfolio summary statistics for all financial institutions included in the study. *Size* is the market capitalization at the end of the fiscal year. *B/M* is the book to market ratio, in which the book value is calculated for the prior fiscal year and the market value is calculated as of prior calendar year end. *Total IO* is the aggregate institutional ownership at the end of the prior fiscal year. *Dividend yield* is the cash dividend for the prior fiscal year divided by the market capitalization as of the prior calendar year end. *Price* is the stock price. *Turnover* is total trading volume divided by shares outstanding. *Age* is the number of months since the firm is listed in CRSP. *Volatility* is the variance of monthly returns over the previous two years. The difference between the average conglomerate firm and the average standalone firm is presented, where the statistical significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively. In Panel B

Panel A: Firm Characteristics

	Conglomerate Firms	Standalone Firms	Difference Conglomerates-Standalone Firms
Size ($millions)	3672	1964	1708***
B/M	0.495	0.501	-0.006***
Total IO (%)	50.24	50.92	-0.68***
Dividend yield (%)	3.96	2.45	1.52***
Stock price	32.60	24.98	7.62***
Turnover (%)	11.37	15.87	-4.50***
Age (months)	182.2	131.6	50.6***
Volatility (%)	10.78	13.57	2.79***
Number of firm years	25,045	55,941	

Panel B: Portfolio Distribution

	Mean	Median	Standard Deviation	5%	95%
Conglomerates in Portfolio (% of Firms)	38.7	38.2	17.0	8.7	64.8
Conglomerates in Portfolio (% of Dollars)	42.2	43.4	21.4	1.2	75.6
Number of Firms in Portfolio	220.2	91.0	359.3	4.0	898.0

Table II: Conglomerate and standalone firm abnormal returns following change in institutional holdings

This table contains calendar time portfolio monthly abnormal percentage returns following changes in institutional holdings. At the beginning of each quarter, stocks are sorted into decile portfolios based on aggregate institutional trading over the prior quarter. Then the portfolio monthly abnormal percentage returns are observed over the subsequent quarter. The analysis in Panel A reflects institutional trading at conglomerate firms and the analysis in Panel B reflects institutional trading at standalone firms. The returns are measured using excess returns, Fama French three-factor returns and DGTW benchmark adjusted returns. Excess returns are calculated as the raw return less the risk-free rate. The three-factor returns are the alphas from regressing excess returns on Fama and French (1993) market, size and book-to-market risk factors. DGTW benchmark adjusted returns are calculated by subtracting DGTW benchmarks from the returns for the stocks within each of the benchmark portfolios. The DGTW benchmarks are characteristic-based benchmarks established by dividing all firms into 125 portfolios based on size, book-to-market and momentum quintiles (Daniel, Grinblatt, Titman and Wermers, 1997; Wermers, 2004). L/S is the abnormal return from a zero-cost portfolio that buys the stocks in the top decile (decile 10) and sells short the stocks in the bottom decile (decile 1). P-values for the L/S portfolio are in parentheses, and significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively.

Panel A: Conglomerate Firms

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.544	-0.296	-0.097	0.475	-0.232	-0.068
2	0.587	-0.216	-0.081	0.454	-0.213	-0.187
3	0.653	-0.131	-0.036	0.580	-0.027	-0.024
4	0.675	-0.043	-0.037	0.686	0.125	0.084
5	0.494	-0.225	-0.189	0.538	0.022	-0.039
6	0.572	-0.163	-0.125	0.522	-0.056	-0.075
7	0.662	-0.081	0.007	0.563	0.013	0.048
8	0.677	-0.085	-0.015	0.579	-0.061	-0.020
9	0.588	-0.203	-0.121	0.706	0.043	0.115
10 (high)	0.725	-0.073	0.011	0.773	0.088	0.126
L/S	0.181	0.223*	0.108	0.297	0.320*	0.194
P-value	(0.144)	(0.076)	(0.319)	(0.114)	(0.098)	(0.225)

Panel B: Standalone Firms

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.175	-0.569	-0.329	0.217	-0.415	-0.325
2	0.416	-0.315	-0.138	0.366	-0.149	-0.048
3	0.436	-0.260	-0.143	0.568	0.052	0.027
4	0.407	-0.290	-0.198	0.371	-0.079	-0.137
5	0.456	-0.229	-0.167	0.502	0.061	0.023
6	0.603	-0.115	-0.001	0.565	0.094	0.011
7	0.618	-0.086	0.008	0.674	0.156	0.092
8	0.632	-0.093	0.011	0.615	0.044	-0.024
9	0.631	-0.114	0.017	0.723	0.181	0.046
10 (high)	0.828	0.100	0.170	0.854	0.167	0.211
L/S	0.653***	0.669***	0.498***	0.638***	0.582***	0.535***
P-value	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)	(0.001)

Table III: Pseudo-conglomerate abnormal returns following change in institutional holdings

This table contains calendar time portfolio monthly pseudo-conglomerate abnormal percentage returns, following changes in institutional trading. A pseudo-conglomerate consists of a portfolio of standalone firms weighted according to the conglomerate firm's industry segment participation. At the beginning of each quarter, pseudo-conglomerates are sorted into decile portfolios based on aggregate institutional trading over the prior quarter. Then, the portfolio monthly pseudo-conglomerate abnormal percentage returns are observed over the subsequent quarter. The returns are measured using excess returns, Fama French three-factor returns and DGTW benchmark adjusted returns. Excess returns are calculated as the raw return less the risk-free rate. The three-factor returns are the alphas from regressing excess returns on Fama and French (1993) market, size and book-to-market risk factors. DGTW benchmark adjusted returns are calculated by subtracting DGTW benchmarks from the returns for the stocks within each of the benchmark portfolios. The DGTW benchmarks are characteristic-based benchmarks established by dividing all firms into 125 portfolios based on size, book-to-market and momentum quintiles (Daniel, Grinblatt, Titman and Wermers, 1997; Wermers, 2004). L/S is the abnormal return from a zero-cost portfolio that buys the stocks in the top decile (decile 10) and sells short the stocks in the bottom decile (decile 1). P-values for the L/S portfolio are in parentheses, and significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively.

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.578	-0.008	-0.129	0.605	0.030	-0.096
2	0.635	0.062	-0.080	0.690	0.125	-0.048
3	0.630	0.054	-0.046	0.597	0.038	-0.098
4	0.603	0.02	-0.065	0.567	-0.012	-0.094
5	0.664	0.071	-0.008	0.614	0.019	-0.068
6	0.705	0.120	0.007	0.654	0.073	-0.040
7	0.762	0.188	0.044	0.730	0.168	0.014
8	0.721	0.145	0.007	0.714	0.149	0.006
9	0.793	0.230	0.088	0.898	0.370	0.173
10 (high)	0.880	0.314	0.148	0.885	0.333	0.130
L/S	0.302**	0.322***	0.277**	0.281*	0.303*	0.227
P-value	(0.016)	(0.009)	(0.042)	(0.081)	(0.058)	(0.175)

Table IV: Conglomerate firm abnormal returns by quantity of industry segments

This table contains calendar time portfolio monthly conglomerate abnormal percentage returns, following changes in institutional trading. Panel A contains results for conglomerates that operate in two industries. Panel B contains results for conglomerates that operate in three industries, and Panel C contains results for institutional trading in conglomerates operating in more than three industries. The abnormal returns are measured using excess returns, Fama French three-factor returns and DGTW benchmark adjusted returns. Excess returns are calculated as the raw return less the risk-free rate. The three-factor returns are the alphas from regressing excess returns on Fama and French (1993) market, size and book-to-market risk factors. DGTW benchmark adjusted returns are calculated by subtracting DGTW benchmarks from the returns for the stocks within each of the benchmark portfolios. The DGTW benchmarks are characteristic-based benchmarks established by dividing all firms into 125 portfolios based on size, book-to-market and momentum quintiles (Daniel, Grinblatt, Titman and Wermers, 1997; Wermers, 2004). L/S is the abnormal return from a zero-cost portfolio that buys the stocks in the top decile (decile 10) and sells short the stocks in the bottom decile (decile 1). P-values for the L/S portfolio are in parentheses, and significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively.

Panel A: Two Industries

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.443	-0.411	-0.176	0.351	-0.363	-0.190
2	0.571	-0.232	-0.108	0.638	0.026	-0.090
3	0.574	-0.230	-0.108	0.465	-0.141	-0.156
4	0.743	0.008	0.039	0.573	0.019	0.065
5	0.476	-0.245	-0.202	0.413	-0.096	-0.125
6	0.562	-0.184	-0.148	0.625	0.050	-0.001
7	0.724	-0.024	0.037	0.753	0.199	0.137
8	0.627	-0.128	-0.085	0.541	-0.048	-0.073
9	0.474	-0.295	-0.236	0.729	0.100	0.051
10 (high)	0.700	-0.100	-0.004	0.797	0.102	0.146
L/S	0.257*	0.311**	0.172	0.446**	0.465**	0.336
P-value	(0.090)	(0.045)	(0.223)	(0.039)	(0.036)	(0.102)

Panel B: Three Industries

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.708	-0.108	0.076	0.433	-0.315	-0.082
2	0.697	-0.090	0.033	0.781	0.070	0.232
3	0.774	0.041	0.074	0.835	0.169	0.188
4	0.629	-0.051	-0.087	0.654	0.027	0.050
5	0.549	-0.138	-0.136	0.624	0.137	-0.025
6	0.656	-0.026	-0.004	0.611	0.011	0.009
7	0.639	-0.083	0.031	0.449	-0.111	0.016
8	0.689	-0.054	0.062	0.801	0.123	0.224
9	0.924	0.215	0.224	0.826	0.171	0.265
10 (high)	0.687	-0.172	-0.029	0.840	0.042	0.216
L/S	-0.021	-0.064	-0.105	0.407	0.357	0.298
P-value	(0.906)	(0.733)	(0.551)	(0.128)	(0.193)	(0.228)

Panel C: Greater than Three Industries

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.75	-0.161	0.060	0.788	0.032	0.104
2	0.77	-0.005	0.114	0.471	-0.311	-0.122
3	0.538	-0.232	-0.134	0.761	0.099	-0.011
4	0.553	-0.104	-0.134	0.479	-0.183	-0.094
5	0.715	0.034	-0.026	0.694	0.116	0.057
6	0.609	-0.197	-0.063	0.360	-0.300	-0.168
7	0.694	-0.043	-0.066	0.820	0.205	0.057
8	0.603	-0.183	0.025	0.089	-0.643	-0.383
9	0.623	-0.181	-0.137	0.806	-0.033	0.180
10 (high)	0.573	-0.247	-0.151	0.619	-0.150	-0.224
L/S	-0.177	-0.087	-0.212	-0.170	-0.182	-0.328
P-value	(0.465)	(0.726)	(0.364)	(0.638)	(0.622)	(0.324)

Table V: Multivariate test of institutional trading at conglomerate and standalone firms

This table shows Fama-MacBeth regressions of buy-and-hold abnormal returns (BHAR) following quarterly changes in institutional holdings (months t-2 to t). In Panel A the buy-and-hold abnormal returns span one quarter (months t+1 to t+3), and in Panel B the buy-and-hold abnormal returns span four quarter (months t+1 to t+12). Cross-section regressions are run for each quarter from Q1 of 1981 to Q4 of 2012. *Change* represents the quarterly percentage change in institutional holdings in the stock. *Conglomerate* is an indicator equal to one if the firm is a conglomerate and equal to zero if the firm is a standalone. *Short Momentum* is the abnormal return over the prior quarter. *Long Momentum* is the abnormal return over the prior year excluding the prior quarter. *Size* is the log of the market capitalization at the end of the prior fiscal year. *B/M* is the book to market ratio, in which the book value is calculated for the prior fiscal year and the market value is calculated as of prior calendar year end. *Dividend Yield* is the cash dividend for the prior fiscal year divided by the market capitalization as of the prior calendar year end. *Price* is the stock price. *Turnover* is total trading volume divided by shares outstanding. *Age* is the number of months since the firm is listed in CRSP. *Volatility* is the variance of monthly returns over the previous two years. *S&P 500* is an indicator equal to one if the firm is a member of the S&P 500 and zero otherwise. P-values are in parentheses and significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively.

Panel A: Subsequent Quarter BHAR				
	All Firms	All Firms	Conglomerates	Standalone Firms
	(1)	(2)	(3)	(4)
Change	0.0501***	0.0778***	0.0082	0.0733***
	(0.000)	(0.000)	(0.607)	(0.000)
*Change*Conglomerate*		-0.0775***		
		(0.000)		
Conglomerate		-0.0015		
		(0.366)		
B/M	0.0025**	0.0026**	0.0015	0.0032***
	(0.019)	(0.011)	(0.115)	(0.004)
Turnover	-0.0643***	-0.0657***	-0.0731***	-0.0745***
	(0.001)	(0.001)	(0.001)	(0.001)
Short Momentum	0.0055	0.0049	-0.0109	0.0120
	(0.538)	(0.578)	(0.317)	(0.177)
Long Momentum	0.0249***	0.0245***	0.0221***	0.0268***
	(0.000)	(0.000)	(0.004)	(0.000)
Age	0.0035*	0.0038**	0.0037*	0.0036*
	(0.057)	(0.041)	(0.086)	(0.068)
Volatility	-0.138***	-0.138***	-0.1250***	-0.1340***
	(0.002)	(0.002)	(0.009)	(0.006)
Price	-0.0003	-0.0002	0.0012	-0.0008
	(0.902)	(0.945)	(0.655)	(0.755)
S&P 500	0.0013	0.0014	0.0046*	-0.0006
	(0.543)	(0.483)	(0.055)	(0.764)
Size	-0.0011	-0.0010	-0.0026**	0.0000
	(0.321)	(0.353)	(0.033)	(0.970)
Dividend Yield	-0.0236	-0.0266	0.0084	-0.0411
	(0.360)	(0.295)	(0.713)	(0.158)
Constant	0.0015	0.0002	0.0044	-0.0031
	(0.902)	(0.989)	(0.755)	(0.820)
Observations	301,940	301,940	94,856	207,084
R-squared	0.096	0.098	0.101	0.103

Panel B: Subsequent Year BHAR				
	All Firms	All Firms	Conglomerates	Standalone Firms
	(1)	(2)	(3)	(4)
Change	0.124***	0.171***	0.0626	0.164***
	(0.000)	(0.000)	(0.117)	(0.000)
*Change*Conglomerate*		-0.113**		
		(0.027)		
Conglomerate		-0.0071		
		(0.210)		
B/M	0.0070**	0.0076**	0.0059*	0.0085**
	(0.048)	(0.029)	(0.072)	(0.016)
Turnover	-0.2300***	-0.240***	-0.319***	-0.245***
	(0.000)	(0.000)	(0.000)	(0.001)
Short Momentum	0.0920***	0.0902***	0.0605**	0.109***
	(0.000)	(0.000)	(0.021)	(0.000)
Long Momentum	0.0361**	0.0352**	0.0288	0.0437***
	(0.023)	(0.024)	(0.124)	(0.007)
Age	0.0141***	0.0155***	0.0115**	0.0158***
	(0.001)	(0.000)	(0.043)	(0.001)
Volatility	-0.3920***	-0.391***	-0.420***	-0.338**
	(0.002)	(0.0018)	(0.0018)	(0.019)
Price	0.0041	0.0050	0.0074	0.0033
	(0.641)	(0.576)	(0.380)	(0.735)
S&P 500	0.0063	0.0070	0.0193**	-0.0012
	(0.371)	(0.315)	(0.013)	(0.872)
Size	-0.0014	-0.0010	-0.0066	0.0029
	(0.735)	(0.799)	(0.129)	(0.447)
Dividend Yield	-0.0210	-0.0337	0.0363	-0.0375
	(0.806)	(0.690)	(0.648)	(0.679)
Constant	-0.0658*	-0.0726*	-0.0279	-0.0982**
	(0.099)	(0.067)	(0.560)	(0.014)
Observations	301,940	301,940	94,856	207,084
R-squared	0.089	0.091	0.093	0.098

Table VI: Market response to earnings announcement following institutional trading

This table shows Fama-MacBeth regressions of three-day earnings announcement abnormal returns following quarterly changes in institutional holdings. Cross-section regressions are run for each quarter from Q1 of 1981 to Q4 of 2012. *Change* represents the quarterly percentage change in institutional holdings in the stock. *Conglomerate* is an indicator equal to one if the firm is a conglomerate and equal to zero if the firm is a standalone. *Short Momentum* is the abnormal return over the prior quarter. *Long Momentum* is the abnormal return over the prior year excluding the prior quarter. *Size* is the log of the market capitalization at the end of the prior fiscal year. *B/M* is the book to market ratio, in which the book value is calculated for the prior fiscal year and the market value is calculated as of prior calendar year end. *Dividend Yield* is the cash dividend for the prior fiscal year divided by the market capitalization as of the prior calendar year end. *Price* is the stock price. *Turnover* is total trading volume divided by shares outstanding. *Age* is the number of months since the firm is listed in CRSP. *Volatility* is the variance of monthly returns over the previous two years. *S&P 500* is an indicator equal to one if the firm is a member of the S&P 500 and zero otherwise. P-values are in parentheses and significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively.

	All Firms	All Firms	Conglomerates	Standalone Firms
	(1)	(2)	(3)	(4)
Change	0.0243***	0.0286***	0.0102	0.0286***
	(0.000)	(0.000)	(0.210)	(0.000)
*Change*Conglomerate*		-0.0183**		
		(0.021)		
Conglomerate		-0.0005		
		(0.273)		
B/M	0.0013**	0.00144***	0.0014***	0.0014*
	(0.013)	(0.006)	(0.005)	(0.078)
Turnover	-0.0090**	-0.0094**	-0.0117*	-0.0120**
	(0.029)	(0.021)	(0.091)	(0.021)
Short Momentum	0.0025	0.0025	0.0029	0.0028
	(0.163)	(0.162)	(0.290)	(0.177)
Long Momentum	0.0036***	0.0036***	0.0028**	0.0038***
	(0.000)	(0.000)	(0.026)	(0.001)
Age	0.0002	0.0003	0.0000	0.0003
	(0.511)	(0.412)	(0.915)	(0.326)
Volatility	-0.0184***	-0.0185***	-0.0029	-0.0188**
	(0.008)	(0.008)	(0.776)	(0.028)
Price	0.0018**	0.0018**	0.0011	0.0019**
	(0.012)	(0.011)	(0.187)	(0.011)
S&P 500	-0.0013**	-0.0012**	0.0000	-0.0016**
	(0.035)	(0.047)	(0.962)	(0.041)
Size	0.0003	0.0004	0.0000	0.0005*
	(0.163)	(0.149)	(0.905)	(0.080)
Dividend Yield	-0.0432***	-0.043***	-0.0432***	-0.0431***
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-0.0054**	-0.00569**	-0.0025	-0.0072**
	(0.034)	(0.029)	(0.574)	(0.017)
Observations	198,809	198,809	58,815	139,994
R-squared	0.018	0.020	0.036	0.023

Table VII: Institutional trading and conglomerate concentration

This table contains calendar time portfolio monthly abnormal percentage returns following changes in institutional holdings. For each quarter, institutions are partitioned into quartiles based on the conglomerate concentration of their portfolios (*Quartile 1, Quartile 2, Quartile 3* and *Quartile 4*). Institutions with the highest conglomerate concentration are in *Quartile 4* and institutions with the lowest conglomerate concentration are in *Quartile 1*. Conglomerate concentration is measured as the ratio of the number of conglomerate firms in the portfolio divided by the total number of firms in the portfolio. At the beginning of each quarter, stocks are sorted into decile portfolios based on institutional trading over the prior quarter. Then, the decile portfolio monthly abnormal percentage returns are observed over the subsequent quarter. The analysis in Panel A includes institutional trading by institutions with the lowest quartile of conglomerate concentration (*Quartile 1*). The results in Panel B and Panel C reflect institutional trading by the middle two quartiles of conglomerate concentration (*Quartile 2* institutions and *Quartile 3* institutions). The analysis in Panel D includes institutional trading by institutions with the highest quartile of conglomerate concentration (*Quartile 4*). The returns are measured using excess returns, Fama French three-factor returns and DGTW benchmark adjusted returns. Excess returns are calculated as the raw return less the risk-free rate. The three-factor returns are the alphas from regressing excess returns on Fama and French (1993) market, size and book-to-market risk factors. DGTW benchmark adjusted returns are calculated by subtracting DGTW benchmarks from the returns for the stocks within each of the benchmark portfolios. The DGTW benchmarks are characteristic-based benchmarks established by dividing all firms into 125 portfolios based on size, book-to-market and momentum quintiles (Daniel, Grinblatt, Titman and Wermers, 1997; Wermers, 2004). L/S is the abnormal return from a zero-cost portfolio that buys the stocks in the top decile (decile 10) and sells short the stocks in the bottom decile (decile 1). P-values for the L/S portfolio are in parentheses, and significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively.

Panel A: Institutional trading by institutions with lowest conglomerate concentration (Quartile 1)

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.244	-0.486	-0.290	0.256	-0.393	-0.254
2	0.405	-0.346	-0.156	0.442	-0.126	-0.041
3	0.459	-0.281	-0.157	0.453	-0.112	-0.085
4	0.448	-0.280	-0.199	0.507	-0.023	-0.062
5	0.451	-0.232	-0.167	0.558	0.077	0.006
6	0.572	-0.143	-0.074	0.517	0.009	-0.079
7	0.646	-0.108	-0.031	0.684	0.132	0.054
8	0.726	-0.032	0.066	0.599	-0.032	-0.030
9	0.711	-0.064	0.075	0.633	-0.008	0.078
10 (high)	0.734	0.004	0.108	0.711	0.031	0.100
L/S	0.490***	0.491***	0.398***	0.455***	0.424***	0.354***
P-value	(0.000)	(0.000)	(0.000)	(0.003)	(0.006)	(0.006)

Panel B: Institutional trading by institutions in Quartile 2

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.431	-0.353	-0.138	0.470	-0.210	-0.121
2	0.481	-0.284	-0.114	0.461	-0.134	-0.050
3	0.479	-0.270	-0.142	0.499	-0.040	-0.065
4	0.486	-0.237	-0.151	0.571	0.045	-0.014
5	0.457	-0.232	-0.168	0.468	-0.018	-0.035
6	0.515	-0.186	-0.146	0.616	0.116	0.031
7	0.653	-0.065	-0.003	0.596	0.042	0.008
8	0.674	-0.061	0.055	0.631	0.033	0.084
9	0.582	-0.175	-0.035	0.602	0.015	0.007
10 (high)	0.644	-0.117	-0.012	0.645	-0.060	0.043
L/S	0.214*	0.236**	0.126	0.175	0.151	0.164
P-value	(0.057)	(0.038)	(0.192)	(0.205)	(0.285)	(0.175)

Panel C: Institutional trading by institutions in Quartile 3

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.536	-0.276	-0.078	0.531	-0.155	-0.032
2	0.490	-0.271	-0.167	0.430	-0.163	-0.051
3	0.502	-0.225	-0.131	0.520	-0.006	-0.026
4	0.451	-0.250	-0.146	0.508	0.046	-0.025
5	0.354	-0.338	-0.246	0.433	-0.118	-0.071
6	0.440	-0.263	-0.120	0.391	-0.061	-0.052
7	0.651	-0.055	0.025	0.561	0.069	-0.074
8	0.649	-0.089	0.001	0.727	0.158	0.109
9	0.775	0.013	0.103	0.721	0.128	0.136
10 (high)	0.664	-0.127	-0.003	0.631	-0.066	0.019
L/S	0.128**	0.149**	0.075	0.100	0.089	0.051
P-value	(0.037)	(0.017)	(0.201)	(0.364)	(0.429)	(0.601)

Panel D: Institutional trading by institutions with highest conglomerate concentration (Quartile 4)

	Equal Weighted Returns			Value Weighted Returns		
Decile	Excess Returns	3 Factor Returns	DGTW Returns	Excess Returns	3 Factor Returns	DGTW Returns
1 (low)	0.704	-0.110	0.022	0.539	-0.112	-0.028
2	0.569	-0.165	-0.070	0.541	0.017	-0.034
3	0.556	-0.121	-0.050	0.269	-0.204	-0.169
4	0.798	0.138	0.006	0.888	0.387	0.152
5	0.374	-0.503	-0.295	0.356	-0.428	-0.246
6	0.456	-0.146	0.098	0.504	-0.073	0.135
7	0.778	-0.062	0.002	0.585	-0.018	-0.040
8	0.604	-0.096	-0.007	0.541	0.087	0.023
9	0.711	-0.013	0.048	0.752	0.217	0.123
10 (high)	0.703	-0.112	0.015	0.641	-0.033	0.022
L/S	-0.001	-0.002	-0.008	0.102	0.079	0.049
P-value	(0.988)	(0.973)	(0.892)	(0.280)	(0.414)	(0.551)

Table VIII: Multivariate test of institutional trading and conglomerate concentration

This table shows Fama-MacBeth regressions of quarterly DGTW benchmark adjusted supplier returns (months t+1 to t+3) following quarterly changes in institutional holdings (months t-2 to t). Cross-section regressions are run for each quarter from Q1 of 1981 to Q4 of 2012. For each firm quarter, institutions are partitioned into quartiles based on the conglomerate concentration of their portfolios and institutional trading by these institutions is represented by *Quartile 1 Change, Quartile 2 Change, Quartile 3 Change* and *Quartile 4 Change*. Institutional trading by institutions with the highest conglomerate concentration are represented in *Quartile 4 Change* and institutional trading by institutions with the lowest conglomerate concentration are represented in *Quartile 1 Change*. *All Inst Change* represents the quarterly percentage change in aggregate institutional holdings in the firm quarter. Two measures of portfolio complexity are used in this table. In Panel A conglomerate concentration is measured as the ratio of the number of conglomerate firms in the portfolio divided by the total number of firms in the portfolio. In Panel B conglomerate concentration is measured as the dollar value invested in conglomerate firms divided by the total dollar value of the portfolio. See Table III for control variable definitions. P-values are in parentheses and significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively.

Panel A: Conglomerate concentration quartiles based on number of conglomerate firms in portfolio

	All Firms	Conglomerate Firms	Standalone Firms
	(1)	(2)	(3)
All Inst Change	0.112***	0.101**	0.125***
	(0.000)	(0.0183)	(9.73e-05)
Quartile 2 Change	-0.0573*	-0.0816*	-0.0504
	(0.078)	(0.0637)	(0.249)
Quartile 3 Change	-0.0873***	-0.106**	-0.0751*
	(0.005)	(0.0426)	(0.0538)
Quartile 4 Change	-0.215***	-0.239***	-0.168**
	(0.000)	(0.000236)	(0.0261)
B/M	0.00247**	0.00158	0.00321***
	(0.0190)	(0.114)	(0.00370)
Turnover	-0.0640***	-0.0689***	-0.0722***
	(0.00137)	(0.00111)	(0.00123)
Short Momentum	0.00382	-0.0126	0.0105
	(0.673)	(0.252)	(0.241)
Long Momentum	0.0246***	0.0216***	0.0267***
	(0.000125)	(0.00522)	(2.79e-05)
Age	0.00363**	0.00396*	0.00360*
	(0.0496)	(0.0672)	(0.0729)
Volatility	-0.138***	-0.126***	-0.136***
	(0.00181)	(0.00878)	(0.00560)
Price	-0.000255	0.00122	-0.000846
	(0.922)	(0.650)	(0.767)
S&P 500	0.00121	0.00452*	-0.000781
	(0.555)	(0.0597)	(0.718)
Size	-0.00105	-0.00252**	0.000104
	(0.342)	(0.0381)	(0.923)
Dividend Yield	-0.0242	0.00779	-0.0425
	(0.347)	(0.733)	(0.145)
Constant	0.000714	0.00260	-0.00333
	(0.954)	(0.854)	(0.812)
Observations	301,940	94,856	207,084
R-squared	0.098	0.105	0.106

Panel B: Conglomerate concentration quartiles based on dollar value of conglomerate stock in portfolio			
	All Firms	Conglomerate Firms	Standalone Firms
	(1)	(2)	(3)
All Inst Change	0.145***	0.118**	0.167***
	(1.88e-05)	(0.0294)	(1.79e-06)
Quartile 2 Change	-0.0498	-0.101	-0.0477
	(0.166)	(0.101)	(0.229)
Quartile 3 Change	-0.124***	-0.103*	-0.167***
	(0.00169)	(0.0920)	(0.000225)
Quartile 4 Change	-0.173***	-0.179***	-0.150**
	(5.95e-06)	(0.00545)	(0.0205)
B/M	0.00251**	0.00157	0.00332***
	(0.0177)	(0.116)	(0.00272)
Turnover	-0.0648***	-0.0696***	-0.0721***
	(0.00130)	(0.000996)	(0.00163)
Short Momentum	0.00366	-0.0130	0.0107
	(0.685)	(0.234)	(0.232)
Long Momentum	0.0246***	0.0216***	0.0267***
	(0.000127)	(0.00518)	(2.70e-05)
Age	0.00359*	0.00379*	0.00369*
	(0.0520)	(0.0763)	(0.0656)
Volatility	-0.138***	-0.126***	-0.135***
	(0.00174)	(0.00881)	(0.00570)
Price	-0.000290	0.00116	-0.000777
	(0.911)	(0.665)	(0.786)
S&P 500	0.00122	0.00450*	-0.000974
	(0.549)	(0.0604)	(0.649)
Size	-0.00100	-0.00250**	0.000144
	(0.364)	(0.0405)	(0.894)
Dividend Yield	-0.0230	0.00795	-0.0405
	(0.374)	(0.728)	(0.159)
Constant	0.000594	0.00363	-0.00452
	(0.962)	(0.797)	(0.745)
Observations	301,940	94,856	207,084
R-squared	0.098	0.107	0.107

Table IX: Determinants of conglomerate concentration

This table shows OLS regressions of conglomerate concentration as a function of financial institution characteristics. The dependent variables are the two measures of conglomerate concentration (*CC1* and *CC2*). *CC1* represents conglomerate concentration measured as the ratio of the number of conglomerate firms in the portfolio divided by the total number of firms in the portfolio. *CC2* represents conglomerate concentration measured as the dollar value invested in conglomerate firms divided by the total dollar value of the portfolio. *ICI* is the industry concentration index from Kacperczyk, Sialm and Zheng (2005). *Institution Size* is the log of the dollar value of the institution portfolio holdings. *Institution Age* is the log of the number of months since the institution has reported holdings according to Thomson Reuters 13f database. *Transient* is an indicator equal to one for all "transient" institutions according to the Bushee (2001) classification. P-values are in parentheses and significance at the 1%, 5%, and 10% level are indicated by ***, **, and *, respectively.

	CC1	*CC2*
	(1)	(2)
ICI	-0.245***	-0.296***
	(0.000)	(0.000)
Institution Size	-0.0071***	0.0020***
	(0.000)	(0.000)
Institution Age	-0.0076***	-0.0080***
	(0.000)	(0.000)
Transient	-0.0149***	-0.0059***
	(0.000)	(0.000)
Constant	0.584***	0.446***
	(0.000)	(0.000)
Observations	91,649	91,649
R-squared	0.073	0.066