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**The investment abilities of mutual
fund buy-side analysts**

G. Cici • C. Rosenfeld

centre for financial research
Look deeper

The Investment Abilities of Mutual Fund Buy-Side Analysts [✧]

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ABSTRACT

We investigate the abilities of buy-side analysts by analyzing nontraditional mutual funds that are exclusively managed by in-house analysts rather than traditional portfolio managers. Analysts exhibit stronger general and job-specific investment abilities than traditional managers from within and outside the fund family. Using holdings of analyst-run funds as a proxy for the analysts' best ideas, we document that more-skilled portfolio managers rely on analysts' ideas from the same family to a lesser extent than less-skilled managers. We find that analysts' abilities matter in that they are positively related to the future performance of other funds within the same family.

Keywords: Mutual Funds, Buy-Side Analysts, Performance Valuation

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1. Introduction

Analysts employed by mutual fund families (i.e., buy-side analysts) provide an important service to the mutual fund management process. Their job is to generate investment recommendations for their affiliated mutual fund managers to consider when making investment decisions. Buy-side analysts thus potentially have a direct impact on the portfolio decisions and performance of the mutual funds that they support, yet we know very little about their abilities and the role that their research plays in their respective fund families.

Previous studies have been unable to directly evaluate the abilities of the analysts employed by mutual fund families for obvious reasons. For one, the investment recommendations and research generated by buy-side analysts are proprietary and not released to the public. Further, the most pertinent data that are available are at the level of fund returns. However, since mutual fund returns reflect both the investment decisions of the fund manager himself as well as analysts' recommendations, it is impossible to accurately assess analyst abilities from mutual fund returns.

Our study sheds light on the abilities of buy-side analysts by using an approach that avoids the limitations faced by the extant literature. We do so by analyzing 68 nontraditional mutual fund portfolios from 14 fund families that are exclusively managed by analysts without any direct involvement from mutual fund managers. Since these funds, commonly referred to as "research funds" or "analyst-run funds", reflect only the investment decisions of buy-side analysts, they provide a unique opportunity to assess the investment abilities of buy-side analysts. In addition, our study evaluates how the investment abilities of buy-side analysts compare with those of traditional portfolio managers from within or outside the family; the manner in which the analysts' research is integrated into the portfolios of managers within the same fund families; and the extent to which analysts' abilities affect the performance of funds within the corresponding families.

Our study can be viewed as a test of the Human Capital Theory, which purports that experience is positively related to employees' performance.¹ In the mutual fund industry, fund managers and buy-side analysts represent two classes of employees with distinct levels of experience; mutual fund managers are more experienced than analysts, and most likely even worked as analysts earlier in their careers. Extending the principles of Human Capital Theory to our setting, one would expect portfolio managers — who are more experienced than analysts— to exhibit better fund performance than analyst-run funds.

We show that mutual fund buy-side analysts have both general and job-specific investment abilities. Their general investment abilities, measured using the Fama and French (1993) and Carhart (1997) models, generate risk-adjusted returns net of expenses in the magnitude of 11-18 basis points per month. Their job-specific abilities, measured by benchmarking the returns of their funds against a portfolio of funds that follow a similar investment style, generate style-adjusted returns net of expenses in the magnitude of 11-13 basis points per month. Further, analyst-run funds exhibit stronger general and job-specific investment abilities than both manager-run funds from other fund families (hereafter “nonaffiliated funds”) and manager-run funds from the same families (hereafter “affiliated funds”). This finding is inconsistent with the Human Capital Theory, and persists after controlling for fund size, fund age, industry concentration and other fund characteristics known to affect fund performance.²

However, this finding is consistent with several possible explanations.³ First, it could be that analysts have an incentive to work harder than fund managers since they are at the very beginning of their investment careers and want to reveal their skills to the labor market.

¹ For a detailed discussion of Human Capital Theory see Becker (1964), Mincer (1974), and Becker (1975).

² This finding is similar to Chevalier and Ellison's (1999a) finding of a superior performance for younger portfolio managers compared with older managers.

³ This finding is also consistent with evidence presented in previous labor market studies. For example, Medoff and Abraham (1980) show that employees' relative performance does not increase with experience, presumably because skill obsolescence, lack of motivation, and lack of stimulation affect the effort level of more senior employees.

Second, portfolio managers' skills could have become obsolete while analysts' skills, shaped by latest education, are more advanced. Third, analysts could benefit from a more focused investment approach facilitated by a smaller number of stocks that each analyst follows in the analyst-run fund while portfolio managers, who are responsible for hundreds of stocks, could follow more of a generalist type of investment approach as they progress through their careers. Fourth, it could be that analysts are shielded from certain distracting tasks that portfolio managers are expected to perform, including promoting the fund to potential clients or meeting with existing institutional clients. Finally, in the presence of weak contracting mechanisms that do not elicit optimal efforts, portfolio managers could become entrenched in their organization⁴ and could become more conservative as they progress through their careers.⁵

To more thoroughly differentiate the investment capabilities of analysts from those of managers, we consider the portfolio composition of analysts and managers. Since analysts are tasked with researching and recommending stocks for their affiliated fund managers, many of the stocks held in analyst-run funds will also be held by affiliated fund managers. We refer to these stocks as "commonly-held". Although the majority of the commonly-held stocks were fully researched by analysts, it is possible that research on some of those stocks was shaped by discussions with affiliated fund managers. We decompose the underlying portfolio holdings of each analyst-run fund into commonly-held stocks and uniquely-held stocks. Uniquely-held stocks appear only in the analyst-run portfolios and not in any affiliated portfolios. The uniquely-held stocks of analyst-run portfolios should provide a more accurate and less contaminated measure of the analysts' abilities. We conduct a similar decomposition for manager-run affiliated funds. A comparison of stocks uniquely held by

⁴ For example, Chevalier and Ellison's (1999b) show that longer-tenured portfolio managers are less likely to be fired in response to poor past performance.

⁵ Prendergrast and Stole (1996) argue that individuals with longer tenure in an organization are less likely to respond to new information or changes to a project because such changes could suggest that their previous positions were wrong.

analysts and affiliated managers yields striking results in that the analyst-held unique stocks outperform the manager-held unique stocks by 25 to 52 basis points per month.

Given the presence of investment abilities among the analysts employed by our sample mutual fund families, we next explore the extent to which analyst ideas are utilized by the affiliated portfolio managers. We use the stock holdings of analyst-run funds from each sample family as a proxy for the best ideas generated by the analysts of that family.⁶ For each affiliated manager-run fund we construct what we refer to as the analyst idea utilization ratio (AIUR), which reflects the fraction of fund assets invested in analyst-held stocks. Presumably fund managers that rely to a larger extent upon analysts' research will put more weight on the analysts' best ideas and thus have a higher AIUR. We observe a high variation in the AIUR measure across manager-run funds, suggesting that some fund managers rely upon analysts' best ideas more than others.

We hypothesize that because they can more easily generate their own lucrative investment ideas, more-skilled managers ought to rely upon analyst ideas to a lesser extent than less-skilled managers. We also argue that affiliated funds that charge higher management fees will be less inclined to shape their portfolios based on the analysts' best ideas because this could be perceived by their superiors or colleagues as a sign that they are not doing enough to justify the high management fees. We test for these effects while controlling for fund style, which might mechanically constrain managers from fully utilizing analyst ideas, and larger asset bases as well as higher portfolio turnovers, both of which afford some managers more opportunity to incorporate analyst ideas into their portfolios.

Multivariate regression results confirm these hypothesized effects by substantiating that managers that have a higher past performance differential with analyst-run funds within

⁶ Although holdings of analyst-run funds might capture only a subset of the best ideas of analysts, we believe that these holdings represent a good proxy for the analysts' best ideas since the decision of analysts to include them in a portfolio with real money, in effect, validates them as high-conviction ideas.

the same family—presumably more skilled managers— are less reliant on analyst ideas. Similarly, we document that managers of funds with higher expense ratios rely less on analyst ideas. The hypothesis that higher-skill managers are less reliant on analyst ideas is further supported by tests that track the future performance of managers’ uniquely- and commonly-held stocks stratified by the funds’ AIURs. These tests suggest that funds relying upon analyst ideas the least hold stocks that perform statistically indifferently from stocks held by affiliated analyst-run funds over the next quarter. Thus, skilled managers are able to come up with their own ideas that perform no better or worse than analyst-generated ideas. On the contrary, both the uniquely- and commonly-held stocks of funds that rely upon analyst ideas the most significantly underperform the uniquely- and commonly-held stock portfolios of affiliated analyst-run funds. This evidence suggests that lower skilled managers are more likely to utilize analyst ideas, but they either pick the worst analyst ideas or poorly weight those ideas in their portfolios.

Our final analysis explores whether higher analyst ability translates into better performance for the rest of the same family’s funds. We posit that the quality of the analysts’ investment decisions, measured by the performance of the analyst-run funds, is related with the quality of the investment process and research capabilities of a given mutual fund family. Thus, analysts’ investment abilities should be related to the performance of affiliated manager-run funds. Consistent with this hypothesis, we find a positive relation between the performance of manager-run funds and the average past performance of analysts from the same complex, which is both statistically and economically significant. This suggests that the quality of investment decisions undertaken by analysts in their analyst-run funds serves as an indication of the research capabilities and strength of the investment process within each corresponding mutual fund family.

Our paper is related to several strands from the mutual fund literature. It is related to studies that examine how characteristics of individuals managing mutual fund portfolios relate to fund performance (see, e.g., Chevalier and Ellison (1999a, b)). While these studies focused on the characteristics of traditional portfolio managers, our study extends the analysis beyond mutual funds managed by traditional portfolio managers, showing that the distinction of whether a fund is managed by analysts or traditional portfolio managers has implications for fund performance.

Our study is also related to a more recent group of articles that explore how organizational family structure interacts with fund performance. For example, Baks (2003) addresses how the common resources provided by fund complexes affect fund performance beyond the contribution of portfolio managers. Other papers have looked at different aspects of the organizational family structure and how they relate to fund performance. For example, Massa, Reuter, and Zitzewitz (2010) analyze funds that are managed by named versus anonymous managers. Chen, Hong, Kubik (2008) study instances of fund management being outsourced to external portfolio managers. Chen, Hong, Huang, and Kubik (2004) examine the role of family size while Massa and Zhang (2008) examine the role of hierarchical structures within mutual fund families. We contribute to this literature by documenting and explaining the extent to which one group of players within mutual fund families, namely in-house analysts, influence the investment choices of fund managers within the same fund complex. We also contribute to this literature by quantifying the impact that in-house analysts' abilities have on the performance of funds from the same families.

Our findings are consistent with Pomorski (2009) and Simutin (2012) whose results can be placed in the context of our study. Pomorski (2009) shows that stocks held across many funds in a fund family generate superior risk-adjusted returns. Under our framework, such stocks are most likely to represent analysts' best ideas, which our study identifies from

the holdings of analyst-run funds and shows that they generate superior returns. Simutin (2012) reports that managers who deviate from an aggregate portfolio of family holdings have superior skill. Under our framework, such managers are most likely the superior managers that deviate from the rest of the family by relying upon analyst ideas to a lesser extent than the rest of family funds because they can generate their own ideas.

Our study is also related to Groysber, Healy, Serafeim, Shanthikumar, and Yang (2012) who assess the abilities of buy-side analysts from one large mutual fund family. They analyze the investment value of the fund family's recommendations and compare these recommendations against the recommendations of all sell-side analysts. In contrast to their study which looks at the analysts' recommendations from only one family, ours looks at the actual investment decisions of analysts from fourteen families.

The remainder of the paper is organized as follows. Section 2 provides a brief discussion of analyst-run funds. The data and sample statistics are discussed in Section 3. Section 4 analyzes the performance of analyst-run and manager-run funds. Reliance of portfolio managers on their affiliated analysts' ideas is investigated in Section 5. Section 6 explores the relation between the abilities of analysts and the performance of other funds from the same fund family. Section 7 concludes.

2. Analyst-run funds: discussion

Analyst-run mutual funds, otherwise known as research funds, represent a relatively recent phenomenon in the mutual fund industry that has attracted growing attention in the business press.⁷ These funds differ from traditional mutual funds in that instead of being

⁷ See, for example, Lauricella (2005), Sullivan (2009), Levitz (2009), and Dolan (2011), among others. Besides the novelty of analyst-run funds, another aspect that has attracted interest is their performance, which some have interpreted as being superior to that of portfolio managers from the same fund families.

managed by traditional portfolio managers they are managed by a group of in-house analysts who are responsible for making the underlying investment decisions.

Most of the fund families that offer analyst-run funds have structured them as diversified portfolios. The exception to this is Fidelity, whose analysts are assigned to manage funds with exposure to specific sectors or subsectors. While managing analyst-run funds, analysts are responsible for making the final investment decisions after consulting with the rest of the analyst team co-managing the fund.

The number of analysts involved in picking stocks for these funds varies from family to family, depending on the size of the research department. For example, MFS Research Fund, one of the first offered analyst-run funds, started with a team of about 30 analysts in charge at inception, whereas Fidelity sector funds are managed by smaller teams of analysts, who generally rotate across portfolios covering different sectors or subsectors every one to two years.

There are many reasons why fund families might want to introduce analyst-run funds. First, analyst-run funds help fund families with talent retention by creating a stimulating environment and providing interesting work opportunities including selecting and investing real money in stocks. Second, analyst-run funds provide on-the-job training for the many analysts who aspire to become portfolio managers, which is an attractive investment in the analysts' human capital. Third, funds run by analysts help fund families identify the most skilled analysts, providing fund families with an attractive venue to hone analysts' investment techniques prior to promoting them to portfolio manager positions. Fourth, since analyst-run funds include stocks that reflect analysts' best ideas, fund families use these fund offerings to showcase the strength of their research departments and investment processes (see e.g., Levitz (2009)). Finally, the presence of funds run by analysts stimulates healthy competition among portfolio managers and analysts, whereby the performance of analysts

can be viewed as an internal hurdle rate that should be matched or surpassed by the portfolio managers housed in the same family.

The concept of analyst-run funds is not without skeptics, however. These types of funds might not be attractive to certain clienteles, such as large institutional investors who would want to deal with one portfolio manager rather than with a team of analysts. Institutional investors might also worry about who among the fund employees is accountable for risk management matters (e.g., Sullivan (2009)). Further, analysts running their own fund might be distracted from their main job of providing research support for the portfolio managers. Another concern is that analysts might want to keep the best ideas to themselves for inclusion in the analyst-run fund rather than share them with the portfolio managers.

The controversy surrounding the merits of analyst-run funds aside, our study relies on analyst-run funds to gain two main methodological advantages. First, the performance of analyst-run funds helps us assess the investment abilities of analysts, allowing us to compare those abilities with the abilities of traditional portfolio managers. Second, we employ the stock holdings of analyst-run funds as a proxy for the best stock ideas generated by the analysts of a given fund family.

3. Data

3.1. Identification of analyst-run funds

Since analyst-run funds are not flagged by any classification variables available in the standard mutual fund databases, we relied on alternative sources to identify analyst-run funds. We started by searching the business press for previous articles discussing analyst-run funds. We identified more than a dozen such articles between 1990 and 2010 where several analyst-run funds were mentioned by name and some of the families offering these types of funds were identified. In most of these articles, analyst-run funds were commonly referred to as

“research funds” by the authors; further, most of the funds identified in the articles contained the string “research” in their names (e.g., MFS Research Fund).

Based on these discoveries, we then searched the whole U.S. equity mutual fund universe in the CRSP Mutual Fund Database and Morningstar Direct for occurrences of the word “research” or “analyst” in the fund names. For each fund on the resulting list, we reviewed its prospectus, accompanying statement of additional information filed with the SEC, and its management profile on Morningstar Direct to verify that the funds were, in fact, managed by analysts rather than portfolio managers. All Fidelity Select funds, which are managed by analysts, were added to our list of analyst-run funds. The resulting final sample includes 68 analyst-run funds from 14 mutual fund families.

3.2. Data sources

We use four databases: the Center for Research in Securities Prices (CRSP) Survivor-Bias Free US Mutual Fund (CRSP MF) Database; Morningstar Direct Mutual Fund Database; Thomson Reuters Mutual Fund Holdings Database; and CRSP Monthly Stock Data Series.

All fund characteristics, such as returns, fees, and investment objectives, came from the CRSP MF Database. Since data reported by CRSP MF is at the share class level, information was aggregated at the portfolio level by value-weighting each attribute across all share classes belonging to the same portfolio.

Mutual fund stock holdings data came primarily from Thomson Reuters. For the few analyst-run funds that we could not identify in Thomson Reuters, we obtained their holdings from Morningstar Direct. For a given date and fund, the holdings data provides the name, identifier, and number of shares held in each equity security. We supplemented the holdings

data with prices, returns, and other individual stock information from the CRSP Monthly Stock Data Series.

Funds from Thomson Reuters were merged with the CRSP MF using WRDS's MFLINKS, which links Thomson Reuters fund identifiers with fund identifiers from CRSP MF. Analyst-run funds for which holdings were available in Morningstar Direct, but not in Thomson Reuters, were linked with CRSP MF using fund tickers and names.

3.3. Sample characteristics

Panel A of Table 1 presents summary characteristics for the 68 analyst-run funds in our sample over the 2000–2010 sample period. Panel B and C report summary characteristics for affiliated and nonaffiliated manager-run funds, respectively. An average is first calculated for each attribute for each fund and then cross-sectional statistics are computed and reported.

Analyst-run funds exhibit certain differences when compared with affiliated and nonaffiliated manager-run funds. Their average reported returns exceed those of affiliated and nonaffiliated manager-run funds by 15 and 33 basis points per month, respectively. Because these patterns persist when we compare the median returns of the three groups, we can reject the possibility that these results are driven by outliers. Not surprisingly, as relatively recent additions to their mutual fund families, analyst-run funds are significantly smaller than affiliated manager-run funds; they are roughly one-fourth (one-half) the size of affiliated manager-run funds when comparing means (medians). The same cannot be said when comparing analyst-run funds with nonaffiliated manager-run funds as the median nonaffiliated manager-run fund is, in fact, smaller than the median analyst fund. A look at the other fund attributes suggests that analyst funds have slightly lower expense ratios and higher portfolio turnover than funds from the other two groups. Since size, expense ratios, and

portfolio turnover are known to affect fund performance⁸, our later performance comparisons will control for differences in these fund characteristics

4. Performance comparisons

This section employs three approaches to assess the investment abilities of analysts and compare them with those of manager-run funds either from the same families or from other families. We start with univariate comparisons. We proceed with multivariate comparisons that control for fund characteristics known to affect fund performance. Finally, to isolate the abilities of the analysts more precisely, we perform a decomposition of the portfolio holdings to compare the performance of stocks that appear exclusively in analyst-run portfolios and manager-run portfolios from the same families.

4.1. Univariate comparisons

4.1.1. Methodology

Three measures are used for our performance comparisons. They include risk-adjusted returns, i.e., intercepts, from the Fama-French (1993) and the Carhart (1997) models and style-adjusted returns, as specified below.

$$R_{p,t} - r_f = a + \beta_{p,MKT} (R_{mkt,t} - r_f) + \beta_{p,SMB} SMB_t + \beta_{p,HML} HML_t + \varepsilon_t \quad (1)$$

$$R_{p,t} - r_f = a + \beta_{p,MKT} (R_{mkt,t} - r_f) + \beta_{p,SMB} SMB_t + \beta_{p,HML} HML_t + \beta_{p,UMD} UMD_t + \varepsilon_t \quad (2)$$

$$SAR_{p,t} = R_{p,t} - \frac{1}{N_s} \sum_{i=1}^{N_s} R_{i,t} \quad (3)$$

⁸ See Carhart (1997) and Chen, Hong, Huag, and Kubik (2004), among others.

where $R_{p,t}$ is the reported return of fund p in month t , $R_{MKT,t}$ is the market portfolio return in month t , and r_f is the risk-free rate. The common factor variables SMB_t , HML_t , and UMD_t are the month- t return differentials between small cap and large cap stocks, high and low book-to-market stocks, and positive and negative return-momentum stocks, respectively. In the third specification, $SAR_{p,t}$ stands for style adjusted return of fund p in month t , s denotes the investment style to which fund p belongs to⁹, and N_s represents the number of all funds sharing the same investment style s .

Across the spectrum of fund managers, one can think of each manager as performing a distinct job. Although all fund managers perform a job within the general scope of investing, each particular job has a more specific function. For example, while it is desirable for a portfolio manager of a well-diversified growth fund and a portfolio manager of a technology sector fund to both beat the market, a relevant measure of their job performance is how well they do relative to other portfolio managers who share similar investment styles. Accordingly, while the risk-adjusted alphas from the Fama-French and Carhart models measure the general investment abilities of analysts and managers, the style-adjusted returns measure their job-specific ability.

4.1.2. Results

Table 2 reports performance results for each of the three fund groups: analyst-run funds; affiliated manager-run funds, and unaffiliated manager-run funds. The two difference rows report the performance differential between each of the manager-run fund groups and analyst-run funds. To account for any effects related to differential expense ratios, we compute returns net and gross of expenses. In Panel A, we first compute performance

⁹ The style designation is based on the `lipper_obj_cd` investment classification variable available from CRSP MF.

measures for each fund based on its time-series of returns and then calculate average and median values for those performance measures across funds from each group. We require funds to have at least 12 months of non-missing return data to be included in the performance calculations of Panel A.

Results suggest that analysts' general investment abilities produce risk-adjusted returns in the magnitude of 12 to 18 basis points per month net of expenses and 20 to 27 basis points gross of expenses. Furthermore, analysts' job-specific abilities generate style-adjusted returns in the magnitude of 11 to 12 basis points net of expenses and 9 basis points gross of expenses. These adjusted returns are statistically significant at the 1 percent level regardless of the return or performance measure used.

Notably, when comparing the general investment abilities of analyst-run funds with those of manager-run funds, analysts outperformed affiliated and unaffiliated managers, respectively, by 16 to 21 and 19 to 28 basis points per month net of expenses. A similar pattern is observed when return gross of expenses are used for comparisons. When comparing the job-specific abilities of analyst-run funds with those of manager-run funds, analysts outperformed affiliated and unaffiliated managers, respectively, by 10 to 12 and 12 to 29 basis points per month net of expenses. A similar pattern holds for returns gross of expenses.

The p-values used to assess the significance of the differences in means are based on t-tests whereas the p-values used to assess the significance of differences in medians are based on the Wilcoxon nonparametric test. These results are not driven by outliers as suggested by the p-values generated by the median comparisons.

In sum, this evidence is consistent with analysts exhibiting both general investment abilities that translated into positive risk-adjusted returns for their investors and job-specific abilities that resulted in analysts beating other managers following a similar investment style

(i.e., other managers performing a similar job). These performance results of analyst-run funds stand in contrast with the performance of affiliated and unaffiliated manager-run funds, which were unable to generate consistent and significant positive risk-adjusted returns for their investors and beat other managers following similar investment styles.

For robustness, Panel B reports performance results using a portfolio approach. We report results under two averaging methods. For the first method, we take an equally-weighted average of returns across all portfolios within each fund group. For the second method, we start by creating a family-specific average for all funds within each group for each family. Then we use these family-specific averages as the basis to calculate monthly average performance for each fund group. This second method ensures that results are not driven by fund families that house a larger number of analyst-run funds, like Fidelity does. Results from Panel B confirm those of Panel A.

4.2. Multivariate comparisons

4.2.1. Methodology

Our second approach for performance comparisons between analyst-run funds and affiliated and unaffiliated manager-run funds employs estimates from pooled regressions that control for a broad set of mutual fund characteristics. Monthly mutual fund performance measures are regressed on our key independent variables: ANALYST, which equals one if a fund is an analyst-run fund, and zero otherwise and AFFILIATED_MANAGER, which equals one if a fund is not an analyst-run fund but belongs to a family that offers analyst-run funds, and zero otherwise. The benchmark group includes all unaffiliated manager-run funds.

Two of the dependent variables are alphas calculated on a rolling basis using the Fama-French or the Carhart models and three years of data. Specifically, the alpha estimates

of fund p in month t , denoted by $\hat{\alpha}_{p,t}$, are calculated, respectively, as:

$$\hat{\alpha}_{p,t} \equiv (R_{p,t} - r_f) - \hat{\beta}_{p,MKT} (R_{mkt,t} - r_f) - \hat{\beta}_{p,SMB} SMB_t - \hat{\beta}_{p,HML} HML_t \quad (4)$$

$$\hat{\alpha}_{p,t} \equiv (R_{p,t} - r_f) - \hat{\beta}_{p,MKT} (R_{mkt,t} - r_f) - \hat{\beta}_{p,SMB} SMB_t - \hat{\beta}_{p,HML} HML_t - \hat{\beta}_{p,UMD} UMD_t \quad (5)$$

where the factor loadings $\hat{\beta}_{p,MKT}$, $\hat{\beta}_{p,SMB}$, $\hat{\beta}_{p,HML}$, and $\hat{\beta}_{p,UMD}$ are estimated using the prior 36 months of returns. Mutual funds with fewer than 12 valid observations in the prior 36 months are treated as missing observations. The third dependent variable is the style adjusted return, $SAR_{p,t}$, computed as specified above in Model 3.

We control for fund characteristics that previous research has documented to be significant in explaining cross-sectional fund performance. Our first group of control variables is intended to control for fund families exhibiting favoritism towards analyst-run funds. Fund families might favor analyst-run funds because they can use their performance to impress investors with the quality of their investment process and research capabilities. Variables from this control group include lagged values for FUND_AGE and RELATIVE_EXPENSE_RATIO. FUND_AGE is the log of fund age measured in years and is intended to control for mutual fund families trying to subsidize the performance of younger funds at the expense of older funds in order to increase flows (see, Gaspar, Massa, and Matos (2006)).¹⁰ RELATIVE_EXPENSE_RATIO, constructed as in Cici, Gibson, and Moussawi (2011), captures the difference between the expense ratio for a specific fund and the average for its

¹⁰ Chevalier and Ellison (1999b) argue that the recent performance of younger funds is more informative to investors than that of older funds, which they empirically support by showing that investment flows exhibit a greater sensitivity to the recent performance of younger funds.

family. We contend that families could increase overall fees by transferring performance to analyst funds from other funds with lower expense ratios.

The rest of control variables include lagged values for: CONCENTRATION, FUND_ASSETS, EXPENSE_RATIO, TURNOVER, and LOAD. CONCENTRATION is the portfolio Herfindahl index computed for each fund as the sum of the squares of the portfolio weights in each SIC-defined industry. This variable is included to control for specialization in certain industries—determined by the analysts’ job requirements— which could provide analysts with a competitive advantage over portfolio managers who might have to rely on a more generalist type of investment approach. FUND_ASSETS represents the total net assets of the fund measured in millions. It is included to control for the widely-documented disadvantage related to diseconomies of scale incurred on larger funds.¹¹ EXPENSE_RATIO is the annual expense ratio divided by 12 and is expressed in percentage. The inclusion of this variable is intended to control for performance differences due to expense ratio differentials. TURNOVER is the portfolio turnover expressed in percentages and LOAD is a dummy variable indicating whether a fund charges load fees or not.

4.2.2. Results

Table 3 reports regression coefficients from the pooled regressions with associated p-values reported in parentheses. We include time and style fixed effects and cluster standard errors by fund. Regardless of whether we use performance metrics intended to measure general investment abilities or job-specific abilities, the coefficient on the ANALYST dummy variable is positive and statistically significant, suggesting the analyst-run funds outperform manager-run funds from other mutual fund families by roughly 13-14 basis points per month. The coefficient on AFFILIATED_MANAGER is positive but statistically

¹¹ See, for example, Chen, Hong, Huang, and Kubik (2004) and Berk and Green (2004).

significant for only four out of the six specifications. Results from a test of the difference between ANALYST and AFFILIATED_MANAGER coefficients is reported at the bottom of the table. The performance of analyst-run funds surpasses that of affiliated manager-run funds by a statistically significant 10-11 basis points per month.

In sum, it appears that manager-run funds whether from the same family as those that offer analyst-run funds or from families that do not offer such funds are at a performance disadvantage relative to analyst-run funds, both from a general investment point of view and from a job-specific point of view. While inconsistent with the Human Capital Theory, this finding is consistent with several plausible explanations.

First, because they are at the beginning of their careers and need to reveal their skills to the labor market, analysts could work harder than fund managers. Second, portfolio managers could face an obsolete skill set whereas analysts' skills could be the product of the latest education and more advanced training. Third, analysts could be the beneficiaries of a more focused investment approach while portfolio managers could gravitate towards a more generalist type of investment approach as they progress through their careers.¹² Fourth, analysts might not have to deal with many of the distractions that portfolio managers are subjected to such as being required to promote the fund to potential clients or to meet regularly with existing institutional clients. Finally, the presence of weak contracting mechanisms that elicit sub-optimal efforts could result in portfolio managers becoming entrenched in their organization and more conservative as they progress through their careers.

¹² This effect could go beyond industry concentration, for which we control, and it could arise due to the fact that portfolio managers have to follow hundreds of stocks in their portfolios while each analyst managing the analyst-run funds follows a smaller number of stocks.

4.3. Comparisons based on uniquely-held stocks

4.3.1. Methodology

Many of the stocks held by analyst-run funds are also held by affiliated fund managers. This makes it likely that research on some of these “commonly-held” stocks was shaped by discussions with affiliated fund managers. Thus, to more precisely isolate analysts’ abilities, we decompose the underlying portfolio holdings of analyst-run funds to identify stocks that appear in the analyst-run portfolios but not in the manager-run portfolios. We contend that these uniquely-held stocks provide an even more accurate assessment of analysts’ abilities.

Following this logic, we decompose portfolio holdings of each analyst- and affiliated manager-run fund into two subsets at the end of every quarter that consist of, respectively, uniquely-held and commonly-held stocks. For each analyst-run fund, uniquely-held stocks are only in that analyst-run portfolio and not in any affiliated manager portfolios, while commonly held stocks are in the given analyst-run portfolio and in the portfolio of at least one affiliated manager. Conversely, for each affiliated manager, uniquely held stocks are only in that manager-run portfolio but not in any of the analyst-run funds from the same family, while commonly held stocks are in the given manager-run portfolio and in the portfolio of at least one analyst-run fund from the same family.

Following the portfolio decomposition, a holdings-based return is constructed separately for all holdings and for each of the uniquely- and commonly-held subsets for each analyst- and affiliated manager-run fund. That is, stocks from all holdings or from each holdings subset are put in a portfolio and held until the next fund holdings report when the portfolio is updated again. The all holdings-based (or subset-based) portfolio of each fund generates a monthly return series.

4.3.2. Results

Results on the performance of uniquely- and commonly-held stocks from the analyst and affiliated manager-run portfolios are reported in Table 4. In Panel A performance measures for each fund based on its time-series of returns of the uniquely or commonly-held portfolio are first computed and then those performance measures are averaged across funds from each group.

For robustness, Panel B reports results from a portfolio approach where every month the uniquely or commonly-held portfolios of funds within each group are placed into an equally-weighted portfolio. The Fama-French and Carhart models are used to evaluate performance of the commonly- and uniquely-held portfolios in both panels.¹³

Results from both panels confirm results from the first two approaches where analyst-run funds are compared against affiliated manager-run funds. Analysts' uniquely-held stocks outperform uniquely-held stocks of affiliated managers by 25 basis points per month in Panel B and 52 basis points in Panel A. Portfolios mimicking commonly-held stocks in the analyst portfolios generate higher risk-adjusted returns than the portfolios mimicking commonly-held stocks in the affiliated manager-run portfolios, however the difference is not statistically significant.¹⁴ For completeness, we also report risk-adjusted returns based on the entire portfolio holdings of analyst- and manager-run funds. Performance comparisons based on the entire portfolio holdings again confirm results from the previous comparison approaches. Interestingly, the outperformance increases substantially by a factor of 2 to 4 when moving from comparisons based on all portfolio holdings to comparisons based on uniquely-held stocks. This is consistent with uniquely-held stocks making up a small fraction of the analyst-

¹³ We can not use style-adjusted returns for these comparisons because that requires doing a similar decomposition of holdings for the other funds belonging to each style universe. That is, for funds that operate in a family that does not offer analyst-run funds, we cannot determine what fraction of ideas in the portfolio came from the family's analysts.

¹⁴ Such a difference could be due to the fact that some portfolio managers choose to include only some, but not all of the best analyst ideas in their portfolios.

run mutual funds, which we confirm by finding (in unreported results) that uniquely-held stocks make up on average nine percent of the total portfolio value of analyst-run funds.

5. Reliance on analyst ideas

5.1. Methodology

To examine the extent to which analyst ideas are utilized by the affiliated managers, for each affiliated manager-run fund we construct what we refer to as the analyst idea utilization ratio (AIUR). AIUR is constructed for each affiliated manager-run fund every quarter as the fraction of fund assets invested in the stocks held by analysts from the same complex. AIUR is averaged across all quarterly observations of a given manager-run fund to come up with a fund specific AIUR. We contend that fund managers who rely to a larger extent upon analysts' research will put more weight on the analysts' best ideas and thus have a higher AIUR.

To assess the determinants of AIUR, we employ pooled regressions of AIUR on several fund characteristics. More-skilled managers ought to rely upon analyst ideas to a lesser extent than less-skilled managers because they can generate their own ideas. To test for this effect, we include PAST_RELATIVE_PERFORMANCE as one of the regressors, which measures the difference between the past risk-adjusted performance of the manager-run fund and the past risk-adjusted performance of all analyst-run funds in the same fund complex. The reason for performance being measured relative to analyst-run funds is that the decision of how much to rely on analyst ideas will depend to a large extent on how managers perceive their abilities relative to those of in-house analysts. The past risk-adjusted performance of the affiliated fund is measured as the average of the fund alphas over the previous 36 months. The past risk-adjusted performance of the analyst-run funds within a given complex is constructed by first taking the mean of the monthly fund alphas across all analyst-run funds

within a given complex every month and then averaging the analyst-run mean alphas over the previous 36 months.

Managers of affiliated funds that charge higher management fees might be less likely to incorporate analysts' best ideas in their fund out of a concern that their superiors or colleagues will view such a practice as a sign that they are not doing enough to justify the high management fees. To test for this effect we include `EXPENSE_RATIO` as one of the regressors.

We test for these effects while we control for the fact that some funds, such as large or highly active funds, might enjoy greater opportunities to rely on analysts' ideas. Thus, we include `FUND_ASSETS` and `TURNOVER` as additional regressors. Other controls include `FUND_AGE`, `CONCENTRATION`, and `LOAD`, as constructed in Section 4. We also control for fund style—which might mechanically constrain managers from fully utilizing analyst ideas—by including style fixed effects. Time fixed effects are also included.

5.2. Results

Table 5 reports cross-sectional distribution statistics on AIUR. On average analyst ideas constitute 44 percent of the portfolios of affiliated manager-run portfolios. Most importantly, there is a great degree of variation in AIUR across affiliated manager-run portfolios, with the AIUR for 80 percent of funds ranging from 3 to 93 percent. This shows that some affiliated portfolio managers rely upon analyst ideas to a larger extent than some others.

In Table 6, we assess the determinants of AIUR for affiliated manager-run funds based on pooled regressions. As hypothesized, results show that AIUR of affiliated managers, is negatively related to the performance of affiliated managers benchmarked against that of in-house analysts. This finding is consistent with more-skilled managers relying to a lesser

extent on analyst's ideas. This effect is economically significant, as evidenced by the size of the coefficient, which suggests that a one percentage point increase in the affiliated manager's past analyst-benchmarked performance leads to a 3-6 percentage point decline in its weight placed on analyst ideas.

Results from the pooled regressions also confirm that larger funds and funds with higher portfolio turnover have higher AIURs, which is consistent with those managers having more opportunities to incorporate analysts' ideas. Interestingly, older funds have lower AIURs. One possible interpretation is that older managers become entrenched and more conservative, resulting in them becoming less open to new ideas generated by the in-house analysts who have shorter tenure with the fund complex. This is consistent with Prendergrast and Stole's (1996) argument that employees with longer tenure in an organization are less receptive to new information that could lead to changes in their positions because any such changes could be interpreted to mean that their previous positions were wrong.

We introduce an additional test to confirm that skilled affiliated managers are indeed less likely to rely on analysts' ideas. Under the premise that managers who rely to a large extent on analysts ideas are less skilled, their holdings ought to display a larger degree of future underperformance relative to the holdings of analyst-run funds from the same family. Conversely, holdings of managers that rely to a lesser extent on analysts' ideas ought to display little or no future underperformance relative to the holdings of analyst-run funds.

Table 7 reports results from the performance of all, uniquely-, and commonly-held stocks of affiliated managers stratified by the AIUR. At the end of every quarter, all manager-run funds within each family that houses at least one analyst-run fund are ranked and sorted into terciles based on their AIUR. A holdings-based return is computed over the next quarter for the portfolio of each manager and the holdings-based returns of all funds belonging to each tercile are averaged, creating a time-series of monthly returns that are

evaluated using the Fama-French and Carhart risk-adjusted approaches. This procedure is repeated every quarter and is conducted for all holdings and separately for subsets of holdings that capture the uniquely- and commonly-held stocks of affiliated managers.

Results from Table 7 show that managers that rely on analysts' ideas the most (i.e., managers in the highest AIUR tercile) hold stocks that underperform stocks held by analysts by 16 basis points per month. Further, the uniquely-held stocks of these managers underperform the uniquely-held stocks of analysts by 36 basis points per month. Interestingly, even the portfolios of commonly-held stocks of these managers appear to underperform the portfolios of the commonly-held stocks of the analysts. This is most likely because these affiliated managers pick the worst stocks from the set of analysts' ideas. In contrast, holdings of managers who are the least reliant on analyst ideas (i.e., managers from the lowest AIUR tercile) show less underperformance relative to the holdings of analyst-run funds. Specifically, the total holdings of managers from this group perform no differently from the total holdings of analyst-run funds. The same holds for the uniquely and commonly-held stocks of managers from this group.

Taken together, the findings from Table 7 further support the view that analysts' ideas play a smaller role in shaping the portfolio choices of skilled managers because, unlike their less skilled colleagues, they can come up with good ideas on their own. These findings are consistent with a deliberate two-tier strategy by mutual fund families: the majority of funds are encouraged to follow internally generated research, however a minority of funds are encouraged to deviate from this practice to facilitate the rise of star funds that can create flow spillovers for the rest of the family funds.¹⁵

¹⁵ Nanda, Wang, and Zheng (2004) show that star funds help generate investment flows for the other funds from the family.

6. Ability of analysts and performance of affiliated funds

Our final analysis explores whether higher analyst ability translates into better performance for the rest of the same family's funds. We posit that the quality of the analysts' investment decisions, measured by the performance of the analyst-run funds, should serve as a proxy for the quality of the investment process and research capabilities of a given mutual fund family. Thus, analysts' investment abilities should be related to the performance of affiliated manager-run funds. We test for this hypothesized effect in what follows.

6.1. Methodology

We employ pooled regressions that relate the performance of manager-run funds from families that offer analyst-run funds to the past performance of analyst-run funds within the same family, controlling for fund characteristics known to affect fund performance as discussed above. The dependent variable, which is monthly fund performance, is measured using the same approaches as in Section 4, whereby two of the dependent variables are Fama-French and the Carhart rolling alphas from Models 4 and 5, and the third dependent variable is the style-adjusted return from Model 3.

The key independent variable is the past risk-adjusted performance of the analyst-run funds within a given complex, which is constructed by first taking the mean of the monthly fund alphas across all analyst-run funds within a given complex every month and then averaging the analyst-run mean alphas over the previous 36 months. The included control variables are the same as in Table 6.

6.2. Results

Results from Table 8 show a positive and significant relation between the performance of manager-run funds and the average past performance of analysts within the

same complex. This relation is economically significant in that a 100 basis point increase in the average monthly performance of analyst-run funds over the previous 36 months is associated with, on average, an increase of about 11-23 basis points in the performance of the affiliated funds. This suggests that the quality of investment decisions undertaken by analysts in their analyst-run funds reflects the quality of investment process and research capabilities of the mutual fund complex and, as such, matters for the performance of affiliated funds. Taken together, our results suggest that buy-side analysts play an important role in the fund management process, as their abilities can affect the performance of all the funds housed under the same fund family.

7. Conclusion

Our study presents new findings on the abilities of buy-side analysts and the role that buy-side analysts play in the mutual fund management process. Analysts' abilities—measured by the performance of the funds that they manage—generate significant risk-adjusted returns that beat those generated by traditional portfolio managers managing funds within the same family or for other families. This finding is at odds with the common wisdom, as shaped by Human Capital Theory that employees' experience should lead to better performance. We believe that this discrepancy is driven by various frictions in the fund management process that negatively affect the performance of traditional portfolio managers but are less likely to affect the performance of funds run by analysts.

Our study is the first to provide evidence on the interaction between portfolio managers and analysts that work for the same mutual fund family. The ideas generated by analysts appear to matter more for some portfolio managers than others. Most importantly, the skill level of the portfolio manager determines the extent of reliance upon internal analyst-generated research. The finding that skilled portfolio managers are less reliant on

internal research generated by analysts is consistent with a deliberate two-tier strategy by mutual fund families. Under this strategy the majority of funds are encouraged to follow internally generated research, however a minority of funds are encouraged to deviate from this practice to facilitate the rise of star funds that can create flow spillovers for the rest of the family's funds.

Our finding of a positive relation between analysts' investment abilities and the future performance of manager-run funds from the same family suggests that the skills of buy-side analysts play an important role in influencing the performance of the funds that they support with their research. For this reason, we believe that the quality of investment decisions undertaken by analysts in their management of analyst-run funds can be viewed as a reflection of the research capability and strength of the investment process within each corresponding mutual fund family. Not surprisingly, some fund families have recognized the potential of their analysts and have sought to capitalize on this potential by offering analyst-run funds that they can use to showcase the strength of their investment process.

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Table 1
Descriptive Statistics

This table reports summary statistics for three groups of mutual funds during the 2000-2010 period. The first group comprises 68 analyst-run equity mutual funds. Statistics on analyst-run funds are reported in Panel A. Panels B and C report statistics on the two remaining groups that comprise affiliated and unaffiliated manager-run equity funds, respectively. Each attribute is first averaged across all observations belonging to each fund to come up with a fund-specific attribute and the statistics reported are based on the cross-section of these fund-specific attributes. Raw returns are of monthly frequency reported in percentages. Expense ratios, maximum 12b-1 fees, and portfolio turnover are all reported in percentages per year.

Panel A. Analyst-Run Funds (N=68)						
Characteristics	mean	10th	25th	Median	75th	90th
Raw Return	0.44%	-0.17%	0.18%	0.50%	0.90%	1.23%
Total Net Assets (\$mill)	520	24	67	184	675	1,359
Expense Ratio	1.21%	1.01%	1.05%	1.17%	1.33%	1.56%
Maximum 12b-1 Fee	0.49%	0.25%	0.34%	0.45%	0.60%	0.75%
Portfolio Turnover	114%	67%	86%	111%	140%	157%
Monthly Observations	103	35	72	132	132	132

Panel B. Affiliated Manager-Run Funds (N = 411)						
Raw Return	0.29%	-0.32%	0.07%	0.36%	0.63%	0.94%
Total Net Assets (\$mill)	2,022	36	111	395	1,417	5,154
Expense Ratio	1.33%	0.85%	0.99%	1.30%	1.61%	1.85%
Maximum 12b-1 Fee	0.50%	0.20%	0.32%	0.54%	0.66%	0.75%
Portfolio Turnover	96%	29%	49%	88%	124%	188%
Monthly Observations	108	57	87	132	132	132

Panel C. Unaffiliated Manager-Run Funds (N=2,694)						
Raw Return	0.11%	-0.99%	-0.16%	0.30%	0.62%	0.94%
Total Net Assets (\$mill)	688	8	26	105	393	1,227
Expense Ratio	1.46%	0.88%	1.08%	1.36%	1.68%	2.02%
Maximum 12b-1 Fee	0.45%	0.25%	0.25%	0.42%	0.61%	0.78%
Portfolio Turnover	112%	26%	45%	76%	123%	197%
Monthly Observations	91	29	56	101	132	132

Table 2
Univariate Performance Comparisons

This table reports performance results for each of the three fund groups. Two return measures and three performance metrics are used. The two return measures are monthly returns net of expenses (actual reported returns) and monthly returns gross of expenses (actual reported returns + annual expense ratio/12). The three performance metrics are the alphas computed from the Fama and French (1993) and Carhart (1997) models and style-adjusted returns. The approach employed in Panel A first calculates performance metrics for each fund based on its time-series of returns and then computes average and median values for those metrics across funds from each group. Panel B reports results from a portfolio approach where every month funds within each group are placed into an equally-weighted portfolio. Panel B also reports results under two averaging methods. The first method equally weights all funds within each fund group. The second method first averages returns within all funds belonging to the same family and the same fund group to come up with a family-specific return and then averages the family-specific return across all families. The performance measures are based on monthly returns and are expressed in percentages. P-values are reported in parentheses. The Difference rows reports the difference in performance between the analyst-run funds and funds from each of the two other fund groups. P-values for the differences are based on t-tests for the mean comparisons and on Wilcoxon nonparametric tests for the median comparisons.

Panel A. Individual Fund Alphas												
Returns Measured:	Net of Expenses						Gross of Expenses					
Performance Measure:	FF α		Carhart α		SAR		FF α		Carhart α		SAR	
Fund Type	mean	median	mean	median	mean	median	mean	median	mean	median	mean	median
Analyst	0.183 (<i><0.001</i>)	0.124	0.179 (<i><0.001</i>)	0.119	0.116 (<i><0.001</i>)	0.107	0.272 (<i><0.001</i>)	0.213	0.256 (<i><0.001</i>)	0.203	0.086 (<i>0.003</i>)	0.087
Affiliated Manager	-0.026 (<i>0.128</i>)	-0.039	-0.024 (<i>0.140</i>)	-0.040	-0.003 (<i>0.870</i>)	0.008	0.065 (<i><0.001</i>)	0.058	0.066 (<i><0.001</i>)	0.056	-0.021 (<i>0.216</i>)	0.001
Difference	0.209 (<i><0.001</i>)	0.163 (<i><0.001</i>)	0.203 (<i><0.001</i>)	0.160 (<i><0.001</i>)	0.119 (<i>0.001</i>)	0.100 (<i>0.004</i>)	0.207 (<i><0.001</i>)	0.155 (<i><0.001</i>)	0.190 (<i><0.001</i>)	0.147 (<i><0.001</i>)	0.107 (<i>0.002</i>)	0.086 (<i>0.011</i>)
Unaffiliated Manager	-0.098 (<i><0.001</i>)	-0.063	-0.094 (<i><0.001</i>)	-0.066	-0.087 (<i><0.001</i>)	-0.015	0.012 (<i>0.170</i>)	0.034	0.013 (<i>0.139</i>)	0.033	-0.079 (<i><0.001</i>)	-0.023
Difference	0.282 (<i><0.001</i>)	0.187 (<i><0.001</i>)	0.273 (<i><0.001</i>)	0.185 (<i><0.001</i>)	0.203 (<i><0.001</i>)	0.122 (<i><0.001</i>)	0.259 (<i><0.001</i>)	0.179 (<i><0.001</i>)	0.243 (<i><0.001</i>)	0.170 (<i><0.001</i>)	0.166 (<i><0.001</i>)	0.110 (<i>0.002</i>)

Table 2-continued
Univariate Performance Comparisons

Panel B. Portfolio Approach												
Returns Measured:	Net of Expenses						Gross of Expenses					
Performance Measure:	One Observation per Fund			One Observation per Family			One Observation per Fund			One Observation per Family		
Fund Type	FF α	Carhart α	SAR	FF α	Carhart α	SAR	FF α	Carhart α	SAR	FF α	Carhart α	SAR
Analyst	0.237 (0.007)	0.237 (0.007)	0.128 (0.007)	0.112 (0.060)	0.112 (-0.061)	0.130 (0.008)	0.341 (<0.001)	0.341 (<0.001)	0.102 (0.022)	0.206 (0.001)	0.206 (0.001)	0.101 (0.033)
Affiliated Manager	0.014 (0.812)	0.013 (0.816)	0.023 (0.282)	-0.020 (0.727)	-0.020 (0.727)	-0.004 (0.862)	0.110 (0.063)	0.109 (0.062)	0.006 (0.792)	0.084 (0.140)	0.084 (0.142)	-0.010 (0.681)
Difference	0.223 (<0.001)	0.224 (<0.001)	0.105 (0.035)	0.132 (0.004)	0.132 (0.004)	0.134 (0.022)	0.231 (<0.001)	0.232 (<0.001)	0.096 (0.050)	0.122 (0.007)	0.122 (0.008)	0.111 (0.058)
Unaffiliated Manager	-0.038 (0.479)	-0.038 (0.477)	-0.008 (0.055)	-0.061 (0.198)	-0.060 (0.198)	-0.002 (0.889)	0.079 (0.148)	0.079 (0.150)	-0.004 (0.308)	0.067 (0.161)	0.068 (0.158)	0.012 (0.440)
Difference	0.275 (<0.001)	0.275 (<0.001)	0.136 (0.006)	0.173 (<0.001)	0.172 (<0.001)	0.132 (0.013)	0.262 (<0.001)	0.262 (<0.001)	0.106 (0.023)	0.139 (0.002)	0.138 (0.001)	0.089 (0.083)

Table 3
Multivariate Performance Comparisons

This table reports results from pooled regressions that control for mutual fund characteristics. The key independent variables are: ANALYST, which equals one if a fund is an analyst-run fund, and zero otherwise and AFFILIATED_MANAGER, which equals one if a fund is not an analyst-run fund but belongs to a family that offers analyst-run funds, and zero otherwise. The control variables include lagged values for: FUND_AGE, the log of fund age measured in years; RELATIVE_EXPENSE_RATIO, the difference between the expense ratio for the fund and the average for its family; CONCENTRATION, the portfolio Herfindahl index, computed for each fund as the sum of the squares of the portfolio weights in each SIC-defined industry; FUND_ASSETS, the total net assets of the fund measured in millions; EXPENSE_RATIO, annual expense ratio divided by 12 and expressed in percentage; TURNOVER, the portfolio turnover expressed in percentages; and LOAD, a dummy variable indicating whether a fund charges load fees or not. The regressions include time and fund style fixed effects and standard errors are clustered by fund. Two of the dependent variables are alphas calculated on a rolling basis using the Fama-French or the Carhart models and three years of data.

Specifically, the alpha estimates of fund p in month t , denoted by $\hat{\alpha}_{p,t}$, are calculated, respectively, as

$$\hat{\alpha}_{p,t} \equiv (R_{p,t} - r_f) - \hat{\beta}_{p,MKT} (R_{mkt,t} - r_f) - \hat{\beta}_{p,SMB} SMB_t - \hat{\beta}_{p,HML} HML_t$$

$$\hat{\alpha}_{p,t} \equiv (R_{p,t} - r_f) - \hat{\beta}_{p,MKT} (R_{mkt,t} - r_f) - \hat{\beta}_{p,SMB} SMB_t - \hat{\beta}_{p,HML} HML_t - \hat{\beta}_{p,UMD} UMD_t$$

where the factor loadings $\hat{\beta}_{p,MKT}$, $\hat{\beta}_{p,SMB}$, $\hat{\beta}_{p,HML}$, and $\hat{\beta}_{p,UMD}$ are estimated using the prior 36 months of returns. Mutual funds with fewer than 12 valid observations in the prior 36 months are treated as missing observations. The third dependent variable is the style-adjusted return computed as

$$SAR_{p,t} = R_{p,t} - \frac{1}{N_s} \sum_{i=1}^{N_s} R_{i,t}$$

where SAR stands for style adjusted return of the fund in month t , s denotes the investment style to which a fund belongs and N_s represents the number of all funds sharing the same investment style s . The performance measures are measured in percentages and the coefficient p-values are reported in parentheses.

Table 3-continued

Returns Measured:	Net of Expenses			Gross of Expenses		
Dependent Variable:	FF α	Carhart α	SAR	FF α	Carhart α	SAR
ANALYST	0.137 (0.004)	0.133 (0.007)	0.142 (0.009)	0.135 (0.004)	0.131 (0.008)	0.144 (0.009)
AFFILIATED_MANAGER	0.025 (0.055)	0.031 (0.031)	0.031 (0.111)	0.025 (0.056)	0.030 (0.031)	0.031 (0.106)
<i>Favoritism controls:</i>						
FUND_AGE	-0.005 (0.651)	0.006 (0.604)	0.033 (0.035)	-0.004 (0.711)	0.008 (0.510)	0.033 (0.030)
RELATIVE_EXPENSE_RATIO	51.308 (0.037)	58.119 (0.033)	85.888 (0.012)	55.212 (0.024)	64.341 (0.017)	81.164 (0.011)
<i>Other controls:</i>						
CONCENTRATION	0.028 (0.677)	-0.040 (0.554)	-0.030 (0.686)	0.031 (0.634)	-0.036 (0.586)	-0.025 (0.731)
FUND_ASSETS	-0.002 (0.613)	-0.012 (0.011)	-0.035 (<0.001)	-0.003 (0.451)	-0.013 (0.002)	-0.035 (<0.001)
EXPENSE_RATIO	-93.697 (<0.001)	-90.778 (<0.001)	-103.981 (<0.001)			
TURNOVER	-0.011 (0.049)	-0.020 (0.003)	-0.030 (0.001)	-0.011 (0.049)	-0.020 (0.003)	-0.030 (<0.001)
LOAD	-0.020 (0.402)	-0.014 (0.601)	-0.001 (0.975)	-0.019 (0.415)	-0.013 (0.625)	-0.002 (0.964)
TIME AND STYLE FIXED EFFECTS	Yes	Yes	Yes	Yes	Yes	Yes
Observations	176,154	176,154	175,709	176,152	176,152	175,707
Adjusted R ²	4.75%	5.00%	0.20%	4.67%	4.92%	0.07%
ANALYST-AFFILIATED_MANAGER <i>P-value</i>	0.112 (0.020)	0.103 (0.039)	0.112 (0.045)	0.110 (0.021)	0.100 (0.044)	0.112 (0.043)

Table 4
Comparisons Based on Uniquely-Held Stocks

This table reports performance comparisons based on portfolios mimicking the holdings or subsets of holdings of analyst and affiliated manager-run funds. Portfolio holdings of each analyst- and manager-run fund are decomposed into two subsets at the end of every quarter that consist of, respectively, uniquely-held and commonly-held stocks. For each analyst-run fund, uniquely-held stocks are only in that analyst-run portfolio and not in any affiliated manager portfolios, while commonly-held stocks are in the given analyst-run portfolio and in the portfolio of at least one affiliated manager. Conversely, for each manager, uniquely-held stocks are only in that manager-run portfolio but not in any of the analyst-run funds from the same family, while commonly-held stocks are in the given manager-run portfolio and in the portfolio of at least one analyst-run fund from the same family. A holdings-based return is constructed separately for all holdings and for each of the uniquely- and commonly-held subsets for each analyst- and manager-run fund. That is, using the most recent portfolio holdings of a given analyst- or manager-run fund, stocks from all holdings or from each holdings subset are put in a portfolio and held until the next fund holdings report when the portfolio is updated again. The all holdings-based (or subset-based) portfolio of each fund generates a monthly return series. In Panel A performance measures for each fund based on its time-series of all holdings or holdings subsets are first computed and then those performance measures are averaged across funds from each group. Panel B reports results from a portfolio approach where every month the all holdings- or subset-based portfolios of funds within each group are placed into equally-weighted portfolios. The Fama-French and Carhart approaches are used to evaluate performance of the commonly- and uniquely-held portfolios in both panels. The performance measures are expressed in percentages and the associated p-values are reported in parentheses.

Panel A. Individual Funds						
Performance Measure:	FF α			Carhart α		
Stock Holdings:	All	Uniquely-Held	Commonly-Held	All	Uniquely-Held	Commonly-Held
Analyst-Run Funds	0.159 (0.003)	0.553 (0.002)	0.134 (0.014)	0.170 (0.005)	0.553 (0.002)	0.124 (0.028)
Affiliated Manager-Run Funds	0.025 (0.130)	0.034 (0.090)	0.041 (0.104)	0.022 (0.179)	0.034 (0.074)	0.031 (0.241)
Difference	0.134 (0.015)	0.520 (0.003)	0.094 (0.114)	0.149 (0.017)	0.519 (0.003)	0.093 (0.133)

Table 4-continued

Panel B. Portfolio Approach						
Performance Measure:	FF α			Carhart α		
Stock Holdings:	All	Uniquely-Held	Commonly-Held	All	Uniquely-Held	Commonly-Held
Analyst-Run Funds	0.230 (0.017)	0.365 (0.003)	0.220 (0.023)	0.230 (0.017)	0.366 (0.002)	0.220 (0.023)
Affiliated Manager-Run Funds	0.103 (0.187)	0.115 (0.213)	0.115 (0.156)	0.103 (0.176)	0.116 (0.198)	0.116 (0.145)
Difference	0.127 (0.039)	0.250 (0.028)	0.105 (0.111)	0.127 (0.039)	0.250 (0.028)	0.104 (0.111)

Table 5
Cross-Sectional Distribution of AIUR

This table reports statistics from the cross-sectional distribution of the analyst idea utilization ratio (AIUR). AIUR is constructed for each affiliated manager-run fund at the end of each quarter as the fraction of fund assets invested in the stocks held by analysts from the same complex. AIUR is averaged across all quarterly observations of a given manager-run fund to come up with a fund specific AIUR.

Mean	10 th Percentile	25 th Percentile	Median	75 th Percentile	90 th Percentile
44.32%	2.52%	14.22%	43.01%	70.80%	92.59%

Table 6
Determinants of AIUR

This table reports results from pooled regressions of AIUR on fund characteristics. The key independent variable is PAST_RELATIVE_PERFORMANCE, measured as the difference between the past risk-adjusted performance of a manager-run fund and the past risk-adjusted performance of all analyst-run funds in the same fund complex. The past risk-adjusted performance of the affiliated fund is measured as the average of the fund alphas over the previous 36 months. The past risk-adjusted performance of the analyst-run funds within a given complex is constructed by first taking the mean of the monthly fund alphas across all analyst-run funds within a given complex every month and then averaging the analyst-run mean alphas over the previous 36 months. The other independent variables include lagged values for: FUND_AGE, the log of fund age measured in years; CONCENTRATION, the portfolio Herfindahl index, computed for each fund as the sum of the squares of the portfolio weights in each SIC-defined industry; FUND_ASSETS, the total net assets of the fund measured in millions; EXPENSE_RATIO, annual expense ratio divided by 12 and expressed in percentage; TURNOVER, the portfolio turnover expressed in percentages; and LOAD, a dummy variable indicating whether a fund charges load fees or not. The regressions include time and fund style fixed effects and standard errors are clustered by fund. Coefficient p-values are reported in parentheses.

Table 6-continued

Returns Measured	Net of Expenses			Gross of Expenses		
Performance Measured as:	FF α	Carhart α	SAR	FF α	Carhart α	SAR
PAST_RELATIVE_PERFORMANCE	-4.322 (0.027)	-5.149 (0.002)	-3.081 (0.101)	-5.804 (0.003)	-6.107 (<0.001)	-5.246 (0.003)
CONCENTRATION	0.200 (0.143)	0.199 (0.146)	0.200 (0.145)	0.184 (0.171)	0.181 (0.178)	0.187 (0.167)
FUND_AGE	-0.079 (0.010)	-0.080 (0.009)	-0.080 (0.008)	-0.076 (0.013)	-0.077 (0.012)	-0.079 (0.009)
FUND_ASSETS	0.040 (0.001)	0.040 (0.001)	0.041 (0.001)	0.050 (<0.001)	0.050 (<0.001)	0.051 (<0.001)
EXPENSE_RATIO	-13.753 (0.012)	-13.547 (0.013)	-13.871 (0.011)			
TURNOVER	0.077 (0.007)	0.077 (0.007)	0.077 (0.007)	0.077 (0.009)	0.076 (0.009)	0.076 (0.010)
LOAD	-0.183 (0.001)	-0.183 (0.001)	-0.183 (0.001)	-0.217 (<0.001)	-0.216 (<0.001)	-0.218 (<0.001)
TIME & STYLE FIXED EFFECTS	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,682	5,682	5,682	5,682	5,682	5,682
Adjusted R ²	38.55%	38.71%	38.42%	37.61%	37.71%	37.53%

Table 7
Future Performance Stratified by Reliance on Analyst Ideas

This table reports results from the performance of all, uniquely-, and commonly-held stocks of affiliated managers stratified by AIUR. At the end of every quarter, all manager-run funds within each family that houses at least one analyst-run fund are ranked and sorted into terciles based on their AIUR. A holdings-based return is computed over the next quarter for the portfolio of each manager and the holdings-based returns of all funds belonging to each tercile are averaged, creating a time-series of monthly returns that are evaluated using the Fama-French and Carhart risk-adjustment approaches. This procedure is repeated every quarter and is conducted for all holdings and separately for subsets of holdings that capture the uniquely- and commonly-held stocks of affiliated managers. The performance measures are expressed in percentages and the associated p-values are reported in parentheses.

Performance Measure:	FF α			Carhart α		
Portfolio Consists of:	All Holdings	Unique Holdings	Common Holdings	All Holdings	Unique Holdings	Common Holdings
Analyst-Run Funds	0.230 (0.017)	0.365 (0.003)	0.220 (0.023)	0.230 (0.017)	0.366 (0.002)	0.220 (0.023)
Manager-Run Funds						
Lowest AIUR	0.172 (0.136)	0.178 (0.140)	0.262 (0.083)	0.173 (0.122)	0.179 (0.127)	0.264 (0.069)
Difference	-0.058 (0.493)	-0.187 (0.148)	0.042 (0.682)	-0.057 (0.488)	-0.187 (0.149)	0.044 (0.655)
Medium AIUR	0.059 (0.440)	0.130 (0.185)	0.057 (0.497)	0.059 (0.435)	0.131 (0.173)	0.057 (0.494)
Difference	-0.171 (0.020)	-0.235 (0.045)	-0.163 (0.063)	-0.171 (0.020)	-0.235 (0.044)	-0.163 (0.064)
Highest AIUR	0.075 (0.275)	0.007 (0.939)	0.060 (0.412)	0.075 (0.272)	0.007 (0.934)	0.060 (0.405)
Difference	-0.155 (0.022)	-0.358 (0.003)	-0.160 (0.033)	-0.155 (0.023)	-0.359 (0.003)	-0.160 (0.033)

Table 8
Relation of Analysts' Abilities and Affiliated Manager-Run Fund Performance

This table reports results from pooled regressions that relate the performance of manager-run funds with the past performance of analyst-run funds from the same family, controlling for fund characteristics. The dependent variable, which is monthly fund performance, is measured using the same approaches as in Section 4, whereby two of the dependent variables are Fama-French and the Carhart rolling alphas from Models 4 and 5, and the third dependent variable is the style adjusted return from Model 3. The key independent variable is PAST_ANALYST_PERFORMANCE, the past risk-adjusted performance of the analyst-run funds within a given complex constructed by first taking the mean of the monthly fund alphas across all analyst-run funds within a given complex every month and then averaging the analyst-run mean alphas over the previous 36 months. The other independent variables include lagged values for: FUND_AGE, the log of fund age measured in years; CONCENTRATION, the portfolio Herfindahl index, computed for each fund as the sum of the squares of the portfolio weights in each SIC-defined industry; FUND_ASSETS, the total net assets of the fund measured in millions; EXPENSE_RATIO, annual expense ratio divided by 12 and expressed in percentage; TURNOVER, the portfolio turnover expressed in percentages; and LOAD, a dummy variable indicating whether a fund charges load fees or not. The regressions include time and fund style fixed effects and standard errors are clustered by fund. Coefficient p-values are reported in parentheses.

Table 8-continued

Returns Measured:	Net of Expenses			Gross of Expenses		
Dependent Variable	FF α	Carhart α	SAR	FF α	Carhart α	SAR
PAST_ANALYST_PERFORMANCE	22.720 (<i><0.001</i>)	21.693 (<i>0.002</i>)	11.211 (<i>0.082</i>)	21.985 (<i><0.001</i>)	20.446 (<i>0.005</i>)	19.141 (<i>0.012</i>)
CONCENTRATION	0.226 (<i>0.283</i>)	0.061 (<i>0.739</i>)	-0.216 (<i>0.141</i>)	0.222 (<i>0.290</i>)	0.062 (<i>0.734</i>)	-0.250 (<i>0.103</i>)
FUND_AGE	0.003 (<i>0.908</i>)	0.020 (<i>0.462</i>)	0.007 (<i>0.840</i>)	0.002 (<i>0.944</i>)	0.018 (<i>0.517</i>)	-0.001 (<i>0.974</i>)
FUND_ASSETS	-0.010 (<i>0.318</i>)	-0.020 (<i>0.083</i>)	-0.043 (<i>0.003</i>)	-0.012 (<i>0.210</i>)	-0.023 (<i>0.034</i>)	-0.040 (<i>0.003</i>)
EXPENSE_RATIO	-61.219 (<i>0.316</i>)	-35.372 (<i>0.591</i>)	-96.727 (<i>0.183</i>)			
TURNOVER	-0.013 (<i>0.559</i>)	-0.026 (<i>0.280</i>)	-0.029 (<i>0.268</i>)	-0.011 (<i>0.618</i>)	-0.024 (<i>0.306</i>)	-0.023 (<i>0.382</i>)
LOAD	-0.106 (<i>0.086</i>)	-0.078 (<i>0.195</i>)	-0.083 (<i>0.238</i>)	-0.096 (<i>0.101</i>)	-0.064 (<i>0.262</i>)	-0.073 (<i>0.272</i>)
TIME & STYLE FIXED EFFECTS	Yes	Yes	Yes	Yes	Yes	
Observations	20,374	20,374	21,036	20374	20374	20,592
Adjusted R ²	5.73%	6.26%	1.91%	5.73%	6.27%	1.83%

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