Best Ideas

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Best Ideas

Abstract

We examine the performance of stocks that represent managers' "Best ideas." We find that the stock that active managers display the most conviction towards ex-ante, outperforms the market, as well as the other stocks in those managers' portfolios, by approximately 0.5 to 3.5 percent per quarter depending on the benchmark employed. The results for managers' other high-conviction investments (e.g. top five stocks) are also strong. The other stocks managers hold do not exhibit significant outperformance. This leads us to two conclusions. First, the U.S. stock market does not appear to be efficiently priced by our risk models, since even the typical active mutual fund manager is able to identify stocks that outperform by economically and statistically large amounts. Second, consistent with the view of Berk and Green (2004), the organization of the money management industry appears to make it optimal for managers to introduce stocks into their portfolio that are not outperformers. We argue that investors would benefit if managers held more concentrated portfolios.

JEL classification: G11, G23

1. Introduction

When asked to discuss his portfolio, the typical investment manager will identify a position therein and proceed to describe the opportunity and the investment thesis with tremendous conviction and enthusiasm. Frequently the listener is overwhelmed by the persuasiveness of the presentation. This leads to a natural follow-up question: how many investments make up the portfolio. Informed that the answer is, e.g., 150, the questioner will often wonder how anyone could possess such depth of knowledge and passion for so many disparate companies. Pressed to explain, investment managers have been known to sheepishly confess that their portfolio contains a few core high conviction positions - the best ideas - and then a large number of additional positions which may have less expected excess return but which serve to "round out" the portfolio.

This paper attempts to identify ex ante which of the investments in managers' portfolios were their best ideas and to evaluate the performance of those investments. We find that best ideas not only generate statistically and economically significant risk-adjusted returns over time but they also systematically outperform the rest of the positions in managers' portfolios. We find this result is consistent across many specifications: different benchmarks, different risk models, and different definitions of best ideas. The level of outperformance varies depending on the specification, but for our primary tests falls in the range of 0.5 to 3.5 percent per quarter. This abnormal performance appears permanent, showing no evidence of reversal over the subsequent year. Interestingly, cross-sectional tests indicate that active managers' best ideas are most effective in illiquid and unpopular stocks. We also confirm that "best ideas" trading strategies are robust to controlling for a variety of fund characteristics, including size (as measured by assets under management) and concentration (as measured by a fund's Herfindahl index).

We argue that these findings have powerful implications for our understanding of stock market efficiency. Previous research has generally found that money managers do not outperform benchmarks net of fees. Mark Rubenstein has referred to this fact as the efficient-markets faction's "nuclear bomb" against the "puny rifles' of those who argue risk-adjusted returns are forecastable. Subsequent work has shown quite modest outperformance of around one percent per year for the stocks selected by managers (ignoring all fees and costs). We believe this paper makes an important contribution by presenting evidence that the typical active manager can select stocks that deliver economically large risk-adjusted returns.

Consequently, this paper's findings are relevant for the optimal behavior of investors in managed funds. Our results suggest that while the typical manager has a small number of good investment ideas that provide positive alpha in expectation, the remaining ideas in the typical managed portfolio add little or no alpha. Managers have clear incentives to include zero-alpha positions. Without them, the portfolio would contain only a few names, leading to increased volatility, price impact, illiquidity, and regulatory/litigation risk. Adding additional stocks to the portfolio can not only reduce volatility but also increase portfolio Sharpe ratio. Perhaps most importantly, adding names enables the manager to take in more assets, and thus draw greater management fees. But while the manager gains from diversifying the portfolio, it is likely that typical investors are made worse off.

Based on these observations, we examine optimal decentralized investment when managerial skill is consistent with our "best ideas" evidence. We show that under realistic assumptions (e.g., investors put only a modest fraction of their assets into a particular managed fund), investors can gain substantially if managers choose less-diversified portfolios that tilt more towards their best ideas.

The rest of the paper is structured as follows. In section 2 we briefly discuss related literature. In section 3 we provide motivation and our methodology. In section 4 we summarize the dataset. In section 5 we describe the empirical results. We discuss the implications of our empirical findings in section 6. Section 7 concludes.

2. Related literature

There are several reasons why examining total portfolio performance may be misleading concerning stock-picking skills. First, manager compensation is often tied to the size of the fund's holdings. As a consequence, managers may have incentives to continue investing fund capital after their supply of alpha-generating ideas has run out. This tension has been the subject of recent analysis, highlighted by the work of Berk and Green (2004). Second, the very nature of fund evaluation may cause managers to hold some or even many stocks on which they have neutral views concerning future performance. In particular, since managers may be penalized for exposing investors to idiosyncratic risk, diversification may cause managers to hold some stocks not because they increase the mean return on the portfolio but simply because these stocks reduce overall portfolio volatility. Third, open end mutual funds provide a liquidity service to investors. Edelen (1999) provides strong evidence that liquidity management is a major concern for fund managers and that performance evaluation methods should take it into account. Alexander et al. (2007) show explicitly that fund managers trade-off liquidity against valuation motives, when making investment decisions. Finally, even if managers were to only hold stocks that they expect to outperform, it is likely that they believe that some of these bets are better than others.

Sharpe (1981); Elton and Gruber (2004); and van Binsbergen, Brandt, and Koijen (2008) study how myopic decision rules for decentralized investment management can lead to suboptimal outcomes. Recent theoretical work by Van Nieuwerburgh and Veldkamp (2008) has highlighted the importance of specialization in managerial information acquisition. They show that returns to such specialization imply that investors should not hold diversified portfolios. Our results may help to shed some light on Van Nieuwerburgh and Veldkamp (2008)'s conclusions.

There are several empirical papers with findings related to ours. Evidence that managers select stocks well can be found in Wermers (2000), Cohen, Gompers, and Vuolteenaho (2002) and Massa, Reuter, and Zitzewitz (forthcoming). Evidence that managers who focus on a limited area of expertise outperform more than the typical manager can be found in Kacperzyk, Sialm, and Zheng (2005). Busse, Green, and Baks (2006) document that managers who select more concentrated portfolios outperform. Cremers and Petajisto (forthcoming) demonstrate that the share of portfolio holdings that differ from the benchmark (what they define as active share) forecasts a fund's abnormal return – this forecastability could be due to managerial focus or portfolio concentration or both. Concurrent research suggests that extracting managers' beliefs about expected returns from portfolio holdings might be useful. In particular, Shumway, Szefler, and Yuan (2009) show that the precision of the implied beliefs from a manager's holdings concerning expected returns helps to identify successful managers. Pomorski (2009) shows that when multiple funds belonging to the same company trade the same stock in the same direction, that stock outperforms. Yao, Zhao, and Wermers (2007) document that trading strategies based on portfolio holdings generate returns exceeding seven percent during the following year, adjusted for the size, book-to market, and momentum characteristics of stocks. Their result depends on weighting those holdings by past fund performance.

3. Methodology

To formally motivate how we extract the best ideas of portfolio managers, we first consider a simple portfolio optimization problem. Consider a linear factor model for the returns on N given assets. Let r_t be the vector of returns on those N assets at time t, with mean μ and covariance matrix Ω. Returns are in excess of the risk-free rate, unless the asset is a zero-investment portfolio. For a set of K factor portfolios, we assume that the following relation holds

$$\begin{aligned} r_t &= \alpha + Br_{Kt} + \varepsilon_t \\ E[\varepsilon_t] &= 0, E[\varepsilon_t \varepsilon_t'] = \Sigma, Cov[r_{Kt,}\varepsilon_t] = 0 \\ r_{Kt} &= \omega_{Kt}^{'} r_t \end{aligned}$$

where B is a NxK matrix of factor sensitivities, r_{Kt} is the K-vector of factor portfolio returns in period t, ω_{Kt} is the matrix of stock weights resulting in these factor returns, and α and ε_t are the N-vectors of mispricings and disturbances, respectively. Finally, Σ is assumed to be of full rank.

An exact K-factor pricing relation implies that α is a vector of zeros. If pricing is not exact, then α is non-zero and related to the residual covariance matrix Σ as described in MacKinlay (1995). MacKinlay shows how the optimal orthogonal portfolio is the unique portfolio that can be constructed from these N assets to be uncorrelated with the factor portfolios and, in conjunction with the factor portfolios, forms the tangency portfolio. For example, when K=1 and the residual covariance matrix Σ is diagonal and proportional to the identity matrix, the orthogonal portfolio weights in the N assets and in the factor portfolio are

$$c \begin{bmatrix} \alpha \\ -\beta' \alpha \end{bmatrix}$$

where c is a normalizing constant and β is the vector of loadings on the factor. The weights on the N assets are proportional to the mispricing vector while the weight on the factor portfolio makes the portfolio orthogonal with respect to the factor. With less restrictive assumptions about Σ, the weights in the orthogonal portfolio then become proportional to $\Sigma^{-1}\alpha$. For example, if Σ is diagonal but stocks differ in the level of residual variance, the weight in each stock is proportional to $\frac{\alpha_i}{\sigma_i^2}$.

This textbook theory motivates benchmark-adjusted weights as appropriate measures of managers' views on mispricing. Practically speaking, we adjust the weights we observe in holdings data in one of four ways. Our basic approach is to identify best ideas as those which the manager overweights the most relative to some benchmark weighting scheme. In order to show robustness of the result, we use several different weighting schemes motivated by theory as well as simplicity and intuition. The simplest approach we consider is to compare the weights in the portfolio to the market capitalization weights of the stocks. That is, if Microsoft makes up 2 percent of the U.S. stock market, and Merck makes up 1 percent, we identify Microsoft's overweight as its portfolio weight minus 2 percent while Merck's overweight is its performance weight minus 1 percent. Of course, it is quite possible that every stock in a manager's portfolio is viewed as overweighted by this metric. This is especially true for the portfolios of small-cap managers, where a typical stock might have a market weight that is quite tiny, and each stock in the portfolio may have weights greater than 2 percent, for example. However, this is not a problem because we are only interested in the relative overweights of each stock - there is no need for the overweights to add to zero or to anything else. Therefore, our most intuitive approach is to define manager j's tilt in stock i as the difference between the fund's portfolio weight in i, λ_{ijt}, and the weight of stock i in the market portfolio, λ_{iMt}

$$market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$$

While intuitive, the weighting scheme discussed above is not clearly motivated by theory. A scheme that does follow from theory represents our second approach. For simplicity we select the Capital Asset Pricing Model to capture the return generating process of equity returns.[1] Using this model, we estimate the idiosyncratic risk component of each stock in the CRSP universe. Our estimate is simply the mean square error obtained by regressing a daily time series of stock i 's excess returns over the risk-free rate on market excess returns over the previous 250-day period.[2] We then need to add two strong assumptions: first, the model we have selected captures the factor structure of returns, so that the idiosyncratic risk components of stocks relative to this model are independent. Second, the goal of each manager is to create a portfolio with maximum information ratio - that is, he wishes to maximize excess return

[1]In unreported results we repeat the analysis using the Fama-French Model (Fama and French 1993) as the underlying asset pricing model. We found that this does not influence our results significantly.

[2]We exclude stocks with stock prices less than five dollars when when calculating tilts based on the interaction with idiosyncratic volatility.

relative to volatility by combining the set of stocks that he has selected. Given that the Sharpe ratio is probably the most widely cited performance statistic of mutual fund managers our second assumption does not appear to be very restrictive. Under these conditions, the manager's weight in each stock relative to the benchmark will be given by its expected risk adjusted return divided by the stock's idiosyncratic variance. Each stock is viewed as being an equally good investment on a risk vs. return basis. Therefore, we thus modify the above tilt by scaling it with our estimate of the stock's idiosyncratic variance,

$$CAPM\_tilt_{ijt} = \sigma_{it}^2(\lambda_{ijt} - \lambda_{iMt})$$

However, not all managers are benchmarked against the market. Ideally, we would subtract the portfolio weights of the benchmark relevant to the specific manager. One very general way to achieve this is to construct the benchmark as the market-capitalization-weighted portfolio of stocks contained in the manager's portfolio. To clarify: suppose that the appropriate benchmark portfolio consisted of Stocks A and B, each of which makes up only a very tiny fraction of the stock market (i.e., they are micro-cap stocks). Further, suppose that Stock A has twice the market capitalization of Stock B. Then, in this weighting scheme, Stock A would have a benchmark weight of 66.67%, and Stock B a benchmark weight of 33.33%. If the portfolio held equal dollar amounts of Stock A and Stock B, Stock A would be viewed as being underweight by 16.67%, while Stock B as being overweight by 16.67%. Using this scheme, the summed tilts do equal zero. Regardless, it is the relative tilt within each portfolio that matters for our approach: in this example, Stock B would be the best idea, and Stock A would be the worst idea. Formally we define the portfolio tilt measures as,

$$\begin{aligned} portfolio\_tilt_{ijt} &= \lambda_{ijt} - \lambda_{ijtV} \\ CAPM\_portfolio\_tilt_{ijt} &= \sigma_{it}^2(\lambda_{ijt} - \lambda_{ijtV}) \end{aligned}$$

where λ_{ijtV} is the corresponding value-weight portfolio of the names currently held by the manager.

We identify the "best idea" of a manager as the stock with the highest tilt in his portfolio. Each of our four tilt measures proxies for the manager's relative conviction about his holdings. High tilt ranks indicate strong conviction.

4. Data and Sample

Our stock return data comes from CRSP (Center of Research for Security Prices) and covers assets traded on the NYSE, AMEX and NASDAQ. We use the new mutual fund holdings data from Thompson Reuters. Our sample consists of US domestic equity funds that report their holdings in the period from January 1984 to December 2007. The holdings data are gathered from quarterly filings of every U.S.- registered mutual fund with the Securities Exchange Commission. The mandatory nature of these filings implies that we can observe the holdings of the vast majority of funds that are in existence during that period. For a portfolio to be eligible for consideration, it must have total net assets exceeding $5 million and at least 5 recorded holdings.[3] A crucial assumption of our analysis is that fund managers try to maximize the information ratio of their portfolios. Therefore we exclude portfolios that are unlikely to be managed with this aim in mind, such as index or tax-managed funds. We also exclude international funds from the sample. We identify best ideas as of the true holding date of the fund manager's portfolio as we are primarily interested in whether managers have stock-picking ability, not whether outsiders can piggyback on the information content in managers' holdings data.[4]

Table 1 provides summary statistics on our sample of mutual fund portfolios over the 24 year period under consideration. It points at the impressive growth of the industry, partly due to the growth in the market itself but also due to the increased demand for equity mutual fund investment. While the number of funds in our sample triples from the end of 1984 to the end of 2007, assets under management increase from $56 billion to more than $2.5 trillion in the same time span. Column 4 indicates that active mutual funds as a whole have grown to be dominant investors in U.S. equity markets. The stocks that managers cover tend to be on average between the

[3]This minimum requirement on the amount of net assets and number of holdings is standard in the the literature and imposed to filter out the most obvious errors present in the holdings data as well as incubated funds.

[4]In research not shown, we have also documented that historically one is able to generate profitable best-ideas trading strategies using holdings information as of the date the positions are made public. See Figure 5 for indirect evidence on this question.

seventh and eighth market capitalization decile. This bias towards large capitalization stocks is gradually decreasing over time. During the sample period, the mean number of assets in a fund has doubled. In summary, our analysis covers a substantial segment of the professional money management industry that in turn scans a substantial part of the U.S stock market for investment ideas.

5. Empirical Results

5.1. The Distribution of Best Ideas

In theory the number of best ideas that exist in the industry at any point in time could be as many as the number of managers or as few as one (if each manager had the same best idea). Of course this latter case is quite unlikely since mutual fund holdings make up a substantial proportion of the market. Therefore massive overweighting of a stock by mutual funds would be difficult to reconcile with financial market equilibrium. The black bars in Figure 1 indicate that best ideas generally do not overlap across managers. Over the entire sample period, almost 70% of best ideas do not overlap across managers. Any of these stocks are a best idea of only one manager at the time. Less than 19% of best ideas are considered by two managers, and only 6.3% of best ideas overlap over three managers at a time. On very rare occasions, it does occur that a stock is the best idea of ten or more funds. Clearly, managers' best ideas are not entirely independent. However, the best idea portfolios we identify do not consist of just a few names that are hot on Wall Street. Rather, it represents the opinions of hundreds of managers each of whom independently found at least one stock about which they appeared to have real conviction.

Figure 2 graphs the median of top tilts (best ideas) over time. Panel 1 depicts the typical top market and portfolio tilts, while Panel 2 contains the same data for the CAPM-market and CAPM-portfolio tilts. As a group, fund managers exhibit a slightly decreasing tendency over time to tilt away from the market and portfolio benchmarks respectively. Panel 2 shows that the distribution of CAPM-tilts reflects trends in idiosyncratic volatility over time.[5] This is a desirable feature of our mea-

[5] Campbell, Lettau, Makiel, and Xu (2001) document a positive trend in idiosyncratic volatility during the 1962 to 1997 period. See Brandt, Brav, Graham, and Kumar (forthcoming) for post-1997 evidence on this time-series variation.

sures: A 2% tilt away from the benchmark in 2000 is a stronger sign of conviction than a 2% tilt in 1997, since idiosyncratic risk has risen in between.

Note that at any point in time, a portion of these tilts are very small as they are due to small deviations from benchmarks by essentially passive indexers. As a consequence, most of our analysis will focus on the top 25% of tilts at any point in time. However, we show that our conclusions do not depend on this restriction as our findings are still evident when we consider even the smallest top tilt as indicative of active management.

5.2. The Features and Performance of Best Ideas

We measure the performance of best ideas using two approaches. Our primary approach is to measure the out-of-sample performance of a portfolio of all active managers' best ideas. Each best idea in the portfolio is equal-weighted (if more than one manager considers a stock a best idea we overweight accordingly). Results are qualitatively similar if we equal-weight unique names in the portfolio, if we weight by market capitalization, or if we weight by the amount of dollar invested in the best idea. The portfolio is rebalanced on the first day of every quarter to reflect new information on the stock holdings of fund managers and its performance is tracked until the end of the quarter. Each best ideas portfolio differs according to which of the four tilt measures we use to identify best ideas and whether we require the fund manager to be increasing the position. Our secondary approach is to instead examine "best-minus-rest" portfolios, where for every manager, we are long his or her best idea and short the remaining stocks in the manager's portfolio (with the weights for the rest of the portfolio being proportional to the manager's weights). Thus for each manager we have a style-neutral best-idea bet, which we as before aggregate over managers according to the dollar amount invested in each best idea.[6] Again, we then track the monthly performance of these four portfolios (one for each tilt measure) over the following three months and rebalance thereafter.

We apply three different measures of performance to this test portfolio – that is

[6] Note that our best-minus-rest approach has at least one attractive benefit: By comparing the manager's best idea to other stocks in the manager's portfolio, the best-minus-rest measure tends to cancel out most style and sector effects that might otherwise bias our performance inference. However, we emphasize the first approach for the simple reason that some managers may have the ability to pick more than one good stock.

three different methods to detect manager's abilities to make use of inefficiencies in stock markets. We choose these models, partly to reflect industry standards in fund evaluation and to make our results comparable to the findings of previous work in the literature. We first examine the simple average excess return of the test portfolio. This is equivalent to using a model of market equilibrium in which all stocks have equal expected return. While financial economists view this model as simplistic, it is still the case that raw returns are an important benchmark against which money managers may be judged by many investors. Second, we use Carhart's (1997) four-factor enhancement of the Fama French model, in which an additional factor is added to take account of correlation with a momentum bet, i.e. a winners-minus-losers portfolio. Third, we report performance results measured by a six-factor specification, which adds two more regressors to the Carhart model. The fifth factor is a standard value-weighted long-short portfolio, long in stocks with high idiosyncratic risk and short in stocks with low idiosyncratic risk. Recent work by Ang, Hodrick, Xing and Zhang (2006 and 2009) indicates that stocks with high idiosyncratic risk perform poorly, and given the nature of our tilt measures, not accounting for the performance of such stocks would skew our results. The sixth factor captures the documented short term reversion in the typical stock's performance. A short-term reversal factor is included here for similar reasons as the momentum factor, to control for mechanical and thus easily replicable investment strategies that should not be attributed to managers acting on private information. All standard factor return data is gathered from Kenneth French's website.[7] We construct the idiosyncratic volatility factor following Ang, Hodrick, Xing and Zhang (2006).

Table 2 reports the results of analyzing the best ideas of active fund managers. We first study the covariance properties of these portfolios. We find that the best ideas of managers covary with small, high-beta, volatile, growth stocks that have recently performed well. Thus, despite considerable evidence that value outperforms growth, as well as weaker but still interesting evidence that low beta as well as less volatile stocks have positive alphas, it does not appear that fund managers systematically find their highest-conviction ideas among these sorts of stocks.

The fact that we find that managers' best ideas are small stocks that load positively on the momentum factor, UMD, is interesting. The first result would be expected even if managers ultimately had no stock-picking ability as the managers themselves would expect to be able to pick smaller stocks better, recognizing that the market for large-cap stocks would be relatively more efficient.

[7] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

As for the covariance with momentum, when a stock performs well, it tends to load positively on UMD and negatively on SR. Thus, in part what we are finding is a failure to rebalance on the part of managers. Stocks that have a substantial tilt tend to be those that have performed well over the past year, thus, achieving their high position at least in part because of past growth in their stock price. Typical coefficients on the UMD factor are in the range between 0.14 and 0.27. While loadings of this size on hedge portfolios do lead to tremendous statistical significance (often with t-statistics above 5), it does not appear that mere price increases are the primary cause of stocks being significantly overweighted in portfolios, since a momentum tilt in the neighborhood of .2 does not imply past performance so high as to massively increase the portfolio weight of the stock. After all, for a stock that is 2% of a portfolio to organically become 3.5% of the portfolio, its price has to rise 75% relative to the return on the rest of the stocks in the portfolio. This is a rare occurrence, and generally, as the data are showing, is not the norm among the best idea stocks we are observing.

In Table 2, we adjust best ideas returns using three models of market equilibrium. The first row of the table shows a return over the entire sample of 105 basis points per month in excess of the risk-free rate. This return has an associated four-factor alpha of 15 b.p. with a t-statistic of 1.59, and a six-factor alpha of 19 b.p./month resulting in a higher t-statistic of 1.99. When we measure tilt relative to the manager's holdings, the point estimates as well as the t-statistics increase by twenty to thirty percent, suggesting that our benchmark may not be perfect. Finally, once we follow theory and interact our market tilt measure with an estimate of idiosyncratic variance, estimates of alpha increase to 82 basis points (t-statistic of 4.38) and 87 basis points (t-statistic of 5.15) for the market and portfolio tilt measures respectively.

One concern is that the factor model may not perfectly price characteristic-sorted portfolios. The small-growth portfolio and the large-growth portfolio have three-factor alphas of -34 bps/month (t-stat -3.16) and 21 bps/month (t-stat of 3.20) in Fama and French (1993). As Daniel, Grinblatt, Titman, Wermers (1997) (DGTW) point out, this fact can distort performance evaluation. For example, the passive strategy of buying the S&P 500 growth and selling the Russell 2000 growth results in a 44 bps/month Carhart alpha (Cremers, Petajisto, and Zitzewitz; 2008). As a consequence, we also adjust the returns on the best-ideas strategy using characteristic-sorted benchmark portfolios as in DGTW. Specifically we assign each best idea to a passive portfolio according to its size, book-to-market, and momentum rank and subtract the passive portfolio's return from the best idea's return. The Characteristic

Selectivity (CS) measure for the best ideas portfolio is just the weighted differenced return, $CS_t = r_{p,t} - r_{DGTW,t}$. Table 3 shows the mean of the benchmarked return, CS_t, along with results from four- and six-factor regressions. In general the results with the characteristic adjustment are similar to, but a bit stronger than, the results without this correction.

Our analysis has focused on the top 25% best ideas across the universe of active managers in order to make sure we were not examining passive funds, sometimes labeled "closet indexers". Table 4 documents that our findings concerning the performance of best ideas generally hold as we vary this threshold from the top 100% to top 50% to top 5% of active tilts. As would be expected, the results are stronger for managers that have heavier tilts. In particular note the very strong performance of best ideas representing the top 5% of tilts in Panel C of that Table. For the top 5% of CAPM portfolio tilts, the six-factor alpha is 1.17% per month, or 14.04% per year.

The analysis in Table 5 indicates that missing controls are probably not responsible for the alphas we measure by examining the performance of a best-minus-rest strategy. Unless best ideas of managers systematically have a different risk or characteristic profile than the rest of the stocks in their portfolios, this strategy controls for any unknown style effects that the manager may possibly be following. Throughout the table, alphas are comparable to those in Table 2.

Table 6 repeats the analysis of Table 5 replacing the best idea in the long side of the bet with the manager's top three ideas (Panel A) or top 5 ideas (Panel B). These top three/five positions are weighted within fund by the size of the manager's position in the stock and then equally-weighted across managers. We find that after generalizing what managers feel is their top picks, the results continue to show economically and statistically significant performance. Consistent with the idea that managers' tilts reflect their views concerning stocks' prospect, the alpha of the trading strategy is smaller as we include the lower-ranked stocks. Consistent with diversification benefits, the standard error of the estimate is usually lower as more stocks are included on the long side.

We examine more carefully how views concerning alpha that are implicit in managers' portfolio weights line up with subsequent performance. Recall that the six-factor alpha for the best idea portfolio of Table 2 based on $portfolio\_tilt$ was 32 basis points. We repeat the calculation replacing every manager's best idea with their second-best idea. We then repeat again for the third-best idea, and so on down to the 10th ranked idea. We perform the same analysis starting with the lowest tilt measure and moving up a manager's rank.[8] Therefore we calculate the performance of strategies that bet on manager's worst idea, then on manager's second-worst idea and so on. Figure 3 plots how the six-factor alpha evolves when one moves down the list of best ideas. The figure is striking: the point estimates monotonically decline as we move down managers' rankings.

Figure 4 plots the cumulative abnormal returns (CAR) of the best ideas portfolios, against the portfolio of all stocks held by mutual fund managers in event time. The CAR's have been adjusted for risk using the six factor model employed above. The graph shows that the superior performance of best ideas is not transitory in nature. The buy-and-hold CAR of the stocks in our best ideas portfolio is increasing even up to 12 months after first appearing in the portfolio. Buying the best-ideas portfolios of Table 2 that exploit variance-weighted tilts and holding these bets for the next twelve months would have returned slightly over 10%, after adjusting for standard factor risk.

5.3. Where are best ideas most effective?

In this subsection, we examine two potential contributing factors to managers' alpha-generating ability. In Table 7, each month we sort all stocks in the best ideas portfolio based on a standard measure of liquidity, the negative of the average daily relative bid-ask spread over the preceding quarter. We find that in every case, the less-liquid stocks (the high bid-ask spread stocks within the best ideas portfolio) are generating the majority of the alpha of the best ideas portfolios. For example, Table 7 shows that for our simplest tilt measure, the less-liquid best ideas outperform by 54 basis points with a t-statistic of 2.84 while the more-liquid best ideas underperform by 10 basis points. This cross-sectional variation in abnormal return within the best-ideas portfolio is not due to our sort on liquidity. In results not shown, we have also controlled for the Pastor and Stambaugh (2003) and Sadka (2006) liquidity factors, and the estimates of alpha remain economically and statistically significant.

In a rational expectations setting, information should be more valuable to the manager the less his or her peers act on it at the same time. Information is a strategic substitute. In order to shed light on this point, we calculate a stock-specific measure of conviction in the industry. Each quarter, we sort each manager's portfolio by one

[8] For this analysis, we require that a manager have at least 20 names in his or her portfolio.

of the four tilt measures and assign a percentage rank to it (1% for lowest and 100% for highest tilt rank). We then cumulate this rank over all managers to arrive at a stock specific popularity measure. Table 8 provides the risk-adjusted performance of portfolios of above- and below-median popularity stocks. We find that the majority of the abnormal return comes from the best ideas that are the least popular. These results suggest that managers generate alpha in best ideas that other managers do not seem to have.

5.4. How do best ideas bets perform as a function of fund characteristics

In this subsection, we repeat the analysis of Table 4 Panel A where we look at the entire universe of active managers. However we now decompose the result based on fund type. We examine two fund characteristics that might be plausibly related to the performance of a fund's best ideas. First we measure how concentrated the fund is using a normalized Herfindahl index measure of the positions in a fund. Then, we measure how big the fund is based on assets under management. Tables 9 and 10 show that the best ideas of small or concentrated funds outperform the best ideas of their large, unconcentrated counterparts. This seems consistent with intuition: managers may well choose to concentrate because they have a few great ideas; alternatively managers who concentrate in the investing sense may also concentrate in the mental sense – that is, they may put greater effort into selecting their best ideas. Managers with fewer assets to manage may have more options in which stock to select as their best idea – a 4% position in a $300M fund is only $12M, a position size that may be quite reasonable in a $600M company. Someone managing $20B does not have the luxury of placing 4% in such a small company no matter how desirable the stock.

5.5. Why are the rest of the ideas in the portfolio?

In this subsection, we examine the performance of the non-best ideas stocks more carefully. In particular, we sort the rest of the portfolio into quintiles based on the stock's past correlation with the manager's best idea, as defined in Table 2. We then measure the performance of a trading strategy that goes long the top quintile (the most correlated stocks) and short the bottom quintile (the most uncorrelated stocks). We report these results in Table 11. We find a spread in six-factor alpha ranging from 15 to 31 basis points per month depending on the definition of best idea. Three of the four estimates are statistically significant and the point estimates increase as we move to our more preferred measures of best ideas. These results suggest that managers are willing to accept a lower (abnormal) return for stocks that are less correlated with the stock on which they have strong views.

6. Discussion and Implications

Modern portfolio theory (MPT) makes clear normative statements about optimal investing by managers on behalf of their clients. Suppose an endowment fund with mean-variance preferences has three possible investments: **M** (the global market portfolio), and **X** and **Y** (the two ideas for trades that a skilled manager possesses). Sharpe (1981) noted that delegating security selection to managers unaware of the client's other portfolio holdings is likely to lead to suboptimal outcomes. In what follows, we study a specific example of Sharpe's general conclusion that is motivated by the empirical results documented in the previous section. Our point is going to be that if a manager has 50 good ideas we may want only his one, two or five best ideas; in order to show that, we are going to simplify the problem by saying the manager has two good ideas and show that under reasonable conditions we will want only his first-best and not the other one. Let the riskless rate be zero and the expected returns on the assets be: $E[R_M] = 7\%$, $E[R_X] = 2\%$, and $E[R_Y] = 1\%$. Further suppose all three assets are uncorrelated and each has the same volatility.

Assume the manager charges no fees. To fix ideas, imagine that the bets are purchases of catastrophe bonds: **X,** a bond that pays 3% in the 99% likely case that Florida hurricane losses fall below some cutoff and -100% otherwise, and **Y,** a similar bond that pays 2% on the 99% chance of below-threshold Japanese windstorm losses and -100% otherwise.

Unconstrained optimization delivers the result 70% in **M**, 20% in **X**, and 10% in **Y**; this is the portfolio that maximizes Sharpe ratio. The problem is separable: if we optimize the active manager's portfolio, we'll find that 2/3 **X** and 1/3 **Y** is optimal. At Stage 2, we can then optimize between the market and the manager to get 70% and 30%, bringing us back to 70%, 20%, and 10% in **M**, **X**, and **Y** respectively. Everything is as expected, and the manager has not hurt his investor by maximizing Sharpe ratio in his two-asset sub-portfolio.

But, suppose the endowment decides in advance that it will not allocate more than 10% to the manager. Now in many cases, the best we can do in terms of Sharpe ratio in the absence of short-selling is if the manager puts 100% in the better bet **X** and zero in **Y**. In fact, if the manager can sell short, Sharpe ratio may often be further increased if he shorts **Y** to fund greater investment in **X**. Once we put in place the extremely realistic constraint that an endowment fund will cap the allocation to any given manager, then the manager is hurting the endowment's expected utility if he selects the Sharpe-ratio-maximizing (SRM) portfolio of his ideas rather than concentrating on his very best idea(s).

Figure 5 shows the Sharpe ratios obtained at different allocations to the ideas **X** and **Y**. Each line on the graph shows the results for a different constraint on the total fraction of assets that are managed (i.e. invested in either **X** or **Y**). We indicate on each line with a star the amount in the best idea consistent with a myopic allocation by the active manager that only maximized his or her own-portfolio Sharpe ratio. At 30% of the investor's portfolio allocated to the active manager, we get the global optimum at this own-portfolio Sharpe Ratio maximizing choice by the active manager, as this choice is also the unconstrained choice (i.e.,the highest Sharpe ratio occurs at 20%, which is 2/3 of 30%). When we constrain the managed assets to either 10% or 20% of the portfolio, the maximum Sharpe ratio is reduced of course. Less obviously, when managed assets are constrained, the fraction of managed assets that should be held in the best idea **X** grows from 2/3 in the unconstrained case to 4/5 if managed holdings are capped at 20% of the portfolio (since the maximum Sharpe ratio is obtained at a 16% investment in the best idea). And in the case where the fixed allocation to the active manager is only 10%, the optimal investment in the best idea becomes 11/10, implying a short position of -1/10 in the second-best idea.

In summary, Figure 5 demonstrates that constraining the allocation to a manager should simultaneously also incentivize the client to push the fund manager to allocate more to best ideas. Otherwise, if managers act myopically by maximizing only their sub-portfolio's Sharpe ratio, the overall Sharpe ratio may be reduced. In the example above, the magnitude of the reduction in Sharpe ratio is modest. In order for the true impact of the effect to be appreciated, one needs to consider the more realistic situation where the investor allocates to multiple managers, which we do next.

Suppose for example that the assumptions underlying the CAPM hold, except that each manager has identified a single unit-beta investment opportunity **X** that has positive CAPM alpha. We assume that there are N managers, each of whom has one best idea so that each manager's portfolio consists of a combination of the best idea and the market portfolio. Note that the best idea could be thought of as an immutable basket of the manager's good ideas. For simplicity, we assume that each manager's idea has the same expected return, volatility, and beta and that the unsystematic components of managers' best ideas are uncorrelated. In Figure 6, we display the Sharpe ratios for such portfolios based on the following set of assumptions. Suppose that each investment **X** has 4% annual alpha and that the market premium is 6%; let the market's annual volatility be 15% and **X**'s be 40% (with the assumption of unit beta, every **X** must have a correlation of .375 with **M**,where **M** again represents the market portfolio). We continue to assume that the risk-free rate is zero.

The optimal risky portfolio for an investor to hold will be a mix of the **X**s and **M**, with each **X** having equal weight. The weights that are optimal are the weights that maximize the resulting portfolio's Sharpe ratio. If each individual manager maximizes his Sharpe ratio, the result will be that each manager will have 89% in the market and 11% in his best idea. And if the investor has access to only a single manager, this will be the optimal choice for the investor as well. But as Figure 6 shows, the conclusion changes dramatically as the number of managers grows. For example, if the investor is allocating among 5 equally-skilled managers, the resulting portfolio will be optimized if each manager allocates approximately 47% to his best idea. If the investor has access to fifty equally-skilled managers, the optimum is found when managers put 468% in their best idea (and -368% in the market).

The top line in Figure 6 shows the Sharpe ratio that would result if managers followed this optimal policy. The lowest line shows the Sharpe ratio the investor will obtain if each manager instead mean-variance optimizes his own portfolio. The middle line gives the resulting Sharpe ratios if managers choose the portfolio that is best for the investor but with the constraint that they cannot sell the market short.

Differences in Sharpe ratios are substantial. For fifty managers, manager-level optimization leads to a Sharpe ratio of 0.4 while the optimum optimorum delivers 0.8, and the best-case scenario with short selling constraints provides only 0.6. Moreover, optimal weights in the manager's best ideas are dramatically larger than what results from myopically maximizing manager-level Sharpe ratio.

In general, it seems likely that borrowing, lending, shorting, and maximum-investment constraints will create a situation where the investor's optimum requires the manager to choose a weight in X far greater than the SRM weight. This would appear to be the case in typical real-world situations. A manager has a small number of good investment ideas. Modern portfolio theory says that any portfolio of stocks that maximizes CAPM information ratio is equally good for investors. But in truth, if the manager offers a portfolio with small weights in the good ideas and a very large weight in the market [or a near-market portfolio of zero- (or near-zero-) alpha stocks], the results for investors will be entirely unsatisfactory. The small allocation that investors make to any given manager, combined with the small weight such a manager places in the good ideas, mean that the manager adds very little value.

Suppose managers have optimized their Sharpe ratios and the investor wishes to obtain the constrained optimum. In a world where shorting the market was costless and common, an investor could take 100 dollars of capital and, instead of giving two dollars to each manager, could short the market to the tune of 800 dollars, giving 18 to each manager. Then, if each manager maximized Sharpe ratio and put 11% into their best idea, the investor would have about two dollars in each best idea and would approximately match the allocation the investor would have had if he had given two dollars to each manager and each manager had put 100% of this capital in their best idea. In reality it would be shocking to see an endowment fund pursue such an extreme market-shorting strategy.

So: MPT says all **X**-**M** combinations are equally good because investors can go long or short the market to return to the optimum. A natural choice for managers would be the SRM portfolio (11/89 in our example). But we see that the more realistic constrained case suggests that managers can serve their clients better by putting a much greater weight in **X** than the SRM weight – e.g. 100% instead of 11%. And yet as we see in Figure 2, overweights of best ideas by actual managers are smaller than 11%. Indeed overweights of that magnitude are rare. Of course the 11% figure came from our simple example; perhaps managers view their best ideas as having far less than 4% alpha. But this seems unlikely, since we find actual outperformance of this order of magnitude despite our very poor proxy for best ideas. Other conditions may differ from our simple example, but it appears probable that what we are observing is a decision by managers to diversify as much or more than the SRM portfolio despite the argument above that their clients would be best served by them diversifying far less than SRM. We identify four reasons managers may overdiversify.

1. **Regulatory/legal.** A number of regulations make it impossible or at least risky for many investment funds to be highly concentrated. Specific regulations bar overconcentration; additionally vague standards such as the "Prudent man" rule make it more attractive for funds to be better diversified from a regulatory

perspective. Managers may well feel that a concentrated portfolio that performs poorly is likely to lead to investor litigation against the manager.

Anecdotally, discussions with institutional fund-pickers make their preference for individual funds with low idiosyncratic risk clear. Some attribute the effect to a lack of understanding of portfolio theory by the selectors. Others argue that the selector's superior (whether inside or outside the organization) will tend to zero in on the worst performing funds, regardless of portfolio performance. Whatever the cause, we have little doubt that most managers feel pressure to be diversified.

2. **Price impact, liquidity and asset-gathering**. Berk and Green (2004) outline a model in which managers attempt to maximize profits by maximizing assets under management. In their model, as in ours, managers mix their positive-alpha ideas with a weighting in the market portfolio. The motivation in their model for the market weight is that investing in an individual stock will affect the stock's price, each purchase pushing it toward fair value. Thus there is a maximum number of dollars of alpha that the manager can extract from a given idea. In the Berk and Green model managers collect fees as a fixed percentage of assets under management, and investors react to performance, so that in equilibrium each manager will raise assets until the fees are equal to the alpha that can be extracted from his good ideas. This leaves the investors with zero after-fee alpha.

   Clearly in the world of Berk and Green, (and in the real world of mutual funds), a manager with one great idea would be foolish to invest his entire fund in that idea, for this would make it impossible for him to capture a very high fraction of the idea's alpha in his fees. In other words, while investors benefit from concentration as noted above, managers under most commonly-used fee structures are better off with a more diversified portfolio. The distribution of bargaining power between managers and investors may therefore be a key determinant of diversification levels in funds.

3. **Manager risk aversion.** While the investor is diversified beyond the manager's portfolio, the manager himself is not. The portfolio's performance is likely the central determinant of the manager's wealth, and as such we should expect him to be risk averse over fund performance. A heavy bet on one or a small number of positions can, in the presence of bad luck, cause the manager to lose his business or his job. If manager talent were fully observable this would not be the case – for a skilled manager the poor performance would be correctly

attributed to luck, and no penalty would be exacted. But when ability is being estimated by investors based on performance, risk-averse managers will have incentive to overdiversify.

4. **Investor irrationality**. There is ample reason to believe that many investors – even sophisticated institutional investors – do not fully appreciate portfolio theory and therefore tend to judge individual investments on their expected Sharpe ratio rather than on what they are expected to contribute to the Sharpe ratio of their portfolio.[9] For example, Morningstar's well-known star rating system is based on a risk-return trade-off that is highly correlated with Sharpe ratio. It is very difficult for a highly concentrated fund to get a top rating even if average returns are very high, as the star methodology heavily penalizes idiosyncratic risk. Since a large majority of all flows to mutual funds are to four- and five-star funds, concentrated funds would appear to be at a significant disadvantage in fund-raising.[10] Other evidence of this bias includes the prominence of fund-level Sharpe ratios in the marketing materials of funds, as well as maximum drawdown and other idiosyncratic measures.

Both theory and evidence suggest that investors would benefit from managers holding more concentrated portfolios.[11] Our belief is that we fail to see managers focusing on their best ideas for a number of reasons. Most of these relate to benefits to the manager of holding a diversified portfolio. Indeed Table 11 provides evidence consistent with this interpretation. But if those were the only causes we would be hearing outcry from investors about overdiversification by managers, while in fact such complaints are rare. Thus we speculate that investor irrationality (or at least bounded rationality) in the form of manager-level analytics and heuristics that are not truly appropriate in a portfolio context, play a major role in causing overdiversification.

[9] This behavior is consistent with the general notion of "narrow framing" proposed by Kahneman and Lovallo (1993), Rabin and Thaler (2001), and Barberis, Huang, and Thaler (2006).

[10] Del Guercio and Tcak (2000) show that Morningstar star rating is the strongest variable predicting mutual fund flows out of those they consider, subsuming alpha in their analysis.

[11] See recent work by Van Nieuwerburgh and Veldkamp (2008)

7. Conclusions

How efficient are stock prices? This is perhaps the central question in the study of investing. Many have interpreted the fact that skilled professionals fail to beat the market by a significant amount as very strong evidence for the efficiency of the stock market. In fact, Rubinstein (2001) describes that evidence as a "nuclear bomb against the puny rifles [of those who believed markets are inefficient]."

This paper asks a related simple question. What if each mutual fund manager had only to pick a few stocks, their best ideas? Could they outperform under those circumstances? We document strong evidence that they could, as the best ideas of active managers generate up to an order of magnitude more alpha than their portfolio as whole, depending on the performance benchmark.

We argue that this presents powerful evidence that the typical mutual fund managers can, indeed, pick stocks. The poor overall performance of mutual fund managers in the past is not due to a lack of stock-picking ability, but rather to institutional factors that encourage them to overdiversify, i.e. pick more stocks than their best alpha-generating ideas. We point out that these factors may include not only the desire to have a very large fund and therefore collect more fees [as detailed in Berk and Green (2004)] but also the desire by both managers **and** investors to minimize a fund's idiosyncratic volatility: Though of course managers are risk averse, investors appear to judge funds irrationally by measures such as Sharpe ratio or Morningstar rating. Both of these measures penalize idiosyncratic volatility, which is not truly appropriate in a portfolio context.

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Figure 1. This figure displays the histogram of the popularity of the stocks that we select as manager's best ideas from 1984-2007. Popularity is defined as the number of managers at any point in time which consider a particular stock their best idea. Best ideas are determined within each fund as the stock with the maximum value of $market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$, where λ_{ijt} is manager j's portfolio weight in stock i and λ_{iMt} is the weight of stock i in the market portfolio.

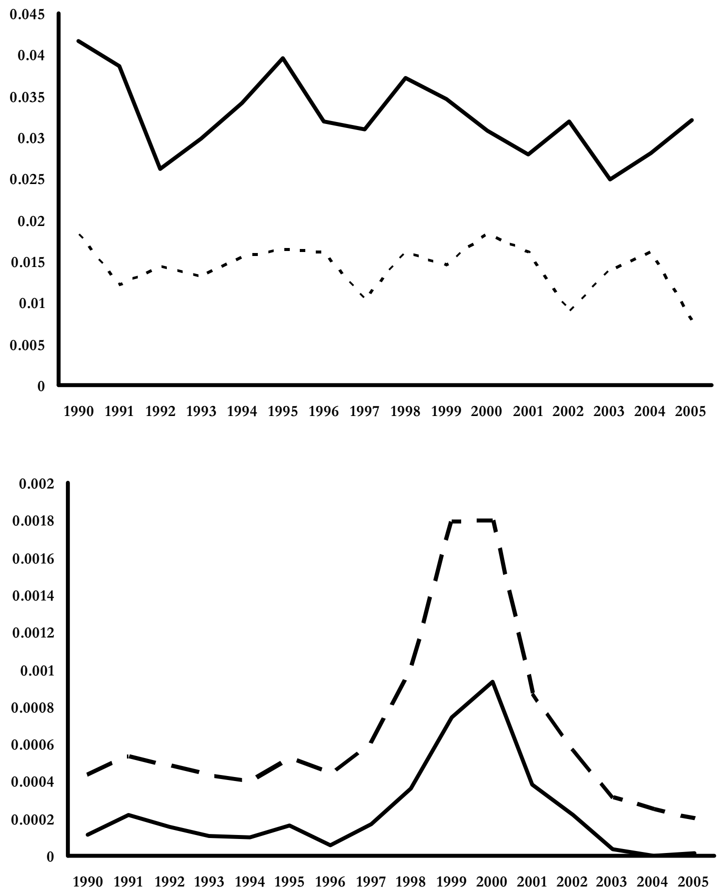


Figure 2. This figure graphs the value of the various measures we use to identify the best idea of a portfolio for the median manager over the time period in question. Best ideas are determined within each fund as the stock with the maximum value of one of four possible measures: 1) $market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$, 2) $CAPM\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{iMt})$, 3) $portfolio\_tilt_{ijt} = \lambda_{ijt} - \lambda_{ijtV}$, and 4) $CAPM\_portfolio\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate (as of the time of the ranking) of a stock's CAPM idiosyncratic variance.

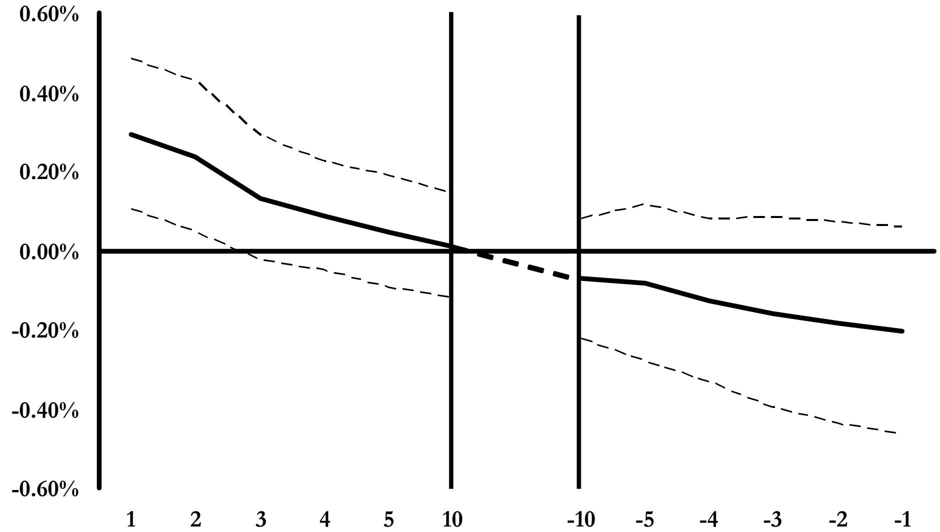
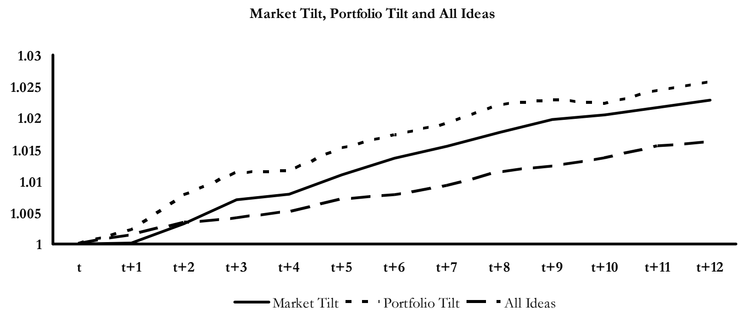


Figure 3. This figure graphs the six-factor alpha along with the accompanying two standard deviation bounds of trading strategies based on the $portfolio\_tilt_{ijt}$ measure of Table 2 Panel A for managers' best idea, second-best idea, down to their worst idea.



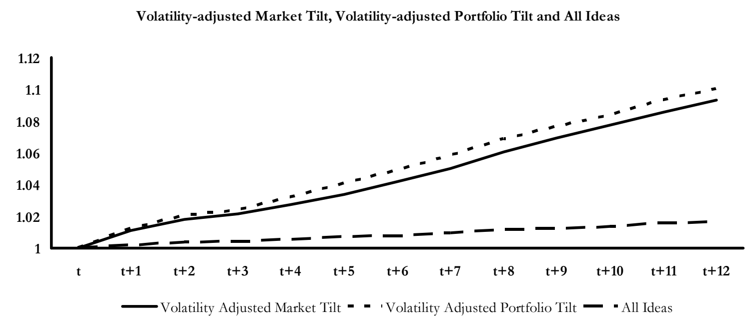


Figure 4. This figure graphs the risk-adjusted cumulative buy-and-hold abnormal returns of the best ideas portfolio as identified by our various tilt measures. The performance of the best ideas portfolios is contrasted with the performance of all stocks held by the mutual fund industry at the same points in time. All cumulative abnormal returns are adjusted using the six factor model

$$r_{p,t} - r_{f,t} = a_6 + bRMRF_t + sSMB_t + hHML_t + mMOM_t + iIDI_t + rSTREV_t + \varepsilon_{p,t}$$

where $r_{p,t}$ is the equal-weight return on the portfolio of the stocks that represent the best idea of each active manager. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We restrict the analysis to those managers whose maximum tilt is in the top 25% of all maximum tilts at the time. The sample period for the dependent variables is January 1985 - December 2007.

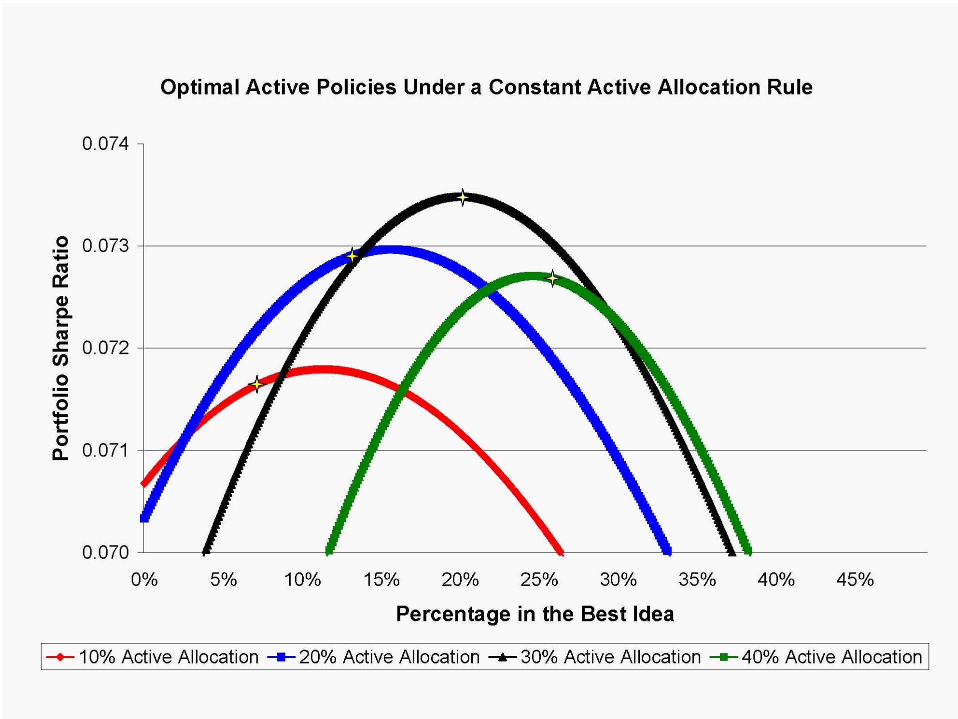


Figure 5. This figure shows the Sharpe ratios obtained from different allocations to the market (M), a best idea (X), and a second-best idea (Y). In particular, we consider the Sharpe ratio of portfolios where an investor allocates a fixed percentage to an active manager choosing a portfolio of X and Y and puts the remaining capital in M. The riskless rate is zero and the expected returns on the three assets in question are: $E[R_M] = 7\%$, $E[R_X] = 2\%$, and $E[R_Y] = 1\%$. All three assets are uncorrelated and each has the same volatility. Each line on the graph shows the results for a different constraint on the total fraction of assets that are managed by the active manager (i.e. invested in either X or Y). The star on each line represents the myopic allocation by the active manager that maximizes simply his or her own-portfolio Sharpe ratio.

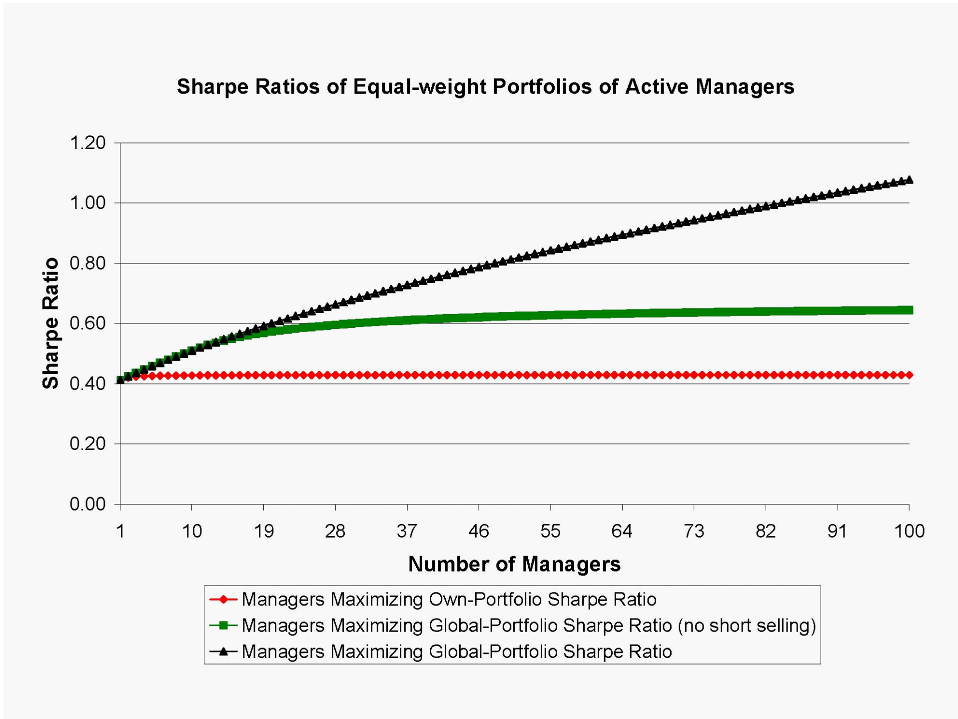


Figure 6. This figure shows the Sharpe ratio of equal-weight portfolios of active managers. We assume that there are N managers, each of whom has one best idea so that each manager's portfolio consists of a combination of the best idea and the market portfolio. For simplicity, we assume that each manager's idea has the same expected return, volatility, and beta and that the unsystematic components of managers' best ideas are uncorrelated. The figure displays the Sharpe ratios for such portfolios based on the following set of assumptions. Suppose that each investment X has 4% annual alpha and that the market premium is 6%; let the market's annual volatility be 15% and X's be 40% (with the assumption of unit beta, every X must have a correlation of .375 with M, where M again represents the market portfolio). The risk-free rate is zero. The top line in Figure 7 shows the Sharpe ratio that would result if managers followed this optimal policy. The lowest line shows the Sharpe ratio the investor will obtain if each manager instead mean-variance optimizes his own portfolio. The middle line gives the resulting Sharpe ratios if managers choose the portfolio that is best for the investor but with the constraint that they cannot sell the market short.

Table 1: **Sample Summary Statistics**

The table reports year-end summary statistics from January 1984 to December 2007 for all mutual fund portfolios detailed on Thompson Financial that contain at least five stocks, are not index or tax-managed funds, have total net assets exceeding five million dollars, and have disclosed fund holdings within the past six months. Column 2 reports the total number of these funds. Column 3 reports the average fund size while Column 4 reports the total value of stocks held in those portfolios (both columns in billions of dollars). Column 4 reports the average market capitalization decile of the stocks held by the funds in the sample. Column 5 reports the average number of stocks in a fund.

Year	Number of Funds	Average Fund Size	Total Assets	Average Market-Cap Decile.	Mean Number of Assets
1984	421	0.13	56	7.7	50
1985	468	0.13	61	7.5	45
1986	530	0.16	87	7.5	52
1987	612	0.21	126	7.8	64
1988	655	0.21	137	7.9	66
1989	671	0.23	156	8.0	65
1990	711	0.22	155	8.1	67
1991	831	0.27	224	8.0	72
1992	896	0.34	308	8.0	85
1993	1382	0.33	455	7.9	85
1994	1500	0.28	416	7.9	84
1995	1569	0.37	580	7.8	88
1996	2014	0.40	809	7.6	90
1997	2150	0.52	1,126	7.5	89
1998	2305	0.64	1,474	7.8	93
1999	2305	0.85	1,948	8.2	92
2000	2198	0.88	1,937	8.3	101
2001	1971	0.78	1,532	8.2	105
2002	1844	0.66	1,222	8.2	101
2003	1841	0.90	1,663	8.1	104
2004	1641	1.08	1,776	8.0	103
2005	1541	1.33	2,056	8.1	106
2006	1392	1.61	2,234	8.0	107
2007	1348	1.89	2,542	8.0	111

Table 2: **Performance of Best Ideas**

We report coefficients from monthly regressions of

$$r_{p,t} - r_{f,t} = \alpha_6 + bRMRF_t + sSMB_t + hHML_t + mMOM_t + iIDI_t + rSTREV_t + \varepsilon_{p,t}$$

where $r_{p,t}$ is the equal-weight excess return on the portfolio of the stocks that represent the best idea of each active manager. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$, 2) $portfolio\_tilt_{ijt} = \lambda_{ijt} - \lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We restrict the analysis to those managers whose maximum tilt is in the top 25% of all maximum tilts at the time. t-statistics are can be found below the parameter estimates. The sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
r_1	0.0105	0.0015	0.0019	1.10	0.15	-0.09	0.19	0.01	-0.07
		1.59	1.99	42.95	3.89	-2.41	8.36	0.68	-2.59
r_2	0.0123	0.0031	0.0032	1.11	0.34	0.00	0.14	-0.01	-0.08
		3.29	3.34	43.41	8.51	0.04	6.33	-0.31	-2.80
r_3	0.0123	0.0040	0.0082	1.23	0.19	-0.49	0.27	0.46	-0.03
		1.86	4.38	24.86	2.43	-6.48	6.17	10.86	-0.56
r_4	0.0136	0.0053	0.0087	1.23	0.42	-0.48	0.23	0.37	-0.03
		2.85	5.15	27.44	5.96	-6.98	5.63	9.56	-0.54

Table 3: **Performance of Best Ideas: Characteristic Selectivity**

We report coefficients from monthly regressions of

$$r_{p,t} - r_{DGTW,t} = \alpha_6 + bRMRF_t + sSMB_t + hHML_t + mMOM_t + iIDI_t + rSTREV_t + \varepsilon_{p,t}$$

where $r_{p,t} - r_{DGTW,t}$ is the equal-weight and DGTW characteristic-benchmark-matched excess return on the portfolio of the stocks that represent the best idea of each active manager. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$, 2) $portfolio\_tilt_{ijt} = \lambda_{ijt} - \lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We restrict the analysis to those managers whose maximum tilt is in the top 25% of all maximum tilts at the time. t-statistics are can be found below the parameter estimates. The sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
r_1	0.0022	0.0010	0.0018	0.05	-0.04	-0.07	0.15	0.04	-0.09
		1.13	1.93	2.07	-1.06	-1.82	6.80	1.96	-3.24
r_2	0.0035	0.0024	0.0029	0.05	0.01	-0.07	0.13	0.02	-0.10
		2.51	3.02	1.94	0.18	-1.87	5.73	0.72	-3.77
r_3	0.0065	0.0053	0.0083	0.20	-0.23	-0.35	0.22	0.28	-0.07
		2.71	4.42	4.03	-2.94	-4.63	4.99	6.58	-1.25
r_4	0.0072	0.0064	0.0088	0.18	-0.09	-0.39	0.18	0.21	-0.05
		3.69	5.11	4.02	-1.29	-5.58	4.37	5.36	-1.04

Table 4: **Performance of Best Ideas at Different Threshold Levels**

We report coefficients from monthly regressions of

$$r_{p,t} - r_{f,t} = \alpha_6 + bRMRF_t + sSMB_t + hHML_t + mMOM_t + iIDI_t + rSTREV_t + \varepsilon_{p,t}$$

where $r_{p,t}$ is the equal-weight excess return on the portfolio of the stocks that represent the best idea of each active manager. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$, 2) $portfolio\_tilt_{ijt} = \lambda_{ijt} - \lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. *t*-statistics are can be found below the parameter estimates. The sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
				Panel A: Top 100% of Tilts					
r_1	0.0093	0.0000	-0.0001	1.10	0.19	-0.06	0.21	-0.02	-0.05
		-0.04	-0.12	58.86	6.45	-2.05	12.31	-1.39	-2.45
r_2	0.0102	0.0005	0.0001	1.13	0.39	0.06	0.15	-0.06	-0.05
		0.65	0.12	53.99	11.87	1.91	8.00	-3.21	-2.15
r_3	0.0101	0.0018	0.0045	1.22	0.19	-0.25	0.12	0.29	-0.06
		1.23	3.44	35.31	3.62	-4.68	3.80	9.71	-1.58
r_4	0.0106	0.0020	0.0036	1.24	0.38	-0.19	0.08	0.19	-0.02
		1.66	3.15	40.36	8.04	-3.97	2.85	7.15	-0.55
				Panel B: Top 50% of Tilts					
r_1	0.0104	0.0014	0.0014	1.10	0.18	-0.09	0.18	-0.02	-0.06
		1.78	1.79	52.44	5.46	-2.77	9.82	-0.87	-2.68
r_2	0.0114	0.0018	0.0017	1.13	0.34	0.02	0.16	-0.03	-0.06
		2.15	1.94	48.58	9.41	0.64	7.78	-1.50	-2.39
r_3	0.0110	0.0027	0.0064	1.23	0.23	-0.42	0.22	0.40	-0.06
		1.45	3.98	28.88	3.49	-6.45	5.75	11.04	-1.20
r_4	0.0121	0.0036	0.0064	1.24	0.43	-0.36	0.16	0.31	-0.02
		-0.01	1.18	55.55	18.41	-1.74	0.46	4.92	-2.10
				Panel C: Top 5% of Tilts					
r_1	0.0122	0.0029	0.0036	1.10	0.27	-0.09	0.22	0.03	-0.08
		1.91	2.24	25.97	4.04	-1.39	5.72	0.93	-1.78
r_2	0.0131	0.0040	0.0052	1.11	0.39	-0.12	0.20	0.06	-0.13
		2.37	2.99	24.14	5.52	-1.71	4.83	1.49	-2.67
r_3	0.0137	0.0054	0.0101	1.21	0.22	-0.70	0.39	0.50	-0.09
		1.82	3.62	16.31	1.94	-6.15	5.92	7.85	-1.09
r_4	0.0165	0.0076	0.0117	1.25	0.40	-0.68	0.39	0.43	-0.07
		2.74	4.37	17.60	3.60	-6.28	6.10	7.09	-0.94

Table 5: **Performance of Best-Minus-Rest Portfolios**

We report coefficients from monthly regressions of

$$spread_{p,t} = \alpha_6 + bRMRF_t + sSMB_t + hHML_t + mMOM_t + iIDI_t + rSTREV_t + \varepsilon_{p,t}$$

where $spread_{p,t}$ is the return on an equal-weight long-short portfolio, long a dollar in each manager's best idea and short a dollar in each manager's investment-weight portfolio of the rest of their ideas. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$, 2) $portfolio\_tilt_{ijt} = \lambda_{ijt} - \lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We restrict the analysis to those managers whose maximum tilt is in the top 25% of all maximum tilts at the time. t-statistics are can be found below the parameter estimates. The sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
$spread_1$	0.0018	0.0003	0.0015	0.02	-0.11	-0.17	0.28	0.09	-0.09
		0.35	1.71	0.66	-3.03	-4.73	13.47	4.51	-3.42
$spread_2$	0.0040	0.0021	0.0030	0.04	0.11	-0.04	0.24	0.06	-0.10
		2.62	3.76	1.67	3.39	-1.34	12.56	3.51	-4.17
$spread_3$	0.0039	0.0034	0.0079	0.10	-0.22	-0.41	0.30	0.48	-0.07
		1.61	4.49	2.10	-3.07	-5.69	7.28	11.81	-1.34
$spread_4$	0.0055	0.0048	0.0085	0.10	0.07	-0.38	0.26	0.37	-0.07
		2.68	5.44	2.54	1.02	-6.04	7.07	10.50	-1.53

Table 6: **Performance of Best-Minus-Rest Portfolios: Top Three / Top Five**

We report coefficients from monthly regressions of

$$r_{p,t}-r_{f,t}=\alpha_6+bRMRF_t+sSMB_t+hHML_t+mMOM_t+iIDI_t+rSTREV_t+\varepsilon_{p,t}$$

where $spread_{p,t}$ is the return on an equal-weight long-short portfolio, long a dollar in each manager's best ideas and short a dollar in each manager's investment-weight portfolio of the rest of their ideas. The best ideas are determined within each fund as the top three (Panel A) or top five (Panel B) stocks with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt}=\lambda_{ijt}-\lambda_{iMt}$, 2) $portfolio\_tilt_{ijt}=\lambda_{ijt}-\lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt}=\sigma^2_{it}(\lambda_{ijt}-\lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt}=\sigma^2_{it}(\lambda_{ijt}-\lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We restrict the analysis to those managers whose maximum tilt is in the top 25% of all maximum tilts at the time. t-statistics are can be found below the parameter estimates. The sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
Panel A: Best Three Ideas									
$spread_1$	0.0094	0.0013	0.0013	1.09	0.22	-0.03	0.12	-0.02	-0.06
		1.91	1.70	55.00	7.16	-1.06	6.78	-1.41	-2.69
$spread_2$	0.0099	0.0018	0.0013	1.12	0.41	0.04	0.07	-0.05	-0.04
		2.34	1.64	52.66	12.47	1.09	3.76	-2.88	-1.60
$spread_3$	0.0083	0.0010	0.0041	1.24	0.35	-0.39	0.17	0.38	0.02
		0.62	2.77	31.55	5.78	-6.47	4.84	11.09	0.52
$spread_4$	0.0091	0.0018	0.0045	1.24	0.48	-0.35	0.13	0.32	0.03
		1.25	3.48	35.81	8.91	-6.61	4.33	10.60	0.90
Panel B: Best Five Ideas									
$spread_1$	0.0089	0.0010	0.0006	1.10	0.24	0.02	0.08	-0.04	-0.04
		1.55	0.97	63.16	8.86	0.91	5.19	-2.87	-2.35
$spread_2$	0.0090	0.0011	0.0005	1.12	0.42	0.09	0.03	-0.06	-0.03
		1.53	0.64	58.36	14.15	3.00	1.89	-3.61	-1.26
$spread_3$	0.0075	0.0002	0.0030	1.23	0.38	-0.36	0.16	0.36	0.03
		0.13	2.34	35.70	6.99	-6.83	5.15	12.07	0.77
$spread_4$	0.0080	0.0009	0.0033	1.24	0.51	-0.33	0.10	0.28	0.03
		0.72	2.76	39.17	10.27	-6.79	3.42	10.39	0.74

Table 7: **Performance of Best Ideas by Liquidity**

We estimate coefficients from monthly regressions of

$$r_{p,t} - r_{f,t} = \alpha_6 + bRMRF_t + sSMB_t + hHML_t + mMOM_t + iIDI_t + rSTREV_t + \varepsilon_{p,t}$$

where $r_{p,t}$ is the equal-weight excess return on the portfolio of the stocks that represent the best idea of each active manager. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$, 2) $portfolio\_tilt_{ijt} = \lambda_{ijt} - \lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We report decompositions of these coefficients based on whether the best idea stock is above, $r_{p,low,t}$, or below, $r_{p,high,t}$, the portfolio's median bid-ask spread. t-statistics are below the parameter estimates. Sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
			Low and High Liquidity Splits						
$r_{1,low}$	0.0115	0.0027	0.0054	1.21	0.11	-0.47	0.40	0.29	-0.17
		1.39	2.84	23.70	1.37	-6.07	8.77	6.67	-3.02
$r_{1,high}$	0.0091	0.0005	-0.0010	1.02	0.27	0.24	0.12	-0.14	0.03
		0.37	-0.74	29.03	4.86	4.52	3.93	-4.70	0.71
$r_{2,low}$	0.0138	0.0050	0.0078	1.23	0.34	-0.39	0.32	0.24	-0.17
		2.68	4.17	24.70	4.33	-5.15	7.29	5.57	-3.22
$r_{2,high}$	0.0116	0.0029	0.0020	1.05	0.38	0.30	0.07	-0.16	-0.03
		1.89	1.23	24.91	5.78	4.60	1.92	-4.38	-0.68
$r_{3,low}$	0.0102	0.0038	0.0100	1.25	0.10	-0.80	0.28	0.61	-0.01
		1.33	3.88	18.21	0.98	-7.73	4.66	10.33	-0.14
$r_{3,high}$	0.0118	0.0030	0.0026	1.21	0.38	0.36	0.01	0.07	-0.05
		1.43	1.20	21.22	4.27	4.10	0.23	1.43	-0.76
$r_{4,low}$	0.0115	0.0050	0.0107	1.25	0.31	-0.80	0.24	0.52	-0.02
		1.98	4.59	20.22	3.26	-8.44	4.32	9.77	-0.31
$r_{4,high}$	0.0108	0.0021	0.0020	1.16	0.40	0.35	0.04	0.07	0.03
		1.12	1.01	22.13	4.86	4.36	0.93	1.60	0.44

Table 8: **Performance of Best Ideas by Popularity**

We estimate coefficients from monthly regressions of

$$r_{p,t}-r_{f,t}=\alpha_6+bRMRF_t+sSMB_t+hHML_t+mMOM_t+iIDI_t+rSTREV_t+\varepsilon_{p,t}$$

where $r_{p,t}$ is the equal-weight excess return on the portfolio of the stocks that represent the best idea of each active manager. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt}=\lambda_{ijt}-\lambda_{iMt}$, 2) $portfolio\_tilt_{ijt}=\lambda_{ijt}-\lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt}=\sigma_{it}^2(\lambda_{ijt}-\lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt}=\sigma_{it}^2(\lambda_{ijt}-\lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ_{it}^2 is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We report decompositions of these estimates based on whether the best idea stock is above, $r_{p,high,t}$, or below, $r_{p,low,t}$, the portfolio's median popularity. Popularity is defined as follows: Within each portfolio we rank each stock by the tilt measure in question and assign a percentage rank to it. To arrive at the tilt–stock-specific popularity measure we cumulate this statistic over the cross-section of managers. t-statistics are below the parameter estimates. Sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
				Low and High Popularity Splits					
$r_{1,low}$	0.0124	0.0032	0.0031	1.12	0.45	0.13	0.19	0.00	-0.11
		2.23	2.01	27.29	7.02	2.04	5.33	-0.05	-2.38
$r_{1,high}$	0.0054	-0.0008	0.0000	1.01	-0.32	-0.40	0.12	0.04	0.01
		-0.53	0.00	24.70	-5.03	-6.41	3.34	1.08	0.14
$r_{2,low}$	0.0135	0.0047	0.0047	1.09	0.58	0.22	0.10	-0.03	-0.08
		4.01	3.79	33.04	11.31	4.27	3.40	-0.96	-2.11
$r_{2,high}$	0.0091	0.0013	0.0019	1.11	-0.04	-0.26	0.22	0.05	0.00
		1.03	1.39	30.96	-0.78	-4.71	6.77	1.78	0.05
$r_{3,low}$	0.0134	0.0048	0.0101	1.23	0.40	-0.47	0.37	0.48	-0.05
		1.92	4.27	19.71	4.14	-4.97	6.68	8.92	-0.75
$r_{3,high}$	0.0058	0.0001	0.0024	1.23	-0.46	-0.51	0.05	0.34	0.03
		0.05	0.77	14.89	-3.61	-4.03	0.71	4.83	0.38
$r_{4,low}$	0.0161	0.0078	0.0101	1.23	0.80	-0.34	0.22	0.25	0.02
		3.95	4.95	22.89	9.55	-4.14	4.65	5.43	0.36
$r_{4,high}$	0.0072	0.0017	0.0054	1.16	-0.27	-0.76	0.20	0.44	0.07
		0.55	1.68	13.77	-2.04	-5.86	2.60	6.08	0.80

Table 9: **Best Ideas by Concentration of Portfolio**

We estimate coefficients from monthly regressions of

$$r_{p,t}-r_{f,t}=\alpha_6+bRMRF_t+sSMB_t+hHML_t+mMOM_t+iIDI_t+rSTREV_t+\varepsilon_{p,t}$$

where $r_{p,t}$ is the equal-weight excess return on the portfolio of the stocks that represent the best idea of each active manager. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt}=\lambda_{ijt}-\lambda_{iMt}$, 2) $portfolio\_tilt_{ijt}=\lambda_{ijt}-\lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt}=\sigma^2_{it}(\lambda_{ijt}-\lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt}=\sigma^2_{it}(\lambda_{ijt}-\lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We restrict the analysis to those managers whose maximum tilt is in the top 25% of all maximum tilts at the time. We report decompositions of these estimates based on how concentrated are the holdings of the fund manager. We measure concentration as the normalized Herfindahl index of the fund, sorting managers into tritles (Panel A: low, Panel B: medium, Panel C: high) based on this measure. t-statistics are can be found below the parameter estimates. The sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
				Panel A: Low					
$r_{1,low}$	0.0060	-0.0035	-0.0045	1.15	0.34	0.21	0.05	-0.12	-0.13
		-2.43	-3.18	30.38	5.70	3.57	1.34	-3.62	-3.11
$r_{2,low}$	0.0078	-0.0009	-0.0031	1.17	0.51	0.17	-0.09	-0.23	-0.04
		-0.68	-2.42	34.71	9.66	3.31	-2.98	-7.84	-1.04
$r_{3,low}$	0.0061	-0.0028	0.0010	1.31	0.36	-0.45	0.25	0.47	0.02
		-1.33	0.54	26.05	4.62	-5.89	5.56	10.75	0.43
$r_{4,low}$	0.0076	-0.0015	0.0012	1.35	0.54	-0.39	0.18	0.33	0.01
		-0.87	0.73	31.53	8.08	-6.02	4.63	9.04	0.18
				Panel B: Medium					
$r_{1,medium}$	0.0091	0.0005	-0.0007	1.07	0.33	0.08	0.05	-0.13	-0.01
		0.55	-0.71	43.57	8.75	2.05	2.43	-5.98	-0.33
$r_{2,medium}$	0.0094	0.0006	-0.0004	1.10	0.51	0.14	0.01	-0.11	-0.03
		0.70	-0.42	45.08	13.54	3.75	0.65	-5.28	-1.14
$r_{3,medium}$	0.0077	-0.0003	0.0027	1.23	0.44	-0.48	0.20	0.38	0.03
		-0.17	1.67	28.84	6.67	-7.40	5.35	10.40	0.64
$r_{4,medium}$	0.0079	0.0000	0.0025	1.23	0.54	-0.42	0.13	0.31	0.03
		0.01	1.64	30.04	8.56	-6.72	3.57	8.72	0.78

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
				Panel C: High					
$r_{1,high}$	0.0098	0.0012	0.0010	1.10	0.22	0.01	0.08	-0.02	-0.05
		1.87	1.58	62.21	7.84	0.40	5.28	-1.61	-2.46
$r_{2,high}$	0.0101	0.0014	0.0010	1.12	0.39	0.07	0.04	-0.03	-0.02
		2.03	1.39	56.42	12.75	2.34	2.44	-1.90	-1.09
$r_{3,high}$	0.0100	0.0020	0.0042	1.21	0.34	-0.26	0.09	0.29	0.02
		1.52	3.64	39.37	7.11	-5.49	3.41	11.11	0.59
$r_{4,high}$	0.0104	0.0027	0.0046	1.21	0.47	-0.25	0.04	0.24	0.02
		2.21	4.11	41.19	10.25	-5.64	1.63	9.50	0.50

Table 10: **Best Ideas by Size of Portfolio**

We report coefficients from monthly regressions of

$$r_{p,t}-r_{f,t}= \alpha_6+bRMRF_t+sSMB_t+hHML_t+mMOM_t+iIDI_t+rSTREV_t+\varepsilon_{p,t}$$

where $r_{p,t}$ is the equal-weight excess return on the portfolio of the stocks that represent the best idea of each active manager. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt}= \lambda_{ijt}-\lambda_{iMt}$, 2) $portfolio\_tilt_{ijt}= \lambda_{ijt}-\lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt}= \sigma^2_{it}(\lambda_{ijt}-\lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt}= \sigma^2_{it}(\lambda_{ijt}-\lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We restrict the analysis to those managers whose maximum tilt is in the top 25% of all maximum tilts at the time. We report decompositions of these estimates based on how large is the manager's fund. We measure size as Assets under management, sorting managers into tritles (Panel A: low, Panel B: medium, Panel C: high) based on this measure. t-statistics are can be found below the parameter estimates. The sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
				Panel A: Low					
$r_{1,low}$	0.0113	0.0030	0.0029	1.09	0.28	-0.08	0.19	0.00	-0.06
		2.90	2.68	37.26	6.21	-1.78	7.16	-0.15	-1.84
$r_{2,low}$	0.0128	0.0045	0.0047	1.11	0.49	-0.01	0.11	-0.04	-0.07
		4.28	4.15	37.29	10.65	-0.24	4.20	-1.44	-2.23
$r_{3,low}$	0.0130	0.0053	0.0086	1.25	0.41	-0.43	0.21	0.36	0.01
		2.61	4.36	23.95	5.00	-5.39	4.50	8.01	0.17
$r_{4,low}$	0.0136	0.0059	0.0089	1.23	0.62	-0.39	0.17	0.26	-0.03
		3.35	5.17	26.80	8.68	-5.55	4.11	6.55	-0.51
				Panel B: Medium					
$r_{1,medium}$	0.0093	0.0004	0.0010	1.13	0.14	-0.08	0.24	0.03	-0.09
		0.34	0.70	31.29	2.44	-1.50	7.39	0.93	-2.43
$r_{2,medium}$	0.0107	0.0018	0.0019	1.13	0.32	0.03	0.18	0.00	-0.08
		1.47	1.44	31.79	5.83	0.58	5.66	0.13	-2.19
$r_{3,medium}$	0.0110	0.0034	0.0083	1.22	0.13	-0.59	0.34	0.50	-0.06
		1.37	3.60	20.03	1.32	-6.28	6.17	9.49	-0.84
$r_{4,medium}$	0.0125	0.0049	0.0091	1.26	0.37	-0.56	0.25	0.39	-0.07
		2.13	4.09	21.34	3.99	-6.27	4.76	7.73	-1.14

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
				Panel C: High					
$r_{1,high}$	0.0090	0.0013	0.0019	1.09	-0.02	-0.14	0.14	0.03	-0.07
		1.12	1.55	34.47	-0.34	-2.79	5.11	1.08	-2.12
$r_{2,high}$	0.0106	0.0022	0.0032	1.11	0.12	-0.02	0.16	0.03	-0.10
		1.87	2.49	32.99	2.31	-0.48	5.25	1.14	-2.71
$r_{3,high}$	0.0101	0.0030	0.0080	1.18	-0.12	-0.45	0.31	0.61	-0.05
		1.04	3.04	16.92	-1.11	-4.18	4.92	10.12	-0.68
$r_{4,high}$	0.0105	0.0033	0.0083	1.19	0.12	-0.52	0.31	0.53	0.03
		1.26	3.33	18.00	1.13	-5.13	5.20	9.31	0.36

Table 11: **Sorting on correlation with manager's best idea**

We report coefficients from monthly regressions of

$$spread_{p,t} = \alpha_6 + bRMRF_t + sSMB_t + hHML_t + mMOM_t + iIDI_t + rSTREV_t + \varepsilon_{p,t}$$

where $spread_{p,t}$ is the return on an equal-weight long-short portfolio, long a dollar in the top 20% of the rest of their ideas which are the most correlated with each manager's best ideas and short a dollar in the 20% of the rest of their ideas which are the least correlated with each manager's best ideas. The best idea is determined within each fund as the stock with the maximum value of one of four possible tilt measures: 1) $market\_tilt_{ijt} = \lambda_{ijt} - \lambda_{iMt}$, 2) $portfolio\_tilt_{ijt} = \lambda_{ijt} - \lambda_{ijtV}$, 3) $CAPM\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{iMt})$, and 4) $CAPM\_portfolio\_tilt_{ijt} = \sigma^2_{it}(\lambda_{ijt} - \lambda_{ijtV})$ where λ_{ijt} is manager j's portfolio weight in stock i, λ_{iMt} is the weight of stock i in the market portfolio, λ_{ijtV} is the value weight of stock i in manager j's portfolio, and σ^2_{it} is the most-recent estimate of a stock's CAPM-idiosyncratic variance. The explanatory variables in the regression are all from Ken French's website except for IDI which we construct following Ang, Hodrick, and Xi (2004). We also report intercept estimates, α_4, when IDI and $STREV$ are excluded from the regression. We restrict the analysis to those managers whose maximum tilt is in the top 25% of all maximum tilts at the time. t-statistics are can be found below the parameter estimates. The sample period for the dependent variables is January 1985 - December 2007.

	Mean	$\widehat{\alpha_4}$	$\widehat{\alpha_6}$	$\widehat{b}$	$\widehat{s}$	$\widehat{h}$	$\widehat{m}$	$\widehat{i}$	$\widehat{r}$
Rest Ideas Performance based on Correlation with Best Idea									
$spread_1$	0.0005	0.0003	0.0015	0.08	-0.19	-0.24	0.17	0.08	-0.07
		0.03	1.03	2.33	-4.46	-5.90	7.85	3.16	-2.57
$spread_2$	0.0023	0.0009	0.0017	0.14	-0.07	-0.14	0.12	0.05	-0.07
		1.29	2.25	4.80	-2.14	-3.97	6.20	2.10	-3.03
$spread_3$	0.0026	0.0021	0.0045	0.16	-0.17	-0.26	0.10	0.21	-0.04
		1.29	3.18	4.23	-3.47	-5.44	3.55	7.46	-0.99
$spread_4$	0.0037	0.0018	0.0031	0.22	-0.08	-0.22	0.08	0.16	-0.03
		1.39	2.96	6.00	-1.76	-4.92	3.72	6.63	-1.02