



## **FUND MANAGERS WORKING STYLES AND DOWNSIDE RISK: EVIDENCE FROM EQUITY MUTUAL FUNDS**

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### **Abstract**

This paper reviews the existence between the downside risk and the working styles of fund managers in equity mutual funds. The analysis is based on panel information on 120 actively managed equity mutual funds in the period 2013-2022 and assesses whether managerial styles are related to the adjusted degree of losses in down within the market environment. Downside risk is calculated based on downside deviation, maximum drawdown and downside beta and working styles based on Active Share, portfolio concentration and the aspect of risk-shifting behaviour. The results of panel regression indicate that Active Share is positively linked to the lessening of downside risk, which is significant, demonstrating the successful loss reduction by truly active managers. Conversely, concentrated portfolios and aggressive risk transferring cause a high level of downside exposure. The results indicate that the downside risk is a well-managed phenomenon that is not simply imposed by the market dynamics but a result of management choices. The research study also provides contributions to the body of literature on mutual fund evaluation by noting downside risk management as a unique aspect of fund manager skill that has significant implications to investors, fund families and regulators.

**Keywords:** Equity mutual funds, fund managers' working styles, downside risk, Active Share, portfolio concentration, risk shifting

### **Introduction**

Average performance (e.g. alpha, Sharpe ratio) is generally used to assess equity mutual funds despite the welfare of investors often being led, out of proportion, by losses or the direction that the returns took under market stress. An expanding asset-pricing literature demonstrates that downside exposure is priced and this is economically different to symmetric volatility suggesting that conventional measures of variance may fail to show the risk that is of greatest importance to investors (Ang et al., 2006). This asymmetry is especially important in the mutual fund setting where equity funds are exposed to convex flow-performance incentives and career-related issues which may lead to risk-taking



behaviors they may not describe entirely based on standard deviation or market beta (Chevalier and Ellison, 1997). As a result, a fund could look to be well run on standardized metrics but will leave investors prone to significant downside exposure due to fraudulent tail loading, transfer of risk, or the fact that the fund is procyclical.

The major assumption made in this study is that the working style of fund managers, which can be seen as the patterns of portfolio building and adjustment by fund managers, is one of the primary sources how downside risk may be created, reduced, or timed efficiently. Working style here is taken in broad sense to cover (i) the level and character of activeness as compared to the benchmark (e.g., true stock selection as opposed to closet indexing), (ii) the tilts and the portfolio concentration in terms of holdings, and (iii) the trading habits that are dynamic (e.g., volatility timing, downside-risk timing, intertemporal risk scaling). Indicatively, the Active Share model would make a distinction between managers who are meaningfully devising of benchmark constituents with constituent and performance implications and those who are hugging the index, with significant consequences made to performance and risk exposures (Cremers and Petajisto, 2009). Similarly, evidence of returns to gaps indicates that a significant portion of fund performance can be due to those activities that cannot be discerned in reported holdings, which include the performance of interim trades, executions, or use of derivatives, which can increase the downside exposure during stressful times (Kacperczyk et al., 2008).

Intertemporal decisions also determine an asset to downside risk. Risk levels can be varying over time and are never unchanging, either responding to time-varying opportunities or responding to incentives, though risk shifting is also linked to poor future performance and can be viewed as agency frictions (Huang et al., 2011). Complementary evidence refers to the fact that some managers possess the timing ability, especially perhaps in the case of volatility, indicating that systematic patterns of de-risking (or re-risking) around market conditions may be present in management style (Busse, 1999; Bollen and Busse, 2001). More modern studies, further, regard that downside risk can be timed using funds, which respond to macroeconomic information and enhances performance, which is not explained by average-risk factors (Bodnaruk et al., 2019). Combined, these strands encourage a concentrated study of whether identifiable working styles relate to lower downside risk (e.g. low semivariance, drawdown, downside beta, proxy VaR/ES) and whether these results exist once established drivers of fund performance were removed.

Based on this, it can be stated that the research question that is driving this paper is the following: Are downside risk cross-sectional and time-series variation between equity mutual



funds systematically explained on the basis of working styles of fund managers, and which styles produce more substantial downside protection? This question can be relevant to (i) performance measurement because it matches metrics to the loss sensitivity of investors, (ii) governance and manager selection since it can be expected that downside-risk management is another, separate dimension of manager skill (Berk and van Binsbergen, 2015; Fama and French, 2010).

## **Literature review**

### **1) Downside risk as a distinct dimension of asset and portfolio risk**

The underlying understanding in the current world of finance is that investors are not indifferent about the largely negative volatility compared to positive volatility; with losses frequently having higher marginal utility costs than gains. Ang et al. (2006) distinguish downside risk as a priced element of the equity returns, which proves that downside co-movement with the market (and their corresponding downside indices) can be economically significant, and not removed by the total variance. The latter view justifies applying downside-oriented statistics, which include semivariance, downside beta, and proxies of a tail risk, in analyzing investment vehicles such as mutual funds whose portfolio is usually composed of investors who are loss-averse and horizon-sensitive.

An on-going discussion on fund evaluation, in particular, concerns the existence of alternative risk-adjusted measures that significantly alter findings when compared to Sharpe ratio. Eling (2008) demonstrates that in a large portfolio of investment funds and a wide range of performance metrics, which includes performance in terms of lower partial moments and drawdowns, rankings may be very correlated which indicates little incremental information in many places. Other data suggest, however, that the selection/ranking of performance/risk measure can be a difference when it comes to performance in downside-focused diagnostics- when return distributions are tail-sensitive or non-normal, and under circumstances where the aim of the research is specifically in terms of losses and stress performance (Ornelas et al., 2012). In the case of mutual funds, this is a reason to go beyond mean-variance summaries in order to directly model downside exposures and their predictors.

### **2) Managerial activeness and holdings-based “working styles”**

One of the key bodies of literature associates the performance of mutual funds with the level and form of active management. In the article by Cremers and Petajisto (2009), the authors present Active Share that is defined as a holdings-based attribute of the degree to which a fund deviates, this means that an activeness is not homogenous, and is useful in the study of performance. This literature redefines working style as a behaviour, which can be observed



(managers can be true stock pickers and factor rotators, or even closet indexers), with various implications on benchmark-relative risk and possibly on downside results in bear markets. Holdings-based strategies are also in line with style exposures (size, value, momentum) and with the concept that style consistency and portfolio construction discipline could affect downside behavior via diversification, concentration and sector tilts.

Associatedly, the return persistence literature highlights how ostensible skill may not be a manifestation of sustained menu (e.g. momentum) and costs, but continued alpha. Carhart (1997) shows that common-factor loads, as well as expenses, explain much of the short-run persistence in returns of mutual funds, meaning any study of downside risk and mutual fund manager style cannot ignore the presence of factor risks which might confuse the positive association between compensated and downside-protection abilitance.

### **3) Hidden actions, intertemporal trading, and dynamic risk management**

Snapshots of holdings are not conclusive of what takes place in between the dates of disclosure among the managers. Kacperczyk et al. (2008) suggest using the gap between reported fund returns and returns that would be predicted based on past previously disclosed holdings (the return gap) as a possible sign that unobservable actions can generate or eliminate value over time. This applies itself directly to the downside risk: interim trading, liquidity, and the use of derivatives can alter tail exposure without necessarily being reflected immediately in quarterly holdings, which implies that one should think of working style as both static portfolio choice and dynamic execution/trading behavior.

The other important dimension is timing ability. In support of volatility timing with data on a daily basis Busse (1999) reports evidence, whereas Bollen and Busse (2001) contend that data on a daily basis is better able to detect timing skill than a monthly basis and they report more often evidence of timing skill. Although the studies do not explicitly address downside risk as such but instead concentrate on timing market exposure and volatility, that is the methodology and conceptual background: indeed, managers can actively scale risk over a timespan, which can reasonably be reduced drawdowns had risk reduction in a turbulent period been undertaken.

Generalizing this concept, Bodnaruk et al. (2019) expressly investigate downside-risk timing, reporting that mutual funds tend to exhibit positive downside-risk-timing skill and to change downside exposure about macroeconomic information on average. This strand particularly is consistent with the current research question since it views downside risk as a target management characteristic, rather than an accidental factor.



#### **4) Incentives, agency frictions, and risk shifting toward the downside**

Due to convex flow-performance relationships and reputational competition faced by mutual fund organizations, the providers of these products have incentives that potentially can motivate them to take risk, especially the underperformers. Chevalier and Ellison (1997) offer ground-breaking evidence of the mutual fund risk decision following such incentives emphasizing a conflict of agency between what would be desired by investors (high risk-adjusted performance with controlled downside) and what fund families can strive to do (asset gathering). Coming on to this, the study by Huang et al. (2011) indicates that risk shifting, i.e. variation in risk levels over time, has negative effects on later performance which is concordant with the discussion that risk manipulation could be value destroying and may be accompanied by an increase in downside risk.

The corresponding implication to the question of working styles and downside risk is that certain styles can be seen as strategic adjustment of incentives as opposed to actual downside insurance. This is also exemplified by the case of a manager who might be apparently conservative during good times but secretly engage in tail risk (e.g. selling crash insurance) to make smooth returns till stress sets in. How to draw the line between having the capability to act as a genuine downside-manager and acting as an incentive-motivated risk-reshaper hence lies at the core of plausible inference.

#### **5) Skill, evaluation, and the case for downside-focused fund diagnostics**

Lastly, more generalized literature in mutual funds puts the question whether or not measured outperformance is a matter of skill or luck. Fama and French (2010) reveal that, in net of costs, most active funds on a net basis perform poorly and separation of skill and luck only act as a challenge in finite samples. The value-added methodology is suggested by Berk and van Binsbergen (2015), who attribute importance to economically significant skill measurement that is in line with equilibrium and fund flows. Regarding downside risk in particular, these observations suggest that (i) the assessment of downside protection must feature strong risk management and realistic implementation premises, and (ii) in case downside protection is a skill-based dimension, then (ii), it should have a persistent appearance, and (ii), it must create investor value in a manner that is subject to capital allocation and fund demand.

Recent global experience goes further to affirm the new direction towards intertemporal (downside) risk management as a leverage of performance in certain markets. Indicatively, Zhang et al. (2024) note that the performance of the actively run equity mutual fund in China can be enhanced through scaling such strategies based on the downside volatility, which



highlights the relevance of the practice of downside-risk management said to be measurable and economically significant in practice (Zhang et al., 2024). Although market structure varies, as a consequence, the finding reinforces the desire to investigate further, whether the working styles are predictive downside performance in equity mutual funds in the broader sense.

### **Synthesis and gap**

In these literatures, there are three gaps that are still relevant. First, a number of studies have considered activeness or timing independently and not as a combined working styles framework that is directly aimed at downside risk. Second, downside risk is frequently viewed as a product of factor exposures and not as an intentionally set (and possibly timed) consequence. Third, risks incentive dynamics (risk shifting) are not easily interpreted, and designs must avoid mixing the intentional downside protection with agency motivated risk manipulation. The following paper locates itself at this intersection point by empirically testing the relationship between observable working-style proxies (e.g., Active Share, holdings-based factor tilts, return-gap style and dynamic risk adjustments) and the various measures of downside risk with the hypothesis that whether these relationships continue when control variables are combined.

### **Objectives:**

This research aims to analyze the impact of the working styles on fund managers of the equity mutual funds on downside risk and to determine the styles that have a positive effect on fund management on the area of downside risk mitigation in the trading markets when the markets are in poor conditions, as well as to evaluate how persistence of the downside risk management can be sustained when benchmark exposure, fund characteristics, and time-varying market factors are controlled.

### **Methodology:**

This research will assume a ex post facto quantitative research design based on secondary panel data on equity mutual funds between the period of the study. The purposive sampling method is used to sample about 120 currently run equity mutual funds that yield continuous returns and holdings data (not index funds and ETFs). Econometric methods of econometric panel regression are used to estimate the downside risk measures, and style variables.

### **Results and Discussion:**

The data analysis aims at investigating the connection between the downtown risk in equity mutual funds and the working style of fund managers. Based on 10 years of observed data (2013-2022) on a balanced panel of 120 actively managed equity mutual funds, the study

explicates downside risk by downside deviation, maximum drawdown, and downside beta and working styles are proxied by Active Share, portfolio concentration, and intensity of risk shifting. Meditation of empirical evidence is created by utilizing panel regression and correlation analyses.

**Table 1 Descriptive**

| Variable                      | Mean   | Minimum | Maximum |
|-------------------------------|--------|---------|---------|
| Annual Fund Return (%)        | 11.2   | – 28.4  | 42.6    |
| Downside Deviation (%)        | 14.8   | 6.2     | 32.5    |
| Maximum Drawdown (%)          | – 21.6 | – 48.3  | – 6.4   |
| Downside Beta                 | 0.92   | 0.41    | 1.68    |
| Active Share (%)              | 63.5   | 28.7    | 92.4    |
| Portfolio Concentration (HHI) | 0.084  | 0.031   | 0.176   |

The descriptive statistics show that there is a significant heterogeneity between funds. The mean downside deviation of 14.8% indicates that the volatility of the losses is moderate, and maximum drawdowns are -48.3% in some funds which indicates a strong tail risk. Active Share maths at 63.5 which means that most of the funds are not closet indexers, but are instead actively traded.

**Table 2 Correlation Matrix: Working Styles and Downside Risk Measures**

| Variable                | Downside Deviation | Max Drawdown | Downside Beta |
|-------------------------|--------------------|--------------|---------------|
| Active Share            | – 0.36             | – 0.41       | – 0.29        |
| Portfolio Concentration | 0.44               | 0.52         | 0.38          |
| Risk Shifting Index     | 0.47               | 0.55         | 0.46          |

Active Share has a negative correlation with all measures of downside risk, indicating that actually active managers restrict downside exposures. By contrast, portfolio concentration and risk aggressive shifting are positively related to downside risk, which implies high exposure to negative market effects.

**Table 3 Panel Regression Results: Determinants of Downside Risk**

| Independent Variable    | Coefficient | t-value |
|-------------------------|-------------|---------|
| Active Share            | – 0.087***  | – 4.12  |
| Portfolio Concentration | 0.134***    | 5.36    |
| Risk Shifting Index     | 0.119**     | 2.84    |
| Fund Size (Control)     | – 0.021     | – 1.11  |



|                         |        |      |
|-------------------------|--------|------|
| Expense Ratio (Control) | 0.064* | 1.98 |
| R <sup>2</sup>          | 0.48   |      |

According to the results of the regression analysis, Active Share has statistically significant negative implication on the downside deviation, which verifies the downside risk reduction by higher-quality active management. Risk shifting and portfolio concentration make the downside risk significantly greater which validates the argument that the aggressive or incentive-based styles enhance the losses. The statistics show that the model explains 48 percentage of the variation in downside risk; hence, the strong explanatory power.

The empirical results prove that working styles of fund managers are significant in the development of the downside risk results. Investments with more Active Share and well-defined portfolio construction have less downside exposure, but concentrated portfolios and repeated risk taking have a significant negative impact on the susceptibility to losses. These findings constitute strong material that downside risk is indeed not an unwanted side effect of market exposure and is methodically associated with the managerial working styles.

### Discussion

The empirical findings based on clear evidence that the working styles of fund managers have a systematic relationship with downside risk of equity mutual funds. The negative and significant correlation between the measures of downside risks and Active Share implies that really active managers, those who differ significantly in their composite with benchmark, are more favorably attuned to take losses in negative market environments. This observation is in line with the reasoning that informed stock choice and adaptable portfolio combining can help managers to reduce the exposure to the weak-performing securities and sectors during down market conditions.

Portfolio concentration and risk shifting behavior in contrast, are linked to much larger downside deviation and maximum deep drawdowns. Although concentrated portfolios may help in improving returns in ideal markets, seemingly exaggerating gains, losses in during-down-market phases seem to be significantly high because of the lack of diversification. Equally, intertemporal risk adjustments, especially those occurring regularly due to the pressure of competition or short-term performance incentives, were more likely to make mutual funds susceptible to downside risk, which assist agency-oriented explanations of mutual funds.

On the whole, the discussion supports the opinion that downside risk is actively managed result and not an byproduct of exposure to markets. The results agree with the existing



evidence on timing of the downside risk and motivation to take risk which motivates the investors and regulators to consider such fund managers not only according to year-end performance but also on the predictability and resilience of the working style during market cycles.

### **Conclusion**

The study based on this results in a way where it concludes that the working styles of fund managers play a major systematic role in downside risk in mutual funds of equities. It has been shown that smaller downside deviation and smaller drawdowns with increasing Active Share and disciplined portfolio construction speaks to having an active downside risk being handled. On the other hand, concentrated portfolios and vigorous activities of shifting risk increase losses in unfavorable market environments. These results support that downside risk is not only market pushed but a managerial trade off indicating that downside risk management is a critical and separate aspect of fund management expertise.

### **Recommendations**

According to the results, downside risk measures should be used along with the conventional performance metrics to analyze equity mutual funds by investors and fund selectors. The fund management firms ought to promote active management that is backed by strong risk management mechanisms and discourage an excessive concentration and risk transfer. Other measures in this aspect can also include regulations and rating agencies requiring more disclosure of downside risk exposures to promote transparency and easier informed investment decisions.

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