



On the use of options by mutual funds: Do they know what they are doing?



Gjergji Cici^{a,b,*}, Luis-Felipe Palacios^c

^a Department of Finance, Mason School of Business, College of William & Mary, Williamsburg, VA 23197, USA

^b Centre for Financial Research (CFR), University of Cologne, Germany

^c WRDS, University of Pennsylvania, Philadelphia, PA 19104, USA

ARTICLE INFO

Article history:

Received 9 January 2014

Accepted 14 September 2014

Available online 23 September 2014

JEL classification:

G11

G20

G23

G29

Keywords:

Options

Mutual funds

Derivatives

Performance

Hedging

Speculation

ABSTRACT

Given recent regulatory inquiries into the derivative-trading practices of mutual funds, we examine their detailed option holdings to assess how mutual funds employ options, what funds use options, and how that affects performance and risk. Mutual funds' use of options appears consistent with income generation and hedging motives, is systematically related to experience, education, and gender characteristics of portfolio managers, and does not lead to performance benefits, on average. Instead, certain uses of options lead to underperformance. We document no permanent or temporary aggressive risk taking by options users, finding instead that some funds use options to effectively lower risk.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

The use of derivatives by mutual funds has received renewed attention from regulators. The Securities and Exchange Commission (SEC) recently initiated a review of the use of derivatives by investment companies registered under the Investment Company Act of 1940. As part of this review, in its 2011 concept release the SEC invited comments from the public on the following two questions, among others: “Do different types of funds use different types of derivatives or use derivatives for different purposes?” and “What are the costs and benefits to funds from using derivatives?”¹

* Corresponding author at: Department of Finance, Mason School of Business, College of William & Mary, Williamsburg, VA 23197, USA. Tel.: +1 757 221 1826; fax: +1 757 221 2884.

E-mail addresses: gjergji.cici@mason.wm.edu (G. Cici), palacios@wharton.upenn.edu (L.-F. Palacios).

¹ See U.S. Securities and Exchange Commission (2011, p. 18). The review is intended to understand the current derivative practices of mutual funds and assess whether those practices are consistent with current regulations on leverage, diversification, and portfolio concentration.

Inaccessibility of detailed data on the institutions' derivative positions have to date made it difficult for researchers to answer these questions in a comprehensive manner. Moreover, these limitations have made it close to impossible to differentiate among various institutions in terms of how they use derivatives. Different derivative uses affect portfolio risk and returns in different ways, potentially limiting the power of tests that try to assess performance and risk impacts of derivatives on institutions, while treating all derivative users as a homogenous group.

We provide a study on the use of one derivative security by mutual funds. Specifically, we do so by employing detailed data on all exchange-traded option positions of all US-based mutual funds. Within the framework of option usage, our data allows us to address the two questions raised by regulators. Moreover, we make a contribution to the previous literature in that we differentiate among funds that use options for different reasons and shed light on how these different uses affect their performance and risk.

Advantages from using options have been discussed in the business press, where mutual funds that invest in options are

sometimes touted as superior investment choices.² Academics have also pointed to hypothesized benefits in the form of better performance or risk management (Koski and Pontiff (1999)). Two additional arguments support the presence of performance benefits from using options: First, option markets are likely to attract informed investors who may trade in options when they have superior information (Black, 1975, p. 61).³ Thus, mutual funds that utilize options could be informed investors that better use their information by achieving stock-specific exposure for a fraction of the cost of buying stock shares directly (Koski and Pontiff (1999), Deli and Varma (2002), Almazan et al. (2004)). Second, using options effectively requires specialized knowledge of options markets and options pricing. Such capabilities, which go beyond mutual fund managers' conventional skills, could suggest a higher level of sophistication among funds that trade in options.⁴

Skeptics, however, point to what happened in the case of Orange County, Baring's Bank, and Long Term Capital Management to question the value created by the use of derivatives in general, and the use of options in particular, by financial institutions. A key concern is that fund managers could use these securities to take excessive risks that adversely affect fund investors.

Given these opposing views and the concerns of regulators, we address three key issues. First, we examine how mutual funds use options. We document that the most popular uses of options appear to be for income generation through writing of call options and for portfolio insurance through purchasing of put options. By way of illustration, written calls make up about 60 percent of all option positions of mutual funds, while purchased puts make up about 18 percent.⁵ These numbers are based on 25,789 equity and index option positions in the portfolios of 250 U.S. equity mutual funds that used options at least once during July 2003–December 2010.

Second, we examine which funds or portfolio managers are more likely to use options. Since portfolio managers could potentially use options to change portfolio risk, this examination is in part motivated by previous research showing that certain fund or manager characteristics affect the risk-taking behavior of portfolio managers.⁶ We find that options use is more prevalent among funds that charge higher expense ratios. Manager characteristics reflecting experience, academic aptitude, and gender characteristics are also related to the likelihood of using options. Specifically, managers with shorter tenure or lower GMAT scores are more likely to employ options. On the other hand, female portfolio managers are less likely to use options in their portfolios than their male peers. This latter finding suggests an additional difference in the trading

patterns of male and female market participants relative to what has been documented by previous research.⁷

Finally, we assess the benefits and costs to mutual funds from investing in options. To do so, we start with overall performance and risk comparisons between options users and nonusers. At first blush these comparisons do not reveal any obvious benefits or costs associated with use of options. However, we argue that the power of such tests is potentially limited by cross-sectional differences in terms of how mutual funds use options. We extend our comparisons to account for such differences. Recognizing that mutual funds employ options to pursue different goals, depending on their options use, we first categorize users into call writers, put writers, call buyers, and put buyers. Next, recognizing that some funds use options to a greater extent than others, we identify funds from each of these four groups that are heavy users of options. We then proceed to compare the performance and risk of these different categories of options users with those of nonusers.

As expected, outcomes from performance comparisons depend on the type of option usage. For instance, funds that engage heavily in writing of put options or purchasing of call options underperformed nonusers by an economically and significant amount on a risk-adjusted basis once you account for nonlinearities in returns. This is interesting in that it suggests that mutual funds are not skilled at writing puts to generate income. It also suggests that mutual funds that place directional bets by purchasing calls are not privy to superior information that they try to leverage in the option markets.

Similarly, outcomes from risk comparisons also depend on the type of option usage. For instance, heavy put buyers exhibited significantly lower systematic, downside, and total portfolio risk than nonusers, suggesting that these particular funds are buying puts for insurance and are effectively limiting the downside of portfolio returns. We next explore whether funds use options to increase portfolio risk towards the end of the year in response to poor performance in the earlier part of the year (see, e.g., Brown et al. (1996)). Again, our overall results prove inconsistent with differential risk-taking behavior over shorter periods within the calendar year. However, once we account for different types of usage, we document that the subset of funds that predominantly purchase puts exhibits a stronger tendency than nonusers to reduce systematic risk in response to poor performance in the first part of the year. This behavior is perhaps driven by a desire to limit additional losses. Overall, our risk comparisons disprove both permanent and temporary aggressive risk taking by options users, suggesting instead that some funds use options primarily for risk management.

Taken together, our findings suggest that use of options is associated with no performance advantages relative to nonusers. The finding that some categories of option users underperform nonusers is troubling in that it implies negative welfare impacts on their underlying investors. On the benefit side, the only salutary impact of options that we document is restricted to a subset of funds that lower portfolio risk through put purchases.

To the best of our knowledge, this is the first study to examine mutual funds' use of options by analyzing their detailed holdings of such securities. Koski and Pontiff (1999), Deli and Varma (2002), Almazan et al. (2004) examined related issues by analyzing and comparing funds that were allowed to use derivatives with funds that were not.⁸ Although our results generally agree with the com-

² Although most articles present a balanced view of the involved risks and rewards (see, e.g., Liase (2007)), some portray funds that use options as superior investments. For example, Richards (2007) announces that "If you want a fund that offers a high level of income and limited exposure to the rises and falls of the stock market, then a covered call fund could be the one for you". Another article refers to an option strategy employed by mutual funds as "one of the investment community's best kept money-making techniques" (Investors Chronicle (2007)).

³ Kumar et al. (1992), Easley et al. (1998), Chakravarty et al. (2004), Cao et al. (2005), and Pan and Potesman (2006) show that information is transmitted into option prices and volumes sooner than into stock prices, suggesting the presence of informed trading in the options markets.

⁴ Recognizing that different skills are required when using options, some fund companies use different portfolio managers to separately manage the stock and the option parts of the fund portfolios (see, e.g., Pressman (2005)).

⁵ The documented prevalence of call writing is consistent with the increased popularity of covered call strategies among mutual funds discussed in the business press (see, e.g., Tan (2001), Liase (2007), Richards (2007), and Investors Chronicle (2007)).

⁶ For example, Brown et al. (1996) show that past fund performance causes managers to change subsequent portfolio risk, while Chevalier and Ellison (1999) show that managers with shorter tenure take less unsystematic risk.

⁷ Barber and Odean (2001) show that men exhibit a higher degree of overconfidence in their trades and trade more than women.

⁸ Chen (2011) conducts a similar analysis for hedge funds. With the exception of the finding that a higher fraction of hedge funds use derivatives, his findings on how derivatives use affects performance and risk are for the most part consistent with findings from mutual fund studies.

Download English Version:

<https://daneshyari.com/en/article/5088568>

Download Persian Version:

<https://daneshyari.com/article/5088568>

[Daneshyari.com](https://daneshyari.com)