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The short-term persistence of international mutual fund performance*

Javier Vidal-García ^{a,*}, Marta Vidal ^b, Sabri Boubaker ^{c,d}, Gazi Salah Uddin ^e



- ^a University of Valladolid, Spain
- ^b Complutense University of Madrid, Spain
- ^c Champagne School of Management, Troyes, France
- d IRG. Université Paris Est. Créteil. France
- e Linköping University, Sweden

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ABSTRACT

This paper examines the short-term persistence in performance of equity mutual funds around the world between 1990 and 2013. Using a large survivorship bias-free sample of 35 countries, we document strong evidence of persistence in daily mutual fund returns over quarterly measurement periods. We rank countries by abnormal return and estimate the performance of each country for the following quarter. We find statistically and economically significant performance persistence that is more pronounced for the top and bottom countries. The post-ranking abnormal return disappears when performance is examined over longer time periods. Thus, our results confirm that superior performance is a short-lived phenomenon.

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1. Introduction

The mutual fund industry defends the idea that some mutual fund managers have superior ability that persists over time, suggesting to investors that it is possible to predict future performance based on past returns. The academic view involves incorporating new data or improving measurement methodology. Many studies provide evidence that performance persists over both short- and long-time periods (e.g., Bollen and Busse, 2005). In this paper, we re-examine mutual fund performance persistence and focus on global short-term persistence across countries using three-month periods. According to Ferreira et al. (2012), the mutual fund industry plays an important role in financial markets with global assets exceeding \$26 trillion.

Research on mutual funds shows that fund's characteristics, including size, fees, age, expanses, loads, turnover and return can predict its future performance. Grinblatt and Titman (1992) find positive persistence in mutual fund performance over five-year periods and persistence is consistent with the ability of fund managers to earn abnormal returns. They argue that the past performance of a fund provides useful information for investing in mutual funds. Hendricks et al. (1993) investigate the short-term relative performance of no-load, growth-oriented mutual funds and find evidence for persistence in the short-term, with the strongest evidence for a one-year evaluation horizon. They claim that their sample was carefully constructed to avoid problems of survivorship

bias. Brown and Goetzmann (1995) examine the performance persistence for a survivorship bias-free sample of U.S. equity mutual funds and find that relative performance of mutual funds persists, but persistence is mainly due to funds that lag the S&P 500 index. They argue that this relative performance is correlated across managers, due to a common strategy that standard stylistic categories and risk adjustment procedures do not capture. Considering the return data of all mutual funds, Malkiel (1995) finds that mutual funds have underperformed the market both after management expenses and gross expenses. Grinblatt et al. (1995) examine investment strategies of a sample of mutual funds and find that around 77% of these mutual funds were momentum investors, buying stocks that were past winners, although they did not systematically sell past losers.

Using a momentum factor, Carhart (1997) shows that common factors in stock returns and expenses account for persistence in equity mutual funds' mean and risk-adjusted returns. The author points that the only persistence not explained is the strong underperformance by the worst-return mutual funds. He explains that the Jegadeesh and Titman's (1993) one-year momentum in stock returns accounts for hot hands effect in mutual fund performance of Hendricks et al. (1993). He points out that mutual funds that earn higher one-year returns do so because some funds hold larger positions in last year's winning stocks and not due to fund managers following momentum strategies.

Tonks (2005) examines the abnormal returns of equity portfolios of U.K. pension funds. In particular, he focuses on the existence of performance persistence among fund management houses, which are fund managers of segregated pension funds. Using a large sample of pension funds, the author finds strong evidence of persistence in the performance of fund managers over a 1-year time horizon using several consistency tests but weaker evidence of persistence at longer time intervals. Even

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^{*} Corresponding author. E-mail address: javiervidal7@hotmail.com (J. Vidal-García).

after allowing for momentum in stock returns, pension fund managers still show evidence of performance persistence.

Many factors cause the lack of persistence over long time horizons. One is the decreasing investment opportunities (Berk and Green, 2004). A fund manager can only invest in a limited way in each investment; otherwise he creates a market impact and this investment opportunity will be arbitraged away. Investors allocate their money to best performers making superior funds grow to the point where outperformance is no longer possible. An option is that top performing fund managers, who have built a strong reputation, may decide to find better paid jobs. Another possibility is that management fees increase over time and this eliminates any good performance record. Natin and Yao (2013) show that stock picking skills strongly predict the post-merger performance of corporate acquirers even after controlling for possible shareholder monitoring. The authors claim that their findings are stronger for funds with characteristics more indicative of active stock picking. They highlighted that mutual fund investors chase performance and managers get higher salaries from superior past performance. More recently, Guercio and Reuter (2014) show that flows chase riskadjusted returns and mutual funds respond by investing more in active management. The authors explain that actively managed funds sold through brokers face a weaker incentive to generate alpha and significantly underperform index funds.

Several studies show evidence in support of the performance persistence in U.S. equity funds after considering fund investment styles. Coggin et al. (1993) examine the performance of U.S. equity pension fund managers. The authors find that the average selectivity measure is positive whereas the average timing measure is negative. Moreover, they show that both selectivity and timing are sensitive to the choice of the benchmark when managers are classified by investment style. Meier and Rombouts (2009) investigate the relation between performance persistence and changes in style. The authors use a new holdings-based measure of style rotation for a large sample of US equity mutual funds, and find that top and bottom performing decile portfolios experience a higher degree of style rotation than middle deciles. They argue that there is a higher degree of performance persistence among style consistent funds. Their results imply that an investor needs to consider style rotation when choosing mutual funds based on past performance, otherwise future returns might exhibit big shifts in performance rankings. Additional studies that have documented performance persistence in U.S. mutual funds include Teo and Woo (2001), Ibbotson and Patel (2002), and Wermers (2003), among others.

Many studies on persistence in mutual fund performance suffer from survivorship bias or data limitations (short time-series), which prevent clear-cut conclusions. Brown et al. (1992) show that early studies exaggerate the result of persistence due to reliance on survivorship-biased data. The authors state that if fund volatility is constant, but varies cross-sectionally when the worst-performing funds disappear, then survivorship creates spurious persistence and biases persistence upwards. To tackle this issue, we use the largest sample to date of worldwide mutual funds which is not plagued by survivorship bias.

Few recent studies examine the relation between fund returns and its characteristics such as fees or fund flows. Narayan et al. (2014) show that stock return shocks and mutual fund flow shocks together explain 20% of the total forecast error variance of stock returns and mutual fund flows. Vidal et al. (2015a, 2015b) find strong evidence of predictability for mutual fund fees. They point out that funds with both positive and negative relations with fees show strong evidence of negative return predictability for their fees. While Vidal-García, Vidal and Nguyen (2016) confirm that liquidity and idiosyncratic risk are useful and important risk factors for quite large fund style subgroups of mutual funds.

Ferreira et al. (2012) examine the determinants of the performance of open-end actively managed equity mutual funds from 27 countries. The authors find that mutual funds underperform in the market in general. They also claim that funds from countries where stock markets

are liquid and legal institutions are strong show better performance. Additional related literature find evidence of persistence for European funds (Banegas et al., 2013; Vidal-Garcia, 2013); US equity funds (Herrmann and Scholz, 2013), and little to no persistence for equity institutional products (Busse et al., 2010).

Using a unique database of daily returns that includes domestic equity funds from 35 countries, our study extends prior literature by examining short-term persistence in mutual fund performance across countries. It makes several contributions to the literature. First, it uses a unique dataset for 35 countries consisting of daily returns of 8680 actively managed equity mutual funds registered across all continents. Second, our empirical investigation is based on four different approaches namely, multifactor performance models, market timing, contingency tables, and bootstrap evaluation of fund alphas, which rule out the possibility that our results are driven by the misspecification of any model. We use the quadratic model of Treynor-Mazuy to detect market timing abilities of mutual fund managers (see, Vidal et al., 2015b for more details on market timing of mutual funds around the world). In addition, we employ a non-parametric methodology based on contingency tables, and supported by several statistical tests to estimate the significance of the results. Finally, we use a bootstrap technique to examine the probability that large positive alphas are caused by sampling variability.

The empirical results show a strong evidence of persistence in daily mutual fund returns over quarterly measurement periods. The evidence confirms that superior performance is a short-lived phenomenon. The top country is Brazil with a daily abnormal return from stock selection of 0.0921%, and the bottom country is Sweden with an abnormal return from stock selection of -0.0842% per day, both are quite robust across the different performance models. Interestingly, the country with the highest persistence is New Zealand and the one with the lowest persistence is Malaysia. In contrast with previous studies, we show that persistence is present across countries, and not concentrated mainly in the top and bottom fund portfolios. Our results confirm earlier findings on short-term performance persistence (see, Bollen and Busse, 2005) and are in contrast with those of Carhart (1997), who finds no evidence of superior ability.

Moreover, we find a significant negative relation between abnormal performance and management expenses, turnover, and maximum load for most countries. All countries show a significant positive relation between abnormal performance and total fund assets, which suggests potential economies of scale in the global mutual fund market. We also examine the effect of fund characteristics on fund performance for each country and find that expense ratio, portfolio turnover, and load fees are significantly and negatively related to performance in most countries, while maximum load is positively related to it.

The rest of the paper is organized as follows. Section 2 describes the data and the variables used in the analysis. Section 3 reviews the basic models and the methodology. Section 4 presents the main empirical results. Section 5 provides additional empirical results. The last section concludes the paper.

2. Data and summary statistics

2.1. Data

Our dataset consists of daily returns of 8680 actively managed equity mutual funds. The funds are registered in 35 countries across all continents: North America (Canada, United States); Europe (Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United Kingdom, Ireland, Luxembourg); Asia–Pacific (Australia, China, Hong Kong, India, Indonesia, Japan, Malaysia, New Zealand, Singapore, South Korea, Taiwan, Thailand); and other regions (Brazil, Chile, Israel, South Africa). All returns are in local currency and are adjusted for dividend. We include only the primary share class when a fund is registered for sale in more

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