



## Equity funds in emerging Asia: Does size matter?



Haoyuan Ding <sup>c,\*</sup>, Huanhuan Zheng <sup>b,1</sup>, Chenqi Zhu <sup>a,2</sup>

<sup>a</sup> Department of Economics, Chinese University of Hong Kong, Shatin, N.T., Hong Kong, China

<sup>b</sup> Institute of Global Economics and Finance, Chinese University of Hong Kong, Shatin, N.T., Hong Kong, China

<sup>c</sup> School of International Business Administration, Shanghai University of Finance and Economics, 777 Guoding Road, Shanghai, China

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### ABSTRACT

Applying a novel data set that covers the emerging Asia equity funds over a period from 2003 to 2009 at weekly frequency, we provide evidence of the existence of a U-shaped relationship between fund size and performance. Moreover, we find that (i) the size–performance relation is highly dependent on targeted investment markets. Using an endogenous regime switching model, we provide evidence of the different shapes (U-shaped and inverted U-shape) of size–performance relations for funds targeted at two types of countries (developing and newly advanced countries); (ii) the significant size–performance relation only comes from the non-crisis period.

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### 1. Introduction

Small and large funds, which produce better performance? The supporters of the former argue that small funds have the flexibility to buy or sell equities quickly without causing substantial price pressure, while their large counterparts usually have significant market power that tends to drive stock price to hurt their deals. Moreover, small funds can easily invest money in places believed to be optimal, whereas large funds may opt for second best because investment opportunities are limited compared to their large capital. Advocates of large funds emphasize the economies of scale in research and administration that benefit large funds. However, large funds can diversify their portfolios and decrease risk to a further degree than smaller funds, which is especially important during a market downturn. Large funds are also more competitive in seizing new investment opportunities because of their comparatively large holdings of cash and liquid assets (see Khorana, Servaes, & Tufano, 2005).

Despite the controversy on whether larger or smaller funds improve performance, the relationship between fund size and performance is generally believed to be concave for funds targeting the U.S. market (see Indro, Jiang, Hu, & Lee, 1999; Kaplan & Schoar, 2005). Mutual funds require a minimum number of assets to justify their costs of acquiring information. However, marginal returns to scale are diminishing, and marginal returns eventually become negative when the fund exceeds its optimal size. Chen, Harrison, Huang, and Kubik (2004) investigate extensive data (from 1969 to 1999) on the U.S. equity funds and find that fund size erodes performance, suggesting that most U.S. funds have exceeded their optimal size, which is consistent with the finding of Indro et al. (1999).

\* Corresponding author. Tel.: +86 852 2609 8603.

E-mail addresses: [ding.haoyuan@mail.shufe.edu.cn](mailto:ding.haoyuan@mail.shufe.edu.cn) (H. Ding), [arwenzh@gmail.com](mailto:arwenzh@gmail.com) (H. Zheng), [zhuchenqi1101@gmail.com](mailto:zhuchenqi1101@gmail.com) (C. Zhu).

<sup>1</sup> Tel.: +86 852 3943 1665.

<sup>2</sup> Tel.: +86 852 2609 8603.

Further, they partly ascribe the negative impact of fund size on performance to the trading costs and diseconomy of organization. Large funds tend to be involved in large transactions that are difficult to execute because of their impact on price.<sup>3</sup> This difficulty of execution leads to high transaction costs that undermine performance (see *Keim & Madhavan, 1997*). Small funds alone have less market power to influence price, although they may be subject to the price impact caused by the trading activities of large funds. Moreover, smaller funds are more efficient in exchanging ideas among different layers of management, which contributes positively to their overall performance.

Most studies addressing the impact of fund size on performance focus on U.S. equity funds. And they normally exclude international funds that invest in markets outside the U.S. (see *Chen et al., 2004; Sapp & Yan, 2008; Zheng, 1999*), studying only U.S.-domiciled and U.S.-invested equity funds. The application of the results of these studies to other countries remains questionable because of distinct investment environments and institutional contexts. Some insightful examinations of other national markets confirm that different investment markets affect the size–performance relation. For example, *Khorana, Servaes, and Wedge (2007)* investigate the US-domiciled funds that invested in Latin America in 2005 and find that fund size benefits performance. Their findings contradict that of the study by *Chen et al. (2004)* on US-domiciled and US-invested funds from 1969 to 1999. The investment market (or the destination of capital flows), the data period, or a combination of both, have a huge effect on the size–performance relationship. These determinants of the size–performance relationship in emerging Asia<sup>4</sup> are examined in our study. Our selection of emerging Asia equity funds is based on three concerns.

First, our study focuses on equity funds because equities have outperformed bonds as the largest share of mutual fund portfolios beginning in the 1990s (see *Kaminsky, Lyons, & Schmukler, 2001*). Their dominance was overwhelming in the past few years, and they only showed signs of decline after the 2007 credit crunch. Despite this decline, equity funds remain the largest component of the fund industry in the world, accounting for 44.8% of all mutual fund assets by the end of 2011.<sup>5</sup>

Second, we focus on emerging markets because of the substantially larger proportion of funds invested in them than in developed markets. Moreover, mutual funds targeted at emerging markets have grown fast in both scope and size. The increasingly important role that the emerging market plays in the worldwide mutual fund industry deserves thorough investigation. Moreover, the considerable economic growth and financial liberalization in emerging markets during the past few years have added new characteristics to the fund industries (see *Khorana et al., 2005*). The emerging market should differentiate itself more from the U.S. market than from other developed markets. We expect such distinctions to add new insights to the size–performance relationship and extend the literature on mutual funds.

Third, the study focuses on emerging Asia because in the sample period, in spite of the sluggish international market conditions, the mutual fund industry in emerging Asia enjoys a vibrant growth averaging 10.44% annually, which far exceeds the world average growth rate of 9.01% and the U.S. average of 7.14%.<sup>6</sup> The proportion of equity funds in the fund industry is the largest in emerging Asia which, in turn, is the largest regional emerging market in terms of market value of mutual fund asset holdings. According to Emerging EPFR Global (henceforth referred to as EPFR), by the end of January 2009, the market value of total asset holdings in emerging Asia was US\$ 117,621 million, far exceeding that of Latin America, the second largest market in the world, at US\$ 33,356 million. Owing to the continuous and impressive (real and expected) economic growth of the stock markets in emerging Asia, they continue to outperform the developed markets by a wide margin. If investment target market does matter, a study on the mutual funds in emerging Asia can extend the mutual fund literature whose focus is mainly on the U.S.

Empirical investigations on equity funds in emerging Asia have remained scarce despite the increasing importance of these funds to the global mutual fund industry. This paper provides an initial examination of the size–performance relationship in these equity funds. Applying a novel data set that covers the funds invested weekly over the period from 2003 to 2009, we reveal a U-shaped relationship between size and fund performance. The “U-shaped” size–performance means that: when the fund size is relatively small, i.e., smaller than certain size threshold, small funds outperform their larger counterparts; whereas the fund size increases the performance when the size is relatively large, i.e. greater than certain threshold, large funds outperform their smaller counterparts. This suggests that the mid-size funds underperform the small and large funds. We interpret our result from the perspective of higher idiosyncratic risk in emerging Asia. To hedge such idiosyncratic risk, small funds are more flexible to adjust their strategies in portfolio selection (e.g., *Chen et al., 2004*), whereas risk can be well diversified for large funds (*Khorana et al., 2005*). Mid-size funds suffer from limited flexibility and insufficient diversification.

Moreover, endogeneity problem arises due to variables that are correlated with both fund performance and selection of investment target, such factors including fund managers' ability, investment strategies, risk tolerance, etc. To account for the endogeneity problem and obtain unbiased estimates, *Bae, Chang, and Kim (2013)* examine cross-border acquisitions of private and public targets by U.S. firms within the framework of maximum-likelihood version of *Heckman's (1979)* self-selection model. Similarly, we address the issue of self-selection of investment markets by using an endogenous regime-switching model. Following *Chan, Covrig, and NG (2005)*, we include variables of stock market development and institutional environment to specify an investment market selection function, which captures the process how mutual funds select investment market. Particularly, stock market volatility and return are adopted to capture the stock market development since they are of first-order importance when managers choose an investment

<sup>3</sup> A large buying order pushes the price up, which means that the fund has to pay more for its order than required, whereas a large selling order pulls the price down and the fund receives less than what it would receive at constant price. Funds either pay more (or receive less) for the stocks they trade or attribute higher transaction costs to skillful brokers to smoothen the price impact. A common practice is for funds to select the latter.

<sup>4</sup> Emerging Asia includes all Asian countries except Japan.

<sup>5</sup> Data source: Investment Company Institute, <http://www.ici.org>.

<sup>6</sup> Data source: Investment Company Institute Fact Book, calculated by authors.

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