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Noise-trading, costly arbitrage, and asset prices: Evidence from US closed-end funds ☆

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Abstract

The behavior of US closed-end funds is very different from that of UK funds. There is no evidence that the US funds' discounts are constrained by arbitrage barriers, no evidence that higher expenses increase discounts and no evidence that replication risk increases discounts but strong evidence that noise-trader risk is priced. The differences between US and UK funds may be due to the fact that small investors dominate US funds while institutional investors dominate UK funds, or because the sample selection method for the UK funds chooses only funds that are relatively easy to arbitrage.

JEL classification: G14; G12

Keywords: Closed-end funds; Noise-trader risk; Arbitrage

1. Introduction

The discounts and premia of US closed-end funds behave extremely differently from those of UK funds. This is true despite the fact that closed-end funds possess nearly identical institutional structures in the US and the UK. In particular, closed-end funds in both countries operate as actively managed investment companies that do not redeem their own shares at par with portfolio values in the way that mutual funds do. Instead, their

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shares trade on stock exchanges where supply and demand determine their prices. The upshot is that per-share stock prices in both countries typically differ from per-share portfolio values—quite often by large amounts.

The resulting discounts (underpricings) and premia (overpricings) have been intensely studied because they are cases where arbitrage pricing and the Law of One Price at least appear to be violated. Numerous papers reviewed by Dimson and Minio-Kozerski (1999) debate whether behavioral explanations or rational factors like fund expenses, mispriced portfolios, or outstanding tax liabilities can do a better job of explaining why fund market values deviate from fund portfolio values.

Gemmill and Thomas (2002) test competing rational and behavioral explanations using UK data. They focus on the ability of arbitrage to constrain discount and premium levels to be consistent with rational factors as well as whether the discounts and premia of the funds in their sample appear to be affected by the leading behavioral explanation for closed-end fund mispricings, noise-trader risk.

As explained by DeLong, Shleifer, Summers, and Waldmann (1990), noise-trader risk is the risk faced by rational traders that irrational "noise traders" may not only cause an asset to be mispriced, but may also, on an ongoing basis, cause any given mispricing to widen rather than narrow. Noise traders can do this because their trading actions are completely unpredictable and noisy. As such, the random trading of noise traders confronts rational traders with a unique, non-diversifiable risk that deters them from fully and immediately rectifying the mispricings caused by the noise traders. The result is that the noise traders can cause lingering mispricings in closed-end funds—sometimes generating discounts by driving fund share prices below portfolio values and at other times generating premia by bidding fund share prices above portfolio values.

However, the noise-trader model of DeLong, Shleifer, Summers, and Waldmann (1990) also makes an equilibrium prediction about the intensity of noise-trader risk and the price at which a fund will trade relative to its portfolio value. The model predicts that the higher the level of noise-trader risk a fund experiences, the deeper on average will be the discount at which it trades, all other things being equal. The intuition is that a deeper average discount provides rational traders with compensation for bearing noise-trader risk. The compensation comes in the form of a higher rate of return than they would get if they mimicked the fund's underlying portfolio by buying the portfolio's assets at their full market prices. By buying the right to the same stream of future returns at a discount, rational traders get a higher rate of return.

When Gemmill and Thomas (2002) test for the ability of arbitrage to constrain the magnitude of mispricings in their sample of UK funds and for the effects of noise-trader risk and fundamental factors on the discounts and premia of their sample of UK funds, they find the following. First, they find that arbitrage appears to successfully constrain discount and premium levels between an upper discount bound and a lower premium bound. Second, they find that discount and premium levels are affected by rational factors but not by noise-trader risk. I find diametrically opposite results for US funds.

First, the US data is inconsistent with the two arbitrage bounds that appear to constrain UK funds from trading at discounts of more than 30% or at premia of more than 5%. To begin with, nearly 16% of the 224,112 weekly discount and premium observations in the US data between 1985 and 2001 lie outside the two boundaries. In addition, the vast majority of the funds break the suggested boundaries. For instance, 87% of the 284 bond funds that were in business for more than five years and 93% of the 114 stock funds that