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Painting the tape: Aggregate evidence

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Abstract

We document systematic patterns in daily aggregate market returns around end-of-quarters consistent with strategic fund manager behavior and the growing presence of mutual funds in the market.

Keywords: Turn-of-quarter effect; Painting the tape; Mutual fund performance; Investment distortion

JEL classification: D82; G2; G14

1. Introduction

[We] found a great many suspicious rises at the point that determines how a share's or fund manager's performance will be judged. The price of a stock would jump right at year's end and fall sharply at the start of the new year. [. . .] The percentage of stocks that became stars on the final trading day and turned into dogs after New Year's was far greater than for [randomly selected mid-month days.] The same applied to mutual funds, where last-minute leaps beyond the normal market trends strongly suggested a round of 'portfolio pumping'. [*The Globe and Mail*, July 7, 2000.[2]]

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[1] Tel.: +1 217 244 5708.
[2] "Hey, that's my money!" Editorial (Editor: Richard Addis), The Globe and Mail, Thomson Canada Limited, Toronto, July 7, 2000, page A14.

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Fund managers have the incentive to distort their investment of new funds at the end of an evaluation period towards stocks in which they hold positions. This trading behavior, sometimes referred to as "painting the tape", causes a price impact which increases the value of the existing position, and thereby increases the overall fund return. The higher short-term fund return leads to greater cash inflows (Sirri and Tufano, 1998), greater assets under management, and ultimately greater mutual fund manager compensation.

Because the price impact of these trades decay over time, fund managers have especially strong incentives to augment existing holdings near the end of evaluation periods. That is, early in an evaluation period, fund managers may want to minimize investment distortions/price impacts. However, later in the evaluation period, enough of the price impact will persist through the end of the evaluation period to make it attractive to distort investments toward assets in place. An extreme manifestation of this investment distortion is the practice of "high closing"—submitting a buy order that blows through the sell limit order book at the close of a trading day at the end of an evaluation period. As the news magazine Maclean's observes, "[. . .] nearly everyone seems to agree that high closing is common. 'It's caused by the competitive nature of the business', says John Gilfoyle, an investment consultant [. . .] 'They have to beat the guy across the street.'"[3]

Carhart et al. (2002) show that funds earn tremendous short-run returns near the end of an evaluation period, when trading behavior has the greatest impact on performance. This is especially so for small-cap funds, which trade less liquid stocks. Carhart et al. find that 80% of funds beat the S & P 500 Index on the last trading day of the year (62% for other quarter-end dates), but only 37% (40% other quarters) do so on the first trading day of a new year. The difference is even greater for small-cap funds: 91% on year end, 70% other quarter-end dates versus 34% for first quarter trading day. Carhart et al. (2002) reject benchmark-beating hypotheses in favor of strategic behavior similar to that motivated here. They find that this strategic effect is higher for better past-performing funds, which have more cash on hand. Funds that performed better in the past year earned 42 basis points higher returns on the last trading day and 29 basis points lower on the first trading day than funds with worse historical performance.

In the next section, we uncover evidence that because Carhart et al. (2002) measure fund performance relative to the S & P 500 Index, they underestimate the impact of strategic mutual fund trade. Specifically, we find that strategic trading by fund managers appears to impact returns on aggregate market indexes, so that measuring the impact relative to the index understates the total effect. In particular, we find that the return on the equally weighted index on the last trading day exceeds that on other trading days, and especially exceeds that on the first trading day of a quarter. Efficient markets would imply that these return differences should be unpredictable white noise, but we show that the share of all equity in the economy held by mutual funds explains this return difference well.

2. Empirical evidence

Mutual fund managers have especially large incentives to manipulate their portfolio at the end of a measurement period (e.g., quarter). In particular, private investors target their mutual fund investments

[3] A Royal Bashing-Regulators accuse top Bay Street players of share manipulation,"by John Nicol, Maclean's magazine, July 10, 2000, Vol. 113 No. 28, page 39."