

Returns on Initial Public Offerings of Closed-End Funds

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Examination of 41 closed-end fund initial public offerings (IPOs) during the period from January 1986 to June 1987 reveals that the mean initial day's return is not significantly different from zero in contrast to previous findings for nonfund IPOs. New funds also show significant negative after-market returns unlike other new issues. Despite the disparity between our findings and previous results, our results are consistent with existing models.

From January 1986 through June 1987, 46 domestic closed-end funds raised \$11 billion in initial public offerings (IPOs); this is approximately 1.5 times the total market value of all closed-end funds outstanding at year end 1985. The popular press contends that new closed-end funds are overpriced and, therefore, offer low returns; the U.S. Securities and Exchange Commission is currently investigating closed-end fund aftermarket performance.¹

On average, IPOs are underpriced. Ibbotson (1975) and Ritter (1984) report average underpricing of 11.4 percent and 48.4 percent, respectively, whereas Smith (1986) in a review of research findings concludes that

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¹ Laderman (1986), Quinn (1987), Siconolfi (1987), and Wallace (1986) argue that new funds are overpriced, and Siconolfi (1988) describes the Securities and Exchange Commission investigation of these funds.

the average underpricing exceeds 15 percent. Baron (1982) and Rock (1986) each argue that underpricing results from a different kind of information asymmetry. Baron contends that underpricing is due to the fact that the investment banker is better informed about capital markets than is the issuer, while Rock argues that underpricing is caused by information asymmetry between different classes of investors.

This article is concerned with IPOs of closed-end funds. These are of interest for two reasons. First, there is less asymmetry of information about the value of the shares being offered than in a typical IPO because the underlying asset is a portfolio of marketable securities. The composition of the initial portfolio and the net asset value per share (NAV) are reported in the prospectus. Second, since the shares of most existing closed-end funds sell at a discount to NAV [see Brauer (1988)], while the shares of closed-end funds are offered initially at a premium to NAV, there is a *prima facie* case that IPOs of closed-end funds are overpriced unlike general IPOs.² Only recently have researchers investigated the initial and aftermarket performance of new closed-end funds [see Anderson and Born (1989) and Weiss (1989)]. The absence of earlier research may be attributable to the paucity of closed-end fund IPOs immediately prior to 1986. Wiesenberg (1989) reports that only two closed-end funds went public during 1974 to 1985.

The primary purpose of this research is to provide new and different empirical evidence about IPO returns. We compare closed-end fund IPO returns to nonfund IPO returns and relate fund initial performance to the predictions of existing pricing models. The remainder of the paper is organized as follows. In Section 1, theoretical predictions for initial and aftermarket IPO returns are explained. In Section 2, the experimental design is presented. In Section 3, the empirical results are presented and explained and these findings are related to the predictions of IPO pricing models. Concluding remarks appear in Section 4.

1. Initial Public Offerings

Both Baron (1982) and Rock (1986) show that asymmetry of information about the initial market value of IPOs will cause new issues to be underpriced on average, the expected degree of underpricing being directly related to the amount of uncertainty surrounding the value of the offering. Evidence that greater underpricing is associated

² Our sample funds initially were priced at an average 7.41 percent premium over original NAV, an amount equal to the average underwriter's spread.

with greater asymmetry of information about the issuer's initial value is provided by Beatty and Ritter (1986), Miller and Reilly (1987), Muscarella and Vetsuypens (1987), and Ritter (1984). Koh and Walter (1989) provide support for the Rock (1986) model using data drawn from the Singapore new-issue market.

Since there is relatively little uncertainty about the value of the assets of closed-end funds, both the Baron and the Rock models predict that IPOs of these funds will experience little underpricing.³ In fact, since investors must pay the expenses of the offering, the typical closed-end fund IPO is offered at a premium relative to the net asset value. Therefore, unless superior fund management justifies a premium to NAV, the offerings must be overpriced.⁴ In the absence of superior fund management we expect the share prices of these funds on average to decline initially by an amount at least equal to these offering expenses in order to trade in the secondary market at prices close to NAV.⁵

For IPOs of operating companies, Chalk and Peavy (1990), Miller and Reilly (1987), and Muscarella and Vetsuypens (1987) find that, consistent with semistrong-form market efficiency, positive, statistically significant abnormal returns occur only on the initial trading day. Similarly, semistrong-form market efficiency implies that closed-end fund returns will not be significantly different from zero on days subsequent to the initial trading day. However, immediate price adjustment may be impeded because underwriters typically do not deliver stock certificates for at least one month after the IPO and thus effectively prevent short sales during that period. At the same time Muscarella, Peavy, and Vetsuypens (1989) show that underwriters establish an initial short position in most closed-end fund IPOs by selling more shares than their allotment without exercising the over-allotment option.⁶ After the offering, the underwriters bid for shares

³ In our sample, to be described in Section 2.1, covering the period from January 1986 to June 1987, each closed-end fund IPO went public at a price exactly equal to its original NAV before selling and underwriting fees were deducted. Since a fund must report its initial portfolio and NAV in the prospectus, an investor should be able to estimate the initial share price with considerable accuracy.

⁴ This overpricing does not violate the assumptions of the efficient market hypothesis because uninformed investors may purchase overpriced IPOs. In a perfectly competitive and unrestricted market, arbitrage activity would soon eliminate any mispricing; however, as explained in Section 1, an institutionally constrained trading environment for IPOs prevents immediate arbitrage activity.

⁵ Most seasoned stock funds trade at a discount from NAV. For example, on January 2, 1987, the stock funds listed under "Publicly Traded Funds" in the *Wall Street Journal* traded at an average 7.59 percent discount from NAV. If new stock funds eventually are to trade at comparable discounts, their prices must decline enough to offset the initial pricing premia to produce the appropriate discount from NAV.

⁶ Underwriters typically have both the motive and opportunity to sell short IPO shares. The motivation for selling an IPO short is to support the new issue's price initially by making aftermarket share purchases. The National Association of Securities Dealers permits underwriters to oversell (short) a maximum of 15 percent of the number of registered shares.

in the secondary market to support the security's price. Our conversations with investment bankers and comments in the popular press [see Wallace (1986)] indicate that new fund issues are usually acquired by less-informed individual investors who may overpay for the shares. The initial restriction on short sales prevents arbitrageurs from acting to eliminate this inefficiency and, therefore, the expected price adjustment may be delayed.

2. Experimental Design

2.1 Sample construction

Forty-six closed-end funds that went public in the United States during the period from January 1986 to June 1987 were identified by Herzfeld (1989). Omitting four dual funds because of their distinctive characteristics, and one fund because it does not trade actively, our final sample consists of 41 funds.⁷ The offering date, number of shares offered, and offering price per share were obtained from the final offering prospectus. The *Wall Street Journal* in its weekly columns classifies closed-end funds into three categories: bond funds, diversified stock funds, and specialized stock funds. The specialized stock funds were separated into domestic and international groups; the funds that invest primarily in the common stock of domestic companies were included in the domestic group, whereas those that invested more than half of their assets in the common stock of companies outside of the United States were included in the international group. Table 1 lists each fund by classification type, original issue size (dollars), and issue date.

Table 2 shows that 54.9 percent of the new fund proceeds were raised by the nine bond funds. The 12 domestic specialized stock funds accounted for 23.9 percent, the 11 diversified stock funds for 14.7 percent, and the nine international specialized stock funds for 6.6 percent. All funds trade on either the American or New York Stock Exchange. Table 1 shows that at least one fund went public during each month of the sample period, January 1986–June 1987. The maximum number of new fund offerings in a month was 5 in April 1987. The largest monthly dollar amount raised was \$1.64 billion in June 1987. The average offering size for the closed-end fund IPOs is \$250.5 million. However, three funds each raised over \$1 billion, and the median fund issue size is only \$90.0 million. All the fund IPOs are “pure” common equity offerings (no debt, preferred stock, or unit offerings).

⁷ Dover Regional Financial Shares went public on September 29, 1986, with a total market value only approximately one third that of the smallest fund in our sample, and largely because of the small size the shares trade inactively in the over-the-counter market.

Table 1
Closed-end fund initial public offerings by type, issue size, and issue date (January 1986 to June 1987)

Name of fund	Classification ¹	Issue size ²	Issue date
Asia Pacific Fund	international stock	86.5	4-24-87
Blue Chip Value Fund	diversified stock	85.0	4-15-87
Clemente Global Growth Fund	diversified stock	60.0	6-23-87
Colonial Municipal Income Trust	bond	260.0	3-19-87
Counselors Tandem Securities Fund	specialized stock	44.0	10-12-86
Cypress Fund	specialized stock	85.0	10-23-86
Decision Capital Fund	diversified stock	40.0	7-09-86
Duff & Phelps Selected Utilities	specialized stock	1200.0	1-21-87
Ellsworth Convertible Growth & Income Fund	specialized stock	45.0	6-20-86
EquityGuard Stock Fund	diversified stock	18.5	8-14-86
First Australia Prime Income Fund	bond	750.0	4-17-86
First Boston Income Fund	bond	240.0	4-08-87
First Financial Fund	specialized stock	92.0	5-01-86
France Fund	international stock	90.0	5-30-86
Gabelli Equity Trust	specialized stock	400.0	8-14-86
Germany Fund	international stock	75.0	7-18-86
Global Yield Fund	bond	570.0	6-30-86
Growth Stock Outlook Trust	diversified stock	125.0	3-06-86
H&Q Healthcare Investors	specialized stock	55.0	4-23-87
Italy Fund	international stock	66.0	2-26-86
Kleinwort Benson Australian Income Fund	bond	55.0	11-20-86
Liberty All-Star Equity Fund	diversified stock	510.0	10-24-86
Lincoln National Convertible Securities	specialized stock	90.0	6-19-86
MFS Government Income Trust	bond	850.0	5-20-87
MFS Municipal Income Trust	bond	310.0	11-18-86
MFS Multimarket Income Trust	bond	1100.0	3-05-87
Malaysia Fund	international stock	84.0	5-08-87
Morgan Grenfeld SMALLcap Fund	specialized stock	50.0	5-07-87
Nicholas-Applegate Growth Fund	diversified stock	100.0	4-10-87
Nuveen Municipal Value Fund	bond	1500.0	6-17-87
Pilgrim Regional BancShares	specialized stock	90.0	1-24-86
Regional Financial Shares Fund	specialized stock	100.0	5-14-86
Royce Value Trust	diversified stock	100.0	11-19-86
Scandinavia Fund	international stock	65.0	6-17-86
Schafer Value Trust	diversified stock	110.0	10-01-86
Scudder New Asia Fund	international stock	84.0	6-18-87
TCW Convertible Securities Fund	specialized stock	200.0	2-26-87
Taiwan Fund	international stock	24.4	12-16-86
Templeton Emerging Markets Fund	international stock	100.0	2-26-87
Worldwide Value Fund	diversified stock	60.0	8-19-86
Zweig Fund	diversified stock	300.0	9-25-86

¹ Fund classifications are the same as those used by the *Wall Street Journal* in the weekly sections, "Closed-End Bond Funds" and "Publicly Traded Funds."

² Issue size is expressed in \$ million, prior to the exercise of any overallotment option.

We obtained closing stock prices for each fund for the first 100 trading days (the initial day and 99 aftermarket trading days) from Standard & Poor's (S&P) *Daily Stock Price Record* and the *Dow Jones News Retrieval Service*. The same sources provided daily closing market prices for the S&P 500 Stock Index and dividend payment data. The weekly NAV for each fund was obtained from the *Wall Street Journal*. In the few instances where the NAV was unavailable from

Table 2
Sample descriptive statistics for closed-end fund initial public offerings, January 1986 to June 1987

	Frequency	%	Amount issued (\$ million)	%
Type of fund				
Stock				
Diversified	11	26.8	1,508.5	14.7
International specialized	9	22.0	674.9	6.6
Domestic specialized	12	29.3	2,451.0	23.9
Bond	9	22.0	5,635.0	54.9
Total	41	100.0	10,269.4	100.0
Offering procedure				
Best efforts	1	2.4	110.0	1.1
Firm commitment	40	97.6	10,159.4	98.9
Total	41	100.0	10,269.4	100.0
Market listing				
American Stock Exchange	6	14.6	1,002.9	9.8
New York Stock Exchange	35	85.4	9,266.5	90.2
Total	41	100.0	10,269.4	100.0

this source, we obtained the information directly from the fund's manager.

2.2 Abnormal return measures and test statistics

Since the portfolio composition of new funds is changing and unknown, it is unclear how to adjust returns for risk. Therefore, two series of abnormal returns were computed for each fund. The first, AR_{it}^0 , was calculated by subtracting the risk-free rate from the fund return each day,

$$AR_{it}^0 = R_{it} - RF_t, \quad (1)$$

where R_{it} is the return of fund i on day t relative to the offering date ($t = 1$), and RF_t is the risk-free rate on day t . The 91-day U.S. Treasury-bill rate was obtained from various issues of the *Federal Reserve Bulletin* and was used as a proxy for the risk-free rate.

The second series of abnormal returns, AR_{it}^1 , was calculated by subtracting the market return from the security return

$$AR_{it}^1 = R_{it} - M_t, \quad (2)$$

where M_t is the return on the S&P 500 Stock Index. For both series the mean abnormal return is defined by⁸

⁸ The appropriate adjusted return measure for fund i on day t is as follows: $AR_{it} = (1 - B_{it})AR_{it}^0 + B_{it}AR_{it}^1$, where $1 - B_{it}$ is the fraction of the portfolio in cash. However, because we do not know the cash fraction on day t , we report a range of adjusted returns.

$$\overline{AR}_t = \sum_{i=1}^n \frac{AR_{it}}{n_t}, \quad (3)$$

where n_t is the number of securities included on day t . The cumulative average abnormal return $\overline{CAR}_h^t$ at time t_2 relative to time t_1 is computed as

$$\overline{CAR}_h^t = \sum_h^{t_2} \overline{AR}_t. \quad (4)$$

The statistical significance of the event-period abnormal returns based on each method is assessed. The null hypothesis to be tested is that the mean day t abnormal return is equal to zero. To test whether the abnormal portfolio return on event day t , $\overline{AR}_t$, is statistically different from zero, we compute the t -statistic

$$t = \overline{AR}_t / \bar{\sigma}(\overline{AR}_t), \quad (5)$$

where $\bar{\sigma}(\overline{AR}_t)$, the standard deviation of the sample mean on day t , is defined as

$$\bar{\sigma}(\overline{AR}_t) = \sigma(\overline{AR}_t) / n_t^{1/2}, \quad (6)$$

where $\sigma(\overline{AR}_t)$ is the cross-sectional standard deviation on day t .⁹

To test whether the cumulative abnormal return from day t_1 until day t_2 is significantly different from zero, we compute the t -statistic,

$$t = \overline{CAR}_h^t / \bar{\sigma}(\overline{CAR}_h^t), \quad (7)$$

where $\bar{\sigma}(\overline{CAR}_h^t) = \bar{\sigma}(\overline{AR}_t) \cdot (t_2 - t_1 + 1)^{1/2}$. Assuming that abnormal returns are independently distributed in event time, portfolio returns will follow a standard normal distribution under the null hypothesis.

3. Results

3.1 Initial returns

Initial returns (R_1), defined as the offering day's closing price minus the initial offering price divided by the offering price, are presented in Table 3. We report only an unadjusted initial return because each

⁹ We recognize that this methodology has two shortcomings: first, it does not use historical data to estimate the sample variance; and, second, it assumes that the measures of performance are independent and identically distributed in the cross section of securities. The first shortcoming is unavoidable since historical data are not available. Brown and Warner (1985) show that the procedure we employ is well specified and most powerful in the context in which the variance changes between the prior estimation period and the event period. The second assumption means that we cannot distinguish between mean effects and variance effects. If the true mean effect differs across securities, an apparent increase in variance will result, causing the t -statistics to be downward biased, weakening the power of our tests.

Table 3
Initial returns for closed-end fund IPOs by type¹

Type of IPO	Num- ber of obser- vations	Mean initial return	t-statistic	Pro- por- tion posi- tive	Minimum initial return	Maxi- mum initial return
Closed-end funds						
Stock total	32	0.0097	0.78	.3125	-0.0500	0.3875
Stock total ²	29	-0.0111	-3.72*	.2414	-0.0500	0.0139
Diversified	11	-0.0076	-1.51	.3636	-0.0500	0.0139
International specialized	9	0.0623	1.45	.5556	-0.0375	0.3875
International specialized ²	6	-0.0122	-1.77	.3333	-0.0375	0.0104
Domestic specialized	12	-0.0135	-3.36*	.0833	-0.0375	0.0125
Bond	19	0.0097	1.09	.0526	-0.0125	0.0750
Total	41	0.0097	0.97	.2683	-0.0500	0.3875
Total ²	38	-0.0062	-1.60	.2105	-0.0500	0.0750
Nonfund issues ³	412	0.0664	8.26*	NA	-0.4380	1.6370

NA = not available.

¹ Mean initial returns are defined as the difference between the offering day's closing price and the initial offering price divided by the offering price.

² Excluding the three special-access international funds that invest in securities of certain foreign countries that restrict direct ownership by U.S. citizens.

³ For the period from January 1986 to May 1987 (June 1987 data was unavailable). *Source:* Muscarella and Vetsuypens (1987).

* Significant at the 0.01 level.

sample fund began day 1 fully invested in cash, and because the day-1 return represents only a partial day's trading if the fund was priced during trading hours, thus making an adjustment for the risk-free rate or the market inappropriate because of nonsynchronous trading times. The mean initial return for the total sample is an insignificant 0.97 percent, which is substantially less than the highly significant 6.64 percent mean return for 412 nonfund IPOs reported by Muscarella and Vetsuypens (1987) for a similar time period, and is substantially less than those reported in any prior study of IPOs.¹⁰

Moreover, the mean initial return is inflated by the inclusion of three special-access international funds whose average initial return is a highly significant 21.11 percent.¹¹ Exclusion of these funds reduces the sample mean initial return to an insignificant -0.62 percent. The

¹⁰ The mean initial market-adjusted return for the sample is 0.91, which is not significantly different from the unadjusted initial return. We conclude that the initial unadjusted returns are not biased because the market effect on these returns is negligible.

¹¹ A special-access international fund is defined as a fund with permission to invest in the securities of certain foreign countries that restrict direct ownership by U.S. citizens. Among our sample, the Asia Pacific Fund, Taiwan Fund, and Templeton Emerging Markets Fund are special-access funds. Because U.S. investors cannot purchase restricted foreign shares directly, they may be willing to pay premia over market value for the indirect purchase of these shares through special-access closed-end funds. The Taiwan Fund, which invests only in restricted Taiwanese shares, frequently sells at a large premium over NAV (e.g., on July 31, 1987, the premium was 127.5 percent).

Table 4
Closed-end fund event time treasury-bill-adjusted and market-adjusted cumulative
aftermarket returns by type

Category	Number of observations	Day 2-20		Day 21-100	
		Treasury-bill-adjusted return	Market-adjusted return	Treasury-bill-adjusted return	Market-adjusted return
All funds	41	-0.0167 (-1.19)	-0.0253 (-1.75)	-0.0942 (-3.60)*	-0.1279 (-5.34)*
Stock total	32	-0.0180 (-0.98)	-0.0267 (-1.62)	-0.1005 (-3.29)*	-0.1349 (-4.76)*
Diversified	11	-0.0255 (-1.67)	-0.0290 (-1.40)	-0.1556 (-4.77)*	-0.2026 (-9.13)*
International specialized	9	-0.0294 (-0.48)	-0.0450 (-0.78)	-0.0269 (-0.77)	-0.0112 (-0.15)
International specialized ¹	6	-0.0451 (-0.73)	-0.0529 (-1.02)	-0.1542 (-1.80)	-0.0890 (-1.39)
Domestic specialized	12	-0.0025 (-0.17)	-0.0109 (-0.68)	-0.1054 (-3.82)*	-0.1656 (-5.47)*
Bonds	9	-0.0139 (-1.37)	-0.0206 (-1.87)	-0.0720 (-2.65)**	-0.1032 (-4.71)*
Nonfund issues ²	412	NA	-0.0013 (-0.10)	NA	NA

t-statistics are in parentheses. NA = not available.

¹ Excluding the three special-access international funds.

² Muscarella and Vetsuypens' (1987) sample of nonfund IPOs.

* Significant at the 0.01 level.

** Significant at the 0.05 level.

standard deviation of initial returns is only 2.18 percent, compared to 16.31 percent for the Muscarella and Vetsuypens sample: the difference is significant at the .01 level.

Table 3 also reports initial returns for the subsets of closed-end funds. While the -0.76 percent initial return for the diversified funds is not significant (*t*-statistic = -1.51), the -1.35 percent initial return for the domestic specialized stock funds is significant at the .01 level. The international stock group's 6.23 percent mean initial return declines to an insignificant -1.22 percent when excluding the special-access funds. While overall the stock funds have an insignificant 0.97 percent mean initial return, the exclusion of the special-access international funds causes the mean initial return to decline to -1.11 percent, which is significant at the .01 level. This is the first study to show negative IPO returns. The closed-end bond funds mean initial return of 0.97 percent (the *t*-statistic of 1.09 is not significant) is the same as reported for the stock funds. Our finding of no underpricing among closed-end fund new issues is consistent with the theory of Baron and Rock. We, therefore, provide new and additional support

for these models, as this is the only known test that examines IPOs with high pricing certainty.

The underwriter spread causes new closed-end funds to be priced at a premium over NAV. However, because seasoned funds rarely trade at a premium over NAV in the secondary market, the new funds may be overpriced. With unconstrained trading and a semistrong-form efficient capital market, an adjustment to the overpricing should occur quickly. However, this adjustment does not occur on day 1 for our sample because the -0.62 percent mean initial return (excluding the special-access international funds) does not offset the mean underwriter spread of 7.41 percent.

3.2 Aftermarket returns

In order to determine whether the lack of full price adjustment on the offering date is caused by the effective prohibition of short sales of new fund shares, we examined fund aftermarket returns. The cumulative mean abnormal daily returns (henceforth CARs) for the sample and each subset are presented in Table 4. The sample's CAR over days 2–20 equals -1.67 percent for the Treasury-bill-adjusted series and is -2.53 percent for the market-adjusted series; both are statistically insignificant. Thus, cumulative returns through day 20 do not offset the initial pricing premium. However, the CAR over days 21–100 is significantly negative for the Treasury-bill-adjusted series (-9.42 percent) and for the market-adjusted series (-12.79 percent), and each CAR is larger than the initial premium.

The stock funds show a similar pattern in that their CARs over days 2–20 for both the Treasury-bill-adjusted series (-1.80 percent) and for the market-adjusted series (-2.67 percent) are insignificant. However, both the Treasury-bill-adjusted CAR (-10.05 percent) and the market-adjusted CAR (-13.49 percent) for days 21–100 are highly significant. A similar pattern is observed among the stock subgroups. While all stock fund groups show insignificant CARs over days 2–20, the day-21–100 returns for the diversified funds (-15.56 percent for the Treasury-bill-adjusted series and -20.26 percent for the market-adjusted series) and the domestic specialized funds (-10.54 percent for the Treasury-bill-adjusted series and -16.56 percent for the market-adjusted series) are highly significant. The international specialized funds' (excluding the special-access funds) CAR for days 21–100 of -8.90 percent for the market-adjusted series offsets the original pricing premium, but it is not statistically significant (mainly because of the very large return variability of these funds over this period).

For the bond funds, neither the CAR for the Treasury-bill-adjusted series (-1.39 percent) nor for the market-adjusted series (-2.06 percent) over the day-2–20 period is significant, but both the CARs for

days 21–100 for the Treasury-bill-adjusted series (-7.20 percent) and the market-adjusted series (-10.32 percent) are significant. Large negative CARs may not occur until after day 20, as this is the earliest time when arbitrageurs can obtain the new stock certificates, thus allowing them to trade freely.

3.3 Calendar time results

During the period from January 1986 to June 1987, most closed-end fund IPOs (78.0 percent) were stock funds. This stock-fund concentration is peculiar because the stock funds underperform the bond funds in aftermarket trading. Because closed-end fund IPOs occurred infrequently in the years before our observation period, investors could not observe the performance of new funds. However, as many fund IPOs appeared, investors could observe the contrasting performances between stock and bond funds. Therefore, we predict that over time, as investors become more informed about the relative returns of stock and bond funds, the demand for stock funds will decline, thus causing underwriters to reduce the supply of stock-fund IPOs.

By dividing our observation period into three consecutive semi-annual time periods, we found that in the first two periods, stock funds comprised 81.8 percent (9/11) and 84.6 percent (11/13) of all fund IPOs, respectively, but that the stock fund proportion declined to 64.3 percent (9/14) in the third period (see Table 5). Furthermore, on a market-adjusted basis the stock funds performed more poorly for the day-2–20 period in the third period (-6.80 percent) than in either the first (-2.50 percent) or second (-2.32 percent) periods.

The decline in the proportion of stock funds and the lower CARs over days 2–20 for the stock funds in the third period support our prediction that investors would recognize the poor relative returns of stock funds. To explore further whether investors reduced their demand for new stock funds, we examined the closed-end fund IPOs over the subsequent one year period from July 1987 to June 1988. We used the same data sources and empirical methodology described in Section 2, and report the results in Table 5.

Investors apparently responded to the poor performances of stock funds because in the period July–December 1987, stock funds accounted for only 18.8 percent (3/16) of fund IPOs; and in the period January–June 1988, stock funds represented only 14.3 percent (4/28) of new funds. The CARs (market-adjusted) over days 2–20 for the stock funds were -7.16 percent during July–December 1987, and -16.25 percent during January–June 1988, compared to the -3.77 percent CAR for the same event period for our original sample. These results suggest that investors recognized that new stock funds tend

Table 5
Closed-end fund unadjusted and adjusted returns by type for selected event time periods

Category and time period	Percentage of total fund IPOs	Number	Day 1		Day 2-20		Day 21-100	
			Unadjusted return	Treasury-bill-adjusted return	Market-adjusted return	Treasury-bill-adjusted return	Market-adjusted return	
Stock funds ¹								
January-June 1986	81.8	9	-0.0111	-0.0077	-0.0250	-0.1349	-0.1442	
July-December 1986	84.6	11	0.0090	0.0032	-0.0232	-0.1050	-0.2191	
January-June 1987	64.3	9	0.0108	-0.0528	-0.0680	-0.1708	-0.0818	
July-December 1987	18.8	3	-0.0317	-0.1122	-0.0716	-0.2748	-0.0537	
January-June 1988	14.3	4	0.0206	-0.1776	-0.1625	-0.0468	-0.0229	
Bond funds								
January-June 1986	18.2	2	0.0313	-0.0036	0.0422	-0.1810	-0.1467	
July-December 1986	15.4	2	0.0000	0.0084	-0.0243	0.0249	-0.1406	
January-June 1987	37.8	5	0.0050	-0.0325	-0.0442	-0.0603	-0.0939	
July-December 1987	81.2	13	-0.0125	-0.0242	0.0279	0.0239	-0.0592	
January-June 1988	85.7	24	-0.0004	-0.0131	-0.0381	-0.0385	-0.0277	

¹ Excluding the special-access international funds.

to destroy value, because a fund's initial market value exceeds the underlying portfolio value. Therefore, although the proliferation of closed-end fund IPOs continued beyond our observation period, the number and proportion of stock funds declined substantially. These results are consistent with the existence of a semistrong-form efficient capital market. After recognizing the poor performance of stock fund IPOs, investors accordingly reduced their demand for these securities.

4. Conclusions

In this study we provide new and different empirical evidence about IPO returns. In contrast to other IPOs, we find that closed-end fund IPOs do not exhibit significant positive initial returns. Instead, new fund shares on average are overpriced. The results are consistent with IPO models that predict no significant underpricing for new issues that have little asymmetry of information about their initial values. Since prior research has not examined IPOs with relative pricing certainty, our findings provide further support for these models. While the new funds have insufficient initial price declines to offset initial overpricing, they experience significant negative aftermarket returns. These results differ from existing research that finds no significant aftermarket returns for other IPOs.

We argue that because new stock funds are priced at premia over NAV, they should experience price declines because most seasoned stock funds sell at discounts from NAV. The share price decline occurs to eliminate the original pricing premium caused by the underwriter spread, and additional share-price erosion may result as the shares move to a discount from NAV. We speculate that an observed delay in price deterioration may be caused by the effective restriction of short sales, which initially prevents arbitrageurs from exploiting overpricing.

While we do not explain why investors buy new closed-end fund shares at premia over NAV, we observed that this behavior resembles the actions of investors buying loaded open-end fund shares and, therefore, paying premia over NAV when similar no-load fund shares are available at NAV. Over time, investors substantially reduced their demand for new stock funds and increased their demand for new bond funds in recognition that bond fund IPOs provide better returns than new stock funds.

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