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The Marketing of Closed-end Fund IPOs: Evidence from Transactions Data*

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We examine aftermarket transactions for closed-end fund IPOs and document large sell-to-buy imbalances (“flipping”), extensive price stabilization, and sharp subsequent price drops. The timing of the price drop is related to both the amount of initial flipping, and use of the over-allotment options. The extent of the flipping activity is related to the composition of the syndicate. Moreover, aftermarket buys (sells) are mainly small (large) trades. These findings suggest that lead underwriters price stabilize and manage the supply of shares in the aftermarket, and that closed-end fund IPOs are marketed to a poorly informed public.

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1. INTRODUCTION

This study investigates a well-documented puzzle in the finance literature: the anomalous aftermarket behavior of closed-end fund initial public offerings (IPOs). While industrial IPOs have an average initial-day return of approximately 16%, closed-end fund IPOs show zero first-day returns. Furthermore, while the short-term price of industrial IPOs increases, the short-term price of closed-end funds decreases. After 5 months of trading, industrial IPOs provide a cumulative market-adjusted return of 18.5% (Ritter, 1987), compared to a −12.6% return for closed-end funds (Weiss, 1989).

Many models with rational agents attribute the underpricing of industrial IPOs to information asymmetry between the issuer and the investing public (e.g., Rock, 1986; Beatty and Ritter, 1986; Carter and Manaster, 1990; Allen and Faulhaber, 1989; Grinblatt and Huang, 1989; and Welch, 1989). Since closed-end funds typically do not have pre-existing assets or proprietary rights, there is little information asymmetry about their asset valuation. Consequently, these models predict that closed-end funds should exhibit less underpricing than industrial IPOs.[1] However, information asymmetry theories do not explain why *overpriced* closed-end funds are successfully brought to market.

Specifically, information asymmetry models do not explain two critical issues regarding closed-end funds. First, these models do not explain the motivation of those who purchase funds that are expected to decline in price. With the typical fund losing 8% of its value over the first 100 trading days, rational investors should wait several months before buying into these securities. Anticipating such behavior, prospective issuers and underwriters would have no incentive to bring these offerings to market. Consequently, in a rational expectations equilibrium, these funds should not get started at all. Lee *et al.* (1991) identify this as the first—and arguably most perplexing—aspect of the closed-end fund puzzle.

A second issue is the relatively slow price adjustment of closed-end funds compared to industrial IPOs. Barry and Jennings (1992) and Schultz and Zaman (1994) demonstrate that the underpricing of industrial firm IPOs is resolved within minutes. In contrast, Weiss (1989) shows that most of the price decline in closed-end funds occurs between 30 and 100 days after the issue. The underwriting expenses for closed-end funds are substantial, averaging 8% of the offer price. Why, then, don't their prices drop immediately?

This study investigates the market behavior of closed-end funds to explain

[1] Michaely and Shaw (1992) make a similar observation about master limited partnerships. Closed-end country funds with special access rights to otherwise restricted foreign markets may have proprietary rights, but again there should be no information asymmetry.

these anomalies. In addition to interviewing underwriters regarding their pre-issue relationship with clients, we perform an intraday analysis of aftermarket trades and quotes in the first 100 days of trading. We find that the pre-issue arrangements identified by underwriters help to explain not only the two anomalies, but also a number of other unusual patterns in the transactions data.

Applying the Lee–Ready (1991) algorithm to a sample of 65 closed-end fund IPOs issued during 1988 and 1989, we show that most trading in the first few weeks is seller-initiated. In fact, we report sell-to-buy imbalances in share volume of as high as 70 : 1 in the first days of trading. Since short-selling is impossible during this time period, this selling pressure confirms the presence of "flippers"—investors who buy IPO shares during the pre-issue and immediately resell them in the aftermarket. By the 30th day, the cumulative sell imbalance averages 9% of the shares issued, suggesting that a significant portion of closed-end fund shares are initially bought by these flippers.

We also observe several indicators of extensive price stabilization. Specifically, despite off-trading selling pressure, we find little price movement in the first 3 weeks, followed by sharp price declines. Consistent with stabilization, the average quoted bid–ask spreads increases 40% over the first 100 days. Moreover, the magnitude of the sell imbalance in the first days of trading foreshadows the timing of the subsequent price decline. That is, funds with higher sell-to-buy imbalances in the first 5 days of trading experience larger price drops over the next few weeks.

We investigate the methods by which underwriters mitigate the costs of flipping. Our discussions with lead underwriters suggest these costs are managed by (i) risk sharing, (ii) creating a short position in the number of shares issued, and (iii) selectively using the over-allotment option. We find evidence consistent with risk sharing in that the extent of the flipping activity is related to the proportion of shares allocated to lower-tier members. We also find evidence that lead underwriters manage the supply of shares in the aftermarket. Specifically, we find that the intensity of the flipping in the first days of trading, and the use of the over-allotment option, are both associated with the duration of the price stabilization period.

Finally, we document asymmetric behavior in large and small trades. Using a share-based trade-size proxy to distinguish large and small traders (i.e., traders who submit orders in excess of $10,000), we find that a significantly higher proportion of the sells (buys) over the first 30 days are initiated by large (small) traders. In fact, nearly 80% of the buys over this period are trades of $10,000 or less. Most of the directional asymmetry between trade-size groups occurs in the first 2 weeks of trading. By day 50, both buys and sells tend to be small trades.

Our findings are largely consistent with a marketing hypothesis, put forth by Weiss (1989), Peavy (1990), and Lee *et al.* (1991), which posits that closed-end fund IPOs are sold by enterprising professionals to a less-informed public. Specifically, we interpret our results as evidence of aftermarket selling by flippers, price stabilization by lead underwriters, and post-issue buying by smaller (and less informed) investors. This hypothesis helps explain our two main puzzles: both flippers and small investors participate in the pre-issue, but only small investors hold these shares in the long run, and the slow price adjustment pattern is due to gradual abandonment of price stabilization by underwriters.

Our results also provide new insights into the aftermarket activities of IPO syndicate members, and the role of the lead underwriter in particular. Specifically, we show how lead underwriters can both absorb large quantities of flipped shares, and achieve price stabilization, through judicious management of their inventory of shares. In addition, we provide direct evidence on the role of the over-allotment option in IPO underwriting. While we cannot identify the flippers directly, our evidence shows that flipping is most closely associated with share allocations to second- and third-tier syndicate members.

Our findings suggest that small investors face substantial information processing costs and may be highly susceptible to marketing tactics. The poor aftermarket performance of closed-end fund offerings during 1986 and 1987 was well documented in the popular press prior to our study period (Liang, 1987; Henry, 1987; and Jereski, 1987). Yet during our study period, a further $17 billion was raised using these instruments. These offerings involved approximately $1.3 billion in underwriting fees—seemingly an expensive tribute to the informational disadvantage (or irrationality) of small investors.[2]

These findings raise questions about the adequacy of current disclosure rules for IPOs, and the propriety of security regulations that permit short-term price stabilization bids in IPO aftermarkets. Current regulations that permit stabilization enable underwriters of closed-end funds to issue shares at inflated prices. Moreover, stabilization produces artifically high aftermarket prices. As a result, buyers who believe they are engaging in open market transactions find that their purchases drop by an average of 8% in the months that follow. We show an overwhelming majority of these aftermarket purchases are made by small traders. While price stabilization may benefit the IPO process by lowering underwriting costs, such benefits need to be weighed against the losses borne by seemingly naive investors.

The remainder of the paper is organized as follows. In the next section, we

[2] Most of the underwriting fee can be saved if small investors wait 100 days and purchase the shares in the open market. If done through discount brokerage houses, transactions fees are only 1 to 2%.

discuss the institutional relationships between the underwriting syndicate members and their clients. Section 3 describes the sample and our research methodology. Section 4 reports the results and Section 5 concludes.

2. THE MARKETING OF CLOSED-END FUND IPOS

2.1. *The Underwriting Syndicate*

The closed-end fund IPO process begins with the formation of an underwriting syndicate. Syndicate members are typically investment houses with established retail distribution capabilities. One or more investment houses will assume lead underwriting responsibilities. The lead underwriter, in conjunction with a fund manager, brings these offerings to market using firm-commitment contracts.[3]

The lead underwriter of the syndicate performs many functions, both during the pre-issue and in the aftermarket. First, together with the fund manager, it establishes the expected terms of the offering (including the anticipated offer price and shares to be issued) and files the necessary documents with the SEC. Second, it retains a large (typically the largest) allotment of shares and sells these shares through its brokerage channels. Third, it coordinates and supports the sales efforts of the other syndicate members. Finally, it makes a commitment to provide aftermarket price support during the first days of trading.

Syndicate members are grouped into tiers based on their share allotment—lead underwriters form the first tier, investment houses with the next largest allotments form the second tier, etc. Each member of the syndicate accepts responsibility for the distribution of its allotment of shares and, in return, each is paid a fee. Closed-end funds are marketed primarily to retail investors, so higher selling fees (around 4.5% of the proceeds compared to 3.7% for other IPOs) are typical (Weiss, 1989).

The marketing efforts in a closed-end fund IPO are focused on the individual investor. Indeed, Weiss (1989) reports that at the end of the first quarter of trading, only 3.5% of the shares of closed-end funds issued during 1986–1987 are held by institutional investors. In contrast, institutions hold 21.8% of the shares in a size-controlled sample of industrial IPOs during the same period. Our sample provides similar results: at the end of the first

[3] IPOs may be brought to market using a best-effort or firm-commitment contract. In theory, a firm-commitment offering is riskier for the lead underwriter, since it must guarantee the proceeds of the offering to the issuer. However, as we show later, the lead underwriters of closed-end funds have substantial flexibility in setting the offer size, so the firm-commitment requirement is not as onerous for closed-end funds as for industrial issues.

quarter of trading, institutions hold less than 5% of the shares of our sample funds.

2.2. *Price Stabilization and Flipping*

As mentioned above, one of the responsibilities of the lead underwriter is to stablize aftermarket prices.[4] Price stabilization is an attempt to mitigate immediate price declines. The recent literature offers three complementary motivations for price stabilization. Hanley *et al.* (1993) argue that stabilization protects the lead underwriter's relationship with investors as well as its reputational capital. Second, they argue that

> ... if a price drop is apportioned over a number of days, the perception of overpricing may be obscured by intervening market moves or informational shocks, thus concealing the overpricing from the underwriter's clients.

In this respect, stabilization of closed-end funds may help ''camouflage'' underwriting and sales fees. Brokers are known to tell investors these IPOs involve no commissions. This representation would appear less credible if fund prices dropped immediately in the aftermarket. Finally, Schultz and Zaman (1994) argue that the primary motivation for stabilization is to control the supply of stock in the aftermarket. They suggest that underwriters issue fewer shares that the actual pre-issue demand in anticipation of selling activity during the first few trading days. That is, the underwriter buys shares at the stabilizing bid merely to cover a net short position established at the time of issue.

The combination of price stabilization and high selling fees presents syndicate members with a moral hazard problem. Specifically, selling brokers have an incentive to place large blocks of shares with flippers, or large investors with no long-term interest in the stock. This share placement arrangement allows syndicate members to quickly collect the selling fees without the time-consuming task of selling to retail customers. With costly and imperfect monitoring of syndicate members, flipping has become a common problem for underwriters.[5]

[4] SEC Rule 10b-7 sets forth the guidelines regulating stabilization activities. This rule requires that the intent of the underwriter and the syndicate to stabilize the issue be disclosed in the prospectus. When there is no existing market for the security, as is the case with IPOs, the only limit on the stabilizing bid is that it cannot exceed either the offer price or the bid of the highest independent dealer. Once a stabilization bid is entered, it may be maintained or reduced but may be raised only if the stabilizer has made no purchases for 3 successive business days. See Hanley *et al.* (1993) for a more detailed discussion of the regulation and economics of stabilization.

[5] While this discussion centers on closed-end funds, flipping is a problem in all IPOs. For example, the *IPO Reporter* (1988) observed that since ''... syndicate members don't have their name attached to the issue, they have nothing to lose—and substantial commissions to gain—by placing shares with investors who don't really want them ... who buy the securities to pay back a broker for previous research or advice (and) ... unload their positions the moment the stock opened to trade.''

Given the high selling fees associated with closed-end fund IPOs, brokers other than the lead underwriter are clearly motivated to sell to flippers. However, the motivation for flippers to participate in overpriced offerings is less clear. We argue that the flippers' incentives stem from their long-term relationship with their brokers. In exchange for the flippers' participation, brokers promise favors, including large allocations in future underpriced IPOs (Benveniste and Spindt, 1989), research services, and other "soft-dollar" inducements (Blume, 1993). There are even allegations that some "brokers and institutions are acting in collusion, splitting the generous selling concessions between themselves." (Dutt, 1988, p. 22).

Flippers can derive these benefits at surprisingly little cost. Since pre-issue IPO investors do not pay an explicit brokerage commission, the transaction costs for flippers are negligible. Moreover, since the lead underwriter supports the issue at or near the offer price, flippers assume little or no price risk when reselling their shares. In fact, some closed-end funds may even appreciate in value in the first few days of trading, thus providing a windfall for flippers.[6] To discourage flipping, several punishments have been threatened or implemented against brokers whose allotment is sold back within the first 30 days of trading (Correra, 1992). One penalty is to exclude the broker from participation in future issues brought to market by the lead underwriter. Alternatively, sales commissions may be withheld if a broker's shares are immediately resold. However, the offending broker can be identified only with difficulty. More recently, many funds have instituted a system of physical delivery of the securities, so that the identity of the flippers and their brokers can be traced. This method of monitoring, however, is quite expensive.

2.3. *Managing the Cost of Flipping*

The cost to the lead underwriter of flipping is potentially high, and extensive flipping can threatened the syndicate.[7] These costs stem from two main sources. First, a sales commission is paid on the flippers' shares that must be resold. Second, flipped shares reacquired during the stabilization period may need to be resold at a reduced price.

Our discussions with underwriters suggest both of these costs can be mitigated. For example, monitoring costs are minimized if a single under-

[6] For example, two of our sample funds experienced large price increases on day 1 (the Thai Fund and the Brazil Fund) while none decreased in value. Thus, a strategy of buying all pre-issue closed-end funds and flipping on day 1 would actually yield a positive return in our sample.

[7] For example, Colonial Government Income Trust rescinded its $180 million dollar offering in 1988 after it learned that sell orders amounted to as much as a third of the number of shares to be offered. Rather than absorbing such large flipping through stabilization activities, the underwriter, Morgan Keegan, canceled the offering.

writer takes the total allocation. However, given the size of many closed-end fund offers and the disperse nature of the targeted investor base, even large underwriters find it compelling to tap into the distribution channels of other investment houses. Thus, in forming a syndicate, underwriters trade off increased monitoring costs against the benefits of a broader distribution base.

Monitoring costs within the syndicate can be reduced by spreading the risk—that is, through the sharing of lead underwriting responsibilities. Since flipping is a costly problem for overpriced IPOs such as closed-end funds, we expect a greater tendency for closed-end fund syndicates to adopt a risk-sharing strategy by using multiple lead underwriters.

We find some evidence consistent with this reasoning. Comparing the number of lead underwriters for a sample of closed-end funds issued between 1982 and 1987 to a control sample of all IPOs issued over the same time period, we find that the closed-end fund sample has a greater average number of lead underwriters (2.8 versus 1.4). This difference is statistically significant (t statistic of 7.0) even after controlling for the offer size and the sign of the initial return (under- or overpricing). In later tests, we further explore the relation between the extent of flipping and the composition of the syndicate.

The inventory risk from flipping can also be managed by anticipating the number of shares that will be flipped and incorporating this estimate in establishing the issue size. During the pre-issue period, if the underwriter knows the amount of subsequent flipping with certainty, then he would simply assume a net short position equal to the amount of flipping. To illustrate, assume that the reported demand for a closed-end fund is 10 million shares but the lead underwriter knows 5% or 500,000 shares, will subsequently be flipped. To accommodate this flipping, the lead underwriter simply sets the issue size to 9.5 million shares.[8] Since 9.5 million shares are being issued, yet 10 million have been committed to customers, the underwriter is short 500,000 shares. If the actual amount of flipping is exactly 500,000 shares, underwriters can cover this short position with shares acquired from flippers.

In managing its short position, the underwriter also considers the availability of the over-allotment option. This option allows the underwriter to obtain additional shares (up to 15% of the issue) from the fund at the offer price, net of underwriting fees. The option is exercisable within the first

[8] Closed-end funds appear to have more flexibility in setting offer size than industrial IPOs. Hanley (1993) reports that industrial IPOs generally do not change the number of shares offered from the initial filing of the preliminary prospectus to the offer date. When they do, these offer changes are typically effected by changing both the offer price and the number of shares issued. In contrast, 78% of the closed-end funds in this sample changed the number of shares offered prior to the offer date. In no case was the offer price altered.

30 days of trading.[9] For example, assume that the underwriter forecasts 500,000 shares will be flipped, but, in fact, no flipping takes place. The underwriter covers the resulting short position by simply exercising the over-allotment option and purchasing 500,000 shares at the offer price, net of fees. Thus, levels of flipping below expectations are dealt with inexpensively.

However, a more costly problem arises if the level of flipping is higher than expected. In this case, the underwriter must either purchase the excess shares flipped and suffer an eventual capital loss, or cease stabilization prematurely, and suffer potential reputational damage. Therefore, a preferred strategy for underwriters is to set the offer size below an unbiased forecast of the "true" demand (stated demand minus anticipated flipping), and use the over-allotment option to cover any shortfall in ex post flipping. For example, using the numbers above, the underwriter can set the issue size as low as 8.7 million shares. If no flipping occurs, the underwriter can still use the option to issue up to 1.3 million additional shares without incurring additional costs.

We find that with 28 funds (45% of our sample), the lead underwriter exercises the over-allotment option. The extensive use of this option in our sample may seem surprising at first, since most of our sample funds experience price declines. The over-allotment option is normally exercised in IPOs that increase in price to fulfill excess demand for an issue. In the case of closed-end funds, this option is apparently being exercised to cover an initial short position when ex post flipping is lower than expected.

2.4. *The Economics of Underwriting and the Role of Small Investors*

Although the marketing of closed-end fund IPOs appears to involve significant risks, the rewards to underwriters can also be substantial. Underwriting fees for these offers typically range from 6 to 8%. This translates into fees of around \$16 million on an average-sized closed-end fund IPO. In addition, lead underwriters often double as managers of the fund, which entitles them to management fees.

But what of the small investors whose apparent gullibility motivates the IPO? Small investors may be noise traders, as defined by De Long *et al.* (1990). That is, they may have erroneous expectations about future fund performance. Alternatively, they could be rational decision makers acting on incomplete information: their brokers' advice. If the cost of information is sufficiently high, reliance on broker advice may be a rational investment strategy. In either case, small investors appear to be unaware of either the

[9] Muscarella *et al.* (1992) contrast the optimal exercise of the over-allotment option in over- and underpriced IPOs and show that the option is exercised for virtually all underpriced IPOs but is only exercised in 29% percent of their sample of overpriced IPOs.

TABLE I
A CASE STUDY

Date	Time	Trd Qte	Pri Ask	Vol Bid	Cond Code	Ask Dep	Bid Dep	Buy Sell	Cum Buy	Cum Sell
DAY 1										
9/22/88	105828	T	10	1130	E			-	-	-
9/22/88	**105830**	**Q**	**10 1/8**	**10**	**O**	**600**	**990**			
9/22/88	**105849**	**Q**	**10 1/8**	**10**	**E**	**600**	**99**			
9/22/88	110756	T	10	100	E			S	-	100
9/22/88	111224	T	10	300	E			S	-	400
9/22/88	112436	T	10	90	E			S	-	490
9/22/88	**114217**	**Q**	**10 1/8**	**10**	**E**	**500**	**99**			
9/22/88	122052	T	10	25	E			S	-	515
9/22/88	122227	T	10	250	E			S	-	765
9/22/88	123104	T	10	200	E			S	-	965
9/22/88	123158	T	10	120	E			S	-	1085
9/22/88	123158	T	10	25	E			S	-	1110
9/22/88	125030	T	10	130	L			S	-	1240
9/22/88	125654	T	10	20	E			S	-	1260
9/22/88	**131137**	**Q**	**10 1/8**	**10**	**E**	**300**	**99**			
9/22/88	131140	T	10	280	E			S	-	1540
9/22/88	132828	T	10	25	E			S	-	1565
9/22/88	140542	T	10	200	E			S	-	1765
9/22/88	140948	T	10	25	E			S	-	1780
9/22/88	142450	T	10	100	E			S	-	1880
9/22/88	154853	T	10	80	E			S	-	1960
9/22/88	155105	T	10	20	E			S	-	1980
9/22/88	155316	T	10	100	E			S	-	2080
9/22/88	155323	T	10	10	E			S	-	2090
9/22/88	155728	T	10	170	E			S	-	2260
9/22/88	**160330**	**Q**	**10 1/8**	**10**	**C**	**1**	**1**			
9/22/88	161317	T	10	52	Z			-		

Note. The above is a time-stamped chronology of all trades and quotes for AMERICAN GOVT INCM PTFL INC. (Cusip: 02591910, Ticker: AAF), a closed-end fund that commenced trading on the New York Stock Exchange on Sept. 22, 1988 (CRSP day 6594). All trades and quotes for the first 7 days of trading are reported. Time is in EST (hh:mm:ss). TrdQte is a trade or quote indicator. If the record is a trade, PriAsk (VolBid) represents the trade price (volume), if the record is a quote, PriAsk (VolBid) represents the quoted ask (bid) price. All volume measures are in terms of 100 share round lots. CondCode is a condition code (i.e., E signifies an eligible trade or quote, O means opening quote, C means closing quote, L means an in-sequence late trade, and Z means an out-of-sequence late trade). AskDep and BidDep are quoted depths at the bid and ask prices, respectively. BuySell indicates trade direction (S for sells, B for buys), and CumBuy and CumSell are cumulative buys and sells, respectively.

TABLE I—*Continued*

Date	Time	Trd Qte	PriAsk	VolBid	Cond Code	Ask Dep	Bid Dep	Buy Sell	Cum. Buys	Cum. Sells
DAY 2										
9/23/88	94038	Q	10 1/8	10	O	700	100			
9/23/88	94041	T	10	488	E			S	-	2748
9/23/88	95031	T	10	50	E			S	-	2798
9/23/88	95034	T	10	200	E			S	-	2998
9/23/88	95136	T	10	50	E			S	-	3048
9/23/88	100722	Q	10 1/8	10	E	999	100			
9/23/88	113249	T	10	10	E			S	-	3058
9/23/88	144730	T	10	50	E			S	-	3108
9/23/88	152804	T	10	50	E			S	-	3158
9/23/88	160316	Q	10 1/8	10	C	1	1			
DAY3										
9/26/88	93623	Q	10 1/8	10	O	999	100			
9/26/88	94927	Q	10 1/8	10	E	999	101			
9/26/88	102706	Q	10 1/8	10	E	999	106			
9/26/88	111325	T	10	20	E			S	-	3178
9/26/88	121846	Q	10 1/8	10	E	999	101			
9/26/88	123958	Q	10 1/8	10	E	999	107			
9/26/88	130450	T	10	20	E			S	-	3198
9/26/88	130506	Q	10 1/8	10	E	999	100			
9/26/88	140936	Q	10 1/8	10	E	999	123			
9/26/88	160332	Q	10 1/8	10	C	1	1			
DAY 4										
9/27/88	93630	Q	10 1/8	10	O	999	103			
9/27/88	94207	T	10	20	E			S	-	3218
9/27/88	94301	T	10	10	E			S	-	3228
9/27/88	95229	T	10	50	E			S	-	3278
9/27/88	95615	Q	10 1/8	10	E	999	120			
9/27/88	114645	T	10 1/8	1	E			B	1	3278
9/27/88	115926	T	10 1/8	10	E			B	11	
9/27/88	120431	T	10 1/8	2	E			B	13	
9/27/88	125312	T	10 1/8	24	E			B	37	
9/27/88	131733	T	10	50	E			S	37	3328
9/27/88	131733	Q	10 1/8	10	E	999	100			
9/27/88	134343	T	10 1/8	20	E			B	57	3328
9/27/88	134621	T	10	3	E			S	57	3331
9/27/88	153434	T	10 1/8	1	E			B	58	
9/27/88	154331	T	10	1	E			S	58	3332
9/27/88	160246	Q	10 1/8	10	C	1	1			
DAY 5										
9/28/88	94104	Q	10 1/8	10	O	999	101			
9/28/88	105448	T	10 1/8	1	E			B	59	
9/28/88	112655	T	10 1/8	5	E			B	64	
9/28/88	121600	T	10	40	E			S		3372
9/28/88	123627	T	10	20	E			S		3392
9/28/88	123627	Q	10 1/8	10	E	999	100			
9/28/88	131546	T	10	40	E			S		3432
9/28/88	132943	Q	10 1/8	10	E	960	100			

TABLE I—*Continued*

Date	Time	Trd Qte	PriAsk	VolBid	Cond Code	Ask Dep	Bid Dep	Buy Sell	Cum. Buys	Cum. Sells
DAY 5	**(cont.)**									
9/28/88	132947	T	10 1/8	25	E			B	89	
9/28/88	153222	T	10 1/8	1	E			B	90	
9/28/88	155248	T	10	10	E			S		3442
9/28/88	**160259**	**Q**	**10 1/8**	**10**	**C**	**1**	**1**			
DAY 6										
9/29/88	93249	T	10	153	E			S		3595
9/29/88	**93301**	**Q**	**10 1/8**	**10**	**O**	**999**	**100**			
9/29/88	94507	T	10	94	E			S		3689
9/29/88	101653	T	10	10	E			S		3699
9/29/88	104514	T	10 1/8	5	E			B	95	
9/29/88	115612	T	10 1/8	1	E			B	96	
9/29/88	**125632**	**Q**	**10 1/8**	**10**	**E**	**999**	**110**			
9/29/88	130113	T	10 1/8	2	E			B	98	
9/29/88	135609	T	10 1/8	2	E			B	100	
9/29/88	140140	T	10 1/8	2	E			B	102	
9/29/88	140508	T	10 1/8	4	E			B	106	
9/29/88	144904	T	10 1/8	1	E			B	107	
9/29/88	144928	T	10 1/8	1	E			B	108	
9/29/88	145918	T	10	5	E			S		3704
9/29/88	**150943**	**Q**	**10 1/8**	**10**	**E**	**93**	**100**			
9/29/88	150947	T	10	10	E			S		3714
9/29/88	151206	T	10 1/8	1	E			B	109	
9/29/88	**151908**	**Q**	**10 1/8**	**10**	**E**	**910**	**110**			
9/29/88	151911	T	10 1/8	15	E			B	124	
9/29/88	152200	T	10	4	E			S		3718
9/29/88	**160146**	**Q**	**10 1/8**	**10**	**C**	**1**	**1**			
DAY 7										
9/30/88	93917	T	10	157	E			S		3875
9/30/88	**93917**	**Q**	**10 1/8**	**10**	**O**	**900**	**100**			
9/30/88	100501	T	10	106	E			S		3981
9/30/88	**101440**	**Q**	**10 1/8**	**10**	**E**	**900**	**111**			
9/30/88	101905	T	10	5	E			S		3986
9/30/88	**101905**	**Q**	**10 1/8**	**10**	**E**	**900**	**106**			
9/30/88	**111431**	**Q**	**10 1/8**	**10**	**E**	**900**	**119**			
9/30/88	**120144**	**Q**	**10 1/8**	**10**	**E**	**900**	**140**			
9/30/88	**133950**	**Q**	**10 1/8**	**10**	**E**	**870**	**100**			
9/30/88	133953	T	10	13	E			S		3999
9/30/88	134102	T	10	5	E			S		4004
9/30/88	134446	T	10	4	E			S		4008
9/30/88	**134447**	**Q**	**10 1/8**	**10**	**E**	**870**	**127**			
9/30/88	**142102**	**Q**	**10 1/8**	**10**	**E**	**870**	**115**			
9/30/88	142105	T	10	20	E			S		4028
9/30/88	143620	T	10	20	E			S		4048
9/30/88	**143620**	**Q**	**10 1/8**	**10**	**E**	**870**	**80**			
9/30/88	**143631**	**Q**	**10 1/8**	**10**	**E**	**870**	**100**			
9/30/88	**153353**	**Q**	**10 1/8**	**10**	**E**	**85**	**100**			
9/30/88	153354	T	10 1/8	10	E			B	134	
9/30/88	**153356**	**Q**	**10 1/8**	**10**	**E**	**850**	**100**			
9/30/88	154344	T	10	10	E			S		4058
9/30/88	**160811**	**Q**	**10 1/8**	**10**	**C**	**1**	**1**			

8% load associated with closed-end fund IPOs or the generous selling commission paid to their broker.

3. SAMPLE AND DATA DESCRIPTION

We obtained our initial sample of 75 closed-end fund IPOs, together with information on the characteristics of the offering, from *Securities Data Corp.* We cross-checked this list against the *Wiesenberger* investment company listings to ensure that all public offerings of closed-end funds on the American (AMEX) and New York (NYSE) stock exchanges between January 1, 1988 and May 31, 1989 are included. Ten funds are dropped for a variety of reasons: mismatched offer dates on the Institute for the Study of Securities Markets (ISSM) tapes (5 firms), negative reported volumes (2), mismatched ticker symbol on the ISSM tape (2), and misidentification of a real estate investment trust (REIT) as a closed-end fund.

Appendix A presents the final sample of 65 funds, showing the issue date, offer price, number of shares issued, total dollar value of offering, and total underwriting costs (gross spread plus miscellaneous expenses). Although the number of shares issued varies across funds, offer prices are clustered, with 91% of the sample offered at either \$10 (43 issues) or \$12 (16 issues). Collectively, the funds in our sample raised over \$17 billion, with four funds raising at least \$1 billion each. The smallest offering in the sample, Hampton Utilities Trust, raised only \$10.2 million.

Transactions data from the ISSM contains all trades and quote revisions for securities traded on the NYSE and AMEX. We report the volume of trading and, more importantly, decompose this volume into buyer-initiated and seller-initiated trades using the Lee and Ready (1991) algorithm summarized in Appendix B. We also analyze bid–ask spreads and price volatility during the first 100 days of trading. We calculate bid–ask spreads as the difference between the last BBO-eligible ask and bid of each day. A quote is BBO-eligible if it is a tradable quote (eligible to be included in the best-bid-or-offer calculation for the National Association of Security Dealers).

4. RESULTS

4.1. *A Case Study*

Table I presents data for American Government Income Portfolio, which is the first closed-fund IPO by ticker symbol on the 1988 ISSM consolidated tape. Although this is only one fund in our sample, the following sequence of events is representative of the sample as a whole. American Government

Income Portfolio went public on September 22, 1988 and commenced trading at 10:58:28 AM The opening trade is for 113,000 shares at $10 and the opening quote by the specialist is at an ask of 10 1/8 and a bid of 10. During the first day of trading, all trades except the opening trade are classified by the Lee–Ready algorithm as sells.[10] Note that the specialist never changes his bid or ask but merely revises his quoted depth, despite a cumulative sell imbalance of 226,000 shares or $2.26 million.

This pattern of selling continues until day 4, when the first buy transaction appears for a mere 100 shares. Almost uniformly over the next 3 days, buyer-initiated trades are substantially smaller than seller-initiated trades. By the end of day 7, cumulative sell volume is 30 times the volume of cumulative buys. However, the specialist still has not changed his bid or ask price, even though the cumulative sell imbalance (cumulative sells minus cumulative buys) is 392,400 shares or $3.9 million.

Table I suggests that large traders are actively selling in the first few days of trading, yet the price of the fund is insensitive to this order flow. This finding stands in stark contrast to the microstructure literature, which shows that specialist quote revisions are responsive to single buys (upward revisions) and sells (downward revisions) (e.g., Hasbrouck, 1988; Blume *et al.,* 1989; and Lee and Ready, 1991). Under normal trading conditions, the large selling activity we observe should lower the bid price within seconds, yet we find no quote revisions in more than 1 week of trading. As we demonstrate below, the price behavior of this fund is quite representative of the funds in our sample.

4.2. *Mean versus Median Price Effects*

Figure 1 depicts the mean and median cumulative return for our sample of 65 funds in the first 100 days of trading. The mean cumulative return series (dashed line) is similar to the mean return pattern presented by Weiss (1989) and Peavy (1990). Like these earlier studies, we find price declines in closed-end fund IPOs to be pervasive. We observe a temporary positive average cumulative return of 0.7% on day 2, due to the inclusion of two country funds (the Brazil Fund and the Thai Fund) that each gained over 20% in the first 2 days of trading. By day 100, however, the average cumulative return for our sample is −6.8%, which is similar to the average bond fund returns in earlier studies. Fifty-seven funds have negative cumulative returns over the first 100 days, six funds have zero returns, and only two funds (the R.O.C. Taiwan fund and the Thai Fund) have positive returns.

[10] The first trade, for 113,000 shares, is unclassified and is not included in the cumulative level of sells. Note that the trade was executed at the subsequent bid, and therefore could reasonably have been classified as a sell. We chose not to classify this trade, however, and in so doing, present conservative net sell imbalance estimates.

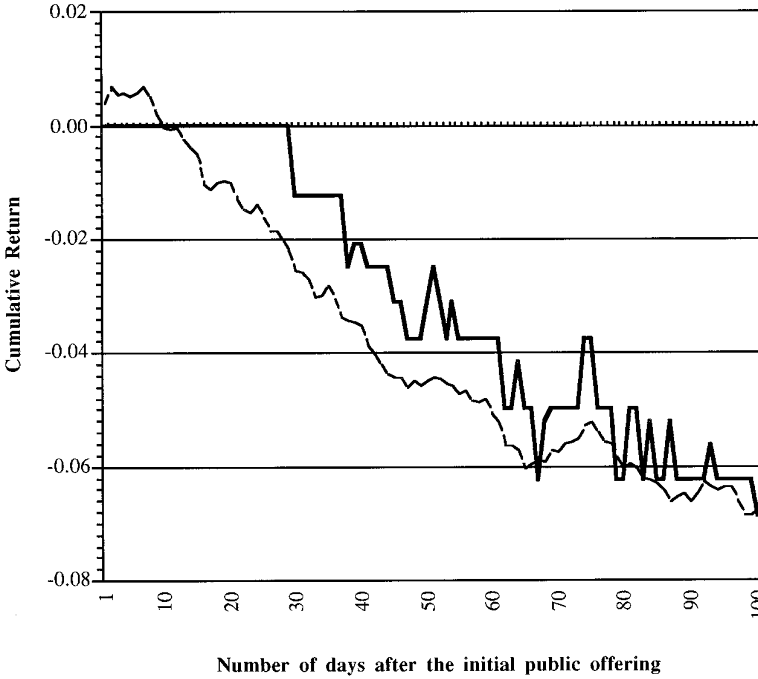


FIG. 1. Mean and median cumulative returns. This graph depicts the mean and median cumulative returns over the first 100 trading days for a sample of 65 closed-end funds that began trading on the New York or American stock exchanges between Jan. 1, 1988 and June 1, 1989. Daily returns are computed using the bid price of the last tradable quote for each day, obtained from the Institute for the Study of Security Markets (ISSM) database. (––––) Mean cumulative return; (———) Median cumulative return.

The median cumulative return, also plotted in Fig. 1, behaves quite differently from the mean cumulative return. The median cumulative return is zero for the first 29 days of trading and then drops sharply at discrete intervals. This suggests that the gradual decline associated with the mean cumulative return is a function of the smoothing which takes place in the averaging process. Indeed, auxiliary tests suggest that when individual fund price corrections do occur, they occur swiftly. For individual funds that have negative cumulative returns by day 100, we find that the mean (median) greatest single day price drop equaled 71% (44%) of the negative cumulative 100 day return.

Note also that the median cumulative return is higher than the mean for most of the first 3 months. This indicates distributional skewness, with large negative returns in a small number of funds. The skewness gradually disappears, so that by day 100, the median firm experiences approximately the same decline as the mean firm. Again, this evidence suggests that stabilization is responsible for the difference between mean and median returns.

4.3. *Trading Volume and Order Imbalances*

In this section, we use transactions data to examine the volume and direction of aftermarket trades. There are good reasons to expect low volume in the first days of trading in closed-end fund IPOs. If traders have rational expectations about an imminent price decline, few will buy. Moreover, if investors participate willingly and with full information in the pre-issue, few will sell. Finally, short-selling in the first 30 days is difficult since brokers typically do not deliver stock certificates until 1 month after trading begins (Peavy, 1990).

The prediction of low volume is examined in Fig. 2. To construct this figure, we first calculate the daily order imbalance as the difference between the volume of sells and the volume of buys classified using the Lee–Ready algorithm. Figure 2 then plots the sell imbalance for each day and the cumulative sell imbalance over the first 100 days. Both are expressed as a percentage of the total number of shares issued.

Figure 2 shows that volume immediately after the issue is extremely high, and overwhelmingly seller-initiated. In fact, the ratio of the volume of seller-initiated to buyer-initiated trades on the first day is approximately 19 : 1. When the six foreign country funds are removed from the sample this ratio exceeds 70 : 1.[11] The cumulative selling continues to increase through time. After 30 trading days, the cumulative sell imbalance reaches 9% of the total shares issued. Daily volume of buys do not equal sells until the second month of trading. Since short-sellers cannot enter the market at this early stage of trading, the large selling activity during the initial aftermarket strongly suggests the presence of flippers.

4.4. *Stabilization*

Despite these sell imbalances, closed-end fund prices exhibit little movement in the first days of trading. Figure 3 shows the percentage of firms where the specialist's quoted bid price does not move from the initial issue price. During the first day of trading, approximately 85% percent of the sample experiences *no* price movement. In fact, the only funds whose price changes on day 1 are country funds. After 7 trading days, when the cumulative sell imbalance is 5% of the total number of shares issued, 71%

[11] Some foreign country funds, such as the Thai fund, hold stock in restricted markets in which U.S. investors have access only through the closed-end fund. For this reason, these funds may be highly sought after by investors.

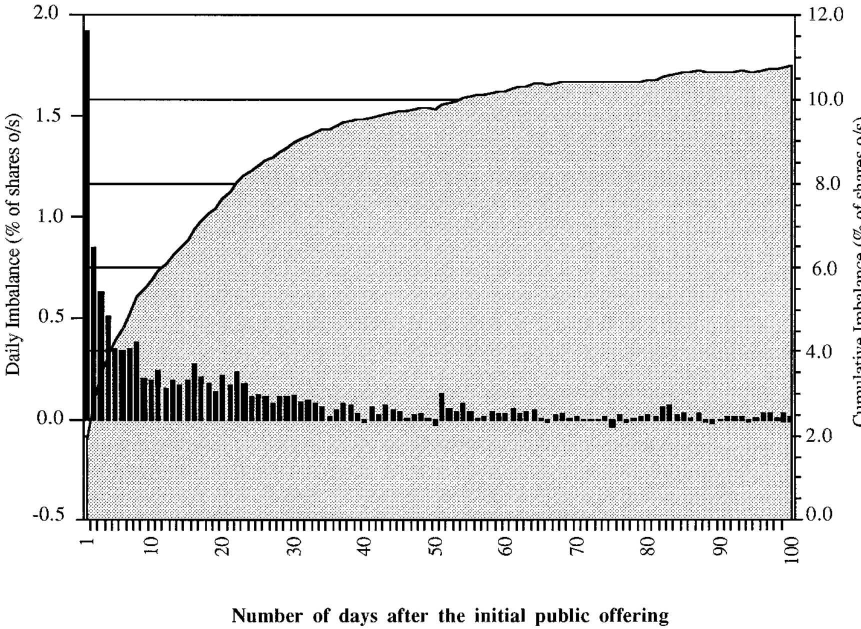


FIG. 2. Daily and cumulative order imbalance. This graph depicts the daily and cumulative order imbalance over the first 100 trading days for a sample of 65 closed-end funds that began trading on the New York or American stock exchanges between Jan. 1, 1988 and June 1, 1989. Order imbalance is defined as (shares sold-shares bought)/total shares issued. The Lee and Ready (1991) algorithm is used to classify each trade as buyer- or seller-initiated. Transactions data on trades and quotes are obtained from the Institute for the Study of Security Markets (ISSM) database. (Solid) Daily imbalance (left axis); (Shaded) Cumulative imbalance (right axis).

of the sample firms have yet to experience a price change. In the first days of trading, prices for our sample of closed-end funds are surprisingly insensitive to order flow. We believe that the breakdown in this relation is due to price stabilization.

Following Hanley *et al.* (1993), we examine the behavior of bid–ask spreads in the aftermarket to provide complementary evidence for the existence of stabilization. Since the bid–ask spread compensates the market-maker for providing liquidity, the width of the spread reflects the costs of market-making, including administrative costs, costs from inventory risk, and costs from losses to informed traders or information asymmetry risk (Glosten and Harris, 1988; Stoll, 1989). According to the information asymmetry hypothesis, as more firm-specific information becomes public over

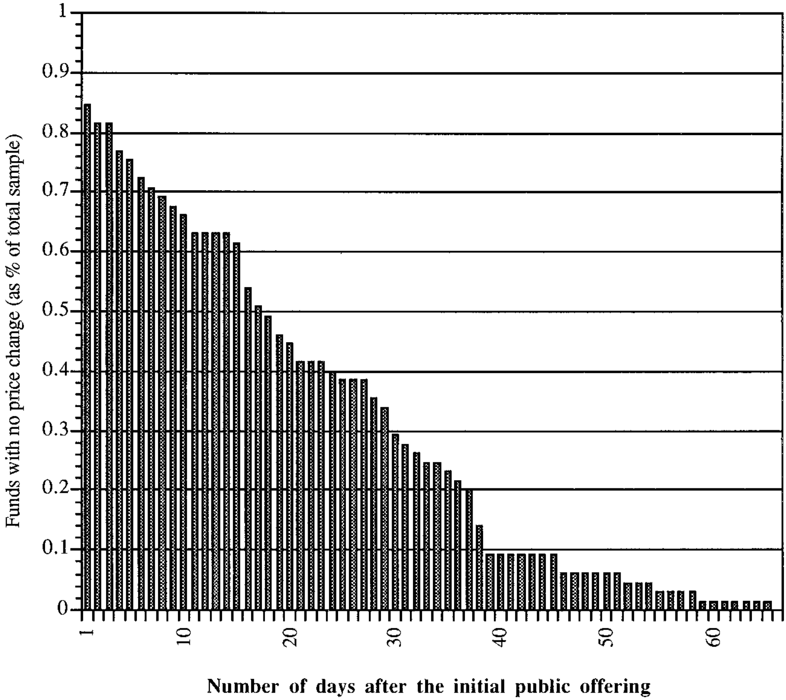


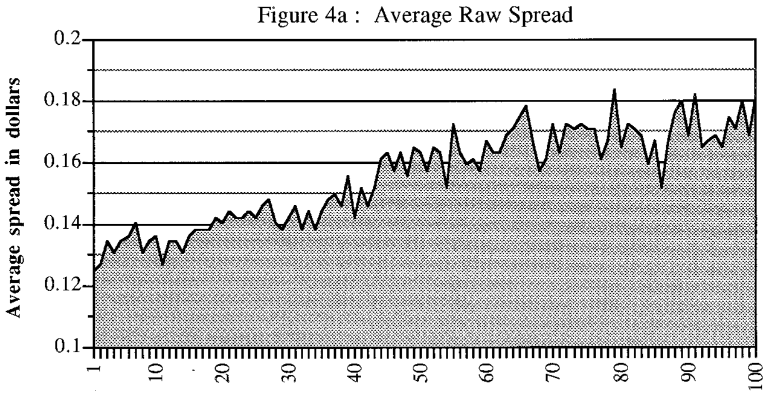
FIG. 3. Percentage of funds that experienced no price change since the opening of trading. This graph depicts the percentage of funds that experienced no price change over the first 100 trading days for a sample of 65 closed-end funds that began trading on the New York or American stock exchances between Jan. 1, 1988 and June 1, 1989. A fund is deemed to have experienced no price change if the specialist's quoted bid price never moved from the offer price. Transactions data on trades and quotes are obtained from the Institute for the Study of Security Markets (ISSM) database.

time, the information advantage of informed traders is reduced. Thus bid–ask spreads should narrow in event time.[12]

Conversely, price stabilization should have the opposite effect on bid–ask spreads. Stabilization creates a temporary floor, which truncates the probability distribution of post-issue IPO market prices. This truncation reduces the costs to specialists (and other liquidity providers) of trading against informed traders. If the dealer market is competitive, then the cost reduction, which Hanley, *et al.* (1993) model as the value of a put option, should be incorporated into the bid–ask spread. As price support is withdrawn, spreads should increase over time.

Figure 4a documents that the average daily closing spread (based on the last BBO-eligible quote for each day) increases over the first 100 days. The

[12] Other factors may cause spreads on IPOs to widen over time (see Hedge and Miller, 1989).



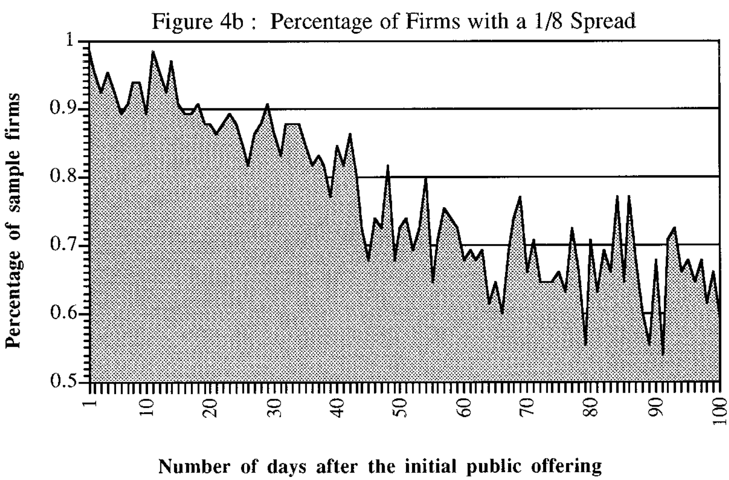


FIG. 4. The behavior of bid–ask spreads. These graphs depict the behavior of bid–ask spreads over the first 100 trading days for a sample of 65 closed-end funds that began trading on the New York or American stock exchanges between Jan. 1, 1988 and June 1, 1989. Figure 4a reports the daily average closing spread in dollars per share. Figure 4b reports the percentage of sample funds with a closing spread of 1/8th. The last tradable quote of each day is used to compute daily spreads. Transactions data are obtained from the Institute for the Study of Security Markets (ISSM) database.

average spread on the first day is 12.6 cents per share while the spread averaged over days 95 to 100 is 17.5 cents per share, an increase of nearly 40%. When we regress the daily cross-sectional average spread against a linear time trend, the estimated intercept is 13.1 cents per share, with a slope of 0.047 cents per share (t statistic = 20.85), indicating an average increase in the spread of approximately 0.05 cents per day. The R^2 for the regression is 0.816, suggesting a large proportion of the day-to-day variation is captured by the linear model. Figure 4b shows that over 90% of the sample firms have the minimum spread of one tick (12.5 cents) over the first 10 trading days despite large sell imbalances. In contrast, by day 100, the percentage of firms with the minimum spread drops below 60%. Again, the evidence suggests that bid–ask spreads are initially narrower than their free market levels.

The bid–ask spread results are consistent with extensive price stabilization in the first weeks of trading. Furthermore, these findings dispel the notion that the specialist is stabilizing the price. If the specialist is stabilizing, bid–ask spreads would widen to reflect the greater inventory risk associated with buying such large quantities of stock. Our discussions with NYSE specialists indicate that the lead underwriter stabilizes by placing a large "good until canceled" buy order at the offer price.

Overall, the results of this section are consistent with price stabilizing activities in the market for closed-end fund IPOs. These activities artificially prop up the observed price and decrease the bid–ask spread. As the IPO seasons, however, bid–ask spreads widen and prices drop, indicating a withdrawal of stabilizing activities. We conclude that the slow decline in value documented by Weiss (1989) and Peavy (1990) is due to the systematic abandonment of price supporting activities by the lead underwriter.

4.5. *Sell Imbalances and Price Declines*

In this section, we explore the relation between order imbalances over the first trading days and the eventual aftermarket performance measured on day 100. Specifically, we examine whether order imbalances over the first few trading days convey information about either the magnitude or timing of subsequent price declines. We consider two hypotheses. First, if incoming orders convey information about the degree of initial overpricing, then larger sell imbalances reflect worse news about the eventual equilibrium value of the fund. Under this scenario, we would expect eventual price declines to be correlated with initial imbalances. Alternatively, if underwriters are using the flipped shares to cover short positions, then the greater the initial selling, the faster the short position will be covered.

To evaluate these hypotheses, we compute the cumulative trade imbalance ($\mathrm{IMBALANCE}_{it}$) for fund i over the first t (t = 1, 3, or 5) trading days as the difference between the volume of all sells and all buys, divided by the number of shares outstanding. We also compute the subsequent cumulative return ($\mathrm{CR}_i(t, T)$) from day $t + 1$ to day T (T = 10, 20, 40, 70, or 100) for each of the sample funds. Note that there is no overlap in accumulation periods for the imbalance and the cumulative return. Though not reported, our results are robust to model specifications that include

TABLE II
PREDICTABILITY OF SUBSEQUENT RETURNS USING TRADE IMBALANCES

Dependent variable: Cumulative return from the close of event day t until the close of event day T.	*Independent variable:* Trade imbalance as of event day t		
	$t = 1$	$t = 3$	$t = 5$
$T = 10$	−0.339	−0.411	−0.323
	(−1.08)	(−7.29)	(−6.99)
	0.018	*0.457*	*0.437*
$T = 20$	−0.457	−0.521	−0.403
	(−1.51)	(−8.64)	(−6.94)
	0.035	*0.542*	*0.433*
$T = 40$	−0.543	−0.333	−0.201
	(−1.83)	(−2.96)	(−1.95)
	0.050	*0.122*	*0.057*
$T = 70$	−0.259	−0.327	−0.262
	(−0.77)	(−2.58)	(−2.38)
	0.010	*0.095*	*0.082*
$T = 100$	−0.105	−0.234	−0.219
	(−0.34)	(−1.71)	(−1.83)
	0.002	*0.044*	*0.050*

Note. For a sample of 65 closed-end fund initial public offerings between Jan. 1, 1988 and June 1, 1989, cross-sectional regressions are estimated to determine the link between trade imbalances and subsequent returns. This table presents estimated slope coefficients, t statistics (in parentheses), and R^2s (in italics) from regressions of the form

$$\mathrm{CR}_j(t, T) = \alpha + \beta\,\mathrm{IMBALANCE}_{jt} + \varepsilon_j,$$

where $\mathrm{IMBALANCE}_{jt}$ is the cumulative trade imbalance for firm j over the first t trading days calculated as the difference between all seller initiated trade volume and all buyer initiated trade volume. The difference is then standardized by dividing by the number of shares outstanding. $\mathrm{CR}_j(t, T)$ is the cumulative bid-to-bid return for firm j from the close of trading day t to the close of day T.

data on underwriting expenses, institutional and insider ownership, and over-allotment options as additional explanatory variables.

Table II reports the results of cross-sectional regressions of the cumulative return on the corresponding order imbalance. These results indicate that selling imbalances over the first days of trading are significantly correlated with subsequent cumulative returns, but only for a subset of combinations of t and T. Specifically, the size of the selling imbalance in the first few days forecasts the subsequent price decline for the shorter accumulation intervals only. Imbalances have little explanatory power for returns generated over longer horizons (and only minor predictive power for cumulative returns on day 100), suggesting that these imbalances are not correlated with the eventual equilibrium price decline. In other words, order imbalance in the first few days of trading predicts the *timing*, rather than the *magnitude*, of the price drop.

Specifically, we find that funds with the most selling pressure in the first 3 or 5 days are also those that experienced the greatest declines in the first 10 or 20 days. However, initial selling imbalance is not correlated with subsequent returns to day 100. This suggests that while all issues eventually attain their unencumbered values, the abandonment of stabilization occurs sooner for issues with larger initial imbalances. This finding is consistent with Schultz and Zaman (1994), who argue that underwriters cease stabilizing once their short position is fully covered. Since ‘‘covering’’ occurs more quickly when early imbalances are large, large initial order imbalances serve as triggering mechanisms for the abandonment of stabilization.

4.6. *Stabilization Abandonment and the Over-allotment Option*

The results of the previous section suggest underwriters tend to abandon stabilization faster when the amount of flipping is relatively high. What happens when the amount of flipping is lower than expected? In particular, when early sell imbalances are insufficient to fully cover a short position, the underwriter will need to obtain additional shares. In this case, the underwriter may (i) extend the stabilization period, and/or (ii) exercise the over-allotment option.[13]

Since these two options are not mutually exclusive, we hypothesize a relation between the exercising of the over-allotment option and the duration of the stabilization bid. Specifically, when too few shares are flipped, the stabilization period is extended in the hope of buying additional shares. Eventually, the over-allotment option may have to be used. Thus, funds that have longer stabilization periods are more likely to exercise the over-allotment option than are funds with shorter stabilization periods.

Table III reports the results of three cross-sectional regressions that examine the relation between the length of the stabilization period and whether or not the over-allotment option is exercised. We include all 62 funds that have zero or negative 100 day returns and available over-allotment data in the analysis. Our results are robust when we exclude the one

[13] Dropping the stabilization bid at this point may induce more investors to buy, but not sell. Increasing the stabilization price may induce more sellers, but underwriters are not legally allowed to stabilize above the offer price. Moreover, this would be clearly more expensive than exercising the over-allotment option.

TABLE III
DURATION OF STABILIZATION AND USE OF THE OVER-ALLOTMENT OPTION

Model	Intercept	OA	OAFull	OAShrs	Adj. R^2
1	23.82 (7.29)	10.50 (2.16)	—	—	5.7
2	24.46 (8.98)	—	15.92 (2.97)	—	11.4
3	24.26 (7.82)	—	—	80.84 (2.21)	6.0

Note. This table reports results of three cross-sectional regressions that examine the relation between the length of the stabilization period and the exercise of the over-allotment option. All 62 funds issued between Jan. 1, 1988 and June 1, 1989 that had zero or negative 100 day returns and over-allotment option information are included. The dependent variable (Edate) is the first day that the bid price dropped below the issue price. In model 1, the independent variable (OA) equals 1 for the 28 funds that exercised the over-allotment option, zero otherwise. In model 2, the independent variable (OAFull) equals 1 for the 16 funds that used the full 15% over-allotment, zero otherwise. In model 3, the independent variable (OAShrs) is the number of shares purchased through the over-allotment option, as a percentage of total shares issued. *T* statistics are in parentheses.

fund (Brazil Fund, ticker: BZL) that initially increased in price yet had a day 100 price less than the issue price. Following Hanley *et al.* (1993), we use the first day that the bid price drops below the issue price (Edate) as a proxy for the end of the stabilization period. This date is separately regressed on three variables: (i) OA, a dummy variable that equals 1 for the 28 funds that exercised the over-allotment option, (ii) OAFull, a dummy variable that equals 1 for the 16 funds that used the full 15% over-allotment, and (iii) OAShrs, a continuous variable that measures the shares purchased through the over-allotment option as a percentage of total shares issued.

The intercept term in row 1 of Table III shows that the 34 nonexercising funds have their first price drop around day 24. Funds that exercise the over-allotment option, on the other hand, do not experience their first price drop until 10.5 days later (t statistic = 2.2). This difference is even more pronounced for the 16 funds that exercise the full 15% of the option. Row 2 shows that these firms, on average, do not experience a price drop until 16 days later (t statistic = 3.0), or on day 40. Furthermore, there is a relation between the number of over-allotment shares used and the timing of the end of stabilization. Row 3 documents that, on average, the stabilization period is increased by 0.81 days for each additional 1% of the over-allotment option used (t statistic = 2.2). These

TABLE IV
THE RELATION BETWEEN SYNDICATE COMPOSITION AND ORDER IMBALANCE

TS1	TS2	TS3	TS4	TSRest	Adjusted R^2
		Panel A—weighted-least squares (n = 61)			
0.043	0.254	0.118	0.054	−0.083	63.6
(0.82)	(2.30)	(1.25)	(0.44)	(−0.55)	
		Panel B—ordinary least squares (n = 59)			
0.036	0.188	0.145	0.130	0.024	65.8
(0.91)	(2.27)	(1.78)	(1.59)	(0.21)	

Note. This table reports the result of a cross-sectional regression that examines the relation between the number of shares flipped and the composition of the underwriting syndicate. The dependent variable is the net selling imbalance over the first 100 days (in number of shares). The independent variables are the number of shares allotted to each tier of the syndicate. Specifically, TSi (i = 1 to 4) is the total number of shares allotted to tier i members, and TSRest is the number of shares allotted to members in tiers five and higher. In Panel A we use a weighted-least squares procedure with a weight proportional to the size of the offering in shares. For this panel, all 61 funds with available syndicate composition information are included. In Panel B, we use an ordinary least squares procedure, but exclude two firms with extremely large third-tier allocations (funds: BTT and CPF). T statistics are in parentheses.

results indicate that the stabilization period is longer for exercising funds, and longest for funds that exercise the full allotment. The evidence suggests that stabilization is used to cover an initial short position, and that the over-allotment option is used when an insufficient number of shares are purchased in the open market.

4.7. *Syndicate Composition and Flipping*

We have argued that a moral hazard problem with the syndicate helps explain the large amount of flipping observed in the first few days of trading. If correct, the number of shares flipped should be related to the composition of the syndicate. In this section, we examine this hypothesis.

Table IV reports the results of two cross-sectional regressions of the amount of flipping (dependent variable) on the share allocation in each tier of the syndicate. The sample consists of the 61 funds for which we have syndicate membership information. The dependent variable is the net selling imbalance over the first 100 days (in number of shares) and the independent variables are the number of shares apportioned to each tier. Specifically, TSi (i = 1 to 4) is the total number of shares allotted to tier i, and TSRest is the number of shares allotted to tiers five and higher. In Panel A, we estimate the system using weighted-least squares with a weight proportional to the size of the offering in shares. In Panel B, we estimate an ordinary least squares (OLS) regression after removing two outliers with extremely large third-tier allocations (BTT and CPH). These results are robust to variations in the time interval for measuring the imbalance, the use of cumulative sells rather than the cumulative selling imbalance, and the inclusion of an intercept.

Given our model specification, the coefficients can be intepreted as estimates of the proportion of shares in each tier that is eventually flipped. For example, Panel A shows that, on average, 4.3% of the first-tier shares are flipped, 25.4% of the second tier, 11.8% of the third tier, and so forth. Similarly, Panel B shows that, under an OLS specification, 3.6% of the first-tier shares are flipped, 18.8% of the second tier, 14.5% of the third tier, etc.

Two salient results emerge. First, tier-one (lead underwriter) allocations are flipped back with much less regularity than other tiers—for both specifications, the difference between tier-one and higher tier coefficients is statistically significant at the 1% level. This finding is consistent with the fact that lead underwriters have relatively little incentive to sell to flippers. Second, of the remaining tiers, we find that those with the greatest number of shares to sell tend to have disproportionately large dealings with flippers. Indeed, most of the flipping is associated with second- and third-tier allotments. While this evidence does not fully explain why syndicate members deal with flippers, it is consistent with the fact that larger brokerage firms tend to have more institutional clients. In any event, Table IV suggests that the risks and rewards of dealing with flippers vary among syndicate members in the general direction predicted by agency theory.

4.8. *Trade Size and Trade Identity*

In this section, we use trade-size proxies to provide further evidence on trader identity. While our data do not permit the identification of specific traders, we can use trade size to provide indirect evidence of the types of traders involved. Figure 5 reports the daily average trade size for buyer- and seller-initiated trades. This figure shows that, on the first day of trading, the average sell transaction is over 11,000 shares. Given the mean issue price for our sample, the average seller is transacting over $120,000 per trade on day 1. Clearly, the early sellers are not small individual investors. This evidence suggests that large block trades occur primarily in the first days of the trading.

Conversely, buy transactions are much smaller in size. Except for the first day, when buys averaged around 5,700 shares, the average size of a buy transaction is between 1,000 and 1,500 shares. When country funds are excluded, these buy transactions fall to 3,500 shares on the first day, and average below 1,000 shares on the remaining days. Since few institutional trades are of this size (Lee, 1992), it seems likely that most of the buy transactions are initiated by small individual investors. By day 30, both

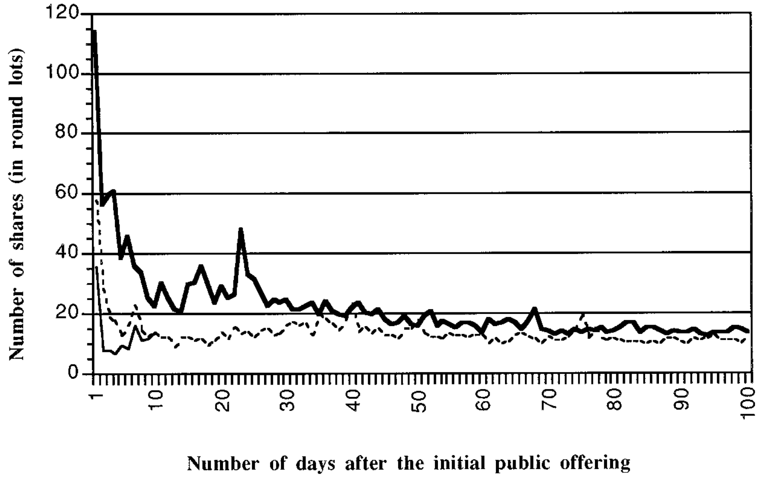


FIG. 5. Average size of buy and sell transactions. This graph depicts the average trade size for buyer-initiated and seller-initiated trades over the first 100 trading days for a sample of 65 closed-end funds that began trading on the New York or American stock exchanges between Jan. 1, 1988 and June 1, 1989. The average trade size is computed by dividing the total number of shares transacted in buyer-initiated (seller-initiated) trades by the total number of buyer-initiated (seller-initiated) trades. The Lee and Ready (1991) algorithm is used to classify each trade as buyer- or seller-initiated. Transactions data on trades and quotes are obtained from the Institute for the Study of Security Markets (ISSM) database. (———) Average sell trade size; (– – – –) Average buy trade size; (———) Average buy trade size (excluding foreign funds).

buys and sells average under 1,000 shares, indicating that large investors are no longer active in the market.

4.9. *Directional Asymmetry by Trade Size*

Finally, we provide some direct evidence on differences in the direction of large and small trades. For this test, we use the original issue price of each fund to determine the largest number of round lot shares that are less than or equal to $10,000. Trades transacted for a fund at this number of shares or less are deemed small trades throughout the sample period, regardless of the market price. For example, if the issue price of a share is $12, then all trades for this fund involving 800 shares or less are classified as small trades, regardless of the prevailing market price.

Table V reports the joint frequency distribution of trade size and direction for all the trades made in the first 30 event days. The six country funds are excluded from the analysis but inclusion of these funds does not change the results. We focus on the first 30 days because after this period, buys

TABLE V
JOINT FREQUENCY DISTRIBUTION OF TRADE SIZE AND BUY: SELL DIRECTION

	Trade direction			
Trade size	Buys	Indeterminable	Sells	Total
Large trades	2680	65	18882	21627
	(5.5)	(0.1)	(38.7)	(44.4)
	22.0	*69.9*	*51.8*	
Small trades	9493	28	17594	27115
	(19.5)	(0.1)	(36.1)	(55.6)
	78.0	*30.1*	*48.2*	
Total	12173	93	36476	48742
	(25.0)	(0.2)	(74.8)	(100.0)

Note. This table reports the joint frequency distribution of trades by size and buy:sell direction for a sample of closed-end fund IPOs. All 65 funds issued between Jan. 1, 1988 and June 1, 1989 are included, except six foreign country funds. All transactions in the first 30 days of trading are included. Trades are classified as small if they are less than a firm-specific size threshold that approximates $10,000. The Lee–Ready (1991) algorithm is used to classify trades as seller- or buyer-initiated. Trades are classified as indeterminable if the prevailing quote is nontradable (e.g., during trading halts or fast trading conditions), if it is the first trade of the year, or if it carries an out-of-sequence code. Percentage of total sample are in parentheses, percentage of column total is italicized.

and sells are roughly equivalent in size. Table V indicates that 27,115 (55.6%) of the total 48,742 transactions are classified as small trades. Of the total number of trades, 36,576 (74.8%) are seller-initiated, 12,173 trades (25%) are buyer-initiated, and 93 trades (0.2%) cannot be classified by the Lee–Ready algorithm.

Results in the third column show that seller-initiated trades are almost equally split between the large trade category (52%) and the small trade category (48%). In contrast, 78% of the buyer-initiated trades are in the small (under $10,000) trade-size category. The buyer-initiated trades are particularly interesting since these traders are buying into funds that should decline in price. This table suggests that uninformed, small traders are the main purchasers of overpriced closed-end funds in the aftermarket.

5. SUMMARY

Using transactions data, we establish a number of empirical regularities in the aftermarket trading of closed-end fund IPOs. First, we show that the vast majority of volume in the first 4 weeks of trading is seller-initiated. Depending on the time frame examined, sells outnumber buys in ratios ranging from 5 : 1 to 70 : 1. Since short-selling is impossible during this time period, the selling imbalance confirms the presence of flippers.

However, we show these imbalances do not immediately translate into price declines. Consistent with the existence of intense price stabilization, 75% of the funds had *no* price moves in the first 5 days of trading and median cumulative returns remained at zero throughout the first 29 days. Furthermore, bid–ask spreads typically begin at the minimum tick-size width (1/8th) and widen through time. As the number of issues that are stabilized declines over time, the proportion of issues trading at unencumbered (and lower) prices increases. In our sample, the abandonment of stabilization occurs at different times for individual funds, thus generating the perceived pattern of gradual decline in aftermarket prices.

We provide evidence that lead underwriters manage the cost of stabilizing by creating a net short position in the number of shares issued during the pre-market period. Our results show that the selling imbalance in the first few trading days has predictive power for the timing of the subsequent price decline: the faster the short position is covered through stabilizing purchases, the sooner the price drops. Furthermore, funds that exercise the over-allotment option experience longer stabilization periods. In this case, the underwriter is unable to completely cover the short position through stabilizing activities, and is forced to acquire additional shares using the over-allotment option.

We also document a relation between the extent of flipping and the composition of the syndicate. Specifically, we find that the shares allocated to tier-one members (lead underwriters) are much less likely to be flipped than shares allocated to other members. This finding does not fully explain the motivation for dealing with flippers. However, it does suggest that the risks and rewards of such behavior vary among the syndicate members in the general direction suggested by the agency problems we outline.

Last, we document significant trade size asymmetries. Seller-initiated trades are both larger and more profitable than buyer-initiated trades in the aftermarket period. Most buyer-initiated trades (nearly 80%) are small trades, for amounts of $10,000 or less and these trades tend to lose money. More to the point, small investors who buy shares in the aftermarket engage in open market transactions that they believe are at unencumbered prices. In fact, their purchases occur at artificially high prices that are supported by underwriters.

Our findings are largely consistent with a marketing hypothesis for closed-end funds. Specifically, we interpret our results as evidence of immediate aftermarket selling by large traders (flippers), price stabilization by underwriters, and post-issue buying by smaller (and less-informed) investors. This hypothesis helps explain our two main puzzles: (i) both flippers and small investors participate in the offering, but only small investors hold these shares in the long run, and (ii) the slow price adjustment pattern is due to gradual abandonment of price stabilization by underwriters.

How can new fund offerings continue to succeed in light of well-publicized prior failures? Our discussions with closed-end fund investors and market practitioners suggest two main marketing ploys. First, new funds typically distance themselves from prior funds by promoting new investment strategies and objectives—thus a wave of bond fund IPOs are followed by a series of country fund IPOs, then a collection of tax-exempt income funds, etc. Since 1992, the SEC has required new closed-end funds to disclose in their prospectuses the fact that, historically, closed-end funds often trade at discounts to their net asset values. However, we observe that this discussion is often couched in the context of how the current fund differs from its predecessors.

Second, some brokers are known to assert that the pre-issue shares are available to investors on a no commission basis, even though these securities are sold with a substantial underwriting load. This misleading assertion is technically correct, since an explicit brokerage commission is not charged. Investors find the assertion credible in part because the stock subsequently trades at the offer price in the aftermarket. What many investors may not realize is that the aftermarket price is being stabilized, thus obscuring the underwriting fees.

The scenario we have outlined appears to be within the guidelines of current securities regulation. However, our findings raise some interesting questions about the adequacy of existing disclosure rules, and the propriety of regulation that permits short-term price stabilization. By stabilizing prices in the aftermarket, underwriters are able to obscure the relationship between the underwriting fee and the subsequent price decline. Moreover, stabilization produces artificial aftermarket prices. We show that some investors, particularly small traders, have purchased shares at these artificially high prices. Regulators should weigh this new evidence on the costs of stabilization against any perceived benefits of the practice.

Finally, our results may provide an alternative explanation for two other IPO anomalies. Prior studies show IPOs of master limited partnership (MLPs) (Michaely and Shaw, 1992) and real estate investment trusts (REITs) (Wang *et al.,* 1992) are overpriced. Interestingly, these IPOs are also sold almost entirely to small individual investors. While we do not examine these securities, we suspect that the marketing hypothesis proposed in this paper is relevant for MLPs and REITs. Our investigation predicts that similar patterns of selling pressure, price stabilization, and asymmetric behavior between large and small trades may be found in these securities.

APPENDIX A: OFFERING CHARACTERISTICS

Offering characteristics for a sample of 65 closed-end funds that went public from January 1988 through May 1989 are shown in Table AI. All data are from *Securities Data Corp.*

CUSIP	Issuer	Offer Date	Offer Price	Shares Offered[a]	Amount Offered[b]	Total Expenses[c]	Exchange
000918	ACM Gov't Opportunity Fund	880818	10.00	11500.0	115.0	0.07704	NYSE
000917	ACM Government Spectrum Fd	880519	10.00	27000.0	270.0	0.07259	NYSE
00091T	ACM Managed Income Fund	881027	10.00	18000.0	180.0	0.07422	NYSE
00142G	AIM Strategic Income Fund	890323	10.00	5700.0	57.0	0.07629	AMEX
025917	American Government Income Fd	880421	8.00	16500.0	132.0	0.07432	NYSE
025920	American Government Term Trust	890119	10.00	7000.0	70.0	0.06669	NYSE
025919	American Govt Income Portfolio	880922	10.00	18750.0	187.5	0.07280	NYSE
009250	Blackstone Income Trust	880722	10.00	58500.0	585.0	0.07184	NYSE
092521	Blackstone Target Term Trust	881117	10.00	83000.0	830.0	0.06193	NYSE
105759	Brazil Fund	880331	12.50	12000.0	150.0	0.07701	NYSE
195743	Colonial High Income Muni Tr	890216	10.00	27000.0	270.0	0.07208	NYSE
195763	Colonial Intermed High Income	880721	10.00	11000.0	110.0	0.07529	NYSE
195768	Colonial Invt Grade Muni Trust	890519	12.00	10000.0	120.0	.	NYSE
205763	Comstock Partners Strategy Fd	880519	10.00	110000.0	1100.0	.	NYSE
261881	Dreyfus Calif Municipal Income	881021	10.00	3700.0	37.0	0.07838	AMEX
26201R	Dreyfus Municipal Income	881021	10.00	16000.0	160.0	0.07356	AMEX
26201T	Dreyfus NY Municipal Income	881021	10.00	3000.0	30.0	0.07953	AMEX
319344	First Boston Strategic Inc Fd	880422	12.00	7250.0	87.0	0.07779	NYSE
320532	First Iberian Fund	880413	10.00	2750.0	27.5	0.10545	AMEX
35459D	Franklin Principal Maturity Tr	890119	10.00	17700.0	177.0	0.07463	NYSE
355145	Franklin Universal Trust	880923	10.00	23000.0	230.0	0.07402	NYSE
37933L	Global Income Plus Fund	880824	10.00	21000.0	210.0	0.07368	NYSE
409528	Hampton Utilities Trust	880307	10.00	1022.5	10.2	0.07650	AMEX
42967M	High Income Advantage Tr III	890221	10.00	11500.0	115.0	0.07342	NYSE
429906	High Yield Plus Fund	880415	10.00	10750.0	107.5	0.07744	NYSE
454090	India Growth Fund	880812	12.00	3300.0	39.6	0.08462	NYSE
48841G	Kemper High Income Trust	880421	12.00	17000.0	204.0	0.07436	NYSE
488413	Kemper Intermediate Govt Trust	880721	10.00	28000.0	280.0	0.07271	NYSE
48842B	Kemper Multi-Market Income Tr	890123	12.00	17000.0	204.0	0.07539	NYSE
48842C	Kemper Municipal Income Trust	881020	12.00	31000.0	372.0	0.07403	NYSE
488427	Kemper Strategic Muni Income	890322	12.00	10000.0	120.0	0.07858	NYSE
541542	Lomas Mortgage Securities Fund	881123	12.00	25000.0	300.0	0.07024	NYSE
55273C	MFS Intermediate Income Trust	880310	10.00	200000.0	2000.0	.	NYSE
55273P	MFS Multimarket Total Return	880721	10.00	15000.0	150.0	0.07584	NYSE
576299	MassMutual Participation Invts	881021	10.00	8500.0	85.0	0.07962	NYSE
626243	MuniEnhanced Fund	890223	12.00	25000.0	300.0	0.07235	NYSE
626295	MuniVest Fund	880922	10.00	48000.0	480.0	0.06617	AMEX
67062B	Nuveen CA Municipal Income Fd	880420	12.00	5000.0	60.0	0.07336	NYSE
67062J	Nuveen Municipal Income Fund	880420	12.00	7000.0	84.0	0.07569	NYSE
67062L	Nuveen NY Municipal Income Fd	880420	12.00	2300.0	27.6	0.08022	AMEX
67062T	Nuveen Premium Income Muni Fd	880721	15.00	45000.0	675.0	0.06563	NYSE
683939	Oppenheimer Multi-Government	881123	10.00	5500.0	55.0	0.07700	NYSE
683933	Oppenheimer Multi-Sector Tr	880324	12.00	28000.0	336.0	0.07227	NYSE

CUSIP	Issuer	Offer Date	Offer Price	Shares Offered[a]	Amount Offered[b]	Total Expenses[c]	Exchange
743586	Prospect Street High Income	881128	10.00	12000.0	120.0	.	NYSE
74435G	Prudential Intermediate Fund	880519	10.00	47000.0	470.0	0.07245	NYSE
746781	Putnam High Yield Muni Income	890518	10.00	18500.0	185.0	.	NYSE
746798	Putnam Intermed Govt Inc Trust	880616	10.00	60000.0	600.0	0.07110	NYSE
746823	Putnam Managed Muni Income Tr	890216	10.00	40000.0	400.0	0.07261	NYSE
746909	Putnam Master Intermediate Tr	880421	10.00	36000.0	360.0	0.07171	NYSE
746853	Putnam Premier Income Trust	880218	10.00	130000.0	1300.0	.	NYSE
749208	RAC Income Fund	881223	12.00	9600.0	115.2	0.07731	NYSE
749651	R.O.C. Taiwan Fund	890512	14.55	4112.6	59.8	0.08849	NYSE
756008	Real Estate Sec Income Fund	880823	10.00	2400.0	24.0	0.08669	AMEX
846330	Spain Fund	880621	12.00	3250.0	39.0	0.11718	NYSE
879929	Templeton Global Govts Inc Tr	881122	10.00	17500.0	175.0	0.07563	NYSE
880198	Templeton Global Income Fund	880317	10.00	110000.0	1100.0	.	NYSE
882904	Thai Fund	880217	12.00	8333.3	100.0	0.08317	NYSE
872527	TIS Mortgage Investment	880819	10.00	7406.7	74.1	0.07756	NYSE
903291	USF&G Pacholder Fund	881116	20.00	1638.0	32.8	0.08890	AMEX
920910	Van Kampen Merritt Cal Muni Tr	881025	10.00	2800.0	28.0	0.08750	AMEX
920911	Van Kampen Merritt Intermed Tr	890119	10.00	13200.0	132.0	0.07659	NYSE
920913	Van Kampen Merritt Ltd Term Tr	890421	12.00	7500.0	90.0	0.07778	NYSE
920909	Van Kampen Merritt Muni Inc Tr	880819	10.00	24000.0	240.0	0.07387	NYSE
98148D	World Income Fund	880922	10.00	27000.0	270.0	0.06685	AMEX
989361	Zenith Income Fund	880420	10.00	8500.0	85.0	0.08260	NYSE

[a] Shares offered are in thousands.
[b] Amount offered is in millions.
[c] Total expenses are the sum of the percentage gross spread and the percentage miscellaneous expenses.

APPENDIX B: INFERRING TRADE DIRECTION

The direction of individual trades is inferred by the following algorithm developed in Lee and Ready (1991). Only NYSE issued quotes which are BBO-eligible are used (a quote is BBO-eligible if it qualifies for the National Association of Security Dealers' best-bid-or-offer calculation):

1. Current quote match. If the trade price is at the bid or ask, and the current quote was not revised within the last 5 seconds, then the direction of the trade is determined by the current quote (i.e., a buy if it's at the ask and a sell if it's at the bid).

2. Delayed quote match. If the current quote is less than 5 seconds old, it is ignored and the trade price is compared to the bid and ask prices of the previous quote.

3. Outside the spread. If the trade price, when compared to the quote in either 1 or 2, is greater than the ask (less than the bid), then the transaction is deemed a buy (sell).

4. Tick test. If the trade is at the midpoint of the spread, or if a BBO-eligible quote is not available, the tick test is used to determine trade direction. A BBO-eligible quote is deemed to be unavailable if the last

NYSE quote issued has a nontradable condition code. Using the tick test, if the last price change was positive (negative), then the current trade is deemed a buy (sell). All out-of-sequence trades are ignored in updating price changes.

5. Proximity to bid/ask. If a trade is between the spread but not at the midpoint, then the trade is classified according to its proximity to the bid or ask price. Trades at prices above the midpoint are classified as buys and trades at prices below the midpoint are classified as sells.

6. Indeterminable. This classification is assigned to a trade when none of the above conditions apply. Specifically, it applies to the first trade of the year for each firm and any trade which is reported out-of-sequence.

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