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Multiple-share classes and mutual fund composition

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Abstract

This article investigates the effect of multiple-share classes on mutual fund composition. Using 10 annual samples of data, we find that before the mass adoption of multiple-share classes, load funds held less cash relative to no-load funds. However, after most load funds had adopted multiple-share classes, we find no difference in cash held between load and no-load funds. These results suggest that the rise of multiple-share-class funds has reduced the compositional advantages of load funds, and hence makes the case for investors to hold single-class, no-load funds. © 2004 Academy of Financial Services. All rights reserved.

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1. Introduction

One of the most significant recent developments in the mutual fund industry has been the rise of multiple-share-class funds. Just like other mutual funds, multiple-share-class funds represent a portfolio of underlying assets. However, unlike other funds, they have different share classes differentiated only by how investors pay fees. For example, a single-class fund only has one fee structure, whereas a multiple-share-class fund can have two, three, or even four different fee structures on the same underlying portfolio.

To understand the impact of multiple-share-class funds consider that at the end of December 1991, the Morningstar mutual funds database indicated that there were 2,373

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funds. By the end of December 2000, the same database indicated that there were 12,029 funds; a more than 5-fold increase in 9 years. However, since each share of a multiple-share-class fund is counted as a separate fund by Morningstar,[1] these numbers are completely overstated. Indeed, when multiple share classes are adjusted for, the numbers drop to 2,322 funds at the end of December 1991 and only 5,349 funds by December 2000. Hence, the rise of multiple-share-class funds is responsible for about 69% of the increase in the reported number of funds over this period.

The massive rise in the number of multiple-share-class funds is due to the adoption of rule 18f-3 by the United States Securities and Exchange Commission (SEC) in 1995. Although some funds were able to obtain exemptions allowing them to offer multiple share classes before 1995,[2] it was this rule change that was the real start to so many funds adopting the multiple-share-class fee structure. The rationale behind the rule adoption was essentially threefold. First, the different share classes would increase investor choice without raising costs to investors as they would now be able to choose the fee structure that best suited them without the funds having to pay the costs of creating several funds. Second, the multiple share classes would result in larger asset bases which in turn would allow funds to realize economies of scale and hence achieve lower costs for investors. Third, the fee structures of multiple share classes could be used as a way of compensating brokers for selling their funds. For example, the brokers would receive parts of the fee charged by the multiple share class in exchange for selling the investor the fund. In this way funds could more easily sell their funds via brokers.

Although the intentions of rule 18f-3 seem quite positive for investors, many of the effects of the rule change have actually been quite negative for investors. For example, one of the most obvious problems with multiple-share-class funds is that mutual fund fees have become more complicated for investors. Indeed, just as investors were getting used to the distinction between load and no-load funds, the industry adopted an alphabet soup of fund share classes that investors have to sift through. This sentiment on the added complexity of the multiple share classes was conveyed by the former SEC chairman, Arthur Levitt, when he stated the following at the annual meeting of the Investment Company Institute in May 1998:

> "Do you really expect investors to understand the alphabet soup of A, B, C, D, I, Y and Z shares? To figure out what combination of front-end loads, (back-end loads), 12b-1 charges, commissions and who knows what else they're paying? You've got to do a better job of making sure that those who sell funds also explain the costs of investing."[3]

Another problem with the share class funds is that despite the intentions stated above, early evidence seems to show that the advent of multiple-share classes has not reduced fees for investors, and may actually have slightly increased the fees. Research by Lesseig, Long and Smythe (2002) has found that for the period 1995–1997 that multiple-share-class funds actually have slightly higher base expense ratios than single-class funds. Such research findings are not surprising given that other research (e.g., Ferris & Chance, 1987; Trzcinka & Zweig, 1990) has found that the implementation of 12b-1 fees has not led to lower

expenses for investors despite the mutual fund industry claims to the contrary when they argued for the change in the SEC rules.[4]

Finally, in maybe the most negative consequence of multiple share classes, O'Neal (1999) has found that the introduction of multiple-share classes has given rise to broker compensation arrangements that can be quite different across share classes. For example, brokers may receive more compensation for selling a deferred-load class share rather than a front-load class share. O'Neal documents that such incentives have lead to clear conflicts of interest. Indeed, he states that due to multiple share classes "brokers may put their own interests ahead of customer interests."[5] Given the added complexity of the share classes and hence the likely greater need for financial advisors, this result is particularly negative for investors as they could be unknowingly sold the wrong share class by brokers.

The purpose of this article is to examine yet another negative aspect of the advent of multiple share classes that has heretofore not been examined by the literature. Specifically, in this article we examine the effect of multiple-share classes on mutual fund composition. This is an interesting question because before the rise of multiple share classes, a number of papers suggested, both theoretically and empirically, that the load structure of the fund had an effect on the composition of the fund. For example, Chordia (1996) and Nanada, Narayanan, and Warther (2000) theorized that since load funds are better able to discourage redemptions due to the load fees, they can hold less cash and less liquid securities than similar no-load funds. Chordia further theorizes that funds with deferred loads will be better able to dissuade redemptions than front-load funds since the investor has to face the direct costs of redeeming their shares as compared to the already sunk costs of a front load. Chordia empirically documents his theoretical predictions using fund composition data for equity funds in the 1980s and very early 1990s. He finds clear evidence that deferred-load funds, and to a lesser extent front-load funds, do in fact hold less cash and less liquid securities as compared to no-load funds.

In this article, we examine the question of how the advent of multiple share classes has affected this relationship between load structure and mutual fund composition. The basic idea is that with the rise of multiple share classes, load funds may no longer have the same compositional advantages as described by Chordia. For example, a fund that 10 years ago was a single-class deferred-load fund is now very likely a fund that has a front-load share class, a deferred-load share class, a level-load share class, and possibly even an institutional investor share class. As a result, the fund may no longer hold less cash than a similar no-load fund as the fund manager may have to guard against redemptions coming from the other share classes. In other words, the compositional differences between load and no-load funds may have disappeared, as there are very few single-class load funds now available to investors. As a result, any compositional advantage gained by load structure in the past may now be compromised with the growth of multiple share classes.

The organization of the rest of this article is as follows. Section 2 provides some brief background on mutual fund share classes. Section 3 describes the data. Section 4 presents the methodology and Section 5 describes the results. Finally, in Section 6 we present our conclusions and implications of the results.

2. Brief background on mutual fund share classes

Although there are exceptions, there currently exist four basic types of mutual fund share classes:[6]

1. Front-load-class shares. This type of share class has a front load and an annual distribution fee (12b-1 fee). The front load is paid when the investor initially invests while the 12b-1 fee is deducted periodically. This share class is typically called the A-share class.
2. Deferred-load-class shares. This type of share class has a deferred load and a 12b-1 fee, which is usually higher than the 12b-1 fee on front-load class shares. The deferred-load is only assessed if the investor redeems shares within a certain period of time. The deferred load typically declines with each year the investment is held so that the deferred load eventually disappears if the fund is held for a significantly long period. At the time when the deferred load goes to zero, the shares are typically converted to front-load class shares and thereafter are subject to lower 12b-1 fees. This share class is typically called the B-share class.
3. Level-load-class shares. These share classes typically have very low deferred or front loads (about one percentage), with the deferred load going to zero after the first year. In addition they have a higher 12b-1 fee that, unlike the deferred-load class, stays at the high level throughout the lifetime of the investment. This share class is typically called the C-share class.
4. Institutional-investor-class shares. These are share classes that often have very low or no front, deferred, or 12b-1 fees. This share class is only available to institutional investors. This share class is typically called the Y-share class.

Note also that while the share classes described above are typically called, A-, B-, C-, and Y-share classes, this is by no means a universal convention. Some fund companies use completely different notation to describe these share classes.

For the typical noninstitutional investor, the decision to use a front-, deferred-, or level-load-class shares is largely based upon the expected holding period of the investment. For long-term investors, front-load class shares are considered the best option as the investor is subject to lower 12b-1 fees. For the intermediate term investor, deferred-load class shares are considered the best as there are no front loads and only low deferred-loads. Finally, for short-term investors the level-load-class shares are the optimal choice, as these share classes have little or no front/deferred loads.

3. Data

To examine the effect of the rule 18f-3 on the composition of funds we utilize mutual fund data from Morningstar's January (which has data up through the end of December of the previous year) data disks from 1992 to 2001.[7] The composition data are based on Morningstar's own quarterly survey of fund holdings and annual and semiannual mutual fund disclosure reports. These data include information about the percentage of cash, stocks,

bonds held, size of the stocks held, and other information such as portfolio turnover and expense ratios.[8]

Our fund selection criterion is the following. For each of the January Morningstar data disks from 1992 to 2001, we select all diversified domestic equity funds, that is, funds with styles of prospectus objectives of Aggressive Growth, Equity-Income, Growth, Growth-Income and Small Company, that had at least three years of return history and contained total assets of 20 million or more at the time of the data disk.[9] Hence we have ten separate samples of mutual funds.

For each of the 10 samples of mutual funds, we then define whether the fund in the sample is a single-share-class fund or a multiple-share-class fund. This was by far the most laborious aspect of the data collection as the Morningstar disks do not separate funds into these categories and because the fund industry has no set standards on the naming of multiple share classes.

As a general rule, the process of determining whether a fund is multiple-share-class fund or not is to examine the fund name. Most multiple-share-class funds use an alphabetical letter or other code at the end of the fund's name, for example, Alliance A, Alliance Adv, and so forth.[10] However, there are a reasonable number of multiple-share-class funds that do not use these letter/codes and a few seemingly single-class funds that do use these letter/codes at the end of their name. To deal with these issues, we define multiple-share class and single-class funds using the following process:

1. For each of the 10 disks, we sample all diversified domestic equity funds, including the funds with less than three years of return history and 20 million in net assets. Then for each of 10 samples of funds (1992–2001), we then sort the funds by the fund name. Within each annual sample, if we find that a fund has a similarly named fund(s) with the same composition data, that is, the same percentage of cash held, and so forth, then it is deemed a multiple-share-class fund.
2. In the cases where a fund has a letter or another often-used code for a multiple-share class at the end of its fund name, but does not have another fund listed in the Morningstar data, we then check the Morningstar "Analysts Review" page (for the disk of that sample) for further information to determine if that fund has a multiple share class or not. The Analysts Review sometimes provides background information on the fund such as whether it has different share classes. If the Analysts Review states that the fund does have multiple-share classes, we assume that this fund is a multiple-share-class fund.
3. If the fund was still classified as a single-share class fund after steps 1 and 2, then the fund was deemed to be a single-class fund.

The next step in the data gathering was then to create three groups of funds for each of the ten samples of funds. The three groups were:

1. Single-class, no-load funds. These are funds that at the time of the data disk were classified as single-class funds and had no front or deferred load and had no 12b-1 fees.
2. Deferred-load funds. These are funds that had four percentage or higher deferred-loads at the time of the data disk. We use the four percentage criterion so as to insure that

the load is sufficient enough to dissuade redemptions.[11] Note that the all deferred-load funds whether single class or multiple-share class are included.

3. Front-load funds. Similar to the deferred-load fund group, these are funds that had four percentage or higher front loads at the time of the data disk regardless of their share class status. As with the deferred-load fund group, all the front-load funds whether single class or multiple share class are included.

As should be clear from the above, the deferred- and front-load fund groups will share many of the same funds due to multiple share classes. That is, one fund may have a front load share class and a deferred load share class. As a result, in the analysis we do not statistically compare the results of deferred-load funds with front-load funds.

Table 1 presents some information on the samples used in the analysis. It shows the number of deferred-load, front-load, and single-class, no-load funds in each of the ten samples. The table also shows, for each of the ten samples, the percentage of the deferred- and front-load funds that have multiple-share classes (columns 3 and 6). As is clearly seen, the percentage dramatically rises over the 10 years, especially after 1995, the year when rule 18f-3 was formally adopted. Indeed, by the 2001 sample, 95% of front-load funds, and an amazing 99.7% of deferred-load funds were part of multiple share class structures.

Table 1 also shows the percentage of deferred- and front-load funds that had level load and/or institutional share classes (columns 4 and 7). Similar to the rise in multiple-share classes, the table shows that by 2001 most load funds adopted the use of level-load and or institutional share classes. By the 2001 Morningstar disk, 90% (80%) of the deferred (front) load funds had level-load and or institutional-share classes.

4. Methodology

For the methodology we use an approach similar to Chordia (1996) in which we regress various variables against the percentage of cash held by the mutual fund. Specifically, for each annual sample, we examine the following equation:

$$\begin{aligned} Cash_i = {} & \alpha_0 + \beta_1(Deferred_i) + \beta_2(Turnover_i) + \beta_3(LNSize_i) \\ & + \beta_4(AggressiveGrowth_i) + \beta_5(EquityIncome_i) \\ & + \beta_6(GrowthIncome_i) + \beta_7(SmallCompany_i) + \beta_8(Index_i) + e_i, \end{aligned} \quad (1)$$

where $Cash_i$ = the percentage of holdings that are held in cash and cash equivalents for the ith mutual fund.

$Deferred_i$ = a (0,1) dummy variable where funds with four percentage or higher deferred loads are coded as 1, and single-class, no-load funds are coded as 0. We also define a separate (0,1) dummy variable, $Front_i$ for another specification of equation (1), where funds with four percentage or higher front loads are coded as 1, and single-class, no-load funds are coded as 0.

$Turnover_i$ = the turnover ratio for the ith fund.

$LNSize_i$ = the log of net assets held by ith fund,

Table 1
Summary statistics on samples used

1 Year of Morningstar data	2 Number of deferred-Load Funds with 4 percent or higher loads	3 % of deferred-Load Funds in column 2 with a multiple share class	4 % of Deferred-Load Funds in column 2 with level load and or institutional share classes	5 Number of Front-Load Funds with 4 percent or higher loads	6 % of Front-Load Funds in column 5 with a multiple share class	7 % of Front-Load Funds in column 5 with level load and or institutional share classes	8 Number of single-class, no-load funds
1992	46	24	0	230	7	0	151
1993	49	41	0	246	13	0.6	173
1994	52	48	2	260	34	4	206
1995	52	56	33	272	46	21	229
1996	67	78	40	297	63	33	274
1997	108	86	51	317	79	46	310
1998	183	96	70	368	83	59	325
1999	241	99.2	78	411	88	68	353
2000	320	99.7	87	482	92	76	372
2001	390	99.7	90	557	95	80	379

Sample consists of all funds that are: 1) at least 3 years old; 2) have at least $20 million in net assets; and 3) are defined as Aggressive Growth, Equity-Income, Growth, Growth-Income or Small-Company funds at the time they are sampled from the Morningstar data disk.

Table 2
Relationship of cash held and load structure: deferred-load funds and single-class, no-load funds
Equation Estimated: $Cash_i = \alpha_0+\beta_1(\text{Deferred}_i)+\beta_2(\text{Turnover}_i)+\beta_3(\text{LNSize}_i)+\beta_4(\text{AggressiveGrowth}_i)+\beta_5(\text{EquityIncome}_i)+\beta_6(\text{GrowthIncome}_i)+\beta_7(\text{SmallCompany}_i)+\beta_8(\text{Index}_i)+e_i$.

Year of Morningstar Data	Constant	Deferred	Turnover	LNSize	Aggressive Growth	Equity-Income	Growth-Income	Small Company	Index	R-squared	*N*
1992	8.902***	−1.905	0.014	0.243	−0.014	−3.180	−3.116	−2.176	−8.810*	0.059	190
	(2.723)	(1.058)	(1.599)	(0.434)	(0.004)	(0.996)	(1.575)	(1.057)	(1.805)		
1993	11.785***	−2.162	0.009**	−0.223	−4.891	−4.631	−2.775	−1.823	−7.199	0.064	220
	(3.542)	(1.184)	(2.061)	(0.401)	(1.293)	(1.575)	(1.354)	(0.893)	(1.597)		
1994	8.444***	−2.215	0.001	0.070	−4.886	−0.565	−0.277	0.920	−7.336***	0.049	253
	(3.354)	(1.556)	(0.108)	(0.169)	(1.592)	(0.250)	(0.183)	(0.605)	(2.554)		
1995	8.662***	−1.677	0.035***	−0.392	3.129	−2.321	−0.139	−1.219	−2.819	0.104	279
	(4.022)	(1.248)	(4.186)	(1.158)	(1.160)	(0.974)	(0.106)	(0.878)	(1.052)		
1996	5.767***	−0.116	−0.006	0.122	1.716	0.582	1.687**	1.957**	−5.097***	0.051	336
	(4.373)	(0.145)	(1.327)	(0.586)	(1.069)	(0.419)	(2.079)	(2.379)	(3.197)		
1997	5.724***	0.505	−0.011**	0.240	1.078	−0.896	−0.337	−0.356	−5.584***	0.042	414
	(4.444)	(0.722)	(2.379)	(1.215)	(0.743)	(0.693)	(0.433)	(0.442)	(3.385)		
1998	4.958***	−0.401	−0.007*	0.150	−1.149	−1.260	−0.260	1.000	−3.368**	0.032	482
	(4.593)	(0.739)	(1.875)	(0.937)	(0.872)	(1.181)	(0.402)	(1.451)	(2.206)		
1999	6.347***	−0.791	0.001	−0.074	3.804**	0.392	1.293	0.717	−3.948*	0.020	571
	(4.539)	(1.142)	(0.065)	(0.359)	(2.441)	(0.285)	(1.522)	(0.791)	(1.935)		
2000	4.474***	−0.219	0.008**	−0.076	−0.453	−0.003	−0.328	1.486**	−2.499	0.033	653
	(4.500)	(0.465)	(2.403)	(0.537)	(0.457)	(0.003)	(0.544)	(2.366)	(1.561)		
2001	3.865***	−0.391	0.010***	0.064	0.132	−0.393	−0.725	0.879*	−2.586**	0.060	726
	(4.741)	(1.034)	(4.411)	(0.553)	(0.164)	(0.458)	(1.491)	(1.751)	(2.421)		

Continued

Table 2 *Continued*

Poled Samples

Years	Constant	Deferred	Turnover	LNSize	AG	EI	GI	SC	Index	Dum92	Dum93	Dum94	R-squared	*N*
1992-1995	8.551***	1.906**	0.011***	0.053	−1.182	−2.505*	−1.385	−0.912	−6.053***	0.861	0.662	−0.210	0.046	946
	(5.838)	(2.433)	(3.639)	(0.232)	(0.726)	(1.901)	(1.666)	(1.069)	(3.494)	(0.939)	(0.753)	(0.249)		

Years	Constant	Deferred	Turnover	LNSize	AG	EI	GI	SC	Index	Dum96	Dum97	Dum98	Dum99	Dum00	R-sqr	*N*
1996-2001	4.502***	−0.347	0.002	0.039	0.590	−0.253	0.100	0.951***	−3.634***	1.821***	1.086***	0.142	1.286***	−0.151	0.030	3188
	(8.840)	(1.508)	(1.341)	(0.576)	(1.183)	(0.537)	(0.357)	(3.248)	(5.672)	(4.450)	(2.858)	(0.394)	(3.753)	(0.460)		

The year of Morningstar data corresponds to the January of the year indicated. Cash is the percentage of fund's holdings that are held in cash and cash equivalents. Deferred is a dummy variable coded 1 for deferred-load funds with four percent or higher deferred loads and 0 for single-class, no-load funds. Turnover is the turnover ratio for fund. LNSize is the log of net assets held by fund; Aggressive Growth, EquityIncome, GrowthIncome and SmallCompany are dummy variables for the styles of the fund. Index is a dummy variable for index funds. The subscript i represents the ith mutual fund. The reference group is the single-class, no-load, non-index, growth funds. T-statistics are in parentheses.

***, **, * denote significance at the one, five and ten percent levels respectively.

Aggressive Growth$_i$, *EquityIncome*$_i$, *GrowthIncome*$_i$ *and Small Company*$_i$ are (0,1) dummy variables to control for style effects.

Index$_i$ is a (0,1) dummy variable for index funds.

Hence, the reference group for the equation is the single-class, no-load, nonindex, growth funds.

The use of the turnover, size, and index variables controls for other effects. Specifically, the turnover variable is used to account for the fact that funds with high turnover do not need to hold as much cash as other funds since the turnover itself provides some liquidity. Similar to Chordia (1996), *LNSize* is used to control for any size effects. Finally, the index variable is employed since index funds will disproportionately carry less cash than other funds.[12]

5. Results

The results of the paper are presented in Tables 2-7. For ease of exposition, we have organized this section into six subsections: cash held by deferred-load funds relative to single-class; no-load funds; cash held by front-load funds relative to single-class, no-load funds; further analysis of the pooled regressions; level-load and institutional-share classes; a robustness check on fund flows; and median market capitalization results.

5.1. Cash held by deferred-load funds relative to single-class, no-load funds

Table 2 shows the results of Eq. (1). The equation is estimated for each of the annual samples from 1992 to 2001. The results on the annual samples from Table 2 show that deferred-load funds do generally hold less cash than single-class funds as nine of the ten coefficients for *Deferred* are negative. While none of these nine coefficients are significant, the magnitude of the coefficients does decline after 1995, indicating that there is some evidence that the ability of deferred-load funds to hold less cash than single-class, no-load funds wane as rule 18f-3 was formally implemented. Indeed, the simple average coefficient for *Deferred* is some eight times higher for the period 1992–1995 than the period 1996–2001. Hence, around the time that many deferred-load funds changed from being single-class funds to multiple-share-class funds, we see a change in the composition of deferred-load funds relative to single-class, no-load funds.

In terms of the other coefficients, we find, not surprisingly, that index funds generally hold significantly less cash than other funds. Furthermore, the *Turnover* variable is often significant but the direction of the relationship with cash held is unclear as the results show both negative and positive coefficients. Finally, the coefficients for fund style are not consistently significant, although the signs on the coefficients indicate that equity-income and growth-income funds tend to hold less cash than Growth funds.

At the bottom of Table 2 we present a simple pooled regression analysis to better investigate the issue of change in the amount of cash held by deferred-load funds before and after the implementation of rule 18f-3. To conduct the analysis we created two pools of data. The first contains all the observations from the samples 1992–1995 (prerule 18f-3), and the

Table 3
Relationship of cash held and load structure: front-load funds and single-class, no-load funds

Equation Estimated: $Cash_i = \alpha_0 + \beta_1(Front_i) + \beta_2(Turnover_i) + \beta_3(LNSize_i) + \beta_4(AggressiveGrowth_i) + \beta_5(EquityIncome_i) + \beta_6(GrowthIncome_i) + \beta_7(SmallCompany_i) + \beta_8(Index_i) + e_i$.

Year of Morningstar Data	Constant	Front	Turnover	LNSize	Aggressive Growth	Equity-Income	Growth-Income	Small Company	Index	R-squared	*N*
1992	11.206***	−1.247	0.005	−0.132	−2.418	−3.082	−2.211*	−1.484	−8.180**	0.038	375
	(5.210)	(1.260)	(0.826)	(0.377)	(1.238)	(1.612)	(1.907)	(0.978)	(2.306)		
1993	11.639***	−0.562	0.010***	−0.234	−4.736**	−5.263***	−2.576**	−1.465	−6.959*	0.058	418
	(5.126)	(0.534)	(2.603)	(0.638)	(2.219)	(2.570)	(2.041)	(0.915)	(1.834)		
1994	8.722***	−0.450	0.008	−0.007	−0.115	−2.218	−1.937*	0.519	−5.601**	0.035	460
	(4.667)	(0.524)	(1.275)	(0.024)	(0.066)	(1.323)	(1.883)	(0.412)	(2.147)		
1995	8.775***	1.045	0.028***	−0.320	0.533	−3.801*	−0.674	−0.221	−3.050	0.049	500
	(4.210)	(1.077)	(3.735)	(0.974)	(0.249)	(1.827)	(0.591)	(0.157)	(0.992)		
1996	4.691***	0.552	−0.003	0.313*	0.736	−0.071	0.286	2.506***	−4.418***	0.043	567
	(4.411)	(1.076)	(0.677)	(1.893)	(0.594)	(0.068)	(0.460)	(3.592)	(2.741)		
1997	4.292***	0.817	−0.006*	0.388**	0.881	−0.331	−0.668	0.616	−4.220***	0.033	623
	(3.943)	(1.631)	(1.763)	(2.381)	(0.770)	(0.313)	(1.072)	(0.900)	(2.743)		
1998	4.221***	0.273	−0.007**	0.235	−1.444	−0.408	−0.061	1.636***	−2.739*	0.033	657
	(4.308)	(0.600)	(2.207)	(1.652)	(1.295)	(0.418)	(0.109)	(2.640)	(1.921)		
1999	5.691***	−0.397	−0.003	0.061	2.528*	1.086	0.911	1.010	−2.134	0.010	744
	(4.747)	(0.691)	(0.660)	(0.349)	(1.922)	(0.890)	(1.263)	(1.288)	(1.173)		
2000	4.178***	0.204	0.002	0.071	−0.643	−0.208	−0.630	1.539**	−2.065	0.018	810
	(4.398)	(0.457)	(0.479)	(0.533)	(0.645)	(0.221)	(1.095)	(2.552)	(1.264)		
2001	3.856***	0.015	0.011***	0.037	1.355	−0.361	−0.491	0.978	−2.327**	0.051	884
	(4.499)	(0.036)	(4.859)	(0.309)	(1.523)	(0.407)	(0.950)	(1.835)	(2.011)		

Continued

Table 3 *Continued*

Pooled Samples

Years	Constant	Front	Turnover	LNSize	AG	EI	GI	SC	Index	Dum92	Dum93	Dum94	R-squared	*N*
1992 -1995	10.431*** (9.385)	−0.263 (0.545)	0.011*** (4.243)	−0.161 (0.963)	−1.508 (1.514)	−3.588*** (3.708)	−1.817*** (3.162)	−0.583 (0.810)	−5.886*** (3.707)	−0.443 (0.664)	−0.100 (0.155)	−0.884 (1.406)	0.037	1753

Years	Constant	Front	Turnover	LNSize	AG	EI	GI	SC	Index	Dum96	Dum97	Dum98	Dum99	Dum00	R-sqr	*N*
1996 -2001	3.793*** (8.172)	0.193 (0.979)	0.001 (0.998)	0.157*** (2.600)	0.531 (1.174)	−0.029 (0.069)	−0.124 (0.498)	1.339*** (5.018)	−2.881*** (4.640)	1.965*** (5.740)	1.204*** (3.620)	0.233 (0.714)	1.116*** (3.532)	−0.221 (0.715)	0.027	4.286

The year of Morningstar data corresponds to the January of the year indicated. Cash is the percentage of fund's holdings that are held in cash and cash equivalents. Front is a dummy variable that is coded 1 for front-load funds with four percent or higher front loads and 0 for single-class, no-load funds. Turnover is the turnover ratio for fund. LNSize is the log of net assets held by fund. AggressiveGrowth, EquityIncome, GrowthIncome and SmallCompany are dummy variables for the styles of funds. Index is a dummy variable for index funds. The subscript i represents the ith mutual fund. The reference group is the single-class, no-load, non-index growth funds. T-statistics are in parentheses.

***, **, * denote significance at the one, five and ten percent levels respectively.

Table 4
Robustness checks of pooled samples using only unique observations

RANDOM SORTING

Deferred-load and No-load funds (1992-1995)

Years	Constant	Deferred	Turnover	LNSize	AG	EI	GI	SC	Index	Dum92	Dum93	Dum94	R-squared	*N*
1992-1995	9.979***	−2.625*	0.006	−0.281	2.860	−2.731	0.672	0.179	−5.954**	1.037	0.154	0.075	0.053	299
	(4.011)	(1.908)	(1.617)	(0.683)	(0.975)	(1.098)	(0.468)	(0.121)	(2.145)	(0.654)	(0.094)	(0.052)		

NON-RANDOM SORTING

Deferred-load and No-load funds (1992-1995)

Years	Constant	Deferred	Turnover	LNSize	AG	EI	GI	SC	Index	Dum92	Dum93	Dum94	R-squared	N
1992-1995	11.741***	−3.443*	0.009*	−0.317	5.052	−2.360	−0.933	−1.967	−6.454*	−0.012	5.601	−3.248	0.088	266
	(3.294)	(1.901)	(1.738)	(0.552)	(1.303)	(0.742)	(0.499)	(0.963)	(1.860)	(0.006)	(1.567)	(0.961)		

Deferred-load and No-load funds (1996-2001)

Years	Constant	Deferred	Turnover	LNSize	AG	EI	GI	SC	Index	Dum96	Dum97	Dum98	Dum99	Dum00	R-sqr	N
1996-2001	4.669***	−0.503	0.000	0.089	2.387*	−0.321	0.728	1.315*	−4.048***	1.264	0.541	−0.382	1.846	−0.481	0.033	792
	(3.350)	(0.852)	(0.044)	(0.454)	(1.817)	(0.277)	(1.036)	(1.921)	(2.613)	(1.309)	(0.470)	(0.346)	(1.601)	(0.440)		

Front-load and No-load funds (1992-1995)

Years	Constant	Front	Turnover	LNSize	AG	EI	GI	SC	Index	Dum92	Dum93	Dum94	R-squared	*N*
1992-1995	14.598***	−1.606	0.007	−0.342	1.562	−1.727	−0.707	−1.118	−7.489***	−3.038*	−0.227	−3.867*	0.047	503
	(5.544)	(1.557)	(1.609)	(0.877)	(0.715)	(0.873)	(0.580)	(0.725)	(2.654)	(1.735)	(0.091)	(1.659)		

Continued

Table 4 *Continued*

Front-load and No-load funds (1996-2001)

Years	Constant	Front	Turnover	LNSize	AG	EI	GI	SC	Index	Dum96	Dum97	Dum98	Dum99	Dum00	R-sqr	N
1996-2001	3.518***	0.089	0.002	0.199	2.376**	−0.250	0.360	1.888***	−3.046**	1.688**	0.342	0.626	2.498**	−1.233	0.042	982
	(2.923)	(0.190)	(0.894)	(1.174)	(2.061)	(0.240)	(0.602)	(3.146)	(2.077)	(2.101)	(0.300)	(0.565)	(2.268)	(1.230)		

In this table, two analyses are conducted. In both analyses we use only unique observations for the pooled samples. That is, every fund only appears once in the pooled sample. In one analysis we examine the deferred, no-load, pooled sample of 1992-1995 using a methodology where if a fund is represented more than once in the original pool, i.e. Tables 2 and 3, we randomly pick one of the observations to stay in the sample and exclude all the rest. For example, the Vanguard 500 Index fund appears four times in the deferred, no-load, pooled sample of 1992-1995 as it appears in the 1992, 1993, 1994 and 1995 samples. For this analysis we randomly pick (using a random number generator) one of the four observations to be included in the sample. We only conduct this analysis on the one pooled sample as it requires us to identify all fund name changes, mergers and liquidations to insure that a fund is only occurring once in the sample.

In the other analysis examine all the pooled samples using a methodology were we use the initial time series sample and then simply add any new, unique observations from subsequent time series to the sample. For example, for the 1992-95 pooled samples, we take the all the observations from 1992 and then add the new, unique observations from the 1993 sample. We repeat this with the 1994 and 1995 time series samples in order to construct a sample of unique observations. The t-statistics are in parentheses. This method is much less time consuming than the first method as we do not have to determine if a fund has changed its name, merged or liquidated.

***, **, * denote significance at the one, five and ten percent levels respectively.

second includes all the observations from 1996 to 2001 (postrule 18f-3). We then use annual dummies to control for effects of year, that is, Dum92, Dum93, and so forth The results of the pooled regression analysis show that the amount of cash held by deferred-load funds is significantly less than that of single-class, no-load funds during the pre-18f-3 period. However, after rule 18f-3, the results indicate that while the cash held by deferred-load funds is less than single-class, no-load funds, it is only marginally less and not significant.

Before moving on, we should state that the pooled results at the bottom of Table 3 must be interpreted with caution. Since funds that are listed in one annual sample are often in another annual sample, the pooled regression is subject to serial correlation. For example, the 1992 sample will contain an observation for the cash held by a fund in late 1991 (again the cash held data in the January 1992 Morningstar data are usually based on the quarter before the disk is published). The 1993 sample, which is pooled with the 1992 sample, may contain an observation for the cash held by this same fund in late 1992. Since the two observations are correlated and since they are in the same pooled sample, the pooled regression estimates are influenced by serial correlation. This will lower the standard errors, hence producing significant coefficients when in fact they are not significant. To deal with this issue we use two simple methods which are outlined later in the description of the results of Table 4.

5.2. *Cash held by front-load funds relative to single-class, no-load funds*

In Table 3 we present a table similar to that of Table 2, except that it examines front-load funds rather than deferred-load funds. The results show somewhat similar findings to the deferred load regressions. Specifically, we see that in the 1992–1994 samples, front-load funds did hold less cash than single-class, no-load funds as the coefficients for the variable *Front* are all negative (however, none are significant). Yet after the 1994 sample, the results indicate that front-load funds generally hold slightly more cash than single-class, no load funds as six of the seven *Front* coefficients are actually positive (yet again, none are significant). So, again, the results here seem to suggest that around the time that many of the front-load funds were being converted to multiple-share-class funds, the compositional differences between front-load funds and single-class, no-load funds disappears. However, again the results are weaker than what we found with the deferred-load sample.

Also similar to Table 2, we present the results of the pooled regression analysis at the bottom of Table 3. The results here are again subject to the same serial correlation problem as those described in Table 2. Nevertheless, the results (although somewhat weak as none of the *Front* coefficients are significant) show a negative coefficient in the pre-18f-3 period and a positive coefficient in the post-18f-3 period, indicating that the amount of cash held has changed as rule 18f-3 was implemented.[13]

In summary, our results in Tables 2 and 3 indicate that deferred- and, to a lesser extent, front-load funds held less cash relative to single-class, no-load funds before most funds had multiple share classes. Conversely, after most funds had started to use multiple share classes, we find the difference in cash held between load funds and no-load funds is much smaller and statistically insignificant.

5.3. Further analysis of the pooled regressions

Table 4 presents some further analysis of the pooled regressions in Tables 2 and 3. In order to make sure our results are robust to the serial correlation problem described above, we used two different methodologies.[14] First, we examine the deferred- and no-load pooled sample of 1992–1995 using a *random sorting* methodology where if a fund is represented more than once in the original pool, we randomly pick one of the observations to stay in the sample and exclude all the rest. For example, the Vanguard 500 Index fund appears four times (as a single-class, no-load fund) in the original pooled deferred- and no-load sample of 1992–1995 (used in Table 2). In the random-sorting method we randomly pick (using a random number generator) one of the four observations to be included in the sample.

We only use the random-sorting methodology on the deferred- and no-load sample for 1992–1995. We do this for two reasons. First, as stated above, the serial correlation in the original pooled regressions will lead to underestimation of the standard errors and hence the possibility of identifying an effect as significant when it is not. The only pooled sample where the coefficient on the load structure (*Deferred* or *Front*) was significant was the deferred- and no-load sample of 1992–1995. Hence, it is important to see if this significant result is a false positive. Second, the data for randomly distributed pooled regression is extremely onerous to construct as the procedure requires us to identify all fund name changes, mergers and liquidations to insure that a fund is only occurring once in the sample. Indeed, if we went just by the names of the funds, we quite often would include the same fund twice or more as its name might have changed during the period 1992–1995.

Given this difficulty in tracing funds through name changes and mergers, for the second methodology we use a *nonrandom sorting* methodology where we employ the initial time series sample and then simply add any new, unique observations from subsequent time series to the sample. For example, for the 1992–95 pooled samples, we take the all the observations from 1992 and then add the new, unique observations from the 1993 sample.[15] We repeat this with the 1994 and 1995 time series samples in order to construct a sample of unique observations. This method is much less time consuming than the first method as we do not have to determine if a fund has changed its name, merged or liquidated. Due to the ease of this method, we use it on all four pooled samples (deferred- and no-load 1992–1995, deferred- and no-load 1996–2001, front- and no-load 1992–1995, front- and no-load 1996–2001).

The results of using the methodologies on the pooled samples are shown in Table 4. The table shows that the findings of both the random and nonrandom sorting of the deferred- and no-load sample of 1992–1995 are consistent with the results reported in Table 2. Both the random-sorting and nonrandom sorting pooled regressions show that deferred-load funds held significantly less cash and the finding is still significant (though at the 10% level). The results for the other pooled samples are also consistent with the pooled results reported in Tables 2 and 3.

5.4. Level-load and/or institutional share classes

Our results show that the amount of cash held by load funds (particularly deferred-load funds) is considerably less than that held by no-load funds before 1995; however, after this period we find little difference in the amount of cash held between load and no-load funds. Our explanation up to this point for the change in cash held is the rise of multiple-share classes. In other words, the rise in the use of multiple-share classes by load funds blurred the line between load and no-load funds causing previously load funds to be more like no-load funds in terms cash held. However, the tests in Tables 2–4 do not directly examine if the rise in share classes is causing the change in cash held by load funds. Indeed, there could be other effects that are causing this change.

In this section, we attempt to directly investigate the effect of multiple-share classes on cash held. To do this we take a slightly different approach than before. Instead of examining load funds relative to single-class, no-load funds, we instead examine just load funds. More specifically, we examine the cash held by deferred-load funds with level-load and/or institutional-share classes relative to other deferred-load funds. The rationale for this test is that funds with these types of share classes, should, on average, hold more cash than other deferred-load funds as level-load and institutional-share classes do not impose severe redemption penalties. Hence, by examining cash held by deferred-load funds with these share classes versus other deferred-load funds we can directly test if the share class effect itself is causing the changes in composition or not.

To test for these effects we examine Eq. (2):

$$\begin{aligned} Cash_i = {} & \alpha_0 + \beta_1(LowLoad_i) + \beta_2(Turnover_i) + \beta_3(LNSize_i) \\ & + \beta_4(AggressiveGrowth_i) + \beta_5(EquityIncome_i) \\ & + \beta_6(GrowthIncome_i) + \beta_7(SmallCompany_i) + \beta_8(Index_i) + e_i, \end{aligned} \tag{2}$$

where LowLoad_i = a (0,1) dummy variable. A 1 denotes a deferred-load fund that has a four percentage or higher deferred load and yet also has a level-load and or institutional-share class. A 0 indicates a deferred-load fund with at least a four percentage deferred load and yet does not have a level-load or institutional share class.

The reference group for Eq. (2) consist of growth, nonindex deferred-load funds without level-load and or institutional share classes.

Note that only deferred-load funds are considered in Eq. (2) as results in Tables 2–4 were stronger for deferred-load funds in terms of being able to hold significantly less cash than no-load funds before the mid-1990s. Note that we tried a specification of Eq. (2) in which front-load funds were used. The results were similar to those reported below for deferred-loads and are available upon request.

The results for Eq. (2) are reported in Table 5. Only the results for the 1995–2001 samples are shown, as the 1992–1994 samples do not contain enough funds with level-load and or institutional share classes. The results show that in six of the seven samples (the only

Table 5
Relationship of cash held and load structure: deferred-load funds with level-load-share and or institutional-investor-share classes versus other deferred-load funds Equation Estimated: $Cash_i = \alpha_0 + \beta_1(\text{lowload}_i) + \beta_2(\text{Turnover}_i) + \beta_3(\text{LNSize}_i) + \beta_4(\text{AggressiveGrowth}_i) + \beta_5(\text{EquityIncome}_i) + \beta_6(\text{GrowthIncome}_i) + \beta_7(\text{SmallCompany}_i) + \beta_8(\text{Index}_i) + e_i$.

Year of Morningstar Data	Constant	Lowload	Turnover	LNSize	Aggressive Growth	Equity-Income	Growth-Income	Small Company	Index	R-squared	N
1995	3.243	1.124	0.004	0.715	−2.845	3.485	−1.737	−1.691	NA	0.092	52
	(0.742)	(0.585)	(0.252)	(0.971)	(0.825)	(1.022)	(0.733)	(0.686)			
1996	1.044	2.486*	0.002	0.859*	−3.227	−0.323	−1.577	1.322	NA	0.140	67
	(0.303)	(1.814)	(0.173)	(1.686)	(1.316)	(0.112)	(0.908)	(0.723)			
1997	5.260*	0.578	−0.011	0.598	−3.601*	−2.208	−2.496	−2.747*	NA	0.081	108
	(1.765)	(0.492)	(1.020)	(1.415)	(1.758)	(1.012)	(1.588)	(1.648)			
1998	5.082***	2.171**	−0.024***	0.193	−1.782	−3.014*	−1.941*	−0.211	−2.665	0.104	183
	(2.676)	(2.212)	(3.188)	(0.675)	(0.962)	(1.877)	(1.699)	(0.168)	(0.636)		
1999	3.687**	0.394	−0.010*	0.512**	−1.546	0.522	−0.452	1.125	−3.726	0.053	241
	(2.181)	(0.440)	(1.843)	(2.079)	(1.016)	(0.385)	(0.494)	(1.074)	(0.948)		
2000	2.690	1.234	0.015***	−0.154	0.131	0.425	0.067	2.237**	−2.400	0.065	320
	(1.617)	(1.171)	(2.746)	(0.662)	(0.096)	(0.301)	(0.077)	(2.163)	(0.792)		
2001	2.766**	0.342	0.012***	0.251	−0.466	−1.647	−1.111	0.792	−0.998	0.058	390
	(2.151)	(0.375)	(2.988)	(1.354)	(0.426)	(1.463)	(1.616)	(1.053)	(0.469)		

The year of Morningstar data corresponds to the January of the year indicated. Cash is the percentage of fund's holdings that are held in cash and cash equivalents. Lowload is a dummy variable coded 1 for deferred-load funds (with 4 percent higher loads, three years of return history and 20 million in net assets) that have a level-load and or institutional-share class and 0 for other deferred-load funds. Turnover is the turnover ratio for fund. LNSize is the log of net assets held by fund, AggressiveGrowth, EquityIncome, GrowthIncome and Small Company are dummy variables for the styles of funds. Index is a dummy variable for index funds. The subscript i represents the ith mutual fund. The reference group is the growth, non-index, deferred-load funds that did not have level load or institutional share classes. T-statistics are in parentheses.
***, **, * denote significance at the one, five and ten percent levels respectively.

exception is 2001), the coefficient for *lowload* is positive indicating that funds with level-loads and or institutional share classes held more cash than other deferred-load funds. Moreover, two of the six coefficients are statistically significant.

These results provide evidence that the multiple-share-class effect is a direct cause of our results in Tables 2–4 showing deferred-load funds held lower amounts of cash relative to no-load funds before the mid-1990s and yet held similar amounts of cash after this time. Table 1 illustrates that most deferred-load funds adopted multiple-share class structures with level-load and or institutional-share classes in the mid to late 1990s. In fact by 2001, 350 of the 390 deferred-load funds in our sample (90%) had multiple share classes with level-load or institutional-share classes. The results of Table 5 indicate that deferred-load funds with level-load and or institutional share classes held more cash than other deferred-load funds. These two results, taken together, explain why deferred-load funds would hold lower amounts of cash relative to no-load funds before the mid 1990s and yet hold similar amounts of cash relative to no-load funds after the mid 1990s: the rise of multiple share classes, particularly level-load and institutional share classes, has caused these previously single-class, deferred-load funds to be more wary of redemptions.

Table 6
Flow data equity matual funds

Year	Net New Cash flows to Equity Mutual Funds (in billions of dollars)	Total Equity Mutual Funds Assets (in billions of dollars)	Percentage of Net New Cash Flows of Equity Mutual Funds as a share of Total Equity Mutual Fund Assets
1990	12.90	239.50	5.39
1991	39.90	404.70	9.86
1992	79.00	514.10	15.37
1993	127.30	740.70	17.19
1994	114.50	852.80	13.43
1995	124.40	1249.10	9.96
1996	216.90	1726.00	12.57
1997	227.10	2368.00	9.59
1998	157.00	2978.20	5.27
1999	187.70	4041.90	4.64
2000	309.40	3962.00	7.81
2001	31.90	3418.20	0.93

Data are from the 2002 Mutual Fund Factbook, Investment Company Institute, p. 25 and p. 62

5.5. Robustness check on fund flows

Another possible explanation for the result that load funds hold similar amounts of cash relative to no-load funds in the post 1995 period is fund flows. For example, if most funds are receiving large inflows of cash, then even no-load funds may not have to hold much in cash as the new inflows can adequately cover any redemptions. Hence, in periods when there are massive inflows, the amount of cash held by load and no-load funds may be similar as the no-load funds do not have to worry as much about redemptions. Indeed, casual empiricism could lead one to conclude that this is the explanation for our results as the late 1990s were characterized by high returns and high net inflows.

To examine this issue in more detail, we use the new net cash flow data from the Investment Company Institute. Table 6 presents these data. The table shows the net new cash flow into equity mutual funds, the total equity mutual fund assets, and the new net new cash flows into equity funds as percentage of total equity mutual funds assets from 1990 to 2001. The last measure provides an adjusted measure of the net new cash flows.

Table 6 shows that net new cash flows into equity funds as percentage of the total actually increased the most in 1992–94; a period when load funds held less cash than no-load funds. These results suggest that our findings on cash held by load funds are not simply a result of fund flows.

5.6. Median market capitalization results

As stated in the introduction, Chordia (1996) theorized that load funds (particularly deferred-load funds) will hold less liquid stocks than similar no-load funds as the load structure should prevent redemptions, hence freeing the manager to be in less liquid and

higher yielding investments. Chordia then went on to empirically document this theory by using the size of stocks held by equity funds as a proxy for liquidity. Specifically, he found that load funds tended to hold stocks of smaller capitalization than no-load funds.

In an effort to test this issue with more current data, we use median market capitalization data available from the Morningstar disks.[16] Table 6 presents the mean median market capitalizations of deferred-, front- and single-class, no-load funds.[17]

Unlike the results presented by Chordia, our results illustrate no discernable pattern between the load structure and the size of the companies held by the fund (Table 7).[18] In fact, the results indicate that load funds actually have higher median market capitalizations than no-load funds. Indeed, in only four of the 100 cases (ten cases for each of the ten years) does the load fund group have significantly lower mean median market capitalization than the no-load group. Comparatively, in 12 of the 100 cases the load group has a significantly higher mean than the no-load group.

6. Conclusions

Recent research has suggested that load funds, particularly deferred-load funds, should be able to hold less cash and less-liquid securities than similar no-load funds, as the existence of a load will dissuade redemptions by investors. However, with the advent of multiple-share classes, the lines between load and no-load funds have become blurred. This paper has investigated the impact of these multiple-share classes on load and no-load mutual fund composition.

Using ten annual samples of mutual fund data, we find that before the mass adoption of multiple-share classes, load funds held less cash relative to single-class, no-load funds. However, after most load funds had adopted multiple-share classes, we found the difference in cash held between load funds and no-load funds to be much smaller if a difference emerged at all. We also found that there was no discernable pattern between the load structure and the liquidity of the assets held by the fund. In fact, the results indicate that load funds often held more liquid assets (as measured by median market capitalization) than no-load funds.

The implications from our results are twofold. First, our results show that investors, if they have a choice, should hold single-class, no-load funds as opposed to load funds as there is no compositional advantage in owning load funds anymore. Indeed, these results add to a growing literature that has found that there is little difference between load and no-load funds except for the load charge itself. For example, Elton, Martin, Gruber, Das and Hlavka (1993), Grinblatt and Titman (1994) and Morey (2003) have all found that before loads are adjusted for, there is no significant difference in the performance of load and no-load funds. Of course, after adjusting for the loads, no-load funds significantly outperform load funds.

Second, our results that the compositional advantages of load funds have been compromised with the advent of multiple share classes constitute yet another negative quality of multiple share classes. As stated in the introduction, evidence suggests that multiple-share

Table 7
Median market capitalization organized by load structure and style of fund (listed in millions of dollars)

Year of Data	Load Sturcture	Aggressive Growth	Equity-Income	Growth	Growth-Income	Small Company
1992	Deferred Load	1485	8534	4699	5387	444
	Front Load	2331	8474***	5290	7069	520
	S.C. No Load	1689	5047	4395	7254	489
1993	Deferred Load	1987	6542	4803	7101	488
	Front Load	2292	9157**	5380	8020	566
	S.C. No Load	1425	6465	5195	7249	476
1994	Deferred Load	1503	5423	4102	6508	560
	Front Load	1953**	7175	5132	7875	586
	S.C. No Load	849	6177	4960	7921	611
1995	Deferred Load	1404	4193	3929	7639	653
	Front Load	1784	6857	5190	7890	566
	S.C. No Load	1626	6276	4622	7407	472
1996	Deferred Load	2136	7454	7630	9887	977**
	Front Load	1986	8882	7593	10840	714**
	S.C. No Load	2156	8677	8092	10861	554
1997	Deferred Load	3253	11446	7445**	12475*	980**
	Front Load	2385	10704	8712	14870	865**
	S.C. No Load	2881	10840	10182	15260	646
1998	Deferred Load	4994**	15578	11886	16655**	1254**
	Front Load	4326**	14137	12932	19027	1030**
	S.C. No Load	2228	12896	14728	20938	719
1999	Deferred Load	9049	17073	23540	27722*	1167*
	Front Load	7752	19639	22294	31023	983
	S.C. No Load	10444	25362	25451	33539	861
2000	Deferred Load	17857	24088	40681	39010	3310
	Front Load	16609	24583	39227	43224	2348
	S.C. No Load	14080	35184	34216	46258	1024
2001	Deferred Load	17002	35646	40005	44499	3075
	Front Load	16718	35425	38102	48560	2446
	S.C. No Load	17125	39691	34458	47031	1228

Sample consists of all funds that are: 1) have at least three years old; 2) have a least 20 million dollars in net assets; and 3) are defined as Aggressive Growth, Equity-Income, Growth, Growth-Income or Small Company funds at the time they are sampled from the Morningstar data disk. S.C. No Load indicates Single-Class, No-Load Funds.

classes have created more confusion for investors, have not caused overall fees to be reduced, and have created conflicts of interests for the brokers who sell the funds. Our results, when combined with these other effects, should add to debate in the industry as to whether the policy of multiple share classes is in the best interest of investors.

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Notes

1. It is interesting to note that the methodology of the well-known Morningstar ratings system did not even reflect that multiple-share-class funds were the same funds until June 2002.
2. The Investment Company Act Release No. IC-20915 details the considerations leading to the adoption of rule 18f-3.
3. Renberg (2001).
4. Rule 12b-1 allowed funds to issue 12b-1 fees. The rule was implemented in 1980. The rule allowed funds to charge an additional fee for distribution and marketing of the fund above and beyond the loads that were imposed.
5. O'Neal (1999), p.76.
6. For a comprehensive analysis of the different fee structures see O'Neal (1999).
7. For this analysis we had access to the January 2002 and January 2003 Morningstar Data Disks (Morningstar, 2002) but were not able to use them because new regulations imposed on accessing data. As of October 2001, Morningstar began a policy on their data disks that makes exporting data from the disk much more difficult unless substantial fees are paid to Morningstar. For example, for the year previous to October 2001, Morningstar charged around $750 for four quarterly Morningstar Principia Pro Plus Data Disks. These disks allowed one to easily export as much data as desired from the disks. However, to get the same exporting access to the four quarterly disks from October 2001 to July 2002 required $7,500 in addition to the normal costs for purchasing the disks. If one does not pay the extra $7,500 fee, the disks restrict the user to just exporting only 100 funds at a time. With over 14,000 funds listed on the latest disks, this restriction makes exporting the data from the normal disks very time consuming and difficult.
8. Note that composition data typically dates (however, not in all cases) from the quarter preceding the date of the Morningstar disk. Hence, the January 1992 disk reports the composition data for a fund as of September 30, 1991.
9. The exclusion of small funds and young funds was done for two reasons. First, these funds are so young and/or small that their basic composition may still be yet to be determined. Indeed, in the case of very young funds, Morningstar does not have composition data. Second, this selection criterion is similar to that used by Chordia (1996), who excluded funds with less than two years of return history and 20 million in net assets.
10. Some other code names were Adv, Fid, Ins, Inst, Instl, Is, Prem, Sel, Svc, Tr. Moreover, some funds have the alphabetical letter attached to the fund name itself, e.g. North American Growth and IncomeA.

11. Note that it is never the case where a deferred-load fund (or a front-load fund for the front-load group) is represented twice in one (annual) sample. If a situation occurs where a fund has two share classes that each have deferred load (front load) of four percent or more, then the youngest share class (using the fund inception date) is removed.
12. It should be noted here that we experimented with other control variables for Eq. (1) (which is used in Tables 2–6). We used dummy variables for closed funds and high-initial-purchase funds, yet found that these variables had no effect on the overall results.
13. Note that we also conducted the analysis for the front-load sample where one pool used the samples from 1992–1994 and the other pool from 1995–2001. We did this because the percentage of front-load funds that are multiple-share class actually rises above 50 percent in 1995 sample; in the deferred-load sample it takes until 1996 for a majority of the funds to have multiple-share classes. The results of this analysis also indicated that the coefficient for *Front* was negative for the early pool and positive for the later pool and that neither of the coefficients was significant.
14. An obvious solution to the problem of serial correlation for a balanced sample is to use Park's method which utilizes Seemingly Unrelated Regression. However, we cannot use Park's method since it requires that the number of time series is greater than the number of cross sections. Moreover, we do not have a balanced sample. We could, of course, one with the funds that repeat in each year, however this would entail problems from the elimination of a large percentage of cases.
15. Note that the sample size of the random method and the non-random methods for the 1992–1995 deferred and no-load samples are different. The random method produces 299 observations and the non-random produces 266. This is because in the non-random method the new, unique observations represent the funds that have just obtained three years of return history or have just increased their net assets to 20 million or above. Funds which already had three years of return history and 20 million dollars in net assets and yet appear for the first time in an annual sample after 1992 are not included in the non-random sample. For example a fund that changed its style from balanced funds to domestic equity funds is not included in the non-random sample.
16. In computing the median market capitalization, Morningstar first ranks the common stocks (domestic and international) in a fund's portfolio from highest to lowest based on their market capitalizations. (The market capitalization of a stock is equal to the number of shares outstanding multiplied by the current price of the stock.) Then, they divide the list into five segments, the first quintile representing the top 20% of equity assets, the second quintile encompassing the next 20% of equity assets, and so on. Finally, Morningstar identifies the stocks that fall into the third (middle) quintile of the portfolio, and we calculate the average-weighted market capitalization of the stocks in this middle quintile. The result is the median market cap. For more information see the Morningstar Principia Pro Plus Manual (2002).
17. Note that the significance tests here always examine whether the mean market

capitalization of deferred- or front-load group of funds is significantly different from the single-class, no-load group.

18. It should be noted here we use different data to test this issue than Chorida (1996). Specifically, Chorida uses the percentage of stock held by funds in the smallest 10%, 25% and 50% of overall market capitalization.

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