

Original article

Supermarket distribution and brand recognition of open-end mutual funds

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Abstract

Although supermarkets for groceries have existed for nearly a century, financial supermarkets are a much more recent innovation. We find that investors rely on mutual fund supermarkets to buy highly differentiable funds from small, specialized fund families. Investors' use of supermarkets is consistent with efforts to reduce search costs while obtaining the benefits of product focus at the fund origination level. The results thus demonstrate the growing importance of distribution in the context of intangible goods. Consistent with arguments by Black, Ciccotello, and Skipper (2002), the findings suggest that brand in financial services is increasingly driven by closeness to the customer. © 2007 Academy of Financial Services. All rights reserved.

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1. Introduction

Ever since Piggly Wiggly opened its doors nearly a century ago, customers in the United States have had the opportunity to shop at supermarkets for groceries. Only much more recently, however, has the supermarket innovation moved beyond tangible products to intangible ones. In 1992, Charles Schwab started its no-transaction fee (NTF) supermarket, called "One Source," where customers (investors) can hold and trade open-end mutual funds

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from multiple fund originators (families) within a single unified account. Customers have responded positively to the extension of the supermarket to intangible products. Block (1997) reports that NTF mutual fund supermarkets grew rapidly after their birth, over 750% in terms of asset holdings between 1992 and 1997. By 2002, the two largest NTF supermarkets, Schwab One-Source and Fidelity Funds Network, held over \$150 billion in assets (Damato, 2003; Strategic Insight, 2002).

Several industry observers argue that NTF supermarkets are “the future” of the direct sold mutual fund business (Damato, 2003; Goldstein & Krutov, 2000). Some evidence appears to support their claim. Recently, the assets entering the mutual fund industry through NTF supermarkets have been about one-third of those entering via direct sale with a fund family (Reid & Rea, 2003). Despite NTF supermarkets’ growing prominence, academic research has yet to address the implications this innovation has for investors or for industry structure.

This paper’s goal is to examine supermarket distribution within the context of the literature in individual financial management. Black, Ciccotello and Skipper (2002) argue that the vertical integration of origination and distribution in financial services and personal financial planning is being driven by the desire to control client relationships. They also posit that the financial services provider closest to the customer will gain power as that customer’s financial situation grows more complex. Consider that over the past 10 years, the number of open-end mutual funds available to investors in the United States has increased to over 10,000. With such a large number of funds from which to choose, the U.S. mutual fund industry does present customers with significant search costs (Sirri & Tufano, 1998). Hence, the open-end mutual fund product provides an excellent test of whether investors are placing more value in distribution over time.

Relying on fund flow data, this paper provides empirical evidence showing that: (1) investors tend to rely more on supermarkets to buy highly differentiable products from smaller, more focused fund families; (2) the brand recognition of NTF supermarkets is gaining strength over time. As customers increasingly rely on the brand of the distributor, the brand name of the product originator (fund family) becomes less important to them. Consistent with arguments by Black, Ciccotello and Skipper (2002) regarding vertical integration trends in other financial planning products, mutual fund supermarket distributors (such as Schwab) have begun to put their own products (funds) onto the “shelves,” vertically integrating backward into product origination.

The paper moves on to describe NTF supermarkets in detail in Section 2. After developing several testable predictions in Section 3, we present cross-sectional analysis in Section 4, and time-series analysis in Section 5. Section 6 presents implications and includes a call for more research on distribution and branding of financial products and services.

2. What is an NTF supermarket?

The 10-k filed by Charles Schwab and Co. on March 30, 1994 contains the following description of an NTF supermarket:

“During July 1992, Schwab introduced nationally its no-transaction-fee mutual fund service, known as the Mutual Fund One-Source service, which by December 31, 1993 enabled

customers to trade over 200 mutual funds in 25 well-known fund families without incurring brokerage transaction fees.

The service is particularly attractive to investors who previously chose to execute mutual fund trades directly with multiple mutual fund companies to avoid brokerage transaction fees and achieve investment diversity among fund families. Mutual fund trades placed through the Mutual Fund OneSource service grew from an average of 1,000 per day in July 1992 . . . to an average of 9,800 per day in December 1993.

While Schwab does not receive transaction fees (commissions) on customer trades in the Mutual Fund OneSource participating mutual funds, it is compensated directly by the participating funds or their sponsors via fees received for providing record keeping and shareholder services. Such compensation is ongoing, based on daily balances of customer assets invested in the participating funds and held at Schwab.”

An NTF supermarket is thus both a financial institution and a marketplace, acting as an intermediary between investors and the fund family. As indicated above, an NTF supermarket does not get any compensation (e.g., through a bid-ask spread, load, or commission) directly from the investor for buying or selling the fund. Instead, the fund or the fund’s advisor pays the NTF supermarket for “listing” the fund in this unified marketplace, as well as for servicing customer accounts.¹ As in the case of Schwab One-Source, and more generally as Hechinger (1999) notes, asset-based fees are common. On an annual basis, these fees generally range from 25 to 40 basis points.²

The growth of supermarkets over the last decade has created what Pozen (2002) terms the “open architecture” in the mutual fund industry. Investors have more choices about where to purchase their mutual fund shares. From an investor (customer) perspective, NTF supermarkets provide a moderate service level at a moderate cost. Before the advent of supermarkets, investors had to choose between the high fees and high service level of a selling intermediary and the low fees and low service level of purchasing directly from the fund families.³

Among NTF supermarkets, there are institutional and retail varieties. The former caters to institutional clients (including financial advisors and planners, trust departments, etc.), whereas the latter serve retail investors directly.⁴

3. The decision to distribute through NTF supermarkets

Mutual funds are distributed to the end investor through one of two primary channels: an intermediary channel or a direct marketing channel.⁵ The traditional intermediary channel relies on broker/dealers, investment advisors, or financial planners to sell funds to the investor. The direct marketing channel relies on advertising and word-of-mouth to draw investors to the fund family directly. The NTF supermarket is an innovation in intermediation that is different from the either of the traditional channels. The premise in this paper is that investors desire the best product with the minimum search costs. These investor demands impact the optimal choice of distribution method, which now includes the NTF supermarket.

Product focus is one such characteristic. Berger, Cummins and Weiss (1997) find that more focused insurers (based on lines of business) tend to use independent agents whereas

those with more lines use direct marketing through captive agents. Direct marketing using captive agents places the agent in a poor position if the firm offers a narrow line of products. The agent has a narrow line to sell and cannot diversify herself. Therefore, independent agents should sell narrow lines, given their ability to diversify.

Mutual fund supermarkets are similar to independent agents in that they can distribute the products of multiple families. Similar to insurance, mutual fund supermarkets could allow fund families to take advantage of product focus. Siggelkow (2003) describes two effects of product focus for mutual fund families: an internal capability effect, leading to a positive relation between family focus and performance, and an external demand effect, leading to a negative relation between family focus and cash inflows. Given that families are compensated for assets under management, they should be concerned about the external demand effect. If an NTF supermarket can substitute its own breadth of product offering for that of the fund family, then that family can concentrate on creating higher quality products through focus. These higher-quality products will be desirable for investors.

- H1: More focused fund families are more likely to rely on NTF supermarkets.

Family size is another characteristic that impacts distribution method choice. Smaller fund families are less likely to be able to distribute their funds through the traditional intermediary channels. Developing a captured sales force requires a greater amount of capital than many small fund families can afford to spend on distribution. Relying on independent selling agents is becoming more difficult with the significant proliferation in the number of open-end mutual funds that has occurred over the last decade. There are over 10,000 funds tracked by Morningstar, about twice as many as there were in 1994. Sass and Gisser (1989) make similar arguments with regard to firm size and the use of independent agents in insurance distribution.

Funds can attract a broker's attention by setting higher sales fees. However, the National Association of Securities Dealers (NASD) caps the size of loads and marketing (12b-1) fees that registered broker/dealers are able to charge thus limiting funds' ability to compete for "shelf space" using sales fees. Alternatively, fund families often compete for shelf space with a broker by promising to route a certain amount of brokerage business through the brokerage house.⁶ Smaller fund families cannot promise sufficient levels of brokerage commissions required to capture the broker's attention.

Smaller fund families could sell their funds to investors directly, without an intermediary. However, the growth in the number of funds makes attracting attention through advertising difficult and capital intensive. Finding these small families would be costly for investors (Sirri & Tufano, 1998), especially given the growth of the mutual fund industry. However, NTF supermarkets provide a method through which fund families can rely on the supermarket's brand name and distribution network to market the fund. Additionally, as described earlier, the family pays for the distribution only to the extent that the NTF supermarket is successful in bringing in cash to the fund.

- H2: Smaller fund families are more likely to rely on an NTF supermarket.

Finally, the complexity of the products originated by the fund family may affect the choice of distribution method. Regan (1997) and Regan and Tennyson (1996) find that independent

agency is preferred to direct marketing in insurance when products are complex. Since equity funds represent residual claims on assets, they are arguably more complex (and differentiable) as a class than bond funds, which rely on senior claims on assets. In particular, equity securities in sectors such as small cap, aggressive growth, and sectors are less likely to be efficiently priced and offer value creation from security selection. Funds in these high-risk equity categories are arguably most differentiable, and least like funds in lower risk sectors that compete mainly on cost.

Rather than try to sell high-risk equity funds directly to investors, fund families might rely on an NTF supermarket. In this context, the NTF supermarket bears some resemblance to an independent agent. By listing high-risk funds with complex investment strategies, the NTF supermarket can reduce investor search costs by the greatest amount. As an intermediary, the NTF supermarket mitigates some of the asymmetric information between fund families and investors concerning fund quality (Leland & Pyle, 1977). The inclusion of a fund in an NTF supermarket might be a signal to the investor of the intermediary's belief that the (higher-risk) fund is high quality and will be successful. Because the NTF supermarket takes no compensation from the investor, it should select funds in which it has confidence.

- H3: Higher risk funds will benefit more from inclusion in an NTF supermarket than lower risk funds.

4. Descriptive and cross-sectional analyses

The sample of NTF supermarket relationships comes from the monthly brokerage availability field on *Morningstar Principia Plus*.⁷ Complete monthly data becomes available in 1994. Eliminated from the analysis are any funds with missing data in following fields: ticker symbol, family name, total assets, age, expense ratio, 12b-1 expenses, star rating (one- and three-year), and ranking within *Morningstar* category.

We begin with some descriptive analysis. Fig. 1 shows the growth in the number and percentage of funds in NTF supermarkets from October 1994 through October 2000. Over that time, the proportion of funds in an NTF supermarket grows from about one in nine to about one in three, even though the number of funds is increasing rapidly. At the start of sampling in 1994, there were only two NTF supermarkets in existence (Schwab and Fidelity), compared with 17 at the end of 2000. The percentage of funds in only *one* supermarket in late 1994 reveals about a one-third overlap between the funds in Schwab and Fidelity NTF supermarkets. By the end of 2000, about two-thirds of all funds distributed through an NTF supermarket funds are in more than one NTF supermarket.

Fig. 2 illustrates the percentage of funds that are in NTF supermarkets by investment objective. In the year 2000, funds distributed by NTF supermarkets tend to be clustered in equity objectives such as Aggressive Growth, Specialty, and Small Company. This result is consistent with the argument that NTF supermarkets help to reduce information asymmetry between customers and fund families when products are higher risk (Leland & Pyle, 1977). The funds themselves might also tend to have a competitive advantage in research and security selection they can lever through the NTF supermarket when their products (such as

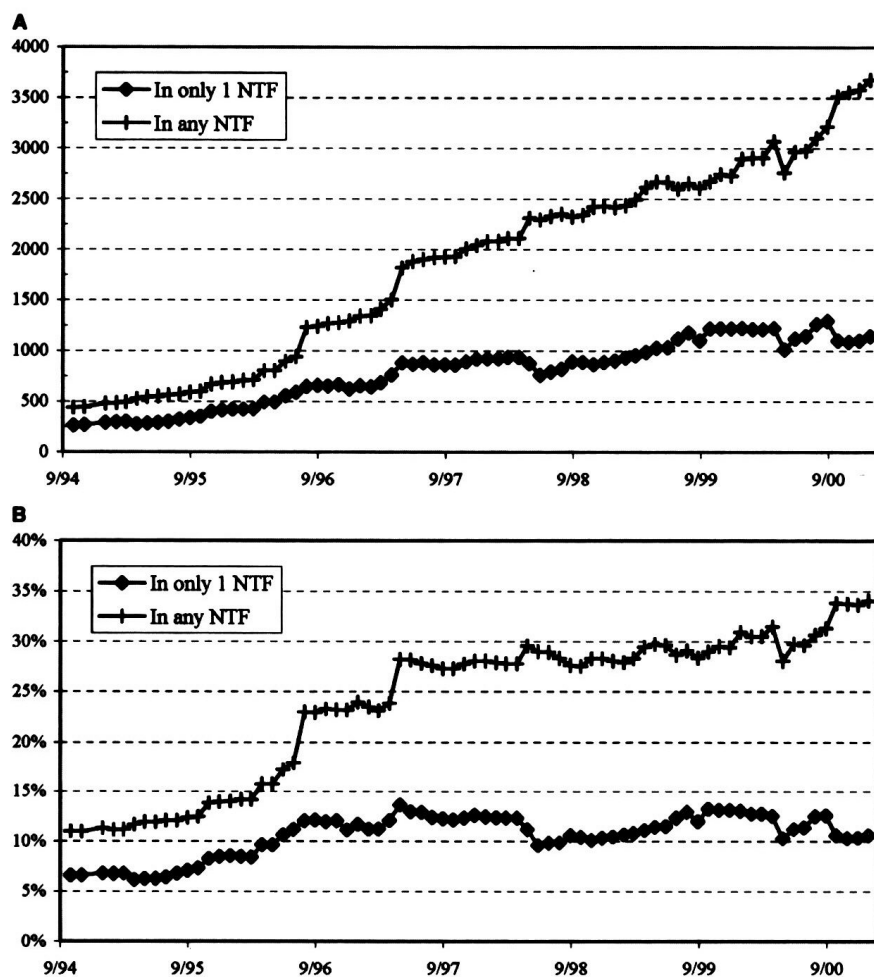


Fig. 1. Funds in no-transaction-fee supermarkets. Panel A of this exhibit shows the number of open-end mutual funds in any or in only 1 no-transfer fee (NTF) supermarket. Panel B shows the percentage of same. The data are drawn from the *Morningstar Principia* CDs databases on a monthly basis from October 1994 through year end 2000.

higher-risk equity funds) are more differentiable. Having more distinctive funds to sell also benefits the NTF supermarket.

Closer examination of Fig. 2 reveals, however, some changes in the fund composition of NTF supermarkets over time. Although equity funds clearly dominate in 2000, in 1994 bond funds are actually the majority. If an NTF supermarket is acting as a family of funds, it needs to have fixed income fund selection to provide a complete portfolio (i.e., a sufficiently complete product line-up) for investors (Mamaysky & Spiegel, 2002). If short of a complete product suite, supermarkets themselves could leave customers with shopping costs. However, the movement toward equity funds over time might signal the growing importance of NTF supermarket brands in distributing higher-risk equity funds. It could also indicate a shift in the supply of funds available to be listed in an NTF supermarket. The development of NTF supermarkets may have spurred a growth in the emergence of small fund families, which would lever the benefits of focus in highly differentiable equity funds.

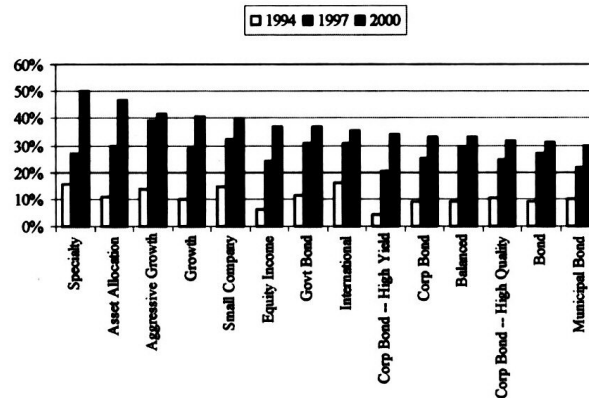


Fig. 2. Percentage of funds in no-transaction fee supermarkets by investment objective. Based on data from *Morningstar Principia Plus* as of October 1994, 1997, and 2000, the following percentages of funds in the particular investment objectives are in at least one no-transaction fee (NTF) supermarket.

4.1. Funds and families in NTF supermarkets: cross sectional analysis

We next provide snapshots at three separate points in time. These compare fund families that rely on retail NTF supermarkets with fund families not in retail NTF supermarkets. The sample contains 1,896 funds in October 1994, 5,011 funds in October 1997, and 8,102 funds in October 2000. Table 1 provides some initial evidence on how NTF supermarket distri-

Table 1
Descriptive characteristics of funds by no-transaction-fee supermarket distribution channel

Variable	1994		1997		2000	
	Yes	No	Yes	No	Yes	No
Number of Funds in Family	122 (150)	104* (111)	120 (122)	125 (112)	125 (116)	138** (100)
Family Focus (Herfindahl)	0.35 (0.19)	0.31** (0.21)	0.33 (0.21)	0.28** (0.18)	0.32 (0.19)	0.28** (0.17)
12b-1 Fee (%) of Funds	0.10 (0.20)	0.24** (0.28)	0.21 (0.26)	0.37** (0.40)	0.16 (0.18)	0.48** (0.44)
Expense Ratio (%) of Funds	1.08 (0.50)	1.09 (0.54)	1.21 (0.68)	1.25 (0.61)	1.18 (0.51)	1.42** (0.82)
<i>Morningstar</i> Star Rating (1–5) of Funds	3.39 (1.11)	3.14** (1.05)	3.13 (1.09)	2.96** (1.07)	3.16 (1.10)	2.95** (1.11)
Rank in <i>Morningstar</i> Cat. (1–100) of Funds	48.6 (28.2)	48.1 (28.2)	47.8 (29.5)	50.2** (28.1)	47.8 (29.0)	52.2** (28.4)
<i>N</i>	260	1,636	1,558	3,453	2,931	5,171

Note: This table shows the average values (standard deviations in parentheses) of funds (families relying on) in NTF supermarkets (Yes) compared to funds that are not in (families that do not rely on) NTF supermarkets (No). *P*-values are based on a two-tailed *t*-test for difference in mean. The results are based on data from *Morningstar Principia Plus*. For the time period shown, significance levels * and ** indicate the difference between funds in an NTF supermarket and those not in an NTF supermarket at the 5% level and 1% level, respectively.

bution interacts with various fund and fund family characteristics. Family focus is significantly higher for NTF-families across the three periods.⁸ This is consistent with H1. Choosing an NTF supermarket to distribute its funds allows a specialized family the ability to lever any competitive advantage in research and security selection (Massa, 2003; Siggelkow, 2003). Because focused families tend to be oriented toward equity funds, as well as small in size, the families relying on NTF supermarket distribution thus bear significant resemblance to insurance companies that use independent agents (Sass & Gisser, 1989; Berger et al., 1997; Kim, Mayers & Smith, 1996; Regan & Tennyson, 1996; and Regan, 1997).

One interesting reversal during the 1994 through 2000 timeframe relates to fund family size. In October 2000, the average number of funds in families using NTF supermarkets is significantly lower than that for non-NTF supermarket families.⁹ This is consistent with H2. This result has reversed from October 1994, when families with larger numbers of funds tended to be in NTF supermarkets. Perhaps NTF supermarkets, when new, relied on the brand name of well-known families (and funds) more than families relied on the brand name of the NTF supermarket. If investor recognition of NTF supermarket brand has grown over time, however, then lesser-known families should begin to rely more on NTF supermarkets to attract investors. Rapid growth in the number of families and funds, combined with their large numbers, makes investors less likely to recognize them in the large crowd. During the 1994 through 2000 timeframe, the number of families in the *Morningstar* database has grown from 529 to 638 whereas the number of funds has grown from 5,157 to 11,795.

Table 1 also reveals that NTF funds have lower 12b-1 (marketing) fees than non-NTF funds over the 1994 through 2000 period. These results are consistent with the argument that an NTF supermarket is an efficient distributor, saving on marketing and distribution costs that would otherwise have to be incurred by the fund family. Because the majority of funds are not distributed by NTF supermarkets, presumably the cost tradeoff is different for them. The results are also consistent with the argument that fund families that list their funds with NTF supermarkets do so because they are not able to (or it is too costly to) try to distribute their funds through brokers. There is evidence that NTF supermarket funds have lower expense ratios than those funds distributed otherwise.

Table 1 shows that the performance of funds in NTF supermarkets, measured by either *Morningstar* ratings (three-year star ranking) or relative investment category ranking (last year's performance), tends to be better than that for those funds not in NTF supermarkets. This is evidence consistent with the argument that NTF supermarkets assist investors with a screening or selection function, thereby reducing information asymmetry regarding the quality of a fund. Subsequent analysis will examine fund performance patterns surrounding NTF supermarket entry.

4.2. Probit analysis of supermarket relationships

Table 2 summarizes the hypothesized signs of the independent variables relative to the propensity for inclusion in an NTF supermarket, and Table 3 reports the results of a probit analysis. The dependent variable takes a value of one if the fund is distributed by an NTF supermarket; zero otherwise. Consistent with H1 and H2, respectively, Table 3 shows that

Table 2
Independent variable definitions and predicted signs

Variable	Definition	Predicted Sign
Fund Variables:		
Equity Fund (EQUITY)	Coded 1 if fund is in the <i>Morningstar</i> Domestic Equity, International, or Specialty Investment Objectives. Coded 0 if fund is in the Corporate or Municipal Bond Objectives.	+
Performance (PERF)	Star Ranking (for three-year period) from <i>Morningstar</i> .	+
Marketing Fee (12b-1)	Coded 1 if the fund has a 12b-1 marketing fee. Coded 0, otherwise.	–
Family Variables:		
Size (SIZE)	Percentage of assets under management relative to the largest family in the sample.	–
Focus (FOCUS)	Herfindahl index for the family based on assets by investment objective.	+

Note: This table contains the names, definitions, and measures of the fund and family variables used in this study of NTF supermarkets. It also contains the predicted signs of each independent variable in relation to its inclusion in an NTF supermarket relationship.

families that are focused and smaller in size are more likely to rely on NTF supermarkets for distribution. The multivariate results thus confirm the cross-sectional findings from Table 1, especially in the latter part of the sample period.

Table 3 also shows that equity funds, funds that have performed well, and funds with no marketing (12b-1) fees are more likely to be in an NTF supermarket. The equity fund result is in line with H3, which suggests that higher risk funds will benefit more from inclusion in a supermarket because of reduction in investor search costs.

Table 3
Probit for NTF supermarket relationship

Variable	Coefficient Estimate	Standard Error	P-value	Variable Mean
Intercept	–1.0945	0.0591	0.0001	
EQUITY	0.1978	0.0320	0.0001	0.6562
PERF	0.0843	0.0132	0.0001	3.0031
12b-1	–0.2933	0.0318	0.0001	0.6093
SIZE	–0.4181	0.0873	0.0001	0.0737
FOCUS	1.1699	0.0723	0.0001	0.1509

Note: Log likelihood function: –6549.75. χ^2 : 1047.01. This table reports the coefficient estimates from a probit analysis for an NTF supermarket relationship for mutual funds. Funds are classified as being distributed by an NTF supermarket (NTF = 1), or not (NTF = 0). We model the determinant of NTF supermarket distribution as a function of whether the fund invests in equities (EQUITY) performance (PERF), and marketing fee (12b-1). We also allow for fund family determinants that include the size of the fund family (SIZE) and its focus (FOCUS). The results are based on data from *Morningstar Principia Plus* as of October 2000.

5. Inclusion in an NTF supermarket: a time-series analysis

We next examine how inclusion in an NTF supermarket impacts the cash flow to funds. The time-series analysis begins by determining when a fund *first* appears on an NTF brokerage availability field, and then examining the flow surrounding that event. The ‘pre-event period’ begins nine months before the NTF inclusion month and ends three months before the inclusion month. The ‘post-event period’ starts in the third month after the inclusion month and ends nine months after the inclusion month.¹⁰ Because the analysis tries to capture the marginal impact of the fund being available in *any* retail NTF supermarket, it does not consider additions to subsequent NTF supermarkets.

Fund flows that reflect the change in a fund’s total net assets A_t from time $t-1$ to time t are calculated as

$$f_t = A_t - A_{t-1}(1 + r_t), \quad (1)$$

where the fund experiences return r_t from $t-1$ to t . While Sirri and Tufano (1998) suggest that dollar flows are most meaningful as a benchmark of how much a fund’s assets grow, we also consider percentage flows. Percentage flows assure that the largest funds’ flows do not overwhelm the results. Percentage flows in both the pre-event (i.e., pre-NTF-supermarket inclusion) and post-event samples are calculated by dividing dollar flows by the total net assets of the fund on the inclusion date. This approach holds constant the net assets used for scaling in both periods, to make proper comparisons without the flows in pre-event period affecting the calculation of percentage flows in the post-event period.

The pre-event period offers a benchmark with which to measure the impacts of NTF supermarket inclusion on the fund. Because the analysis considers the same fund over two periods that are separated by only six months (from end of the pre-event period to the beginning of the post-event period), the fund itself is used as the initial control. Pre-event data also complements our cross-sectional analysis by providing fund characteristics during the period that most likely is contemporaneous with the decision to include the fund in the NTF supermarket.¹¹

As a robustness check on this methodology, the analysis subsequently compares the results from the sample of funds added to NTF supermarkets with those of a control group of funds that are not added to an NTF supermarket in the event window. The NTF supermarket fund is first matched with a fund in the same investment objective, and next matched by preperiod performance ranking. The final match criterion is the preperiod fund flow. Differences in performance and expense measures between the post- and pre- periods between the sample and control funds are measured. Thinking of the process in an experimental context, the analysis compares two groups of funds’ change in performance, where one group receives the treatment, in this case the first addition to an NTF supermarket.

5.1. Changes in fund flows around inclusion into a retail NTF supermarket

What are the characteristics of funds (families) that benefit most from relying on NTF supermarket intermediaries? Table 4 (Panel A) shows that changes in flow after inclusion in an NTF supermarket are significantly positive on a percentage basis for the sample at large.

Table 4
Fund flows surrounding inclusion in a retail NTF supermarket

	Dollar Flows			Percentage Flows		
	Pre	Post	Post – Pre	Pre	Post	Post – Pre
Panel A: All Fnds (N = 758)						
Mean	24.73	18.22	–6.51	1.93%	9.43%	7.50%**
Std. Dev.	240.24	273.79	345.72	21.59%	70.97%	70.94%
Median	0.77	–0.55	–0.05	1.52%	–1.21%	–0.18%
% Positive			49.47%			49.47%
Panel B: Sub-Samples Based on Fund Risk Objective						
Equity (N = 462)						
Mean	39.12	27.71	–11.41	1.82%	10.62%	8.80%*
Std. Dev.	305.95	346.43	440.47	24.42%	75.77%	78.46%
Median	0.88	–0.27	0.17	1.52%	–0.81%	0.47%
% Positive			50.22%			50.22%
Bond (N = 296)						
Mean	2.28	3.41	1.13	2.10%	7.57%	5.47%
Std. Dev.	31.43	66.75	58.50	16.23%	62.83%	57.34%
Median	0.73	–0.70	–0.23	1.56%	–1.93%	–0.52%
% Positive			48.31%			48.31%
Panel C: Equity Sub-Samples Based on Asset Size						
Small Equity (N = 231)						
Mean	0.00	4.26	4.26*	–0.11%	14.03%	14.14%*
Std. Dev.	11.81	23.09	25.63	28.32%	89.58%	93.59%
Median	0.48	–0.35	–0.05	1.22%	–1.21%	–0.21%
% Positive			48.48%			48.48%
Large Equity (N = 231)						
Mean	78.24	51.17	–27.08	3.75%	7.22%	3.47%
Std. Dev.	429.43	488.78	622.67	19.65%	58.81%	59.34%
Median	5.94	0.75	1.80	2.03%	0.49%	1.16%
% Positive			51.95%			51.95%
Panel D: Sub-Samples Based on Family Size						
	Small families (N = 397)			Large Families (N = 361)		
Mean	0.04%	10.01%	9.97%**	4.00%	8.79%	4.79%
Std. Dev.	20.64%	70.19%	72.10%	22.43%	71.92%	69.64%
Median	0.09%	–1.32%	0.58%	3.10%	–1.06%	–1.42%
% Positive			51.89%			46.81%
Mean Fund TNA on inclusion date (\$M)	\$108.12			\$692.90		

Note: We begin with a sample of 3780 funds that are added to a retail NTF supermarket from 1994 to 2000. The event month is the first month in which this fund appears in *any retail NTF supermarket*. We compare fund flows pre-event (months –9 through –3) with those post-event (months +3 through +9). For these comparisons, we require valid data in both periods. Panel A contains the results for the entire sample. Panel B examines the sub-samples based on risk objective (equity compared to bond). Panel C examines the equity fund sub-samples based on asset size at month zero (above and below median for that sub-sample are “large” and “small,” respectively). Panel D examines sub-samples based on fund family size. Family size is measured by the percentile rank of the total assets within a fund’s family relative to all other fund families. Small families are those below the median rank at the time one of their funds is added to an NTF supermarket. Percent positive is the percentage of post- minus pre-comparisons that are greater than zero. T-tests (signed rank tests) are used to assess difference in means (medians), with * and ** denoting significance at the 5% level and 1% level, respectively.

Panel B of Table 4 illustrates that the significant result is driven by equity (as opposed to bond) funds. Panel C shows that small equity funds are the primary driver behind the equity fund result. In terms of percentages, small equity funds experience an average gain in flow of over 14% between the pre- and post-inclusion periods. They also experience an average increase in flows of over four million dollars.¹²

Panel D of Table 4 illustrates that smaller fund families experience a much stronger increase in flow when their funds enter an NTF supermarket. Each of the time-series results supports the stated hypotheses. Higher-risk (equity) funds from small, focused families tend to have the greatest increases in flow following entry into an NTF supermarket. The Table 4 findings also reflect a reduction in information asymmetry and investor search or shopping costs (Sirri & Tufano, 1998; Klemperer, 1992). Increases in fund flows could also mean that an NTF supermarket represents the addition of a low-cost market channel for the fund (Chowdhry & Nanda, 1991).

Our findings of larger fund flows in the post-inclusion period could be because of the flow-to-performance relationship discussed in Sirri and Tufano (1998). That is, funds might improve their performance after being added to the NTF supermarket and thus attract additional flow. To examine performance patterns more closely, we examine performance surrounding first inclusion into an NTF supermarket. Both NTF funds' raw performance change and the performance change relative to that of a control group are insignificant for the sample, so it is unlikely that flow to performance is driving the increase in flows post-entry for the NTF sample as whole.

5.2. Schwab and Fidelity retail NTF supermarkets

The analysis now turns to examining two most prominent retail NTF supermarkets, those from Schwab and Fidelity. By industry estimates, Schwab and Fidelity together control over half of the retail assets held in NTF supermarkets. Table 5 (Panel A) shows the flows surrounding entry into the Schwab or Fidelity retail NTF supermarket. The flows are greater than those for the entire retail supermarket sample (Table 4). Therefore, the Table 5 results suggest that Schwab and Fidelity NTF supermarkets provide some additional brand recognition relative to their peers.

Panel B shows that Schwab and Fidelity retail NTF supermarkets benefit small families' funds more than funds from large families, consistent with the results in Table 4. Flow increases after entry into these supermarkets are also growing over time, as Panel C shows. Before November 1997, the sample midpoint, the mean increase in flow was just under 6%. Since then, the average has been over 13%. From 1994 to 2000, the relative size of funds (and families) entering these NTF supermarkets has also decreased. Panel C of Table 5 shows that the mean asset size of funds in the early period is about \$629 million, compared with \$281 million in the later period. In the early days of Schwab and Fidelity's retail NTF supermarkets, the intermediary relied more on the larger and better-known funds they added to attract investor attention. More recently, however, retail investors have relied upon the Schwab and Fidelity NTF supermarkets to find help with selection in the ever more-crowded open-end fund universe.¹³

Table 6 provides some additional evidence on selection. It shows that funds selected by

Table 5
Fund flows surrounding inclusion in Schwab or Fidelity retail NTF supermarket

Panel A: All Funds (N = 526)						
	Pre	Post	Post – Pre			
Mean	2.89%	11.60%	8.70%**			
Std. Dev.	22.93%	70.67%	69.42%			
Median	1.77%	–0.07%	0.35%*			
% Positive			50.95%			
Mean TNA on inclusion date (\$M)			\$489.71			
Panel B: Sub-Samples Based on Family Size						
	Small families (N = 265)			Large Families (N = 261)		
	Pre	Post	Post – Pre	Pre	Post	Post – Pre
Mean	1.03%	10.34%	9.31%*	4.78%	12.86%	8.08%
Std. Dev.	23.09%	58.97%	59.67%	22.65%	80.93%	78.19%
Median	0.23%	–0.67%	1.02%*	3.73%	0.33%	–0.75%
% Positive			52.45%			49.43%
Mean TNA on inclusion date (\$M)	\$122.76			\$862.28		
Panel C: Sub-Samples Based on Date Added						
	Before 11/1997 (N = 315)			After 10/1997 (N = 211)		
	Pre	Post	Post – Pre	Pre	Post	Post – Pre
Mean	1.08%	6.79%	5.72%	5.60%	18.76%	13.16%*
Std. Dev.	20.83%	50.97%	52.48%	25.56%	92.27%	88.85%
Median	1.69%	–0.64%	–0.45%	2.66%	1.15%	3.39%*
% Positive			47.62%			55.92%
Mean TNA on inclusion date (\$M)	\$629.48			\$281.03		

Note: We begin with a sample of 3780 funds that are added to an NTF supermarket from 1994 to 2000. The event month is the first month in which a fund appears in *any Schwab or Fidelity retail NTF supermarket*. We compare fund flows pre-event (months –9 through –3) with those post-event (months +3 through +9). For these comparisons, we require valid data in both periods. All flows are scaled by the fund's total net assets as of the month of inclusion in the NTF supermarket. Panel A contains the results for all funds added to either Schwab or Fidelity's retail NTF Supermarket. Panel B partitions the sample based on fund family size. Family size is measured by the percentile rank of the total assets within a fund's family relative to all other fund families. Small families are those below the median rank at the time one of their funds is added to an NTF supermarket. Panel C examines the flows based on date of entry into the supermarket. November 1997 is the sample midpoint. Percent positive is the percentage of post- minus pre-comparisons that are greater than zero. T-tests (signed rank tests) are used to assess difference in means (medians), with * and ** denoting significance at the 5% level and 1% level, respectively.

Schwab or Fidelity retail NTF supermarkets tend to outperform matched funds over the nine-month window after entry. Recall that this difference was not significant for the sample at large. The increasing flow over time to Schwab and Fidelity retail NTF funds seen in Table 5 may thus be related to their ability to actually select funds that will be superior performers. This would enhance their reputation and brand. Examining the subsamples shows that this matched difference is mainly because of small funds. Because small funds would arguably be the least known to retail investors, this result lends some support to the argument that investors' reliance on Schwab and Fidelity NTF supermarkets to select lesser-known funds is justified.

Schwab has taken advantage of its increased brand recognition by adding its own funds

Table 6
Fund performance after inclusion in Schwab or Fidelity's retail NTF supermarket

	Rank			
	T0	Post	Post – T0	Matched Post – T0
Panel A: All Funds (N = 471)				
Mean	46.34	47.71	1.37	–3.44*
Std. Dev.	29.21	29.45	31.90	37.43
Median	47.00	45.00	1.00	–2.00*
% Positive			50.32%	46.28%
Panel B: Sub-Samples Based on Asset Size				
Small Funds (N = 223)				
Mean	51.04	49.87	–1.17	–4.76*
Std. Dev.	29.16	31.16	32.94	40.51
Median	55.00	46.00	–2.00	–3.00*
% Positive			43.95	43.95
Large Funds (N = 248)				
Mean	42.12	45.77	3.66*	–2.24
Std. Dev.	28.66	27.75	30.83	34.46
Median	38.50	44.00	3.00*	0.00
% Positive			56.05	48.39

Note: We begin with a sample of 3780 funds that are added to an NTF supermarket from 1994 to 2000. The event month (T0) is the first month in which a fund appears in *any Schwab or Fidelity retail NTF supermarket*. We compare fund performance rank taken from Morningstar at entry (T0) to its rank nine months later. For these comparisons, we require valid data in both periods. Matched results adjust each period's performance change by that of a fund in the same objective, matched on Morningstar performance rank and pre-period flow. Morningstar rank increases suggest poorer relative performance, so a negative change in rank suggests relative performance improvement. Panel A contains the results for the entire sample. Panel B examines the sub-samples based on asset size (above and below median for that sub-sample are "large" and "small," respectively). Percent positive is the percentage of post- minus pre-comparisons that are greater than zero (poorer performance). T-tests (signed rank tests) are used to assess difference in means (medians), with * and ** denoting significance at the 5% level and 1% level, respectively.

to its supermarket. By integrating backward from distribution into origination, Schwab is following the strategy put in place by supermarkets that distribute tangibles, such as groceries. "Store-brand" intangibles could have the advantage of lower costs if there are synergies in origination and distribution, similar to those for tangible products. Fidelity, which has long maintained a large and successful fund origination business, faces a somewhat different issue being both an originator and distributor. Fidelity's supermarket funds could cannibalize its own fund offerings. Both Schwab and Fidelity's actions reflect the opportunities and challenges of vertical integration in the mutual fund industry.

6. Implications and summary

Over the period from 1992 through 2002, NTF supermarket distribution has gained significant market share in the mutual fund industry. This share has gone from zero to about one-third of the money entering the industry through the direct purchase channel. Investor search costs are a likely reason (Sirri & Tufano, 1998).

Investors' behavior suggests that mutual fund families' product origination and distribution strategies are complementary (Milgrom & Roberts, 1995). Larger fund families with broader product offerings rely less on NTF supermarkets than small, focused families do. The former can more easily build direct sale or agency distribution networks, thus vertically integrating themselves (Grossman & Hart, 1986). They also offer the wide array of funds necessary to reduce investors search costs.

On the industry level, our results reflect an evolution of the mutual fund industry as it balances the investment management and investor servicing functions. Smaller and more focused families are less likely to choose to tackle the full range of tasks. If investors identify more strongly with an NTF supermarket brand, as opposed to the brand of an individual fund (family), then families will arguably continue to concentrate more on the "upstream" activities, such as research and security selection, and leave "downstream" activities, such as marketing and distribution, to the NTF supermarket. Supermarkets, for their part, are beginning to lever their brand recognition by integrating backward into fund origination.

The ongoing challenge for academic research in individual financial management is to examine the implications of brand and trust, and how these relate to firm and industry industrial organization and design.

Notes

1. Besides NTF supermarkets, there are transaction fee supermarkets where the investor pays the supermarket directly for its services. The fund complex and the transaction fee supermarket must have a sales agreement, but generally no revenue sharing between the fund family and the transaction fee supermarket occurs. Nearly all funds are offered through transaction fee supermarkets. Transaction fee and NTF supermarket relationships are quite different. In an NTF supermarket, the fund family compensates the supermarket in terms of a percentage of the assets held in the supermarket and/or annual fees. These are expenditures the fund family could otherwise use to market and distribute its products through other channels. As the goal of the study is to examine strategy and structure of fund families, we focus on NTF supermarket distribution.
2. LaPlante (2001), Fortin and Michelson (2001), and Walbert (1998) observe that NTF supermarkets often charge a start-up or annual fee in addition to asset-based charges. Disclosure of supermarket contracts is not currently required.
3. This is a general statement about supermarket segmentation on costs and services. Levels of costs and services certainly vary within each distribution channel, as well as across channels. Selling agents are not easily able to discriminate between high cost and low cost investors.
4. The focus of the paper will be on retail, as opposed to institutional, NTF supermarkets. The goal is to understand the strategic implications of marketing to individual (retail) investors, who may face significant search costs.
5. See Pozen (2002) Chapter 7 for a thorough discussion of the marketing of mutual funds.
6. The significance with which fund families rely on brokerage business to "buy" shelf

space is highlighted in a recent SEC rule. The rule prohibits funds from paying for distribution using brokerage commissions. “Our staff found that the use of brokerage commissions to facilitate the sale of fund shares is widespread among funds that rely on broker-dealers to sell their shares” (Release No. IC-26591).

7. To test for the completeness of the funds designated as being part of a particular NTF, we hand gathered data on Schwab Retail One Source from the Schwab Website (www.schwab.com) during October 2000 as a check on the accuracy of the brokerage availability field in *Morningstar*. The match is very close (details available upon request). Because *Morningstar* relies on reporting brokers to identify whether a particular supermarket is an NTF supermarket, it is possible that we are missing NTF supermarkets and the funds listed with those supermarkets. However, given that Schwab and Fidelity comprise a considerable portion of the NTF supermarket market share and that funds unique to one NTF supermarket are not common, the results are likely not significantly affected.
8. Family focus is the sum of the squared proportions of family assets in each investment objective. If a family had all of its assets in one objective, for example, that family would have a Herfindahl index of 1.0.
9. The proportion of funds in NTF supermarkets from fund families with five funds or less is about 50% in October 2000, compared with 33% for the sample at large.
10. We did experiment with other pre- and post-event windows, such as -12 to -3 and 3 to 12 , and found the results to be robust. To obtain as complete a sample as possible, we only require complete data for the specific item being examined in each separate analysis. For example, a fund is not dropped from the expense ratio analysis if it has complete expense ratio data during both the pre-event and post-event periods, but lacks star rating data. For this reason, our cross-sectional and time-series samples are drawn from the same universe, but the samples exclude different funds because of missing data.
11. Suppose that entry into an NTF supermarket is not an exogenous event. Perhaps funds that have recently performed well tend to be added to NTF supermarkets, for example. These funds would tend to attract flows in the preperiod, which makes finding an increase in flows in the post period more difficult.
12. Matched fund flow results are very similar, and hence not shown. The matched fund results suggest that the abnormal flow is robust to controls for factors affecting the fund outside of NTF supermarket entry.
13. McDonald (2003) describes how Schwab plans to increase its NTF supermarket fee from 35 to 40 basis points based on its leverage in “helping investors winnow the field.”

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