Micro-cap funds have grown in popularity because they zero in on the most inefficient part of the stock market, but they aren't for everybody—particularly the faint of heart.

The Smallest of the Small: Funds That Focus on Micro-Cap Companies

By Albert J. Fredman

For years, investors have looked to small, well-run, innovative companies for greater long-term growth than big blue chips could offer. Over the 71-year period ended December 1996, small stocks returned 12.6% yearly compared with 10.7% for the S&P 500, according to Ibbotson Associates.

In 1981, Rolf Banz published a seminal academic study demonstrating that small companies produce higher risk-adjusted returns than their larger brethren. Although hotly debated, this so-called "small-firm effect" is a major anomaly to the efficient market hypothesis. But in addition to any small-firm effect, as an asset class nascent companies play a crucial role in diversifying a portfolio. That's because their returns can significantly deviate from those of big-cap holdings over periods of varying length, as we'll see.

Investors have flocked to small-cap funds since the mid-1980s. On June 5, Lipper Analytical Services traced 477 of these funds with assets of $87.3 billion. Now nearly all stocks in the Russell 2000—a popular benchmark for the group—are covered by Wall Street analysts. Many small companies routinely trade 100,000 or more shares a day. Higher volume leads to more efficient pricing. Because the inefficiencies in the small-stock market have largely been exploited, it's likely that these firms may not continue to outperform large caps to the same degree they have in the past. In addition to its increased size, the small-stock market has become more liquid so it's no longer the risky frontier it once was.

The World of Micro Caps

In the quest for exposure to truly small companies, a new breed of small-stock fund has emerged—a group that focuses on micro-cap stocks—the smallest and least-efficiently priced of America's small companies. Some view micro caps as a separate asset class, but I feel they are not. Rather, micro caps are for people who desire true small-firm exposure. Increased attention has been focused on the ultra-small category during the last few years, and a number of new mutual funds have debuted. Because of the growing popularity of these up-and-coming firms, Lipper introduced a micro-cap category earlier this year. It included 37 funds with $3.1 billion of assets on June 5.

Table 1 provides a profile of the micro-cap universe. More than 4,000 ultra-small companies exist in a broad range of industries providing plenty of choices. About two-thirds of publicly traded U.S. companies are micro caps. The majority trade in the Nasdaq market, but they also are found on the NYSE and Amex. The category includes firms with market capitalizations (the total value of outstanding shares) ranging from $10 million to about $300 million. However, the definition varies among investment managers and with changes in stock price levels. Conversely, the market capitalizations of a few firms in the traditional small-company universe exceed $1 billion.

In terms of performance, micro caps tend to move in sync with the small-stock universe, which can be in or out of favor for extended periods. Micro caps also tend to exhibit their strongest performance in January. Since 1926, micro caps have averaged an 8.7% return in that month compared to 1.4% for all months, according to Daniel P. Coker of the Micro-Cap Research Group at NatWest Securities. Another anomaly, the so-called "January effect," has played a significant role in the superior returns of small stocks over lengthy periods.

The smaller the company, the less likely it is to be covered by researchers. While more than 50% of micro caps are followed by Wall Street analysts, only 1.4 analysts cover each stock on average, according to research done at NatWest Securities. Conversely, on average, about 18 analysts track firms in the S&P 500.

Yet research has increasingly focused on micro caps, particularly because companies now must file SEC docu-

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Table 1.
The Micro-Cap Universe in Perspective*

Asset Class	Percent of Total Market Capitalization	Capitalization Range	Total Capitalization (billions)	Number of Companies	Percent of Companies
Large Cap	Top 60%	Over $6.3 billion	$4,715	223	3%
Mid Cap	20%–40%	$1.8 billion to $6.3 billion	1,572	468	7%
Small Cap	5%–20%	$305 million to $1.8 billion	1,178	1,592	24%
Micro Cap	Bottom 5%	$10 million to $305 million	393	4,388	66%
Totals	100%		$7,858	6,671	100%

*As of 12/31/96
Source: Wilshire Associates Incorporated, Santa Monica, California.

ments electronically on EDGAR. With electronic filing, access to timely information on tiny companies has substantially increased. But because micro caps are still under followed by Wall Street, they may be inefficiently priced, offering skilled managers a greater opportunity to discover the next Microsoft. Another plus for talented stockpickers is that there are a lot more mergers and acquisitions in the micro-cap area than in the small-cap universe.

But micro-cap companies carry more business and liquidity risk than larger firms. Perils include inexperienced managements, a narrow business focus, competition from larger companies, and financing problems. In addition, ultra-small stocks are illiquid and generally more vulnerable to adverse shifts in market sentiment and economic conditions. Because micro caps have fewer shares outstanding and trade in lower volume than bigger companies, a purchase or sale of shares by a mutual fund could have a big impact on the price.

Liquidity risk cuts both ways, however. It's wonderful when everybody wants the illiquid stocks your fund owns. Moreover, research at NatWest Securities has indicated that the volatility of micro caps has declined over the years. This reduction in risk can be attributed to factors such as the greater availability of information and the increased liquidity of tiny stocks due to a greater flow of investor money into the sector. In particular, the long time horizons of many investors greatly increase the demand for micro caps. Those people under 40 who are starting 401(k) plans have plenty of years in which to reap the benefits of micro-cap stock investing.

Finding a Micro-Cap Yardstick

The Russell 2000 is a popular capitalization-weighted small-stock benchmark. It tracks the 2,000 smallest firms in the Russell 3000, which consists of the 3,000 largest U.S. companies that represent about 98% of the domestic equity market. At this writing, the median market capitalization of the Russell 2000 was about $352 million. The largest company had a $1.0-billion market capitalization, while the smallest weighed in at $162 million. Although highly appropriate for small companies, the Russell 2000 is not the best indicator for micro caps, even though it is commonly used in shareholder reports because it's considered close enough.

At this writing, a pure micro-cap share price index does not exist. To zero in on the ultra-small, analysts often use returns generated by Dimensional Fund Advisors (DFA) U.S. 9-10 Small Company Fund. This is a passive, $1.2-billion portfolio containing stocks from the ninth and tenth deciles of the NYSE—which together comprise the smallest 20% of NYSE companies—plus small Amex and over-the-counter stocks. (The fund is available to institutional investors and to individuals through certain investment advisers.) As of February 28, the DFA 9-10 contained about 2,621 stocks with a $123-million median market capitalization, according to Morningstar. The fund's annual returns deviate significantly from those of the Russell 2000.

The 30-year period ended December 1996 generally was a good one for micro-cap companies. According to Ibbotson Associates, "small companies" (micro-caps) returned 15.0% yearly, greatly ex-

Table 2.
S&P 500 vs. Small Stocks
(Annual total returns for rolling five-year periods)*

Five-Year Period	S&P 500 (%)	U.S. Small Stocks** (%)
1967–71	8.4	12.5
1968–72	7.5	0.5
1969–73	2.0	–12.3
1970–74	–2.4	–11.1
1971–75	3.2	0.6
1972–76	4.9	6.8
1973–77	–0.2	10.8
1974–78	4.3	24.4
1975–79	14.8	39.8
1976–80	14.0	37.4
1977–81	8.1	28.8
1978–82	14.1	29.3
1979–83	17.3	32.5
1980–84	14.8	21.6
1981–85	14.7	18.8
1982–86	19.9	17.3
1983–87	16.5	9.5
1984–88	15.4	6.7
1985–89	20.4	10.3
1986–90	13.1	0.6
1987–91	15.4	6.9
1988–92	15.9	13.6
1989–93	14.5	13.3
1990–94	8.7	11.8
1991–95	16.6	24.5
1992–96	15.2	19.5

* *With reinvested dividends*
***Returns since 1982 are based on DFA U.S. 9–10 Small Company Fund*
Source: Ibbotson Associates, Chicago, Illinois.

ceeding the 11.9% return for the S&P 500 and the 5.4% annualized inflation rate. Since 1982, Ibbotson's small stock series has been based on the DFA 9-10 Small Company Fund.

Long-term average results do not tell the whole story, of course. Small companies can underperform or outperform their larger siblings for extended periods. Table 2 illustrates this by comparing returns for the S&P 500 and small stocks over rolling five-year periods. The latter generated returns exceeding those of the S&P for 14 of the 26 periods. Both the outperformance and underperformance by small stocks were quite sizable in many cases, exceeding 10 percentage points in 10 periods. The riskiness of small stocks is highlighted by their double-digit negative returns for the periods ended in both 1973 and 1974.

Table 3 shows two noteworthy times for small-stock overperformance and underperformance. The group returned an awesome 35.3% annually for the nine years through 1983, compared with 15.7% for the S&P 500. Some who challenge the small-firm effect point to the fact that this stretch of stellar returns was largely responsible for their superior returns over the past 71 years. It's doubtful that such strong performance could be repeated anytime soon.

Table 3.
Extreme Periods for Small Stocks (average annual compound returns)*

Period	S&P 500 (%)	Small Stocks** (%)
Nine years 1974–1983	15.7	35.3
Seven years 1984–1990	14.7	2.6

*With reinvested dividends
**Since 1982, small stock returns are based on DFA U.S. 9–10 Small Company Fund
Source: Ibbotson Associates, Chicago, Illinois.

Big companies had fallen from favor after the Nifty Fifty collapse in the early 1970s. But then the tide turned, and the bull market of the 1980s was led by the corporate titans for the seven years ended in 1990. Thus, higher risk does not always equate to higher returns, even over lengthy periods. In 1991, small caps were back in favor. The DFA 9-10 Fund outperformed the S&P 500 by more than 10 percentage points in each of the three years 1991 through 1993.

But then large stocks outperformed from 1994 on. Because the big blue chips generally were leaders in the bull market that began in 1982, small-stock funds lagged over the 15 years ended March 31, 1997. Growth and income funds returned 15.6% yearly over this period versus 14.2% for small-cap funds, according to Lipper. S&P 500 index funds led all categories with an annualized 15-year return of 17.2%.

However, small companies have recently shown signs of a revival and sentiment has turned increasingly positive since early May. In particular, corporate insiders have increased their purchases of small and micro-cap companies.

Table 4.
Selected No-Load and Low-Load Micro-Cap Funds

	Inception Date	Style	Median Market Cap. ($ mil.)	Total Net Assets* ($ mil.)	Total Stocks
Babson Enterprise (closed)	12/2/83	Value	158	182.2	84
Bridgeway Ultra-Small Company (closed)	8/5/94	Value	78	19.5	123
Fremont U.S. Micro-Cap	6/30/94	Growth	132	151.3	78
Heartland Small Cap Contrarian	4/27/95	Value	68	266.8	118
Montgomery Micro Cap (closed)	12/30/94	Blend	326	274.2	80
Oberweis Micro-Cap	1/1/96	Growth	68	30.7	110
Pathfinder	6/29/87	Value	29	2.6	81
PBHG Limited (closed)	7/1/96	Growth	196	138.4	84
Perritt Capital Growth	5/2/88	Value	113	7.8	58
Robertson Stevens MicroCap Growth	8/15/96	Growth	125	10.3	51
Royce Micro-Cap	12/31/91	Value	147	138.2	164
Scudder Micro Cap	8/12/96	Blend	na	52.3	na
Van Wagoner Micro-Cap	12/29/95	Growth	158	101.3	55
Wasatch Micro-Cap	6/19/95	Growth	131	66.3	49

*As of 3/31/97
Source: Morningstar, Inc., Chicago, Illinois.

Micro-Cap Funds

Table 4 identifies 14 selected micro-cap funds and several portfolio statistics for each, presented as an example of the characteristics of micro-cap funds. Ten of these funds have debuted since 1993. Micro-cap funds function best with assets of $100 million to $200 million, or less. Small size is important because tiny firms are illiquid and buying or selling a fairly large quantity of stock can quickly push the price up or down.

These funds often close to investors when their portfolios reach a certain size, such as $100 million or $200 million, and several of the funds in Table 4 are closed. An extreme case is PBHG Limited, which stopped accepting money after a single day, July 1, 1996, when assets reached $150 million. If a micro-cap fund grows too large, it will experience so-called "capitalization creep" and no longer be a true micro-cap fund. In fact, one reason for the popularity of micro-cap funds is that many small-stock funds have seen the sizes of their holdings grow. Yet closing a micro-cap fund at assets of, say $100 million, or less, has its drawbacks. It may result in a higher expense ratio and greater volatility, since redemptions would not be offset by new shareholder investments.

Some micro-cap funds target smaller companies than others, so you should check the portfolio's median market capitalization. This information is available from Morningstar or Value Line data, or directly from the fund. For true micro-cap exposure, stick with funds that have median market caps of $250 million or less. A few funds even have market caps of less than $100 million. For instance, Bridgeway Ultra-Small Company Portfolio targets firms with market caps less than the upper limit of the smallest 10% of NYSE-listed firms; its median market capitalization is $78 million (Table 4). This fund wants to remain very small and it closed to new investors when its net assets reached just $27.5 million on June 9. [Because of its size, it is not covered in Morningstar Mutual Funds or AAII's "Individual Investor's Guide to Low-Load Mutual Funds".]

A clear distinction doesn't always exist between "micro-cap" and "small-cap" products because many funds mix the categories to varying degrees. Examples include Berwyn, Fidelity Low-Priced Stock, Heartland Value, Lindner/Ryback Small-Cap, T. Rowe Price Small Cap Value, and Warburg Pincus Small Company Value. A fund's split between small and micro caps, as well as any stakes it has in other size groups, can be determined by examining its "market cap" breakdown in Morningstar.

Even though you can find small-stock index funds—such as those that target the Russell 2000—actively managed portfolios may be best for investing in the tiniest companies. Small-cap index funds have been less successful than their large-cap relatives because they don't prune out the vast majority of small companies. Most smaller companies are destined to stay small—it's the portfolio manager's job to pick the most promising. Conversely, the best argument for an index fund is that the trading costs for illiquid small stocks can be quite high. And with an index fund, you avoid the risk of picking a manager who underperforms.

Many micro-cap funds don't have much of a track record. Yet new small stock funds often do exceptionally well during the first year or two, if market conditions remain favorable. Since they start small, they can put the manager's choicest picks into the portfolio. Because micro-cap companies are illiquid, the small size of a new fund is a plus. As the fund grows, more stocks can be added to the portfolio without having to sell existing positions.

Of course, micro-cap funds face considerable management risk, so you need to be confident of the abilities of the person at the helm, even though the fund itself may have a limited performance history. It's best to stick with well-established managements who have commendable reputations for small-company investing. A poorly managed micro-cap fund can be a long-term disaster, because it's a lot easier to mess up with tiny companies than with blue chips.

When analyzing a micro-cap fund, you should also determine the number of stocks it holds, because ultra-small firms are so illiquid that it's hard to get out of a disappointing company quickly without driving down its price. If a fund is concentrated in, say, four dozen or fewer stocks, there is less room for error, so you need to have a lot of confidence in management's stock-picking ability. More concentrated funds can be more volatile. Conversely, if the fund holds more than 100 stocks, liquidity risk becomes less of an issue. For example, to lower its risk and for other reasons, the $138.2 million Royce Micro-Cap recently held 164 tiny companies.

Table 5.
Total Returns of Selected Micro-Cap Funds

	1997 Q1 (%)	1996 (%)	1995 (%)	1994 (%)	1993 (%)	1992 (%)
Babson Enterprise (closed)	3.07	21.27	16.43	2.45	16.27	24.59
Bridgeway Ultra-Small Company (closed)	–2.80	29.74	39.84	—	—	—
Fremont U.S. Micro-Cap	–9.63	48.70	54.04	—	—	—
Heartland Small Cap Contrarian	–1.87	18.86	—	—	—	—
Montgomery Micro Cap (closed)	–5.44	19.12	28.66	—	—	—
Oberweis Micro-Cap	–7.25	22.80	—	—	—	—
Pathfinder	0.94	5.57	38.97	–8.93	3.09	0.96
Perritt Capital Growth	–5.94	17.99	30.69	–5.08	5.29	6.48
Royce Micro-Cap	–0.86	15.54	19.07	3.55	23.67	29.40
Van Wagoner Micro-Cap	–16.22	24.50	—	—	—	—
Wasatch Micro-Cap	–6.60	13.66	—	—	—	—
Benchmark:						
DFA U.S. 9–10 Small Company Fund	–2.95	17.65	34.48	3.09	20.97	23.54

Source: Lipper Analytical Services, Inc., Summit, New Jersey.

Fund Returns

Table 5 shows total returns for selected micro-cap funds that have at least a full calendar year of performance data. The DFA U.S. 9-10 Small Company Fund is used as a benchmark.

Note the fairly wide variations in returns among different funds within any given year. For instance, in 1996 returns ranged from 48.7% for Fremont U.S. Micro-Cap down to 5.57% for Pathfinder. In the first quarter of 1997, the numbers varied from 3.07% for the value-oriented Babson Enterprise to a negative 16.22% for the growth-oriented Van Wagoner Micro-Cap. Because the micro-cap universe is large and fairly inefficient, you can expect sizable performance differences. An inefficiency can lead to significant underperformance as well as outperformance, so good management is crucial.

Patience and discipline are needed to succeed with micro caps because the group can go through extended subpar periods as it did during the seven years through 1990. In addition, it remains to be seen how these relatively new offerings would weather a bear market if fund managers are forced to part with some illiquid holdings to meet redemptions. Investors tend to yank their money out of the most aggressive funds when they get nervous. A taste of what could happen was apparent in 1990 when the DFA 9-10 Small Company Fund sustained a drop of 21.6%, and the average micro-cap fund tracked by Lipper was down 20.3%. Conversely, the Vanguard Index 500 fared better with a drop of only 3.4%. Micro-cap investing certainly isn't for the faint of heart.

Micro-Cap Checklist

Keep these points in mind if you're considering a micro-cap investment.

- *Think long-term.* Plan on being invested for more than 10 years. These funds are inappropriate for short-term investors or those trying to time the market. Micro caps can underperform the S&P for years so you need a lengthy time horizon to be able to benefit from the stellar returns when they ultimately occur.
- *Watch out for management risk.* In addition to underperformance by the group, you face substantial management risk because the micro-cap market is so large and inefficient. If your fund significantly lags its peers for 18 months or more, think about moving on.
- *Dollar cost averaging is a good way to build exposure.* Because of the greater volatility of tiny companies, dollar cost averaging can noticeably reduce the average cost of your holdings if followed over a long period. This strategy is particularly effective if you can double up on your investments when small companies are out of favor.
- *Keep your exposure modest.* Even though they offer exciting long-term potential, micro caps should not dominate your asset allocation. Most investors should limit their exposure to 20%, or less, of their total equity allocation.
- *Be style conscious.* Value funds, which focus on cheap stocks, tend to be less volatile and have lower turnover rates than their growth-oriented counterparts. The latter target firms with rapidly expanding earnings, such as high-flying technology stocks. You can check a fund's average price-earnings and price-book ratios in Morningstar or Value Line. Considerable differences can exist. For instance, the growth-oriented Van Wagoner Micro-Cap recently had a price-earnings ratio of 39.5 in contrast to the value-oriented Royce Micro-Cap with an earnings multiple of 20.9, according to Morningstar.
- *Beware of style drift.* Both the size of a micro-cap fund and the median market capitalization of companies it owns are important. You don't want a fund that drifts into the small-cap category, particularly if its performance is faltering.
- *Be wary of high-turnover funds.* Because micro caps are illiquid, any advantage gained from the small-firm anomaly can be wiped out by the added transaction costs accompanying active trading.

Concluding Thoughts

Micro-cap stocks today are what small-cap stocks were in the 1970s. That's because the small-stock arena has grown to the point where its companies are more efficiently priced, offering fewer bargain-hunting opportunities. Morningstar defines the small-cap universe to include those funds with median market capitalizations of $1 billion or less, whereas micro-cap funds have median market capitalizations of $250 million or less.

Micro caps have grown in popularity because they're the most inefficient part of the U.S. equity market. Yet micro-cap funds are not for everyone, particularly those who don't have long time horizons or have a low tolerance for risk.

And if you already own a well-managed small-stock fund, it's a good idea to determine to what extent it invests in these tiny companies before acquiring a separate micro-cap fund. You may have sufficient micro-cap exposure, as many traditional small-stock funds have 25%, or more, of their assets invested in micro caps.