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Costs—Do It Yourself Strategies
Without Paying Fund Managers**

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**To my children—Emily, Caroline, and
Alexandra. You brighten my world just by
being yourselves.**

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ABOUT THE AUTHOR

Marvin Appel originally trained as an anesthesiologist at Harvard Medical School and Johns Hopkins Hospital. He concurrently earned a Ph.D. in biomedical engineering from Harvard University. However, in 1996, he changed careers and joined his father in the field of investment management, where he has been able to put his engineering and computer training to work in analyzing the stock market. He is now CEO of Appel Asset Management in Great Neck, New York, which manages \$55 million in client assets in mutual funds, exchange-traded funds, and closed-end funds using active asset allocation strategies.

Dr. Appel is the author of “Systems and Forecasts,” a highly regarded newsletter on technical analysis that his father started in 1973, and he has been a regular contributor to “Dental Economics” and “Physician’s Money Digest.” Dr. Appel’s market insights have been featured on CNNfn, CNBC Power Lunch, CBS Marketwatch.com, and Forbes.com. He has been invited to testify to the New York State Legislature regarding his market forecasts. He has presented his investment strategies to numerous conferences, including the American Association of Physician Specialists Annual Scientific Meeting, The World Series of Exchange Traded Funds, the National Association of Active Investment Managers annual conference, The Indexing and ETF Summit, and chapter meetings of the American Association of Individual Investors, among others.

1

EXCHANGE-TRADED FUNDS (ETFs): NOW INDIVIDUALS CAN INVEST LIKE THE BIG PLAYERS

Exchange-traded funds (ETFs) are one of the fastest-growing investments in the United States. Their rapid growth is all the more remarkable because, unlike mutual funds, ETFs do not pay sales loads to financial intermediaries. Advisors who recommend ETFs rarely have financial incentive to do so.

ETFs are a powerful investment tool. However, before you use them, you should understand how they work and what makes them different from other mutual funds. This chapter introduces you to ETFs but only begins to discuss why you should use them. Chapter 2, “The Multifaceted Stock Market,” completes the presentation of the background necessary for you to fully appreciate the evidence in Chapter 3, “A One-Step Strategy for Selecting Superior Investments: Indexing,” showing that ETFs have outperformed and are likely to continue to outperform a majority of comparable mutual funds.¹

ETFs Are a Special Type of Mutual Fund

ETFs hold a basket of individual stocks, just as mutual funds do. Each ETF share represents a proportional piece of the portfolio of stocks, as with mutual funds. Therefore, many of the advantages of mutual funds also characterize ETFs:

- Ability to diversify with a single investment
- Ability to gain exposure to a particular investment style (small versus large company stocks, for example) or to a specific industry (utilities, technology, etc.) with a single investment, without having to select individual companies

Saving the effort needed to select individual stocks can be helpful because the selection of individual stocks has been a less important determinant of investment performance than the selection of particular industries. For example, the steep rise in oil prices that started in 2003 has lifted shares in a wide variety of energy companies. During the same period, U.S. automotive stocks have faced great difficulties. As a result, even relatively uninformed energy investors are far more likely to have nice gains to show for the 2003–2006 period because any stock they picked is likely to have done well. On the other hand, even the most astute automotive analyst would have had a rough time making money by holding stocks in that sector. This is not to say that competition between two companies has never resulted in gains for one stock and losses for the other. Rather, industry-wide developments that move stocks across an entire sector have had a larger impact on the stock market than have company-specific events. (Even a takeover bid for a particular company often leads other companies in that sector to move.)

ETFs Avoid the Expense of Fund Managers

Most open-end mutual funds (which will be referred to simply as *mutual funds* throughout the rest of the book) are actively managed. This means that most funds have managers who pick which stocks to

buy and sell, and when, according to their own judgments. Active managers generally keep their stock selections secret until they have finished making transactions for their own funds. In this way, they avoid having to compete in the market when placing transactions against free riders, who might want to copy the managers' ideas.

In contrast, ETFs are passively managed. Passive management means that a predetermined set of rules is used to select the individual stocks that are held in each ETF. An ETF sponsor can update the selection of stocks in a passively managed portfolio, but only on dates that it specified in advance. Anybody who knows what the rules are can anticipate the changes that an ETF will be making to its portfolio on the dates specified for portfolio update. Because the rules for selecting a passively managed portfolio are available to everyone, it is unnecessary to hire a manager.

The fund sponsor for each passively managed ETF selects a set of rules that govern which stocks the ETF will hold. After these rules are in place, the ETF does not deviate. So, unlike the case with an actively managed fund, investors in a passively managed fund or ETF know at any time exactly which stocks are in the fund and when that portfolio is scheduled to change. (Although some actively managed ETFs are in development, passively managed ETFs are likely to dominate the landscape for the foreseeable future.) The accurate knowledge by individual fund investors of their funds' holdings is called *investment transparency*. For many investors, this transparency is considered an advantage, because when you buy an ETF, you know exactly what you are getting.²

Another term used to describe passive investment management is indexing. The connotation of a market index, in addition to being passively managed and enjoying the attendant advantages of low cost and transparency, is that it usually aims to represent the performance of a particular market sector. Broadly based indexes can represent the entire universe of publicly traded shares in the United States, or even in the world (such as the MSCI World Index). At the other end of the spectrum, a number of market indexes have been designed to represent the behavior of fairly narrow industry sectors, such as the S&P Select Homebuilders Industry Index. (The latter is tracked by an ETF, the SPDR Homebuilders ETF, whose ticker symbol is XHB.)

ETFs Are Traded on Exchanges

The big difference between ETFs and regular mutual funds is that as an individual investor, you buy ETFs on a stock exchange. You do not deal directly with the sponsoring mutual fund company, and you bear the full costs of every transaction you make. Whether this is an advantage to you depends on how you are using ETFs.

For example, when you purchase shares of a regular mutual fund, such as Vanguard's S&P 500 Index Fund (VFINX), you send your money to Vanguard, and it creates new shares of its fund for you. The price per share is based on the value at the market close of the fund's holdings on the date of your purchase. Conversely, if you want to redeem from a Vanguard fund, Vanguard eliminates your shares and sends you the cash value, again based on the value of the assets in the fund at the market close on that day.

With regular (open-end) mutual funds, buyers and sellers receive the same price for their shares on any given day, regardless of how the market behaved, and regardless of how many other shareholders in the fund might be buying or selling on that day. If you buy new shares, the mutual fund manager might be unable to put your money to work until the next day, when the fund will have the chance to purchase additional shares. If you redeem mutual fund shares, the fund manager might have to raise the cash you have requested by selling some of the fund's holdings the next day. The necessity of engaging in such transactions to accommodate shareholder additions or redemptions might hurt the performance of the mutual fund, but it does not affect the price per share you pay or receive.

In contrast, when you purchase an ETF, you call or e-mail your stockbroker just as you would to buy stock in an individual company. When you purchase an ETF, you must pay a broker's commission, similar to the charge you would incur to buy an individual stock. Note the difference between the likely size of a commission on the purchase of ETF shares and the sales charge on the purchase of a mutual fund with a sales load. Competition among brokers has driven the

cost of buying ETF shares to low levels at many brokerage firms (including online brokerages and discount brokerages). However, the sales loads on mutual funds remain far larger than the cost of buying shares through a discount broker. Sales loads are generally as high as 5 percent of the assets you are investing.

You pay this sales charge either as a lump sum up front or over a period of years. When the sales charge is collected over a period of years (for example, 0.75 percent of assets per year for seven years in a typical class B load mutual fund share), you pay a “deferred sales charge” if you try to exit the fund before the full sales charge has been paid to the broker.³

When you purchase shares of an open-end mutual fund, the number of outstanding fund shares increases because the fund company takes your cash and creates new shares that are delivered to your account. The mutual fund generally puts the cash it received from you to work by using it to buy stock. Similarly, when you redeem shares of an open-end mutual fund, the fund company takes your shares and eliminates them, thereby decreasing the number of outstanding shares. In return for your shares, the fund company places cash in your account. The mutual fund generally sells shares of stock it owns to raise the cash it has to give to you.

Unlike mutual funds, which need to create new shares to meet your purchases and to eliminate existing shares to meet your redemptions, when you buy or sell ETF shares, you conduct the transaction with another investor. You and the other investor exchange ETF shares for cash, but the number of outstanding ETF shares does not change as a result of your transaction. Only the list of shareholders changes.

As an example, let us compare what happens when an investor purchases 100 SPY at \$127/share to what happens if the same investor instead purchases shares in an open-end S&P 500 Index Fund (ticker ABCDX) that sells for \$50/share. The outline that follows compares the purchase of ETF shares to the purchase of shares in an open-end mutual fund.

Case 1

Investor A has \$12,700 that he wants to invest in the ETF that tracks the S&P 500 Index (ticker SPY). Investor B has 100 shares of SPY that she wants to sell at \$127.00/share.

Before purchase by Investor A:

- Investor A has \$12,700 cash.
- Investor B has 100 SPY.
- Total SPY outstanding = 100 shares.

After purchase by Investor A:

- Investor A has 100 SPY.
- Investor B has \$12,700 cash.
- Total SPY outstanding = 100 shares. (No change from before the purchase by Investor A.)

Case 2

Investor A has \$12,700 to invest in an open-end mutual fund (ticker ABCDX) that tracks the S&P 500 Index. The share price of ABCDX is \$50/share.

Before purchase by Investor A:

- Investor A has \$12,700 cash.
- Fund ABCDX has 2,000 shares outstanding at \$50/each, for total assets of \$100,000. This \$100,000 in fund assets is entirely invested in the basket of stocks that tracks the S&P 500 Index.

After purchase by Investor A:

- Investor A has 254 shares of fund ABCDX.
- Fund ABCDX holds shares of stock worth \$100,000 plus \$12,700 cash, for total assets of \$112,700 (an increase from before the purchase by Investor A). The new cash in the fund will be used to purchase more shares during the next trading day.
- Total number of ABCDX shares outstanding has increased from 2,000 to 2,254, but each share is still worth \$50.

Every transaction in an open-end fund for the entire day receives the same price. An order placed with a fund at 9:00 a.m. gets the same closing price for the day as one placed at 3:59 p.m. That closing price is set based on data from the market close at 4:00 p.m. Any order received at a mutual fund after 4:00 p.m.—even 4:01 p.m.—receives the next day's closing price.

With ETFs, as with stocks, the price you get for your order can change throughout the day. Suppose that you buy an ETF early in the trading day (say, at 10:00 a.m.), and then at 11:00 a.m. some news comes out that drives the market higher. In this case, you will profit from the timing of your order. However, mutual fund purchasers will

not. Of course, the reverse can also be true—namely, that the timing of your order can result in your getting a less favorable price than would have been the case if you had waited until the end of the trading day.

If you are a day trader, the ability to trade ETFs throughout the day makes them useful to you in a way that other mutual funds are not. Indeed, many hedge funds use ETFs specifically to be able to day-trade. If you trade more slowly, holding positions for days or weeks or longer, or if you are a long-term investor, the ability to trade during the day will probably not affect your investment performance one way or the other, on average.

For investors who utilize end-of-day trading strategies, ETFs have a big advantage that does not apply to individual stocks or mutual funds: Many ETFs trade until 4:15 p.m.—15 minutes after the regular market closes at 4:00 p.m. This allows you to wait until the market close to collect data and then use that data to decide which trades to execute on the same day.

In my experience, any trading model that utilizes daily data from the market close is likely to perform more poorly if trades are not executed on that same day. Investors who use mutual funds that allow unlimited trading (such as those offered by Rydex, Profunds, and Direxion that are designed to accommodate active trading) must submit their buy or sell orders to the mutual fund before the market closes. There is a chance that some trading decisions made before the close will turn out to be different from the decisions that would have been made if the final closing data had been known earlier.

ETF Investors Have Hidden Costs Through the Bid-Ask Spread

From the earlier discussion, you can infer that the price you pay for your ETF depends on the balance of supply and demand for that ETF at the time your order hits the trading floor. An ETF's share price is usually slightly different from the market value of the fund's underlying holdings. Moreover, the price a buyer pays is generally higher than the price a seller receives.

Selling a used car is a useful analogy. If you know how much you want for your car, you can sell it yourself. If a willing buyer sees your advertisement, he may take the car off your hands at a price you both feel is fair. However, you might not be able to locate a buyer.

If that is the case, you might decide to sell your car to a dealer. The dealer then pays a price low enough for him to expect to turn a profit when he resells your car. The dealer's knowledge of the car's value comes from observing the used-car market. Ideally (for the dealer), he would like to offer you as little as possible, but if the offer is too low for your liking, you will simply look for another dealer. On the other hand, if your demands are too high to leave room to profit, the dealer will let you walk.

If you accept the dealer's offer on your car, he will try to resell it at a higher price. Suppose the dealer is extremely lucky—the second after you leave the lot, a buyer enters, looking for exactly the car you just sold. Naturally, the dealer will sell it at a profit. The same car on the same day was worth less to you, the seller, than it was to the buyer.

Trading ETFs on exchanges works much the same way. If you as an ETF buyer are offering the same price that a different seller is demanding, the stock exchange is supposed to match up the two of you so that each of your orders can be filled. (However, exchanges have not always functioned this way, giving rise to periodic scandals and investigations. As a result, you should pay attention to the quality of your trade execution.)

However, suppose you want to buy an ETF at a time when a willing seller is not around. In that case, a dealer or specialist in a stock exchange offers to fill your order. Just as with a car dealer, a stock dealer transacts with you only at a price that allows him to make a profit. With the advent of electronic trading, you (through your broker) can look for the best price available for the ETF you want on more than one exchange. This is analogous to shopping around for the best price at multiple car dealerships.

If the dealer sells you the shares you want, he immediately tries to repurchase them from someone else at a lower price. If you turn around and try to resell your shares to a dealer (or specialist, or market maker), you receive less than you paid, even if the market has not moved one iota in the interim.

The price you pay to buy shares at the lowest available price is called the asking price, or *ask*. The price you receive when you sell shares at the highest available price is the *bid*. As with cars, stock dealers stand ready at any time to sell you shares at the ask price or to buy shares from you at the bid price.

The difference between the price you have to pay to buy shares and what a seller would receive to sell shares is called the *bid-ask spread*. The bid-ask spread is no less a cost to you than a broker's commission, despite being less visible. But to the unwary investor, the bid-ask spread is a hidden cost. Before you decide to buy an ETF, you should ask your broker for both the bid and ask so that you can get a feel for the cost per trade.

TABLE 1.1 Bid-Ask Spreads as a Percentage of the Share Price for Selected U.S. Equity ETFs During Normal Midday Market Conditions in the Fall of 2005*

ETF Name	ETF Ticker Symbol	Investment Objective	Bid Price (\$)	Ask Price (\$)	Bid-Ask Spread as % of Midpoint	Size of Market (Shares in 100s, Bid×Ask)
S&P 500 Depository Receipts	SPY	Large cap	123.81	123.83	.02%	750×400
iShares Russell 100 Index Fund	IWB	Large cap	67.08	67.16	.12%	100×132
Vanguard Large Cap Vipers	VV	Large cap	54.77	54.84	.13%	500×600
Diamonds Trust	DIA	Large cap	107.06	107.08	.02%	600×300
iShares Russell 1000 Growth Index Fund	IWF	Large growth	50.62	50.69	.14%	100×600

TABLE 1.1 (continued)

ETF Name	ETF Ticker Symbol	Investment Objective	Bid Price (\$)	Ask Price (\$)	Bid-Ask Spread as % of Midpoint	Size of Market (Shares in 100s, Bid×Ask)
iShares S&P 500 Growth Index Fund	IVW	Large growth	58.71	58.81	.17%	600×900
Vanguard Growth Vipers	VUG	Large growth	53.06	53.11	.09%	300×379
iShares Russell 1000 Value Index Fund	IWD	Large value	68.40	68.49	.13%	600×620
iShares S&P 500 Value Index Fund	IVE	Large value	64.40	64.51	.17%	300×600
Vanguard Value Vipers	VTV	Large value	56.39	56.44	.09%	491×94
iShares S&P 400 Midcap Index Fund	IJH	Midcap	72.12	72.16	.06%	30×30
S&P Midcap SPDR	MDY	Midcap	131.46	131.49	.02%	300×125
Vanguard Extended Market Index Vipers	VXF	Midcap	89.13	89.25	.13%	600×600
iShares Russell Midcap Index Fund	IWR	Midcap	85.83	85.91	.09%	490×1000
iShares Russell Midcap Growth Index Fund	IWP	Midcap growth	90.99	91.10	.12%	300×900

TABLE 1.1 (continued)

ETF Name	ETF Ticker Symbol	Investment Objective	Bid Price (\$)	Ask Price (\$)	Bid-Ask Spread as % of Midpoint	Size of Market (Shares in 100s, Bid×Ask)
iShares S&P 400 Midcap Growth Index Fund	IJK	Midcap growth	73.33	73.43	.14%	300×300
iShares Russell Midcap Value Index Fund	IWS	Midcap value	122.22	122.28	.05%	10×74
iShares S&P 400 Midcap Value Index Fund	IJJ	Midcap value	69.34	69.45	.16%	300×300
iShares S&P 600 Index Fund	IJR	Small cap	57.42	57.47	.09%	50×50
iShares Russell 2000 Index Fund	IWM	Small cap	66.21	66.22	.02%	500×32
iShares Russell Microcap Index Fund	IWC	Small cap	50.51	50.59	.16%	200×300
Vanguard Small Cap Vipers	VB	Small cap	58.93	59.02	.15%	300×300
Vanguard Small Cap Growth Vipers	VBK	Small cap growth	56.99	57.15	.28%	500×500
StreetTracks Small Cap Growth	DSG	Small cap growth	79.71	79.87	.20%	50×50

TABLE 1.1 (continued)

ETF Name	ETF Ticker Symbol	Investment Objective	Bid Price (\$)	Ask Price (\$)	Bid-Ask Spread as % of Midpoint	Size of Market (Shares in 100s, Bid×Ask)
iShares S&P 600 Small Cap Growth	IJT	Small cap growth	114.60	114.70	.09%	3×25
iShares Russell 2000 Growth	IWO	Small cap growth	68.55	68.59	.06%	130×60
Vanguard Small Cap Value Vipers	VBR	Small cap value	61	61.11	.18%	900×600
StreetTracks Small Cap Value	DSV	Small cap value	62.01	62.17	.26%	50×100
iShares S&P 600 Small Cap Value	IJS	Small cap value	63.89	63.98	.14%	300×300
iShares Russell 2000 Value	IWN	Small cap value	65.88	65.92	.06%	95×40
Select Energy Sector SPDR	XLE	Sector energy	47.6	47.65	.10%	200×315
iShares Dow Jones U.S. Financial Index Fund	IYF	Sector financial	100.77	100.91	.14%	300×900
iShares Dow Jones U.S. Financial Services Index Fund	IYG	Sector financial	113.54	113.68	.12%	300×900

TABLE 1.1 (continued)

ETF Name	ETF Ticker Symbol	Investment Objective	Bid Price (\$)	Ask Price (\$)	Bid-Ask Spread as % of Midpoint	Size of Market (Shares in 100s, Bid×Ask)
Select Financial Sector SPDR	XLF	Sector financial	31.58	31.59	.03%	600×1000
Vanguard Financial Vipers	VFH	Sector financial	55.78	55.87	.16%	300×300
Vanguard Health Care Vipers	VHT	Sector health care	53.07	53.16	.17%	300×600
Select Health Care Sector SPDR	XLV	Sector health care	30.96	30.98	.06%	900×100
iShares Dow Jones U.S. Healthcare Index Fund	IYH	Sector health care	61.76	61.85	.15%	300×600
iShares Cohen & Steers Realty Majors Fund	ICF	Sector REITs	73.28	73.37	.12%	110×120
iShares Dow Jones U.S. Real Estate Index Fund	IYR	Sector REITs	64	64.02	.03%	56×130
Vanguard REIT Vipers	VNQ	Sector REITs	59.79	60.04	.42%	100×100
iShares Dow Jones U.S. Technology Index Fund	IYW	Sector technology	49.55	49.62	.14%	900×100
Select Technology Sector SPDR	XLK	Sector technology	21.10	21.12	.09%	330×1400
iShares Goldman Sachs Technology Index Fund	IGM	Sector technology	46.97	47.04	.15%	101×230

TABLE 1.1 (continued)

ETF Name	ETF Ticker Symbol	Investment Objective	Bid Price (\$)	Ask Price (\$)	Bid-Ask Spread as % of Midpoint	Size of Market (Shares in 100s, Bid×Ask)
Vanguard Information Technology Vipers	VGT	Sector technology	48.03	48.12	.19%	600×600
Utilities HOLDERS	UTH	Sector utilities	109.22	109.30	.07%	100×65
Select Utilities Sector SPDR	XLU	Sector utilities	30.45	30.48	.10%	1200×800
Vanguard Utilities Vipers	VPU	Sector utilities	63.34	63.46	.19%	900×600
iShares Russell 3000 Index Fund	IWV	Total market	74.32	74.42	.13%	100×100
iShares Dow Jones Total Market Index Fund	IYY	Total market	62.51	62.59	.13%	100×100
Vanguard Total Market Vipers	VTI	Total market	121.95	122.07	.10%	100×900
iShares Lehman Aggregate Bond Index Fund	AGG	Bond	99.39	99.79	.40%	300×350
iShares Lehman 7-10 Year Treasury Note Fund	IEF	Bond	82.47	82.55	.10%	350×1000
iShares Lehman TIPS Fund	TIP	Bond	102.26	102.46	.20%	400×400

TABLE 1.1 (continued)

ETF Name	ETF Ticker Symbol	Investment Objective	Bid Price (\$)	Ask Price (\$)	Bid-Ask Spread as % of Midpoint	Size of Market (Shares in 100s, Bid×Ask)
iShares Goldman Sachs Investop Corp Bond Fund	LQD	Bond	106.09	106.76	.63%	300×250
iShares Lehman 20-Year Treasury Bond Fund	TLT	Bond	88.72	88.82	.11%	2500×2500
iShares 1–3 Year Treasury Note Fund	SHY	Bond	80.08	80.13	.06%	1000×1000

*The size of the market is the number of shares available to sell at the bid price by the number of shares available to buy at the ask price, in hundreds of shares. (So, for example, 100×50 means that 10,000 shares are available to sell at the bid and that 5,000 are available to buy at the ask.) Note that the bid-ask spreads and the size of the market on any ETF can vary from minute to minute. The data in Table 1.1 is only a snapshot of the market at a particular time in the past. Future conditions might differ.

Bid-ask spreads and brokers' commissions are disadvantages of ETFs compared to regular mutual funds, which you can purchase without incurring either expense. However, mutual fund investors also bear these costs, albeit in a less visible way.

If the mutual fund must make transactions as a result of share purchases or redemptions from any shareholder or on the basis of investment decisions that the portfolio manager makes, the fund bears the costs of a bid-ask spread in addition to the brokerage commissions for whatever stocks it trades. These expenses of the fund are not reported as part of its expense ratio. The typical equity mutual fund turns over 100 percent of its portfolio each year.

Because ETFs are passively managed, the underlying stock portfolios turn over slowly compared to most mutual funds. Therefore, ETF performance is far less impaired by transactions in the underlying

stocks than is the case with most mutual funds. (This advantage somewhat offsets the burden that an ETF investor has of paying for his own transaction costs.) The extent to which mutual funds suffer from transaction costs in their stock portfolios varies widely, depending on the manager's investment style, the type of stocks in which the fund invests, and the level of shareholder additions and redemptions. Information about how much a regular mutual fund spends on brokerage commissions and adverse market impact is difficult to uncover and is not included in the mutual fund's expense ratio.

As you might expect, dealers respond to changes in the balance between supply and demand. If everyone wants to sell at the same time but no one wants to buy, the price falls. That is to say, the bid price drops. Again, all this is independent of the actual market value of the underlying stocks that the ETF holds.

The question then arises, what is to stop ETFs from trading well above or below the market value of the underlying stocks? The next section discusses the unique feature of ETFs that keeps them in line with fair market values.

The Creation/Redemption Process Keeps ETF Share Prices Close to the Market Value of the Underlying Shares

The unique feature of ETFs compared to mutual funds is that shares can be created or redeemed in exchange for the basket of underlying stocks. You and I cannot do this, but a number of large financial firms called *authorized participants* can by transacting with the ETF custodian, as explained next.

All shares of stocks in individual companies need to be housed somewhere. As individual investors, we rarely hold stock certificates for ourselves these days. Rather, a custodial bank or brokerage firm holds shares for us and keeps track of how much it is holding on our behalf. Because ETFs represent partial ownership of a metaphorical basket of stocks, the actual shares in the basket need to be held somewhere, just as our own individual stocks do.

For this purpose, each ETF has a custodian who holds the shares. However, rather than keeping track of which shares belong to which

individual investor, all the custodian has to do is make sure that the number of ETF shares in circulation is exactly the right amount for the custodian's holdings of underlying shares. In this regard, an ETF share (in the hands of an authorized participant) is like a claim check. Whoever submits the claim check can retrieve the stored item, which in this case is a basket of stocks. Because all investors know what goods the claim check represents, they can trade claim checks among themselves without needing to inspect the underlying merchandise for each transaction, while the custodian simply guards the merchandise until someone claims it.

Even though ETF shares are traded between investors far more frequently than they are exchanged for the underlying basket of stocks, authorized participants do have the option of switching between ETFs and the actual underlying shares in individual companies. If an authorized participant wants to create shares of an ETF, it can deliver the basket of stocks to the ETF custodian. Conversely, if the authorized participant wants to redeem shares of an ETF, it can deliver the ETF shares to the custodian, who transfers the underlying stocks' shares in exchange. Creation or redemption of ETFs usually occurs in lots of 50,000 ETF shares.

The ability of authorized participants to create or redeem ETF shares in exchange for the underlying stocks gives them a financial incentive to keep the price of ETFs close to the market value of the underlying shares. To see how this occurs, consider the example of an ETF facing a lot of selling pressure. As discussed earlier, an overabundance of sellers drives the ETF price down, regardless of what is happening to the underlying shares.

Let us consider the hypothetical (and unrealistically simple) case of an ETF that holds only one stock—say, shares in GE. The ETF is priced so that one share of GE-ETF equals one share of GE stock. Suppose that panic selling has driven the ETF price a full 1 percent below the market value of its underlying GE shares.

An authorized participant firm happens to own 50,000 shares of GE in its own capital account. This firm, when it perceives the disparity between the GE-ETF and the true price of GE stock, can buy 50,000 shares of GE-ETF at a 1 percent discount and simultaneously sell its 50,000 shares of GE.

At the end of the day, the authorized participant firm asks to redeem its 50,000 shares of GE-ETF. It receives 50,000 shares of GE. The firm started and ended the day with 50,000 shares of GE. But in the course of the day's trading, it locked in a profit of 1 percent.

Obviously, no ETF is created as a basket of one stock. However, authorized participants can achieve the same result with a basket of stocks. If strong selling drives the price of the ETF far enough below the market value of its underlying stocks, an authorized participant can step in and buy the discounted ETF while simultaneously selling (or selling short) the equivalent basket of stocks.

Conversely, if strong buying pushes the price of an ETF far enough above the fair value of its underlying stocks, the authorized participant can sell or short-sell shares of the ETF while simultaneously buying the basket of stocks in the open market.

The process of simultaneously buying and selling essentially identical baskets of stocks in different places at the same time to profit from price discrepancies is called *arbitrage*. Firms that practice arbitrage help maintain a narrow gap between the ETF's market price and the value of its underlying shares.

The size of the discrepancy between an ETF's price and its fair value depends on the character of the stocks in the ETF. An S&P 500 ETF holds stocks for which there are almost always willing buyers and sellers for a large number of shares. Such stocks are said to be very liquid. All else being equal, it is easier to be an investor in a liquid stock than the opposite—an illiquid stock. Suppose you want to buy \$1 million worth of shares in ExxonMobil, a company whose outstanding shares are worth a total of \$349 billion. Compared to the entire company, \$1 million is an insignificantly small amount, and it is usually easy to find someone with whom to transact. Most of the dollar value of the stocks in the S&P 500 consists of easy-to-trade stocks like XOM. As a result, the cost of arbitrage by an authorized participant is low, allowing S&P 500 ETFs to trade close to their fair values.

On the other hand, an ETF that holds only small company stocks imposes higher costs on arbitrageurs. If you want to buy \$1 million worth of stock in a company whose outstanding shares are worth

\$100 million in total, you have to locate a seller for fully 1 percent of the company's shares. Although in the case of ExxonMobil, it is not hard to find sellers for less than 1/3,000th of 1 percent of a company, it is a far more difficult undertaking to find someone who owns 1 percent of a small company and is willing to sell that much all at once to you. To attract that large a fraction of the outstanding shares, you might have to raise the price you are willing to pay. Conversely, if you want to sell 1 percent of a company's stock, you have to accept a fairly low price to attract that many buyers all at once. Although this is an extreme example, these considerations usually do cause the share price of a small-cap ETF to deviate further from its fair value before it becomes profitable to arbitrage, compared to the situation with large company stocks, which are almost always more liquid.

The market provides two types of information throughout the trading day for you to consult when you are considering making a trade. First are the current bid and ask prices. (If you want to sell immediately "at the market," you should get the bid price. If you want to buy immediately "at the market," you should pay the ask price. In reality, delays in transmitting your order to the exchange might result in your getting a price different from the bid-ask quote you saw when you placed the order.)

The second bit of information is the Indicative Optimized Portfolio Value (IOPV), which in later chapters of this book is referred to by the more descriptive term *fair value*. IOPV is the fair market value of the underlying basket of stocks in the ETF. This is updated every 15 seconds. Normally, the bid price should be lower than the IOPV, and the ask price should be above it.

To understand why this is, we can turn back to the used car example. There is usually a true wholesale price at which a dealer knows she can buy or sell a car at auction. This price is analogous to the IOPV, which is what the basket of stocks in an ETF is worth in the absence of transaction costs. Generally speaking, a car dealer will not pay more than the auction price to buy a used car and will not sell one off the lot for less, because transacting with other dealers at a car auction remains an option. If a dealer did put up a car for sale for less than the auction price, another dealer could simply buy the car and

resell it at auction, pocketing a profit at no risk (again, neglecting transaction costs, which for cars are significant).

Similarly, the ask price on an ETF is what you would have to pay to purchase it. Insiders (authorized participants, specialists, etc.) ordinarily will not sell you an ETF for less than it would cost them to reassemble the underlying basket of stocks through purchases on the open market. If one authorized participant were to ask less for an ETF than the underlying basket of stocks was worth on the open market, which is the IOPV, another trader would snap up the shares at the too-low ask price and simultaneously sell short the underlying basket of stocks at the IOPV, locking in a profit. This actually does occur on rare occasions when one trader's attention might lapse. At such times, other traders swoop in like vultures to take advantage of the riskless profit opportunity. The trader who lets himself get taken advantage of is said to have been *picked off*, in the language of floor traders.

It is wise to check the IOPV before placing an order. If the bid-ask quote is very different from the IOPV, you might want to try to understand why before making the trade. In some cases, especially when the market is moving quickly, the 15-second delay in updating the IOPV can account entirely for discrepancies between it and the bid-ask quote.

IOPV is reported under a different ticker symbol than the ETF. Other ticker symbols exist for ETFs that report more arcane data, such as the number of shares outstanding, the prior day's closing fair market value, and the cash component of the ETF holdings. (Because the stocks in an ETF pay dividends at various dates, each ETF might have small cash holdings in addition to the basket of shares.)

Good sources of information on the ticker symbols for this additional ETF data are available online from Indexfunds.com⁴ and from www.amex.com⁵ (the American Stock Exchange Web site). Barclay's iShares Web site (www.ishares.com) also provides ticker symbols for price quotes and intra-day fair market values for all of its ETFs.

ETF Performance Is Not Weighed Down by Transaction Costs

As mentioned earlier, all mutual fund shareholders bear the costs incurred as a result of purchases or redemptions by every other shareholder. Such costs are typically modest for any transaction that an individual investor might request. However, if large numbers of shareholders request redemptions or make purchases at the same time, the fund might incur significant costs.

Many funds restrict the number of transactions that each investor can make in a given year to avoid these types of costs. However, the larger problem for mutual fund investors is what would happen if a large number of long-term shareholders decided to run for the exits at the same time. That could happen on a day of a significant market decline, such as occurred on October 19, 1987, when the S&P 500 Index lost more than 20 percent of its value during just that one day.

ETFs do not suffer from this risk because the only way for ETF shares to be redeemed is with a transfer of shares of individual stocks. No cost is involved in simply transferring stocks from one account to another, so the performance for remaining ETF shareholders is not adversely affected when ETF shares are redeemed. Those costs fall entirely on the authorized participant firms if they elect to liquidate shares they have received from a creation or redemption.

ETF Shares Are Often More Tax-Efficient Than Mutual Funds

The exchange of ETF shares for shares of stock also avoids realizing capital gains when many shareholders want to unload the fund. In a regular mutual fund, when shareholder redemptions force the fund to sell stock holdings to raise the cash needed to meet those redemptions, any profits on the stock sale generate capital gains that are passed on to the remaining shareholders of the fund at the time of its annual capital gains distribution. This means that long-term shareholders might have to pay capital gains taxes because some other shareholders sold out.

In some instances, fund managers might decide to realize the gains from one of their holdings. That, too, creates a taxable capital gain for the fund shareholders, whether or not they actually sell their shares. The extent to which this is an issue depends on how frequently a fund manager turns over his portfolio and whether the market has been in an uptrend. (At the tail end of a bear market, there might be no profits to tax, in which case portfolio turnover does not create tax liabilities for the shareholders.)

The exchange of ETF shares for shares of the underlying stocks does not create a taxable event. The only way for a long-term shareholder of an ETF to realize capital gains without selling his own shares is when a change in the basket of stocks forces the sale of some shares. Because all ETFs that are currently trading in the United States are passively managed and therefore have low portfolio turnover, the risk of a large capital gains distribution is minimal. In contrast, a regular mutual fund can generate a large taxable distribution in either of two situations: first, if the portfolio manager makes a big change in his holdings, or second, if a large number of shareholder redemptions force the fund to sell stock.

Special Risks of ETFs

As already discussed, ETF share prices are sensitive to the balance between supply and demand—a risk absent from regular mutual funds. ETF investors face the additional risk of relying on authorized participants to keep ETF prices in line with the underlying share values. During *fast markets*—periods marked by an overwhelming imbalance between supply and demand—authorized participant firms and specialists have been known to be slow to step up and fill the wave of orders. The result is that at the time you are most anxious to sell, you might not be able to get as fair a price (relative to the value of the underlying shares) as you thought you would. The bid-ask spreads illustrated in Table 1.1 were obtained during a normal market. If you buy or sell during a fast market, your bid-ask spread costs will be higher than normal.

Actually, if you like to trade against the crowd, ETF pricing can work in your favor. You might be able to buy the ETF you want at a discount to its fair value if panic selling is occurring. If you are looking to sell ETF shares, you might be able to get more than fair value if buyers are clamoring for what you are selling.

Conclusion

This chapter has described the ways in which ETFs possess characteristics of both traditional open-end mutual funds and shares in individual companies. Like mutual funds, ETF shares represent a proportional ownership in a portfolio of individual stocks or bonds. All the ETFs currently listed have investment transparency—you know exactly what you are buying. Although it is usually not important for an individual mutual fund investor to know precisely what stocks are in his fund's portfolio, in the past, some mutual funds deviated from their original objectives, leading investors to assume risks of which they were unaware when they selected the fund.

Like individual stocks and in contrast to open-end mutual funds, ETFs trade on exchanges. This means that your transaction costs are likely to be greater with an ETF than with a no-load mutual fund purchased directly from the fund company. For long-term shareholders, their transaction costs might ultimately be offset by an improvement in ETF performance compared to a comparable mutual fund because ETF shareholders do not bear transaction costs arising from buy and sell orders from other shareholders.

Another difference between ETFs and mutual funds is that ETF share prices are subject to shifts in the balance between supply and demand at the time you place your order. This represents an additional risk that is nonexistent with open-end funds.

The flexibility of ETFs has led a wide range of investors to utilize them. We have, however, just barely begun to discuss the advantages of ETFs. Specifically, we have referred to potentially greater tax efficiency compared to regular mutual funds and to the benefits to long-term shareholders of not having their long-term performance eroded if other shareholders effect large or frequent transactions.

The next two chapters teach you how to evaluate mutual fund and ETF performance and show you in which areas ETFs have outperformed a majority of their actively managed competition.

Endnotes

- 1 The past results presented in this book, either real or hypothetical, do not guarantee future investment performance.
- 2 During the 1990s, a number of ostensibly low-volatility equity mutual funds stretched their mandates to be able to participate in the boom in technology stocks. These funds did boost their gains by doing so for as long as the tech boom lasted, but then they delivered unexpectedly large losses during the ensuing bear market. Shareholders who thought they were diluting their risk from exposure to technology stocks by investing in nontechnology funds found out that they were not as protected as they had expected.
- 3 Many mutual funds that normally charge sales loads are also available through discount brokers with mutual fund supermarkets such as Schwab or T.D. Ameritrade. These discount brokerages frequently do not impose the normal brokerage sales load on mutual fund purchases, which is a big advantage compared to using a full-service broker. However, the discount brokers do impose a range of charges of their own. Many funds purchased through supermarkets are free of transaction costs, but others might carry prohibitive costs. Be careful about purchasing mutual funds through brokers.
- 4 The exact URL for Indexfunds.com is www.indexfunds.com/data/tickerzone.php.
- 5 On the home page for the American Stock Exchange, you can use its ETF screener to find the ticker symbol for the shares you want. For further information about each ETF, enter its ticker symbol into the dialog box as if requesting a quote. Finally, on the quote screen, select the “tear sheet,” which has all the secondary ticker symbols as well as other information.

2

THE MULTIFACETED STOCK MARKET: A GUIDE TO DIFFERENT INVESTMENT STYLES

More than 185 ETFs are trading in the United States. Considering that most ETFs are low-margin businesses for their sponsors, why should there be so many? The answer, not surprisingly, is that a large number of investment objectives can be filled with ETFs. In medicine, when a condition has a multiplicity of treatments available, the implication is usually that no single treatment has demonstrated clearly superior results. The same is true in investing. If a strategy had a clearly superior record, nobody would invest using any other method. The fact that so many choices are available to the individual investor reflects that each investment strategy has its advantages and its drawbacks, its past successes and failures. You, the reader, are left with a bewildering array of choices. The good news is that the range of options might present the opportunity to outperform the market. Here we begin to lay out the choices you have that are the building blocks of a successful investment strategy. Later chapters of the book show you how to take advantage of the options available to you.

The First Decision: Stocks, Bonds, or Cash

ETFs represent different areas of the stock and investment grade bond markets. For cash holdings, you will likely be best off in a low-cost money market fund.¹ The closest alternative to a money market fund available through ETFs is the iShares Lehman 1–3-Year Treasury Index Fund, ticker symbol SHY. Although the 4.7 percent yield paid by SHY is higher than that paid by most money market funds, the yield advantage is small compared to the best money market funds. Moreover, SHY has some price risk, and you do have to pay commissions to buy and sell SHY, whereas the best money market funds incur neither of these disadvantages. In particular, during periods when the Federal Reserve has boosted short-term interest rates, the total return available from a good money market fund has actually been higher than that from short-term bond funds such as SHY. (Of course, the converse is also likely to be true. If the Federal Reserve is on a well-telegraphed campaign of lowering interest rates, SHY could potentially generate capital gains in addition to its yield.)

The first decision that the individual investor must make is how much to invest in each of these areas. The optimal asset allocation in general will be different at different points in the life of an investor and will depend on the economic outlook. Table 2.1 provides a brief summary of how stocks, bonds, and cash have performed historically in the United States.

TABLE 2.1 Long-Term Performance Histories for Three Different Broad Classes of Investments in the United States (Stocks, Bonds, or Cash), and the Relative Performance of These Different Investments According to the Level of Inflation

	Stocks (Large Company)	Bonds	Treasury Bills
Long-term annual compounded growth rate 1926–2004*	10.4%	Long term corporate: 5.9% Long-term government: 5.4% Intermediate-term government: 5.4%	3.7%

TABLE 2.1 (continued)

	Stocks (Large Company)	Bonds	Treasury Bills
Worst losses based on calendar year results	64% (1929–1932); 35% (1937); 37% (1973–1974); 38% (2000–2002)	11% (1967–1969) 7% (1978–1980) 7% (1999) (Risk figures for long-term corporate bonds only)	0
Moderate inflation	Best		
Severe inflation		Worst	Best
Deflation	Worst	Best	

*Source: Ibbotson, *Stocks, Bonds, Bills, and Inflation*, 2005 Yearbook.

Although a discussion of personal financial planning is beyond the scope of this book, Chapter 7, “The One-Decision Portfolio,” presents a one-decision portfolio suitable for relatively conservative investors. The one-decision portfolio allocates 50 percent to equity investments and 50 percent to income investments. Historically, all but the most conservative investors would have benefited from having exposure to U.S. equities.

Table 2.2 shows more recent annual return data. Based on calendar year total returns 1979–2005, stocks have been the most profitable investment. Nonetheless, bonds beat stocks in 8 out of the past 27 years. Cash also beat stocks in 8 out of 27 years. Cash beat bonds during 9 out of 27 years. The compounded gains per year during this period have averaged 13.4 percent for stocks, 9.1 percent for bonds, and 6.3 percent for cash. Note that these returns have been above those seen during longer historical periods.

Even though stocks have been significantly more profitable over the years, the fact that bonds have had less than half the risk of stocks and have outperformed stocks almost one-third of the time suggests that all but the most aggressive investors should maintain some exposure to bonds in addition to stocks to improve their balance of risk versus reward.

TABLE 2.2 Annual Total Returns for U.S. Stock, Bond, and Cash Benchmarks, 1979–2005

	Lehman Aggregate Bond Index	90-Day T-Bills	Russell 3000 Index
1979	1.9%	10.5%	24.1%
1980	2.7%	12.1%	32.5%
1981	6.3%	15.0%	−4.4%
1982	32.6%	11.4%	20.7%
1983	8.4%	9.0%	22.7%
1984	15.2%	10.0%	3.4%
1985	22.1%	7.8%	32.2%
1986	15.3%	6.2%	16.7%
1987	2.8%	5.9%	1.9%
1988	7.9%	6.9%	17.8%
1989	14.5%	8.2%	29.3%
1990	9.0%	7.8%	−5.1%
1991	16.0%	5.6%	33.7%
1992	7.4%	3.5%	9.6%
1993	9.8%	3.0%	10.9%
1994	−2.9%	4.4%	.2%
1995	18.5%	5.7%	36.8%
1996	3.6%	5.2%	21.8%
1997	9.7%	5.2%	31.8%
1998	8.7%	4.9%	24.1%
1999	−.8%	4.8%	20.9%
2000	11.6%	6.0%	−7.5%
2001	8.4%	3.5%	−11.5%
2002	10.3%	1.6%	−21.5%
2003	4.1%	1.0%	31.1%
2004	4.3%	1.4%	12.7%
2005	2.4%	3.3%	6.1%

Unfortunately, it has been difficult to predict when bonds are likely to outperform stocks. However, Chapter 11, “What Bonds Can Tell You About Stocks,” presents an interest rate indicator that tells you when to increase cash positions. The main function of cash in an investment portfolio is to provide a source of consistently positive performance and to reduce volatility. Conservative investors can use the one-decision portfolio of Chapter 7, which includes a cash position to reduce the risk of having a losing year. Growth-oriented investors can use cash only when other investments appear likely to underperform or to maintain a rainy-day fund for emergencies.

Size Matters

The first distinction between different stocks is the size of the company. From an investment perspective, company size is measured as the dollar value of all outstanding shares. For example, if a company has 10 million shares outstanding, and the recent closing price was \$20/share, the total market capitalization is $10 \text{ million} \times \$20 = \$200 \text{ million}$.

ETFs and mutual funds are available for large, midsized, and small companies. (Small companies are often referred to as small-cap, midsized companies as midcap, and large companies as large-cap.) No universally accepted range of market capitalizations defines large-, mid-, and small-cap stocks. Generally, large-cap stocks are those with market capitalizations over \$10 billion. Midcap stocks have market caps ranging from \$2–\$10 billion, and small-cap stocks are those with less than \$2 billion in total market capitalization. These dollar amounts are not strict rules but rather are soft guidelines that suggest which type of stock will appear in which type of index. Approximately 10 percent of all stocks are considered large-cap. However, this 10 percent represents some 80 percent of the dollar value of outstanding shares. Another 10 percent of stocks qualify as midcaps, and the remaining 80 percent are small-caps and microcaps. Midcap stocks represent approximately 10 percent of the total market cap of the U.S. market, and small-caps represent the remaining 10 percent.

Many large-cap stocks are extremely well known. WalMart, ExxonMobil, and General Electric are a few. As an example of how to calculate a market capitalization, consider Microsoft. There are 10.38 billion shares of Microsoft outstanding. At a current share price of \$27.25, the market capitalization of Microsoft is

$$10.38 \text{ billion shares} \times \$27.25/\text{share} = \$282.86 \text{ billion}$$

which is approximately 2.1 percent of the value of all publicly traded stocks in the United States.

Many midcap stocks are also well known. Examples include Clorox Co., Nordstrom, E-Trade Financial, and Royal Caribbean Cruises. All these shares have market capitalizations in the \$8–11 billion range, which places them at the larger end of the midcap universe.

Small-cap stocks, although numerous, are generally far less recognizable. Examples include Shurguard Storage Centers, the Men's Wearhouse, Toro Co., Jack in the Box Inc., Ethan Allen Interiors, and Phillips-Van Heusen. These companies have market capitalizations in the \$1–3 billion range.

A new category of ETF was launched in August 2005 to represent the behavior of microcap stocks, which are the smallest of the small-caps. The two microcap offerings that are currently available are the iShares Russell Microcap Index Fund (ticker symbol IWC) and the PowerShares Zacks Microcap Portfolio (ticker symbol PZI). The Russell Microcap Index consists of the smallest 1,000 stocks in the Russell 2000 Index plus the next 2,000 stocks smaller than those in the Russell 2000 Index. The largest company in the Russell Microcap Index has a market cap of \$540 million, and the smallest has shares totaling \$55 million.²

The underlying microcap index represents the broad universe of microcap stocks listed on national exchanges. The ETF, however, does not attempt to hold all 3,000 microcap stocks. Rather, with the goal of improving liquidity, IWC holds a subset of the Russell Microcap Index (approximately 1,200 shares).³

In contrast to the Russell Microcap Index, the Zacks Microcap Index uses a proprietary (nonpublic) stock selection algorithm in an attempt to outperform the broad microcap market. Zacks selects

300–500 stocks with market capitalizations ranging from \$58 million to \$575 million. Roughly equal dollar amounts of each stock are invested in the hypothetical index portfolio. PZI in general holds most or all of the stocks in the Zacks Index.⁴

Microcap stock ETFs must overcome two inherent difficulties. First, the underlying individual stocks are difficult to trade, which in finance is called *poor liquidity*. At any one time, relatively few shares are available to buy, and, conversely, relatively few buyers are willing to purchase shares put up for sale. As a result, the act of placing a buy or sell order for a microcap stock can easily move the market against you. (That is, the arrival of a buy order at a stock exchange can easily drive the price significantly higher before all the desired shares are purchased, or the arrival of a sell order can easily drive the share price significantly lower before all the desired shares are sold.)

Note that a large buy or sell order can move the market against you in even a widely traded stock. The difference between an easily traded (liquid) stock and a difficult-to-trade (illiquid) stock is the size of the order that can be filled without affecting the prevailing price. For blue-chip stocks such as XOM, an order of \$1 million (approximately 17,000 shares) can be filled without adverse price impact.

At the other end of the spectrum lie stocks such as Steinway Musical Instruments Company (ticker symbol LVB), which is a component of the Russell Microcap Index ETF. Although this brand name is well known to pianists, the company is small, with a total market capitalization of \$250 million. On a typical, quiet morning two hours into the trading day, the total volume in this stock has been only 800 shares. One hundred shares are available for purchase at \$31.18, but if you want more stock than that, you have to pay the next lowest ask price of \$31.22 (at which 900 shares are currently available). What this means is that an order of more than 100 shares drives up the stock's price by 4 cents, or almost 1/8 percent. If, on the other hand, you want to sell some shares, you have to accept a price of only \$31.01. A simple calculation shows that the bid-ask spread is huge:

$$\begin{aligned} & (\text{bid price} - \text{ask price}) / (\text{midpoint of bid-ask prices}) \\ & (\$31.18 - \$31.01) / (\$31.095) = 0.55 \text{ percent} \end{aligned}$$

Liquidity concerns apply not only to individual stocks, but also to ETFs. As a general rule, ETFs whose portfolios consist of highly liquid stocks are highly liquid. ETFs whose portfolios consist of illiquid stocks are difficult to trade. Most individual investors are unlikely to move the market against them when buying ETFs. However, for an investment professional who trades ETFs for many clients simultaneously, liquidity is an important concern.

The second challenge to microcap ETFs is the sheer number of microcap stocks that are available. Both of the available microcap ETFs hold fewer than half of the microcap stocks that are listed on exchanges. In the case of the Russell Microcap Index Fund (IWC), the ETF is attempting to match the performance of its index by holding only 40 percent of the index's constituents. As a result, there is a risk that the ETF will not succeed in its objective. The PowerShares Zacks Microcap Index Fund (PZI) has set for itself the goal of outperforming the broad microcap market. Even though it is passively managed (in that Zacks lists the shares it has selected every quarter and makes its selections public), it's always possible that Zacks' methods will lag rather than beat the broader microcap market. PZI does start off with a cost advantage: PowerShares Zacks Microcap Index Fund has an expense ratio of 0.7 percent. Royce Microcap Investor Class has an expense ratio of 1.5 percent, and Perritt Microcap has an expense ratio of 1.25 percent.

Because microcap stocks are so numerous, and because it is generally difficult to find buyers or sellers of significant numbers of shares at an attractive price (which ETFs are liable to have to do more frequently than mutual funds, which have the option of limiting the frequency of their shareholders' redemptions), it remains to be seen whether the microcap ETFs will be able to compete with microcap mutual funds such as Royce Microcap (RYOTX) or Perritt Microcap Opportunity (PRCGX). Several other microcap funds exist, but these two have among the longest track records of those available to individual investors.⁵

The distinction between different market capitalizations is relevant to the individual investor for a number of reasons. First, academic research has suggested and experience has demonstrated that

market capitalization is an independent predictor of investment performance.⁶ Since 1926, small-cap stocks have returned 2.3 percent per year more than large-caps.⁷ During the entire historical period, small-caps were riskier than large-caps. (Note, however, that during the 2000–2003 bear market, small-caps were safer than large-caps—an exception to the historical pattern.)

More importantly, small-cap stocks have not been more profitable than large-caps every year. Rather, there have been long stretches of time when large company stocks as a group were more profitable, and other stretches of time when small company stocks were more profitable. For example, small-cap stock mutual funds outperformed large-cap funds from 1977–1983, 1991–1993, and 1999–2005. Large-cap mutual funds outperformed from 1970–1976, 1984–1990, and 1995–1998.

There have even been times when stocks of one size were profitable overall while the other lost money. For example, in 1998, the Russell 2000 Index of small-cap stocks *lost* 2.6 percent (including dividends), whereas the S&P 500 Index (representing large-cap stocks) returned 28.6 percent during the same year. However, in 2001, the Russell 2000 Index showed a profit (2.5 percent), whereas the large-cap S&P 500 Index lost 11.9 percent.

The point to draw from these examples is that the success of a small- or large-cap investment can depend critically on when you make it. Clearly, it has been important to be in the right place at the right time. As you will see in Chapter 8, “When to Live Large,” a successful strategy that allocates investments to large versus small stocks might by itself significantly increase investment performance.

A number of fundamental explanations have been advanced as to why thousands of stocks across so many different industries should share performance characteristics based only on size.^{8,9} One issue is interest rates. Small companies have a harder time borrowing than large companies. Therefore, during periods of easy credit, small companies derive a relatively greater benefit than large companies.

Currency exchange rates might also have different impacts on large versus small companies. Large companies are more likely to do business internationally and to derive profits from operations abroad. A weaker U.S. dollar inflates the value of earnings from foreign operations—a benefit not enjoyed by small-caps in general.

Another important consideration in allocating between small- and large-cap stocks is trading costs. A truly long-term investor (multiple-year holding period) need not worry about this, but anyone who is more active will quickly discover that the cost of trading ETFs that hold small-cap stocks is significantly greater than the cost of trading large-cap ETFs. Multiple ETFs are available for each investment style, and as discussed next, the basis for selecting one over another should include a consideration of trading costs.

Each Investment Style Has Multiple ETFs

So far, we have treated the behavior of small- or large-cap stocks as if there were only one universally accepted performance result. Although there are relatively few sources of remote historical data, since the development of the Russell Indexes in 1979 and the more recent development of competing Standard & Poor's Indexes (beyond the S&P 500) and Wilshire Indexes, among others, there are now at least two and often more measures of the performance of large-cap and small-cap stocks. Moreover, at least two ETFs can track each market capitalization.

This is a potential benefit to the individual investor (after you sort through the confusion of having multiple indexes purporting to represent the same investment style). Given a decision to invest in small-cap stocks, for example, you can pick the best-performing ETF, or the ETF that is cheapest to trade (in terms of bid-ask spread and liquidity, if your order is large enough for liquidity to be an issue).

The selection of one ETF over another in the same investment style is not entirely objective. Chapter 12, “It’s a Jungle Out There,” delves into how I analyze which ETF to select when more than one is available.

Midcap ETFs

As an investment style, midcaps have had the best performance in the past 25 years compared to large- or small-caps. (See Figure 2.1.) Four ETFs track three midcap stock market indexes. Both the Midcap SPDR (MDY) and the iShares S&P 400 Midcap Index Fund (IJH) track the S&P 400 Midcap Stock Index. The iShares Russell Midcap Index Fund (IWR) tracks the Russell Midcap Index. The Midcap Viper (VO) tracks the Morgan Stanley Capital International (MSCI) U.S. Midcap 450 Index.

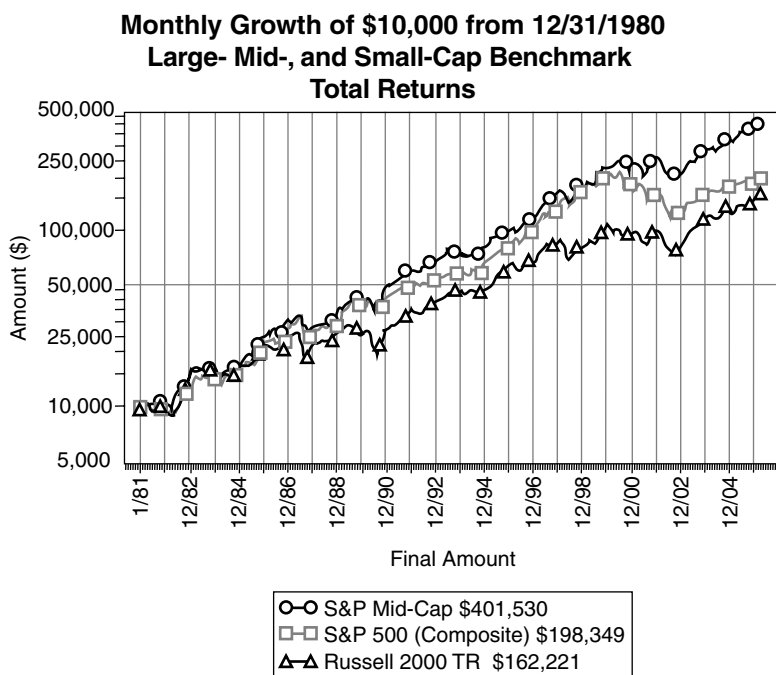


FIGURE 2.1 Growth of \$10,000 invested in small-cap, midcap, and large-cap benchmarks 1981–2005.

In addition, there is another ETF that on the face of it would not appear to be a midcap ETF—the S&P 500 equal-weighted ETF, ticker RSP, sponsored by Rydex Funds. However, when you examine its performance histories, you see that it most closely matches that investment style.

RSP holds the same stocks as the S&P 500. However, unlike the S&P 500 Index, in which larger company stocks are given more weight in the index, each of the 500 stocks has an equal 0.2 percent weight in the RSP. (By way of comparison, the top 100 stocks in the S&P 500 account for 57 percent of the entire index.)

The amazing observation is that RSP is more closely correlated with the S&P 400 Midcap Index than with the S&P 500 Index even though the RSP and the S&P 400 Index have no stocks in common, whereas the RSP and the S&P 500 Index have every stock in common. (See Figure 2.2.) This is a stunning example of how market capitalization is an independent and important determinant of investment performance.

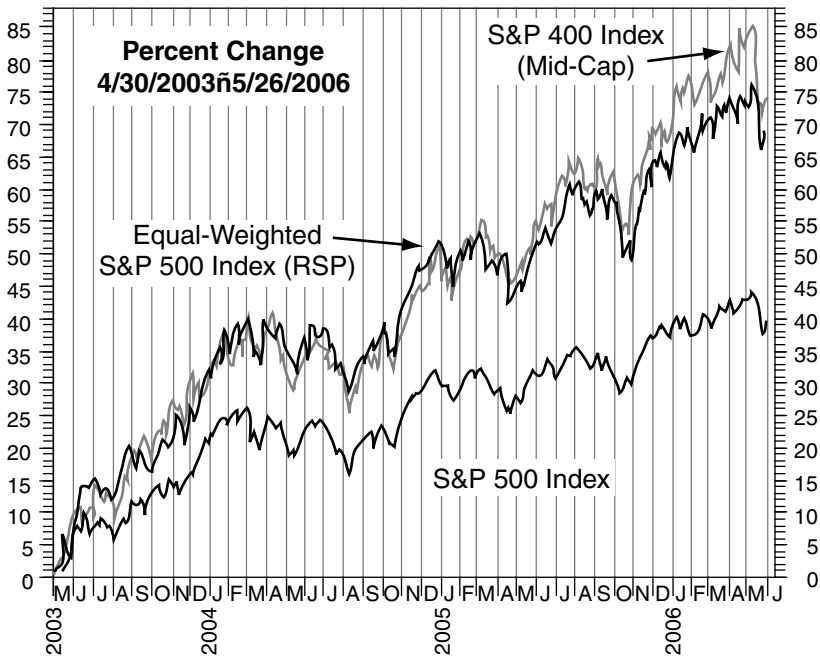


FIGURE 2.2 Percent change from 4/30/2003 in the Equal-Weighted S&P 500 Index ETF (RSP), compared to the S&P 500 Index and the S&P 400 Midcap Index.

All-Cap or Total-Market ETFs

Four ETFs capture the behavior of almost the entire market capitalization of the United States: the iShares Russell 3000 Index Fund (IWB), the Total Market Vipers (VTI), the StreetTracks Total Market ETF (TMW), and the iShares Dow Jones Total Market Index Fund (IYY). These can be useful proxies for the overall stock market, but you should not lose sight of the implicit allocation decision you make when you purchase any of these ETFs.

All of these ETFs reflect an average of publicly traded stocks that place heavier weight on companies with higher market capitalizations. (Actually, they weight stocks by the dollar value of outstanding shares available for trading, which excludes closely held shares. See Chapter 3, “A One-Step Strategy for Selecting Superior Investments.”) For example, the Russell 1000 Index (large-cap) accounts for 91 percent of the Russell 3000 Total Market Index. The S&P 500 accounts for 77 percent of the Wilshire Total Market Index.

Because so much more market capitalization resides in large-cap stocks than in small-cap stocks, the behavior of these total-market ETFs correlates much more closely with the behavior of large-caps than with small-caps. This is clearly demonstrated in Figure 2.3, which shows the behavior of different all-cap ETFs compared to a small- and large-cap benchmark from 2001–2005. During this period, small-cap stocks were much stronger than large-caps. The four all-cap ETFs that appear in Figure 2.3 had results far closer to that of the S&P 500 (large-caps) than to the Russell 2000 Index (small-caps).

As a practical matter, it might be easier just to use a large-cap ETF than a total-market ETF whenever the trading costs for the total-market ETF are higher. Conversely, if you want to allocate to both small- and large-caps for diversification, you might be better advised to purchase small- and large-cap ETFs separately so that you can achieve the portfolio mix you desire rather than the roughly 80 percent large-cap/20 percent small-cap mix implicit in buying a total-market ETF.

**Broad-Market ETFs, Russell 2000 and
S&P 500 Percentage Change
5/31/2001–5/26/2006**

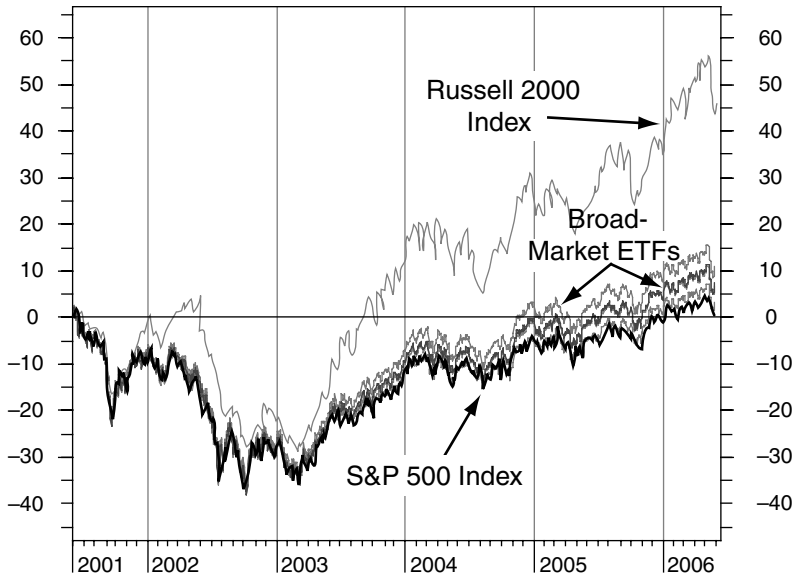


FIGURE 2.3 Performance of the Russell 2000 Index (small-cap benchmark), the S&P 500 Index (large-cap benchmark), and the four broad-market ETFs (ticker symbols IWV, VTI, TMV, IYY) from 2001–2005. Note that the broad-market ETFs moved much more closely to the S&P 500 than to the Russell 2000 Index, reflecting the significantly greater impact of large-cap stocks compared to small-caps on the behavior of total-market ETFs.

If you wanted to allocate more to small-caps at a time when you considered them to be undervalued as a group, a total-market ETF would be a poor choice. The total-market would have a relatively low (by historical standards) exposure to small-caps precisely when you wanted to overweight them.

Although total-market ETFs have not been around long enough to demonstrate a performance advantage compared to either large- or small-cap ETFs, one situation where they are attractive are for small investors for whom each brokerage commission has a significantly negative impact. Such investors can achieve some diversification with a single transaction.

Growth and Value ETFs

Other criteria are available with which to segregate groups of stocks besides market capitalization. An important category is the group of market indexes called *value indexes*, which represent the collective behavior of stocks that appear cheap compared to the overall market in terms of their *current* earnings, dividends, or value of the company's underlying assets (called *book value*). Although in principle, any company's stock could be a value stock if the share price dropped low enough, in practice, certain industries, such as banks, energy, and cyclical stocks, have been disproportionately represented in value indexes.

Complementing value indexes are *growth indexes*. Growth stocks generally appear expensive relative to the overall market in terms of their current earnings, dividends, or book values. Investors buy these stocks because the companies appear to have better *future* prospects than the typical company. Industries represented most heavily in growth stock indexes have included technology, health care, and consumer staples.

Indexes that do not attempt to separate growth and value stocks are called *blend indexes*. The S&P 500, composed of large-cap stocks, is an example of a large-cap blend index. The Russell 2000 Index is a small-cap blend index that consists of 2,000 small company stocks, again without regard to growth or value characteristics.

Over the long term, large-cap value has outperformed large-cap growth. However, as is the case with small- versus large-caps, growth and value stocks have done better at different times. As a general rule, when the stock market has been weak, large-cap value stocks have fared better than large-cap growth stocks. During strong market climates, large-cap growth has generally beaten large-cap value.

Small-cap growth and value have also fared differently from one another during different periods. However, it is hard to make a generic statement that small-cap value has generally done better than small-cap growth during bear markets. Certainly, from 2000–2003, small-cap value performed well compared to the other investment styles. However, during the bear market years of 1969–1970, small-cap growth actually held up better.

It turns out that the same strategy has been successful in guiding long-term asset allocation decisions between growth and value, whether using small- or large-cap ETFs. The growth-versus-value asset allocation model is discussed in Chapter 9, “Boring Bargains or Hot Prospects?”

Conclusion

Growth and value, large cap and small cap are all examples of different *investment styles*. ETFs offer you exposure to all the major investment styles, allowing you to choose the one with the best investment prospects at the time, and to change the amount you have invested in different areas whenever you want. The ability to move assets from one style to another is an important tool you can use to increase your investment performance. You will learn how to use this tool starting in Chapter 8.

Endnotes

- 1 Vanguard and Fidelity offer the best money market funds that are available to the general investment public. A number of other companies offer good money markets, but they are available only to restricted classes of investors such as participants in certain retirement plans or to very large clients of the fund. Note that although the risk of money markets is listed as zero based on historical experience, the value of money market funds is nonetheless not guaranteed.
- 2 www.russell.com/US/Indexes/US/Definitions.asp (Russell U.S. Equity Index Definitions, 11/8/2005)
- 3 <http://moneycentral.msn.com/content/invest/mstar/P129015.asp>
- 4 www.powershares.com/images/pdf/PZIZacks_PreProspectus.pdf (PowerShares prospectus for PZI dated 8/18/2005)
- 5 DFA U.S. Microcap (DFSCX) has performed closely to Royce Microcap since the latter’s incorporation in 1991. DFSCX goes back to 1982 but is available only to institutional investors with a minimum investment of \$2 million and prior approval of the investor by DFA.
- 6 Perhaps the most famous example is the work of Fama and French. Their historical data on the performance difference between large- and small-cap stocks is available online at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

- 7 Ibbotson, Stocks, Bonds, Bills, and Inflation, 2005 Yearbook.
- 8 It might be useful to discuss some terminology here. *Fundamental analysis* reflects the discipline of making investment decisions based on underlying data (subjective or quantitative), such as industry prospects, economic environment and projections, regulatory climate, source of competition, and so on. Many fundamental analysts visit individual companies, attend industry conferences, and generally form subjective opinions of the important players in the investments they are analyzing. The goal is for the fundamental analyst to estimate a fair value for his investments. When those fair values differ from the market values, the analyst makes recommendations to capture the economic benefit of the market's mispricing.

Technical analysis is the discipline of using quantitative data or visual chart patterns to guide investment decisions. Classically, technical analysts used chart patterns to make investment decisions. Then, the advent of calculators and computers led to the widespread use of quantitative data among technical analysts. Quantitative asset allocation models lend themselves to hypothetical testing on historical data in a way that is more difficult to achieve by looking at past visual patterns. The underlying assumption is that past patterns of market behavior will repeat themselves to enough of an extent to allow the technical analyst to beat the market.

Both fundamental and technical analysis assume that markets are “inefficient”—that stock prices do not accurately reflect the true worth of every traded stock. Fundamental and technical analyses are not mutually exclusive. For example, an asset allocation model that uses changes in interest rates to guide investment decisions could qualify as an example of either fundamental or technical analysis. The approach used in this book reflects technical analysis.

- 9 See, for example, Richard Anderson, *Market Timing Models*, Irwin Professional Publishing, 1997, Chapter 6.

