EXCHANGE-TRADED FUNDS: A NEW TWIST ON INDEX INVESTING

By Albert J. Fredman

Exchange-traded funds work like index funds yet trade throughout the day like stocks, with real-time prices and volume. They are also more economical to operate than traditional index funds because their sponsors do not deal directly with individual investors.

Exchange-traded funds (a.k.a. index shares) rank among the most actively traded stocks on the American Stock Exchange. Such funds offer investors an interest in a regulated investment company containing a basket of stocks that replicate an underlying benchmark, such as the S&P 500, the Nasdaq 100, or the Morgan Stanley Capital International Japan index.

Exchange-traded funds work like index funds, yet trade throughout the day like stocks, with real-time prices and volume. Conversely, traditional mutual funds are priced once a day at the market close.

Competing directly with index mutual funds such as the giant Vanguard 500, assets in exchange-traded funds have risen from $2.40 billion at year-end 1996 to $37.3 billion on March 31, 2000. Dozens of these funds now trade on the Amex, with more on the way.

The first in the group were Standard & Poor's depositary receipts—SPDRs ("spiders")—which replicate the S&P 500 index and came to market in early 1993. SPDR assets soared in the late 1990s as individuals became increasingly aware of the investment's ultra-low costs, tax efficiency, and intraday liquidity.

In 1996, Barclays Global Investors introduced 17 World Equity Benchmark Shares (or "WEBS"), each of which focuses on a single foreign market. On May 12, 2000, Barclays introduced iShares MSCI South Korea, its first emerging market offering. Barclays then renamed all the WEBS "iShares MSCI."

Barclays has recently rolled out many additional exchange-traded iShares offerings, which focus on domestic indexes compiled by Dow Jones, Frank Russell, and Standard & Poor's. Large, mid-sized, and small company indexes are available. Both growth and value options are offered on certain benchmarks and many of the indexes track stock market sectors.

Vanguard has filed with the Securities and Exchange Commmision to introduce a separate class of shares on five of its existing index funds—Vanguard 500 Index, Vanguard Growth Index, Vanguard Value Index, Vanguard Total Stock Market Index, and Vanguard Small Cap Index. Individuals who own shares in the corresponding existing Vanguard funds can transfer into the new exchange-traded shares, which will be called "Vipers" and trade on the Amex. Other fund companies will undoubtedly follow in Vanguard's footsteps.

Exchange-traded funds are more economical to operate than traditional index funds because their sponsors do not deal directly with individual investors. High costs of telephone centers and branch offices are avoided. Regular mutual fund companies must service many individuals who are demanding more attention and make frequent cash investments and withdrawals.

For the individual, buying or selling exchange-traded funds is as simple as trading any stock or closed-end fund. But to appreciate their uniqueness, it is

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TABLE 1. DOMESTIC INDEX SHARES

Fund	Ticker	Total Net Assets ($ mil)*	Beta**	Expense Ratio (%)	Portfolio Turnover (%)
Diamonds (DJIA)	DIA	1,998.7	0.96	0.12	34.70
Nasdaq-100 Index	QQQ	10,759.4	1.50	0.18	13.60
S&P 500 SPDR	SPY	16,970.4	1.03	0.12	6.23
S&P MidCap 400 SPDR	MDY	2,686.1	0.93	0.25	43.42
Select Sector SPDRs:					
Basic Industries	XLB	115.4	0.52	0.28	9.70
Consumer Services	XLV	86.3	0.86	0.28	14.56
Consumer Staples	XLP	259.0	0.84	0.28	2.91
Cyclicals/Transportation	XLY	128.2	0.97	0.28	9.56
Energy	XLE	217.0	0.47	0.28	20.15
Financial	XLF	464.8	1.17	0.28	5.71
Industrial	XLI	62.4	0.69	0.28	12.42
Technology	XLK	1,421.9	1.22	0.28	21.23
Utilities	XLU	72.8	0.58	0.28	38.86

**As of 3/31/00*
***A measure of risk relative to the market. The S&P 500 is used in the calculation of beta.*
Source: *Bloomberg; Amex Web site (www.amex.com); trust prospectuses.*

useful to have a general understanding of how they work.

BEHIND THE SCENES

In contrast to regular mutual funds, cash investments or redemptions are not possible with exchange-traded funds. Rather, professional investors—often Amex specialists—can make block-size "in-kind" investments and redemptions consisting of large baskets of stocks matching the target index. For an in-kind investment, the stocks plus a residual cash requirement are deposited with a trustee in exchange for Amex-traded shares of the fund, such as a SPDR. Putting together such a basket is not difficult because a computer program facilitates the simultaneous purchase or sale of a predefined basket of stocks in a single coordinated transaction. Specialists create and redeem fund shares in response to imbalances in demand and supply. For instance, new SPDR shares would be created if demand suddenly surged.

A tax-efficiency edge is an important by-product of the in-kind redemption process. Specifically, shares held by the trust need not be sold to meet redemptions in a bear market—a potential concern that regular index fund investors have. Shares are sold within an exchange-traded fund's portfolio only when one or more index components change.

Like their closed-end cousins, exchange-traded funds have both a share price and a net asset value. Unlike the former, they are priced efficiently because potential arbitrage profits motivate large institutional traders to erase premiums or discounts. In fact, 99% of the time the difference between the closing market price and net asset value of SPDRs is less than 0.5%.

How does arbitrage work?

Shares of funds are issued or redeemed by their distributor in "creation units." Each represents a basket of stocks matching those in the index in composition and weighting. The size of a creation unit for SPDRs is 50,000 shares, so the unit would be valued at $7.5 million if SPDRs were quoted at $150. Creations or redemptions usually occur in multiple units. On several occasions, this process has resulted in as much as $1 billion moving in or out of the SPDR trust during a single day.

Creations take place when a fund trades at a premium, whereas discounts prompt redemptions. If SPDRs were trading $20 above their net asset value, an institution may choose to make an in-kind investment and simultaneously sell an equivalent SPDR position at the Amex. The arbitrageur locks in a risk-free profit while helping to close the gap between price and net asset value. SPDR creations and redemptions occur every several days. Activity is less frequent with smaller, less actively traded funds.

Some individuals will never give up trying to time the market. As they can be traded at varying prices throughout the day, exchange-traded funds should benefit regular index mutual funds by removing many of their market timers. Long-term investors in traditional index funds will be protected from the higher costs and potential tax liabilities associated with large inflows and outflows of hot money.

DOMESTIC PORTFOLIOS

Table 1 provides selected data on the domestic exchange-traded funds (this column focuses primarily on the older funds for which sufficient data were available at this writing). The beta figures are a measure of risk that reflects the volatility of the individual shares relative to the S&P 500—betas above 1.0 indicate that a fund is more volatile than the S&P 500, and values below 1.0 reflect less volatility. In theory, S&P 500 SPDRs have a beta of 1.0.

SPDRs are the Amex's second most actively traded stock and have $17 billion in assets, ranking in size among the largest 30 stock and balanced mutual funds. SPDRs represent ownership in the SPDR trust, a unit investment trust that holds the stocks in the underlying index. (SPDRs trade at 1/10th the value of the S&P 500, so the per share price would be 150 if the S&P

stood at 1500.) The S&P 500 provides ample exposure to the so-called new economy, as technology companies comprised 34% of the benchmark's total market value on March 31.

Looking for even broader exposure to the domestic market than you have with an S&P 500 fund? Recently introduced by Barclays Global Investors, iShares Russell 3000 fund tracks the 3000 largest domestic companies based on market value, which encompass about 98% of the U.S. stock market.

Introduced in May 1995, MidCap SPDRs target medium-sized companies as mirrored by the S&P MidCap 400. MidCap SPDRs have a significantly higher turnover rate than SPDRs (Table 1) because many more changes occur in the composition of the MidCap index. Turnover occurs as mid-sized companies grow and graduate to the S&P 500; the bigger the market cap of the company leaving the index, the greater its impact on turnover. For instance, Internet bellwether America Online had a big effect when it moved from the MidCap 400 to the S&P 500 last year.

Diamonds replicate the 30-stock Dow Jones industrial average. The 104-year old Dow is the only "price weighted" indicator within the index share arena—all others are "value weighted," i.e., weighted by each component stock's market capitalization (stock price per share multiplied by that company's shares outstanding). Diamonds trade at 1/100th of the Dow's quotation. The Dow's composition is modified occasionally to reflect changes in the economy. Diamonds got a face-lift on November 1, 1999, when Microsoft, Intel, Home Depot, and SBC Communications replaced Chevron, Goodyear Tire, Sears, and Union Carbide in the Dow 30. Microsoft and Intel—the first Nasdaq-traded firms ever included in the Dow—give the venerable average more of a technology flavor. Diamond and SPDR expense ratios were reduced from 0.18% to 0.12% effective March 1, 2000.

Introduced March 10, 1999, the Nasdaq-100 Index Tracking Stock (a.k.a. "triple Qs," a spin on their ticker QQQ) benchmarks the 100 largest non-financial domestic and international companies in that market—particularly technology, biotechnology, retail, and Internet firms. A 24% weighting is the limit for any one stock. Cisco Systems, Intel, and Microsoft jointly comprise about 22% of the index's value. By far the most actively traded Amex stock, triple Qs had $10.8 billion in assets on March 31. Shares are priced at 1/20th of the value of their highly volatile benchmark. This volatility is reflected in the beta of 1.5 for triple Qs, meaning that they are about 50% more volatile than the S&P 500, with its beta of 1.0. The shares appreciated 125% between their March inception and March 10, 2000. Triple Qs split two-for-one on March 20, 2000, to bring the share price to a more attractive trading range for investors.

Each year, the Nasdaq-Amex Market Group performs an analysis to determine the top 100 companies for its benchmark. On December 13, 1999, 15 technology companies were added to replace a mix of technology, media, and healthcare shares. These new components also are included in triple Qs.

SECTOR CHOICES

The nine Select Sector SPDRs each represent a group of companies within the S&P 500. Each company is weighted by its total market value. The portfolios change with variations in stock prices, mergers, and other corporate events. The Amex's Web site (www.amex.com) provides the most recently available portfolio breakdowns.

Technically, S&P divides its 500 index into 11 sectors. However, it would not be feasible to offer 11 Sector SPDRs because some would be too concentrated in big-cap issues. According to an IRS restriction, a regulated investment company cannot invest more than 25% of its assets in any one stock. Thus, the 11 industries were reconstituted as nine. Not all companies fit perfectly. For instance, General Electric is included in the industrial sector SPDR even though it has a large presence in financial services. Some of the companies in the technology SPDR, such as Boeing, Lockheed, Eastman Kodak and BF Goodrich, are not the fast-growing tech plays you might expect.

There are similarities between the broader-based triple Qs and the more focused S&P Select technology SPDR. For instance, Microsoft carries the greatest weight in each. Even though a handful of fast-growing technology stocks dominate the Nasdaq 100, the S&P Select technology index has the purer tech focus. The latter includes some important tech companies that are not in the Nasdaq-100, such as America Online, IBM, and Lucent Technologies.

Some of the sectors are relatively broad. For example, the cyclical/transportation SPDR represents companies involved in building materials, retailing, apparel, housewares, air transportation, automotive manufacturing, shipping, and trucking. Sector SPDRs compete with actively managed sector funds offered by companies such as Fidelity, INVESCO, and Vanguard. An assortment of closed-end sector funds also exists. Many of the actively managed sector funds are more focused. For example, Fidelity has funds focusing on areas such as air transportation, automotive, brokerage and investment firms, insurance, and leisure. In addition, Fidelity offers four technology choices. However, a narrower focus often also means greater risk.

Company risk is a consideration with sector SPDRs because the top three holdings may comprise a third or more of the fund's assets. Ac-

TABLE 2. SINGLE-COUNTRY EXCHANGE-TRADED FUNDS*

Country	Ticker	No. of Hold'gs	Total Net Assets ($ mil)**	Weight'g of Top Stock (%)	Portfolio Turnover (%)
Australia	EWA	44	62.4	22.89	13.83
Austria	EWO	18	9.4	24.91	49.95
Belgium	EWK	15	12.5	23.19	62.99
Canada	EWC	67	14.7	23.88	11.66
France	EWQ	56	94.6	16.42	0.00
Germany	EWG	45	186.4	22.73	13.67
Hong Kong	EWH	33	89.1	24.66	42.89
Italy	EWI	55	59.5	20.44	7.89
Japan	EWJ	252	993.3	7.17	0.00
Malaysia	EWM	54	124.5	13.33	7.24
Mexico	EWW	43	27.6	24.60	18.36
Netherlands	EWN	25	23.9	18.75	32.13
Singapore	EWS	30	99.9	21.01	25.31
Spain	EWP	38	42.8	21.16	16.58
Sweden	EWD	27	27.8	23.18	33.44
Switzerland	EWL	32	40.0	17.41	35.10
United Kingdom	EWU	101	141.1	15.54	13.24

*iShares MSCI (formerly WEBS)
**As of 3/31/00
Source: Bloomberg; Amex Web site (www.amex.com); WEBS prospectus.

tively managed sector funds typically give greater weightings to some of the manager's favored smaller companies. Sector SPDR betas range from 0.47 for energy to 1.22 for technology (Table 1), indicating a considerable variation in volatility.

Most sector SPDRs have higher portfolio turnover rates than the S&P 500 SPDRs (Table 1). Because there are fewer stocks in these portfolios, the impact of one company leaving can be greater than it would be if the portfolio had 500 stocks. In addition, takeover activity can be concentrated within certain sectors and that can vary from time to time. Turnover results in transaction costs and realized gains (or losses) from the sale of component stocks. Any resultant capital gains distributions are distributed annually to shareholders. State Street Global Advisors (the advisor for sector SPDRs) recently reduced the expense ratios on all nine sector portfolios by 50% to 0.28%. The lower expenses will remain in effect for at least a year.

COUNTRY INDEX FUNDS

Introduced in 1996, World Equity Benchmark Shares are registered as open-end investment companies. Now named iShares MSCI, their primary focus is on developed stock markets, as evident in Table 2. Fourteen of the 17 countries targeted are in Morgan Stanley Capital International's 20-country EAFE index (Europe/Australasia/Far East).

These country funds have grown in assets and trading volume at a time when a noteworthy number of closed-end country funds have open-ended or liquidated. Total net assets of all 17 portfolios amounted to $2 billion as of March 31, 2000.

With $993 million in assets, iShares MSCI Japan is the largest. A few of the funds provide access to countries that do not have single-country funds available in the U.S. These include Belgium and Sweden. Expense ratios on all iShares MSCI are 0.84%, which, while high, is far below those of most comparable actively managed single-country funds.

Each iShares MSCI portfolio represents a basket of stocks designed to track its corresponding Morgan Stanley Capital International country index. Unlike SPDRs, triple Qs and Diamonds, these country funds do not invest in every stock in their respective benchmarks. Instead, they replicate their country indexes with a representative sample, using portfolio optimization. Correlations of individual funds to their underlying MSCI indexes average 0.90 (with 1.0 reflecting perfect positive correlation). They all have a big-cap bias because they are based on value-weighted country indexes. A number of them have fairly high turnover rates because the impact of index component changes due to mergers and other factors is greater with a relatively small number of stocks, as in the case of sector SPDRs.

Like sector SPDRs, iShares MSCI for smaller countries weight their top holdings heavily. They are classified as "non-diversified" funds under the Investment Company Act of 1940 and it's not uncommon to see more than 20% of a fund's assets invested in its top stock, as evident in Table 2. Their three biggest companies recently accounted for close to 50% of the assets of the Austrian and Belgium funds. Considerably less concentration is evident in Japan, where the top three companies amounted to a more modest 18% of assets.

Like single-country closed- and open-end funds, iShares MSCI can be highly volatile and should only be used for a small part of an investor's portfolio. Diversifying among countries and geographic regions is recommended. Single-country funds have greatest appeal for those with large portfolios who want to fine-tune their country exposure. They can complement holdings of open- and closed-end regional and international funds. For more information on iShares MSCI, see the Web site for Barclays Global Investors (www.ishares.com).

INVESTMENT ISSUES

Exchange-traded funds offer more investment options and greater liquidity than traditional index funds. Because their prices fluctuate intraday, you can place a "limit order" to buy or to sell at specified prices. Such orders get executed only if you receive your price or better. As with stocks, you also can place a variety of other kinds of orders such as "stop" and "stop-limit" orders.

The ability to get in and out at various intraday prices gives these funds a trading edge over mutual funds, which can be bought or sold only at the day's closing net asset value. (One exception: The 36 Fidelity Select Sector Portfolios are repriced hourly during each trading day). Intraday liquidity can be advantageous for some individuals in volatile, fast moving markets. Because of brokerage costs, index shares may make better sense for investors who are putting a larger lump sum into the market as opposed to those who want to dollar cost average, with many small purchases. However, the ability to buy and sell exchange-traded funds at low-cost on-line has added to their appeal.

Rapid-fire trading is not recommended with any investment. The goal of indexing is to ensure that an investor performs about as well as the market over the long haul, while minimizing taxes and transaction costs. Frequent buying and selling can turn these funds into a loser's game because taxes and transaction costs increase along with the likelihood of timing bloopers. Market timing usually underperforms a buy-and-hold strategy. Exchange-traded funds are excellent vehicles provided they're used correctly in a disciplined investment program. Anecdotal evidence indicates that much of the active trading in these funds is done by institutions. For instance, many of the transactions in SPDRs are block trades of 10,000 shares or greater, which would amount to at least $1.5 million at a per share price of $150. However, the triple Qs are actively traded by many individuals who are attracted by the high volatility of the Nasdaq 100.

Exchange-traded funds also can be purchased using margin, and sold short on a "downtick" or at a price lower than that of the last different price. (Most stocks can only be shorted on an "uptick" or a price above the preceding different price.) Short sellers speculate on a price decline by selling a security borrowed from their broker, which they hope to buy back at a lower price. The strategy is risky because the market has an inherent bullish bias, and downturns are very difficult to pinpoint. In contrast to speculators, hedgers may sell exchange-traded funds short to protect an existing portfolio against a downturn. If the market tumbles, the gain on the short position offsets the loss in value on the portfolio. Conversely, the hedger faces a problem if the market pulls a surprise and surges. As in an outright speculation, the outcome of a hedge depends on the accuracy of one's prediction.

CLOSED-END COMPARISONS

In sharp contrast to the efficient pricing of index shares, many closed-end funds recently have changed hands at steep discounts. Markdowns of 30% or more on country funds are not uncommon. The absence of discounts and premiums is a plus because individuals hate to lose money. Behavioral finance research tells us that investors value a unit of monetary gain less than they suffer from the adverse impact of an equal unit of loss. The average investor doesn't see the possibility of a 30% discount narrowing to 20% as a reward sufficient to offset the danger of that discount widening to 40%. The popularity of index shares may have contributed to deeper discounts on closed-end funds with similar objectives. Yet seeking value in deeply discounted closed-end funds remains a sensible strategy for some investors.

In addition, the following differences exist between exchange-traded funds and closed-end funds:

- *Lower cost*. The index-fund structure of exchange-traded funds results in much lower management fees, greatly reduced transaction costs, and more predictable performance.
- *Tax efficiency*. As explained, the in-kind redemption process makes exchange-traded funds highly tax efficient. Conversely, closed-end funds often make large taxable distributions. Exchange-traded funds are more suitable for taxable accounts if the investor follows a buy-and-hold strategy.
- *Large companies predominate*. Because many exchange-traded funds track capitalization-weighted indexes, they have a built-in, big-cap bias. A closed-end fund may give greater representation to smaller firms.
- *Greater simplicity and transparency*. Closed-end funds are more complicated and they have their idiosyncrasies. For instance, many investors have been confused and disappointed by rights offerings. In addition, it is easy for investors to know the individual portfolio holdings of exchange-traded funds.
- *Lower risk*. Several factors contribute to the lower risk of exchange-traded funds. First, there is no management risk because each fund tracks an index. Second, investors don't face the risk of widening discounts. Third, exchange-traded funds cannot internally leverage like many closed-end funds, which increases volatility. Finally, exchange-traded funds often have greater liquidity. This is especially true of SPDRs.

DIVIDEND CONSIDERATIONS

Most exchange-traded funds pay periodic dividends. SPDRs pay quarterly and Diamonds pay monthly. No dividends have been paid on triple Qs because the modest dividends

earned on this portfolio do not exceed the trust's expenses. Dividend reinvestment is possible if your broker offers it, but you only can buy full shares, not fractional shares as with a mutual fund. In addition, a fee may be charged for this service, which normally is free with regular mutual funds. Most exchange-traded fund shareholders do not reinvest dividends.

Traditional index mutual funds like the Vanguard 500 may have a performance edge for long-term investors because they reinvest dividends in additional stock as received. Conversely, exchange-traded funds structured as unit investment trusts (which Diamonds, SPDRs, MidCap SPDRs, and triple Qs are) cannot reinvest dividends received from the underlying portfolio. Instead, the income remains in an interest-bearing account until it is distributed to shareholders on the next scheduled periodic payment date. Technically, the interest earned on the cash balances will offset the trust's expenses. With rising stock prices, this practice results in a "dividend cash drag," meaning the investment's total return is affected by the delay in reinvesting dividends.

CONCLUSIONS

Exchange-traded funds have caught the attention of many investors. Their unique structure provides another choice for individuals who prefer funds that replicate market indexes. After all, a compelling case for indexing exists with the majority of actively managed funds underperforming their benchmarks. Exchange-traded funds can be useful complements to investor portfolios of mutual funds, closed-end funds, and individual stocks. Major pluses are low costs, high tax efficiency where turnover is low, and the ability to use limit and other special trading orders. Intense competition among sponsors of exchange-traded funds has led to rock-bottom expenses on a number of funds. Barclays new iShares S&P 500 Fund has a 0.0945% expense ratio versus 0.18% for the venerable $103 billion Vanguard 500.

The individual offerings are quite different from one another and their use depends upon factors such as the size of an investor's portfolio, whether the holdings are in taxable or tax-protected accounts, and the investor's level of sophistication. The more focused single-country and sector vehicles are designed for sophisticated investors with large portfolios.

Even though active investors are attracted by their flexibility, exchange-traded funds are best-suited for long-term holdings. Funds based on broader indexes such as the S&P 500 or the even more-inclusive Russell 3000 are generally most appropriate as core holdings. Jumping in and out in an effort to catch the latest "hot" trend defeats the underlying philosophy of building wealth slowly but surely.

For further information, click on "Index Shares" at the Amex Web site (www.amex.com). Also, go to the site for Barclays Global Investors (www.ishares.com). ✦