Journal of Indexes

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the summer issue

July/August 2010

Micro Caps + Informational Inefficiency = Active Opportunities
Steve Swartley

Keeping Up With Styles
Philip Murphy

Ten Stock Index Myths
Robert Waid

Are Moving Averages Effective?
Mack Courter

Plus more from Blitzer on bubbles, as well as Bhatia, Labovitz & Kenyon and our panel of experts

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features

Micro Caps + Informational Inefficiency = Active Opportunities
By Steve Swartley 10
A small space, with lots of room to explore.

Keeping Up With Styles
Philip Murphy 14
Sometimes it's good to update your styles.

Ten Stock Index Myths
By Robert Waid 20
The truth behind some widely believed fallacies.

Moving Averages: Are They Effective?
By Mack Courter 24
The historical value of the golden cross.

Market Concentration As A Bubble Signal
By David Blitzer 28
A true indicator or just tea leaves?

Myths About Alpha
By Hemen Bhatia 30
Looking at active manager performance in India.

The Mathematics Of Equity Index Pricing
By Mark Labovitz and Jeff Kenyon 34
More complex than you think.

The Summertime Survey
By *Journal of Indexes* Staff. 42
Chatting with experts about the things they know best.

news

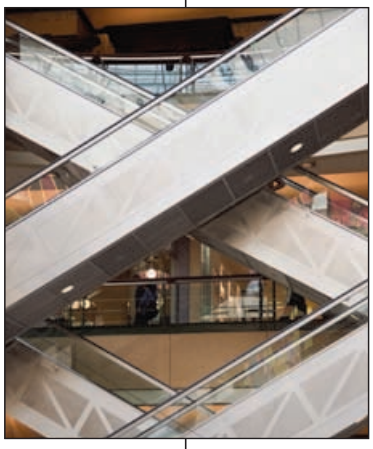
ETFs Dominate May 'Flash Crash' 50
S&P Records Dividend Surge 50
SEC Stalls New Applications For Derivatives-Based ETFs 50
Study: ETF Investors Are Bad Market Timers. 50
S&P 500 ETF To Launch In China 51
Indexing Developments 51
Around The World Of ETFs 54
From The Exchanges 56
Back To The Futures 56
Know Your Options 56
On The Move 56

data

Selected Major Indexes 58
Returns Of Largest U.S. Index Mutual Funds 59
U.S. Market Overview In Style 60
U.S. Industry Review 61
Exchange-Traded Funds Corner 62

14

20



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Robert Waid is managing director and head of indexes and index research for Wilshire Equity Analytics. He has over two decades of index-related experience at Wilshire Associates. Waid's prior responsibilities included overseeing Wilshire's proprietary investment department and proprietary research, where he was responsible for the development, implementation and management of domestic long/short programs. Prior to this, Waid oversaw Wilshire's Database Systems Group. He holds a B.S. in finance from the University of Southern California.

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Jim Wiandt
Editor

Beach Reading

Is it summer again, already? We always do our very best around here to provide all of you index geeks out there with some quality beach reading. I know you're out there—those of you who, like us, eat this stuff up and eagerly look forward to every issue. Don't be embarrassed to take it out to the beach, the lakefront pier, your veranda, wherever. You know you love wonky index talk. Just give yourself over to it.

This issue is a bit of a potluck, but some really *good* potluck, like grandma's scalloped potatoes, Uncle Roger's baked ham or Aunt Sally's sugar-crusted oatmeal cookies at the family reunion. Almost all of the articles this issue contains come from index or index-based product providers—so we really *have* kept it in the family this time.

We kick off the issue with a bit of blasphemy from Steve Swartley of the Russell family (where, as a side note, there are all sorts of interesting things going on of late) telling us to go active in the micro-cap space (as, of course, many large institutional investors have done around Russell small-cap indexes for years). This article provides a nice window into the latest research on the topic.

From Philip Murphy of the S&P family is a great piece all about the latest thinking in style. While you may see it as PR for S&P's recent alterations of their style indexes, I found it an incredibly interesting inside look at the thinking that goes into index innovation and a snapshot of where the thinking on style (historically, metrics have been all over the map) currently sits. And why not keep it rolling with the index providers? Bob Waid of Wilshire weighs in with a *great* little piece on what he characterizes as the 10 biggest myths in the index business. Following Bob is Mack Courter from Courter Financial Services with an intriguing—and very active (for us)—piece on moving averages and their efficacy as investment metrics.

Getting back to the indexers is David Blitzer, who has a debate with himself over whether weighting tilts can signal actionable bubbles. Hemen Bhatia of Benchmark Asset Management then reminds us that indexing doesn't work just in the U.S. His data indicate that indexation blows active management *out of the water* in India. Finally, Mark Labovitz and Jeff Kenyon explain in detail why pricing an equity index is not as easy as it looks in this bit of a do-it-yourself guide to good equity index building.

Bringing us home is a summer roundtable including lively quotes from the likes of Mark Mobius, John Hyland and frequent *Journal of Indexes* contributor Craig Israelsen, and a raucous back-page humor piece from Lara Crigger that had me laughing out loud. Be careful not to spill your beach drink on that.

Happy summer reading!

Jim Wiandt
Editor

ETFR

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The search for income

By Marsha Zapson

Dividends are one corner of the ETF universe where investor enthusiasm is matching managers' product development. Investors can already choose from seven ETFs offering exposure to different baskets of dividend paying stocks, including one with an international slant. Meanwhile, there are two products waiting in the wings. As ETFR goes to press, Vanguard's Dividend VIPER was poised to launch on the American Stock Exchange and Nasdaq was seeking a manager to design an ETF tracking its nascent Nasdaq Dividend index.

It's no secret that investors today are looking for yield, and dividends are "hot" again after the tax cuts of a few years ago. Many are still smarting from the recent bear market and demographics are beginning to take their toll as the first baby-boomers move into the later parts of their investment lives. Like many successful financial products, these dividend ETFs are shrewdly answering a market need.

But do investors know what they're buying? The seven dividend ETFs currently offer yields ranging between 3.6% and 1.5%, and whether that dividend 10▶

Dividend ETFs

Fund Name	Ticker	1Q'06	Launch
iShares Select Dividend	DVY	3.3	Nov-03
S&P Dividend Aristocrats	SDY	3.6	Nov-05
First Trust Morningstar Dividend Leaders	FDL		Mar-06
PowerShares Dividend Achievers	PFM	2.8	Sep-05
PowerShares Dividend Achievers (HiYield)	PEY	1.4	Dec-04
PowerShares Dividend Achievers (HiGr)	PHJ	3.9	Sep-05
PowerShares Dividend Achievers (Int'l)	PID	6.3	Sep-05
Vanguard Dividend VIPERs	*Will be launched shortly*		
Nasdaq Dividend Achievers	*Has not yet been filed*		

IN THIS ISSUE

Every Jane and Joe can now take a direct bet on oil, easily and relatively cheaply. USO, the first ETF to track the price of crude, launched in April on the Amex. Like the Deutsche Bank Commodity ETF, USO invests in futures. Cover

The QQQQ twist: Nasdaq now offers two new takes on QQQQ. QQEW is an equal weighted version of the Nasdaq-100, while QTEC is an equal weighted version of technology stocks in the Nasdaq-100. According to John Jacobs, Nasdaq's executive vice president, the ETFs were launched due to investor demand. Page 3

ETFR's Expert Portfolios have done well this quarter. At the end of March, the Tack 80 was up 4.4%, the PMMA was up 4.3%, INR was up 6.1%, and the Davep was up 7.2%. In comparison, the Diamonds was up 4.6%, the Nasdaq 100 was up 6.4%, and the SPDR was up 4.7%. Each portfolio manager explains how and why his portfolio did well. Page 7

Remember the largecap rally that never happened? ETFR looks at the 12 largecap ETFs in the market and finds that Rydex's equal weighted version of the S&P 500 outperformed the others in the first quarter. Page 8

ETFR's monthly databank includes ETFs from around the globe. Page 13

UPDATES

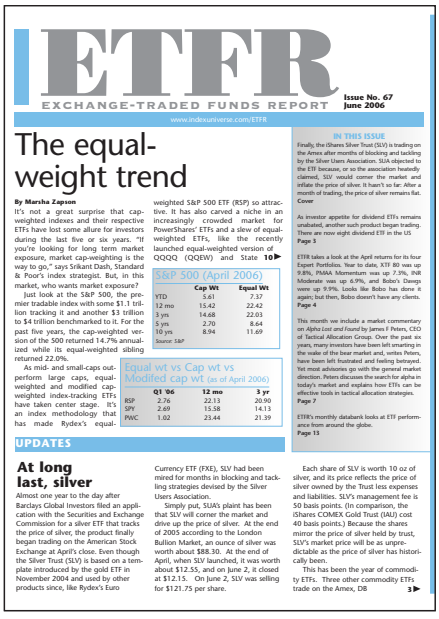
Crude realities

Even though oil prices more than tripled since late 2001, most investors could watch but not partake. Gaining direct exposure to the commodity itself was a challenge for everyday investors who could not or did not want to trade futures. All that changed when the US Oil Fund LP (USO) began trading on the American Stock Exchange April 10, 2006. For the first time, every Jane and Joe in the US can make a bet on crude oil easily and cheaply.

Like the recently launched Deutsche Bank Commodity ETF (DBC), USO is not a 1940 act company. Rather it is a commodity pool registered with the Commodity Futures Trading Commission and Securities and Exchange Commission. USO, managed by California-based Victoria Bay Asset Management, buys futures to track the price movement of West Texas Intermediate light, sweet crude oil. WTI is the primary benchmark for oil in the US.

USO is an unlevered pool, "meaning if $100 million comes in, we buy $100 million of futures contracts," said John Hyland, USO's director of portfolio research. After the first month, the fund rolls the contracts forward, month after month, year after year. However, because the fund only has a small proportion to advance as margin, the balance of unused cash sits in short-term treasuries.

"USO is calculated on a total return basis, which does not mean the price of the ETF equals the price of that 3▶



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The equal-weight trend

By Marsha Zapson

It's not a great surprise that cap-weighted indexes and their respective ETFs have lost some allure for investors during the last five or six years. "If you're looking for long term market exposure, market cap-weighting is the way to go," says Srikant Dash, Standard & Poor's index strategist. But, in this market, who wants market exposure?

Just look at the S&P 500, the premier tradable index with some $1.1 trillion tracking it and another $3 trillion to $4 trillion benchmarked to it. For the past five years, the cap-weighted version of the 500 returned 14.7% annualized while its equal-weighted sibling returned 22.0%.

As mid- and small-caps outperform large caps, equal-weighted and modified cap-weighted index-tracking ETFs have taken center stage. It's an index methodology that has made Rydex's equal-weighted S&P 500 ETF (RSP) so attractive. It has also carved a niche in an increasingly crowded market for PowerShares' ETFs and a slew of equal-weighted ETFs, like the recently launched equal-weighted version of QQQQ (QQEW) and State 10▶

S&P 500 (April 2006)

	Cap Wt	Equal Wt
YTD	5.61	7.37
12 mo	15.42	22.42
3 yrs	14.68	22.03
5 yrs	2.70	8.64
10 yrs	8.94	11.69

Source: S&P

Equal wt vs Cap wt vs Modified cap wt (as of April 2006)

	Q1 '06	12 mo	3 yr
RSP	2.76	22.13	20.90
SPY	2.69	15.58	14.13
PWC	1.02	23.44	21.39

IN THIS ISSUE

Finally, the iShares Silver Trust (SLV) is trading on the Amex after months of blocking and tackling by the Silver Users Association. SUA objected to the ETF because, or so the association heatedly claimed, SLV would corner the market and inflate the price of silver. It hasn't so far. After a month of trading, the price of silver remains flat. Cover

As investor appetite for dividend ETFs remains unabated, another such product began trading. There are now eight dividend ETF in the US Page 3

ETFR takes a look at the April returns for its four Expert Portfolios. Year to date, XTF 80 was up 9.8%, PMAA Momentum was up 7.3%, INR Moderate was up 6.9%, and Bobo's Davep were up 9.9%. Looks like Bobo has done it again; but then, Bobo doesn't have any clients. Page 4

This month we include a market commentary on *Alpha Lost and Found* by James F Peters, CEO of Tactical Allocation Group. Over the past six years, many investors have been left smarting in the wake of the bear market and, writes Peters, have been left frustrated and feeling betrayed. Yet most advisories go with the general market direction. Peters discusses the search for alpha in today's market and explains how ETFs can be effective tools in tactical allocation strategies. Page 7

ETFR's monthly databank looks at ETF performance from around the globe. Page 13

UPDATES

At long last, silver

Almost one year to the day after Barclays Global Investors filed an application with the Securities and Exchange Commission for a silver ETF that tracks the price of silver, the product finally began trading on the American Stock Exchange at April's close. Even though the Silver Trust (SLV) is based on a template introduced by the gold ETF in November 2004 and used by other products since, like Rydex's Euro Currency ETF (FXE), SLV had been mired for months in blocking and tackling strategies devised by the Silver Users Association.

Simply put, SUA's plaint has been that SLV will corner the market and drive up the price of silver. At the end of 2005 according to the London Bullion Market, an ounce of silver was worth about $88.30. At the end of April, when SLV launched, it was worth about $12.55, and on June 2, it closed at $12.15. On June 2, SLV was selling for $121.75 per share.

Each share of SLV is worth 10 oz of silver, and its price reflects the price of silver owned by the Trust less expenses and liabilities. SLV's management fee is 50 basis points. (In comparison, the iShares COMEX Gold Trust (IAU) cost 40 basis points.) Because the shares mirror the price of silver held by trust, SLV's market price will be as unpredictable as the price of silver has historically been.

This has been the year of commodity ETFs. Three other commodity ETFs trade on the Amex, DB 3▶

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Gold investor's choices widen

By Marsha Zapson

With the gold rush now in its fifth year, the first US ETF to hold gold mining stocks (Canada has had one for three years) began trading on the American Stock Exchange May 22. While some investors lament that the ETF trading under ticker GDX made its appearance a year too late, it nonetheless allows them to buy a broad basket of 44 gold mining stocks (hedged and unhedged) for 55 basis points.

And who better to design and manage such a fund than Van Eck Global? The New York-based boutique, which introduced the first gold-mining-oriented mutual fund in the US in 1968, has become known as one of the top money managers in precious metals since the 1970s when it made its name in that decade's gold bull run. In addition, the shop also runs money in emerging markets, its smallest business, and in hard assets (like oil, natural gas, and timber), its largest.

One week after launch, GDX had attracted $54.9 million in assets—healthy perhaps for a nascent ETF but a mere pittance when compared with Van Eck's gold mutual funds and managed accounts that total some $1 billion.

Why would Van Eck want to launch a gold miners ETF? After all, GDX will directly compete with a Van Eck mutual fund that is also designed for US investors and that also invests in international gold mining stocks. "That's the way the market is going," says the firm's gold strategist, Joe Foster, who also just happens to run its international gold miners mutual fund. "If we hadn't done it, somebody else would have."

Comparing Indexes

GDX tracks the Amex's Gold Miners index, GDM, which was launched at the end of 2004 and designed specifically for the ETF. Like so many 10▶

IN THIS ISSUE

Thinking of investing in the BRICs? ETF newcomer, Claymore Advisors, filed with the SEC in late May for an ETF tracking BONY's BRIC index, which holds 50 ADRs and GDRs. Claymore, by the way, has plans to launch four additional ETFs, all of which nudge the ETF industry one step closer to active management. Cover

Our four ETFR expert portfolios hit their first negative month this May. All are down for the month, although Bobo, the Dart-Throwing Monkey, who is something of an anomaly in this august group, is still ahead of his mates. XTF 80 is down 3.6%, INR Moderate is down 3.3%, PMAA Momentum is down 3.2%, and Bobo's Davep is down 2.9%. Page 4

After four years of wending their way through the SEC, PlusFunds' eight leveraged and inverse ETFs finally began trading on the Amex June 21. These ETFs deliver double the daily performance—either long or short—of the S&P 500, Nasdaq-100, DJIA, and S&P MidCap. Page 7

PowerShares, the first ETF provider to offer enhanced indexes for its cadre of ETF, has filed for 31 (count 'em) new ETFs including 10 RAFI-branded ETFs, 16 Intellidexes, and five stand-alones. Among the latter group, two are noteworthy: the much anticipated Nasdaq-100 dividend ETF and an India ETF. Page 8

ETFR's monthly databank includes ETFs from around the globe. Page 13

UPDATES

A flurry of BRICs

Emerging markets have not been immune to recent stock volatility, and their double-digit return hegemony of the past three years is now being challenged. While investors have been pouring money into emerging markets funds this year, advisors are saying that they may have just missed the rally.

Returns for Brazil, Russia, India, and China, known as BRIC countries, have descended into negative territory during May. Despite declines, investor interest in the BRICs is high, and an ETF offering exposure to this group would be a welcome addition to the relatively small number of US mutual funds in the space.

ETF newcomer Claymore Advisors of Lisle, Illinois, filed an application with the Securities and Exchange Commission late May for a BRIC ETF. (Claymore, by the way, has plans to launch four additional ETFs, all of which are in registration; page 3.) The proposed BRIC ETF tracks the Bank of New York's recently launched BRIC Select ADR index, which holds American and Global Depositary Receipts trading on the New York, American and Nasdaq stock exchanges.

BONY's BRIC index, which is modified cap weighted and a subset of the bank's broader ADR index, holds 50 of the largest BRIC companies, including 15 each from Brazil, India and China, and five from Russia. No one stock can exceed 23%, and no one country can exceed 45% of the index. The index is continuously calculated 3▶

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Micro Caps + Informational Inefficiency = Active Opportunities

A small space, with lots of room to explore

By Steve Swartley

It is largely accepted that markets become less efficient as total market capitalization declines. Small-cap stocks in general and micro-cap stocks in particular provide investors with a rich pool in which to attempt to generate excess returns. The primary advantage micro-cap investors have comes from the *informational* inefficiency. While the data for a smaller company is available since all public companies listed on regulated exchanges, large or small, have to file with the Securities and Exchange Commission, it takes effort and skill to synthesize the information necessary to determine whether or not a company is mispriced.

Micro-cap stocks, generally defined as those that range between a market capitalization of $50 million and $500 million, tend to be largely ignored by Wall Street analysts, so investors have to do their own fundamental analysis. Small companies also tend to have relatively simple business models with limited products and end-markets, however, which makes the task of evaluation somewhat less burdensome. Furthermore, while a company's senior management won't disclose nonpublic information, the CEO or CFO of a smaller company is more likely to actually pick up the phone and answer questions, as they are eager for exposure and recognition from the marketplace. For an investor, the increased likelihood of contact with a key decision-maker is just one example of an opportunity to develop superior insight on a stock.

For those willing to put in the effort, there are thousands of investment opportunities in the micro-cap space. Have managers been able to take advantage of the opportunity? The short answer is yes. Money managers that invest in the micro-cap space have consistently achieved better benchmark-relative results than their larger-cap-focused peers. In seven of the past nine very volatile years, the benchmark-relative excess return for the average micro-cap manager has exceeded that of small-, mid- and large-cap managers.

It is important to keep in mind that viewing the micro-cap space as a separate investment category is a fairly recent development, and there simply aren't that many products that are categorized as micro-cap. The performance results in Figure 1 come from the "frozen" Russell universes, meaning they include only the performance of products that were actually in the universe at the time and not the backfilled results of the current members of the universe.

Since the launch of the Russell Microcap Index in 2005, approximately 30 managers have had their products included in the micro-cap manager performance universe each year, compared with only 15 in 2001. There are numerous theories as to why the market has been slow to more fully embrace the micro-cap space. For individual money managers, even if they are able to charge higher fees for a micro-cap product, it may not make economic sense for the firm to offer a product, as the available capacity should be quite limited due to the relative illiquidity of the space. Larger institutional clients, on the other hand, often find it difficult to invest enough money in the space to meaningfully impact their overall portfolio's returns. The limited number of products included in the performance universe also reflects certain restrictions such as a minimum level of assets under management and that the product is fully invested.

As has been historically the case, the market's most recent recovery has been led by micro-cap stocks. From the low of March 9, 2009, through the end of the first quarter of 2010, the Russell Microcap and small-cap Russell 2000 indexes have produced cumulative returns of 90.9 percent and 88.7 percent, respectively, and each has outperformed the large-cap Russell 1000 Index by 17.3 percent and 20.5 percent, respectively. Even in this environment, micro-cap managers have been able to add considerable value. As seen in Figure 2, there were clear longer-term advantages that could have been capitalized upon when invested in micro-cap stocks.

Of course, free lunches get eaten and there is certainly greater volatility in the Russell Microcap Index. However, the magnitude of the difference may be surprisingly small. The nine-year annualized standard deviation for the Russell Microcap Index is 26.2 compared with 23.4 for the Russell 2000 Index and 21.7 for the Russell Midcap Index. Interestingly, the longer-term risk-adjusted return is the same for the Russell Microcap and Russell 2000, and both exceed that of the Russell 1000.

What Is A Micro-Cap Stock?

While it is easy to compare the market capitalization of one stock with another's, there wasn't an objective benchmark in which to help classify micro-cap stocks as a group

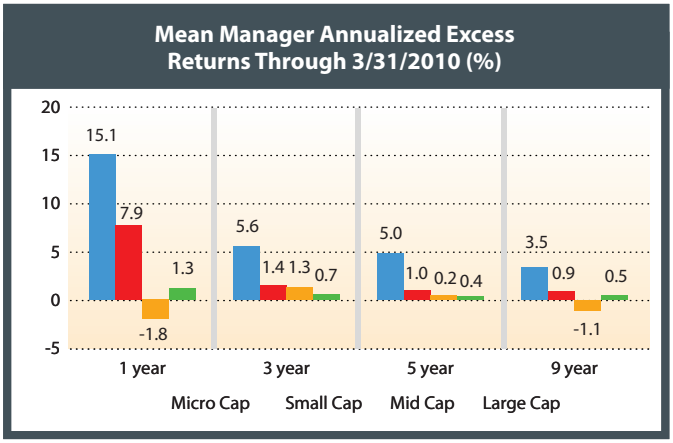
Figure 1

Mean Benchmark-Relative Excess Return For Active Managers

Russell Manager Universes: U.S. Equity	2009	2008	2007	2006	2005	2004	2003	2002	2001
Micro Cap	**15.08**	-2.05	**10.14**	**-0.60**	**7.89**	**3.66**	-6.76	**1.15**	**4.96**
Small Cap	7.86	-4.02	4.82	-3.35	3.55	-1.01	**0.78**	**1.15**	1.62
Mid Cap	-1.83	**0.85**	4.07	-1.87	-1.31	-2.00	-0.57	-4.22	-3.08
Large Cap	1.30	-0.50	2.14	-1.47	1.06	0.44	0.66	-0.40	1.63

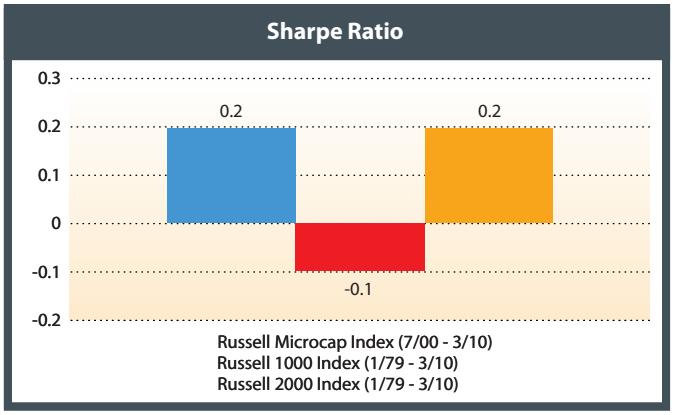
Source: Russell Manager Universes
Indexes and universes are unmanaged and cannot be invested in directly. Returns shown here and in subsequent figures represent past performance, are not a guarantee of future performance and are not indicative of any specific investment.
Note: Data are based on Russell Manager Universes. The benchmark for micro-cap equity is the Russell Microcap Index; for small-cap equity, the Russell 2000 Index; for mid-cap equity, the Russell Midcap Index; for large-cap equity, the Russell 1000 Index.

Figure 2



Source: Russell Microcap Universe

Figure 3



Sources: Russell Index Group and MPI Stylus

until 2005, when Russell launched its index to help define this market-cap space. (At the time of the launch, Russell used the same construction methodology to reconstruct five additional years of performance for the Microcap index, which is why the unusual nine-year numbers are being referred to throughout this piece.) The microcap index comprises the smallest 1,000 stocks in the small-cap Russell 2000 Index plus an additional 1,000 smaller companies.

Following the market's meltdown in 2008, the overall valuation of the market declined sharply and, for the first time in the history of the micro-cap index, there weren't enough stocks that passed the construction methodology rules to reach 2,000 index members. At the time of the annual 2009 index reconstitution in June of 2009, the market cap for the smallest position was $30 million, the largest was $375 million and the weighted average was $193 million. As of March 31, 2010, with the recovery of the market, the weighted average market cap for the micro-cap index had grown to $260 million.

Over 50 managers are currently providing Russell with their portfolio holdings, which allow our research analysts to see where the managers are positioned relative to the benchmark. On average, the managers' largest over-weighted sectors are energy services and producer durables, while they are underweight health care and financial services as of the end of March 2010 (see Figure 4). Valuation metrics are largely similar except for the

Figure 4

1Q10: Active Managers Vs. Microcap Index

	Manager Average	Microcap Index
Market Cap ($ Wtd Avg $billion)	0.25	0.26
Technology	18.5%	17.7%
Health Care	11.7%	16.6%
Cons. Disc. and Services	16.9%	15.4%
Consumer Staples	3.2%	2.4%
Energy Services	7.4%	3.3%
Materials and Processing	7.3%	6.3%
Producer Durables	18.7%	12.1%
Financial Services	14.0%	23.9%
Utilities	2.2%	2.3%
Portfolio P/E	54.8	-239.5
Portfolio P/E Excluding Neg. Earnings	17.6	18.9
Portfolio P/E - I/B/E/S 1Yr Forecast EPS	16.2	16.8
Portfolio Price/Book	1.5	1.6
Price/Cash Flow	15.6	33.0
Portfolio Price/Sales	0.9	1.0
L.T. Growth Forecast - I/B/E/S Medians	15.0	14.3
1 Year EPS Forecast - I/B/E/S Medians	13.7	11.9
Return on Equity - 5 Year Avg	9.1	5.0
EPS Growth - 5 Years	6.0	0.6
EPS Variability - 5 Years	71.1	79.9
EPS Variability - 10 Years	117.2	112.9
Beta (vs. R3000)	1.3	1.4

Source: Russell profiles

manager's greater avoidance of negative earnings and willingness to pay up for companies with stronger cash flows. Managers are also showing a preference for greater forecasted growth and higher return on equity.

The sector exposures of the Russell Microcap Index are similar to that of the Russell 2000 Index, with financial services, technology, health care, consumer discretionary and services, and producer durables accounting for more than 85 percent of the index's weighting. Likewise, the two indexes are largely similar in terms of valuation, with the exception being the large proportion of micro-cap stocks that have negative earnings, which significantly impacts the P/E ratio. Compared with the Russell 2000, the Russell Microcap has a lower return on equity and assets (often proxies for quality), higher earnings variability and, with less access to capital, lower debt levels.

The Challenge And The Opportunity

Two of the greatest challenges when trying to invest in a micro-cap stock are often the liquidity and trading costs. While the challenges posed by investing in more illiquid

continued on page 57

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BLACKROCK

Keeping Up With Styles

The case for periodic recalibration of style benchmark factors

By Philip Murphy

Various criticisms have recently been made with respect to ubiquitous style boxes, including the contention that they cost investors absolute and risk-adjusted performance during bear markets. While some of this criticism is thought provoking, blaming the size/style framework for unsatisfactory performance is misplaced. Size and style explain a large part of the cross section of equity returns, and the framework has been an invaluable resource for facilitating performance measurement and passive investment. However, style boxes should not be interpreted as a cage. It may very well pay to invest with managers that fall "outside the box," but surely it also pays to know that fact. Conversely, it is surely beneficial not to overpay for exposure within style boxes. While there are no universally accepted definitions of growth and value, there is a body of topical literature in which factors consistently appear as helping to define growth or value, or both. Ideally, style benchmarks would reflect theory as it evolves through time.

First-generation style benchmarks were built around single factors such as book to price. Since growth and value were defined by a single variable, value consisted of stocks with high book-to-price values, and growth consisted of those with low book-to-price values. However, relying on one measure to differentiate growth from value was justifiably criticized. Pope, Rakvin and Platt (2003)[1] point out some of the limitations of book to price and state that while it does seem to have explanatory power, "there logically must be … additional information in other factors." As a solution, next-generation style benchmarks assessed growth and value along separate dimensions by identifying distinct growth and value factors.

While multifactor style indexes were an important innovation in style benchmarking, they also suffer shortcomings. Over time, developments in financial research, changes in accounting standards and shifts in investment sentiment jointly contribute to variations in growth and value factor sensitivities. Given the inherently factor-based nature of style indexes, good benchmarks would ideally incorporate some level of dynamism. On the other hand, it is important to avoid too much change because benchmarks provide a standard for performance measurement. By periodically updating factors every five to 10 years, style benchmarks can capture an aspect of market representation that may be ignored in static formulations. For example, much work has been done in recent years on styles factors, so the universe of potential factors is of a considerably different makeup than it was 10 or 15 years ago. Style benchmarks should take these developments into account. Less directly but perhaps just as significantly, changes in accounting standards may affect factor efficacy in growth and value differentiation. Periodic factor updates would capture changing dynamics on both fronts without over-fitting to recent history.

The Need For Factor Revision

With the 2009 rebalance of its U.S. style benchmarks, S&P Indices revised the factors it uses to categorize growth and value stocks and create its style indexes. S&P embarked on this update with the goal of addressing the need for increased dynamism in style benchmarking. Measures of the need to review and potentially revise style factors include the frequency, breadth and depth of changes in accounting standards over time. Since the original deployment of S&P's current factors, many changes have occurred in accounting standards and also, perhaps, in the factors that best reflect the investment decisions of growth and value managers. Figure 1 shows the number of new standards issued by the Financial Accounting Standards Board (FASB) during 2005-2009.

Some of these changes in standards have had far-reaching consequences. One example is the statement of financial accounting standards (SFAS) No. 158, released in September 2006, which changed the rules under which public companies report pension-related assets and liabilities on the balance sheet. Mulford, Quinn and Swanson (2008)[2] show the effects of SFAS No. 158 on total assets, total liabilities and shareholder equity, as well as on related profitability measures such as return on assets (ROA) and return on equity (ROE). Of the 24 companies studied (Dow Jones Industrial Average components with defined benefit plans affected by SFAS No. 158 in 2006), the change in ROE after adjusting for the new standard ranged from 0.5 percent to 173.9 percent. To analyze ROE through time as a determinant of returns, we ranked the S&P 500 universe and measured ROE quartile portfolio returns for seven nonoverlapping periods covering January 1988 through August 2009. Figure 2 shows the results; it seems clear that ROE performance is highly time-varying.

In addition to variations in accounting standards and factor sensitivities, the style literature evolves through time. For example, momentum has appeared frequently in the past 10 years, while some factors that are commonly thought of as style determinants, such as dividend yield, appeared less frequently. Our factor revision was intended to create style benchmarks

Figure 1

Number Of FASB Standards Issued Per Year

2005	22
2006	14
2007	9
2008	0
2009	16

Sources: fasb.org, Standard & Poor's

Figure 2

Performance Of ROE Quartile Portfolios Is Time-Varying

Average Monthly Active Return	Equally Weighted Quartile Portfolio			
	1	2	3	4
Jan-88 thru Dec-91	4.98%	1.37%	0.73%	0.13%
Jan-92 thru Dec-94	1.22%	5.03%	8.41%	10.71%
Jan-95 thru Dec-97	2.56%	-0.46%	-3.24%	-5.58%
Jan-98 thru Dec-00	5.52%	1.76%	-0.39%	0.29%
Jan-01 thru Dec-03	7.41%	11.38%	13.68%	16.03%
Jan-04 thru Dec-06	3.63%	5.63%	5.79%	6.05%
Jan-07 thru Aug-09	5.26%	11.60%	9.27%	14.50%

Source: Standard & Poor's

that reflect current thinking and practice with respect to the measures that best determine style constituency.

Style Factor Identification

Overview

There are many potential factors that have been investigated as style determinants. Ideally, style indexes would be constructed in such a way as to maximize the differentiation and, therefore, the utility of the growth and value categories. Practically speaking, however, searching for factors that have historically enabled such a result amounts to an exercise in data mining. There is no assurance that such divergence would continue during out-of-sample periods. On the other hand, it is sensible to select factors that are likely to hold the promise of growth and value differentiation as indicated by their past history as long as their application is not designed to optimize historical growth and value differentiation. The approach we have taken to determine which factors to use going forward began with a survey of academic and practitioner literature. Referring to a current body of research, we updated our indexes with factors cited in the latest work on the topic. The steps involved in our overall process are summarized below:

1. Review of relevant literature:
   a. We searched for peer-reviewed papers that have been published in academic and practitioner journals on the subject of style investing in the 10 years through January 2009. To avoid biasing our search results, we did not use specific factor names, such as "price to book." We searched paper abstracts for keywords "growth" *or* "value" *or* "style," and "stocks" *or* "equity" *or* "portfolio."
   b. We created a catalog of factors referenced in the literature, each of which became a candidate for inclusion in the set of new style factors.
2. Definition of analytical universe:
   a. For the purpose of performing the analyses described below, our universe comprises all U.S.-domiciled and -listed stocks trading over $5 per share.
3. Time series analysis:
   a. For each potential factor, we ranked all stocks in the universe. We then created factor quartiles and formed equally weighted portfolios of stocks in the top and bottom quartiles.
   b. We calculated monthly returns of each portfolio for the past 20 years, and measured the monthly difference in total return between top and bottom portfolios (the inter-quartile spread).
   c. We calculated a t-statistic from the inter-quartile spread time series of each factor and ranked all factors by t-statistic.
4. Cross-sectional analysis: For each potential factor, we performed a *k*-means cluster analysis. Insightful Corporation (2001), producer of the statistical software S-Plus, describes the *k*-means clustering as an algorithm wherein "the observations are classified as belonging to one of *k* groups. Group membership is determined by calculating the centroid (the multidimensional version of the mean) for each group and assigning each observation to the group with the closest centroid."
   a. For sample years under consideration in our data set, we performed *k*-means clustering for every potential factor. We set *k* equal to 2 because we want to divide the universe into two parts. Factors are standardized and outliers removed before clustering.
   b. For each factor we recorded two terms: intra-cluster distance and inter-cluster distance. The former refers to the distance of each cluster member from the cluster centroid, while the latter refers to the distance between the centroids of each cluster.
   c. We characterized the clustering ability of each potential factor in terms of a clustering power variable, defined as:

$$\text{Clustering Power} = \sum_{Y=1}^{5} \text{Inter-Cluster Distance}_y / \text{Intra-Cluster Distance}_Y$$

Where for each year,

$$\text{Inter-Cluster Distance} = |\text{Centroid(A)} - \text{Centroid(B)}|^2$$

$$\text{Intra-Cluster Distance} = \text{SumSquare (A)}/\text{Count(A)} + \text{SumSquare (B)}/\text{Count(B)}$$

Figure 3

Literature Review Findings

Growth		Value	
Factor	**# of Citations**	**Factor**	**# of Citations**
Momentum	10	**Book to Price**	30
Book Equity Growth	3	**Earnings to Price**	13
Return on Equity	2	**Dividend Yield**	9
Earnings Change to Price	1	**Cash Flow to Price**	6
Earnings Surprise	1	**Sales to Price**	4
Estimate Revisions	1	**Forecast Earnings to Price**	1
Sales Growth	1		

Sources: EBSCO Online Database, Standard & Poor's

Figure 4

Ranking Of All Growth Factor Candidates, In Order Of Literature Citations

	Data Coverage as of Dec 2008	Time Series	Cross Sectional
Momentum	1	6	4
Book Equity Growth	5	3	5
Return on Equity	3	7	7
Earnings Change to Price	3	4	2
Earnings Surprise	7	2	6
Estimate Revisions	6	1	3
Sales Growth	2	5	1

Source: Standard & Poor's

Centroid(A) and Centroid(B) refer to the centroids of each of two clusters for each potential factor. SumSquare(A) and SumSquare(B) refer to the sum of squares of the distances among members within each cluster. Count(A) and Count(B) refer to counts within each cluster. All these variables are available as output of S-Plus' *k*-means clustering module. We rank all factors by their clustering power variable.

5. Review of data coverage: For all potential factors, we performed an assessment of data coverage. We prefer factors with relatively high data coverage.

Candidate List

Our literature review resulted in a list of 39 papers, which cited 13 style-related factors plus several variations focusing on altering time periods over which variables are calculated. Variations are more prevalent within the group of potential growth factors because there is less of a consensus regarding their identification and formulation. It was not until the introduction of multifactor indexes that growth began to be measured by a different set of factors than value. The most common formulation of single-factor benchmarks relies on book to price in order to differentiate styles. The literature reflects this, as book to price is the most cited factor, and the average frequency of citations per growth factor is significantly lower than the average frequency of citations per value factor. Figure 3 summarizes the findings of our literature review, sorted by frequency of citation.

Generally speaking, as noted by Brush (2007),[3] growth factors capture some change and thus may be thought of as dynamic, while value factors capture some level and thus may be thought of as static. One possible exception to this line of thinking is ROE, which seems to capture a level at a point in time but has been considered as a growth factor in the literature.

Factor Selection

The approach we use in factor selection encompasses three considerations. First, we give preference to factors with more frequent citations in the literature selected in order to reflect the dynamism of current thinking and practice in the field of style investing. Second, we prefer factors that are constructed from measures with high levels of coverage within the S&P Total Market Index (TMI) universe, which facilitates style categorization across the entire spectrum of U.S. market capitalization. Third, all else equal, we prefer factors with relatively high analytical ranks, as indicated by our time series and cross-sectional analyses.

Growth

Figure 4 ranks all growth factors under consideration in order of literature citation frequency for data coverage, time series, and cross-sectional analyses. In making factor selections, S&P tried to balance the sometimes conflicting considerations of presence in the literature, data coverage and analytical results. We weighed the first two considerations somewhat more heavily than the last. Momentum had the highest citation count (see Figure 4) and highest level of coverage. The relative importance of these considerations overcame its middling analytical performance because we wanted to avoid data mining and include representative factors. Book equity growth was not accepted because of its relatively low level of data coverage. Return on equity was not accepted due to its extremely poor analytical results. Earnings change to price, despite its low citation count, had reasonably good coverage and analytical results, and was accepted. Earnings surprise and estimate revisions were both rejected because of coverage levels. Finally, sales growth, also despite a low citation count, had good coverage and analytical results, and was accepted.

Value

Figure 5 ranks all value factors under consideration in order of literature citation frequency for data coverage, time series, and cross-sectional analyses. Book to price had the highest overall number of literature citations and the highest level of data coverage, as well as fairly good analytical results; it was accepted. Earnings to price also had high levels of literature mentions and data coverage along with reasonably good analytics; it was also accepted. We were skeptical of our cross-sectional rank of dividend yield because the universe is naturally clustered into stocks that pay dividends and those that do not; therefore, we reasoned that the cross-sectional results were biased upward and discounted it somewhat. Since none of the other results were particularly impressive, dividend yield was rejected. While cash flow to price had a somewhat better citation frequency

Figure 5

Ranking Of All Value Factor Candidates, In Order Of Literature Citations

	Data Coverage as of Dec 2008	Time Series	Cross Sectional
Book to Price	1	4	3
Earnings to Price	2	3	4
Dividend Yield	5	5	1
Cash Flow to Price	2	2	6
Sales to Price	2	1	2
Forecast Earnings to Price	6	6	5

Source: Standard & Poor's

and equivalent data coverage compared to sales to price, the latter had superior time series and cross-sectional results. Therefore, cash flow to price was rejected and sales to price was accepted. Forecast earnings to price ranked poorly in all measures and was therefore rejected.

Summary of Changes

Figure 6 shows the factor changes that became effective in 2009.

Momentum As A Growth Factor

Of all the factors under consideration, momentum is perhaps the most controversial. Much work has been done demonstrating its efficacy as an investment strategy. Some theorists and practitioners consider it to be an additional dimension of investment style, independent of growth or value. Logically, there is reason to see it as such because momentum may develop in either growth or value as market leadership shifts. Bird and Casavecchia (2007)[4] follow this line of thinking as they consider momentum effects across growth and value styles. Others view momentum in lieu of the growth style. For example, Arshanapalli, d'Ouville and Nelson (2004)[5] and Bansal, Dittmar and Lundblad (2005)[6] both examine various effects of momentum along with size and value. However, Brush (2007) considers momentum explicitly as a growth factor. Its efficacy as such becomes clearer when one considers the high level of excess return it explains among growth managers. Figure 7 shows the correlation of growth and value managers' excess return versus momentum's excess return within each style. The analysis covers 10 years through August 2009. Momentum quartile portfolios are drawn from growth and value benchmark universes, respectively.

It appears that momentum goes a long way toward explaining active returns of growth managers, whereas this factor is negatively correlated to the active returns of value managers. This makes intuitive sense since price momentum is a reaction to fundamental momentum in measures such as earnings and cash flow.

Summary

Consistency in style benchmarking need not imply artificially confining factor exposures to a static set. The world changes and style benchmarks should be representative of recent research and results in the field without being overreactive or over-fitted. We feel that periodic reviews of the style literature and factor efficacy are reasonable steps toward instituting dynamism in the benchmarking process.

In its 2009 U.S. style index rebalance, S&P used several revised factors for its growth and value benchmarks. The changes directly affect the calculation of our growth and value scores, which are then used to construct our style benchmarks. Our overall style index construction framework, downstream of the calculation of style scores, remains intact as originally introduced in 2005.[7]

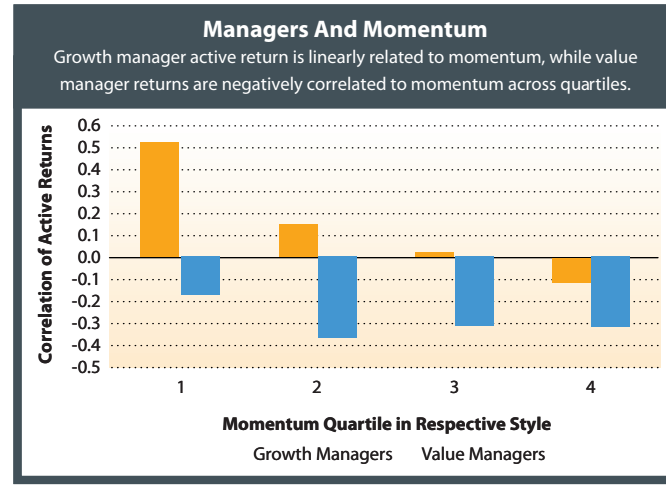
Figure 6

2009 Revision To S&P U.S. Style Factors

	Old Factors	Revised Factors
Growth	Sales Growth	Sales Growth
	Earnings Growth	Earnings Change to Price
	Internal Growth Rate	Momentum
Value	Book to Price	Book to Price
	Sales to Price	Sales to Price
	Cash Flow to Price	Earnings to Price
	Dividend Yield	

Source: Standard & Poor's

Figure 7



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Ten Stock Index Myths

Drilling for the truth behind 10 widely believed fallacies

By Robert Waid

A stock index is a statistical indicator of changes in the value of a group of stocks. They are used as the bases for investment vehicles, as benchmarks of investor skill and as research tools. Practitioners believe they know what an index is once it's been described by its weighting scheme, rebalance frequency and inclusion rules. Even so, a number of index myths abound. Some myths make for interesting trivia, while others can affect the validity of research or influence investment decisions. Below is a collection of index myths believed by novices and experts alike.

Myth 1: The Dow Jones Industrial Average Was The First Stock Index

The Dow Jones Industrial Average (DJIA) has been calculated daily since its 12-stock inception on May 26, 1896. Although it is known (incorrectly) as the oldest continuing market index, it was not even Charles Henry Dow's first stock index. Twelve years earlier, Mr. Dow's initial stock average, containing 11 stocks (nine of which were railroad issues) appeared in Customer's Afternoon Letter, a daily two-page financial news bulletin that was the precursor of the Wall Street Journal; today that average is known as the Dow Jones Transportation Average.1 As for the DJIA, on Oct. 4, 1916, its number of components increased to 20, and then to 30 twelve years later, where its count remains today.

Myth 2: The S&P 500 Includes The 500 Largest Stocks

The S&P 500 was originally designed as a measure of the stock market built from the industry level up. The S&P Committee selects "leading" companies while considering profitability, liquidity and industry representation. In general, this meant larger companies, but this was not a requirement. Major industry and sector numerical constraints such as 400 industrials, 40 utilities, 40 financials and 20 transportation companies existed until 1988, and the S&P 500 Index did not contain 500 stocks until March 4, 1957.[2]

With the creation of the S&P MidCap 400 (June 19, 1991) and the S&P SmallCap 600 (Oct. 17, 1994), the S&P 500 implicitly added the goal of being a large-cap index. Using the Wilshire 5000 membership for size comparisons, Figure 1 shows that during the last 20 years, the number of S&P 500 companies not in the top 500, 750 and 1,000 by market-capitalization rank has decreased.

Myth 3: The Wilshire 5000 Index Has Exactly 5,000 Stocks

This isn't as bad as asking who is buried in Grant's tomb, or how many stocks are in the Standard & Poor's 500, because unlike S&P's objective of maintaining a membership count of exactly 500 stocks, the Wilshire 5000 Total Market Index is not an index of 5,000 stocks. Since its inception, the Wilshire 5000 was designed to measure the performance of the total U.S. equity market; therefore, there are no minimum or maximum limits to its membership. During its summer 1974 development, the soon to be named Wilshire 5000 Equity Index had just shy of 5,000 issues—thus the number 5000 was made part of the name to convey the breadth of the index's coverage. The Wilshire 5000 membership count has ranged from 3,069 on Feb. 28, 1971 to 7,562 on July 31, 1998. The membership count on December 31, 2009 was 4,041.

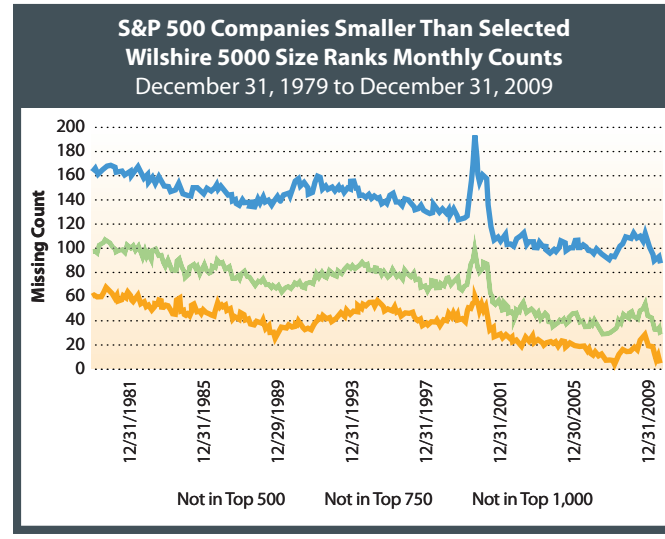
Myth 4: The Russell 3000 Covers 98% Of The Market

The common marketing line for broad market index coverage is 98 percent. For years, the Frank Russell Company has been making the claim that the Russell 3000 Index covers approximately 98 percent of the market. Interestingly, Wilshire Associates doesn't make the claim that the Wilshire 5000 covers 100 percent of the market, just that it is the most pure and complete representation of the total U.S. market. However, according to Figure 2, the Russell 3000 continues to have less than 98 percent coverage[3] of the Wilshire 5000 and represented as little as 92 percent of the Wilshire 5000 in the late '80s and less than 96 percent as recently as 2006.

Myth 5: The S&P 500 Was Created In 1926

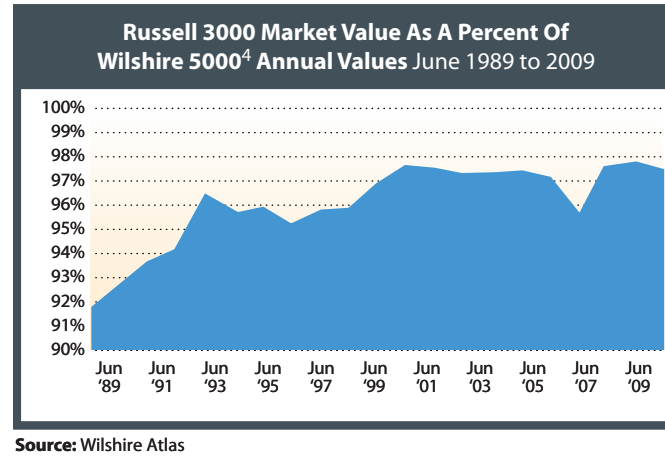
Yes, the "common stocks" returns on the "Stocks, Bonds, Bills and Inflation" chart that adorns many an investment house wall is the S&P 500 and yes, those returns

Figure 1



Source: Wilshire Atlas

Figure 2



Source: Wilshire Atlas

go back to December 1925. The origins of the S&P 500 Index date back to 1923, when the Standard Statistics Company, the precursor to Standard & Poor's, introduced a weekly series of indexes that included 233 companies that were grouped into 26 industries. The number of companies grew until the S&P 500 was introduced with 500 companies on March 4, 1957. The index was assigned a standard market base of 10 (1941-43). This is fairly well known by index users. The myth is that the 233-company weekly index was used for the S&P 500 history. In the late 1920s, because of technology constraints, S&P created the S&P 90 Stock Composite Index (50 industrials, 20 railroad and 20 utility stocks) for daily, then hourly, calculation as a market indicator. The S&P 500 was linked to the S&P 90 Stock Composite Index to provide daily history.[5]

Myth 6: Stock Splits Don't Affect Index Weights Or Returns

It is true that stock splits don't affect index weights or returns for market-capitalization-weighted indexes, but it is not necessarily true for other types of indexes. The algebra of a market-cap-weighted index is that the adjustment factor used to split a company's share price is multiplied by the inverse of that adjustment factor to adjust the shares outstanding. This makes the net adjustment 1.0. Indexes that use a weighting scheme where an item is affected by a split such as prices without an offsetting item such as shares outstanding will have a net change in weights and thus affect returns due to a split. This is not a function of an index's age either. The Dow Jones Industrial Average, and the newer Dow Jones Select Dividend are both affected by splits because of their price weighting and indicated annual dividend weighting, respectively.[6]

Disney's 1998 3:1 stock split illustrates how a split affected the DJIA. Disney closed 1997 at $99.00, which translated to almost 5 percent of the DJIA. As a result, Disney's 12 percent return to its July 9, 1998 3:1 split date barely affected the DJIA's 15 percent return. However, Disney's split reduced its price by two-thirds; thus, its index weight fell to less than 2 percent. For the remainder of 1998, Disney declined 19 percent compared with the DJIA's 1 percent gain. Disney's split and subsequent reduced weight saved the DJIA over 0.7 percent (or more than 50 points) in 1998 performance.[7]

Myth 7: The Wilshire 4500 Is A Small-Cap Index

The Wilshire 4500 Completion Index, launched in 1983, was the first "completion" index; that is, an index comprising the securities in a broad or total market index that are not in the S&P 500 Index. Since the S&P 500 is not composed of the largest 500 stocks (see prior myth), or even designed as a large-cap index, the corollary is true—the Wilshire 4500 is not a small-cap index or even designed as a small-cap index. This doesn't mean that the Wilshire 4500 or other completion indexes do not include a number of small-cap stocks and small-cap characteristics, but they have large-cap and mid-cap stocks as well. However, as the correlations of Figure 3 show, the Wilshire 4500 has performance characteristics more in line with the Wilshire US Mid and Small-Cap indexes versus the Wilshire US Large and Micro-Cap size indexes.

This does not mean that the Wilshire 4500 is the best way to measure or invest for small-cap exposure. U.S-based completion indexes are designed to extend the S&P 500 investment to the "broad market." If the goal is to measure or invest in small-cap stocks, an investor might consider using an index designed specifically to measure small-cap investments, such as the Wilshire US Small-Cap Index. That said, the S&P 500 Index's transition into a more pure-play large-cap index implies that the Wilshire 4500 is becoming more of a small-cap index.

Myth 8: The Nasdaq-100 Is A Cap-Weighted U.S. Index Of The Largest 100 Nasdaq Stocks

A number of minor myths exist surrounding the Nasdaq-100 Index, which combine to warrant inclusion on this 10-myth list. According to the Nasdaq Web site, "The NASDAQ-100 Index includes 100 of the largest non-financial securities listed on The NASDAQ Stock Market based on market capitalization."[8]

Minor Myth A: The Nasdaq-100 represents the largest 100 stocks trading on Nasdaq

On Jan. 31, 1985, the Nasdaq-100 and the Nasdaq Financial Index were introduced. Because of the Nasdaq Financial Index, large financial companies such as Fifth Third Bancorp, Northern Trust and TD Ameritrade continue to be excluded from the Nasdaq-100.

Minor Myth B: The Nasdaq-100 includes only U.S. companies

In January 1998, foreign companies were admitted to the Nasdaq-100. As of December 2009, 15 companies incorporated in 12 different countries were included in the Nasdaq-100.[9]

Figure 3

Ten-Year Correlations Ending December 2009

	4500	Large-Cap	Mid-Cap	Small-Cap	Micro-Cap
4500	1.00				
Large-Cap	0.87	1.00			
Mid-Cap	0.97	0.89	1.00		
Small-Cap	0.98	0.85	0.98	1.00	
Micro-Cap	0.92	0.75	0.88	0.93	1.00

Source: Wilshire Associates

Minor Myth C: The Nasdaq-100 is cap-weighted

In 1998, a modified capitalization-weighted methodology was implemented to scale back to 20 percent any single security whose weight exceeded 24 percent of the index. The method also scaled back the collective weights of large-cap stocks (weights greater than 4.5 percent of the index) to 40 percent when they exceeded 48 percent.[10] The modified weights have not been rebalanced since their 1998 implementation because none of the components has violated these boundaries since they were originally established; however, this has created a few market-cap distortions. For example, the $190 billion Apple Computer company has an index weight of 15.7 percent, which is nearly three times Microsoft's 5.6 percent weight with a $271 billion market cap.[11]

Myth 9: Stock Index Levels Measure Total Performance

The beauty of a stock index is that it takes a group of investments and converts it into a single number. The performance of the investment represented by the index is conveyed when this number is used with a comparably computed number for a different date or time. When the Wilshire 5000 experiences an increase from 15,000 to 16,500, that's a 10 percent gain; similarly, when the price of a commodity such as gold increases from $500 to $550 per ounce, that's also a 10 percent gain. Typically, only price index returns are calculated in real time and thus reported by the media. The actual or total return of an investment in stocks may be higher, because unlike gold and other commodities, stocks pay dividends. For example, the 20-year annualized return for gold ending Dec. 31, 2009, was 5.1 percent and the Wilshire 5000 was 6.2 percent. Adjusting for dividends, the nondividend-paying commodity gold's total return is the same 5.1 percent, while the Wilshire 5000's total return increases to 8.3 percent.

Myth 10: The Russell 2000 Index Has 2,000 Stocks

Unlike the S&P 500, which is constructed to always have 500 stocks, the Russell 2000 is designed to have 2,000 issues on its annual rebalance date. The myth is that since the annual rebalance date is the end of June, the Russell 2000 "should" have 2,000 issues once a year on its rebalance dates. The reality is that Russell creates its rebalanced membership list as of May 31. This means that because of the "No Replacement" rule,[12] the index will likely have less than 2,000 issues due to deleted companies from May 31 to the June rebalance date.[13] For example, there were 1,956 Russell 2000 companies as of the June 22, 2007 annual rebalance.[14]

Bonus Myth: Adding The U.S. To MSCI EAFE Equals The Developed Global Equity Market

The MSCI EAFE Index (Europe, Australia and Far East) was built as a gauge of what the non-U.S. global equity market is doing. Unfortunately, the 21-country, developed market EAFE index excludes the fifth-largest equity market in the world—Canada. The 10 smallest EAFE countries combined, including the likes of Austria, Greece, New Zealand and Portugal, are less than the size of the MSCI Canada Index.[15] Canada's exclusion was one of the drivers that led to the creation of the MSCI Developed Market ex USA Index and the MSCI EAFE + Canada Index. (These indexes have differed historically but are identical today.)

Problems With Index Myths

Articles are written and investment decisions are made where myths are treated as accepted facts. Whether it is research that assumes the S&P 500 was 500 large-cap stocks in the 1930s or that the Russell 3000 excludes only 2 percent of the U.S. market, these index myths can change a reasonably logical conclusion into a waste of paper and ink. Keep in mind the myth that there are only 10 index myths and you'll be well on your way to correct index usage.

Endnotes

1 Dow Jones Industrial Average History, www.djindexes.com, July 2, 2007

2 S&P 500 Directory, 2005, pages 8 and 9

3 Wilshire float shares outstanding were used to calculate Russell 3000 market values.

4 June dates were chosen for maximum Russell coverage.

5 S&P 500 Directory, 2005

6 The Dow Jones Select Dividend Indexes have a "weighting factor" that is adjusted on the split's ex-dividend date, so the weight change created by the split is pushed back to the rebalance date.

7 Price-weighted returns calculated by Wilshire Associates Inc. with the split equal 16.17 percent and without the split equal 15.42 percent. There were no membership changes to the DJIA and only one stock split in 1998.

8 Nasdaq 100 Index Methodology, www.nasdaq.com

9 www.wikipedia.org

10 Nasdaq-100 Index Methodology, www.nasdaq.com

11 Wilshire Atlas as of Dec. 31, 2009.

12 Russell U.S. Equity Indexes, Construction and Methodology, www.russell.com, April 2007

13 This myth applies to other Russell "count" indexes.

14 Index count using Wilshire Atlas

15 MSCI Global Investable Market Index Summary, March 2007 and Wilshire Atlas as of Dec. 31, 2009

Moving Averages: Are They Effective?

The historical value of the golden cross

By Mack Courter

The last decade has been an extremely difficult period for stock market investing. Buying and holding the S&P 500 Index over this period has resulted in a loss of 0.95 percent as of the end of 2009, according to iShares.com. Because of these extremely frustrating results, many investors have turned away from buy-and-hold investing, which worked so well in the 1980s and 1990s. They have turned to a variety of strategies, from diversifying into alternative asset classes to fundamental or technical analysis, to improve performance.

One technique widely employed by professional and individual investors alike is the moving average. Moving averages have been embraced for good reason, as investors could have saved themselves substantial losses in the last bear market by using them to determine when to hold and when to sell broad-market indexes. Applying a 50-day or 200-day moving average to the S&P 500 in 2008 would have produced a loss of 3.14 percent and 3.47 percent, respectively. By contrast, a buy-and-hold position in the S&P 500 would have returned a negative 38.49 percent.

These losses will eventually be recouped. However, many do not have the nerves of steel necessary to "hang in there" after watching their hard-earned nest egg decimated. For these investors, a disciplined investment approach is needed to reduce the volatility in their portfolios, while preventing them from bailing out at the bottom. One such method may be the use of moving averages.

In this paper, we will explore three of the more popular moving averages—the 200-day, the 50-day and a 50-day/200-day crossover. We will analyze the risks and returns of each, comparing them with each other and also with buy-and-hold investing. We will study the results of trading these systems on the S&P 500 stock index, starting in 1971, the first year data is readily available. Special emphasis will be given to the three major bear markets occurring in this period.

Moving Averages Defined

What is a moving average? Investopedia defines it as "An indicator frequently used in technical analysis showing the average value of a security's price over a set period." For example, to calculate a 10-day simple moving average, one would collect the prices (usually at close) for the security over the past 10 days, add them together and divide by 10. The following day, one would include the price for the most recent day and drop the price for the first day. Hence, the average is dubbed "moving."

The advantage of using moving averages is that they are great in defining whether an investment is trending up or down. The problem though, is that they are by definition slow to adapt when a trend has changed. As Robert D. Edwards and John Magee wrote in their classic work "Technical Analysis of Stock Trends":

The trouble with a Moving Average (and which we discovered long since, but keep bumping into from time to time) is that it cannot entirely escape from its past. The smoother the curve (longer cycle) one has, the more "inhibited" it is in responding to recent important changes of trend.

To make a moving average somewhat more responsive to recent data rather than older data, many investors use an exponential moving average, which calculates the moving average geometrically. In this study, we will use exponential averages exclusively.

200-Day Moving Average

Perhaps the most well known is the 200-day moving average, which averages prices over the past 200 days. Generally, the longer an investor's time frame, the longer the moving average used. For example, a day trader has no use for a 200-day moving average. A long-term investor, in contrast, has no use for an hourly one. The 200-day moving average is the standby for long-term investors.

For the purposes of our study, one would be invested in the S&P 500 when the price was trading above the 200-day moving average, and out of the market when the price was below the average. The buy trigger is pulled when the day's low price rises above the average. A sell signal is flashed when the day's high price falls below the average. Most market technicians rely on closing data rather than intraday highs and lows to indicate

Figure 1

Buy-And-Hold Vs. 200-Day Moving Average System

	39-year Annual Returns (1971-2009)	39-year Standard Deviation of Annual Returns	Growth of $100,000
Buy and Hold	6.62%	17.72%	$1,219,355
200-day Moving Avg. System	6.68%	13.02%	$1,243,706

Source: Author calculations using eSignal and Excel

Figure 2

Bear Market: Buy-And-Hold Results

	Peak Price	Date	Trough Price	Date	% Decline	Decline of $100,000 Portfolio
1973-74	120.24	1/11/1973	62.28	10/3/1974	-48.20%	$48,200
2000-02	1527.46	3/24/2000	776.76	10/9/2002	-49.15%	$49,150
2008	1565.15	10/9/2007	676.53	3/9/2009	-56.78%	$56,780

Source: Author calculations using eSignal and Excel

Figure 3

Bear Market 200-Day Moving Average Results		
	% Decline	Decline of $100,000 Portfolio
1973-74	10.40%	$10,400
2000-02	11.30%	$11,300
2008	15.60%	$15,600

Source: Author calculations using eSignal and Excel

Figure 5

Bear Market 50-Day Moving Average Results		
	% Decline	Decline of $100,000 Portfolio
1973-74	7.00%	$7,000
2000-02	31.80%	$31,800
2008	15.20%	$15,200

Source: Author calculations using eSignal and Excel

Figure 4

Buy-And-Hold Vs. 50-Day Moving Average System: Total 39-Year Performance (1971-2009)			
	39-year Annual Returns	39-year Standard Deviation of Annual Returns	Growth of $100,000
Buy-And-Hold	6.62%	17.72%	$1,219,355
50-Day Moving Avg. System	5.39%	14.65%	$775,953

Source: Author calculations using eSignal and Excel

trades. When I analyzed the data, however, this resulted in an excessive amount of whipsaw trading. Thus, in this paper, intraday highs and lows are employed to generate the trade signals.

The performance results for this strategy compared to buying and holding the S&P 500 beginning Dec. 31, 1970 and ending Dec. 31, 2009 are in Figure 1.

The total returns for both methods are virtually the same. The big difference lies in how those returns were achieved. Using the 200-day moving average, investors would have decreased their annual volatility by 26 percent. In other words, one would have achieved the same return with only three-quarters of the risk.

Figure 2 quantifies the returns during the bear markets of 1973-74, 2000-02, and 2008. In every one, buy-and-hold investors lost approximately half their capital.

Figure 3 depicts the results of using the 200-day moving average system during these bear markets. The portfolio was valued on the S&P 500's highs just prior to these bear markets. The portfolio was then adjusted based on the number of trades during the bear market. In the '73-'74 downturn, this system gave six false buy signals on the way down. In the 2000-02 bear, it gave three false signals. In the 2008 decline, it gave four. Still, overall results were much better than buying and holding.

The 200-day moving average strategy works best during trending markets, whether up or down. It does not do well during periods in which the market moves more or less sideways. In the entire period, the system dictated 87 round-trip trades (174 total). Although this works out to only 4.5 trades per year, the majority of these trades occurred during choppy trading ranges. Approximately half appeared in the 1970s alone. During these sideways markets, it was not uncommon to do trades on a weekly or biweekly basis. Just 36 of the 87 trades were profitable. Thus, nearly 60 percent of the time, the positions were closed at a loss. This would have been frustrating for most, increasing the likelihood that one would "cheat" on using the system. Also, an investor would have incurred trading costs and tax consequences if trading in a nonqualified account (which are not included in this analysis). Because of these drawbacks, many investors do not use the 200-day moving average solely to dictate portfolio activity. They will use other indicators in conjunction with it on which to base their investment decisions. (A study of these other tools is beyond the scope of this paper.)

It should be noted that the return calculations for this paper do not include dividends, which would have increased returns substantially. Investors would have been in the market approximately 70 percent of the time (28 of the 39 years studied) trading the 200-day strategy. Therefore, they would have received many dividend payments, but obviously not as much if they had simply held the S&P 500 for the entire time instead. It seems prudent to remain in cash for a few weeks upon receiving a sell signal, and then when it appears that a whipsaw is less likely, invest the portfolio in Treasury bonds. This may mitigate the loss of dividends when not holding stocks.

50-Day Moving Average

The 50-day moving average is generally defined as one used by intermediate-term investors. The buy and sell criteria remain the same as that for the 200-day moving average study—the only difference being the moving average itself.

The performance for this approach versus buy-and-hold appears in Figure 4. The return offered by the 50-day moving average system was substantially less than that of the buy-and-hold approach. However, the standard deviation was also much less for the moving average strategy.

When zooming in on the three bear markets using this moving average, the results get interesting. Figure 5 shows a big difference from the buy-and-hold approach (see Figure 2) in the 1973-74 and 2008 downturns. The disparity is not so stark in the 2000-02 bear market. While the S&P 500 declined by almost half, an investor would have still watched a third of his portfolio evaporate. The reason for this disappointment was whipsaw trading. Prices crossed the 50-day moving average so much during these three years that 29 trades were executed. Most of these transactions resulted in small losses, which added up over time.

Comparing the 50-day with the 200-day moving average, we see that the former bested the latter in the first bear market. The 200-day lost far less in the second bear. Results were practically identical in the last downturn.

As one might expect, using a shorter moving average

Figure 6

Buy-And-Hold Vs. 50-/200-Day Moving Average Crossover System: Total 39-Year Performance (1971-2009)

	39-year Annual Returns	39-year Standard Deviation of Annual Returns	Growth of $100,000
Buy-And-Hold	6.62%	17.72%	$1,219,355
50-/ 200-Day Moving Avg. System	7.02%	11.82%	$1,408,397

Source: Author calculations using eSignal and Excel

generates more buy and sell signals. While the 50-day average certainly indentifies a change in trend sooner, many of these signals proved to be false. The number of round-trip trades was 218, or 436 total. This means 11.2 trades per year; almost one per month. Thus, this strategy generates 2.5 times as much activity as the 200-day approach. During trendless markets, there were times when an investor would have been buying one day, and selling the next. Just 30 percent of trades were profitable. Time spent in the stock market was also less than the longer moving average, at approximately 64 percent (25 of the 39 years studied). It appears that for most long-term investors, utilizing a 200-day moving average may be a better choice than the 50-day.

50-/200-Day Moving Average Crossover

By now, this paper has established that using moving averages can reduce portfolio volatility. There are drawbacks, however, including false buy and sell signals and a high percentage of losing trades. The former increases trading costs, and possibly taxes as well. The latter can be psychologically damaging. As veteran investors realize, controlling one's emotions is half the battle.

To address these shortcomings, the moving average crossover system was developed. Using this approach, one employs both the 50-day and the 200-day moving averages. The trade trigger is pulled when one moving average crosses over the other. If the 50-day average crosses above the 200-day, a buy signal is given. If the 50-day line crosses below the 200-day moving average, a sell signal is generated.

This is a popular method in the literature on technical analysis, where the crossing of the 200-day and 50-day averages is referred to as a "golden cross."

Performance against a passive buy-and-hold approach is shown in Figure 6.

This moving average system generated a respectable 0.6 percent larger annual return than the passive approach, but with an amazing 33 percent less volatility. It also had a higher return with lower standard deviation than either the 50- or 200-day strategies.

continued on page 63

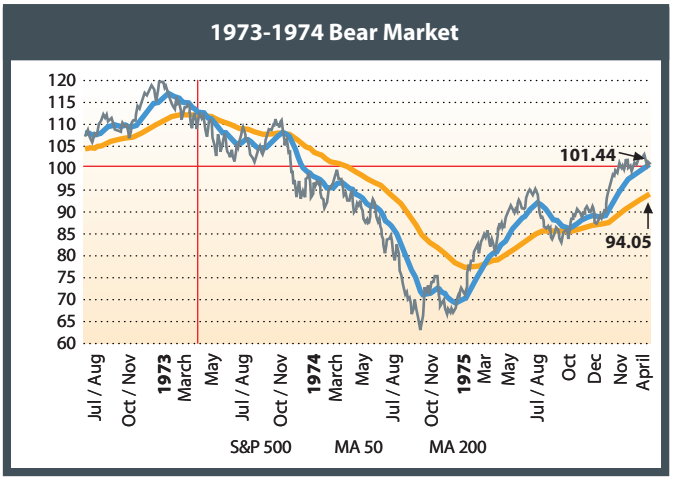
Figure 7

Bear Market 50-/200-Day Moving Average Crossover Results

	% Decline	Decline of $100,000 Portfolio
1973-74	15.30%	$15,300
2000-02	8.50%	$8,500
2008	11.20%	$11,200

Source: Author calculations using eSignal and Excel

Figure 8

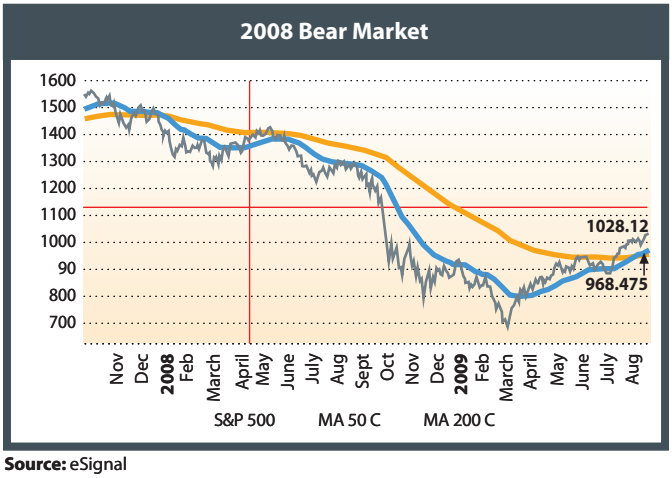


Source: eSignal

Figure 9

Source: eSignal

Figure 10



Source: eSignal

Market Concentration As A Bubble Signal

A true indicator or just tea leaves?

By David Blitzer

Indexes were originally created to track and analyze the market, so it's not surprising that even index investors like to use their data to predict, or speculate, on the next market move. Among all the bits of collected ancient wisdom—and myths—around indexes is the belief that as the market becomes more concentrated at the top, the chance of a sharp downward break increases. We can make this operational by looking at the S&P 500 and how much of the index's total market value is accounted for by the 50 largest stocks; the analysis reveals this bit of wisdom has some truth to it, although its utility as a market forecaster is limited at best.

The Figure 1 shows the S&P 500 and the share of the 50 largest stocks in the index from 1989 through April 2010 using month-end data. The 50-largest share varies from 45 to 60 percent over time. It peaks in early 2000 when the tech stocks began to collapse. Had one been tracking the 50-largest share during the last half of the 1990s, it should have given signs that all was not well in the market. Of course, neither this statistic nor most others available would have cooled all the euphoria that swept the Internet market.

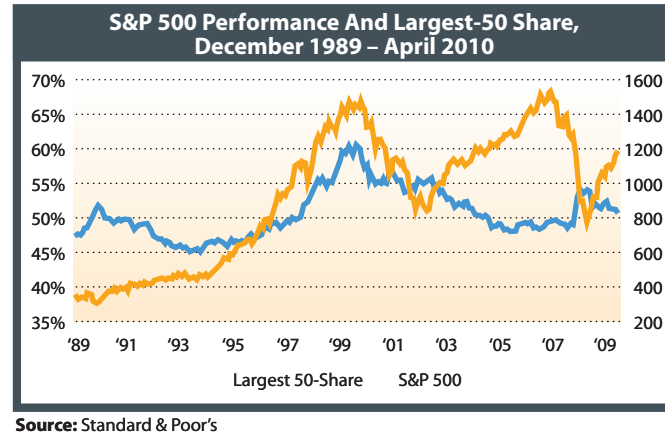
More recently, the 50-largest share surged upward in September 2008, as the market crumbled in the face of the financial crisis and then turned down in March 2009 as the market bottomed. The downward drift beginning in 2003, which took the share under 50 percent, suggests that the stock market did not anticipate a market slide or the financial crisis until disaster was upon it in 2007.

The largest-50 share data poses questions about the market: Was there something very different about the 1990s tech bull market and the rebound from the 2000-2002 bear market? Why does concentration rise in a bubble?

The Tech Boom And The Mid-2000s Market

The second half of the 1990s was driven by tech stocks and growth stocks. The tech sector share of the S&P 500 climbed from 8.5 percent in January 1995 to a peak of 33.1 percent in February 2000. This was largely the result of market movements, not changes to the stocks in the benchmark. The guidelines S&P uses in selecting stocks for the S&P 500 Index require that stocks have four quarters of positive earnings when added to the index. Many of the Internet story stocks of the 1990s barely had a year of revenues, to say nothing of earnings, so they weren't possible candidates for the index. AOL, then a darling of the moment, didn't join the index until the end of 1998. The 1990s bull market was a technology market and little else. Among the 10 sectors, only one other—financials—gained share: Financials rose 0.8 percentage points, while technology rose 24.6 percentage points. The health care sector share was unchanged and the other sectors all lost share.

Figure 1



Source: Standard & Poor's

Even telecommunication services, often linked to technology, lost 1.3 percentage points of share.

The mid-2000s market was different. Technology and financials both gained share from October 2002 to July 2007, but more modestly; tech gained 9 percentage points, financials 8.2 percentage points. Energy and health care also gained share, while the other sectors lost. The range from top gainer to biggest loser in the 2000s market was 14.9 percentage points, compared with 31.3 points in the 1990s bull market. While the 1990s were a tech bubble, the mid-2000s were a more general market recovery. The more recent market was not solely dependent on booming bank stocks.

Concentration And Bubbles

In a bubble, capital flows to one market or market segment as investors bid up prices and join the rush. In the housing boom, we saw a surge in mortgage debt as money rushed to housing. In the tech boom, funds moved from other parts of the stock market into tech stocks. One aspect was a huge swing from value to growth. The largest-50 share figures reflect this.

There is a bubble in bubble research, with new theories and concepts being published on almost a daily basis. Among all the analyses, one group—the econo-physicists building mathematical models of internal market dynamics—considers concentration. As a market rises the way the U.S. stock market did in the tech bubble, more and more of the capital and the unrealized capital gains become concentrated in one corner of the market. Although one might propose that the logical end point is a small handful of stocks accounting for a majority of the market value, the process breaks down before this endpoint is reached. At a breaking point, the market becomes top-heavy and crashes. The difficulty in this theory and in tracking the largest-50 share is that no one knows the breaking point before the crash.

In a bubble, capital flows to one market or market segment as investors bid up prices and join the rush.

As of April 30, the largest-50 share was 50.7 percent, nine points lower than when the tech bubble burst. Moreover, the 50-largest share has been easing down since December 2009. While there are no bubbles in plain sight, there are just a few fundamental issues weighing on the global economy—sovereign debts, high oil prices, the prospect of rising interest rates and more financial regulation—so there is still plenty for investors to wonder, or worry, about.

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Myths About Alpha

Two studies examine active manager performance in India

By Hemen Bhatia

The fact that index funds outperform the majority of actively managed mutual funds has been widely accepted in many areas of the market. Only the most ardent supporters of active management cling to arguments suggesting that the average active manager adds value in areas like large-cap U.S. equities.

As you move away from the most efficient markets, however, active proponents get bolder. The less liquid and less efficient the market, they say, the more opportunity there is to outperform. From corporate bonds to emerging markets equities, they argue, active management still makes sense.

These arguments are echoed within the Indian media and the Indian investment management industry. Proponents of active fund management in India variously claim that Indian markets are inefficient; that Indian fund managers are privy to information not available to the rest of the market; or that the intellect of active fund managers in India is much higher than that of the market as a whole.

In short, they argue, Indian fund managers will always be able to outperform their benchmarks and generate alpha. Moreover, they suggest, it is easy to choose good managers in India.

The data, however, suggest otherwise. This study substitutes data for myth, examining the actual performance of active managers in India over significant time periods. In addition, it looks at the consistency of manager outperformance. In both cases, the data increasingly favors passive funds.

This study may have significant repercussions for Western investors looking at emerging market allocations. After all, if domestic managers with firsthand knowledge of a market as complex as India are unable to add value, what chance do Western managers have of doing better?

As you move away from the most efficient markets, active proponents get bolder. The less liquid and less efficient the market, the more opportunity there is to outperform.

Part 1: The Myth Of Eternal Alpha

Methodology

It has often been argued that individual active fund managers in India are consistently able to exploit anomalies and aberrations that exist in the market. To test this theory in the Indian markets, we examined the three-year rolling returns of all active fund managers in India, subject to two screens.

First, to be included in the study, funds must have been in existence for at least six calendar years as of the end of December 2009. This screen ensures that we have sufficient performance data to study. Second, funds must have a broad index (the S&P CNX Nifty, BSE Sensex, BSE 100 or CNX 100) as their benchmark, to ensure appropriate measurement.

We compared these funds with the performance of the Nifty BeES—an ETF launched by Benchmark Asset Management Company Pvt Ltd. that tracks the S&P CNX Nifty Index. The ETF was chosen because: 1) Nifty BeES captures dividends unlike the pure Nifty index; and 2) Nifty BeES also has management expenses like regular mutual funds.

After applying these filters, we were left with 57 funds for further analysis. We took a simple average of returns of the funds selected. For simplicity, we have taken only growth plans or dividend reinvestment plans assuming no payout.

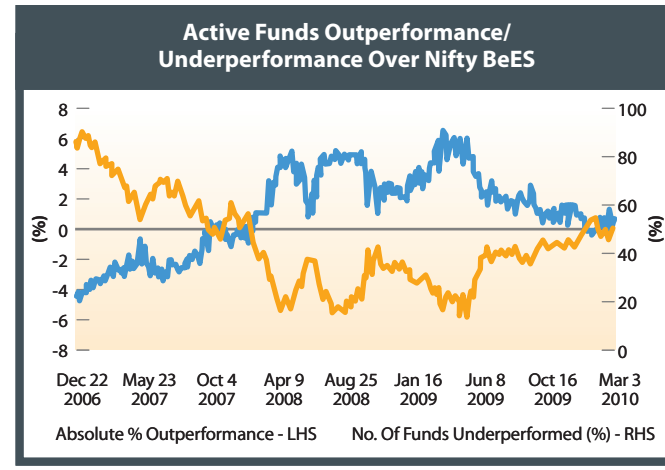
The period of investment commences daily from December 2003 and ends December 2006. The last observation date is Dec. 31, 2009. Thus over 650 data points have been considered for analysis.

Results

Figure 1 shows that the average outperformance of large-cap diversified active funds has declined over the period studied. At various points in time, the level of underperformance has neared or exceeded 6 percent per annum; as of December 2009, it stood at roughly 1 percent per annum. Compounded over three years, that 1 percent per year underperformance translates into more than a 3 percent gap for the average actively managed fund.

If we compare each fund's performance with that of the Nifty BeES, we can also see in Figure 1 that the number of funds underperforming (in percentage terms) the Nifty BeES has varied, but has been generally positive. As of December 2009, 57 to 60 percent—or 32 to 35—of the funds have underperformed the Nifty BeES. While active management had a strong run for the three-year periods ending between December 2006 and February 2008, more recently, those funds have trailed.

Figure 1



Sources: MFI Explorer and Benchmark Asset Mangement. Data as on Dec. 31, 2009.

Figure 2

Performance Persistence Over Three Consecutive 12-Month Periods

Mutual Fund Category	Fund Count on Dec-07	% Remaining in Top Quartile	
		Dec 2008	Dec 2009
Diversified - Large Cap + Mid Cap Funds	163	4.91%	0.00%
Diversified - Large-Cap Funds	111	4.50%	0.90%
Diversified - Mid-Cap Funds	52	5.77%	0.00%
Mutual Fund Category	**Fund Count on Dec-07**	**% Remaining in Top Half**	
		Dec 2008	**Dec 2009**
Diversified - Large Cap + Mid Cap Funds	163	23.31%	11.04%
Diversified - Large-Cap Funds	111	24.32%	13.51%
Diversified - Mid-Cap Funds	52	26.92%	11.54%

Sources: MFI Explorer and Benchmark Asset Management

Note: (a) Diversified Equity schemes include Diversified as well as Tax Planning schemes as per classification of MFI Explorer. (b) Large Cap & Mid Cap scheme classification is as per MFI Explorer which is based on Dec. 31, 2009 portfolio of the schemes under analysis.

Analysis

Is it an aberration or a paradigm shift?

We believe that this trend is here to stay. The argument for indexing in an efficient market is inviolable, and there is a strong argument to be made that the Indian market is rapidly evolving.

While the absolute skills of Indian fund managers remain the same, their skills relative to markets are diminishing. In an increasingly institutionalized market dominated by professional managers, those managers are becoming a larger and larger portion of the market. The direct consequence of this is the emergence of an efficient market with faster price discovery. In addition, fund assets under management have increased dramatically recently, making it more difficult for these funds to add outperformance to their portfolios by finding attractively priced small-cap stocks. The only predictable factor in investments that can be controlled are the various fixed annual costs, e.g., the Nifty BeES's expenses of 0.5 percent per annum or the 2.5 percent per annum that is the maximum expenses an active fund in India is allowed to charge.

This difference of 2 percent per annum can balloon into a huge difference over a number of years because of compounding. In a moderate-return environment, that becomes a significant portion of your returns.

Part 2: The Myth Of Predictable Alpha

Our study showed that relatively few actively managed funds outperform the market in India over rolling three-year periods. If it were easy to identify the winners ahead of time, however, investors could still favor those active funds over index competitors.

We have always believed that being in the top performance quartile is a random event and that past performance is a poor indicator in picking future winners. Hence, we decided to do a systematic study of predictability of fund manager outperformance in India as a follow-up to our analysis of active vs. passive investment.

The second study answers two particular sets of questions:

(1) How consistent is the membership of the top quartile and the top half of actively managed Indian mutual funds? Is achieving a spot in the top quartile a random event, or can it be predicted with any degree of consistency by using past data?

(2) What percentage of a particular period's top-quartile funds remain from the prior period's top quartile or have been promoted from the third, second and first quartiles?

Methodology

For this study, we examined all diversified equity funds with track records of at least three calendar years as of Dec. 31, 2009. That included a total of 163 funds, including 111 large-cap funds and 52 mid-cap funds. The study examined calendar-year returns for the past three years; performance data includes reinvested dividends.

Performance Persistence Over Three Consecutive 12-Month Periods

If fund management is a skill that can be repeated, then most of the top-quartile fund managers should be in the top quartile the next year and the year after that. But if it is a random event, then the law of probability should apply.

In a random scenario, only 6.25 percent of total funds should repeat top-quartile performance a year later, and 1.56 percent of the original sample should remain in the top quartile three times in a row. For example, if there are 200 funds considered for analysis, then at the end of the first year, 25 percent (or 50 funds) of the total funds should be in the top quartile. By the law of probability, 25 percent of the 50 funds (which were in the top quartile at the end of first year), i.e., 12.5 funds or 6.25 percent of the total funds, should be in the top quartile at the end of the second year. Twenty-five percent of the 12.5 funds that were in the top quartile at the end of the second year should repeat their top-quartile performance in year three, meaning 3.125 funds or 1.56 percent of the total funds. The actual results prove that amongst the large-cap group, less than 5 percent—or five individual funds—managed to repeat their top-quartile performance over two years, and less than 1 percent—essentially one fund—repeated

Figure 3

Performance Over Two Nonoverlapping One-Year Periods, Based On Quartiles
(Period 1: Jan 08-Dec 08; Period 2: Jan 09-Dec 09)

Mutual Fund Category	Fund Count on Dec-08	One-Year Percentages as on Dec. 2009				
		<--------Top Quartiles----------Bottom Quartiles------->				Total (%)
		4th Quartile (%)	3rd Quartile (%)	2nd Quartile (%)	1st Quartile (%)	
Diversified - Large Cap + Mid Cap Funds						
4th Quartile (Dec. 08)	41	9.76%	19.51%	39.02%	31.71%	100.00%
3rd Quartile (Dec. 08)	41	17.07%	39.02%	19.51%	24.39%	100.00%
2nd Quartile (Dec. 08)	40	30.00%	20.00%	27.50%	22.50%	100.00%
1st Quartile (Dec. 08)	41	43.90%	21.95%	12.20%	21.95%	100.00%
Large Cap Funds						
4th Quartile (Dec. 08)	28	17.86%	17.86%	35.71%	28.57%	100.00%
3rd Quartile (Dec. 08)	28	42.86%	28.57%	17.86%	10.71%	100.00%
2nd Quartile (Dec. 08)	27	22.22%	29.63%	18.52%	29.63%	100.00%
1st Quartile (Dec. 08)	28	17.86%	25.00%	25.00%	32.14%	100.00%
Mid Cap Funds						
4th Quartile (Dec. 08)	13	7.69%	23.08%	23.08%	46.15%	100.00%
3rd Quartile (Dec. 08)	13	46.15%	15.38%	15.38%	23.08%	100.00%
2nd Quartile (Dec. 08)	13	23.08%	30.77%	30.77%	15.38%	100.00%
1st Quartile (Dec. 08)	13	23.08%	30.77%	30.77%	15.38%	100.00%

Sources: MFI Explorer and Benchmark Asset Management
Note: (a) Diversified Equity schemes include Diversified as well as Tax Planning schemes as per classification of MFI Explorer. (b) Large Cap & Mid Cap scheme classification is as per MFI Explorer which is based on Dec. 31, 2009 portfolio of the schemes under analysis.

for all three years. The results for the mid-cap group are a little better in the second year, with three funds—or 5.77 percent—making the cut, but then not a single fund made it into the top quartile for the third year (see Figure 2).

A similar analysis for the top half also yields results very close to their probabilistic values. Of the entire sample, the number of funds that reappear in the top half of performers for the first two sequential years should be 25 percent, and for all three years, the percentage should be 12.5 percent. The actual figures are very close to that, with the numbers for the combined group working out to 23.31 percent reaching the top half in the second year, and 11.04 percent reaching the top half in the third year.

The results clearly show that fund returns are random and independent of prior returns in India. Past performance clearly has little or no predictive value going forward. Superior performance has more association with luck, is a matter of chance and has less correlation with skill.

Performance Over Two Nonoverlapping One-Year Periods

The data from the previous analysis suggest that almost none of the top-quartile funds managed to consistently retain their top-quartile position or rank—or rather, that just one did.

Since the repeat performance rate of top-quartile funds is very low or negligible, the logical question that arises is: Where do future top-quartile performers come from?

To answer this question, we decided to screen the top-quartile funds to find out the contribution from each period's top and lower quartiles to the next year's future top-quartile funds.

Figure 3 shows that 9.76 percent of the funds (4 out of 41 funds) in the combined large-cap and mid-cap group that had a top-quartile ranking at the end of 2008 maintained their top-quartile ranking through the end of 2009. This means that roughly 90 percent (37 out of 41 funds) of the top-quartile funds as of December 2008 had slipped to lower quartiles by December 2009.

Only 17.86 percent of large-cap funds (5 out of 28 funds) and 7.69 percent of mid-cap funds (1 out of 13 funds) with a top-quartile ranking over one year ending December 2008 could maintain a top-quartile ranking in the subsequent year ending December 2009, which also means that around 82 percent (23 out of 28 funds) of the top-quartile large-cap funds and around 92 percent (12 out of 13 funds) of the top-quartile mid-cap funds as of December 2008 slipped to lower quartiles as of December 2009.

Conclusion

Believers in active management cling to the myth that they can consistently beat index funds in supposedly less efficient markets. At least in India, however, this does not appear to be the case. As the Indian equity market has matured, the number of domestic funds beating the index on a rolling three-year basis has declined. Moreover, there is no consistency in terms of which funds outperform. Using past performance to pick future winners is roughly equivalent to rolling the dice, or worse.

It's a gamble you'll lose, whether you're betting in New York, London or Delhi.

The Mathematics Of Equity Index Pricing

More complex than you think

By Mark Labovitz and Jeff Kenyon

The pricing of an index made up of a set of underlying securities appears straightforward. However, there are a variety of factors that make the process nontrivial. These factors include the introduction or removal of instruments when the index is rebalanced, the effects of corporate actions (e.g., dividends, splits, spinoffs, etc.) and the impact of liquidation. This paper describes the process of index pricing, for both equally weighted and market-capitalization-weighted indexes, for price-only and total return variants, with the intent of surfacing assumptions and describing the handling of many special cases.

Assumptions

The pricing described in this paper proceeds from the existence of the set of equities to be used to form the portfolio. The creation of this set of equities, which the authors collectively call the constituents, from the universe of available securities is beyond the scope of this paper. Along with lists of constituents, other data are assumed to be available to the computations. These include equity prices and shares data whose frequency conforms to the interval at which the index price is desired. However, the reader should be aware that beyond the data frequency there are a number of issues affecting the creation of real-time index prices, and these issues are not considered herein. This paper focuses on the use of daily closing values. The following daily closing values are of interest: closing prices, float-adjusted shares, detailed descriptions of corporate actions applicable to and indexed by close of the day, and if multiple currencies are involved, the closing exchange rates between the currencies of interest. Consistent with this time frame, all variable subscripts which refer to time are referring to a series of close-of-the-day points.

Additionally, this paper addresses two index weighting schemes:

1. Equally weighted (EQ), and
2. Market-Capitalization-weighted (MC) (also referred to as market-value-weighted [Bodie, et al. 2001])

The price formulations are laid out such that many of the computations performed for these index weighting approaches are identical. For either form of weighting, the index pricing for a given day is formulated as the sum of the closing price × shares × a currency conversion factor, which is multiplied by a quantity describing the previous day's index price.

An important set of assumptions being made relate to the adjustment of the indexes for applicable corporate actions (CAs), and the impact of those actions upon the mechanical calculation of the index. The methods for performing these adjustment are described below. No discussion of the selection of initial (IPO) index values is given, although there are commonly used conventions in setting such values.

When the index price is not adjusted for the issuance of dividends, the indexes, regardless of whether they are MC or EQ weighted, are denoted as price-only indexes. This is the assumed state of affairs in the material up to the last section. In that final section, the authors provide a discussion for pricing total return indexes, i.e., indexes that are adjusted for the total return of their components (including dividends). After the adjustment on the ex-date that adds back the dividend, the dividend disappears from the computation and the total return is thereafter adjusted by the commonly used computation of price-only, normalized by a previous-day divisor. It is thereby assumed that the dividends are subsequently invested in the aggregate behavior of the index. Total return indexes are computed for both weighting schemes.

Equally Weighted Indexes

After the selection of an index's constituents, initial pricing of an equally weighted index is as follows. Select a nominal monetary amount[1] for the component value[2] (in dollars for regional indexes and local currency for country indexes), and call that amount v_0. To find the initial total value, we then have

$$a_0 = v_0 \times n \qquad (1)$$

where: a_0 = the total monetary value or the sum over the constituents, and
n = the number of components in the index.

Figure 1

Example Of Equally Weighted Index Calculations, 'Ordinary' End-Of-Day Re-Pricing

(a)	Intial Public Offering ($t = 0$)		
Security	**Price**	**Shares**	**Value**
ABC	50	20	1000
DEF	20	50	1000
XYZ	10	100	1000
DOGG	5	200	1000
Total Value			4000
Index Pricing			4000
Adjustment Factor (f)			1
(b)	**End of First Trading Day ($t = 1$)**		
ABC	51	20	1020
DEF	17	50	850
XYZ	11	100	1100
DOGG	6.5	200	1300
Total Value			4270
Index Pricing			4270
Adjustment Factor (f)			1
(c)	**End of Arbitrary Trading Day Prior To 1st Rebalance And Absent A CA ($t = g$)**		
ABC	53	20	1060
DEF	17.75	50	887.5
XYZ	11	100	1100
DOGG	5.25	200	1050
Total Value			4097.5
Index Pricing			4097.5
Adjustment Factor (f)			1

Figure 2

Example Of Rebalance
(a) index at close prior to rebalance; (b) index rebalanced prior to open

(a)	At Close Prior To Rebalance ($t = b-1$)		
Security	**Price**	**Shares**	**Value**
ABC	60	20	1200
DEF	22	50	1100
XYZ	10	100	1000
DOGG	2	200	400
Total Value			3700
Index Pricing			3700
Adjustment Factor (f)			1
(b)	**Rebalance Pre-open ($t = b$)**		
ABC	60	15.42	925
DEF	22	42.05	925
XYZ	10	92.50	925
DOGG	2	462.50	925
Total Value			3700
Index Pricing			3700
Adjustment Factor (f)			1

Figure 3

General Format Of Equally Weighted Index Computation For Further Discussion

	Time t = *arbitrary*		
Security	**Price**	**Shares**	**Value**
Equity 1	p(1, t)	A(1)	p(1, t) x A(1) = V(1, t)
Equity 2	p(2, t)	A(2)	p(2, t) x A(2)= V(2, t)
Equity 3	p(4, t)	A(3)	p(4, t) x A(3)= V(3, t)
Equity 4	p(3, t)	A(4)	p(3, t) x A(4)= V(4, t)
Total Value			Sum (Value)
Index Pricing			Total Value/f
Adjustment Factor (f)	Value to Place Index in Desired Range		

As a business rule for time 0 (the time after the close of the day and prior to the opening of the day on which index will commence pricing for the first time), each component of an equally weighted index will have a number of shares such that the value for each component (shares x price) will be $10,000. The index value at time 0 will be set to 100 and the adjustment factor between the total value and index will be computed as $f = a_0 / index_0$.

Using the prices of the components at the time of index construction, we can compute the number of shares of each component in the index by

$$s_{i,0} = v_0 / p_{i,0} \qquad (2)$$

where: $s_{i,0}$ is the number of shares of equity $i = 1, 2, \ldots, n$, at time $t = 0$ where time may take on the values of $t = 0, 1, 2, \ldots, T$, and

$p_{i,0}$ is the price of one share of the i^{th} security at time $t = 0$.

An analogous computation (but one in which the total value is used to compute the value in the individual components) takes place at the time of any rebalance. Let $t = b$, where b is any day on which a rebalance is to take place after the close and prior to the next day's opening.

Then a_b equals the total value of the index after the close on the previous day and before the next opening.

From which it follows that

$$v_b = a_b / n_b \qquad (3)$$

where: v_b = the monetary value in each constituent, and
n_b = the number of components in the index.

Once again

$$s_{i,b} = v_b / p_{i,b-1} \qquad (4)$$

where: $s_{i,b}$ is the number of shares of equity $i = 1, 2, \ldots, n$, at time or $t = b$, and
$p_{i,b-1}$ is the price of one share of the i^{th} security at time at the close of business on day $b - 1$.

The computation for the EQ index ("chain pricing"), is given in equation (5).

$$\text{Index Price}_t = \frac{\sum_{i=1}^{n}(p_{i,t} x\, s_{i,D} x\, r_{i,t})}{\sum_{i=1}^{n}(p_{i,t-1} x\, s_{i,D} x r_{i,t-1}) / a_{t-1} / f} = \frac{a_{t-1}}{f} * \frac{\sum_{i=1}^{n}(p_{i,t} x\, s_{i,D} x\, r_{i,t})}{\sum_{i=1}^{n}(p_{i,t-1} x\, s_{i,D} x\, r_{i,t-1})} \qquad (5)$$

where: $p_{i,t}$ = price of security $i = 1,2,\ldots,n$, at time $t = 1, 2, \ldots, T$ and $t=D$ where D is the most recent initial index day, the date of the most recent CA (a CA ex-date) or the rebalance day (the initial day after a rebalance),
n = the number of equities in the index from the most recent rebalance (excepting any liquidation action taken [see below]), and
$s_{i,D}$ = the number of shares for equity i at time D

$$r_{i,t} = \begin{cases} 1, \text{ if a country index, or} \\ \text{exchange rate from local currency to} \\ \text{USD at a time } (t), \text{ if a regional index} \end{cases}$$

a_t is defined as the total value of the index at time t
f is defined as the arbitrary adjustment factor to convert the total value into the index value via the equation $IndexPrice_D = a_D / f$ where D is defined as above.

An example of this approach is given in Figure 1 (Steve Harris, personal communication). The figure describes the computation of the index for consecutive dates. The impor-

Figure 4

Impact Of Common CAs Upon EQ Indexes

Name of Corporate Action	Impact on Price	Impact on Shares
Cash Dividend	Adjusted Price = closing price - dividend announced by the company	No adjustment for price-only index
Special Dividend	Adjusted Price = closing price - dividend announced by the company	No adjustment for price-only index
Splits and Reverses (within class of equity)	Adjusted Price = closing price * A / B	New number of shares = old number of shares * (B / A)
Rights Offering	Adjusted Price = (closing price * A + subscription price * B) / (A + B)	New number of shares = old number of shares * (A + B) / A
Stock Dividend	Adjusted Price = closing price * A / (A + B)	New number of shares = old number of shares * (A + B) / A
Stock Dividend of a Different Company Security	Adjusted Price = (closing price * A - price of the different company security* B) / A	New number of shares = a(t=closing time, closing day)/Adjusted Price
Return of Capital and Share Consolidation	Adjusted Price = (closing price - dividend announced by company) * A / B	New number of shares = old number of shares * (B / A)
Repurchase Shares - Self Tender	Adjusted Price = [(price before tender * old number of shares) - (tender price * number of tendered shares)] / (old number of shares - number of tendered shares)	New number of shares = V(i.t=closing time, closing day) / Adjusted Price
Spin-Off	Adjusted Price = (closing price * A - price of spun-off shares * B) / A	New number of shares = V(i.t=closing time, closing day) / Adjusted Price
Combination Stock Distribution (Dividend or Split) and Rights Offering (If rights are applicable after stock distribution) NB: B new shares from the distribution and C new shares from the rights offering for every A shares held	Adjusted Price = [closing price * A + subscription price * C * (1 + B / A)] / [(A + B) * (1 + C / A)]	New number of shares = V(i.t=closing time, closing day) / Adjusted Price
Combination Stock Distribution (Dividend or Split) and Rights Offering (If stock distribution is applicable after rights) NB: B new shares from the distribution and C new shares from the rights offering for every A shares held	Adjusted Price = [closing price * A + subscription price * C] / [(A + C) * (1 + B / A)]	New number of shares = V(i.t=closing time, closing day) / Adjusted Price
Combination Stock Distribution (Dividend or Split) and Rights Offering (Neither action is applicable to other) NB: B new shares from the distribution and C new shares from the rights offering for every A shares held	Adjusted Price = [closing price * A + subscription price * C] / [A + B + C]	New number of shares = V(i.t=closing time, closing day) / Adjusted Price

Source: Groves (2008)

tant point to note is that the shares in the index remain the same while general market factors will move the price about. So Figure 1 gives an example of an ordinary (no CAs, no rebalance) end-of-day re-pricing of the index, and Figure 2 provides an example of the rebalance of the index.[3]

To commence, let us assume the following at $t = 0$ or at index IPO (see Figure 1):

$$v_0 = 1000$$
$$n_0 = 4$$
$$\Rightarrow a_0 = 1000 \times 4 = 4000$$

In Figure 2 and the next computation, the authors show a rebalance. Let b = the rebalance day.

From Figure 2(a) we derive:

$$a_b = 3700$$

$$n_b = 4$$
$$\Rightarrow v_b = 3700/4 = 925$$

Figure 2(b) combines these results with the data at close.

The important point to note is that after rebalance, the index pricing is identical to its value prior to rebalance, but the value invested in each security is now identical as required by the equally weighted index.

Adjusting Equally Weighted Indexes For Corporate Actions (CAs)

In this formulation of the EQ index, if the change in price is due to a CA rather than just marketplace movements, it may be necessary to adjust the number of shares associated with a particular component. To support this discussion, let's place Figure 2 in a general format for further discussion of CA adjustments (see Figure 3).

Figure 5

Example Of Adjusting For 2-For-1 Split CA

(a) represents the index at close on the cum-date; (b) depicts the index adjusted for the CA prior to opening on the ex-date

(a)	At Close Prior To Ex-Date ($t = h$)		
Security	**Price**	**Shares**	**Value**
ABC	70	20	1400
DEF	20	45	900
XYZ	10	92.5	925
DOGG	5	150	750
Total Value			3975
Index Pricing			3975
Adjustment Factor (f)			1
(b)	**CA Adjusted Prior To Open ($t = h + 1$)**		
ABC	35	40	1400
DEF	20	45	900
XYZ	10	92.5	925
DOGG	5	150	750
Total Value			3975
Index Pricing			3975
Adjustment Factor (f)			1

Figure 4 lists the commonly observed CAs as well as the adjustments, if any, to the number of shares in the computation of the equally weighted index. For the following corporate actions, where indicated, we will assume that shareholders receive B(i) new shares for security i (denoted B in Figure 4) for every A(i) shares held (denoted A in Figures 3 and 4). Let $p(i, t = r)$ be defined as the closing price for equity i on the cum-date and let $p_A(i, t = r+1)$ be defined as the adjusted price for equity i on the ex-date (denoted Adjusted Price in Figure 4). The use of end-of-day pricing is once again assumed. In this computation, the analyst is to use the column labeled "Impact on Shares" to adjust the EQ shares for any constituent under a CA.

In implementing these adjustments, there must be an effort to set up a function or functions, indexed by type of CA to perform the arithmetic/substitutions reported on in "Impact on Shares" (see Figure 4), using the data for the equity on cum- and ex-dates of the CA.

Consequently, the authors suggest the following generalized procedure:

1. For CAs affecting components, identify the type of CA.
2. Pull the relevant dates (cum and ex).
3. Extract the shares' change data.
4. Pull any pricing change data.
5. Apply the particular CA rule.

A worked example is given in Figure 5, and explained further below.

The application of steps in processing CA (as seen in Figure 5) follows:

1. Type of CA: Split (2 for 1)
2. Equity: ABC
3. Cum-date: h, Ex-date: $h+1$
4. B=2, A=1
5. Adjusted price = (1/2) * closing price = 35
6. New number of shares = (2/1) * Old Number of Shares = 40

The outcome of this processing worth noting is that the index pricing and security values remain unchanged as per this CA's prescription. The only changes are to the price and shares of ABC, which is once again consistent with Figure 4.

Adjusting Equally Weighted Indexes For Liquidations

In the event of a component dropout (liquidation) between rebalances, the event can be dealt with by the adjustment as follows:

$$\text{Index Price}_t = \frac{\sum_{i=1}^{n-1} (p_{i,t} \times s_{i,D} \times r_{i,t})}{\sum_{i=1}^{n-1} (p_{i,t-1} \times s_{i,D} \times r_{i,t-1}) / (a_{t-1} / f)} = \frac{a_{t-1}}{f} * \frac{\sum_{i=1}^{n-1} (p_{i,t} \times s_{i,D} \times r_{i,t})}{\sum_{i=1}^{n-1} (p_{i,t-1} \times s_{i,D} \times r_{i,t-1})} \quad (6)$$

where: the index has been reordered so that the deleted component has been removed (reduced to n-1 securities), and the numerator of the divisor $\{\sum_{i=1}^{n-1} (p_{i,t-1} \times s_{i,D} \times r_{i,t-1})\}$ is the previous day's (prior to liquidation) market cap computed as if the component had already been deleted (simulated total value) and the denominator $\{(a_{t-1} / f)\}$ is the index price for the previous day as computed.

Note we are using a modified version of chained pricing given in equation (5). Figure 6 provides an example for performing a liquidation adjustment.

Then, as per equation (6) and the material in Figure 6, we have:

$$a_{g+1} = 4270 * (2935/2970) = 4219.68$$

Without this adjustment, the index value would have dropped from 4270 to 2935 with roughly 1300 points of the drop due solely to the liquidation.

Market-Capitalization-Weighted Indexes

Unlike the equally weighted index, the market-capitalization-weighted index, denoted MC, uses the market cap of the component (*price* x *free float shares*) as a weighting factor. Consequently, in this construction, the authors divide the sum of the market caps of all the stocks in the index at a given time by a quantity that is the sum of the market caps at some initial time divided by an initial index value (a_0 / f). With respect to the mathematical manipulations (not the quantities), the computations are the same as for the EQ index. So, mathematically

$$\text{Index Price}_t = \frac{\sum_{i=1}^{n} (p_{i,t} \times q_{i,t} \times r_{i,t})}{\sum_{i=1}^{n} (p_{i,0} \times q_{i,0} \times r_{i,0}) / a_0 / f} = \frac{a_0}{f} * \frac{\sum_{i=1}^{n} (p_{i,t} \times q_{i,t} \times r_{i,t})}{\sum_{i=1}^{n} (p_{i,0} \times q_{i,0} \times r_{i,0})} \quad (7)$$

where: $p_{i,t}$ = price of security $i = 1, 2, \ldots, n$, at time $t=0, 1, 2, \ldots, T$ and $t=0$ means the initial time period,

n = the number of equities in the index,
$q_{i,t}$ = float-adjusted shares outstanding for equity i at time t,

$$r_{i,t} = \begin{cases} 1, \text{ if a country index, or} \\ \text{exchange rate from local currency to USD at a time } (t), \text{ if a regional index} \end{cases}$$

a_0 is defined as the total value of the index at time *0*, f is defined as arbitrary adjustment factor to convert the total value into the index value or pricing via the equation $IndexPrice_0 = a_0 / f$; the computation is performed in this manner so that the *IndexPrice* can be placed in an arbitrary range.

Therefore, if the initial index price is set to 100 = a_0/f $f = a_0/100$, equation (7) becomes

$$Index\ Price_t = \frac{\sum_{i=1}^{n}(p_{i,t} \times q_{i,t} \times r_{i,t})}{\sum_{i=1}^{n}(p_{i,0} \times q_{i,0} \times r_{i,0}) / 100} = 100 \times \frac{\sum_{i=1}^{n}(p_{i,t} \times q_{i,t} \times r_{i,t})}{\sum_{i=1}^{n}(p_{i,0} \times q_{i,0} \times r_{i,0})} \quad (8)$$

The same result can be obtained by chain pricing:

$$Index\ Price_t = \frac{\sum_{i=1}^{n}(p_{i,t} \times q_{i,t} \times r_{i,t})}{\sum_{i=1}^{n}(p_{i,t-1} \times q_{i,t-1} \times r_{i,t-1}) / (a_{t-1} / f)} = \frac{a_{t-1}}{f} \times \frac{\sum_{i=1}^{n}(p_{i,t} \times q_{i,t} x r_{i,t})}{\sum_{i=1}^{n}(p_{i,t-1} \times q_{i,t-1} x r_{i,t-1})} \quad (9)$$

The authors recommend the use of equation (9) rather than equation (7), as the latter is more versatile. Also, the manipulations performed in Figures 1, 2, 3 and 5 are identical for MC indexes as well. The difference is that the number of shares for the components in the MC indexes is the free-float number of shares rather than a number of shares derived to make the value of components equal at IPO or rebalance dates as is the case for EQ indexes.

Adjusting Market-Cap-Weighted Indexes For Liquidations

Handling the liquidation of components of an MC index is similar to that already described for EQ indexes. The adjustment is as follows:

$$Index\ Price_t = \frac{\sum_{i=1}^{n-1}(p_{i,t} \times q_{i,t} \times r_{i,t})}{\sum_{i=1}^{n-1}(p_{i,t-1} \times q_{i,t-1} \times r_{i,t-1}) / (a_{t-1} / f)} = \frac{a_{t-1}}{f} * \frac{\sum_{i=1}^{n-1}(p_{i,t} \times q_{i,t} \times r_{i,t})}{\sum_{i=1}^{n-1}(p_{i,t-1} \times q_{i,t-1} x r_{i,t-1})} \quad (10)$$

where: the index has been reordered so that the deleted component has been removed (reduced to n-1 securities), and
the numerator of the divisor $\{\sum_{i=1}^{n-1}(p_{i,t-1} \times q_{i,t-1} \times r_{i,t-1})\}$ is the previous day's (prior to liquidation) market cap computed as if the component had already been deleted and the denominator (a_{t-1}/f) is the index price for the previous day as computed.

Figure 6

Worked Example For Dealing With Liquidation Of Component In Index, Not Ignoring The Change
(a) is the pricing at close on the day prior to liquidation; (b) is the raw effects of liquidation; (c) computes the adjustment used in equation (5) created by removing the liquidated equity from (a)

(a)	At Close, Prior To Liquidation *(t = g)*		
Security	**Price**	**Shares**	**Value**
ABC	51	20	1020
DEF	17	50	850
XYZ	11	100	1100
DOGG	5	200	1300
Total Value			4270
Index Pricing			4270
Adjustment Factor (*f*)			1
(b)	**At Close, Day Of Liquidation *(t = g + 1)***		
ABC	53	20	1060
DEF	16.5	50	825
XYZ	10.5	100	1050
DOGG	0	200	0
Total Value			2935
Index Pricing			2935
Adjustment Factor (*f*)			1
(c)	**At Close, Prior To Liquidation, Simulated *(t = g [simulated])***		
ABC	51	20	1020
DEF	17	50	850
XYZ	11	100	1100
DOGG	0	200	0
Total Value			2970
Index Pricing			2970
Adjustment Factor (*f*)			1

Figure 6 is an example of the recommended manipulations to be performed in the event of a liquidation.

Regional Indexes

If pricing calculations are being applied to regional indexes, the leading difference is that multiple currencies are likely to be involved. Prices are to be converted to a common currency (typically, U.S. dollars or euros). In such cases, when currency conversions have been applied, the daily index price change will also reflect the daily change(s) in the exchange rate(s). This adjustment, where appropriate, is built into the above equation via the term $r_{i,t}$, where

$$r_{i,t} = \begin{cases} 1, \text{ if a country index, or} \\ \text{exchange rate from local currency to USD at time (t) if a regional index} \end{cases}$$

A consequence of performing such computations as observed by the authors is that index values may change based on the common currency in which they are calculated, i.e., calculating an index value for Hungary in

Figure 7

Example Of Common Adjustment Of Total Return Index
(a) shows the starting state of the index at close of day $t = g$. (b) shows the computation of elements (no dividends cum-date) needed to adjust index for close of day $t = g + 1$. (c) shows close of ex day $t = g + 2$ for stock ABC. The equity has a $2 dividend and there are no other price changes for constituents of the index. (c) provides the adjusted computation for the numerator of the adjustment factor. When combined with the index value from $g + 1$ the adjustment correctly keeps the total return constant for $g + 2$. Lastly, (d) is a price-only version of (c). The total value from (d) is used as the denominator (divisor) for the next day's computations.

(a)	Initial State Of Index Close Of Day ($t = g$)			
Security	**Price**	**Shares**	**Dividend/ Shr**	**Value**
ABC	51	20	0	1020
DEF	17	50	0	850
XYZ	11	100	0	1100
DOGG	6.5	200	0	1300
Total Value				4270
Index Pricing				4270
Adjustment Factor (f)				1
(b)	Dividend Cum Date, Adjustment Due Solely To Market Movements ($t = g + 1$)			
ABC	52	20	0	1040
DEF	16.5	50	0	825
XYZ	11.25	100	0	1125
DOGG	6.75	200	0	1350
Total Value				4340
Index Pricing				4340
Adjustment Factor (f)				1
(c)	Ex-Date Adjustments ($t = g + 2$)			
ABC	50	20	2	1040
DEF	16.5	50	0	825
XYZ	11.25	100	0	1125
DOGG	6.75	200	0	1350
Total Value				4340
Index Pricing				4340
Adjustment Factor (f)				1
(d)	Price-Only Version of Ex-Date ($t = g + 2$) Used In Divisor Next Day ($t = g + 3$)			
ABC	50	20	0	1000
DEF	16.5	50	0	825
XYZ	11.25	100	0	1125
DOGG	6.75	200	0	1350
Total Value				4300
Index Pricing				4300
Adjustment Factor (f)				1

U.S. dollars will likely not produce the same value as calculating the same index value in Hungarian forints, since the index would also reflect the change in HUF/USD exchange rates.

Computation Of Total Return Indexes

The total return is a quantity that adjusts the price for issuance of dividends. When a company issues a dividend, the price of the equity drops in the exact amount of the per-share dividend amount. Leaving aside subsequent market movements of the equity price, the impact of a dividend upon an index in which the equity is a component is a drop in the price of the index. This is true for both EQ and MC indexes. A companion index that is based on the total return adjusts the price-only index for the issuance of dividends by its components. The total return index is computed as follows:

$$TRIndexPrice_t = TRIndexPrice_{t-1} \times \frac{\sum_{i=1}^{n}(p_{i,t} \times h_{i,t} \times r_{i,t}) + (div_{i,t} \times h_{i,t} \times r_{i,t})}{\sum_{i=1}^{n}(p_{i,t-1} \times h_{i,t-1} \times r_{i,t-1})} \quad (11)$$

where: $p_{i,t}$ = price of security $i = 1, 2, \ldots, n$, at time $t = 0, 1, 2, \ldots, T$ and $t = 0$ means the initial time period, n = the number of equities in the index, $h_{i,t}$ = the number shares in equity i at time t = $q_{i,t}$ or $s_{i,t}$ depending on whether MC or EQ weighting is used, respectively

$$r_{i,t} = \begin{cases} 1, \text{ if a country index, or} \\ \text{exchange rate from local currency to} \\ \text{USD at a time (t), if a regional index} \end{cases}$$

$div_{i,t}$ = per-share dividend on ex-date

As per previous computations, all quantities in equation (11) are end-of-day quantities. The numerator is computed as per the ex-date for any dividends. A key point for this approach comes via the observation that the dividend is adjusted for solely on the ex-date and does not enter the computations (explicitly) after that date. To accomplish this, on the day following the ex-date, a price-only version of the index's ex-date total value enters in the denominator (divisor) of equation (11).

Total return indexes may be computed for both EQ and MC indexes. The setup of the total return index setting, including initial value, is identical to the price-only indexes.

Examples are given below using Figure 7 to help the reader understand how adjustments to the total return index as formulated in equation (11) might roll out over a time frame about the ex-date. Figure 7 is an example of a non-ex-date computation followed by an ex-date.

Following Figure 7(a), let $TRIndexPrice = 5000$

Then, based on Figure 7(b),

$TRIndexPrice_{g+1} = 5000 * 4340/4270 = 5023.42$

Then, based on Figure 7(c),

$TRIndexPrice_{g+2} = 5023.42 * 4340/4340 = 5023.42$ (no change)

As a final example, the authors assume that another equity has a 2-for-1 split on the same ex-day that ABC grants a $2

dividend. Let us further assume there are also some price changes due not only to the CA but also to the market. Figure 8 provides such an example. Figure 8(b,c) shows changes due solely to the CAs, which we will not normally see in the close-of-day data. Figure 8(c) provides the computations needed to obtain the numerator to the adjustment factor.

Let $TRIndex\ Price_{g} = 5000$ (value at day close, $t = g$)

After results given in Figure 8(b,c) the

$$TRIndex\ Price_{g+1} = 5000 * 4330/4270 = 5070.26$$

Summary

This paper provides a fairly complete description of the computations necessary to adjust the prices of equity indexes as they change under market movements, the occurrence of corporate actions, periodic index rebalance and combinations of these driving activities. While the paper illustrates and discusses the re-pricing as an end-of-the-trading-day activity, many of the results presented here can be used under any latency scheme, representing either longer or shorter periods of time than one day. Similarly, while the paper restricts the discussion of portfolio weighting to two of the most commonly used weighting schemes (equal weighting and market capitalization weighting), other weighting schemes could be substituted without fundamentally changing the results provided.

The approach described uses a divisor method in computing the adjustments. The application of the appropriate divisor is a function of the prior day's total value, or in some cases, a hybrid of present-day and prior-day elements (shares and prices) that the authors call a simulated divisor. Finally, the authors have adopted the use of an adjustment factor whose value is determined such that the analyst can set the index (price) in a desired range without having to worry about constraining the total value computations.

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Figure 8

Example Of Computations Necessary To Adjust Total Return Index For Both Nondividend CAs And Market Movements On Same Day

(a) provides the initial state, (b) shows changes due to the CAs and (c) shows market movements on top of the CA effects. Finally, we create in (d) a price-only version of (c). The total value from (d) is used as the denominator (divisor) for the next day's computations.

(a)	Initial State Of Index Close Of Day ($t = g$)			
Security	**Price**	**Shares**	**Dividend/ Shr**	**Value**
ABC	51	20	0	1020
DEF	17	50	0	850
XYZ	11	100	0	1100
DOGG	6.5	200	0	1300
Total Value				4270
Index Pricing				4270
Adjustment Factor (*f*)				1
(b)	Changes Due To CA (2:1 Split DEF) Only ($t = g+1$)			
ABC	49	20	2	1020
DEF	8.5	100	0	850
XYZ	11	100	0	1100
DOGG	6.5	200	0	1300
Total Value				4270
Index Pricing				4270
Adjustment Factor (*f*)				1
(c)	Ex-Date Changes With Market Movements On Top of Split And Dividends ($t = g+1$)			
ABC	49.5	20	2	1030
DEF	8	100	0	800
XYZ	11.5	100	0	1150
DOGG	6.75	200	0	1350
Total Value				4330
Index Pricing				4330
Adjustment Factor (*f*)				1
(d)	Price Only Version of Ex-Date ($t = g+1$) Used In Divisor Next Day ($t = g+2$)			
ABC	49.5	20	0	990
DEF	8	100	0	800
XYZ	11.5	100	0	1150
DOGG	6.75	200	0	1350
Total Value				4290
Index Pricing				4290
Adjustment Factor (*f*)				1

Endnotes

[1] Setting the initial value of indexes is not within the scope of this paper.

[2] This paper adapts the following definitions. The *total value* is the sum of the product of shares *x* price. The *index value* is defined as the total value divided by an arbitrary, but fixed, value called an *adjustment factor*, denoted elsewhere in the paper as *f*. The purpose of the adjustment factor is to scale the index within a desired range.

[3] The tables present in this paper are for illustrative purposes. The authors are not suggesting that tables represent the best computational format. It should be clear that the computations can be set up using very efficient matrix structures. Additionally, for day-to-day index pricing wherein changes are due solely to market movement, then equation (5) simplifies considerably to $\sum_{i=1}^{n}(p_{it} x s_{iD} x r_{it})/f$, rendering the within-tableau computation as complete.

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The Summertime Survey

Friendly visits with some of the most interesting people in indexing and investing

Mark Mobius, executive chairman of Templeton Asset Management

JoI: Do you think the global economy has turned the corner? What do you expect for the next few years or so?

Mark Mobius (Mobius): The bank supply increase that we've seen will continue to support the economies around the world, so we see a continued recovery despite what has been happening in Greece and in Europe. As you know, the Europeans have stepped in to pump money into the system. As long as that's happening, I expect to see recovery continuing.

JoI: Do you think emerging markets in general have recovered from the global financial crisis? How do you think they are positioned going forward, in particular?

Mobius: Emerging markets definitely have recovered. You can see it in the growth statistics: China is growing at 9 percent, India at 7 to 8 percent and most markets are growing at over 3 or 4 percent. More importantly, emerging markets are in a very strong financial position because their foreign reserves are far greater than that of the developed countries, and their debt-to-GDP ratios are lower. So from that aspect, these emerging markets are doing very well.

The global meltdown, of course, affected emerging markets—but it was mainly because of sentiment from the West. In fact, the fundamentals of these emerging markets were still quite good. And of course, now they're even better.

JoI: What could go wrong in China?

Mobius: What could go wrong would be a disintegration of the government-led programs to increase spending on infrastructure and a general tightening of credit and money supply. That could be bad for China. But I don't see that happening.

JoI: Should emerging market bonds trade at a premium or a discount to developed market bonds?

Mobius: Generally speaking, they should be trading at a premium. The emerging markets are in a better financial position because of their higher foreign reserves and their lower debt-to-GDP ratios. Of course, you have to look at it on a country basis. Argentina, for example, got a very, very bad rating and deserves it. But then if you look at countries like China, India, even Russia and Turkey, these have much stronger financial positions.

Craig Israelsen, Associate Professor, Brigham Young University

JoI: Do you think the global economy has turned a corner? Are we in a global recovery now?

Craig Israelsen (Israelsen): In the diverse array of investments that we have in front of us to utilize, there's always a "corner turning" taking place, and there's always approaching accidents. That's the beauty of a broadly diversified approach: We don't have any genuine hope that we can avoid all the potholes. I'd like to have a diversified enough portfolio in which, in fact, some of my asset classes are having a bad run. That tells me I have a broad enough exposure. If all the components of my portfolio are doing well, I probably don't have a very diversified portfolio. As far as equities are concerned, if there is [a global recovery in equities taking place, it's] a scary one. If this is what a recovery is supposed to feel like, I'm not sure I want to be in recovery.

JoI: Do you think there are further threats ahead for investors?

Israelsen: Yes. I think the threats have a lot to do with the mechanics of how things are traded. I'm not sure that the biggest threats are the underlying economic realities.

One of the biggest threats [at the investor level] is expecting too much from a portfolio, and that expectation comes from under-funding. If an investor doesn't invest enough in their 401(k) or their IRA for years and years, they won't have enough. At some point it dawns on them that they don't have enough money, and they either have to invest more or they have to expect heroics from their portfolio.

One way to expect heroics is to put a heavy weighting on more aggressive elements, such as more aggressive equity positions. Well, they may get lucky. The timing may be good for them, and they think they're really brilliant. Or, as is typically the case, roughly 30 percent of the time equities get hit. Roughly 70 percent of the time, equities have a positive return. And it doesn't really matter if that's domestic or non-U.S., that's just the general trend since the 1920s. So, under-saving creates inflated expectations of what the portfolio needs to make up for under-funding.

Another hazard of a "recovery" is over-management of a portfolio by investors, and not just investors, but managers of portfolios or managers of mutual funds. There's this tendency to always be tweaking it and modifying it and reexamining every possible way to reconfigure it. I just don't think that's a helpful approach. If people did that to their yards, every three years they'd pull up every tree and replant it—that's just so asinine. But that's what a lot of people do and some advisers do to portfolios.

JoI: What have been the most important takeaways from the last two years or so? Have the events of the past two years changed your investment philosophy or approach at all?

Israelsen: I'll answer the second part first: No. My philosophy is a really broad diversification over multiple asset classes, with equal weighting, because I don't pretend to know which of the various asset classes will do better that year. I have a decent idea that over the long haul, equity and diversified assets will do better than fixed income, just in general, so the overall weighting of a portfolio could be tilted more towards equity for a younger investor.

What happened in '08, what happened in '09, what's

happening in 2010—it's just stuff happening. And stuff always happens. I think the key is to not react to "stuff." Unless you think something of biblical proportions has occurred that changes all the rules, then it's just noise. And if you have broad enough exposure to a variety of asset classes, something in your portfolio is doing great.

Actually, the last couple of years I think have manifested how truly vital it is to be broadly diversified, number one, and to have a cash pantry on the side, for retirees especially, to cover your cash flow needs if you don't want to be withdrawing from your portfolio because it's getting drawn down by market behavior. That's the single best way to take risk out of a portfolio: Don't rely on it 100 percent.

But it's hard. It's hard because people look at cash in a portfolio as a waste because it doesn't have equitylike returns. But there's a reason for that: It's not equity. In 2008, there was a rekindling of a love affair with cash, but often it came too late.

JoI: What do you think are the challenges facing retirement investors in the current environment, and have those changed over the years?

Israelsen: What's changed over the years is longevity. In 1930, it was anticipated based on mortality tables that a retiree might live three to seven years in retirement. Now, for women, it could be 30 to 35 years, maybe 25 to 30 years for men. That's a long time. That's a lot of money to have saved up to create an annuity stream to cover that many years of income. Then combine that [longevity] with extreme real estate inflation.

At portions of time in the last 20 years, the rate of inflation in real estate has been unbelievable. For young people, it's almost impossible to think about buying a home. And just the amount of goods and services that we can spend our money on is manifoldly larger than 50 years ago.

Budgeting skills are as important as what your portfolio is doing—probably, more important really, because budgeting is an everyday issue. If a person can scale back appropriately so that they can actually survive on a 4 percent withdrawal rate, they're good. Any reasonably designed retirement portfolio will last with a 4 percent withdrawal rate. Eight percent? You're going to have to get really lucky in your investments.

I think a way to stop a party is to walk in and say, "Hey, let's all talk about budgeting." That's about the reaction. I've been teaching family finance for 20 years to college students, and it's not the favorite topic. But without a livable budget, I don't know that there is a portfolio that's good enough. If a person is spending more than they should, even a great portfolio is not going to solve that one.

JoI: Is index-based investing something that is reasonable for the average investor to embrace?

Israelsen: Absolutely—assuming that the index is not built by a bunch of crazy men. The tacit assumption is often that if it's an index, it must be good. That's false. Indexes are invented by human beings, not androids.

An index could be inappropriate, in that it is very, very focused, like the Malaysian leisure equipment short fund. Wow, do we need that? I don't personally think so. That's not even approximating a diversified portfolio. A more appropriate index would be the Russell 1000 or even the S&P 500. Those are indexes that attempt to create a broad exposure to a particular asset class.

The next task is to assemble enough index exposures via ETFs or index funds that you have a multi-asset or multi-index overall portfolio. Often, a fairly novice investor gets an index fund and they think, "oh, great, I'm so diversified, I have 500 stocks, all right here in America. What could be better?" They have diversification within one silo, but the problem is they need 10 or 12 silos to have a diversified portfolio.

JoI: Has the importance of asset allocation and diversification changed over the years?

Israelsen: It's changed with respect to the choices and different possibilities available. Forty years ago, the operational logistics of broadly diversifying were really hard. We've always had quite a few indexes, and now, we have 10 times more—but it hasn't always been possible to operationalize. We have data on the GSCI back to 1970, but only in recent years could you actually invest in it.

So I think what's changed is the opportunity set of how diversely you can allocate assets in a portfolio—it is just so easy now. But you can end up with 30, 40, 50 different ETFs or different index funds, and then the question becomes, have I done myself a favor? How many of those were crucial? 10? 12? 15? I think the trick now to asset allocation is not going overboard. With 30 to 40 different ETFs in one portfolio, in all probability there's quite a bit of redundancy with that many products. If you have, say, 10 or 12 core ingredients in a portfolio, that means that each ingredient can actually receive a material weighting.

JoI: Is there a disconnect between the average investor's point of view and the investment world's point of view?

Israelsen: Yes. It's a disconnection that's roughly the size of the Grand Canyon. And the reason is, of course, the investment companies want to keep those assets. In the target-date space, Fidelity, T. Rowe Price, Vanguard and Principal have about 85 percent of all the assets. Those are the big four. They want those assets up to the target *and* after the target. One of the ways to lose those assets is to underperform—and so nobody wants to underperform.

What's the measuring stick? Well, here is the cause, in my estimation, of the big disconnect: The average investor compares everything to the S&P 500. That index has gained a lot of stature as a very common benchmark of performance. But should a target-date fund that has two years left before the target be benchmarked to a 100 percent equity index? That's ludicrous if you are trying to bring the investor safely to the target.

But the average investor maybe doesn't look at it that way. They want a lot of protection as they approach the target, but they don't want their product to underperform the S&P 500. It's kind of a psychotic expectation. Of course, in the pension world, their biggest fear is a tracking error. Do they have error tracking their benchmark index? Well, that's going to be a perpetual problem for target-date funds if they inappropriately index themselves against a 100 percent equity index. That's led to the creation of some target-date indexes that are actually ratcheting down expectations to a more relevant comparison. Hopefully, those indexes will gain some popularity so that the investing public can more adequately benchmark how a target-based fund—as it approaches its stated target date—should be performing.

Frankly, it shouldn't be keeping up with the S&P 500 in an up market. And it shouldn't be going down anywhere close to what the S&P 500 goes down in a down market.

John Hyland, Chief Investment Officer, United States Commodity Funds

JoI: Do you think the global economy has turned the corner, or is there more turmoil in the immediate future?

John Hyland (Hyland): With of course the proviso that I'm not an economist or an investment strategist per se, I do believe, globally speaking, that the economies have turned the corner from the wreckage of 18-plus months ago. So, that's the good news.

The less happy or optimistic news is that although I think we've turned the corner, that doesn't mean that this is a return to what many investors probably thought was "normal" in terms of volatility or returns, that being the four or five years that preceded the big crash. I think we will see higher levels of volatility than we saw in the late 2000s. And I think that we will see returns that over longer periods of time—year-over-year, etc.—are going to swing wider and often negative, compared to what we saw in the '90s, where up until the tech bubble, it was a long, steady, relatively low-volatility bull market. I think the economy has turned the corner, but I think we're going to see this sort of choppiness that we saw in the '60s and '70s. So, it's not all bad, but it's not all good.

JoI: Where do you think we are in the commodities boom at this point? Are we still in it?

Hyland: A lot of the underpinnings or the perceived appeal of commodities for investors comes from two different sources. The intellectual academic underpinnings of the viability of including commodity exposure in the diversified portfolios is really laid out by the Yale study done by Professors Gorton and Rouwenhorst. They're the ones that looked at 30, 40 years of data and concluded that there are some potential benefits to including a diversified basket of commodity exposure in a portfolio to come up with a better risk-adjusted return. That study was done in 2004. I am unaware that anything has actually transpired in the last five or six years that could lead one to believe that that conclusion is no longer valid. And from talking to Professor Rouwenhorst, [the authors of the study] aren't aware of anything either.

A lot of people might point out that there is a lot of investor interest in commodities and ask if that is going to change things. But I think it's almost a fundamental misconception that is fueled quite a bit by—to be quite honest—erroneous accounts of how things work in these markets. At the end of the day, the historically uncorrelated nature of commodities and the fact that they have offered attractive, competitive returns relative to stocks and bonds is ultimately driven by the movement in spot prices of commodities. And that movement is not really impacted by investors buying and selling futures contracts.

The other major support for commodities … is the one that is probably most closely associated with Jim Rogers. Jim Rogers doesn't come in and say you should buy commodities because they're noncorrelated and they offer competitive returns. His case is that commodity prices and commodity investing tends to go through long cycles, and the long cycles are driven by periods of overinvestment and underinvestment. His argument is that through the late '70s and '80s and into the '90s, pretty much across the board there was an underinvestment in the ability to produce physical commodities. And therefore, essentially, the global economy reacted by increasing the amount of capacity or the usage of what capacity they had.

For example, 10 or 15 years ago, the amount of oil being produced as a percentage of the oil production capacity might have been 80 to 85 to 90 percent. But as consumption kept rising and the underinvestment in production capability didn't match it, what steadily happened is you got up to where we are now, where consumption as a percentage of production capability is running in the high 90 percent range. Jim Rogers' point is these long cycles of underinvestment in production capability will lead to long cycles of strong price growth and strong positive returns from investing in commodities. You simply cannot turn the corner very quickly: If you spend 20 years not developing more capacity and then you eventually get to the point where all of your capacity is being used, it's going to take you 10 or 20 years to build enough new capacity to really make a difference.

JoI: Are commodities becoming more important to investor portfolios?

Hyland: Yes, I think so, for both of the reasons that were cited. People did not generally consider these a legitimate investment class, because you have to remember, back in the early '70s or the '60s, there were only three investment classes: There were U.S. bonds, U.S. stocks and U.S. cash, and that was your choice. We know today there are more than three choices: There are global bonds, there's global stocks, there are high-yield bonds and there is

securitized real estate. There are investment categories that nobody was thinking about in the '60s or '70s that now exist. And I believe that through a combination of the work of people like Gorton and Rouwenhorst and also Jim Rogers, the newest category—or one of the newest categories—to the investment menu is commodity exposure. It's still very new. It's very small. I believe it's a permanent addition, just like I believe REITs and securitized real estate is a permanent addition to the checklist.

JoI: Do commodities still offer diversification benefits to investors or has the increased role of investors in those markets fundamentally changed things?

Hyland: I believe that the diversification benefit remains in place. [People] confuse being noncorrelated with being negatively correlated. Being noncorrelated means sometimes commodities will rise and fall with equities or with bonds and sometimes they won't. When you see a period like, say, late 2008/early 2009, where they fell together, immediately people jump to the conclusion, well, they are now correlated. But that doesn't actually prove the thesis. You would expect that noncorrelated assets, roughly speaking, should move in the same direction half the time. To be correlated, they need to move in the same direction most of the time. And to be negatively correlated, they need to move in the opposite direction most of the time.

I don't believe that Gorton and Rouwenhorst believe that what we've seen over the last year or two is empirical evidence that invalidates the point, because it's simply too short a time span. In addition, I circle back to the linkage: Ultimately, returns are dictated by what happens in the spot market. So, the question is, is the spot market going to become more correlated or less correlated? And this is not a function of investors buying futures. This is a function of steel companies buying nickel, or oil companies buying crude or bakeries buying wheat. And I'm not sure that I've seen any evidence to suggest that the movement of spot prices is going to have an increase in correlation to the movement of financial assets like stocks and bonds.

JoI: What new regulations can we expect in the area of commodities investment and how will that affect the products USCF manages?

Hyland: There are two issues that are likely to come out of all of this. I think you can reasonably expect that there will be greater pushes for more disclosures. There is a question about whether people, if you tell them more, will they read more? I don't know. If the prospectus is 120 pages and they want more, I can add 20 more pages of disclosure about the risks of how things work. Although, I do believe you will get a certain amount of a declining marginal benefit because people may or may not be inclined to really avail themselves of it.

The second issue though, which is the bigger issue, is will future regulation attempt to restrict investment choices to people, to simply say, we don't think people should be able to buy "x"? I don't think it is really something that's currently being contemplated, but certainly, until we know what the ultimate new regulations might be, that's always a concern.

The other road they could go down, which is a more classical regulatory issue, at least in the commodities space, is that they could limit the amount of contracts or the amount of commodity exposure a single investment fund can buy … . The outcome of that on the margin could make investing in commodities a little bit more expensive … . We're not necessarily talking about all of a sudden it's going to cost an extra 100 basis points to operate a fund, but we could easily be talking about an extra 10 or 20 basis points to operate a fund because of the impact of some regulation. You can't really say unless you know exactly what the regulation is and how a market will react to it. But I'm pretty sure the regulations aren't going to make anything cheaper.

Deborah Fuhr, Managing Director and Global Head of ETF Research & Implementation Strategy, BlackRock

JoI: Do you think we're in a global recovery or that the global economy has turned a corner?

Deborah Fuhr (Fuhr): I think this has been a year of a lot of events that people never thought would occur. The U.K. election, for example, was a big surprise the way that played out … . So, it's really a hard one to call, in my mind.

JoI: How has the financial meltdown and what has followed since affected the global ETF industry?

Fuhr: If you go back to the time of the Lehman bankruptcy, I would say that it's actually encouraged investors to embrace ETFs in a greater fashion. Prior to the Lehman bankruptcy, many investors were using certificates, which are basically unsecured debt. They were using structured products; they were using swaps—all of which have counterparty risks which people really didn't pay that much attention to until Lehman filed for bankruptcy. Today, we're close to two years on. People are still waiting for PricewaterhouseCoopers to tell them how much money they will get back for those products. It's not going away from people's minds. And it's had specific implications for investors primarily outside the U.S., but also some in the U.S.

That year we saw people become aware of and concerned about the structure of the products they were buying, as well as what was inside of them. I think they also became concerned about the liquidity and ability to get in and out of products. During that time period, some hedge funds and mutual funds were putting or talking about putting restrictions on the ability to get in or out of those funds. We were seeing volatility increase: That year there were 18 trading days when the S&P 500 Index moved by more than 5 percent a day, whereas in the prior 53 years, that happened 17 times. If you are using mutual funds, you typically wait for the end of the day for it to price itself out, but the emotional sense of feeling like you just lost or missed out on another 5 percent was not a very nice feeling for investors.

The other thing we saw is that active managers would generally say that in declining markets, index funds followed benchmarks down and the actively managed funds should do better. But what we saw in that time period, based on Standard & Poor's analysis of active funds versus benchmarks [SPIVA], was that six out of 10 or seven out of 10 managers, depending on the benchmark, were not making the benchmarks. So, I think that has really caused people to rationalize and think about where they're going to spend their risk budget to look for really active funds. They want funds that are taking advantage of that risk by using it and delivering alpha. They don't want funds that many would call closet indexers. That's not what they're looking for. And where they can't find good alpha funds or can't do alpha generation in-house, they're increasingly looking for low-cost beta products like ETFs, and specifically looking at the ETFs that are tracking benchmarks that they know and care about—the low-cost beta building-blocks story. They like ETFs because you can trade them with multiple brokers and buy and sell any time during the day, and they are a cost-efficient way that's very democratic as a product. Whether you're a retail investor buying one share or a large asset manager or pension plan investing hundreds of millions, that annual cost is the same—and that's quite unique for a financial product.

I think that there's a lot of positive momentum behind the ETF story and how and why people are using them.

JoI: What are the ETF hot spots for growth right now around the globe?

Fuhr: Hot spots are a little bit hard to quantify, on the one hand, because no matter where I go in the world, investors often are using U.S.-listed ETFs. It's hard to identify who the investors are in ETFs. I've seen investors in Belize, in China, in Latin America, in Europe, Asia buying U.S.-listed ETFs. You can't just say that if assets or trading volumes increase in the U.S. that it's all U.S. investors.

Further, in Europe the ETF trading is not required to be recorded on an exchange. In Europe, many people think that ETFs aren't liquid, but it's more because from a regulatory point of view, the trades don't have to be reported. Most of the trades are done what we call OTC and not reported on an exchange. It's not that the ETFs aren't liquid, it's just that you don't see the volume on exchange.

With that for background, I think what we are seeing is there is really a barbell approach to investing that's being employed when people are using ETFs. Some are using ETFs to gain exposure to safer or less risky investments like government bonds. Others are going for emerging markets.

ETFs are clearly a product that we're seeing investors around the world embrace. I think of the regulatory change in the U.K., which is called the Retail Distribution Review, where they looked at the sales practices of independent financial advisers [IFAs]. The FSA, the regulatory authority in the U.K., was concerned that these IFAs tended to be tied to selling the products of a bank or insurance company, and that the retail client didn't know or understand this and didn't realize how much they were paying and how they were paying for these services.

Now, by 2012, the IFAs have to say whether they're really independent or they're providing restricted advice, and they need to look at the whole of the market, including looking at ETFs as products. And now they can be asked why they would be using a structured product if it was designed to deliver the same return as an ETF but at a higher cost.

JoI: Are there any things that you would consider actual challenges or obstacles for ETF growth?

Fuhr: I think many people have been surprised or disappointed on a number of fronts when they've been using products. One, they have had issues where they didn't understand the leverage and inverse products. And with some of the leverage and inverse products now having been cross-listed to be available in Europe, we run the risk that European investors may suffer the same experience that we saw in the U.S.

I also think many analysts and many reports lump all of these exchange-traded products together—whether it's a true ETF that's an open-ended fund or a note, partnership, grantor trust or other structures—and talk about them with the same tone without specifying that they are different. They just put everything together and don't make it clear enough for the clients that some of the products are funds, some are notes, some are partnerships. My concern is I think the lack of clarity on the product structures as well as what is inside of them is a huge risk.

Many people have also been surprised because they expected to be receiving spot prices when they bought some of the commodity products and they haven't realized in some cases that they're buying baskets of equities, or in some cases a physical commodity or in other cases front-month or forward-month futures contracts.

I think my big concern is lack of clarity on some of these new products that are coming to market, combined with the fact that now that the product has grown to be $1.1 trillion, everyone wants to be involved in the ETF industry and thinks that they can just launch something and it will be a successful ETF, even if it's not a fund, even if the benchmark isn't anything that people normally would be aware of. And they think that they don't require any form of distribution support. I think there is a lot of misunderstanding in terms of the products about what it takes to make successful ETFs.

In Europe, in particular, the index providers are giving out a lot of licenses. We have 34 Euro STOXX 50 ETFs in Europe, with 115 listings. It's confusing to the investors. How do I decide which product and which listing to buy? At some point there is too much, and I think in Europe, we've gotten to the point of having too many similar products.

JoI: Who is using ETFs right now? Are 401(k) plans a factor?

Fuhr: Specifically, looking at the U.S., there was a recent Greenwich Associates survey, where in March they surveyed institutional investors on the subject of ETFs. I think it's quite telling that institutional investors, pension plans and asset managers are using ETFs. It's no surprise that many

use them for transition, to equitize cash, for rebalancing and to obtain exposure to hard-to-access buckets, like emerging markets, Brazil, Korea, Taiwan, etc. So no surprise there.

I think what *is* surprising to many is the fact that 30 percent of the institutions that do not currently use ETFs say the lack of familiarity with the fund is the reason why. Even though ETFs have been around for 17 years, even with institutional investors there's a significant portion who feel they're not familiar enough. And I think it is true that many investors would say, "Yes, I know what an ETF is." But saying that doesn't mean they're comfortable enough to use them.

I think there is a challenge to get people to try ETFs. I think once they try them, they find them useful and will continue to use them and come back to them as a tool to help them do their jobs. But it's kind of like going to a Japanese restaurant for the first time and not really knowing what kind of fish you are ordering and how to eat it. For a lot of people that's intimidating; people are reluctant to do anything that they haven't done before. For some, using ETFs kind of falls into that camp.

401(k) plans are an area where they are being used. I think that they will be used more in those plans.

All of this contributes to the growth in the number and types of ETFs and the size of the asset flows into the various categories. As I said, it's being thought of as very democratic and can be used by all types of investors, whether they're really big or a retail or small trader who wants to just buy a few shares.

JoI: Are investors getting more comfortable with ETNs?

Fuhr: I would say, yes, partially, because for many, it's the only way to implement trades in commodities or in volatility or some other asset classes. For investors who aren't allowed to trade futures, buying these kind of allows them access to these types of asset classes that they wouldn't historically be able to own directly. I think that people like many ETNs and I think they are becoming more comfortable. I think they are more comfortable with ETNs than standard certificates because with an ETN, although you have the counterparty issuer risk, you can trade them with multiple brokers, whereas with a standard certificate, you would be obliged to buy and sell with the issuer only.

Bill Mast, Director of Fixed Income Indexes, Morningstar

JoI: Has the global economy turned a corner? Are we in a global recovery now?

Bill Mast (Mast): It depends. If you define "recovery" as things are going to get better before they get worse, and are we above the depths of 2007-2008, yes, most certainly. We're above the lows, and I wouldn't anticipate hitting those lows.

But I very much buy into the whole "new normal" paradigm. Things are different. And I don't think that's necessarily going to be a bad thing, going forward. If you look at the excesses and the bubbles with housing and Wall Street, I don't know if we do want to get back to those excesses.

With that said, I certainly am not a subscriber to anything even remotely V-shaped. And I think what's going on geopolitically is going to be a big problem going forward.

But without sounding too cliché, I think the United States has proven very recently that despite all our troubles … if you look at the whole financial crisis in Europe, the U.S. has benefited from it, when you look at the markets. Look at Treasurys: Despite all the ratios that would suggest that our credit rating might be in jeopardy, that's where the money rushes, and I think that's the ultimate vote of confidence in the United States. Within the United States, yes, I think we're in a recovery.

Globally, I highly doubt it. We're not going to be there for a long, long time. And then there's always one more thing, whether it's Korea or the euro, etc.—and let's not underestimate what's going on in the Gulf Coast either. I'm no economist, I can't appreciate the full implications, but that's starting to get a little scary.

JoI: How did the 2008 meltdown change the way investors view fixed income?

Mast: I think it has a lot to do with the decoupling of the credit markets. In 2008, if you saw how U.S. Treasurys produced some of the best yearly returns in the history of measured results—and conversely, corporates did just the opposite—that's never happened before. That's unprecedented.

People are achieving a new consciousness about what they're actually buying … . [In the past, if] I suggested, "Look. Corporates used to be 10 percent of the market. Now it's 25 percent." The response was always, "Yeah, whatever." And almost rightfully so. But people are really appreciating, now, what that means. I think that has a lot to do with investors realizing that corporates aren't Treasurys, and securitized mortgages are not pass-throughs. If you look at how wide agency spreads got through the crisis, those are the ones you bought for just a little bit more juice than Treasurys. But essentially, you got the same return or just a little bit more if spreads didn't lie down on you.

I think one of the biggest things—and it's going to be a slow change—is people really looking at the rating agencies. They've been abandoned by some institutional risk management teams. People are looking outside for more independent evaluation of creditworthiness.

JoI: Are there any particular subclasses of fixed income that are getting more attention now than before?

Mast: Oh, there's no doubt—it's the sovereigns. That used to be risk free, essentially, if you didn't offer up currency exposure. Obviously, there were exceptions in Latin America and in Russia, but the conservative investor would rarely venture into that territory. Maybe for the newbie, it's obvious that Greece should be getting beat up, but that's a new development.

Before the euro was common currency, you really didn't care about creditworthiness in Europe. You'd just worry

continued on page 57


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News

ETFs Dominate May 'Flash Crash'

Around two-thirds of all securities that had trades canceled during the extraordinary "flash crash" of May 6 were exchange-traded funds or exchange-traded notes, though the reasons for this aren't yet clear, according to analysis from *JoI*'s parent Web site IndexUniverse.com.

In the heat of the selling, the Dow Jones Industrial Average fell by almost 1,000 points, or nearly 10 percent, before erasing around two-thirds of those losses by the time the market closed. The world's biggest ETF, the SPDR S&P 500 (NYSE Arca: SPY), matched that fall, dropping as much as 10 percent in afternoon trading, before recouping much of that to close almost 4 percent lower at $112.94.

While ETF traders said stocks were poised for some sort of downside correction, particularly in view of riots in Greece in the wake of Standard & Poor's downgrade of that country's sovereign debt to junk status, the swift and unprecedented price action on May 6—between 2:30 and 3:00 p.m. EDT—clearly involved computers as opposed to panicked humans. Indeed, the slivers of salient time were in minutes, even seconds, IndexUniverse.com has found.

Of the 281 securities Nasdaq said had unusual trades that it will cancel, 193, or 68.7 percent of them, were ETFs or ETNs. The New York Stock Exchange reported a similar percentage of questionable trades involving exchange-traded products. The Big Board said 111 of 173 securities affected by questionable trades, or 64.2 percent, were either ETFs or ETNs. Both exchanges said that they would cancel spurious trades.

Nasdaq hasn't admitted to any technological breakdown, but it ultimately decided to cancel all trades executed between 2:40 and 3:00 p.m. EDT that took place more than 60 percent away from the last consolidated print at 2:40 p.m. The exchange announced later that more than 10,000 trades had been canceled. It was not clear what methodology either exchange used to determine which trades should be eliminated.

S&P Records Dividend Surge

S&P released its domestic dividend report for the first quarter of 2010 in early April. The report covers roughly 7,000 publicly traded companies and tracks dividend payments on a quarterly basis.

According to the index provider, the first quarter was a veritable bonanza of dividends in comparison with the prior year: Only 48 companies lowered their dividend in Q1 2010 versus 367 in Q1 2009. At the same time, 399 companies raised their dividends, as opposed to 283 in 2009.

Meanwhile, the forward net change in the indicated dividend rate saw a $6.4 billion increase, whereas in 2009 it fell by $43.8 billion during what S&P says was the worst dividend quarter in history.

Importantly, S&P Senior Index Analyst Howard Silverblatt noted that coverage ratios have increased, with more companies covering their dividends with earnings as market conditions improve.

"The first quarter represents a rebirth of dividends in the U.S. domestic market and speaks to the higher confidence that board of directors are placing in both the economic recovery and their future earnings ability," Silverblatt said. He added that S&P expects dividends to pull themselves out of the muck to their 2007 and 2008 levels by 2013 after a slow recovery tied to an improving economy.

SEC Stalls New Applications For Derivatives-Based ETFs

The Securities and Exchange Commission said in late March that it is looking into whether more protections are needed surrounding the use of derivatives—such as swaps—by mutual funds, ETFs and other investment companies in a move that's likely to slow the launching of some ETFs.

The SEC decision affects new and existing "exemptive relief" filings that investment companies make when they are planning to launch ETFs. The commission said it would defer consideration of such filings until it completes the review. Specifically, the review will apply to actively managed and leveraged ETFs, particularly those that plan to use swaps and other derivative instruments to achieve investment objectives. It will not affect existing ETFs or any other types of fund applications, the SEC said.

The SEC said its inquiry would focus on a number of issues, including whether funds that rely heavily on derivatives—particularly those that seek to provide leveraged returns—maintain and implement risk management measures that reflect the nature and volume of their derivatives use.

It's also examining whether existing prospectus disclosures adequately address the particular risks created by derivatives. There is no indication as to how long the review process may last.

Study: ETF Investors Are Bad Market Timers

According to a recent research report from TrimTabs, ETF investors are so bad at picking the right time to buy or short-sell the equity markets that those doing exactly the opposite of what ETF players did in the past 10 years would have ended up making sevenfold profits, while the S&P 500 Index lost almost 18 percent.

TrimTabs offered two explanations for its conclusion. First, ETFs are mostly traded by retail investors and day traders, which they consider the least-informed and most emotional market participants. It also said hedge funds use ETFs when liquidity dries up, and many gravitated to ETFs after they were forced to close individual stock positions as markets went into a tailspin following the collapse of

Lehman Brothers in the fall of 2008.

Equity ETFs had record inflows of $111 billion between September 2008 and December 2008. That was followed by losses of $29.7 billion between January 2009 and April 2009, when markets returned to normal and hedge funds could resume their regular individual stock picks, the TrimTabs study said.

It said the fact that it confirmed the contrarian hypothesis for one-, two- and three-month periods for long- and short-equity ETFs strongly suggests the negative correlation is not the result of luck. The study's author believes that the liquidity of ETFs gives inexperienced investors a false sense of power.

TrimTabs said it's not unusual to observe a strong correlation between flows and returns on a simultaneous basis because flows often chase returns. But the research firm said this was the first time it observed such a strong correlation on a forward basis, meaning investors could do very well by using past flow data as a contrary leading indicator.

S&P 500 ETF To Launch In China

The curtain is rising on a new chapter of investing, as plans to launch the first Chinese version of an S&P 500 ETF begin to take shape, according to a mid-March announcement.

Bosera Asset Management, a Shenzhen, China-based firm with $30.8 billion under management, has obtained rights from Standard & Poor's to launch an S&P 500 ETF specifically designed for investors there, a milestone for Asia's most populous nation, where access to foreign markets has been limited by Chinese law. Terms weren't disclosed.

The S&P 500 is the world's most widely used index, with nearly $1 trillion indexed to it.

S&P didn't say when Bosera might roll out the Chinese version of the S&P ETF.

INDEXING DEVELOPMENTS

FTSE Debuts New IPO Index

FTSE announced in May that it and its partner IPO research firm Renaissance Capital had created a series of Asia Pacific IPO indexes that exclude Japan. The Asia Pacific region has so far seen the launch of roughly 69 percent of the IPOs to debut in 2010, FTSE said.

The two new indexes include a broad index that covers the entire Asia Pacific ex-Japan region and a narrower index that focuses on IPOs originating in Hong Kong and China.

The broad FTSE Renaissance Asia Pacific ex Japan IPO Index covers all IPOs in the region with free float of more than $100 million, and encompasses individual country indexes for each of its component markets: Australia, Hong Kong, China, India, Indonesia, Malaysia, New Zealand, Pakistan, the Philippines, Singapore, South Korea, Taiwan and Thailand.

The FTSE Renaissance Hong Kong/China Top IPO Index covers the largest IPOs from Hong Kong's market—many of them are companies that operate or are domiciled in mainland China.

FTSE took over the calculation of Renaissance's original U.S. IPO indexes in April 2009, after which the index family was renamed the FTSE Renaissance IPO Index Series.

MSCI May Add Micro-Caps

In early May, MSCI said that it was beginning one of its consultations, in which it solicits input from the investment community on its proposed index changes.

This time the consultation raises the possibility of expanding the coverage of MSCI's developed market and frontier market indexes: The developed markets equity universe would see the addition of micro-cap stocks, while the frontier markets indexes would be expanded to include more small-cap stocks.

Should the proposed changes be implemented as presented in the consultation paper, MSCI would calculate broad market indexes for the developed markets that would encompass the large-, mid-, small- and micro-cap segments that would be available alongside the existing broad market indexes.

The frontier markets index series currently only covers the small-cap segment of certain select markets in the Middle East, in addition to the large- and mid-

cap segments of each frontier market. The consultation paper suggests standardizing small-cap coverage throughout MSCI's frontier markets indexes.

MSCI has posted the consultation paper on its Web site and has said that it would announce any resulting changes to the rules and construction of its indexes by June 30.

Bosnia-Herzegovina Joins DJI FEAS Series

In late March, Dow Jones Indexes announced the addition of Bosnia-Herzegovina to its Dow Jones FEAS index universe.

The Dow Jones FEAS indexes cover companies in countries included in the Federation of Euro-Asian Stock Exchanges. Currently, the DJ FEAS benchmarks include a composite index and two subindexes that cover the Middle East/Caucasus region and southeastern Europe. With the inclusion of Bosnia-Herzegovina, eleven of FEAS' 29 member states are covered in the composite index, including the major exchanges of the United Arab Emirates, Jordan, Serbia, Turkey, Pakistan, Bahrain, Oman, the Republic of Macedonia, Bulgaria and Croatia.

Bosnia-Herzegovina is included in the subindex for southeastern Europe, along with five other countries.

DJI Adds To RBP Family

In early May, Dow Jones Indexes unveiled four new indexes to be included in its existing family of Required Business Performance indexes. The index family uses a methodology that incorporates a scoring system devised by Transparent Value LLC, a subsidiary of Guggenheim Partners, to determine if a company is likely to perform at a level that justifies its stock price.

The new indexes include the Dow Jones RBP U.S. Large-Cap Aggressive Index, the Dow Jones RBP U.S. Large-Cap Defensive Index, the Dow Jones RBP U.S. Large-Cap Market Index and the Dow Jones U.S. Large-Cap Total Stock Market Index (RBP weighted).

The first three are directional strategy indexes. They are subsets of the Dow Jones U.S. Large-Cap Total Stock Market Index that are designed to reflect aggressive, defensive and neutral market views as determined by the beta factors and momentum of their component stocks. Components are weighted by their RBP probabilities, which reflect in part estimates of each company's ability to meet or beat earnings targets.

Meanwhile, the fourth index covers the 750 components of the DJ U.S. Large-Cap Total Stock Market Index. It weights those components by their RBP probabilities rather than free-float market capitalization.

Markit Debuts Nonagency RMBS Benchmark

In late April, Markit rolled out the Markit PrimeX Index. The new index covers the nonagency residential mortgage-backed securities market in the U.S.

The main index's components are securitized fixed-rate and hybrid adjustable-rate prime mortgages. Two subindexes track 100 percent fixed-rate or adjustable-rate RMBS issued during the 18-month period starting Jan. 1, 2005; two other subindexes track 100 percent fixed-rate or adjustable-rate RMBS issued during the 18-month period starting July 1, 2006.

The index is tradable and is supported by 12 different market makers.

BarCap Rolls Out ABS Index

Barclays Capital debuted its Pan European ABS Benchmark Bond indexes in late March. The indexes track European fixed and floating asset-backed securities debt.

Barclays already offered separate index families for ABS debt denominated in euro and sterling, and the new indexes combine that coverage under one umbrella for a multicurrency perspective. The ABS debt represented in the indexes encompasses residential and commercial mortgage-backed securities, as well as securities backed by auto loans and credit cards.

The data for the new index is available via Bloomberg, Barclays Capital Live and Barclays' risk and analytics platform POINT.

STOXX Debuts, Licenses Volatility Futures Index

In late April, STOXX Ltd. unveiled the EURO STOXX 50 Volatility Short-Term Futures Index, which tracks the performance of a rolling investment in one-month and two-month futures contracts on the EURO STOXX 50 Volatility Index, or VSTOXX.

The new index gradually rolls from the near-month VSTOXX contracts into the next-month VSTOXX contracts, until its weight is fully invested in the next-month contract, which has now become the near-month contract, thus beginning the rolling cycle over again.

The VSTOXX itself uses the prices of options on the EURO STOXX 50 Index to track the blue-chip index's near-term volatility. It was developed by Goldman Sachs and Deutsche Boerse.

Barclays Capital has licensed the new short-term futures volatility index as the basis for an exchange-traded note.

Credit Suisse Adds To Hedge Fund Index Lineup

Credit Suisse added three new indexes to its family of Liquid Alternative Beta benchmarks in late March.

The LAB indexes are designed to replicate the performance of different popular hedge fund strategies by applying algorithms to tradable investment vehicles. The new indexes include the Liquid Alternative Beta Index, the Event Driven Liquid Index and the Merger Arbitrage Liquid Index.

The series already included the LAB Global Macro Index and the LAB Long/Short Liquid Index.

Part of the appeal of hedge fund replication indexes over actual hedge funds is the low cost and transparency that is associated with passive investing combined with hedge-fundlike returns.

New S&P Index Tracks Int'l Commodities

S&P rolled out its S&P World Commodity Index in early May. The new benchmark tracks commodity futures that are not listed in the U.S.

At launch, the index covered 22 highly liquid commodities listed on

eight exchanges throughout the world, including the U.K., Canada, Japan, Malaysia and continental Europe. Additional components will be added if and when they meet the eligibility requirements. Components fall into one of three sector buckets: agriculture, energy and metals. Brent crude oil and gasoil represented about 74 percent of the energy-heavy index as of the end of April.

Six different currencies were represented in the index when it debuted, although the S&P WCI is actually calculated in USD.

MSCI Moves Israel To Developed Markets Status

Index provider MSCI Inc. announced the completion of its semiannual review in early May, with the changes becoming effective May 26.

The biggest change, which has been long anticipated, is the reclassification of Israel as a developed market—it has been removed from the MSCI Emerging Markets Index and added to the MSCI World Index.

The MSCI Bangladesh Index is also being added to the MSCI Frontier Markets Index—the Bangladesh index was rolled out in November 2009, but was calculated as a stand-alone index prior to May 26 of this year. The MSCI Frontier Markets Index saw a total of 19 additions and 29 deletions, with the three largest newcomers joining the index via the inclusion of Bangladesh.

The MSCI Global Standard indexes were slated to see the addition of 42 stocks and the deletion of 45. The developed-market MSCI World Index's top three additions included Israel's Teva Pharmaceutical, the U.S.' CIT Group and Canada's Red Back Mining, while the MSCI Emerging Markets Index's largest new members included Indonesia's Gudang Garam, China's Lee & Man Paper Manufacturing and India's Rural Electrification Corp.

The MSCI Global Small Cap indexes added 511 stocks and deleted 188. The MSCI Global Investable Market Index family—which encompasses the emerging- and developed-market "Standard" and "Small Cap" indexes, but not the frontier indexes—saw a total of 502 additions and 182 deletions, some of which were due to companies simply moving between the standard and small-cap indexes.

MSCI also rolled out a stand-alone index covering Bosnia-Herzegovina that will be calculated going forward, with the possibility of it joining the frontier or emerging market indexes at some point in the future.

Changes were also made to MSCI's Islamic index family and to its U.S. index family.

S&P Moves Israel Too

In May, S&P announced changes to its country classification system. The results stemmed from a consultation process that began in January 2010.

Israel's status was the only change. The country will be reclassified as a developed market as of the September 2010 annual reconstitution. Israel is one of the component countries in S&P's indexes for the Middle East & Africa region.

The consultation also considered whether Colombia, Jordan, Kuwait and the United Arab Emirates should be reclassified, but concluded that they still qualified as frontier markets.

S&P Rolls Out CTS

S&P rolled out the S&P Commodity Trading Strategy Index, composed of high-liquidity futures contracts, in mid-May.

The index tracks a basket of 30 different commodities and financial futures contracts that are classed into 17 different sectors. Various market factors—including macroeconomic indicators, market momentum and overall market sentiment—are used to determine whether the index will take a long or a short position in each sector.

Its portfolio includes 10 financial and seven commodity sectors, with the financial and the commodity halves of the index given equal weight. The commodities components consist of individual commodity contracts, while the financials components are futures contracts tracking global currencies and U.S. Treasury notes and bonds. Subindexes are calculated for the financial and commodity halves of the index.

In its announcement of the launch, S&P stressed that the S&P CTSI was designed to be tradable and investable.

Mexico Could Enter WGBI

At the close of March, Citigroup announced that its Mexican Government Bond Index was one step closer to being added to its World Government Bond Index. If Mexico continues to meet the broad benchmarks requirements with regard to size, credit and barriers to entry through the April, May and June 2010 credit profiles, the country will be added to the WGBI in October.

The addition of Mexico would bring the total number of countries represented in the WGBI to 24; it would also be the first Latin American country to be included, Citi's announcement noted.

Mexico has 19 bonds that currently meet the criteria for inclusion in the WGBI. Citi estimated that Mexico would have a weight of about 0.64 percent in the index, placing it below Poland and above Denmark.

Russell Adds IPOs For 1Q

As the first quarter wound to a close, Russell announced the addition of 16 initial public offerings to the Russell 3000 Index; these were added, with another 64 IPOs, to the broad Russell Global Index, for a total of 80. In recent years, Russell began adding IPOs to its indexes on a quarterly basis in order to better reflect the market in a timely way, rather than waiting for its annual June review.

Four of the new U.S. additions—Cobalt International Energy, KAR Auction Services, Piedmont Office Realty Trust and Symetra Financial—were added to the large-cap Russell 1000 Index immediately, while the remaining 12 were added to the Russell 2000. The U.S. companies included seven financial services firms and three stocks from the materials and processing sector, among others, Russell said in a statement, adding that none of the additions were tech stocks.

Roughly 40 stocks were added to emerging markets, with the Russell Greater China Index seeing the addition

of 21 stocks. The index covers the markets of Hong Kong, China and Taiwan.

Other emerging markets saw fairly large numbers of companies added: India had eight; Korea, seven; Indonesia, five; and Brazil, four. The entire continent of Europe saw just six IPOs: France and the U.K. each added two, while Belgium and Italy each added one.

AROUND THE WORLD OF ETFs

Vanguard Offers Commission-Free ETF Trading

In early May, Vanguard raised the stakes on competitors by offering its brokerage customers commission-free trading on all 46 of its ETFs, joining the list of ETF providers that offer a way for investors to purchase funds free of charge.

The Vanguard announcement is a big deal because it pairs commission-free trading with some of the lowest-cost and most well-established ETFs in the market. Also, by covering all 46 Vanguard ETFs, it's now the largest group of ETFs available for commission-free trading.

Charles Schwab offers its brokerage customers commission-free trades on its own ETFs, while Fidelity allows its own brokerage customers commission-free trading on 25 popular iShares ETFs. Other deals have been rumored.

Commission-free trading means that strategies typically used by mutual fund investors, like dollar-cost averaging, can now be affordably applied to ETFs.

Institutional ETF Usage To Rise, Says New Study

According to a recent study from Stamford, Conn.-based Greenwich Associates, the percentage of U.S. institutional investors using ETFs is expected to grow from its current level of 14 percent. Big players like pension funds and endowments already represent half the assets invested in ETFs in the U.S.

Over half of the 70 U.S. institutional investors Greenwich surveyed said their ETF use will rise in the next three years, with 20 percent forecasting growth in ETF investing of 5 to 10 percent in that period. U.S. ETF assets totaled $820 billion at the end of March, according to data compiled by IndexUniverse.com. That means U.S. institutions already have more than $400 billion invested in ETFs, and increased use by big players could make that number skyrocket quickly.

The survey also concluded that at least 30 percent of those surveyed currently don't use ETFs in their portfolios because they lack familiarity with these instruments. But growth should be spurred as these institutions become more educated.

The institutions that participated in the survey included 43 plan sponsors and 27 money managers. Thirty-eight of the institutions individually manage more than $5 billion. The survey was conducted from March 8 to March 16, 2010.

SEA's Strange Shutdown

Claymore Securities was forced to close its shipping-industry ETF in late April because a shareholder vote on a proposed change in the fund's investment advisory agreement didn't attract enough voters to establish a quorum. The company, acknowledging that this may be the first time in the history of ETFs that a fund has closed for this reason, said all its other ETFs and closed-ends funds reached quorums within allowable periods and successfully approved new investment advisory agreements.

The votes were related to Claymore's acquisition by Guggenheim Partners in October. Claymore said 91 percent of those who voted approved the new advisory agreement for the Claymore/Delta Global Shipping Index (NYSE Arca: SEA), but the lack of a 50 percent quorum forced the closing. Claymore has already filed with regulators to launch a successor product that will track the same index and trade with the same symbol, "SEA."

PowerShares Unveils Domestic Small-Cap Sectors

In April, Invesco PowerShares rolled out a family of domestic, small-cap sector ETFs that are based on subsets of the well-known Standard & Poor's SmallCap 600 Index. The nine funds parallel the Select Sector SPDRs that track subindexes of the S&P 500. They cover the same nine sectors, and each fund's ticker symbol is the same as that of its SPDR counterpart, except with an "S" on the end.

The new funds include the following:

- PowerShares S&P SmallCap Consumer Discretionary (NasdaqGM: XLYS)
- PowerShares S&P SmallCap Consumer Staples (NasdaqGM: XLPS)
- PowerShares S&P SmallCap Energy (NasdaqGM: XLES)
- PowerShares S&P SmallCap Financials (NasdaqGM: XLFS)
- PowerShares S&P SmallCap Health Care (NasdaqGM: XLVS)
- PowerShares S&P SmallCap Industrials (NasdaqGM: XLIS)
- PowerShares S&P SmallCap Information Technology (NasdaqGM: XLKS)
- PowerShares S&P SmallCap Materials (NasdaqGM: XLBS)
- PowerShares S&P SmallCap Utilities (NasdaqGM: XLUS)

Components have market capitalizations between $250 million and $1.2 billion.

Each ETF charges an expense ratio of 0.29 percent.

Move Over 'BRIC,' Meet 'BICK'

In mid-April, First Trust launched an emerging market ETF that targets some of the largest companies in Brazil, India, China and South Korea, in a twist on the traditional "BRIC" emerging markets bloc

that replaces Russia with South Korea.

The First Trust BICK Index Fund (NYSE Arca: BICK) tracks the ISE BICK Index, which comprises 87 securities with a median market capitalization of $15 billion. The fund's benchmark uses an equal weighting methodology that ensures each country represents 25 percent of the portfolio. Companies within a country allocation are also equal weighted. The index is rebalanced quarterly.

BICK charges an expense ratio of 0.70 percent.

Old Mutual Adds Three Int'l ETFs

GlobalShares launched three broad-based ETFs focused on international stocks in early April.

The funds are the GlobalShares FTSE All Cap Asia Pacific ex Japan Fund (NYSE Arca: GSZ), the GlobalShares FTSE All World Fund (NYSE Arca: GSW) and the GlobalShares FTSE All-World ex U.S. Fund (NYSE Arca: GSO).

According to Old Mutual, the parent company of GlobalShares, the new GlobalShares products, however, have slightly more bias toward small-cap stocks than some competing products.

GSZ, the Asia Pacific fund minus Japan, has an expense ratio of 0.50 percent, while the other two funds each cost investors 0.35 percent a year.

Two More MLP ETNs Debut

April saw the launch of two new MLP ETNs, as both UBS and Credit Suisse rolled out products.

The Credit Suisse Cushing 30 MLP ETN (NYSE Arca: MLPN) and UBS E-TRACS Alerian MLP Infrastructure ETN (NYSE Arca: MLPI) joined the JPMorgan Alerian MLP Index ETN (NYSE Arca: AMJ) on the open market; all three charge expense ratios of 0.85 percent.

The Alerian MLP Infrastructure Index that MLPI tracks has 25 companies in it, all of them focused on energy infrastructure operations; it is a subset of AMJ's 50-stock underlying index. Meanwhile, MLPN tracks the Cushing 30 MLP Index, an equal-weighted North American energy infrastructure benchmark.

MLPs, which generally pay reliable quarterly dividends to investors, are becoming attractive at a time when official interest rates are close to zero.

Rydex To Close 12 Leveraged/Inverse ETFs

Rydex/SGI announced in late April that it would close 12 of its 14 leveraged and inverse ETFs due to their failure to attract significant assets. The dozen funds had combined assets of just $129 million.

The last day of trading for the funds was May 21.

The terminated funds include ETFs tied to the Russell 2000 and S&P MidCap 400 indexes and to four of S&P's Select Sector indexes. The Rydex 2X S&P 500 ETF (NYSE Arca: RSU) and Rydex Inverse 2X S&P 500 ETF (NYSE Arca: RSW) will continue to trade, and the firm's equal-weighted and currency ETFs will not be affected.

FINRA Raises Margin Requirement On ETFs

At the end of April, the Financial Industry Regulatory Authority, or FINRA, implemented a rule that raised the minimum margin requirement for leveraged ETFs and uncovered options overlying leveraged ETFs.

"In general, the margin requirements have increased by a factor commensurate with the leverage of the ETF or underlying ETF in the case of an option," the FINRA notice, dated November 2009, said.

The FINRA rule builds on NASD Rule 2520, which existed before FINRA's 2007 creation and increased minimum margin requirements on market participants defined as "pattern day traders." Under Rule 2520, such traders using margin accounts were required to put up a daily maintenance requirement of $25,000. With the new FINRA rule, that amount gets multiplied by the same factor of magnification of returns that a particular leveraged ETF uses, according to a notice on the rule FINRA circulated in September 2009.

FINRA had previously planned to implement the new rule in December 2009.

Firms Roll Out Small-Cap Regional ETFs

Spring has seen the launch of a number of small-cap ETFs with a geographic twist.

In March, IndexIQ launched the first of several ETFs with a small-cap tilt; the IQ Australia Small Cap ETF (NYSE Arca: KROO) and the IQ Canada Small Cap ETF (NYSE Arca: CNDA) target companies in the two respective countries that produce raw materials that are in high demand in Asian economies. It followed up in April and May with two similar funds, the IQ South Korea Small Cap ETF (NYSE Arca: SKOR) and IQ Taiwan Small Cap ETF (NYSE Arca: TWON). Ultimately the firm plans to launch nine more small-cap country and

sector equity funds. KROO and CNDA each charge an expense ratio of 69 basis points; the other two ETFs charge 79 basis points.

In April, Van Eck unveiled the Market Vectors Latin America Small-Cap Index ETF (NYSE Arca: LATM), which joins the firm's existing Brazilian small-cap ETF. LATM tracks an index weighted heavily toward Brazil (43 percent) and Mexico (23 percent) that also covers 16 other countries. LATM charges an expense ratio of 0.63 percent.

Global X Launches Miners ETFs

Global X launched two ETFs focused on copper mining and silver mining companies in April. The Global X Copper Miners ETF (NYSE Arca: COPX) and the Global X Silver Miners ETF (NYSE Arca: SIL) both have annual management fees of 0.65 percent. The silver ETF is the first of its kind, while the copper ETF will compete with a product from First Trust (NasdaqGM: CU) that has an expense ratio of 0.70 percent.

SIL is based on the Solactive Global Silver Miners Index, and COPX uses the Solactive Global Copper Miners Index as its benchmark. Constituent companies of each underlying index must derive the biggest single portion of their business from the mining of the index's designated metal.

FROM THE EXCHANGES

Nasdaq Partners On Analytics

Nasdaq and SunGard announced in May that they had teamed up to provide risk analytics on several widely used Nasdaq indexes via SunGard's APT unit, which develops investment technology.

Weekly updated reports are freely available via the two companies' Web sites and offer data and analysis on different scenarios, risk attribution, tracking error, value at risk and volatility. The reports compare the Nasdaq indexes with different SunGard benchmarks.

Currently, analytics are available for the Nasdaq-100, the Nasdaq Clean Edge Green Energy Index, the Nasdaq OMX Clean Edge Smart Grid Infrastructure Index, the Nasdaq OMX CRD Global Sustainability 50 Index and the Wilder Nasdaq OMX Global Energy Efficient Transport Index.

BACK TO THE FUTURES

CME Group Volumes Mixed

April was a great month for CME Group overall—the exchange saw its average daily volume increase by an impressive 31 percent from April 2009, for a total volume traded for the month of 11.9 million contracts. All but one of its respective product lines saw volumes increase over the previous year by 12 percent or more—87 percent in the case of FX contracts.

The lone exception was equity index derivatives contracts, which saw their ADV fall by 15 percent. The exchange's highest volume index contracts seem to be major contributors to the decline, with the blockbuster E-mini S&P 500 contract's ADV down 15.6 percent year-over-year to 1.98 million for the month.

KNOW YOUR OPTIONS

CBOE Volumes Up In April

The average daily volume of the CBOE in April 2010 was up 6 percent over the previous year and jumped 17 percent from the preceding month, with a total monthly volume of 111.4 million contracts traded.

Although the ADV for ETF options was up just 8 percent from the preceding year, index options saw their ADV jump a startling 36 percent from April 2009. Total volume for the month was 25 million contracts for ETF options and 24 million for index options.

In terms of index and ETF options, the five most actively traded contracts in April were options on the S&P 500 Index, the SPDR S&P 500, the CBOE Volatility Index, the PowerShares QQQ Trust and the iShares Russell 2000 Index Fund.

S&P 500 Dividend Options Debut

So far this year, the CBOE has launched two options contracts tracking the dividend risk of the S&P 500, each targeting a different accrual period (annual or quarterly).

Most recently, on May 25, it rolled out options on the S&P 500 Annual Dividend Index, with initial expirations of December 2010 and 2011. The contracts are targeted at investors who want to look at dividend movement over the course of the entire year. Earlier, in March, the exchange debuted options on the S&P Quarterly Dividend Index.

The underlying indexes of the contracts track the ordinary cash dividends of the components of the S&P 500.

Nasdaq OMX Launches Internet Options

In late May, Nasdaq OMX Group rolled out options on the Nasdaq Internet Index on its Nasdaq OMX PHLX subsidiary.

The underlying index tracks a broad spectrum of U.S.-listed companies that operate Internet-related businesses. Its component list covers such well-known names as Amazon.com, Google, AOL, eBay and Yahoo.

ON THE MOVE

Kranefuss Leaves iShares

Lee Kranefuss, chairman of the world's biggest ETF company, iShares, has stepped down from his post and been replaced by George Packer, a professor emeritus of finance at Stanford University. The change was effective April 30, iShares said in a press release. Kranefuss had been interested in stepping down for some time, according to a spokeswoman at the San Francisco-based firm, which is now a subsidiary of BlackRock. He had served as chairman since 2003 after joining the firm in 1997, just after it became part of Barclays Global Investors.

Russell Hires Ken O'Keeffe

Russell said that it had hired Ken O'Keeffe, formerly the global head of client services at MSCI Barra, as its regional director in the Americas for ETFs based on Russell Indexes, in April.

O'Keeffe's new responsibilities will include overseeing the licensing of Russell's indexes to ETF providers as well as guiding the development of new indexes for use as the basis for ETFs.

Russell also promoted Jamie Forbes to regional director for ETFs in Europe, the Middle East and Africa. She is based in Russell's London offices.

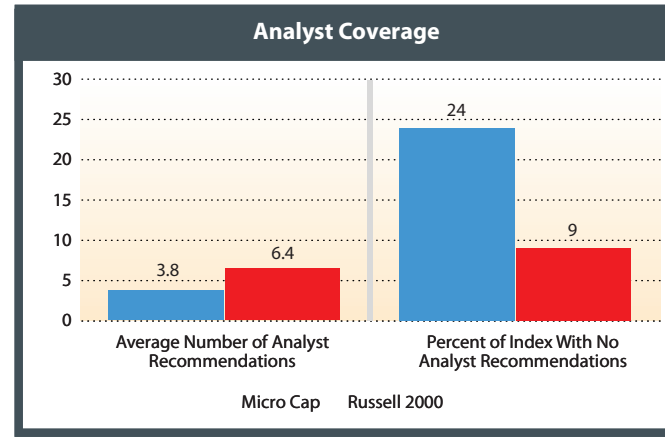
continued on page 63

Swartley continued from page 12

stocks can't be completely eliminated, active managers can choose which stocks they want to hold and can avoid the most illiquid. In fact, within a benchmark that contains 2,000 stocks, micro-cap managers will typically hold only 100 individual names. Likewise, with the increased use of electronic crossing networks—especially for managers that are liquidity providers as opposed to demanders—transaction costs can be managed to a certain degree.

An interesting development to watch going forward will be the growth and adoption of micro-cap exchange-traded funds. The obvious benefit ETFs provide is a relatively inexpensive means to capture micro-cap exposure. While active managers have shown the ability to add value in the space over longer periods, manager performance patterns tend to be cyclical, leading to specific periods where passive exposure to the micro-cap space would have been preferred. For active managers, ETFs can be seen as another source of liquidity. One double-edged sword, however, is that ETFs hold a considerably larger number of stocks, including a large portion of stocks not widely held by active managers. Large fund flows, then, could significantly impact benchmark-relative performance. For example, significant inflows in passive micro-cap funds would drive up prices in general, including benchmark holdings not widely held by active managers, negatively impacting the relative performance.

Figure 5



Source: Bloomberg, as of 3/31/2010.

Investors across the market-capitalization spectrum are seeking to identify mispriced securities. One advantage the micro-cap space offers is that the lack of Wall Street coverage provides a greater opportunity to develop insights not yet identified by the broad marketplace. If the investor has in fact identified a mispriced stock, and if the company is able to operate effectively, the stock should benefit from the discovery effect as others begin to recognize this formerly unknown company and help drive the price up.

Disclosures

Russell Investments is a Washington, USA Corporation, which operates through subsidiaries worldwide and is a subsidiary of The Northwestern Mutual Life Insurance Company.

Roundtable continued from page 48

about your currency exposure. That explained 90 percent of your performance if you were outside your local currency. Similarly, a country's credit didn't mean much at all. The common currency opened up a whole new market in Europe, where credit mattered.

JoI: Should fixed-income investors be concerned about the possibility of rising interest rates?

Mast: Absolutely, no doubt, though again, I'm not a financial adviser.

However, things like what's going on with Greece, North Korea, South Korea, the Gulf Coast, financial regulation—I put those all in the category of nonsystematic things. Systematic things are whatever the Fed is doing, what the employment number is, what the CPI is doing, what consumer confidence is doing. That's systematic stuff that will lead you to fair value in Treasurys.

My guess is, if we were just looking at systematic risk, I think rates would already be 150 basis points higher, easily, across the curve, because, as I've suggested, I do think the United States, as a whole, has turned the corner. But all these other things are going to put the brakes on recovery, brakes on inflation and all the systematic things that would typically take interest rates higher.

JoI: How important is international diversification when investing in fixed income? And has that changed over time?

Mast: I think it's of growing importance, with that paralleling the growth of the economy … . As it becomes easier and much, much cheaper—thanks to ETFs, which also don't introduce name-specific risk—I think you're doing your customer or yourself a huge disservice if you don't diversify.

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Selected Major Indexes *Sorted By YTD Returns*

July/August 2010

	Total Return %								Annualized Return %					
Index Name	**YTD**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**	**2003**	**3-Yr**	**5-Yr**	**10-Yr**	**15-Yr**	**Sharpe**	**Std Dev**
Russell Micro Cap	**19.17**	27.48	-39.78	-8.00	16.54	2.57	14.14	66.36	-6.33	2.93	-	-	-0.16	27.13
Wilshire 5000 Equal Weight*	**18.20**	98.25	-44.96	-6.69	18.91	5.53	28.89	92.83	5.12	9.62	12.40	17.11	0.26	29.86
Russell 2000 Value	**17.72**	20.58	-28.92	-9.78	23.48	4.71	22.25	46.03	-3.89	5.26	9.58	10.59	-0.07	26.94
S&P SmallCap 600/Citi Value	**17.25**	22.85	-29.51	-5.54	19.57	8.33	21.06	39.09	-2.72	6.27	8.21	-	-0.03	26.60
FTSE NAREIT All REITs	**16.79**	27.45	-37.34	-17.83	34.35	8.29	30.41	38.47	-9.14	2.88	10.95	10.39	-0.10	37.87
Russell 2000	**15.01**	27.17	-33.79	-1.57	18.37	4.55	18.33	47.25	-2.79	5.74	4.91	8.26	-0.04	26.03
Wilshire 4500 Completion	**14.98**	36.99	-39.03	5.39	15.28	10.03	18.10	43.84	-1.73	6.65	3.54	8.99	-0.01	24.41
S&P SmallCap 600	**14.96**	25.57	-31.07	-0.30	15.12	7.68	22.65	38.79	-2.03	5.87	7.42	10.33	-0.01	25.83
Dow Jones Transportation Average	**14.43**	18.58	-21.41	1.43	9.81	11.65	27.73	31.84	-0.79	7.95	6.48	8.50	0.04	26.28
S&P MidCap 400/Citi Value	**13.92**	33.73	-34.87	2.65	14.62	10.80	17.19	33.81	-2.13	6.19	7.67	-	-0.02	24.83
S&P MidCap 400	**13.74**	37.38	-36.23	7.98	10.32	12.56	16.48	35.62	-0.44	6.89	6.84	11.88	0.04	24.41
S&P MidCap 400/Citi Growth	**13.58**	41.08	-37.61	13.50	5.81	14.39	15.79	37.32	1.23	7.49	5.93	-	0.11	24.39
S&P SmallCap 600/Citi Growth	**12.70**	28.35	-32.94	5.60	10.54	7.02	24.27	38.43	-1.43	5.38	6.45	-	0.01	25.39
Russell 2000 Growth	**12.13**	34.47	-38.54	7.05	13.35	4.15	14.31	48.54	-1.93	6.06	-0.06	5.32	0.00	25.92
Alerian MLP	**11.91**	76.41	-36.91	12.72	26.07	6.32	16.67	44.54	5.35	12.36	19.27	-	0.27	23.44
MSCI World Small Cap	**11.71**	44.12	-41.88	0.79	17.20	15.71	24.31	57.79	-4.58	5.99	7.65	-	-0.11	25.77
S&P 500 Equal Weighted	**11.14**	46.31	-39.72	1.53	15.80	8.06	16.95	40.97	-2.48	5.61	6.21	9.99	-0.03	25.33
Russell 3000 Value	**10.21**	19.76	-36.25	-1.01	22.34	6.85	16.94	31.14	-7.36	2.20	3.92	8.80	-0.30	22.11
Russell 1000 Value	**9.55**	19.69	-36.85	-0.17	22.25	7.05	16.49	30.03	-7.66	1.93	3.48	8.70	-0.32	21.81
S&P 500/Citi Value	**9.11**	21.18	-39.22	1.99	20.80	8.71	15.03	30.36	-8.10	2.03	2.29	-	-0.33	22.51
MSCI Nordic Countries	**8.38**	47.07	-53.52	21.24	39.26	15.65	27.45	43.37	-8.29	8.00	0.49	10.94	-0.17	31.20
Russell 3000	**8.23**	28.34	-37.31	5.14	15.72	6.12	11.95	31.06	-4.56	3.28	0.50	7.89	-0.19	20.99
S&P 1500	**7.86**	27.25	-36.72	5.47	15.34	5.66	11.78	29.59	-4.57	3.10	0.56	8.01	-0.20	20.62
NASDAQ 100	**7.76**	54.61	-41.57	19.24	-	-	-	-	2.93	-	-	-	0.18	24.43
Russell 1000	**7.65**	28.43	-37.60	5.77	15.46	6.27	11.40	29.89	-4.71	3.07	0.16	7.92	-0.20	20.67
Dow Jones Composite Average	**7.22**	19.35	-27.94	8.88	15.71	9.49	15.58	29.40	-2.69	5.59	4.40	9.11	-0.13	18.90
Barclays US Corporate High Yield	**7.07**	58.21	-26.16	1.87	11.85	2.74	11.13	28.97	7.02	8.49	7.68	7.47	0.39	17.25
S&P 500	**7.05**	26.46	-37.00	5.49	15.79	4.91	10.88	28.68	-5.05	2.63	-0.19	7.66	-0.23	20.21
MSCI India	**6.82**	102.81	-64.63	73.11	51.00	37.57	19.11	78.35	6.97	24.42	14.80	-	0.33	43.28
Barclays Global High Yield	**6.61**	59.40	-26.89	3.18	13.69	3.59	13.17	32.42	7.20	9.05	9.22	9.58	0.40	17.63
MSCI EAFE Small Cap	**6.55**	46.78	-47.01	1.45	19.31	26.19	30.78	61.35	-8.87	4.44	7.39	-	-0.26	26.79
DJ Industrial Average	**6.42**	22.68	-31.93	8.88	19.05	1.72	5.31	28.28	-2.85	4.24	2.59	8.77	-0.15	18.55
Russell 3000 Growth	**6.29**	37.01	-38.44	11.40	9.46	5.17	6.93	30.97	-1.93	4.22	-3.37	6.33	-0.06	20.63
Russell 1000 Growth	**5.81**	37.21	-38.44	11.81	9.07	5.26	6.30	29.75	-1.93	4.05	-3.63	6.47	-0.07	20.29
Russell Top 200	**5.68**	24.21	-36.07	5.89	15.53	3.77	8.31	26.68	-5.20	2.07	-1.69	7.19	-0.26	19.28
S&P 500/Citi Growth	**5.03**	31.57	-34.92	9.13	11.01	1.14	6.97	27.08	-2.10	3.08	-3.11	7.53	-0.10	18.99
JPM EMBI Global	**4.96**	28.18	-10.91	6.28	9.88	10.73	11.73	25.66	7.24	9.10	10.56	12.80	0.50	12.46
MSCI EM	**3.65**	78.51	-53.33	39.39	32.17	34.00	25.55	55.82	4.00	16.56	-	-	0.24	33.14
Barclays US Treasury 20+ Yr	**3.50**	-21.40	33.72	10.15	0.93	8.57	8.99	1.80	5.71	4.49	7.09	7.80	0.32	16.59
MSCI World	**3.25**	29.99	-40.71	9.04	20.07	9.49	14.72	33.11	-6.75	3.35	0.41	5.69	-0.28	21.94
Barclays US Aggregate Bond	**2.84**	5.93	5.24	6.97	4.33	2.43	4.34	4.10	6.32	5.38	6.43	6.55	1.10	4.18
Barclays Municipal	**2.48**	12.91	-2.47	3.36	4.84	3.51	4.48	5.31	4.88	4.51	5.77	5.82	0.56	5.99
S&P GSCI	**1.86**	13.48	-46.49	32.67	-15.09	25.55	17.28	20.72	-7.86	-4.64	4.10	4.85	-0.15	31.44
Barclays US Treasury 1-3 Yr	**0.98**	0.80	6.67	7.31	3.92	1.62	0.91	1.92	4.62	4.18	4.46	4.93	1.57	2.03
MSCI BRIC*	**0.37**	88.79	-60.27	56.12	52.87	39.81	13.63	84.18	4.49	20.60	11.52	10.09	0.27	37.63
MSCI EAFE Growth	**0.29**	29.36	-42.70	16.45	22.33	13.28	16.12	31.99	-7.52	4.30	-0.75	2.89	-0.29	23.05
Barclays Global Aggregate	**-0.26**	6.93	4.79	9.48	6.64	-4.49	9.27	12.51	6.10	4.67	6.72	5.99	0.62	7.57
S&P Global 100	**-0.87**	26.71	-36.44	11.38	20.42	5.47	10.15	30.93	-5.69	3.04	-0.60	7.92	-0.25	20.93
MSCI EAFE	**-0.96**	31.78	-43.38	11.17	26.34	13.54	20.25	38.59	-8.91	3.86	1.64	4.47	-0.33	24.11
Dow Jones Utilities Average	**-1.26**	12.47	-27.84	20.11	16.63	25.14	30.24	29.39	-5.65	4.63	5.91	9.03	-0.36	16.52
Barclays Glbl Aggregate Treasuries	**-1.27**	2.63	10.23	10.57	6.44	-6.66	10.33	14.78	6.52	4.40	-	-	0.59	8.84
MSCI EAFE Value	**-2.23**	34.23	-44.09	5.96	30.38	13.80	24.33	45.30	-10.36	3.37	3.90	5.92	-0.35	25.73
MSCI EAFE GDP Weighted	**-3.13**	30.38	-44.82	12.88	27.39	13.68	22.57	42.95	-10.41	3.40	1.54	5.33	-0.36	25.54
DJ UBS Commodity	**-3.18**	18.91	-35.65	16.23	2.07	21.36	9.15	23.93	-6.64	0.22	6.07	5.74	-0.24	23.63
MSCI Europe	**-4.46**	35.83	-46.42	13.86	33.72	9.42	20.88	38.54	-10.54	3.42	1.96	7.31	-0.36	25.73
MSCI EMU	**-8.78**	31.41	-47.57	19.55	36.29	8.80	21.41	43.15	-12.51	3.03	0.96	6.94	-0.36	29.09
MSCI Portugal	**-18.18**	40.41	-52.15	24.00	47.37	-1.87	24.70	43.04	-15.45	0.75	1.31	-	-0.49	28.53
MSCI Spain	**-19.37**	43.48	-40.60	23.95	49.36	4.41	28.93	58.46	-6.96	7.05	6.20	12.31	-0.12	31.17
Citigroup Greek GBI USD	**-22.96**	6.98	-3.84	13.25	11.88	-8.95	15.73	25.58	-4.76	-1.25	6.76	-	-0.27	17.89
MSCI Greece	**-23.12**	25.05	-66.01	32.91	35.05	16.10	46.06	69.52	-26.73	-7.10	-3.29	-	-0.56	41.65

*Source: Morningstar. Data as of April 30, 2010. All returns are in dollars, unless noted. YTD is year-to-date. 3-, 5-, 10- and 15-year returns are annualized. Sharpe is 12-month Sharpe ratio. Std Dev is 3-year standard deviation. *Indicates price returns. All other indexes are total return.*

Largest U.S. Index Mutual Funds *Sorted By Total Net Assets In $US Millions*

July/August 2010

				Total Return %				Annualized Return %						
Fund Name	**Ticker**	**Assets**	**Exp Ratio**	**3-Mo**	**YTD**	**2009**	**2008**	**3-Yr**	**5-Yr**	**10-Yr**	**15-Yr**	**P/E**	**Std Dev**	**Yield**
Vanguard Total Stock Mkt Indx	VTSMX	**65,222.8**	0.18	12.23	8.30	28.70	-37.04	-4.23	3.52	0.69	7.82	18.2	20.91	1.66
Vanguard 500 Index, Inv Shrs	VFINX	**51,508.0**	0.18	11.02	7.02	26.49	-37.02	-5.08	2.55	-0.27	7.58	18.6	20.21	1.84
Vanguard Institutional Indx, Inst	VINIX	**48,636.1**	0.05	11.04	7.05	26.63	-36.95	-4.99	2.66	-0.16	7.71	18.6	20.20	1.96
Vanguard Total Stock Mkt Idx, Adm	VTSAX	**31,416.2**	0.09	12.26	8.37	28.83	-36.99	-4.15	3.62	0.76	7.87	18.2	20.92	1.75
Vanguard 500 Index, Adm Shrs	VFIAX	**30,360.9**	0.09	11.04	7.05	26.62	-36.97	-4.99	2.65	-0.20	7.64	18.6	20.21	1.94
Vanguard Total Intl Stock Index	VGTSX	**27,032.8**	0.32	5.12	-0.21	36.73	-44.10	-6.54	5.67	2.86	-	9.4	26.40	2.39
Vanguard Institutional Idx, Instl+	VIIIX	**26,786.4**	0.03	11.06	7.06	26.66	-36.94	-4.96	2.69	-0.13	7.74	18.6	20.21	1.98
Fidelity Spartan 500 Index Cl Inv	FUSEX	**25,467.7**	0.10	11.02	7.02	26.51	-37.03	-5.07	2.59	-0.28	7.52	17.5	20.23	1.76
Vanguard Total Bond Mkt II Idx, Inv	VTBIX	**23,413.9**	0.19	1.14	2.62	-	-	-	-	-	-	-	-	3.57
Vanguard Total Bond Mkt Idx, Inv	VBMFX	**20,511.8**	0.22	1.18	2.77	5.93	5.05	6.24	5.29	6.14	6.34	-	4.23	3.77
Vanguard Total Bond Mkt Idx, Adm	VBTLX	**19,672.1**	0.14	1.21	2.80	6.04	5.15	6.35	5.39	6.22	6.39	-	4.23	3.88
Vanguard Total Stock Mkt Idx, Instl	VITSX	**18,942.4**	0.06	12.26	8.33	28.83	-36.94	-4.13	3.64	0.80	7.92	18.2	20.90	1.75
Vanguard Total Bond Mkt Index, Instl	VBTIX	**18,057.8**	0.08	1.22	2.82	6.09	5.19	6.39	5.43	6.28	6.46	-	4.23	3.93
Vanguard 500 Index, Signal Class	VIFSX	**17,676.3**	0.09	11.04	7.05	26.61	-36.97	-4.99	2.62	-0.24	7.60	18.6	20.21	1.94
Fidelity Spartan 500 Idx Cl Adv	FUSVX	**13,440.1**	0.07	11.03	7.03	26.55	-37.01	-5.04	2.61	-0.27	7.53	17.5	20.21	1.79
T. Rowe Price Equity Index 500	PREIX	**12,359.6**	0.35	10.96	6.93	26.33	-37.06	-5.21	2.40	-0.44	7.37	17.5	20.18	1.58
Vanguard Instl Total Stk Mkt Idx, Instl+	VITPX	**11,785.8**	0.03	12.28	8.34	28.92	-36.89	-4.08	3.70	-	-	18.2	20.93	1.80
Fidelity U.S. Bond Index	FBIDX	**10,237.0**	0.32	1.17	2.67	6.45	3.76	5.38	4.84	6.16	6.35	-	3.82	3.41
Schwab S&P 500 Index	SWPPX	**10,035.9**	0.09	11.00	7.04	26.25	-36.72	-4.97	2.64	-0.25	-	17.6	20.13	1.32
Vanguard Emrg Mkts Stock Idx, Shrs	VEIEX	**8,451.5**	0.40	9.60	2.74	75.98	-52.81	3.62	15.50	11.25	8.91	5.8	33.59	1.18
Vanguard Total Bond Mkt Idx, Sig	VBTSX	**8,251.8**	0.14	1.21	2.80	6.04	5.15	6.35	5.36	6.18	6.37	-	4.23	3.88
Vanguard Total Bond Mkt II, Instl	VTBNX	**8,132.5**	0.07	1.15	2.64	-	-	-	-	-	-	-	-	3.60
Vanguard Mid Cap Index, Inv	VIMSX	**7,927.5**	0.27	16.68	12.54	40.22	-41.82	-3.52	5.58	6.47	-	18.1	24.77	0.95
Vanguard Small Cap Index, Inv	NAESX	**7,236.0**	0.28	19.74	15.73	36.12	-36.07	-1.40	6.63	5.84	9.23	17.6	26.92	0.86
Vanguard Mid Cap Index, Instl	VMCIX	**6,953.3**	0.09	16.71	12.58	40.51	-41.76	-3.37	5.74	6.64	-	18.1	24.80	1.08
Vanguard Europe Stock Index, Inv	VEURX	**6,680.7**	0.27	2.18	-4.24	31.91	-44.73	-10.29	3.32	1.98	7.45	11.2	26.60	3.95
Vanguard Dev Mkts Index, Instl	VIDMX	**6,353.0**	0.08	3.88	-0.91	28.17	-41.62	-8.72	3.77	-	-	11.8	25.00	-
Vanguard Growth Index, Inv	VIGRX	**6,068.2**	0.28	11.57	6.46	36.29	-38.32	-1.55	4.16	-2.03	7.72	21.0	20.15	0.95
Fidelity Series 100 Index	FOHIX	**6,028.6**	0.20	9.67	5.80	22.14	-35.44	-5.15	-	-	-	17.2	19.08	2.15
Fidelity Spartan Intl Index, Inv Cl	FSIIX	**5,824.5**	0.10	3.68	-1.56	28.48	-41.43	-8.83	3.78	1.45	-	14.4	25.09	2.12
Vanguard Sh-Term Bond Idx, Sig	VBSSX	**5,797.5**	0.14	0.56	1.74	4.38	5.51	5.65	4.84	5.15	5.45	-	2.66	2.63
Fidelity Spartan Total Mkt Idx, Inv	FSTMX	**5,764.5**	0.10	12.23	8.42	28.39	-37.18	-4.33	3.53	0.66	-	17.5	20.87	1.65
Vanguard Sh-Term Bond Idx, Inv	VBISX	**5,664.8**	0.22	0.53	1.70	4.28	5.43	5.56	4.78	5.13	5.43	-	2.66	2.52
Vanguard Small Cap Index, Instl	VSCIX	**5,054.1**	0.09	19.81	15.80	36.40	-35.98	-1.24	6.80	6.01	9.37	17.6	26.91	1.00
Vanguard Extended Mkt Index, Inv	VEXMX	**4,987.6**	0.30	18.28	14.30	37.43	-38.73	-2.01	6.28	3.43	9.01	18.3	25.42	0.86
Vanguard Total Stock Mkt Idx, Sig	VTSSX	**4,975.9**	0.09	12.21	8.32	28.85	-36.99	-4.16	3.58	0.72	7.84	18.2	20.90	1.75
Vanguard Total Bond Mkt Idx, Instl+	VBMPX	**4,969.0**	0.05	1.21	2.80	5.93	5.05	6.25	5.30	6.15	6.34	-	4.23	-
John Hancock 500 Idx Trust NAV Cl	-	**4,786.9**	0.49	10.91	6.98	25.94	-37.26	-5.42	1.93	-	-	17.7	20.19	1.18
Schwab 1000 Index	SNXFX	**4,754.7**	0.29	11.53	7.61	27.68	-37.28	-4.69	2.99	0.11	7.68	17.6	20.37	1.63
Vanguard REIT Index, Inv Shrs	VGSIX	**4,589.6**	0.26	24.45	17.82	27.76	-37.05	-8.50	4.06	11.06	-	33.6	40.50	2.77
Vanguard Extend Mkt Idx, Instl	VIEIX	**4,449.9**	0.09	18.36	14.38	37.69	-38.58	-1.82	6.48	3.62	9.16	18.3	25.43	1.02
Vanguard Small Cap Value Index	VISVX	**4,115.3**	0.28	20.67	16.97	30.34	-32.05	-2.51	5.55	8.99	-	15.5	27.74	1.60
Fidelity Spartan Totl Mkt Idx, Adv Cl	FSTVX	**4,099.7**	0.07	12.24	8.44	28.43	-37.16	-4.30	3.56	0.67	-	17.5	20.86	1.68
Vanguard Balanced Index, Inv Shrs	VBINX	**3,701.5**	0.25	7.76	6.15	20.05	-22.21	0.38	4.63	3.27	7.65	18.2	13.13	2.40
Vanguard Int-Term Bond Index, Inv	VBIIX	**3,690.8**	0.22	1.69	3.77	6.79	4.93	7.00	5.67	7.10	6.90	-	6.88	4.27
Vanguard Small Cap Growth Index	VISGX	**3,650.6**	0.28	18.74	14.44	41.85	-40.00	-0.59	7.47	5.73	-	20.5	26.98	0.24
ING U.S. Bond Index Portfolio Cl 1	ILBAX	**3,624.7**	0.45	1.28	2.74	5.88	-	-	-	-	-	-	-	2.47
Vanguard Value Index, Inv Shrs	VIVAX	**3,621.3**	0.26	10.79	8.05	19.58	-35.97	-7.64	1.98	2.07	7.63	16.2	21.32	2.31
ING Stock Index Portfolio Instl Cl	INGIX	**3,556.6**	0.26	10.96	6.94	26.22	-37.12	-5.23	2.40	-	-	18.5	20.25	0.56
Vanguard Pacific Stock Index, Inv	VPACX	**3,537.0**	0.27	6.81	5.27	21.18	-34.36	-5.52	4.56	0.57	0.55	13.9	22.35	2.51
Vanguard Growth Index, Instl Cl	VIGIX	**3,400.2**	0.09	11.66	6.55	36.50	-38.19	-1.38	4.33	-1.89	7.83	21.0	20.15	1.13
Vanguard Balanced Index, Instl Cl	VBAIX	**3,393.9**	0.09	7.77	6.21	20.18	-22.10	0.53	4.76	3.39	7.73	18.2	13.11	2.57
VALIC Company I Stock Index	VSTIX	**3,253.9**	0.39	10.94	6.95	26.16	-37.21	-5.33	2.31	-0.53	7.35	17.8	20.36	2.01
Vanguard Dev Mkts Index, Inv	VDMIX	**3,237.9**	0.22	3.74	-1.05	28.17	-41.62	-8.76	3.74	-	-	11.8	25.01	1.16
Fidelity Spartan Ext Mkt Index, Inv	FSEMX	**3,182.7**	0.10	17.97	15.02	36.65	-38.45	-1.46	6.83	3.59	-	17.5	24.43	1.00
Vanguard Emrg Mkts Stock Idx, Adm	VEMAX	**3,182.4**	0.27	9.65	2.79	76.18	-52.76	3.75	15.61	11.30	8.95	5.8	33.62	1.27
Vanguard Value Index Cl Instl	VIVIX	**3,050.7**	0.09	10.89	8.15	19.79	-35.88	-7.48	2.13	2.20	7.74	16.2	21.34	2.48
Vanguard Mid-Cap Index, Sig	VMISX	**2,774.0**	0.15	16.70	12.57	40.43	-41.78	-3.40	5.69	6.58	-	18.1	24.80	1.04
Vanguard Int-Term Bond Idx, Adm	VBILX	**2,705.0**	0.14	1.72	3.81	6.89	5.01	7.10	5.75	7.16	6.95	-	6.88	4.38
Vanguard FTSE AW exUS Idx, Instl	VFWSX	**2,694.3**	0.15	6.06	0.40	39.01	-43.96	-5.35	-	-	-	9.8	26.92	2.04

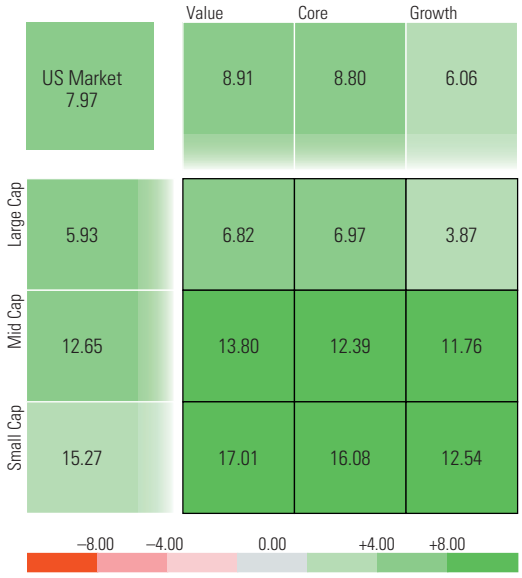
Source: Morningstar. Data as of April 30, 2010. Exp Ratio is expense ratio. YTD is year-to-date. 3-, 5-, 10- and 15-yr returns are annualized. P/E is price-to-earnings ratio. Std Dev is 3-year standard deviation. Yield is 12-month.

Morningstar U.S. Style Overview Jan. 1 - Apr. 30, 2010

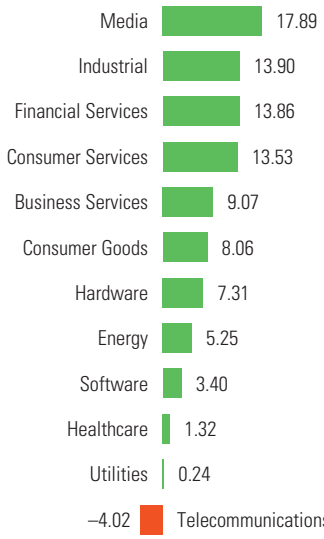
Trailing Returns %

Morningstar Indexes	3-Month	YTD	1-Yr	3-Yr	5-Yr	10-Yr
US Market	11.94	7.97	40.56	–4.30	3.52	0.57
Large Cap	9.80	5.93	36.34	–4.97	2.52	–1.30
Mid Cap	16.95	12.65	51.37	–3.30	5.75	5.35
Small Cap	19.38	15.27	54.27	–1.31	6.71	6.65
US Value	11.13	8.91	40.35	–8.35	1.86	4.72
US Core	12.32	8.80	40.81	–2.40	4.41	3.14
US Growth	12.39	6.06	40.43	–2.45	3.99	–6.14
Large Value	8.78	6.82	34.06	–10.24	0.48	2.74
Large Core	10.14	6.97	36.92	–2.43	3.74	1.24
Large Growth	10.53	3.87	38.20	–2.51	2.93	–8.05
Mid Value	16.88	13.80	56.67	–4.43	4.71	9.59
Mid Core	16.92	12.39	49.87	–3.42	5.47	8.26
Mid Growth	17.08	11.76	47.70	–2.46	6.76	–1.26
Small Value	19.75	17.01	65.68	–0.06	7.36	11.96
Small Core	20.14	16.08	54.24	–2.23	6.75	9.89
Small Growth	18.10	12.54	43.37	–2.16	5.65	–1.41

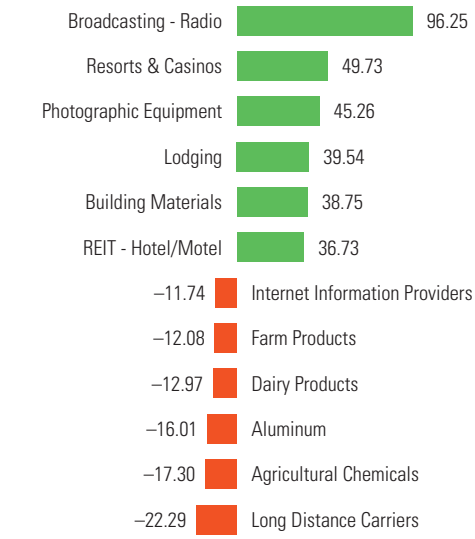
Morningstar Market Barometer YTD Return %



Sector Index YTD Return %



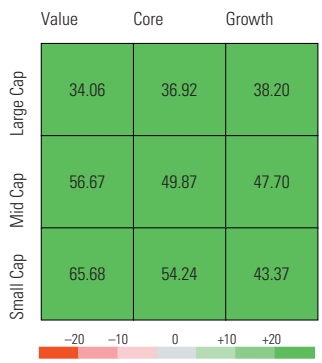
Industry Leaders & Laggards YTD Return %



Biggest Influence on Style Index Performance

	YTD Return %	Constituent Weight %
Best Performing Index		
Small Value	17.01	
Zions Bancorp	124.05	0.66
Lexmark International Inc.	42.61	0.76
Apartment Investment & Management Co.	40.77	0.69
Brunswick Corp.	64.44	0.42
CBL & Associates Properties Inc.	53.16	0.50
Worst Performing Index		
Large Growth	3.87	
Apple Inc.	23.90	7.00
Cisco Systems Inc.	12.49	5.16
Schlumberger Ltd.	10.08	2.90
Emerson Electric Co.	23.51	1.20
CVS Caremark Corp.	15.19	1.70

1-Year



3-Year

5-Year

Source: Morningstar. Data as of April 30, 2010.

Notes and Disclaimer: ©2009 Morningstar, Inc. All Rights Reserved. Unless otherwise noted, all data is as of most recent month end. Multi-year returns are annualized. NA: Not Available. Biggest Influence on Index Performance lists are calculated by multiplying stock returns for the period by their respective weights in the index as of the start of the period. Sector and Industry Indexes are based on Morningstar's proprietary sector classifications. The information contained herein is not warranted to be accurate, complete or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information.

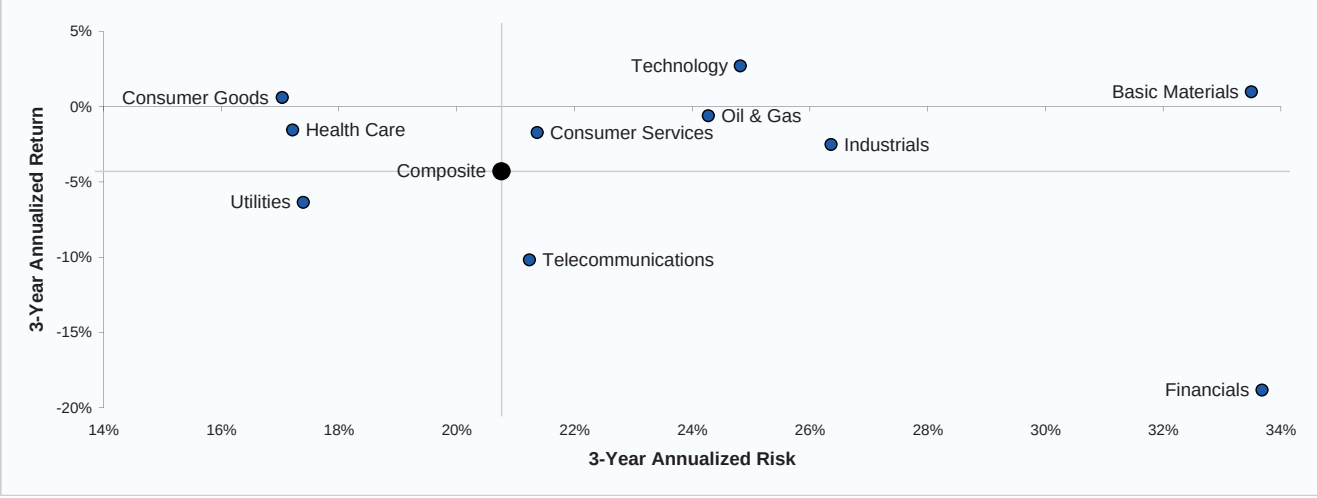
MORNINGSTAR®

Dow Jones U.S. Industry Review

Performance

Index Name	Weight	1-Month	3-Month	YTD	1-Year	3-Year	5-Year	10-Year
Dow Jones U.S. Index	**100.00%**	**1.94%**	**11.84%**	**7.84%**	**40.63%**	**-4.30%**	**3.47%**	**0.45%**
Dow Jones U.S. Basic Materials Index	3.27%	0.61%	16.86%	7.29%	57.34%	0.98%	8.76%	7.82%
Dow Jones U.S. Consumer Goods Index	9.92%	-0.15%	8.49%	6.83%	37.94%	0.61%	5.49%	6.80%
Dow Jones U.S. Consumer Services Index	12.17%	3.75%	17.10%	14.37%	44.11%	-1.71%	3.80%	0.38%
Dow Jones U.S. Financials Index	17.07%	2.11%	14.70%	12.97%	49.74%	-18.82%	-6.01%	0.83%
Dow Jones U.S. Health Care Index	11.31%	-3.12%	0.56%	1.08%	32.62%	-1.54%	2.96%	2.61%
Dow Jones U.S. Industrials Index	13.03%	4.62%	18.60%	15.44%	51.37%	-2.51%	4.75%	1.51%
Dow Jones U.S. Oil & Gas Index	10.53%	4.52%	9.84%	5.02%	28.80%	-0.60%	9.59%	10.08%
Dow Jones U.S. Technology Index	16.62%	2.04%	13.71%	3.97%	44.94%	2.71%	7.70%	-6.46%
Dow Jones U.S. Telecommunications Index	2.43%	0.20%	5.68%	-3.46%	9.84%	-10.17%	1.86%	-6.82%
Dow Jones U.S. Utilities Index	3.65%	2.97%	5.25%	0.66%	26.51%	-6.36%	3.94%	4.66%

Risk-Return



Industry Weights Relative to Global ex-U.S.

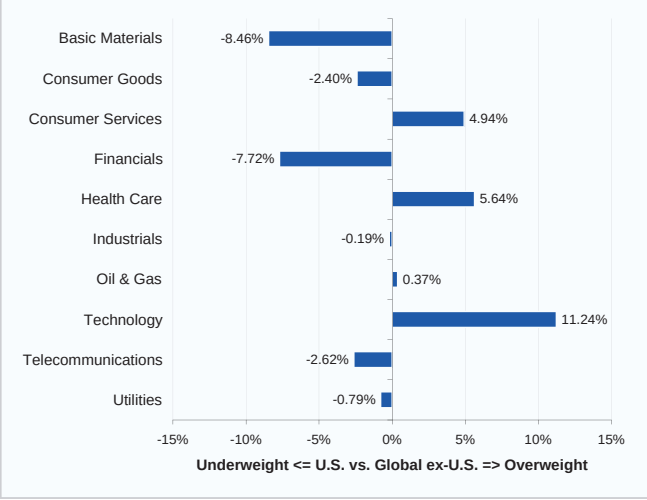
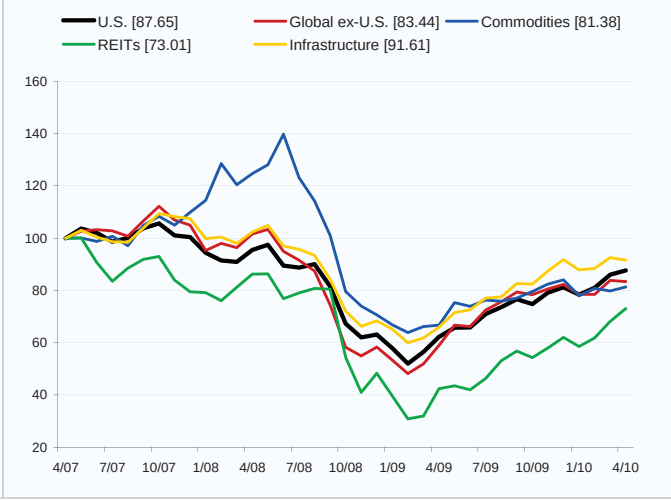


Chart compares industry weights within the Dow Jones U.S. Index to industry weights within the Dow Jones Global ex-U.S. Index

Asset Class Performance



U.S. = Dow Jones U.S. Index | Global ex-U.S. = Dow Jones Global ex-U.S. Index
Commodities = Dow Jones-UBS Commodity Index | REITs = Dow Jones U.S. Select REIT Index
Infrastructure = Dow Jones Brookfield Global Infrastructure Index

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The Dow Jones U.S. Index, the Dow Jones Global ex-U.S. Index and the Dow Jones U.S. Industry Indexes were first published in February 2000. The Dow Jones Brookfield Infrastructure Index was first published in July 2008. To the extent this document includes information for the index for the period prior to its initial publication date, such information is back-tested (i.e., calculations of how the index might have performed during that time period if the index had existed). Any comparisons, assertions and conclusions regarding the performance of the Index during the time period prior to launch will be based on back-testing. Back-tested information is purely hypothetical and is provided solely for informational purposes. Back-tested performance does not represent actual performance and should not be interpreted as an indication of actual performance. Past performance is also not indicative of future results.

Data as of April 30, 2010
Source: Dow Jones Indexes Analytics & Research

For more information, please visit the Dow Jones Indexes Web site at www.djindexes.com.

Dow Jones Indexes
A CME Group Company

Largest New ETFs *Sorted By Total Net Assets In $US Millions*

Covers ETFs and ETNs launched during the 12-month period ended April 30, 2010.

Fund Name	Ticker	ER	1-Mo	3-Mo	YTD	Launch Date	Assets
Market Vectors Junior Gold Miners	GDXJ	0.60	13.45	31.62	13.36	11/10/2009	**1,154.8**
Market Vectors Brazil Small-Cap	BRF	0.73	1.58	10.97	-6.05	5/12/2009	**715.8**
ETFS Physical Platinum Shares	PPLT	0.60	5.64	15.34	-	1/8/2010	**597.7**
ProShares Short 20+ Year Treasury	TBF	0.95	-3.57	-1.82	-4.71	8/20/2009	**505.3**
PIMCO 1-5 Year U.S. TIPS Index	STPZ	0.20	0.74	0.54	1.43	8/20/2009	**489.6**
WisdomTree Dreyfus Emerging Currency	CEW	0.55	0.49	2.71	1.55	5/6/2009	**434.5**
ETFS Physical Swiss Gold Shares	SGOL	0.39	5.86	8.86	7.49	9/9/2009	**395.7**
ETFS Physical Palladium Shares	PALL	0.60	14.52	31.43	-	1/8/2010	**376.0**
Vanguard Short-Term Corporate Bond	VCSH	0.15	0.39	1.12	2.15	11/19/2009	**373.6**
PowerShares Build America Bond	BAB	0.28	3.40	4.63	7.87	11/17/2009	**294.8**
Schwab U.S. Broad Market	SCHB	0.08	1.96	11.87	8.08	11/3/2009	**239.7**
Schwab U.S. Large-Cap	SCHX	0.08	1.57	11.22	7.31	11/3/2009	**237.3**
Schwab International Equity	SCHF	0.15	-2.22	5.11	-0.81	11/3/2009	**234.1**
ProShares UltraPro Short S&P 500	SPXU	0.95	-5.59	-29.32	-21.82	6/23/2009	**218.3**
Schwab U.S. Small-Cap	SCHA	0.15	5.75	19.60	16.22	11/3/2009	**201.5**
iShares MSCI All Peru	EPU	0.63	2.46	13.56	5.11	6/19/2009	**194.2**
PIMCO Enh Short Maturity Strategy	MINT	0.35	0.09	0.19	0.40	11/16/2009	**178.6**
iShares Russell Top 200 Growth	IWY	0.20	0.72	8.93	3.34	9/22/2009	**172.7**
iShares Russell Top 200 Value	IWX	0.20	1.94	9.91	6.67	9/22/2009	**171.0**
Vanguard Intermediate-Term Corp Bond	VCIT	0.15	1.27	2.35	4.09	11/19/2009	**161.4**

Source: Morningstar. Data as of April 30, 2010. ER is expense ratio. 1-Mo is 1-month. 3-Mo is 3-month. YTD is year-to-date.

Selected ETFs In Registration

Direxion Daily Wind Energy Bull 3X
EGS INDXX India Infrastructure
First Trust Dev Intl Mkts AlphaDEX
Global X Lithium
IQ Intl Malaysia Small Cap
iShares MSCI China Small-Cap
Jefferies S&P 500 VIX Sh-Term Futrs
Market Vectors GDP Em Mkts Equity
NASDAQ OMX Industry Leaders
Peritus High Yield
Pimco High Yield Corporate Bond
PowerShares S&P 500 High Quality
ProShares UltraPro MSCI EAFE
Russell Global 3000 Value
Schwab U.S. TIPS
Shares MSCI Russia
SPDR Barclays Capital CMBS
Teucrium Corn
Wilshire Small-Cap Growth
WisdomTree Rising Dollar

Source: IndexUniverse.com's ETF Watch

Largest U.S.-listed ETFs *Sorted By Total Net Assets In $US Millions*

				Total Return %				Annualized Return %					
Fund Name	Ticker	Assets	Exp Ratio	3-Mo	YTD	2009	2008	3-Yr	5-Yr	Mkt Cap	P/E	Std Dev	Yield
SPDR S&P 500	SPY	**$74,438.5**	0.09	11.08	7.05	26.31	-36.70	-5.05	2.59	46,003	17.5	20.08	1.76
SPDR Gold Shares Trust	GLD	**$43,925.6**	0.40	8.87	7.50	24.03	4.92	19.80	21.62	-	-	22.04	-
iShares MSCI EAFE	EFA	**$35,815.1**	0.35	3.68	-1.57	26.88	-41.00	-9.18	3.44	27,215	10.8	25.25	2.63
iShares MSCI Emerging Markets	EEM	**$35,746.8**	0.72	9.85	1.32	68.82	-48.87	3.29	15.38	20,470	6.2	32.74	1.37
Vanguard Emerging Markets	VWO	**$24,445.7**	0.27	9.99	2.59	76.29	-52.54	3.66	15.40	19,148	5.8	32.82	1.29
iShares S&P 500	IVV	**$23,121.1**	0.09	11.23	7.10	26.61	-37.00	-5.04	2.59	46,062	17.3	20.16	1.76
PowerShares QQQ Trust	QQQQ	**$22,418.8**	0.20	15.19	7.74	54.67	-41.72	2.75	7.50	41,601	24.9	24.51	0.43
iShares Barclays TIPS Bond	TIP	**$20,344.5**	0.20	1.17	2.72	8.95	-0.53	6.61	4.77	-	-	9.01	3.98
Vanguard Total Stock	VTI	**$15,015.1**	0.07	12.46	8.45	28.89	-36.95	-4.14	3.63	24,612	18.2	20.88	1.75
iShares Russell 2000	IWM	**$14,604.6**	0.24	19.50	15.04	28.53	-34.15	-2.64	5.74	925	18.2	25.51	1.05
iShares iBoxx $ Inv Gr Corp Bond	LQD	**$12,438.4**	0.15	3.10	4.38	8.58	2.44	5.75	4.86	-	-	12.14	5.26
iShares Russell 1000 Growth	IWF	**$11,663.5**	0.20	10.63	5.66	36.73	-38.21	-2.11	3.88	36,997	18.7	20.32	1.32
iShares Barclays Aggregate Bond	AGG	**$11,513.4**	0.24	1.17	2.60	3.01	7.90	6.04	5.15	-	-	5.54	3.76
iShares MSCI Brazil	EWZ	**$10,842.8**	0.65	11.70	-3.16	121.50	-54.37	15.11	30.66	26,426	12.9	41.54	3.75
SPDR S&P MidCap 400	MDY	**$9,791.3**	0.25	17.28	13.50	37.52	-36.40	-0.78	6.52	2,904	19.7	24.10	1.12
iShares Russell 1000 Value	IWD	**$9,638.7**	0.20	12.84	9.63	19.23	-36.45	-7.67	1.86	32,303	15.9	21.66	1.94
SPDR Dow Jones Industrial Avg	DIA	**$9,072.8**	0.17	9.98	6.26	22.72	-32.10	-3.02	4.08	100,531	16.4	18.35	2.32
iShares FTSE/Xinhua China 25	FXI	**$8,332.1**	0.73	6.47	-3.36	47.28	-47.73	6.83	19.09	72,001	15.9	40.21	1.32
iShares S&P 400 MidCap	IJH	**$8,028.3**	0.21	17.53	13.74	37.81	-36.18	-0.52	6.75	2,904	19.7	24.04	1.12
iShares Barclays 1-3 Yr Treas Bond	SHY	**$7,815.0**	0.15	0.19	0.99	0.36	6.61	4.62	4.12	-	-	2.08	1.46
Vanguard Total Bond Market	BND	**$7,295.2**	0.12	1.17	2.47	3.67	6.88	6.35	-	-	-	4.99	3.82
Financial Select Sector SPDR	XLF	**$7,101.8**	0.21	14.22	12.47	17.50	-54.90	-21.91	-8.29	48,826	17.2	36.83	1.21
iShares S&P SmallCap 600	IJR	**$6,722.8**	0.20	18.95	15.21	25.88	-31.52	-2.14	5.75	952	19.3	25.31	0.85
Energy Select Sector SPDR	XLE	**$6,593.2**	0.21	10.32	5.46	21.81	-38.97	-0.34	9.64	43,863	18.4	26.33	1.68
Market Vectors Gold Miners	GDX	**$6,401.3**	0.55	24.04	9.31	36.72	-26.07	9.16	-	11,967	22.1	49.23	0.22

Source: Morningstar. Data as of April 30, 2010. Exp Ratio is expense ratio. 3-Mo is 3-month. YTD is year-to-date. 3-Yr and 5-Yr are 3-year and 5-year annualized returns, respectively. Mkt Cap is geometric average market capitalization. P/E is price-to-earnings ratio. Std Dev is 3-year standard deviation. Yield is 12-month.

Courter continued from page 27

Figure 11

Comparison Of Buy-And-Hold And All Three Moving Average Systems Total 39-Year Performance (1971-2009)

	39-year Annual Returns	39-year Standard Deviation of Annual Returns	Growth of $100,000	# of Trades	Percentage of Trades Profitable
Buy-And-Hold	6.62%	17.72%	$1,219,355	2	100%
200-Day Moving Avg. System	6.68%	13.02%	$1,243,706	174	41%
50-Day Moving Avg. System	5.39%	14.65%	$775,953	436	30%
50-/200-Day Moving Avg. Crossover	7.02%	11.82%	$1,408,397	34	76%

Source: Author calculations using eSignal and Excel

Figure 7 analyzes the bear market performance of the 50-/200-day crossover.

The method lost more than the 50-day and 200-day moving average systems in 1973 and 1974 ($15,300 vs. $7,000 or $10,400, respectively); however, during the last two bear markets, the crossover system worked better than the other two.

Taking a closer look at the three bear markets, we do not see many wrong signals. Investors had just one whipsaw trade in the 1973-74 bear. They had no such trades in either the 2000-02 or the 2008 period (see Figures 8-10).

One can also observe by reviewing these three charts why solely using either the 50-day or the 200-day moving average results in so many incorrect trades. The blue line is the 50-day average. The orange line is the 200-day average.

While perhaps not as quick to discern a change in trend, the strategy's prognostications were much more accurate. Seventy-six percent of all round-trip trades were profitable. The system generated only 17 round-trip trades, 34 in all—less than one per year. An investor using this method would have been invested in the market 72 percent of the time—just slightly more than using the 200-day moving average by itself. All three moving-average strategies are compared with buy-and-hold in Figure 11.

Conclusion

This study indicates that an investor can reduce risk in his portfolio by enlisting the help of moving averages. Using the S&P 500 as a proxy investment, it is clear that the 50-day/200-day crossover system is superior to the 50-day or 200-day moving averages by themselves. While this may be true for the broad stock market, results may vary for different indexes.

There are many ways an investor can use this information. One tactic would be to simply trade an S&P 500 exchange-traded fund or index fund based on the signals generated. Another would be to invest in other attractive equity investments that one thinks will outperform the market during an upturn. One would remain in those holdings as long as the 50-day average is above the 200-day average on the S&P 500 stock index, and liquidate those positions when the sell signal is generated.

It goes without saying that investors should not rely solely on any one technique. However, applying moving-average strategies in conjunction with portfolio diversification and prudent money management may reduce one's risk substantially. If nothing else, this will lead to better sleep if the next decade is anything like the last one, and it may lead to a larger nest egg.

News continued from page 56

Oulton Departs FTSE

In a series of updates, ResponsibleInvestor.com reported in April that FTSE's director of responsible investment was leaving the company in May to become the European head of responsible investment at Mercer, a consulting firm.

David Harris, the head of FTSE's responsible investment operations, was promoted to fill Will Oulton's role, the Web site said.

According to the site, Oulton is a well-known authority on responsible investment and was recently named vice president of the European Sustainable Investment Forum (Eurosif).

Markit Names Grimes As MD

At the end of March, Markit said it had named Paul Grimes as managing director of equities and index operations.

Grimes was a founding member of FTSE Group, ultimately serving as the index provider's chief operating officer before his departure.

At Markit, Grimes is overseeing the firm's equity and fixed-income index business. He also shares responsibility for Markit's dividend forecast, index management and ETF services with Director Bernie Thurston.

Jamie Farmer Named DJI Executive Director

In mid-April, Dow Jones Indexes announced that it had named Jamie Farmer as executive director.

Previously the senior director of global index operations and head of exchange relationships, Farmer's role has now expanded to encompass responsibility for DJI's global sales and business development.

Farmer joined DJI in 2006 from Susquehanna International Group LLP.

HUMOR

Ten Things I Learned From The 'Flash Crash'

By Lara Crigger

Valuable nuggets mined from disaster

At roughly 2:45 p.m. EDT on May 6, 2010, the market went to zero. Not literally zero, but at one point things had gotten so hairy that you could have bought the entire S&P 500—all of it—for the cost of a Big Mac. It was a swift kick in the junk bonds, a phenomenon known as the "flash crash" (aka The Hindenburg Effect).

Those wacky trades were ultimately canceled, of course, but who cares? I slept like a baby that night—I woke up every 15 minutes and cried.

But as I sit here in the middle of the summer doldrums, sipping iced coffee on the veranda, I look back at those frantic moments with a kind of nostalgia. May 6 was certainly a day that taught me a few things about the markets:

1. Don't let The Flash near a trading desk. Save the superheroes for fighting regulators.
2. Spilling your third Scotch on a Bloomberg terminal does not fix a liquidity crisis.
3. The KFC Double Down is so potently unhealthy, it can give even the NYSE a heart attack.
4. "Fat Finger" would be a great name for a Meatloaf cover band.
5. Skynet is finally online. All we need is Arnie telling us to "come with me if you want to live."
6. Note to SEC Chairman Mary Schapiro: Next time you throw a Cinco de Mayo party and forget to invite Mark Zuckerburg, don't post about it on your Facebook page. Mafia Wars isn't just a game.
7. "Flash Crash" is not some naughty movie on an SEC staffer's laptop. At least, it's not *just* some naughty movie on an SEC staffer's laptop.
8. 2:45 p.m. is a terrible time to go to the bathroom. Time to open an "adult diapers" store at the corner of Wall and Broad.
9. Being bearish shouldn't involve actual live bears.
10. When in doubt: Blame it on speculators. They have no union, and they never fight back.

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