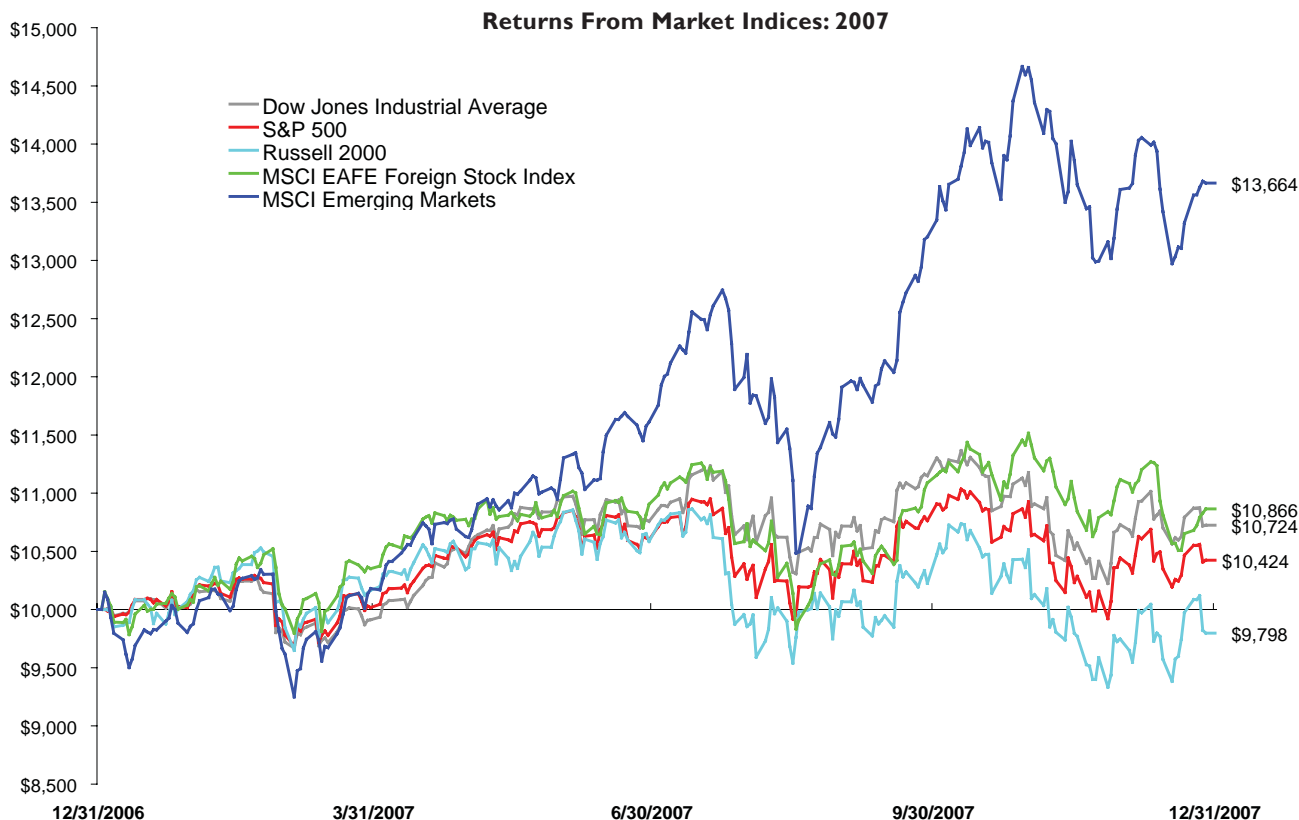


## WORLD MARKET SURVEY



## ETFs, LIQUIDITY, AND BEST EXECUTION

This edition of Investment Quarterly continues the discussion of Exchange Traded Funds (ETFs) from last quarter's edition, with a focus this time on trading issues affecting ETF investors. ETFs don't trade like mutual funds, and the differences can have a substantial impact on investor returns.

Shares of an open end mutual fund are purchased from or redeemed by the fund itself. Such funds must therefore maintain cash positions, credit lines, and a variety of other formal or informal arrangements so that investors can be confident of finding a ready

market for their shares. Such arrangements cost money, and cash positions held by open end funds against the possibility of redemptions by investors tend to reduce their total return.

ETFs don't have to maintain such arrangements, because they don't buy or sell their own shares. Instead, their shares are traded on exchanges, just like any other stock. Orders from investors are filled by counterparties, who must be found by brokers. ETF owners therefore assume "counterparty" risk — the risk that the stock market will not

permit them to sell shares without making price concessions vis-à-vis the prices of the stocks owned by the ETF.

### WILD & WOOLLY MARKETS

More significantly, ETF owners must trade in a highly competitive, profit-maximizing marketplace. Stock traders know well that the price at which a transaction executes can vary widely from the *ex ante* expectations of any of the parties thereto. Such expected values may be derived from cash-flow, relative valuation, asset replacement, modern portfolio theory, option theory, or other economic models. But

*...the greater the frequency and volume of trading in an account, the greater the magnitude of account underperformance.*

*But while a market maker expects to win in dealing with non-informed traders, by the same token he expects to lose when transacting with informed counterparties.*

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the “fair” or “justified” price generated by such analyses does not often survive contact with security markets, which are naturally rife with disguised intentions, bluffs, feigned disinterest, information leakage, order front running (illegal but admittedly wide-spread), and other forms of hostile combat. The markets are patrolled by information predators, opportunistic traders, profit-seeking dealers and market makers, transaction-oriented brokers, and a host of other colorful characters. Institutional investors and hedge funds control trillions of dollars in financial assets, who compete against each other and retail Mom and Pop order flows to extract value from their trading strategies.

In this environment, it behooves the ETF investor to develop a trading strategy to reduce the drag of trading on performance. The need to do so may be surprising to retail investors. Are there not regulations mandating that each trade receive ‘best execution?’ Doesn’t best execution mean that the investor receives the highest available price when selling and pays the lowest available price when buying? Aren’t there consumer-protection laws?

The short answer is, “yes, but.” The long answer takes one into the fascinating subject of market microstructure theory, with its attendant topics of game theory, utility, and inventory control systems on the one hand, and on the other, discussions of market rules, order presentation strategies, characteristics of exchanges, components of trade costs, and so forth. This is the world both of complex mathematics and liar’s poker. This is the world in which certain banking institutions offer “no-cost” trades and the retail public can’t figure out how they can afford to do it. This is the world in which certain broker/dealers offer access to “world-class” money managers for a \$25,000 account. This is the world of wolves and sheep, and the object of the exercise is to avoid getting fleeced.

In this world, information is king. For example, studies indicate that do-it-yourself retail investors at major discount brokerage houses underperform the market

to a breathtaking degree when measured according to their actual portfolio profits and losses. The extent of the underperformance spans the full spectrum of account sizes, and the most prevalent characteristic across the retail investing population is that the greater the frequency and volume of trading in an account, the greater the magnitude of account underperformance.

### MOM & POP VS. WARREN BUFFETT

Retail investors usually do the wrong thing at the wrong time. So, all other things held equal, any professional trader would prefer to deal with a retail trader than with a fellow pro. To a professional trader, therefore, knowing whether an order is retail or institutional is a very valuable piece of information — so valuable that some market makers pay brokers to identify retail order flow (this is a part of a larger “payment-for-order-flow” problem in the marketplace), so that they can skim the cream without having to risk doing business with sharp-pencil information traders like Warren Buffett.

Note what is going on in such a situation. A market maker (a dealer in a quote-driven market or a specialist in an auction market) receives order requests from two types of non-informed traders: the possibly pseudo-informed retail investor, and the liquidity trader (e.g., a pension plan that must, by law, invest employee contributions regardless of market conditions, or an index fund that must buy and sell to reflect changes in its benchmark index). The market maker buys from these customers at the ‘bid’ and sells at the ‘ask.’ Provided he can turn over inventory within a reasonable time, or can hedge inventory risk at a reasonable price, the market maker can expect to profit both from the bid/ask spread itself, and from expected blunders of the retail component of his order flow.

But while a market maker expects to win in dealing with non-informed traders, by the same token he expects to lose when transacting with informed counterparties. An informed trader

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wishing, for example, to sell a stock, might forecast a future price change that will cause the dealer's inventory value to plummet shortly after the dealer has accommodated the order. On at least one level, a market maker's bid and ask prices are a function of anticipated gains from non-informed traders, less anticipated losses from informed traders. If a non-informed trader buys or sells a stock at the best publicly displayed ask or bid price, she may be under the impression that the order received best execution. Actually, however, she traded at a price designed to subsidize the transactions of informed investors.

Mom and Pop just subsidized Warren Buffett! What a country! But actually it makes good economic sense. Informed people naturally do better than their uninformed brethren — not just at trading securities, but at anything. If that were not so, no one would take the trouble to inform or educate themselves, because there would be nothing to gain by doing so. In such a world there would be no bid and ask quotations, because there would be no market makers. The market could not work, because no one would have any idea what they were doing!

### ETF LIQUIDITY

In securities markets, liquidity is defined as the ability to buy or sell shares without incurring exorbitant costs. So far we've examined one such cost: the bid/ask spread. Like a trade commission, the spread directly dilutes the value an investor receives at sale. A trade may also have "market impact" costs: if a market maker's inventory is under pressure because everyone wants to buy a "hot" stock, the resulting supply/demand imbalance creates a new price equilibrium, pushing the price upward.

Then there are costs due to trade delay. A trader may, for example, place an order in venue A (say, an electronic crossing network on the internet) under the belief that a certain price is available, only to find that no counterparty exists at that price in that venue. So he takes the trade to venue B, and finds that

the order executes successfully, but only after the market price has increased.

A similar risk afflicts limit orders: an order may fail to execute at or better than the designated limit price because the price runs away from the trader. If a price runs away fast, the market's interest in the transaction may instantly evaporate — the order's limit price may become simply irrelevant to current market conditions — and anticipated profits of the order may be lost. The usual term for this trading cost is "opportunity cost." A previous edition of IQ discussed trade costs, and is available at [www.schultzcollins.com](http://www.schultzcollins.com).

### IMPLEMENTATION SHORTFALL

The universe of total trading costs results in a phenomenon called "implementation shortfall:" the decrement in the value of a portfolio manager's stock selection ideas due to the cost of realizing them in a marketplace of traders competing to enhance their own profits. Implementation shortfall is a poorly understood but critically important reason why it is difficult for active managers to outperform indices. Parenthetically, this is also one reason why the investment and trading systems advertised on television, most of which are scrupulously back tested for profitability, don't generate consistent profits when applied in the real world. A backtested hypothetical portfolio suffers no implementation shortfall, because its hypothetical trades can have no impact on a market that is fixed forever in the past. Put another way, there can be no uncertainty about past prices; implementation shortfall is, in the final analysis, the cost of overcoming uncertainty about the future.

### CHEER UP, ETF INVESTORS!

At this point, the story starts to become more cheery for ETF owners. One source of good news lies in the critical differences between owning and trading stock in a single company, and owning and trading an ETF that owns a basket of stocks representing a broad based industry, sector, or benchmark asset

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class index. Basically, it's harder to find — and more costly to demand — liquidity for a single stock trade than for an ETF trade.

There are two reasons. In the first place, the likelihood that a trade is information based is much lower with an ETF than with a single stock, all else equal. This should make bid/ask spreads for ETF transactions relatively narrow, because ETF market makers are less likely to get “bagged” by informed traders.

In the second place, liquidity for a single stock is, in part, a function of the market's breadth (trading volume) and depth (limit order placements versus hidden pools of interested yet patient money) for just that one security. Thus market liquidity of an ETF is unlikely to disappear suddenly because private information leaks out concerning a large buy or sell order overhanging the marketplace, or because new information indicates that a stock's prospects have suddenly become unfavorable. In fact, unlike single stocks, the primary driver of liquidity of ETF shares is not the daily trading volume in the ETF shares themselves, but rather the liquidity of the whole basket of stocks underlying the ETF's benchmark index.

The bottom line is that ETF trades are less likely to siphon off value, because market makers understand that in trading ETFs they are less likely to deal with sharp-pencil professional traders who have discovered critical information regarding a specific company. They are more likely to make money on trading ETFs. Also, ETF investors are less likely to experience catastrophic trading failures when everyone flees a stock at the same time. There is usually a hidden reservoir of liquidity behind ETFs. This is easy to see when contrasting the task of selling a large block of a single stock, which often requires substantial price concessions, and a large trade of an ETF. At worst, fulfillment of a large ETF trade may make it necessary to create or redeem ETF shares. Although this is not a cost-free procedure, it is not likely to dry up the liquidity of the entire broad market or sector underlying the ETF.

### THE “CORRECT” PRICE

Market microstructure theory suggests that one of the primary benefits of a properly-functioning market is its constant effort to discover the “correct” value of a security at any given time; the whole economy benefits from understanding what the market thinks securities are worth. This process of discovery is effected by investors making predictions about a corporation's true value, and placing limit orders predicated on those predictions. Standing limit orders at prices that fall within the National Best Bid and Offer (NBBO) price range — called “marketable” orders — must generally be published. Investors are willing to publish their limit orders so as to increase the probability that they will receive quick fulfillment when they are highly confident prices will move as they expect.

But standing limit orders at prices outside the NBBO may remain hidden, known only to the investor and his broker. Why would an investor want to hide his limit order? To prevent the market's other participants from taking his predictions into account in their own ruminations about the “correct” price, so as to reap extra profits if the stock price evolves as he anticipates.

As the stock price changes, investors can track the frequency and magnitude of “hits” on limit orders, and so gauge the true magnitude of market interest — including hidden interest — in the stock at various price points. The spread for a single stock tightens as a multitude of investors place limit orders hoping to achieve price improvement.

The presence of publicly displayed limit orders can make the average bid/ask spread of the stocks an ETF owns (the “basket spread”) tighter than the spread for the ETF itself. But this effect may be somewhat illusory. ETFs have great liquidity in part because their value is updated every 15 seconds in a process known as the Intra-Day Proxy Value, or IDPV (also known as the Intra-Day Optimized Value, or IOPV), which mitigates the need for price discovery strategies through use of limit orders.

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## ETFs, LIQUIDITY, AND BEST EXECUTION

Also, limit orders for single stocks placed inside the NBBO may be both small and evanescent. Hence the great ETF liquidity tradeoff: spreads may appear wider (although this may be merely an artifact of display rules for tiny orders) even though liquidity is more readily available to cushion other trade costs such as market impact.

### THE COST OF DOING NOTHING

In calculating trading costs, the cost of doing nothing can be a major factor. If a portfolio is over weighted in certain securities, that concentration of assets may produce an unacceptable degree of risk — and risk imposes real costs. Thus investors must also consider the cost of the disutility of holding a suboptimal or under - diversified portfolio versus the costs of demanding liquidity — i.e., of trading — to reduce portfolio risk. The calculus of disutility becomes even more complex for the taxable investor facing the prospect of recognizing embedded capital gains tax liabilities.

### WHAT IS BEST EXECUTION?

Although most retail investors would define best execution as a combination of low trade commission costs and timely execution of orders at the NBBO, there is more to it. Consider the following hypothetical: a money manager, Alpha Capital Management, has two groups of clients. Group One meets Alpha's minimum account size (\$5 million), and consists primarily of referrals from long-term business contacts. Group Two accounts arrive via a deal negotiated with the ABC brokerage firm. The terms of the deal specify that ABC will aggregate ABC client funds in one account for Alpha, and will track each ABC client's share of that account, providing each investor with performance results and accounting services, thus relieving Alpha Capital of these duties. ABC will also provide 'soft dollar' compensation (in the form of research and operational subsidies) to Alpha Capital in exchange for Alpha's commitment to route all Group Two trades through ABC's trade desk. This is how ABC can offer Alpha's "world class money management" to Mom and Pop investors.

Group One has no trading constraints. Alpha is free to seek price improvement through use of electronic crossing networks and other trade venues and order presentation strategies. Group Two labors under a substantial trading constraint, in that all its trades must flow through ABC's trade desk.

It would be unfair — and a clear violation of Alpha Capital's fiduciary duty as a registered investment adviser — to pass on to Group One on a pro-rata basis the higher trade costs incurred by Group Two. To fulfill its fiduciary responsibility to all clients, Alpha Capital sequences Group One's trades into the market prior to those of Group Two. As a result, Group One is almost always buying slightly cheaper and selling slightly higher than Group Two, and is often paying substantially lower trade costs to boot. Group Two is stuck at the tail end of the trading sequence, has no prospect of enjoying price improvement, and pays more for trading. Adding insult to injury, a portion of the higher trading costs paid by Group Two to ABC are then redirected to Alpha Capital as soft dollars, which redound in part to the benefit of Group One. Nevertheless, Group Two can still be deemed to be receiving best execution, providing their trades execute within NBBO.

This hypothetical illustrates a basic principle of best execution: It is a process, rather than a price. Although Group Two investors undoubtedly receive the best displayed price available at the time of trade, it would be difficult to argue that the Alpha Capital/ABC brokerage process operates in their best interests.

In general, there are three types of traders:

1. Sheep.
2. Fundamental value traders (e.g., value stock investors), for whom it may be preferable to trade time for price.
3. Information traders, who may consider high cost trades executed quickly (grab all available liquidity at whatever price)

***Best execution ... is a process, rather than a price.***

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and anonymously (prevent others from front running the trade) to be a resounding success, because for these investors, best execution means trading price for time.

### ETF TRADE PRESENTATION AT SCLC

How do these market rules and practices relate to developing trade presentation strategies for ETFs? Generally, small ETF trades will transact in a fairly benign environment of tight spreads, albeit with relatively fewer opportunities to achieve price improvement. But new ETFs have been created at a torrid pace over the last few years, many investing in highly specialized niches, with the result that some are rather thinly traded. Thus it is not uncommon for a client's ETF trade to represent more than 100% of its average daily trading volume. For larger ETF orders — orders in excess of average daily trading volume, or likely to exceed the liquidity bounds offered by market-maker quotes — liquidity may be a significant issue, especially in terms of potential market impact and the cost of creating or redeeming more ETF shares. Liquidity costs are thus the primary reason why Schultz Collins Lawson Chambers (SCLC) generally recommends ETFs that:

1. Have at least several years of track record, to make possible a statistically significant analysis;
2. Replicate well-understood indices that are widely used across the investment industry; and,
3. Are issued by institutions with promotional muscle (such as Vanguard, Barclays or State Street), so that their market volume tends to increase or remain high.

How does SCLC present ETF trades to the market so as to control liquidity costs? When a client authorizes an ETF transaction, unless otherwise directed, SCLC trading policy is as follows:

1. If the order is less than 25% of the recent average daily trading volume, SCLC will submit the full order as a market order.
2. Check the IDPV. If, given the size of the trade order, the displayed bid/ask spread ratio (defined as the  $(ask - bid) / IDPV$ ) is less than 0.3%, SCLC will submit the full order as a market order.

3. If the order exceeds daily trading volume for the ETF, or if the bid/ask ratio for orders exceeding 25% of daily trading volume is greater than 0.3%, SCLC will present the order on a staggered basis up to 25% of daily volume, with each piece of the order submitted as a market order.

### BEST EXECUTION AT SCLC

SCLC never takes payments or soft dollar compensation in return for order flow. In practical terms, direction of order flow is impossible for SCLC. As investment counsel, our role is, not to make decisions for clients, but to support clients in making them. This principle is expressed first in our policy of never accepting trading discretion over client accounts, but extends also to the selection of custodians. In no case does SCLC select the executing broker; rather, we support the client's selection of custodians, explaining to them the pros and cons of various custodians with which we are familiar. SCLC will do business with any custodian a client selects. Once a client has established an account at a custodian, assets held in that account can be bought or sold only at that custodian. SCLC thus has no control over where transactions authorized by clients are executed.

However, to assure that such selections are prudent, SCLC annually reviews custodian trade policies and results, choice of trade venues, and trade execution costs/benefit measures for those custodians generally used by SCLC clients.

With respect to ETFs, SCLC focuses on custodial decisions about the routing to various exchanges of orders that arrive from their customers, and on the underlying liquidity of the investment vehicles themselves. For instance, we verify whether a custodial platform (e.g., Schwab or Fidelity) can comfortably accommodate ECNs and other market venues, and that the custodian compiles statistical evidence of price improvements, speed of execution, and other relevant trading data.

SCLC's Best Execution Committee meets periodically to evaluate these findings, to assess their impact on our advice to clients about the pros and cons of various custodians, and to review and update SCLC trading policies.

*Schultz Collins never takes payments or soft dollar compensation in return for order flow.*

**SURVEY OF INDICES & FUND AVERAGES**  
PERIOD AND ANNUALIZED COMPOUND RETURNS IN PERCENT

	Fourth Quarter 2007	Total Return 12 Month	3 Years Ending 12/31/2007	5 Years Ending 12/31/2007	10 Years Ending 12/31/2007
<b>Inflation Index &amp; Risk Free Rate</b>					
Consumer Price Index	1.09	3.83	3.27	2.99	2.67
U.S. 3-Month Treasury Bills	0.99	4.74	4.16	2.95	3.62
<b>U.S. Stock Market (Large Companies)</b>					
Standard & Poor's (S&P) 500 Index	-3.33	5.49	8.62	12.83	5.91
S&P/Citigroup Large Cap Growth Index	-1.28	9.13	7.01	10.74	4.42
S&P/Citigroup Large Cap Value Index	-5.37	1.99	10.23	14.97	6.68
Average Large Cap Blend Fund ‡	-2.82	6.16	8.71	12.63	5.92
<b>U.S. Stock Market (Small Companies)</b>					
Russell 2000 Index	-4.58	-1.57	6.80	16.25	7.08
Dimensional US Micro Cap Fund	-6.91	-5.22	5.18	17.23	10.58
Russell 2000 Growth Index	-2.10	7.05	8.11	16.50	4.32
Russell 2000 Value Index	-7.28	-9.78	5.27	15.80	9.06
Average Small Cap Blend Fund ‡	-5.65	-1.10	6.93	15.72	8.30
<b>Real Estate</b>					
DJ Wilshire REIT Index	-13.54	-17.56	8.46	18.27	11.05
<b>Fixed Income (Bond) Markets</b>					
Lehman Government Bond Index	3.73	8.66	4.90	4.10	5.92
Avg. Intermediate Gov't Bond Fund ‡	2.78	6.09	3.82	3.27	4.93
Lehman Municipal Bond Index	1.37	3.36	3.90	4.30	5.18
Average California Intermed/Short Muni Bond ‡	0.82	2.50	2.73	2.80	4.01
Credit Suisse High Yield Bond Index	-1.04	2.66	5.52	10.97	6.10
Average High Yield Bond ‡	-1.46	1.47	4.61	9.50	4.01
Citigroup World Gov't Bond Index	3.92	10.95	3.12	6.81	6.31
Average World Bond Fund ‡	1.90	7.29	3.14	6.39	5.60
<b>International Stocks</b>					
MSCI EAFE Foreign Stock Index	-1.75	11.17	16.83	21.59	8.66
Average Foreign Large Blend Stock Fund ‡	-1.41	12.71	17.22	20.31	7.94
MSCI Europe Stock Index	-0.47	13.86	18.55	22.78	9.55
MSCI Pacific Stock Index	-4.63	5.30	13.16	19.01	6.83
MSCI Emerging Mkt Index (excl. dividends)	3.38	36.48	31.95	33.65	11.70
Average Emerging Markets Fund ‡	3.74	36.68	33.23	35.18	13.86

‡ Source: Morningstar Principia 12/31/2007

## WORLD MARKET SURVEY

Ending a volatile year marked by record highs and sharp market corrections, U.S. stocks declined markedly in November and December. The 30 large stocks in the Dow Jones Industrial Average were off 3.9% in the fourth quarter; even so, the Dow ended the year with an 8.9% total return. The broader S&P 500 fell 3.3% for the quarter, eking out a 5.5% return for the trailing twelve months. Concerns that the credit crunch is far from over, and that the U.S. economy could sink into recession, exerted considerable downward pressure on stocks of smaller companies. The Russell 2000 Index lost 4.6% in the fourth quarter, and ended the year down 1.6%.

2007 was also a year in which investment "style" mattered. Value stocks declined: the S&P/Citibank Value Stock Index was off 5.4% for the quarter, and gained a modest 2.0% for the year. Growth stocks, which had been laggards since the technology bust in the early 2000's, finally returned to favor. The S&P/Citibank Growth Stock Index fell just 1.3% in the fourth quarter, managing a 9.1% advance for the year.

The challenges facing the U.S. economy did not go unnoticed by the rest of the world. The dollar continued to lose ground to foreign currencies in 2007, declining a

stunning 9.6% against the Euro. But this improved the returns to U.S. investors from relatively weak foreign markets. The MSCI Europe Stock Index posted a modest 3.3% gain when measured in local currency; in U.S. dollars, it was up 13.9%. The Pacific Stock Index, including Japan, was actually down 3.3% for the year in local currencies, but registered a gain of 5.3% in dollar terms. Of course, the big movers among foreign stocks were the big emerging economies, such as China, India and Brazil. After a rough start, emerging markets gained 30.4% in 2007 in local currencies, and were up 36.5% in U.S. dollars.

Circling back to real estate, commercially oriented Equity REIT's reversed course last year after leading most investment categories for the previous five years, up to and including the first quarter of '07. The FTSE NAREIT Index plunged 12.7% in the fourth quarter and was off 15.7% for the 12 months ending December 31.

Last year's bond market was also heavily influenced by the sub-prime debacle, with a "flight to quality" pushing down yields on Governments. The yield on the benchmark 10-year Treasury fell to 4.03% by year-end, providing a total annual return of 9.1% for the year.

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### Individual Country Returns 2007

	US Dollar	Local Currency
<b>North America</b>		
United States	3.8%	3.8%
Canada	27.1	7.8
<b>Latin America</b>		
Brazil	71.1	42.6
Chile	23.0	15.1
Mexico	10.8	11.7
<b>Africa</b>		
South Africa	12.6	9.1
<b>Europe</b>		
Austria	1.6	-8.4
Belgium	5.6	-4.7
Denmark	17.6	6.1
Finland	39.0	25.3
France	11.3	0.4
Germany	30.5	17.7
Great Britain	3.8	2.1
Ireland	-19.2	-27.1
Italy	1.7	-8.3
Netherlands	12.0	1.0
Norway	26.8	10.6
Portugal	24.5	12.3
Spain	17.8	6.2
Sweden	-3.1	-8.5
Switzerland	5.6	-2.0
<b>Asia</b>		
Australia	25.3	12.4
Hong Kong	44.5	44.9
Indonesia	39.0	45.1
Japan	-6.0	-11.9
New Zealand	2.2	-6.4
Philippines	36.7	15.1
Singapore	27.6	19.7
South Korea	33.6	34.5
Taiwan	6.5	6.0
Thailand	39.0	29.5

Source: Dow Jones Global Indexes