

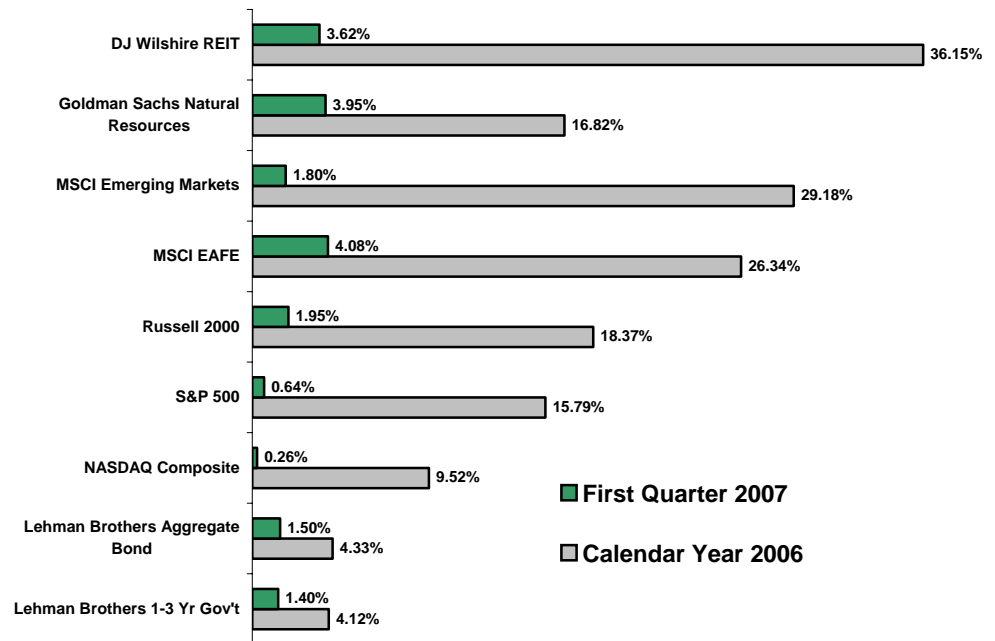
WORLD MARKET SURVEY

Stock Markets Suffer a Sell-off, Exhibit Increase in Volatility

The US Stock Market took investors on a wild ride last quarter including a stomach churning 416 drop in the Dow Jones Industrial Average on February 27, that pushed the index down 3.3%. Other major markets and indices, including the NASDAQ Composite Index and the S&P 500, were subject to similar declines. By the end of the first quarter the S&P 500 had recovered most of its February losses, to end the quarter with just over a half-point gain, including reinvested dividends. The NASDAQ eked out a quarter-percent return and the Dow was down 0.3% for the period. Investors might have let out a collective sigh of relief that the damage from the sell-off was relatively limited, assuming they didn't panic and sell inopportunistly.

(Continued on page 8)

Returns from Market Indices: First Quarter 2007 & Calendar Year 2006



WHY DIVERSIFY? AN ACADEMIC PERSPECTIVE

OK, we know that over the past decade we have discussed this business of diversification more than a few times. Perhaps even our clients are tired of hearing about it. Diversification is the oldest, best-known rule of investing: Diversify, Diversify, Diversify. Who wants to hear about it again, for crying out loud?

Well, we are indeed sorry, dear reader. If you are tired of hearing about diversification, imagine how we must feel. Still, it occurs to us to wonder why the message of diversification is shouted every day from the rooftops of even the most popular financial publications and websites, almost like the weight loss articles that appear relentlessly in popular magazines. Now, there is nothing

magical about losing weight. Everyone knows how to do it: eat less, and exercise more. Diversification is not quite that simple, but it isn't rocket science, either – and we should know, because we have spent years reviewing the mathematics, the academic literature and the empirical evidence. But diversifying is like weight loss in one important respect: everyone knows they should do it, lots of people do try, and few really succeed.

Diversifying is inherently trickier than dieting, because there is nothing like the bathroom scale to help us understand our overall situation at a glance. Many is the time that we have examined portfolios of mutual funds wherein, while each fund was

itself effectively diversified, they owned many of the same stocks.

But the real problem – and the reason that articles preaching diversification still attract the interest of the editors at *Money* and the *Wall Street Journal* – is that there are still lots of people who don't try to diversify at all. Instead, they select stocks, or markets, or asset classes, or money managers, hoping to hit a home run. Too often, they try to pick a portfolio of "good" instruments, markets, or managers to hedge their bets. The problem is that, because they are picking with only one set of criteria – i.e., their own, developed out of their necessarily limited reading and finite experience – they tend to

WHY DIVERSIFY? AN ACADEMIC PERSPECTIVE

pick investments with similar attributes. It's a problem endemic to investors – which is to say, to the human condition – that boils down to greed, fear, and pride. To diversify effectively, one must swallow investments that are distasteful.

So, here's another slug of cod liver oil. Take it, because it is good to understand exactly why diversification works better than picking winners. There are at least three reasons why an investor would want to diversify:

1. To avoid large losses;
2. Manage unsystematic risk; or,
3. Reduce variance drain

Let's consider them in order.

Avoidance of Large Losses

The usefulness of diversification as a technique to mitigate the probability of incurring a large financial loss was, by 1974, embodied in the standards of prudence governing the investment of assets in employee retirement plans:

“... a fiduciary shall discharge his duties with respect to a plan solely in the interest of the participants and beneficiaries ... by diversifying the investments of the plan so as to minimize the risk of large losses ...”

Most people learned at their mother's knee that putting all your eggs in one basket is a risky proposition. Well-known examples of stocks that experienced catastrophic large losses include:

- Johnson & Johnson, following the Tylenol tampering case;
- Union Carbide, following the explosion in Bhopal, India;
- Procter & Gamble, following the misuse of derivative hedging strategies by its corporate treasury department;
- General Public Utilities, following the nuclear event on Three Mile Island;
- Consolidated Edison, following the OPEC oil price increases;

- Texas Gulf Sulfur, following the plane crash that killed the firm's top management personnel;
- First Executive, following the collapse of the high yield bond market;
- McKesson, following its acquisition of pharmaceutical distributorships.

All companies are vulnerable to unpredictable events that have a sudden negative impact on the stock's price. Furthermore, the track record of a firm's stock or history of management success does not guarantee that good fortune will continue in the future. For example, during the three-year period ending December 31, 1984, the S&P 500 Stock Index earned a cumulative return of 64.0%. During the same period, the companies listed below exhibited stronger, more robust performance. However, good financials and strong stock performance during one period are not predictive of future results:

Companies that Beat the Market in the Early 1980s	Cumulative Return 1982-1984	Cumulative Return 1985-1998
Interchart	+337.8%	-79.1%
Ames Department Stores	+298.6%	-100.0%
Prime Motor Inns	+226.7%	-98.1%
Circle K	+205.2%	-100.0%
Shoney's	+197.5%	-74.1%
Data General	+118.6%	-72.0%
Service Merchandise	+103.7%	-87.7%
Zenith Electronics	+79.6%	-99.0%
Pan Am	+68.2%	-100.0%
S&P 500 Stock Index	+64.0%	+1,012.8%

Simply picking a basket of stocks with recent track records of above-average appreciation is not “scientific diversification.” In the lead up to the tech stock market meltdown of the early 2000's, naïve investors owned lots of securities whose fortunes were all tightly linked to the same economic and market conditions. The overall result was a breathtaking ride on the upside, followed by devastating reversals when the market turned bearish. Such pseudo-diversification is quite common. Investors often take comfort in portfolios of fifteen or twenty

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WHY DIVERSIFY? AN ACADEMIC PERSPECTIVE

“good” stocks. “Bad” stocks (i.e., stocks with different characteristics than “good” stocks) are simply not present in the portfolio. But this just increases the likelihood that the portfolio holdings will all react the same way to changes in the economy or the market, increasing its overall volatility. Such volatility is not understood by investors as a problem, so long as portfolio returns stay positive; but when things change for the worse – not a rare phenomenon – the cost of the strategy can be steep.

Managing Unsystematic Risk

In the 1960s, Nobel Prize winner William Sharpe defined the portion of an asset’s risk that can be diversified away as “unsystematic” or “unique” risk. This is the risk that is unique to the individual company, rather than to the class of similar stocks as a whole, and includes events such as labor difficulties, unfavorable litigation, supply problems, technological obsolescence, unanticipated changes in the legal or competitive environment in which the company operates, management fraud or incompetence, and so forth. As we have seen, unique risk can be catastrophic to even the “best” company.

Sharpe pointed out that company risk can be substantially mitigated through broad diversification. As the portfolio becomes increasingly diversified, the impact of one company’s fortunes is less and less pronounced until, at the limit, such unique risk is completely eliminated. The risk that remains in the portfolio Sharpe called “systematic” or “market” risk; it is entailed in general market and economic conditions, and cannot therefore be diversified away. Thus another term economists use for risk that can be diversified away is “unsystematic” risk.

Sharpe’s key finding is that, because investors can diversify their holdings, the market prices assets, not in isolation, but in terms of their risks and rewards vis-à-vis the available alternatives – i.e., the portfolio constituted by the rest of the market. Examination of a firm’s financial statement tells you little about how the market will price it, because the market prices the stock in relation to all the other opportunities for investment. *Unique risk is, therefore, uncompensated.*

Studies have demonstrated that, for the average New York Stock Exchange common stock, market risk represents approximately 30% of the total variance in its period-to-period price change, while unique risk represents approximately 70%. This suggests that effective diversification can eliminate up to 70% of portfolio risk, without reducing expected reward.

Modern Portfolio Theory, at least in its classic formulation in the 1950s and 1960s, holds that, all else equal, investors prefer less risk to more risk, and that diversification is a tool to reduce risk while preserving return. Portfolios with the optimal combination of securities trace out a curve of “investment possibilities” that is known as the efficient frontier. These are combinations of securities that, for any given degree of risk, provide the highest expected returns; or, for a given level of expected return, carry the least risk. Portfolios can be formed along a Capital Market Line (CML) by combining the zero-risk asset (e.g., short-term US T-Bills) with the market portfolio (usually proxied by a broadly diversified index such as the S&P 500, or by combining T-Bills with a combination of indices representing multiple stock and bond asset classes, both domestic and foreign). Three important economic principles flow from these observations:

1. For any degree of risk, the maximum expected return from a portfolio is determined by the height of the capital market line;
2. Inefficient portfolios – those that are formed of stocks with forecasted high returns, but without consideration of their portfolio effects – are not expected to compensate investors commensurately with their embedded risks; and,
3. Absent other risk mitigation strategies, failure to diversify may destroy wealth.

The chart below provides a geometric interpretation of these economic principles, where “Asset i” represents either a single stock or a poorly diversified portfolio. At Asset i, the

... all else equal, investors prefer less risk to more risk ...

WHY DIVERSIFY? AN ACADEMIC PERSPECTIVE

investor takes on far greater risk than necessary to earn the returns that Asset i is expected to generate. To the extent that Asset i lies below the curve of the efficient frontier – on our chart, it is the curve that intersects the CML at the point labeled “Market Portfolio” – the investor is therefore leaving money on the table, by failing to capture returns that could have been earned by a more efficient portfolio, without taking a jot of additional risk. That lost return is a direct measure of the economic cost imposed by a failure to diversify efficiently.

When an investor can borrow at the risk free rate, the efficient frontier changes from a curve to a straight line. Portfolios on the CML located to the left of the Market Portfolio are combinations of risky securities and cash or T-Bills – i.e., are less risky than the Market Portfolio. Portfolios on the CML to the right of the Market Portfolio are leveraged risky asset portfolios – i.e., they are more risky than the Market Portfolio. As the portfolio becomes increasingly concentrated in a few stocks, uncompensated risk rises dramatically.

Avoidance of Variance Drain

Would you rather have a return of 13% or 11%? If you invest \$10,000 for thirty years at a compound return of 13%, the ending wealth will be \$494,024. At 11%, ending wealth will

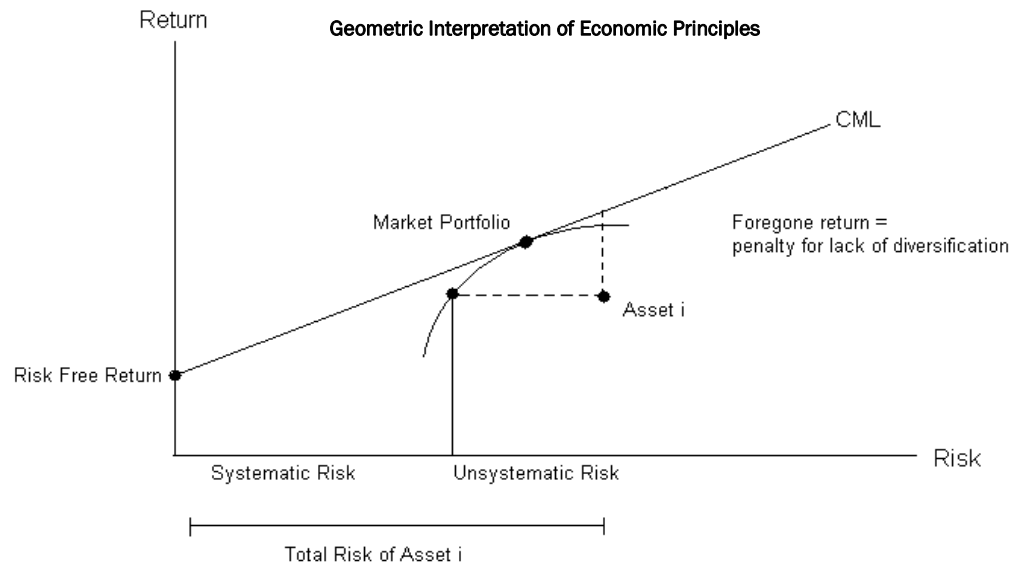
be \$271,126. A 2% difference in compound return translates into a 45% difference in ending wealth.

Return and wealth line up neatly in this example because the 13% and 11% returns are constant (i.e., they show no variance). Constant returns are found in bank CDs and similar instruments. Investors typically pay for that certainty by accepting low returns. Most investment returns are not constant. That’s why the average return to an investment is interesting: knowing that its return will vary, we want to know how it will behave on average. But in the real world, no one consistently earns average returns. Ending wealth depends, rather, on compounding a series of non-average periodic returns, and is therefore always less than it would be absent all variance – that is, than it would be if we could earn the average return all the time.

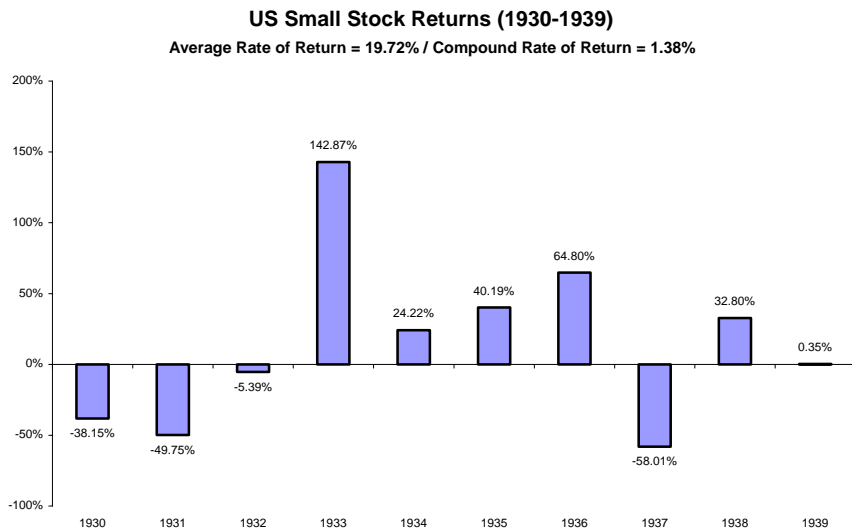
This is well illustrated by the chart on the following page, which covers a ten-year period in which returns from US small company stocks averaged 19.72%. Incredibly, the return series produced a compound rate of wealth accumulation of only 1.38%, despite the positive returns that occurred in six out of the ten years and the 142.87% in 1933. The difference between average return and compound return is the subject of a research paper by T. Messmore entitled “Variance Drain.” The pa-

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WHY DIVERSIFY? AN ACADEMIC PERSPECTIVE



People spend Dollars, not rates of return.

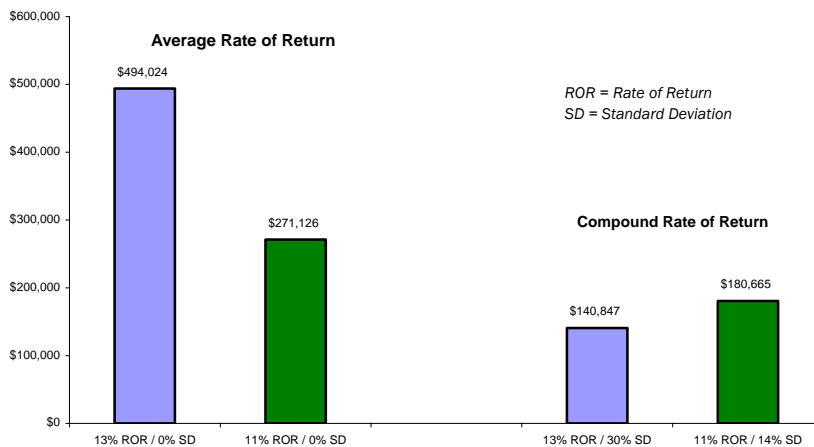
per poses the question, "Is your investment return leaking down the variance drain?" Messmore points out that people spend *dollars*, not rates of return. Variance in investment returns subtracts from ending dollar wealth, roughly according to the formula:

$$\text{Ending Compound Wealth} = \text{Initial Wealth} \times [\text{Average Return} - \frac{1}{2} \text{Variance}]$$

Variance is the square of standard deviation. As noted, standard deviation measures how periodic returns differ from the average for the whole sample, in this case, the entire history through which the investment is held. For example, since 1970, the average US stock has earned approximately 13% per year, with a standard deviation of $\pm 30\%$. This can be contrasted with a portfolio that earns 11%, with a standard deviation of $\pm 14\%$. As the chart below indicates, the investor achieves greater ending wealth under the lower risk 11% earnings regime, on an initial \$10,000 invested over 30 years.

(Continued on page 6)

Effect of Variance Drain on Wealth Accumulation



WHY DIVERSIFY? AN ACADEMIC PERSPECTIVE

This result is, to say the least, counterintuitive. Searching for the best wealth-generating investment strategy means balancing returns against risk. If the variability of return is too great, even spectacular periodic returns will, in the end, produce only modest wealth. In terms of stocks, all else equal, the more volatile the stock, the lower its long-term growth rate.

Variance drain is easy to demonstrate mathematically. If one has \$1 to invest, and investment A earns -10% in year one and +10% in year two, its average return is 0%, and its ending value is $\$1(.9)(1.1) = \0.99 . If investment B earns -20% in year one and +20% in year two, its average return is also 0%. Its ending value, however, is $\$1(.8)(1.2) = \0.96 . If there are no cash flows, the order in which the returns are achieved is irrelevant. The important point is that the greater the variability in returns the lower the investor's eventual spendable wealth.

Variance drain is of critical significance for the investor. Concentrating in volatile stocks may make it especially difficult to achieve long-term wealth accumulation objectives. This is simply another way of saying that maximizing short-term rates of return can be counterproductive for long-term investment success.

When a portfolio experiences cash flows, the order in which returns occur makes a huge difference. For example, when a portfolio makes regular periodic distributions (e.g., to provide income in retirement), they act as a multiplier of downside results and as a cap on upside results. Following a period of negative return, removing dollars from the portfolio means that fewer dollars remain to assist in the recovery of wealth; following a period of positive return, removing dollars from the portfolio means that fewer dollars remain available to continue compound growth.

Thus, cash flows change the definition of required return. A key element in professional asset management is the coordination of asset allocation policies with distribution requirements. The need for such coordination is a factor in the creation of a consistently applied Investment Policy. Using Investment Policy is a long way from buying a few "good" stocks, or

overweighting the "safest," or most "attractive" stocks.

Conclusion

Curiously, one of the more trenchant terms financial economists have coined to refer to excessive concentration in a given security or asset class is, "bloated fractional representation." Not unlike the metabolic cost of excessive fat storage to dieters, portfolio bloat imposes a significant economic cost on investors. A fit, trim portfolio reacts more nimbly to changing environmental circumstances, just as a fit, trim athlete is nimbler and more resilient than his sedentary colleague. How best, then, to diversify? Herewith, our Five Point Diet Plan for overweight portfolios:

1. Set an Investment Policy that specifies the target percentage allocation of the portfolio to each of a diverse basket of asset classes.
2. Diversify among equities, fixed income, and real estate, both domestically and internationally.
3. Don't forget also to diversify between large and small companies, and between growth and value stocks.
4. Use investment vehicles, such as mutual funds or exchange-traded funds, that each hold as broad an array of the securities in a given asset class as possible.
5. As time goes on and bloated fractional representation begins to appear in the portfolio, trim the positions that have done well, and buy the positions that have done poorly, so as to pull the portfolio closer to the targets specified in the Investment Policy. In short, rebalance.

There are, to be sure, many finer points to be considered. That's where the rocket science begins to come in, and where we at SCLC spend a lot of our time; it's our bread and butter, so to speak. But, any investor following our Five Point Plan will not likely go too far wrong.

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

	First Quarter 2007	12 Month Ending 03/31/07	3 Years Ending 03/31/07	5 Years Ending 03/31/07	10 Years Ending 03/31/07
Inflation Index & Risk Free Rate					
Consumer Price Index	0.57	2.08	2.88	2.69	2.47
U.S. 3-Month Treasury Bills	1.32	5.24	3.64	2.68	3.76
U.S. Stock Market (Large Companies)					
Standard & Poor's (S & P) 500 Index	0.64	11.83	10.06	6.27	8.20
S & P/Citigroup Large Cap Growth Index	-0.09	8.08	6.97	3.45	6.75
S & P/Citigroup Large Cap Value Index	1.34	15.63	13.19	9.06	9.23
Average Large Cap Blend Fund ‡	1.07	10.25	9.78	6.12	7.80
U.S. Stock Market (Small Companies)					
Russell 2000 Index	1.95	5.91	12.00	10.95	10.23
Dimensional US Micro Cap Fund	1.66	3.24	11.55	13.99	14.01
Russell 2000 Growth Index	2.48	1.57	9.41	7.88	6.31
Russell 2000 Value Index	1.46	10.38	14.47	13.61	13.47
Average Small Cap Blend Fund ‡	2.89	5.78	12.34	11.05	11.64
Real Estate					
DJ Wilshire REIT Index	3.62	21.85	24.09	22.76	15.60
Fixed Income (Bond) Markets					
Lehman Government Bond Index	1.44	5.93	2.70	5.07	6.25
Average Intermediate Gov't Bond Fund ‡	1.33	5.48	2.59	4.13	5.37
Lehman Municipal Bond Index	0.81	5.43	3.96	5.50	5.87
Avg. California Intermed/Short Muni Bond ‡	0.66	4.23	2.66	3.78	4.37
Credit Suisse High Yield Bond Index	3.02	11.84	8.74	11.18	7.25
Average High Yield Bond Fund ‡	2.62	10.15	7.81	9.27	5.56
Citigroup World Gov't Bond Index	1.15	7.78	2.69	9.01	5.81
Average World Bond Fund ‡	1.31	6.77	3.60	8.02	5.61
International Stocks					
MSCI EAFE Foreign Stock Index	4.08	20.20	19.83	15.68	8.31
Average Foreign Large Blend Stock Fund ‡	3.45	17.61	18.60	13.69	7.60
MSCI Europe Stock Index	3.86	25.38	22.11	15.77	10.36
MSCI Pacific Stock Index	4.57	9.96	14.94	15.65	4.75
MSCI Emerging Mkt Index (excl. dividends)	1.80	17.93	24.45	21.46	6.10
Average Emerging Markets Fund ‡	2.36	20.61	26.58	23.57	9.45

‡ Source: Morningstar Principia 03/31/2007

WORLD MARKET SURVEY

(Continued from page 1)

International Markets

While hardly immune to the quarter's sudden swings in stock prices, markets in Europe ended the period up somewhat higher than those in the US. The MSCI Europe Index gained 2.8% in local currency. When converted to US dollars, the quarterly returns for the Index were more than a percent higher due to a 1.3% increase in the value of the euro over the dollar, following last year's appreciation in the euro of 11.5%. Results were similar in Japan, where stocks finished the quarter with a 2.0% gain, when measured in yen, and a 3.5% gain in dollars. However, during the last week of February, the Nikkei Stock Average fell 9.0%, a greater decline than in either Europe or the US.

If the day-to-day swings in US and developed foreign markets were unnerving, the gyrations in the world's emerging markets were much greater. As a case in point, the *Wall Street Journal* reported that Latin American markets lost 5.0% the first week of the year, then by February 22 appreciated 12.0%, whereupon they dropped 12.5% over ten days, and then moved up another 12.5% in the three weeks that followed. The MSCI Latin American Index finished the quarter up 5.6%. The broad MSCI Index of all Emerging Markets registered a 1.8% quarterly gain.

Fixed Income & Real Estate

Turbulence in the equity markets increased demand for Government bonds last quarter. The yield on the 10-year Treasury note dropped to 4.5% at the beginning of March, before increasing to 4.7% by the quarter end. The yield on the 10-year Treasury was 4.7% at the end of last year. The Lehman Aggregate Bond Index, which measures both Treasury and investment grade corporate bonds, finished the quarter with a 1.5% total return. The index was up 4.3% last year.

Securitized real estate, which has been one of the top performing investment categories for the past seven years, continued to perform well in 2007. The Dow Jones Wilshire REIT Index returned 3.6% for the quarter, after a 36.2% gain last year.

Individual Country Returns First Quarter 2007

	U.S. Dollar	Local Currency
North America		
United States	1.0%	1.0%
Canada	3.5	2.6
Latin America		
Brazil	6.3	1.9
Chile	7.2	8.5
Mexico	7.6	9.4
Venezuela	-4.7	-8.9
Africa		
South Africa	5.6	8.6
Europe		
Austria	6.8	5.8
Belgium	3.2	2.2
Denmark	6.5	5.4
Finland	9.0	8.0
France	3.5	2.5
Germany	6.7	5.7
Ireland	-0.1	-1.1
Great Britain	2.1	1.8
Italy	2.4	1.5
Netherlands	7.2	6.2
Norway	7.6	5.5
Portugal	4.9	3.9
Spain	4.7	3.7
Sweden	3.3	5.9
Switzerland	3.1	3.1
Asia		
Australia	8.1	5.5
Hong Kong	2.8	3.3
Indonesia	-0.9	0.5
Japan	3.1	2.2
New Zealand	1.3	-0.1
Philippines	9.4	7.7
Singapore	11.4	10.2
South Korea	1.0	2.2
Taiwan	-1.7	-0.2
Thailand	1.7	-1.5

Source: Dow Jones Global Indexes

INVESTMENT QUARTERLY

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**SCHULTZ COLLINS
LAWSON CHAMBERS**

INVESTMENT COUNSEL

455 MARKET STREET, SUITE 1450
SAN FRANCISCO, CA 94105

877.291.2205 Fax 415.291.3015

1912 SUNDERLAND PLACE NW
WASHINGTON, D.C. 20036

202.429.0200 Fax 202.331.3803

22 WEST PENNSYLVANIA AVENUE
SUITE 606 TOWSON, MD 21204

410.583.5800 Fax 410.339.7833

www.schultzcollins.com

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