



Beyond Modern Portfolio Theory: Generating Alpha Without Picking Stocks

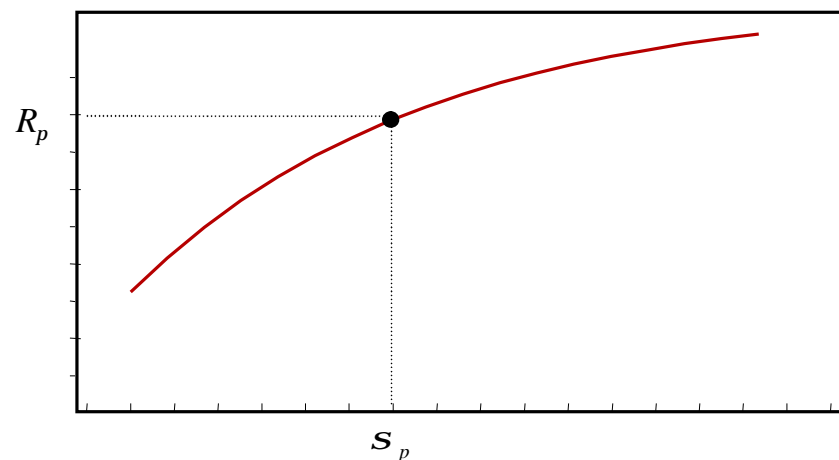
ENHANCED
INVESTMENT TECHNOLOGIES
Mathematical Investment Strategies

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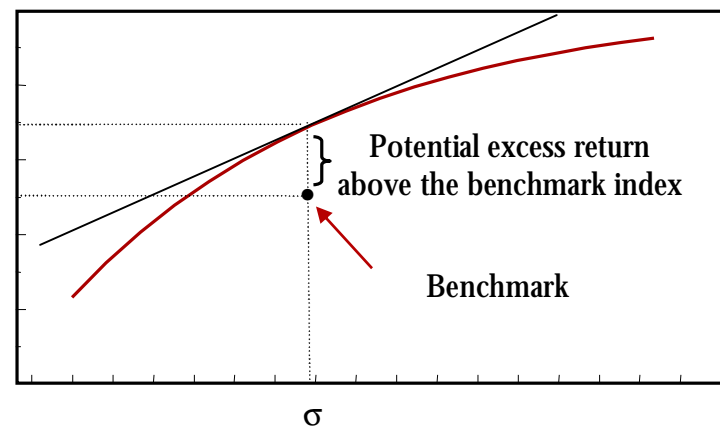
- § 'Efficient' markets vs. 'Efficient' Portfolios
- § Rate of Return vs. Long-Term Growth Rate
- § Importance of Risk in Long-Term Growth Rate
- § Emergence of Stochastic Portfolio Theory
- § Two-Stock Example

- § Diversification is achieved by combining uncorrelated assets.
- § Markowitz demonstrated its role in reducing risk in 1952.
- § The efficient frontier represents the ‘optimal’ combination.
- § An efficient portfolio sits on the efficient frontier.



Efficient Market or Efficient Portfolio?

- § An efficient market is not the same thing as an efficient portfolio.
- § A passive index gives little consideration to covariance.
- § Covariance is the critical element in Markowitz's theory.
- § A cap-weighted benchmark is unlikely to be an efficient portfolio.



There is no theoretical impediment to creating a portfolio with market-like risk and above-market expected return

- § Stochastic Portfolio Theory (SPT) uses mathematics to build on the 'classical' theory.
- § Diversification plays a key role in SPT.
- § Volatility impacts a portfolio's long-term growth rate, not just its risk.
- § Enhanced Investment Technologies has applied Stochastic Portfolio Theory to large cap equity management for over 20 years.

Imagine a stock which....

§ has good years and bad years in equal proportion

§ doubles in a good year, halves in a bad year.

Q: What is the expected arithmetic return of this stock?

A: 25%

Q: What is the long-term return of this stock?

A: 0%

Q: How much will your money grow if you invest in this stock for a long time?

A: It won't

§ The long-term return is also known as the compound growth rate.

§ This is the 'return you get' in the long run.

§ For a risky investment, the long-term return is always less than the expected (arithmetic) rate of return.

§ **Q: Why?**

§ **A: Volatility.**

Key Point: Arithmetic rates of return do not properly account for compounding.

Example of Different Volatilities and Growth Rates

Imagine a rather less volatile company...

§ It too has about as many good years as bad.

§ But in a good year you 'only' get 75% and in a bad year you 'only' lose 25%

Q: What is the expected rate of return of this stock?

A: 25%

Q: What is the long-term growth rate of this stock?

A: 14.5%

Key Point: If you reduce the volatility, you increase the long-term return.

- § Given two stocks with equal expected rates of return, **the one with the lower volatility has the higher long-term growth rate.**
- § This applies to portfolios too.
- § Controlling risk is important for a portfolio's long-term growth.
- § Intelligent portfolio construction can reduce portfolio risk and thus increase long-term growth.
- § Enhanced Investment Technologies focuses only on the covariance structure of the market in an attempt to generate higher long-term growth than its benchmark indexes.

- § **Stochastic Portfolio Theory (SPT) is a new framework for**
 - § Portfolio construction
 - § Analysing portfolio behavior
 - § Understanding the structure of equity markets

- § Stochastic Portfolio Theory is descriptive rather than normative.

- § SPT explains how it is possible to outperform a cap-weighted benchmark index **without using return forecasts**.

- § **Stochastic Portfolio Theory has been applied since 1987.**

- § The long-term growth rate of a portfolio is **greater** than the average growth rates of its constituent stocks.
- § This 'extra' growth is known as the 'Excess Growth Rate' or 'Gamma Star'.
- § It depends only on variances and covariances.
- § It does NOT depend on stock returns.

Excess Growth Rate

$$g^* = \frac{1}{2} \left[\sum_{i=1}^n p_i s_i^2 - \sum_{i,j=1}^n p_i p_j s_{ij} \right]$$

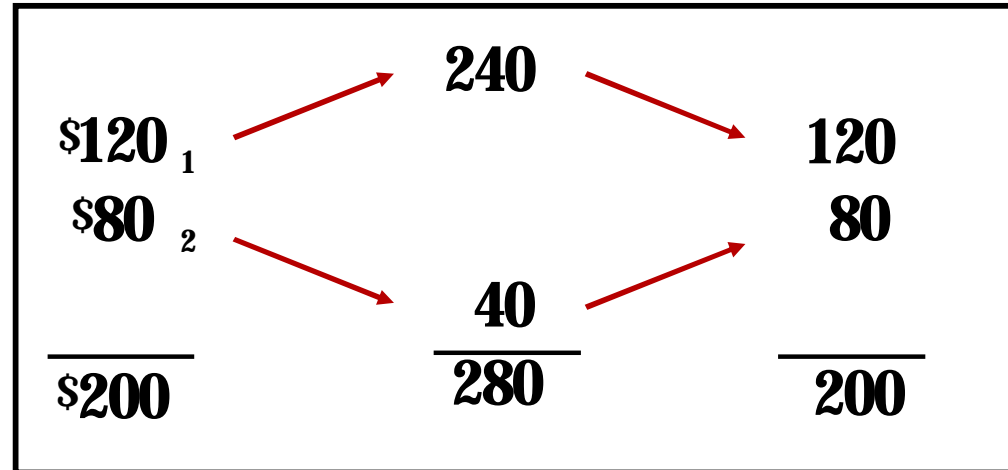
The diagram illustrates the components of the Excess Growth Rate formula. Three red ovals are connected to the formula: 'Stock variances' points to the s_i^2 term, 'Stock covariances' points to the s_{ij} term, and 'Stock weights' points to the p_i and p_j terms.

Gamma Star = $\frac{1}{2}$ [weighted average stock variance – portfolio variance]

How Enhanced Investment Technologies' Process "Captures" Volatility

PASSIVE PORTFOLIO

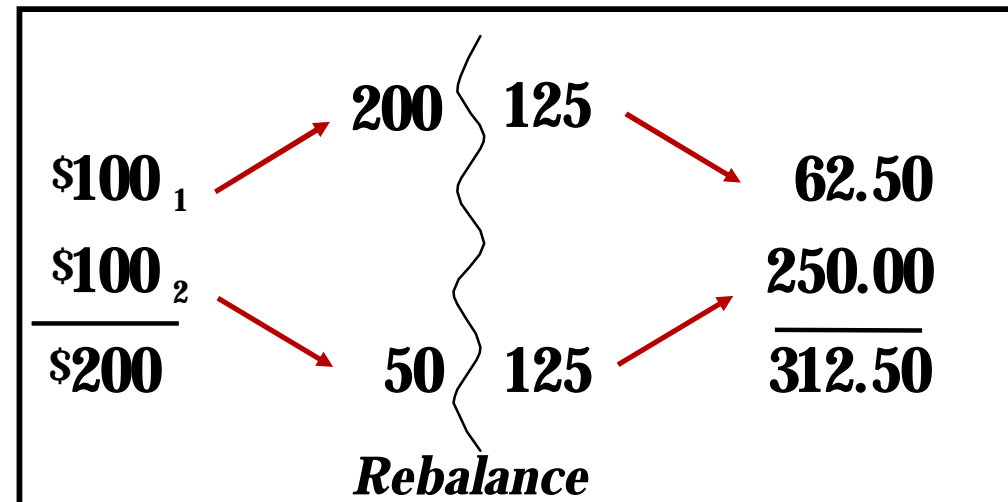
§ Passive portfolio produces no net gain. Stocks have volatility, but opportunity to generate excess return has not been captured.



No Excess Return

ENHANCED INVESTMENT TECHNOLOGIES PORTFOLIO

§ Enhanced Investment Technologies applies its mathematical formula to establish potentially more efficient weights. Dynamic process of maintaining and re-establishing those weights produces the potential excess return.



Excess Return = \$112.50

Criteria for hypothetical illustration: 2 stock portfolio, perfect negative correlation, each move by a factor of 2. Mathematically, a 50%/50% target weighting for a 2 stock portfolio with similar growth rates maximises ending wealth. The hypothetical illustrations shown are provided to demonstrate Enhanced Investment Technologies' trading process. Trading costs and other expenses have not been considered.

Skill vs. Luck?

As of June 30, 2008

	Inception Quarter	Alpha*	Std Dev Residual Return*	Information Ratio*	t Statistic	One Tail Significance
Enhanced Plus	1987 Q3	1.58%	2.23%	0.71	3.17	0.11%
Broad Enhanced Plus	2001 Q2	1.82%	2.12%	0.86	2.28	1.53%
Large Cap Growth	1993 Q3	5.12%	4.45%	1.15	4.30	0.01%
Broad Large Cap Growth	2001 Q1	2.28%	3.21%	0.71	1.92	3.24%
Large Cap Value	1993 Q3	2.73%	3.28%	0.83	3.12	0.14%
Broad Large Cap Value	2004 Q4	0.54%	2.08%	0.26	0.50	31.41%
Enhanced Index	1998 Q2	1.24%	1.28%	0.97	3.09	0.18%
Large Cap Core	2001 Q4	3.26%	3.42%	0.95	2.43	1.12%
Global Core	2005 Q1	3.47%	2.94%	1.18	2.12	2.79%

§ The One Tail Significance is the estimated probability that pure luck would produce the portfolio's observed alpha or better.

*Source: National Consulting Firm. Information Ratio = Alpha ÷ Standard Deviation of Residual Return.

Data presented reflects past performance, which is no guarantee of future results.

Data presented is quarterly data from first full quarter since inception and is calculated gross of fees.

Chart includes strategies with at least a three-year track record.

See Presentation Notes for additional information.

- § The market portfolio is unlikely to be an efficient portfolio.
- § Stochastic Portfolio Theory uses **growth rate** instead of rate of return, and does not require the estimation of the future growth rates of stocks.
- § **We believe it is possible to create a portfolio of greater efficiency than the market portfolio.**
- § The technique involves considering the covariance of stocks, and adjusting stock weights to achieve a more efficient combination than the benchmark index.

Enhanced Investment Technologies has implemented Stochastic Portfolio Theory to the management of large cap equity portfolios since 1987.

Composite Performance

As of September 30, 2008

Active Composites	Annualised Returns								Inception Date	
	1 Mos	1 Yr	2 Yrs	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs		ITD
Large Cap Growth Gross	-9.54%	-16.21%	-3.48%	0.12%	6.16%	6.86%	13.09%		12.99%	1/07/1993
Large Cap Growth Net	-9.58%	-16.59%	-3.91%	-0.33%	5.66%	6.31%	12.50%		12.40%	
Growth Index - Blended	-10.16%	-19.44%	-3.00%	0.05%	3.57%	1.23%	8.17%		8.03%	
Difference (Gross-Index)	0.61%	3.23%	-0.47%	0.07%	2.59%	5.63%	4.92%		4.96%	
Broad Large Cap Growth Gross	-12.53%	-21.74%	-4.61%	-1.12%	4.82%				-1.31%	1/11/2000
Broad Large Cap Growth Net	-12.57%	-22.12%	-5.08%	-1.61%	4.29%				-1.83%	
Russell 1000 Growth Index	-11.58%	-20.88%	-2.82%	0.05%	3.74%				-4.95%	
Difference (Gross-Index)	-0.95%	-0.86%	-1.79%	-1.17%	1.08%				3.64%	
Broad Large Cap Growth Moderate Gross	-11.89%	-21.03%	-3.92%						-1.70%	1/12/2005
Broad Large Cap Growth Moderate Net	-11.91%	-21.24%	-4.17%						-1.96%	
Russell 1000 Growth Index	-11.58%	-20.88%	-2.82%						-1.09%	
Difference (Gross-Index)	-0.31%	-0.15%	-1.10%						-0.62%	
Enhanced Plus Gross	-8.99%	-19.40%	-3.87%	0.86%	7.19%	5.84%	9.97%	11.64%	10.63%	1/07/1987
Enhanced Plus Net	-9.01%	-19.64%	-4.16%	0.56%	6.84%	5.46%	9.56%	11.22%	10.22%	
S&P 500 Index	-8.91%	-21.98%	-4.69%	0.22%	5.17%	3.06%	8.40%	9.94%	8.98%	
Difference (Gross-Index)	-0.08%	2.58%	0.81%	0.65%	2.02%	2.78%	1.57%	1.70%	1.65%	
Broad Enhanced Plus Gross	-9.50%	-20.53%	-4.21%	0.09%	6.57%				4.23%	1/04/2001
Broad Enhanced Plus Net	-9.53%	-20.75%	-4.47%	-0.18%	6.25%				3.88%	
Russell 1000 Index	-9.53%	-22.10%	-4.57%	0.13%	5.49%				2.30%	
Difference (Gross-Index)	0.02%	1.57%	0.36%	-0.04%	1.07%				1.93%	
Large Cap Core Gross	-8.83%	-19.00%	-4.17%	0.07%	8.04%				4.16%	1/08/2001
Large Cap Core Net	-8.86%	-19.36%	-4.58%	-0.35%	7.55%				3.69%	
S&P 500 Index	-8.91%	-21.98%	-4.69%	0.22%	5.17%				1.29%	
Difference (Gross-Index)	0.08%	2.98%	0.52%	-0.15%	2.87%				2.86%	
Enhanced Index Gross	-8.53%	-19.98%	-3.74%	0.96%	6.31%	4.41%			3.64%	1/04/1998
Enhanced Index Net	-8.55%	-20.22%	-4.03%	0.65%	5.99%	4.06%			3.29%	
S&P 500 Index	-8.91%	-21.98%	-4.69%	0.22%	5.17%	3.06%			2.21%	
Difference (Gross-Index)	0.38%	2.00%	0.95%	0.74%	1.15%	1.34%			1.43%	
Large Cap Value Gross	-6.98%	-21.07%	-4.44%	1.66%	9.05%	7.89%	10.66%		10.87%	1/07/1993
Large Cap Value Net	-7.01%	-21.37%	-4.81%	1.26%	8.63%	7.47%	10.23%		10.44%	
Value Index - Blended	-7.48%	-24.50%	-6.37%	0.32%	6.72%	4.58%	8.31%		8.53%	
Difference (Gross-Index)	0.51%	3.44%	1.93%	1.34%	2.33%	3.31%	2.35%		2.34%	
Broad Large Cap Value Gross	-6.39%	-20.62%	-4.60%	0.58%					5.84%	1/08/2004
Broad Large Cap Value Net	-6.42%	-20.90%	-4.95%	0.21%					5.45%	
Russell 1000 Value Index	-7.35%	-23.56%	-6.46%	0.09%					4.57%	
Difference (Gross-Index)	0.95%	2.94%	1.86%	0.49%					1.27%	

Past performance does not guarantee future results.
See Presentation Notes for additional information.

Composite Performance (cont'd)

As of September 30, 2008

	<i>1 Mos</i>	<i>1 Yr</i>	<i>2 Yrs</i>	<i>3 Yrs</i>	<i>5 Yrs</i>	<i>10 Yrs</i>	<i>15 Yrs</i>	<i>20 Yrs</i>	<i>ITD</i>	<i>Inception Date</i>
Enhanced Plus USA Gross	-10.37%	-20.34%	-4.13%						-0.56%	1/01/2006
Enhanced Plus USA Net	-10.39%	-20.57%	-4.42%						-0.87%	
MSCI USA Gross Index	-9.17%	-21.73%	-4.36%						-0.43%	
Difference (Gross-Index)	-1.19%	1.39%	0.23%						-0.13%	
Enhanced USA Gross	-9.41%	-19.94%	-3.40%	0.94%					0.94%	1/10/2005
Enhanced USA Net	-9.43%	-20.16%	-3.66%	0.67%					0.67%	
MSCI USA Gross Index	-9.17%	-21.73%	-4.36%	0.39%					0.39%	
Difference (Gross-Index)	-0.23%	1.79%	0.96%	0.55%					0.55%	
Global Core Gross	-11.06%	-21.70%	-1.02%	3.55%					5.84%	1/01/2005
Global Core Net	-11.10%	-22.13%	-1.56%	2.99%					5.26%	
MSCI World Index	-11.85%	-25.62%	-4.86%	1.27%					2.76%	
Difference (Gross-Index)	0.79%	3.92%	3.84%	2.29%					3.08%	
International Equity Gross	-12.44%	-28.25%							-3.25%	1/11/2006
International Equity Net	-12.48%	-28.56%							-3.66%	
MSCI EAFE Index	-14.42%	-30.12%							-8.51%	
Difference (Gross-Index)	1.98%	1.87%							5.26%	
Broad Large Cap Core 130/30 Gross	-12.73%	-22.46%							-9.79%	1/01/2007
Broad Large Cap Core 130/30 Net	-12.80%	-23.16%							-10.59%	
Russell 1000 Index	-9.53%	-22.10%							-8.78%	
Difference (Gross-Index)	-3.20%	-0.37%							-1.01%	
Long Short Market Neutral Gross**	-0.92%	9.07%							5.87%	1/12/2006
Long Short Market Neutral Net**	-1.00%	8.09%							4.93%	
LIBOR 3 Month Rate	0.33%	3.45%							4.32%	
Difference (Gross-Index)	-1.25%	5.62%							1.55%	

Past performance does not guarantee future results.
See Presentation Notes for additional information.

Presentation Notes

Enhanced Investment Technologies, an indirect subsidiary of Janus Capital Group Company, is an independent investment adviser registered under the Investment Advisers Act of 1940 utilising an investment process based on a mathematical theory. Enhanced Investment Technologies is affiliated with Janus Capital Group Inc. and its subsidiaries. These subsidiaries and/or affiliates include Janus Capital Management LLC and Perkins, Wolf, McDonnell and Company LLC. Past performance is no guarantee of future results. Your principal may be at risk during certain market periods. Performance results reflect the reinvestment of dividends and other earnings. Portfolio performance results shown are time-weighted rates of return using daily valuation, include the effect of transaction costs (commissions, exchange fees, etc.), and are gross of non-reclaimable withholding taxes, if any. The composite(s) include all actual fee paying accounts managed on a fully discretionary basis according to the investment strategy from inception date, including those no longer under management. Accounts meeting with such criteria enter the composite upon the full first month under management. For periods of less than one year, performance is not annualised. Reporting currency is USD. Enhanced Investment Technologies claims compliance with the Global Investment Performance Standards (GIPS®).

The gross performance results presented do not reflect the deduction of investment advisory fees and returns will be reduced by such advisory fee and other contractual expenses as described in the individual contract and Enhanced Investment Technologies' form ADV Part II.

The net performance results do not reflect the deduction of investment advisory fees actually charged to the accounts in the composite. However, the net performance results do reflect the deduction of model investment advisory fees. Through December 31, 2004, net returns were derived using the maximum fixed fee in effect for each strategy. As of January 1, 2005 net returns are calculated by applying the standard fee schedule in effect for the respective period to each account in the composite on a monthly basis. Actual advisory fees may vary among clients invested in this strategy. Actual advisory fees paid may be higher or lower than model advisory fees.

The Enhanced Plus strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the S&P 500 Index. Previously, portfolios typically included from 50% to 90% of the names in the S&P 500 Index.

The Broad Enhanced Plus strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the Russell 1000 Index. Previously, portfolios typically included from 50% to 90% of the names in the Russell 1000 Index.

The Enhanced Plus USA strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the MSCI USA Gross Index. Previously, portfolios typically included from 50% to 90% of the names in the MSCI USA Gross Index.

The Large Cap Growth strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the S&P 500/Citigroup Growth Index. Previously, portfolios typically included from 50% to 90% of the names in the Growth Index - Blended.

The Broad Large Cap Growth strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the Russell 1000 Growth Index. Previously, portfolios typically included from 50% to 90% of the names in the Russell 1000 Growth Index.

The Large Cap Value strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the S&P 500/Citigroup Value Index. Previously, portfolios typically included from 50% to 90% of the names in the Value Index - Blended.

The Broad Large Cap Value strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the Russell 1000 Value Index. Previously, portfolios typically included from 50% to 90% of the names in the Russell Value Index.

The Enhanced Index strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the S&P 500 Index. Previously, portfolios typically included from 50% to 90% of the names in the S&P 500 Index.

The Broad Enhanced Index strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the Russell 1000 Index. Previously, portfolios typically included from 50% to 90% of the names in the Russell 1000 Index.

The Enhanced USA strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the MSCI USA Gross Index. Previously, portfolios typically included from 50% to 90% of the names in the MSCI USA Gross Index.

The Large Cap Core strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 30% to 90% of the names in the S&P 500 Index. Previously, portfolios typically included from 50% to 90% of the names in the S&P 500 Index.

Presentation Notes

The Global Core strategy pursues a risk-controlled approach to manage a well-diversified portfolio of securities. Under normal market conditions, effective October 26, 2007, the portfolio will typically include from 20% to 70% of the names in the MSCI World Index. Previously, portfolios typically included from 20% to 60% of the names in the MSCI World Index.

The International Equity Composite is composed of both separately managed accounts and registered pooled accounts. This strategy pursues a risk-controlled approach to manage a well-diversified portfolio of large capitalization securities. Under normal market conditions, the portfolio will typically include from 20% to 70% of the names in the MSCI EAFE Index.

The Collared Long/Short (120/20) strategy pursues a risk controlled approach invested to achieve a desired leverage of 120% long and 20% short positions. The portfolio will typically hold positions of a large number of stocks, primarily constituents of the Russell 1000 Index universe, but may include other large cap U.S. equities.

The S&P 500 Index is the Standard & Poor's composite index of 500 stocks, a widely recognized, unmanaged index of common stock prices.

The Russell 1000 Index measures performance of the 1,000 largest companies in the Russell 3000 Index.

For Growth Index blended from inception to 12/31/2005, the portfolio's benchmark was the S&P 500/Barra Growth Index (the 'Barra Index'). During the period from 1/01/2006 to 3/31/2006, the benchmark return consisted partially of the return of the Barra Index and the S&P 500/Citigroup Growth Index to resemble the portfolio's composition during the transitional period. From 4/01/2006 to present, the portfolio's benchmark was changed to the S&P 500/Citigroup Growth Index.

The S&P 500/Citigroup Growth Index is a capitalization-weighted index. The S&P 500/Citigroup style indices allow for overlap between growth and value. Approximately 1/3 of the market capitalization of the S&P 500 Index will represent pure growth and will be allocated to the growth index. Approximately 1/3 of the market capitalization of the S&P 500 Index will represent pure value and will be allocated to the value index. The remaining stocks that are neither pure growth nor pure value will be apportioned between the 2 style indices. The S&P 500/Citigroup style indices are reconstituted annually.

The Russell 1000 Growth Index measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

For Value Index blended from inception to 12/31/2005, the portfolio's benchmark was the S&P 500/Barra Value Index (the 'Barra Index'). During the period from 1/01/2006 to 3/31/2006, the benchmark return consisted partially of the return of the Barra Index and the S&P 500/Citigroup Value Index to resemble the portfolio's composition during the transitional period. From 4/01/2006 to present, the portfolio's benchmark was changed to the S&P 500 Citigroup Value Index.

The S&P 500/Citigroup Value Index is a capitalization-weighted index. The S&P 500/Citigroup style indices allow for overlap between growth and value. Approximately 1/3 of the market capitalization of the S&P 500 Index will represent pure growth and will be allocated to the growth index. Approximately 1/3 of the market capitalization of the S&P 500 Index will represent pure value and will be allocated to the value index. The remaining stocks that are neither pure growth nor pure value will be apportioned between the 2 style indices. The S&P 500/Citigroup style indices are reconstituted annually.

Russell 1000 Value Index measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The MSCI World Index is a free float-adjusted market capitalization index that is designed to measure global developed market equity performance.

The MSCI USA Gross Index is a free float-adjusted, market capitalization-weighted index designed to measure equity market performance in the U.S.

The MSCI EAFE Index is a Morgan Stanley Capital International Index that is designed to measure the performance of the developed stock markets of Europe, Australia and the Far East.

The Index returns are provided to represent the investment environment existing during the time periods shown. For comparison purposes, the index is fully invested, which includes the reinvestment of dividends and capital gains. The returns for the index do not include any transactions costs, management fees or other costs. Composition of each separately managed account portfolio may differ from securities in the corresponding benchmark index. The index is used as a performance benchmark only, as Enhanced Investment Technologies does not attempt to replicate an index. The weightings of securities within the portfolio may differ significantly from the weighting within the index. The index is not available for direct investment, therefore, its performance does not reflect the expenses associated with the active management of an actual portfolio.

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