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## REIT Performance: A New Definition (RUC211)

By Richard Wollack, Dan O'Connor, Dionisio Meneses, and David Siopack

### Investment Myopia

For much of the latter half of the 1990s, investors in stocks reaped a bonanza seldom paralleled in history. For instance, in the years 1997-99, investors who owned the stocks contained in the S&P 500 achieved average annual total returns (almost entirely from share price appreciation) exceeding 26% a year. Investors holding the Nasdaq 100 (which includes many of the biggest names in technology) did even better; their investment skyrocketed an average of nearly 47% annually in the same period.

Shrewd investors likened this share price appreciation (and unprecedented expansion in earnings multiples) to the mythical Icarus flying too close to the sun with his waxen wings and, consequently, did not overinvest in these highflying stocks and indices. Many (perhaps most) investors, however, continued to pour money into those stocks, some even after the inevitable decline in share prices had begun. What caused this "irrational exuberance," to quote a now-famous phrase?

Quite simply, too many investors focused exclusively on absolute return potential and ignored the other yardsticks that must be taken into account in evaluating investment performance. In other words, performance was encapsulated in a single (and all-too-often exaggerated) return (i.e., share price appreciation) number without an understanding of the underlying risk (and risk/return relationship) required to achieve it.

Focusing on average annual return, as most investors do, is a myopic perspective of performance. An investor's measure of performance—his definition—must consider not only return, but also other factors, particularly the risk inherent in the return potential. Such additional factors incorporate both practical insights as well as some of the risk measures used in Modern Portfolio Theory (MPT).

### A New Definition

Five key measures of performance—viewed together—help alleviate investment myopia: (1) annual return; (2) dividend yield; (3) dividend contribution to total return; (4) correlation with other asset classes; and (5) the Sharpe ratio.

This course analyzes these five performance metrics in the context of how three major asset classes—stocks, bonds, and real estate (with real estate investment trusts, or REITs, constituting the last category)—have performed, both recently and over the long term. In short, as documented by the last two of these metrics—correlation and the less widely utilized Sharpe ratio—this course demonstrates that the inclusion of REITs optimizes the risk-adjusted return in virtually all investment portfolios. Hence, REITs' performance must be redefined when compared with other asset classes, incorporating a diverse group of measures rather than simple annual return.

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**Average Annual Return**



The financial reward of an investment is commonly labeled annual return or average annual return—AAR. In Graph 1 and Table 1, this first performance measure (AAR) for REITs, the S&P 500, and Treasury Bonds is compared over time.

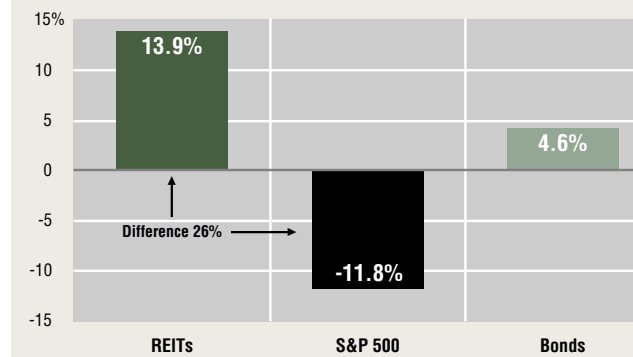
In 2001, REITs outperformed the S&P by a staggering 26 percentage points and outperformed the Lehman Long Treasury Bond Index by more than nine percentage points. The contrasts between REIT and S&P 500 returns can be partly explained by the fact that while most S&P firms do not have predictable recurring revenue, REITs enjoy substantial levels of recurring lease revenues fixed for varying, but often predictable, periods. With the outflow of funds from the technology and manufacturing sectors—attributable to uncertainty of earnings growth in a slowing economy—REITs became a haven for some investors. But how have REITs done over the midterm?

As can be seen in Table 1, REITs have also widely outperformed the S&P 500 and the Bond Index over recent 24-month and 36-month periods.

Looking long term, REITs from 1979 through 2001 nearly matched the S&P 500 (i.e., the AAR for the S&P 500 exceeded that of REITs by only approximately 100 basis points) and outperformed bonds by an average of 360 basis points per year (see Table 2). These results are likely surprising to many investors. How, they might ask, have REITs performed so closely to the S&P?

One possible explanation is shown in Graph 2. These government data highlight the fact that the amount of rent paid by businesses—expressed as a percentage of revenues—remains virtually constant at 1.6%. Thus, as the U.S. business sector expands, rents (and the value) of real estate grow at approximately the same rate over time. Since REITs own the real estate being leased, their earnings can continue to pace business earnings as those businesses devote a relatively stable proportion of revenue toward what their financial statements call “property & plant.” Naturally, there are periods, such as economic slowdowns, when real estate earnings and corporate earnings diverge. Long-term leases help cushion REIT earnings in such periods, however.

Graph 1:  
Performance: 2001



Source: GRA/GCMG

Table 1:  
Short-Term (3 Year) Performance  
As of December 31, 2001

	Average Annual Return (AAR)		
	1 Year	2 Year	3 Year
REITs	13.9%	19.9%	11.2%
S&P 500	(11.8%)	(10.5%)	(1.0%)
Bonds	4.6%	12.1%	4.7%

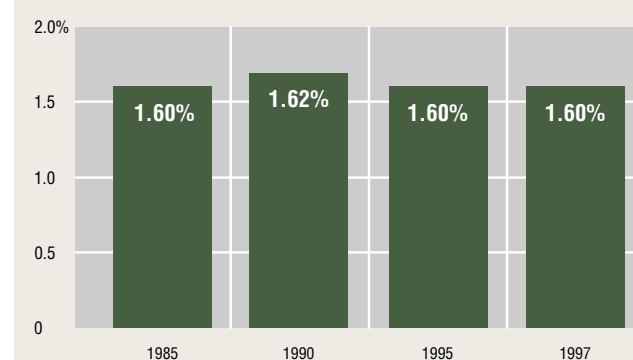
Source: GRA/GCMG

Table 2:  
Long-Term Performance: 23 Years  
1979 through 2001

	Average Return	vs. REITs
REITs	13.9%	—
S&P 500	14.9%	1.0%
Bonds	10.3%	(3.6%)

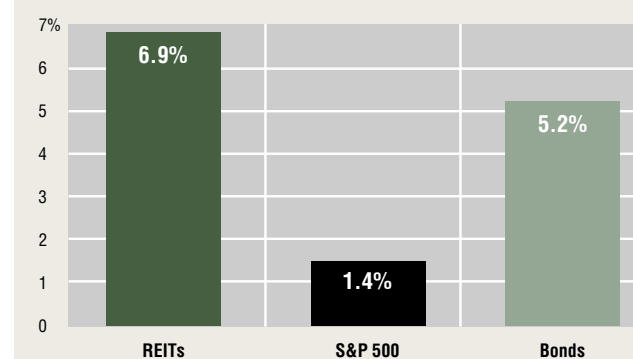
Source: GRA/GCMG

Graph 2:  
Business Rents: Percent of Business Revenues  
REITs capture a steady share of business revenues/growth



Source: GRA/GCMG, IRS: Statistics of Income Bulletin, Summer 2000, Vol. 20, No. 1

Graph 3:  
Current Dividend Rate  
As of December 31, 2001



Source: GRA/GCMG

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**Dividend Yield**

What role do dividends play in assessing and determining investment performance? In an environment where corporate earnings are fleeting and dividends questionable, REITs' generous and comparatively stable dividend streams offers refuge. At present (as can be seen in Graph 3), REITs' average dividend of about 7% represents a 5.5-percentage-point income spread over the S&P 500, and about a 2-percentage-point advantage over long-term Treasurys.

Such a yield difference lowers the near-term risk of holding REITs. The healthy income spread can be partly attributed to REITs' business structure, which under tax law requires a minimum payout of 90% of earnings. This requirement has, over time, continually driven REIT dividends higher at a far more predictable and frequent pace than for conventional C corporation equities.

**Dividends' Contribution to Total Return**

This high dividend level also represents a much larger portion of total return for REITs than for the S&P 500. For much of the 1990s, little attention was placed on the level of current income (i.e., dividends) vs. the other component of total return, price appreciation. The subsequent precipitous decline in many stock sectors and broader market indices (including the S&P 500) has helped to re-educate investors on the importance of current income. Investors now realize that there is an inherent advantage to having a dollar in hand vs. the promise of the same dollar embedded in growth-based forecasts. From 1979 through 2001 (as can be seen in Graph 4), dividends accounted for a full 37% of the total return of REITs, vs. only 12% of most of the S&P.

**Correlation: A Yardstick of Asset Interrelationships**

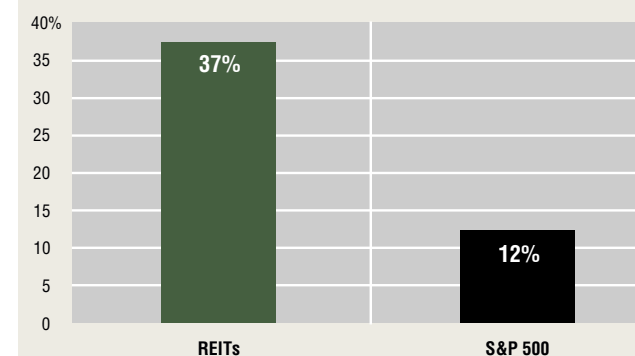
AAR and dividend levels deal only with independent characteristics of each asset type. For even more perspective on performance, one must also look at correlation—a measure of asset interrelationships, or, in statistical terms, “covariance.”

Correlations can range from -1.00 to +1.00, with the latter representing a perfect positive relationship. Most investment asset classes typically display at least moderately positive correlations with each other; correlations above 0.50 are generally considered to be high.

As can be seen in Table 3, from 1979 through 2001, REITs had a correlation of only 0.23 with the broader stock market (i.e., S&P 500) and an even lower correlation with bonds.

Furthermore, REITs, even though they trade on stock exchanges, have a far lower correlation to the S&P than bonds, 0.23 vs. 0.40. This low correlation with other major classes means that REITs offer yet another important investment benefit—diversification value, which reduces the overall investment portfolio risk. In years of extreme volatility, this low REIT correlation has offered investors a sizable dose of Dramamine to combat roller coaster undulations of the broad market.

Graph 4:  
**Dividends as a Percent of Total Return**  
1979 through 2001



Source: GRA/GCMG

Table 3:  
**Long-Term Correlation**  
1979 through 2001

REITs vs. S&P 500	=	0.23
REITs vs. Bonds	=	0.21
Bonds vs. S&P 500	=	0.40

Source: GRA/GCMG

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**Risk-Adjusted Return—The Sharpe Ratio**

Another measure of asset risk is the measure of the magnitude of value added (i.e., return, or the level of reward) vs. its corresponding risk (as measured by the investment's volatility). The Sharpe ratio, which measures the amount of reward (AAR) per unit of risk, reflects that trade-off. Table 4 reveals the Sharpe ratios for REITs, the S&P 500, and bonds from 1979 through the third quarter of 2001.

The prime objective for investors is to maximize reward and minimize risk (that is, maximize the Sharpe ratio). The inclusion of REITs in a portfolio enhances a portfolio's Sharpe ratio. As shown in Table 4, the ideal portfolio maximizes the Sharpe ratio; it consists of about 34% REITs, 43% S&P, and 23% bonds. Bonds offer only a 0.50 Sharpe ratio over 23 years, which means they reduce risk to a lesser degree—investors forego some reward by overemphasizing long-term bonds.

Note that this combination of assets yields only 60 basis points less in total return than a pure S&P portfolio while increasing the Sharpe ratio by more than 30%! The portfolio optimizes reward vs. risk.

**REITs, AN ESSENTIAL PORTFOLIO COMPONENT**

We have reviewed five key measures to derive a new definition of investment performance, and it is this: the best combination of return, dividend, and risk characteristics to match an investor's short- and long-term investment needs. In other words, performance is in the eye of the beholder.

To be sure, the importance of each measure (in large part because of disparities in risk aversion) varies among investors. Yet despite different investor weightings of those five performance measures, a rational investment strategy should incorporate—to some degree—each of the five. Such a strategy would dictate at least some allocation to REITs for virtually every investor!

Why REITs? Simply, as we have shown, REITs capture virtually the same long-term growth of the economy as the average company in the S&P. Yet because of REITs' unique tax structure and greater earnings stability (attributable to fixed-term leases), they also produce substantially higher dividends and exhibit lower volatility and risk, as measured by the most widely accepted statistical measures of Modern Portfolio Theory.

**APPENDIX**

The key concepts utilized in this course are defined and described further below.

**Investment Indices:** For bond returns, the Lehman Long Treasury Bond Index, a basket of government bonds having maturities of 10 years or more, was used. The S&P 500, an index of 500 of the largest companies traded in U.S. exchanges, was utilized to measure

Table 4:  
**Sharpe'ning Performance: 3 Portfolio Mixes**  
1979 through 3Q01

		AAR	Sharpe
	REITs	13.9%	0.66
	S&P 500	14.5%	0.67
	Bonds	10.5%	0.50
	<b>Average</b>	<b>13.0%</b>	<b>0.61</b>
No REITs	REITs 0%		
	S&P 500 60%	13.2%	0.74
	Bonds 40%		
	<b>Gain</b>	<b>0.2%</b>	<b>0.13</b>
Some REITs	REITs 10%		
	S&P 500 55%	13.4%	0.81
	Bonds 35%		
	<b>Gain</b>	<b>0.4%</b>	<b>0.20</b>
Ideal Fit	REITs 34%		
	S&P 500 43%	13.9%	0.90
	Bonds 23%		
	<b>Gain</b>	<b>0.9%</b>	<b>0.29</b>

Source: GRA/GCMG

More REITs=  
Higher Return &  
Higher Sharpe Ratio

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stock performance. Finally, for real estate, the REITs contained in the NAREIT Index was the proxy.

**Modern Portfolio Theory (MPT):** Modern Portfolio Theory encompasses the application of statistical tools that examine the risk vs. return of investment assets.

**Sharpe Ratio:** Formulated by a winner of the Nobel Memorial Prize in Economic Sciences, William Sharpe, the Sharpe ratio indicates the amount of reward (excess return) received per unit of risk (standard deviation) assumed; the higher the ratio the better. It is calculated by dividing a portfolio's return in excess of the riskless return (typically some assumption of the return received by U.S. Government bonds over the period analyzed—see definition below) by the portfolio's standard deviation.

The Sharpe ratio has become accepted as the most meaningful measure of risk in comparing discrete portfolios and is widely used in modern portfolio management.

**Riskless Return:** The rate earned on a riskless investment, such as the current 90-day United States Treasury Bill rate.

**Correlation and Correlation Coefficient:** A correlation coefficient is the number that indicates the degree of correlation (i.e., relationship) between two sets of data or between two random variables. A coefficient of 1.0 represents a perfect correlation (identical relationship/movement) and -1.0 is a perfect negative correlation (opposite relationship/movement). A "0" correlation coefficient indicates no relationship between the data.

**Standard Deviation:** Standard deviation is the most commonly used measure of the dispersion (spread) of a frequency distribution. In a normal distribution, approximately 68% of the observed scores are within one standard deviation of the mean and about 95% of the scores are within two standard deviations of the mean. Standard deviation is the square root of the variance (i.e., the square root of the arithmetic mean of the squares of the deviation of each of the class frequencies from the arithmetic mean of the frequency distribution). An important attribute of the standard deviation as a measure of spread is that if the mean and standard deviation of a normal distribution are known, it is possible to compute the percentile rank associated with any given score.

*This course is adapted from a paper by Richard Wollack, Dan O'Connor, Dionisio Meneses, and David Siopack of Global Real Analysis and Global Capital Markets Group, affiliates of the real estate firm CB Richard Ellis.*

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