**Executive summary.** The global commercial real estate market has been estimated to be as large as $23 trillion.1 Historically, commercial real estate has provided competitive real returns and diversification opportunities for traditional portfolios. Yet an important question remains: Can an investment in commercial real estate actually deliver the characteristics and benefits of the broad real estate market? Indeed, investment vehicles such as real estate investment trusts (REITs), partnerships, or private investment pools can look quite different from the broad real estate market. The complexity of this question is a possible reason why institutional investors on average allocate only 6% of their portfolios to commercial equity real estate (Cerulli Associates, 2011). In the United States, as of December 2010, private commercial real estate holdings were estimated at $247 billion, according to the National Council of Real Estate Investment Fiduciaries (NCREIF), and public U.S. equity REITs at $358 billion.2 This analysis evaluates the commercial real estate market and offers perspective regarding the various investment options.

1 Estimated market size based on data provided by Prudential Real Estate Investors.
2 For this paper, we use real estate investment trust or REIT to refer to any form of equitized real estate investment.
We contend that:

- Commercial real estate is a unique and significant asset class.
- An equitized real estate index serves as a long-term proxy for the commercial real estate market.
- Because REITs represent exposure to the commercial real estate asset class, they may be evaluated for strategic inclusion in a portfolio using the same metrics employed for other asset classes.
- However, because REITs are equities and are therefore part of broad-based global equity markets, investors must factor in the exposure already contained within the active and indexed portions of their portfolios.

**Commercial equity real estate basics**

Commercial equity real estate is a unique and significant asset class. It provides investors with the opportunity to own property, with the primary objective of leasing a structure to various tenants in return for income and the potential for capital gain upon the sale of the property.

Commercial real estate may be segmented by property type, geographic location, and development stage. Core property types commonly include multifamily residential (apartment buildings), retail, office, and industrial. Other, less common property types include health care facilities, public storage buildings, golf courses, and hotels. Development stages include core (mature, income-producing properties), value-added (income-producing properties with appreciation potential), and opportunistic or distressed (development properties with a focus on capital appreciation).

Long-term returns for real estate are driven primarily by a property’s net operating income (NOI) and to a lesser extent by property value appreciation. Historically, commercial real estate prices and income (assuming properties are maintained appropriately) have grown on par with to slightly above inflation (Figure 1, page 4). Income-oriented properties may increase rents to compensate for inflation’s erosion of value, and thus obtain some hedge against inflation. However, for a property to maintain its inflation-adjusted value, it must be well-located, have rents that can be adjusted periodically, and not be subject to sudden, sharp increases in operating costs. As an extreme example, if an apartment had rent-control provisions, the proprietor would not be able to increase rents, and the property therefore would not provide an inflation hedge.

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**Notes on risk:** All investments are subject to risk. Funds that concentrate on a relatively narrow market sector face the risk of higher share-price volatility. Foreign investing involves additional risks, including currency fluctuations and political uncertainty. Past performance is not a guarantee of future results. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. Diversification does not ensure a profit or protect against a loss in a declining market.
Public and private real estate investments

A real estate investment trust is an operating company that offers ownership shares to the public and, as a result, trades on a stock exchange. Equity REITs own property directly and derive most of their earnings from property income, with a smaller portion coming from appreciation when an underlying holding is sold. As a consequence of various tax and income requirements, many equity REITs choose to invest primarily in mature, income-generating properties. Mortgage REITs make loans to property developers, and hybrid REITs combine the two strategies. In this report we use equity REITs as a lens for the market, because the other types do not explicitly focus on income-producing properties. We thus employ the FTSE NAREIT Equity REIT Index as a proxy for U.S. REIT investments.

Private real estate investment can take the form of direct investments, open- or closed-ended commingled funds, or private partnerships. In a direct investment, an investor purchases and manages a property directly. Closed-ended commingled funds represent large pools of capital, with the underlying properties managed by a specialist. Open-ended commingled funds offer investors more freedom to add or withdraw capital—given proper notification and the approval of the manager. By their very nature, private partnerships are highly customizable. Without tax laws to govern their structure, private partnerships can focus on any combination of property types and development stages.

The most popular benchmark used to measure private investment holdings is the NCREIF Property Index. Because of well-documented concerns about the appraisal-based valuation methodology, which introduces serial correlation and return (volatility) smoothing, we elected to use a transactions-based index that was developed by the MIT Center for Real Estate (Fisher, Geltner, and Pollakowski, 2006) and endorsed by NCREIF. The transactions-based index corrects for smoothing, leading to standard deviations significantly greater than reported in the standard index.

Sustainable NOI is used to calculate the current and future value of a property. Expectations of future NOI (and hence property values) change with economic cycles, the supply and demand of properties and tenants, and the performance of the financial markets (stocks and bonds compete with real estate for investor capital).

Investing in commercial real estate

Traditionally, there are three primary means of investing in commercial real estate, as summarized in Figure 2, page 4: direct investment and management, participation in a private investment pool, and purchases of REIT shares.

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3 Tax laws mandate that a REIT must pay out 90% of its taxable profit in the form of dividends. In addition, a REIT must continually satisfy certain tests with respect to the sources of its income, the nature and diversification of its assets, the amount of its distributions to stockholders, and the ownership of its stock. Among other things, these restrictions may limit the company’s ability to acquire certain types of assets, limit its ability to dispose of assets that it has held for less than four years if the disposition would result in gains exceeding specified amounts, limit the ability to engage in hedging transactions, and require the company to make distributions to its stockholders at times when the company might deem it more advantageous to use those funds for other corporate purposes or when the company might not have funds readily available for distribution.

4 For analysis using the FTSE NAREIT Equity REIT Index, many choose to focus on the period starting in the early 1990s, because of the significant tax and structural changes that followed the 1986 Tax Reform Act. The act permitted REITs to operate and manage most types of income-producing commercial properties by providing “customary” services associated with real estate ownership. Between 1986 and 1992, real estate suffered a severe recession, and by 1992 many private real estate companies realized that the most efficient way to access capital was from the public marketplace through REITs (source: www.reit.com).
Direct investment involves purchasing a property outright and assuming operating control over rent policy and collection, maintenance, and growth. Although direct ownership allows the investor to collect rents and the proceeds of any property sales without paying a management fee, it requires expertise in property management, or a willingness to hire a third-party manager. Direct ownership also limits the ability to create a multi-property portfolio because of the size of the required investments. Because of these challenges, few diversified real estate investors choose to own properties directly.

Private real estate vehicles provide direct access to commercial real estate properties. However, for many investors, private real estate can be difficult to include in a diversified portfolio because of high costs, illiquidity, limited transparency, and large required minimum investments. And even an open-

<table>
<thead>
<tr>
<th><strong>Figure 2. Characteristics of primary real estate vehicles</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Form of investment</strong></td>
</tr>
<tr>
<td>Management</td>
</tr>
<tr>
<td>Investor time and resource requirements</td>
</tr>
<tr>
<td>Source of returns</td>
</tr>
<tr>
<td>Valuation</td>
</tr>
<tr>
<td>Return characteristics</td>
</tr>
<tr>
<td>Liquidity</td>
</tr>
<tr>
<td>Management fees</td>
</tr>
<tr>
<td>Diversification?</td>
</tr>
<tr>
<td>Transparency</td>
</tr>
</tbody>
</table>

Note: There may be other material differences between products that must be considered prior to investing.
Source: Vanguard.

5 Although illiquidity potentially leads to a return premium in most assets, whether or not such a premium exists for an investment pool is the subject of an ongoing debate in the investment industry.
ended commingled fund often requires early notification and substantial waiting periods for account transactions. Finally, to attain diversification across property types and regions, the investor needs to either buy a share in a vast portfolio or acquire shares in multiple portfolios.

In terms of the underlying real estate exposure, there is no substantive difference between holding an interest in a private real estate partnership and holding a REIT. However, ownership of REIT shares addresses many of the investment concerns associated with private real estate partnerships or pools. REITs offer transparency and liquidity far exceeding that of most private real estate investments. And regional and property-type diversification is achieved more easily in public real estate than in private real estate. For example, a REIT index fund may hold more than 100 REITs, each representing many underlying properties across geographic regions.

Are REITs an effective proxy for the real estate market?

Public real estate options come with their own unique concerns. Given the desirable investment qualities of REITs, for many investors the primary question is whether REITs can provide effective exposure to real estate. Although REITs constitute a small portion of the real estate market and have performed quite differently from other real estate vehicles in the short term, we believe there are at least two fundamental similarities leading to the conclusion that REITs are representative of the commercial real estate market. These are geographic representation and long-term performance.

Most important, REITs and private investments—whether held directly or through a private investment pool—are invested similarly. Indeed, both private and public investment pools derive returns from holding portfolios of commercial real estate. As Figure 3 suggests, the REIT market is well-diversified across property types, including a significant portion of the property types that are likely to be included in a private investment pool. In addition, a REIT index is geographically diversified, representing holdings from all areas of the country. The range of property types and geographic regions suggests that a broad REIT index is more representative of the aggregate real estate market than any single REIT or private investment pool.

It is also instructive to examine the performance of REITs relative to that of private holdings. Given that investment properties represent the underlying holdings of both public and private investment vehicles, returns should be more similar than different, particularly over the long term. However, because the primary public and private benchmarks have modestly different constituents (the NCREIF Property Index includes office, retail, industrial, and residential properties, along with a very small percentage of hotels, and includes properties across the range of development stages), we would expect some differences in returns, particularly in the short term. To help illustrate this concept, Figure 4, page 6, shows that since 1984 (the inception of the NCREIF transaction index), the cumulative returns of public and private real estate have not been meaningfully different over longer periods when private real estate is adjusted for differences in how benchmark returns are reported; see the note below Figure 4 for details. From this

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**Figure 3. Sector composition of FTSE NAREIT Equity REIT Index**

As of December 31, 2010

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments</td>
<td>16%</td>
</tr>
<tr>
<td>Regional malls</td>
<td>15%</td>
</tr>
<tr>
<td>Offices</td>
<td>14%</td>
</tr>
<tr>
<td>Health care</td>
<td>12%</td>
</tr>
<tr>
<td>Shopping centers</td>
<td>9%</td>
</tr>
<tr>
<td>Lodging/resorts</td>
<td>6%</td>
</tr>
<tr>
<td>Diversified</td>
<td>6%</td>
</tr>
<tr>
<td>Specialty</td>
<td>6%</td>
</tr>
<tr>
<td>Self-storage</td>
<td>6%</td>
</tr>
<tr>
<td>Industrial</td>
<td>5%</td>
</tr>
<tr>
<td>Office/industrial mix</td>
<td>3%</td>
</tr>
<tr>
<td>Free-standing retail</td>
<td>2%</td>
</tr>
<tr>
<td>Manufactured homes</td>
<td>1%</td>
</tr>
</tbody>
</table>

Note: Percentages may not sum to 100% because of rounding.

Source: FTSE/NAREIT.
perspective, investors in public or broad private real estate indexes would have ended up in essentially the same place over longer periods of time, albeit by marginally different routes.

Although the use of publicly held real estate vehicles as a proxy for the commercial real estate market seems reasonable, it is clear that returns for public REITs and private pools may differ significantly in the short term, as seen in Figure 5. Here we show that over three-year periods, the FTSE NAREIT and NCREIF transaction indexes have performed quite differently. This could be due to differences in holdings or, more important, to a potentially significant short-term relationship between REITs and public equity markets.

Arguments against using REITs

As a result of the potential for short-term performance disparity, the primary argument against using REITs as a proxy for the commercial real estate market is the correlation of REIT performance with the broad equity market—particularly in the small-cap value sector. Higher historical correlations between REITs and small-cap value stocks do suggest that some return variation is related to the movements of the small-value sector. However, a significant portion of REITs’ return variation (approximately 50%) is uncorrelated, indicating substantial independence.

The primary differences between REITs and traditional equities are the core businesses and the primary drivers of earnings growth. REIT earnings are driven by the net operating income of the property holdings and, to a lesser degree, by appreciation in the value of properties. In contrast, traditional corporate earnings are driven by growth in sales revenue for products and services. As a result of this difference in business
fundamentals, there can be other significant contrasts between traditional small-cap value stocks and REITs, as illustrated in Figure 6.

A second argument commonly used against REITs is that equitization of real estate exposure may not work because it hasn’t worked with other asset classes—mainly commodities. The impact of equitization is often evaluated in the commodity markets, where equity sectors such as those focused on energy or mining firms can be used as proxies for a commodity index itself. However, investing in real estate typically centers on a decision about whether to obtain exposure through a publicly listed REIT or a privately held partnership—that is, a choice between public and private vehicles, not a decision about whether to hold property outright or as a share in a managed portfolio of properties. The equitization of commodities involves deciding whether to invest in the commodity itself (say, a
gold bar), in commodity futures (the gold component of a commodity index), or in shares of companies whose primary business is the production of that commodity (gold-mining companies).

**Commercial real estate market exposure**

For investors in any asset class to obtain the risk and return characteristics of the market, an investable market index is required. However, there are two primary concerns with commercial real estate indexes. First, existing benchmarks (such as the FTSE NAREIT and NCREIF indexes) represent only a small portion of the total U.S. commercial real estate market. For example, the total value of U.S. commercial real estate is likely measured in trillions; since investment holdings account for approximately $600 billion, it appears that the vast majority of the commercial real estate market is closely held by real estate developers, brokers, and long-term investors and is therefore unavailable for transaction. This is somewhat different from the equity and debt markets, where public holdings make up a much larger portion of the total market capitalization of each asset class.

Second, only REIT indexes have historically been investable, as the NCREIF Property Index represents an aggregation of private investor holdings. In fact, outside of a REIT index mutual fund or ETF, any investment in commercial real estate is highly concentrated and consequently a bet on manager skill. Investment performance therefore entirely depends on the selection of a manager and that manager’s skill.

The difference between specialized exposure and market exposure is important, because investors typically model asset allocation and expected portfolio risks and returns on the basis of broad market exposures. In other words, investors put the characteristics of a particular asset class into a model to determine an appropriate allocation. Many asset classes, such as domestic and international stocks and bonds, can be replicated to capture the market exposure, but specialized investments such as privately held commercial real estate do not yet offer this option to the same degree. The derivatives markets may eventually help investors to track private real estate indexes, but for now such opportunities are limited. The importance of manager selection therefore results in a potentially wide distribution of return possibilities. In fact, if investors in private vehicles receive the return for the overall real estate market, it is more likely to be because of luck than because they found an investment pool that is diversified enough to replicate the true characteristics of the aggregate real estate market.

**Figure 7** demonstrates the relationship between idiosyncratic risk and systematic risk. Here we plot five-year annualized returns of individual REITs over time, with each dash representing the return for a specific REIT. For example, in 1993, 46 REITs had five-year returns, while in 2009, 141 had five-year returns. The dispersion of the returns simulates the risk inherent to selecting a concentrated real estate portfolio. We also plot the index return as well as the 25th, 50th, and 75th percentile returns. By definition, in any given period, 50% of firms will be above the median and 50% will be below the median, but it is instructive to look at the range of returns as well as where the index falls relative to the distributions. In every five-year period, a percentage of firms posted returns well below “average.”

It is also instructive to evaluate the spread between the 25th and 75th percentiles. In most years this spread was between 15 and 20 percentage points. Such a wide spread sheds light on the challenges associated with using undiversified investment vehicles to implement an asset allocation strategy. In this example, investors can own the REIT market, which means that the decision to invest with a manager or through an index can be a part of the investment process. However, no such investable index exists for the remainder of the commercial real estate market. As a result, investors in private partnerships must be able to believe that their managers can consistently deliver returns that are not only above the median return for all private partnerships but also above the index return for public REITs.

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6 We use REIT returns here because, unlike return data for private partnerships, REIT data are accurate and free of biases. Further, a REIT can be thought of as a publicly traded version of a private partnership or private investment pool. The investment managers invest in similar properties, with similar goals, objectives, and risks.
Portfolio impact of equitized real estate

To evaluate the potential impact of real estate exposure on a portfolio, we used the FTSE NAREIT Equity REIT Index to approximate the real estate market. This presents an obvious challenge: We have provided evidence to support the idea that commercial real estate is a separate asset class, naturally subject to asset-allocation decisions similar to those made for stocks and bonds. Further, we believe that REITs represent the best opportunity for many investors to gain access to this asset class. The waters are muddied, however, because while REITs represent exposure to a unique asset class, they are in fact equities.

Because REITs are equities, to justify their inclusion in a financial model as a unique asset class, investors must believe that REITs offer an exposure fundamentally different from that provided by other equities—a case that is reasonably strong. For example, the returns of most equities may be almost entirely explained by three key variables—the returns of the broad equity market, a size factor (large or small), and a style factor (growth or value). These are commonly known as the Fama-French risk factors. However, returns for REITs are only partially explained by these fundamental factors. In fact, the underlying real estate holdings constitute the largest single influence on REIT returns. It can be contended, therefore, that investors gain access to the previously unavailable real estate market through REITs.

Of course, while arguments can be made regarding the utility of adding a unique REIT allocation to a portfolio, investors must account for the fact that REITs are equities and as such are often contained in their broad equity allocations. In fact, for many investors, this may represent the only commercial real estate exposure required.

7 Separately we find that the Fama-French factors explain only 50% of REIT returns, leaving a large error term, likely representative of the real estate asset.
8 Investors with heavy allocations to active equity managers will be less able to control the total allocation to REITs, as the underlying managers themselves may be overweighting or underweighting REITs within their specific portfolios. In fact, a given strategic allocation is known for certain only if the entire portfolio is indexed.
Overall, to advocate a specific allocation to REITs, an investor must first believe that a broad REIT index fund or ETF accurately represents systematic exposure to commercial real estate. If the investor does not believe that but still desires exposure to commercial real estate, then an allocation to private real estate requires confidence that the private manager will consistently produce returns above those achieved by the median private manager as well as by the REIT index.

If an investor does accept that an index vehicle provides systematic exposure to the commercial real estate market, then the investor must also be comfortable with potentially significant deviations from other real estate indexes in the short term (Figure 5). And the investor must be confident that the portfolio will benefit from exposure above that provided by the inclusion of REITs in the public equity market. Assuming that these conditions hold for certain investors, then an independent strategic allocation to real estate may be warranted. Such strategic allocations to REITs should be based on specific risk and return objectives and constraints, and portfolios should be periodically rebalanced to those allocations.

Looking beyond the United States

So far in this analysis, we have made the case for commercial real estate using benchmarks focused on the U.S. market. This is primarily due to the abundance of data in the United States and the relative lack of data globally. That said, a case can be made that, as with equities and fixed income, investors thinking about including a real estate proxy in a broadly diversified portfolio should not limit themselves to a focus on one country or currency. Indeed, to the extent that global investment options are available, a portfolio’s diversification may be enhanced by including exposure to both U.S. and non-U.S. components.9

At a high level, the rationale for including non-U.S. real estate in a portfolio that already contains a U.S. allocation to this asset class is similar to the argument for combining U.S. and non-U.S. equities—namely, increased diversification and the potential for lower volatility. For example, global diversification permits exposure to multiple property markets, business cycles, and interest rate regimes. Imperfect correlations across these markets would theoretically lead to lower overall portfolio volatility.

Figure 8 reveals that as of December 2010, U.S. REITs accounted for only one third of the global equitized real estate market. By focusing solely on U.S. REITs, an investor is actively excluding two thirds of the global market from the real estate portfolio. It would therefore make intuitive sense that a U.S. investor could obtain a diversification benefit from expanding the portfolio to include non-U.S. REITs.

The left panel of Figure 9, page 12, shows that historically the U.S. REIT market has been imperfectly correlated to the non-U.S. real estate market. While correlations have been trending up since the early 2000s, the potential for diversification remains as long as correlations are less than 1.10

The right panel of Figure 9 reveals that, while the impact to portfolio volatility has cycled between higher and lower volatility, portfolios including both U.S. and non-U.S. real estate exposure would have experienced lower average volatility than a portfolio solely invested in U.S. real estate. This can be seen wherever the line in the graph dips below the x-axis. It is notable that, despite the increasing correlations, for much of the 2000s a portfolio that incorporated global real estate exposure would have experienced lower average volatility, even during the financial crisis of 2008.

9 Outside the United States, the most prevalent structure for equitized real estate companies is a real estate operating company or REOC. A REOC is similar to a REIT, except that a REOC reinvests earnings into the business, while a REIT distributes earnings to the shareholders. In addition, REOCs may be able to make more types of investments than REITs can.

10 Interestingly, this is the same trend we have witnessed between U.S. and non-U.S. equities over the past decade (see, for example, Philips, 2011). However, the trend is stronger in the broad equity market than in the real estate market, suggesting a potentially greater diversification benefit from combining U.S. and non-U.S. real estate.
Conclusion

Commercial real estate is a unique and significant asset class. Because of this, an argument can be made for its inclusion in a diversified portfolio. The challenge investors face, however, is that unlike equities, fixed income, or commodities, the available vehicles do not offer pure exposure to the asset class. Whether utilizing REITs, a collective trust, a separate account, or direct property ownership, investors are only exposed to a small slice of the broad commercial real estate market. As a result, real estate investors must be comfortable with the potential for their investment to deviate significantly from the performance of that broad market.

For those investors who desire exposure to commercial real estate and are indeed comfortable with the potential short-term risks, we have shown that a broad REIT index can serve as an effective proxy for the real estate market. In other words, we believe it is unnecessary for investors to incur the illiquidity, high costs, and manager risk of a relatively concentrated privately managed portfolio of commercial properties.

Finally, while we have shown that REITs offer liquid, diversified, transparent, and low-cost exposure to commercial real estate, investors must be comfortable with one last risk—the risk of a sector overweight. At the end of the day, REITs are equities, and as such are represented in most broadly diversified equity funds. For example, as of December 2010, REITs accounted for just over 1% of the broad U.S. stock market. The reality is that any additional allocation to REITs can represent a significant overweighting of a potentially volatile and concentrated sector.
Historically U.S. REITs and non-U.S. real estate have been imperfectly correlated.

12-month rolling correlations between U.S. REITs and non-U.S. real estate

July 1990–December 2010

12-month rolling impact on portfolio volatility

July 1990–December 2010

Sources: Morningstar and Standard & Poor’s. U.S. REITs are represented by the S&P U.S. REIT Index. Non-U.S. real estate is represented by the S&P Global Ex U.S. Property Index.
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ETFs are not redeemable with an Applicant Fund other than in Creation Unit aggregations. Instead, investors must buy or sell ETFs in the secondary market with the assistance of a stockbroker. In doing so, the investor will incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

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