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Zisler Capital Views

What investors need to know about . . .

Dagwood II: Multilayered themes on asset allocation with regard to equity REITs and property

Our seasonal contribution to CIOs and investors who search for edible diversions without tears and regret.

A **Dagwood Sandwich** is a multi-layered sandwich with a variety of fillings, assembled to attain such a tremendous size and infinite variety of contents as to stun the imagination, sight, and stomach. The Dagwood, originated in the comic strip, "Blondie", during the Great Depression, is today's new super-sized meal.

We invite our astute readers to consume this article in leisurely, thoughtful bites. Please share this article with a curious, idea-starved friend.



This issue of **Zisler Capital Views** is the second in a series of five articles on risk, the **Dagwood Risk Series**:

- The capital markets only reward investors for assuming risks—systematic risks—that they can not shed through diversification.
- To retain diversifiable, or idiosyncratic, risks is equivalent to leaving value on the table.
- Equity REITs and property deserve an allocation within a well diversified domestic portfolio, both (separately) receiving a 10% to 20% allocation. (We do not look at international portfolios or REITs with property, or other real estate assets, in this article.)
- While we extol the advantages of diversification in principle, we hasten to add that diversification is not free. Therefore, real estate portfolios, which comprise less than 10% of the investor's overall portfolio, need not be diversified down to the granular level.
- Along the efficient frontier investors can only increase return by incurring more risk or higher beta.
- Whereas diversification is the best free lunch in finance, active management is a zero sum game. Finding an active manager who can consistently deliver alpha, or returns above the efficient frontier, is like finding a needle in the haystack. Good hunting!

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Contents

| | |
|---|----|
| 1. Preface | 3 |
| 2. Diversification and real estate asset allocation | 4 |
| 3. Absolute and diversifiable risk | 6 |
| 4. Standards of diversification | 7 |
| 5. Equity REIT allocation (without liabilities) | 7 |
| 6. Property allocation (without liabilities) | 9 |
| 7. Conclusion | 11 |

In our enthusiasm, have we forgotten something important? Let us know. Call us or email.





I. Preface

Welcome to **Dagwood II**, the second of five articles from our **Dagwood Risk Series** on real estate risk management. “Dagwood”, a character taken from the comic book, *Blondie*, is a fictional character created during the hardscrabble Great Depression days. (Blondie is still available for comic aficionados.) The word, “supersize”, had yet to be invented. We picked “Dagwood” in honor of the sandwich because we felt there was so much food for thought in this paper and its four companions that the Dagwood Series required either a big appetite (i.e., glutton for punishment) or lots of free weekend time.

A Dagwood sandwich includes a little of everything. We hope that our tutorial on asset allocation will convince readers that real estate portfolios should not be just a string of “good” deals, or a little of everything. The principles of modern portfolio theory—we call it “standard portfolio theory”—apply to the role of real estate within a multi-asset portfolio and to the structure of the real estate portfolio itself.

We hope to reinforce the notion that not putting your eggs in one basket is a good idea as long as the baskets are not highly correlated. To do otherwise is to leave value on the table and only have a messy omelet to show for your considerable efforts. If you follow our advice, you may well earn yourself three Michelin stars.

In **Dagwood I**, we devised a statistical correction for serial correlation or smoothing, which distorts asset allocation studies and underestimates risk. **Dagwood II** determines the range optimal equity REIT allocations within a multi-asset domestic portfolio. The paper prescribes a significant portfolio allocation for equity REITS, about 20%.

Be sure to check out the last two of the Dagwood series:

- **Dagwood III. A short primer on downside risk and shortfall constraints**
- **Dagwood IV. Asset allocation with equity REITs within a surplus context**
- **Dagwood V. Should pension funds invest in leveraged property?**



II. Diversification and real estate asset allocation

What is diversification? Why is it important? How does it reduce portfolio risk? Why is it critical to diversify among asset classes as well as within asset classes? Can an investor over-diversify? How do investor liabilities affect the optimal or “best” asset allocation? How should investors manage their downside or shortfall risk?

Diversification theory is not new. Modern Portfolio Theory (MPT)¹ is a well received and widely used technique for managing investment portfolios. MPT is recognized and universally used by competent portfolio managers. In fact, it should be called “Standard Portfolio Theory”. It is no more than an elaboration and enhancement of the accepted notions that a prudent investor does not “put all of his eggs in one basket” and that the baskets are not alike (or correlated) with respect to risk.² The purpose of this issue of **Zisler Capital Views** is to provide investors with a basic tutorial on diversification using real estate, equity REITs and property (separately), as one component of a diversified multi-asset portfolio.

Diversification is a tool for managing risk. Good portfolio management practices should embrace diversification as a central objective. Diversification is accomplished by blending together major asset classes to obtain the highest long-run return for any given level of portfolio risk, or equivalently, by finding assets or asset classes whose returns do not move in perfect unison. These assets act like hedges. In fact, if two assets’ returns move exactly opposite to each other—they exhibit a perfect negative correlation of minus one—the assets are perfect hedges. In practice, investors try to select assets or asset classes whose returns do not all vary according to the same risk factors, such as unanticipated changes in inflation, interest rates, business conditions, industry or city-specific fundamentals, etc. A prudent portfolio manager seeks to mitigate the impact of these shocks by spreading the investments across asset classes and within asset classes that are not equally sensitive to these shocks. Specifically, the manager searches for assets that have negative or less than perfectly positive correlations, such as the assets included in the correlation matrices of Exhibits 1 and 2.

¹The Markowitz mean-variance framework is widely accepted in academic and practical finance. Constructing mean-variance-efficient portfolios for various risk levels determines asset allocations. This technique takes advantage of diversification benefits over time. An important limitation is that it only considers the risk-return trade-off in a static context. The risk measure is the standard deviation of returns, whereas there are many other sources of risks that investors face.

²Many investors who neglect the latter point may own portfolios that are diversified in appearance and but not in fact. A related consideration is that investors typically focus on their financial assets to the exclusion of their liabilities or, in the case of high net worth individuals, their human capital. In so doing, they may “double down”. For example, a real estate developer might have significant exposure to assets (such as equity REITs and limited partnership interests) whose returns are strongly correlated with her expected income.



Exhibit 1. June 2007 to April 2009: The Depths of the Credit Crisis

| | S&P 500 | Small | LT Corp | LT Govt | IT Govt | T-Bills | Inflation | EREIT |
|-----------|--------------|--------------|--------------|---------------|---------------|--------------|--------------|--------------|
| S&P 500 | 1.000 | 0.947 | 0.298 | -0.265 | -0.265 | 0.129 | 0.215 | 0.845 |
| Small | 0.947 | 1.000 | 0.249 | -0.316 | -0.316 | 0.005 | 0.225 | 0.922 |
| LT Corp | 0.298 | 0.249 | 1.000 | 0.411 | 0.411 | -0.050 | -0.542 | 0.238 |
| LT Govt | -0.265 | -0.316 | 0.411 | 1.000 | 1.000 | 0.199 | -0.445 | -0.289 |
| IT Govt | -0.265 | -0.316 | 0.411 | 1.000 | 1.000 | 0.199 | -0.445 | -0.289 |
| T-Bills | 0.129 | 0.005 | -0.050 | 0.199 | 0.199 | 1.000 | 0.236 | 0.075 |
| Inflation | 0.215 | 0.225 | -0.542 | -0.445 | -0.445 | 0.236 | 1.000 | 0.252 |
| EREIT | 0.845 | 0.922 | 0.238 | -0.289 | -0.289 | 0.075 | 0.252 | 1.000 |

Exhibit 2. January 1972 to June 2007. More halcyon times

| | S&P 500 | Small | LT Corp | LT Govt | IT Govt | T-Bills | Inflation | EREIT |
|-----------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|--------------|
| S&P 500 | 1.000 | 0.749 | 0.296 | 0.116 | 0.116 | 0.023 | -0.085 | 0.549 |
| Small | 0.749 | 1.000 | 0.175 | -0.003 | -0.003 | -0.015 | -0.048 | 0.621 |
| LT Corp | 0.296 | 0.175 | 1.000 | 0.796 | 0.796 | 0.053 | -0.221 | 0.212 |
| LT Govt | 0.116 | -0.003 | 0.796 | 1.000 | 1.000 | 0.155 | -0.119 | 0.022 |
| IT Govt | 0.116 | -0.003 | 0.796 | 1.000 | 1.000 | 0.155 | -0.119 | 0.022 |
| T-Bills | 0.023 | -0.015 | 0.053 | 0.155 | 0.155 | 1.000 | 0.436 | -0.032 |
| Inflation | -0.085 | -0.048 | -0.221 | -0.119 | -0.119 | 0.436 | 1.000 | -0.032 |
| EREIT | 0.549 | 0.621 | 0.212 | 0.022 | 0.022 | -0.032 | -0.032 | 1.000 |

In **Dagwood I**, we noted that correlations are not stable over time. We introduced Exhibits 1 and 2 to show that correlations increased for certain asset pairs during the crash—an example of phase locking. Despite the volatility in correlation coefficients and standard deviations over time, by selecting as long a time period as possible from which to draw necessary statistical parameters, as we do from 1972 through part of 2009, we “average out” these perturbations.

Through asset diversification, investors can reduce overall portfolio risk without sacrificing return. Similarly, investors can increase return without incurring additional portfolio risk. However, consistent with the risk management objectives of diversification, investors also want to mitigate, if not minimize, shortfalls or downside risk. They certainly want to minimize the likelihood of large losses of principal and interest. Investors ask questions such as the following: “Even if my portfolio is well diversified, what is the likelihood that I will face a loss of principal? What is the likelihood that I will lose over 10% of my capital over a five year horizon?” We explore shortfall or minimum return issues in **Dagwood III**.



III. Absolute and diversifiable risk

So far, we have discussed in the context of Exhibit 1 absolute and relative risk. Gold, for example, is a volatile asset (as determined by the ratio of its standard deviation to its average return over time), but combined with other assets, gold can improve overall portfolio performance without increasing portfolio risk. (Gold's marginal risk is close to or less than zero in the context of a broader, diversified portfolio.) Therefore, the most appropriate definition of an asset's risk is its contribution to overall portfolio risk.³

A diversifiable risk is a risk that specifically affects a single asset or small group of assets. This type of risk, sometimes known as unique or nonsystematic risk, can be hedged by the selection of another asset whose return is not highly correlated. The investor will not receive additional return for bearing risks that can be hedged or eliminated through diversification. Incurring diversifiable risk is equivalent to bearing needless risk. The capital markets will not reward investors for bearing risks that the investor can otherwise shed. Using real estate again, an example of a diversifiable risk is the unexpected default of one of a thousand tenants or the unexpected resignation of the CEO of a publicly listed REIT. Property portfolios well diversified by location, property type, and even position in the capital stack typically do not suffer much from the bankruptcy of a city's largest employer, unless the causal factors are systemic and lead to bankruptcies across the nation.

The number of investments within a portfolio is an important consideration, especially since diversification is not free. When there are too few assets, then too much diversifiable, and hence needless and uncompensated, risk remains within the portfolio. The risk of a portfolio, in practice, drops as the investor adds additional assets. However, the risk does not drop to zero. What remains is non-diversifiable risk. In theory, if there were no transactions or management costs, then one might argue that there never is enough diversification. However, in practice, how many external managers can an investor (or his advisor) prudently monitor and evaluate? How many assets can a manager prudently manage? Diversification is not free because investors, their advisors and external managers must contend with scarce resources: time and money. There is an optimal number of assets, and this number will depend critically on the specific facts and circumstances. We suspect that there is a significant number of large institutional investors who have too many external real estate money managers.

³As we will see later, the marginal contribution to overall portfolio risk can differ depending on the liabilities. For example, the addition of T-bills, which is low risk in an assets-only context, is a higher risk asset (and may sub-optimize portfolio performance) in the context of long duration liabilities. We are shocked when CIOs and wealth managers make asset recommendations—"Every portfolio should have gold as an inflation hedge"—without regard to the nature of the underlying liabilities.



IV. Standards of diversification

A prudent manager will seek to diversify the portfolio between classes and within classes: (1) No one asset class should dominate the portfolio, or, in order to reduce the risk of loss of principal and current income, the investor (or advisor) should not expose too large a portion of the portfolio to any one class of investments; (2) Asset classes should be selected to reduce overall portfolio risk without sacrificing return, that is, asset class expected returns should not be highly correlated; (3) Assets within classes should be selected to reduce the overall risk of the asset class without sacrificing return, that is, assets within classes should not be highly correlated; and (4) No single asset should assume an excessive proportion of the total portfolio. All of these prescriptions are subject to the caveat that diversification is not free. If real estate constitutes a small percentage of the overall portfolio, the incremental portfolio benefits of diversification within real estate are small.⁴

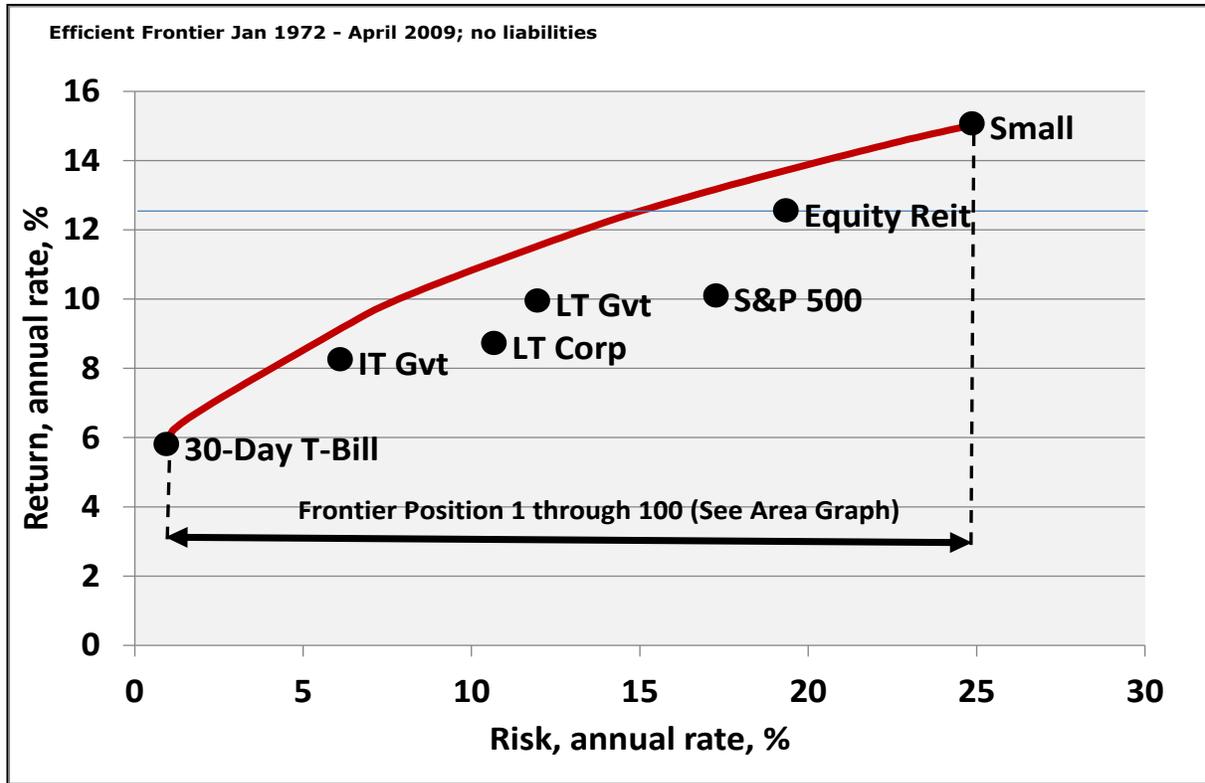
V. Equity REIT allocation (without liabilities)

The efficient frontier is that locus of points which defines the greatest achievable return associated with a specific level of risk. To the extent that asset returns are not perfectly correlated, the efficient frontier is convex (looking from the top down).

Consider Exhibit 3, which depicts a number of efficient portfolios consisting of optimal combinations of some or all of the indicated asset choices. For example, at the midpoint along the efficient frontier, the efficient asset allocation is 35% small stocks, 40% long term government, 2% intermediate term government, and about 20% equity REITs. T-bills are excluded at the midpoint but dominate portfolios of lowest risk. Thus, a portfolio of moderate risk includes REITs but excludes corporate bonds, T-bills, and large stocks (S&P 500). A critical observation is that once on the efficient frontier, investors must shoulder additional risk in order to increase return. There are no free lunches on the efficient frontier; the free lunch counter is below the frontier.

⁴Career preservation is a natural and understandable impulse. For example, the real estate manager of a large pension fund for which real estate is a small component may nevertheless seek granular diversification of the real estate portfolio, even though the comparative strength of the pension fund may be its ability to write big checks for large deals. Thus, the application of diversification may reflect a multiplicity of financial and organizational goals, not all of which enhance the expected performance of the surplus.

Exhibit 3. Efficient frontier with no liabilities



The efficient portfolio at the midpoint, which prescribes a 20% allocation to equity REITs (Exhibit 5), has an average return of about 10%. Exhibit 6 indicates that the likelihood of a negative return—left tail risk—is about 17.5%. Diversification using equity REITs reduces left tail risk and sheds nonsystematic risk for which the capital markets do not reward investors.

Exhibit 4. A moderate-risk domestic portfolio gives equity REITs a 20% allocation.

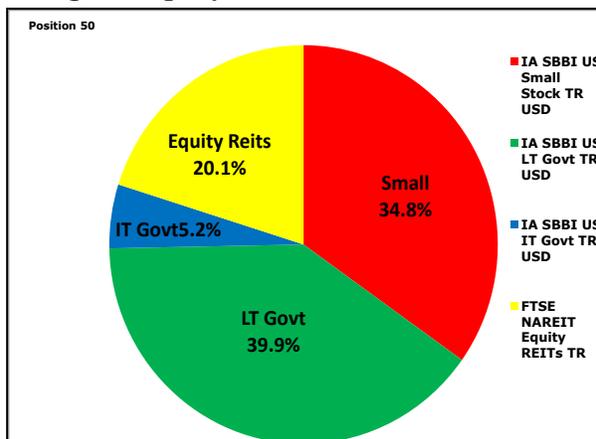


Exhibit 5. Adding equity REITs reduces left-tail risk without sacrificing returns.

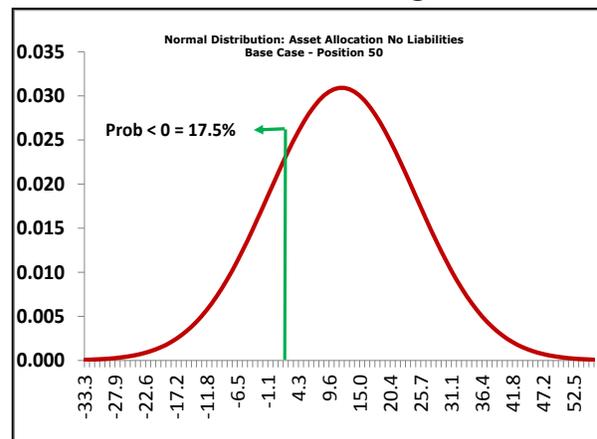
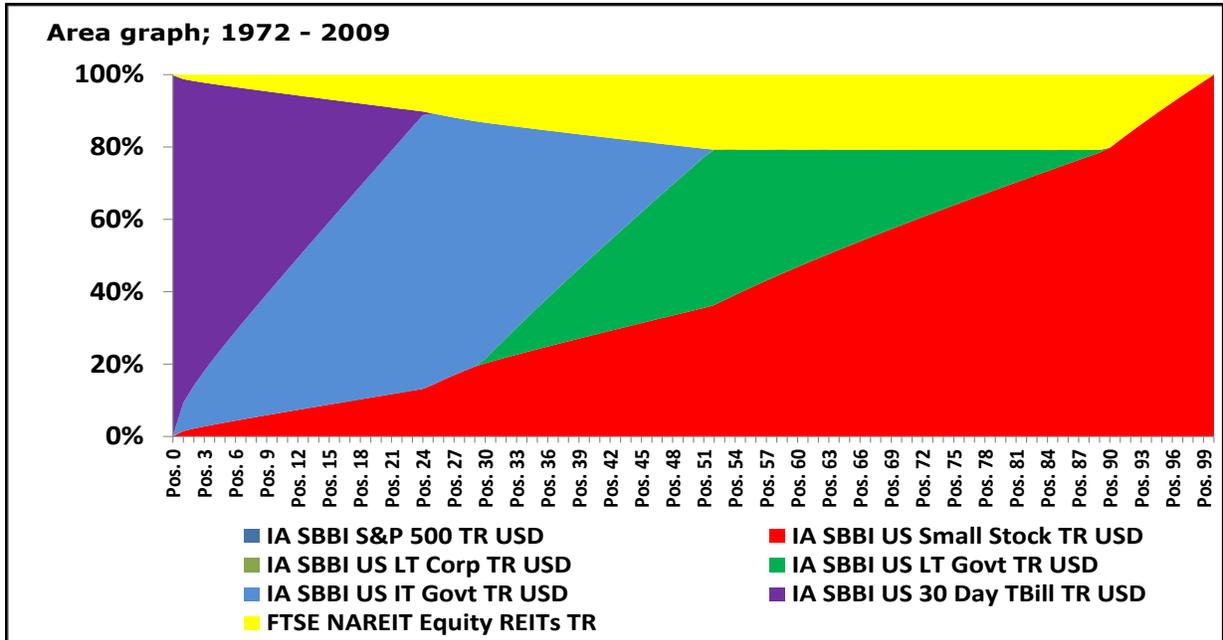


Exhibit 6. Area graph showing asset allocation along the efficient frontier



VI. Property asset allocation (with no liabilities)

We now turn to property. Many asset allocation studies using unadjusted standard deviations prescribe unreasonable allocations to property. Mindful of these studies we imposed the following constraint: Stocks must comprise 1.5 times the total bond allocation (not including T-bills).

We incorporated an adjusted standard deviation half way between the measured (and biased) standard deviation and the standard deviation of equity REITs, as we recommended in **Dagwood I**. We also investigated the property allocation with the same constraint but we assumed that property's standard deviation matched that of equity REITs. (See Exhibits 6 and 7.) The property allocation is between 11% and 29%. We suspect that 11% to 20% is just about right, but, intuition aside, our estimate is a bit fuzzy.

We believe that real estate, either property or REITs, deserves an allocation within institutional and high net worth portfolios. We just cannot be sure with high precision, but we will have more to say regarding these issues in future **Zisler Capital Views**.



Exhibit 7. Mid-risk property allocation that assumes (large and small cap stocks) = 1.5 times (LT Corporate and LT Government Bonds) and property standard deviation = the average of the measured property standard deviation and the equity REIT standard deviation.

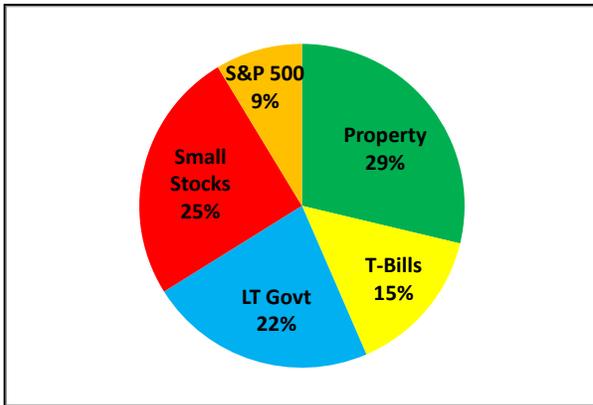
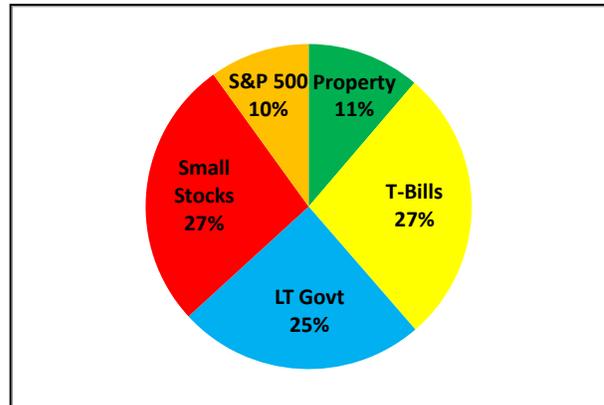


Exhibit 8 Mid-risk property allocation that assumes (large and small cap stocks) = 1.5 times (LT Corporate and LT Government Bonds) and property standard deviation = the equity REIT standard deviation.



We plan to explore new approaches to risk measurement, mitigation and management. In particular, we will apply these risk management tools to specific transactions, including joint ventures, complex capital structures, and promote structures.



VII. Conclusion

Asset allocation. Equity REITs or property deserve an allocation within well diversified domestic portfolios. (We do not explore international portfolios, although research elsewhere supports a role for securitized real estate and property within an international portfolio.) The statistical results are not very precise. However, we are comfortable recommending an allocation between 10% and 20% for equity REITs or property. (We do not evaluate portfolios with REITs and property, although we reserve this important issue for future articles.)

Total risk. Total risk equals diversifiable (idiosyncratic) risk plus non-diversifiable (systematic) risk. Diversification enables the investor to shed through the capital markets non-systematic or diversifiable risk. Systematic risk is risk which the investor cannot shed. The market only compensates investors for assuming systematic risk. If the investor is inefficiently diversified, the investor has essentially left value on the table.

Active Managers. When investors hire active managers, they typically expect these managers to achieve active returns in excess of those systematic returns investors could achieve by investing in a diversified passive portfolio of assets. Investors should understand that the shedding of nonsystematic risk is not a zero sum game, whereas the search for excess returns is a zero-sum game. That is why active managers who can consistently beat the market (achieve returns in excess of the returns associated with a portfolio along the efficient frontier) should be able to charge higher fees. (They should not receive active fees for the systematic portion of total return.) Alas, identifying successful active managers is no easy task.

Use of REITs and Property. We plan to explore in future issues efficient allocations of property and equity REITs together in domestic and international portfolios. For now, we would like to share some insights into why anyone might like to combine REITs and property within the same portfolio. An important empirical observation is that REIT returns tend to lead property returns. REIT returns also seem to adjust faster to disequilibrium. REIT transactions costs are less than property transactions costs. Additionally, it is possible to short REITs, but not property. Credit default swaps are also available for REITs, but not for property. Consequently, REITs can provide a useful tactical method to express market views, negative or positive, regarding property types and even regional locations. The capital markets also provide ways to partially hedge or shift risk. Thus, we are believers in the combined use of publicly traded REITs and property within the same real estate program if not in the same portfolio.



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Zisler Capital Views is a research service of Encore Enterprises, Inc., that focuses on critical issues at the nexus of real estate capital markets, corporate finance, structured finance, and portfolio strategy. Our research is all about critical ideas for curious and thoughtful investors.

Why are we writing Zisler Capital Views? We believe that most (but not all) real estate research is either parochial, self-serving, bland, or just wrong-headed: (1) “Parochial” because much real estate research fails to look past the real estate sector and assess complex linkages affecting value and risk; (2) “self-serving” because some companies, which lack the long view, believe that uncompromising objectivity may be bad for business; (3) “bland” because some sponsors prefer “safe” or “so what” research rather than the alternative, which may be inconvenient or controversial; and (4) “wrong-headed” because much research fails to blend practice with the best that academia offers. However, the main reason we write Zisler Capital Views is, well, we just like to write and because we believe we have something important to say. We hope you agree.

Randall Zisler and Matthew Zisler have extensive experience in structured finance, research, derivatives, portfolio strategy, and real estate finance at leading global investment banks. The authors have advised some of the largest pension funds, institutions, corporations and developers, raised and managed (successfully) pension fund capital, structured complicated debt and equity transactions, and participated in REIT IPOs and CMBS issuance. Randy was a professor at Princeton University and has held senior positions at Goldman Sachs, Nomura Securities, Pension Consulting Alliance, and Jones Lang LaSalle. He has advised high net worth individuals including Marvin Davis and Merv Griffin.

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