

STRATEGIES FOR DIVERSIFICATION IN EXISTING  
REAL ESTATE PORTFOLIOS

by

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ABSTRACT

Diversification within real estate has become increasingly important with the growth of institutional investors in the real estate investment community. While traditional real estate investors understand perfectly well the benefits of maximizing return and minimizing risk for each acquisition, institutional investors require that returns be reached with minimum risk at the portfolio level. Investment managers need to be able to quantify their return results in a fashion that is compatible with the portfolio theory approach of the institutional clients. The key is to identify which model of diversification is appropriate for "true" diversification as well as the most practical to implement given the unique characteristics of the manager and their fund. Moreover, the manager must have a clear understanding of how their strategy fits into the larger diversification considerations of their client. In this paper, seven models of diversification strategy are identified. Utilizing access to an existing real estate investment portfolio and the growth objectives of TA Associates Realty, a Boston, MA based real estate investment advisor, a case study is performed which recommends an appropriate diversification strategy for the subject fund. Overall, it is concluded that it is possible to diversify away from an existing portfolio partially constructed in a purely opportunistic fashion. From a pragmatic viewpoint, some models of portfolio diversification are more appropriate than others depending on the specific characteristics which define the already existing portfolio.

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## CHAPTER 1 INTRODUCTION

Diversification within real estate has become increasingly important with the insurgence of institutional investors in the real estate investment community. While traditional real estate investors understand perfectly well the benefits of maximizing return and minimizing risk for each acquisition, institutional investors require that returns be reached with minimum risk at the portfolio level. Not only do the institutional investors view real estate as a broad asset class diversifier when combined with their stock and bond portfolios, but they also emphasize the importance of diversification within each individual asset class. For this reason, real estate investment managers who want to act as single, well-diversified accounts must practice strategies of within-real estate diversification in order to provide quality service to their institutional investment clients.

A substantial amount of existing literature on within-real estate diversification strategies offers real estate investors options to draw from when originating a new investment fund. Indeed, while some of these strategies are considered to be "naive" from a modern portfolio theory viewpoint, others have been effective in generating well diversified real estate portfolios that contribute to the overall diversification of large institutional funds as a separate asset class. However, the question is whether or not the different models of within-real estate diversification that emphasize a portfolio theory mentality can be successfully applied

to an already existing portfolio which has partly been constructed in an opportunistic fashion. Is it possible to make adjustments to a group of real estate assets selected for their individual potential on a "deal basis" and create an efficiently diversified portfolio which results in overall performance that outperforms, or is equal to, that of the sum of its parts? Moreover, given the unique characteristics that define the components of an existing portfolio and the specific strategies used for property-specific acquisition, are some models of diversification more pragmatic than others in insuring that a selected portfolio strategy is not only correct and appropriate, but doable? If an investment manager is able to confirm that each addition to, or disposition from, an existing portfolio is of overall portfolio benefit given specific risk and reward targets, they can then be viewed by potential clients, namely pension funds, as a single well diversified manager account. This perception transforms the previously perceived niche-player into an efficient producer of core as well as opportunity results. It is not possible to be both.

In attempting to answer these questions, this paper reviews the existing literature and identifies the various within-real estate diversification strategies for equity real estate portfolios. Issues pertaining to the pragmatic nature of these strategies are discussed in the context of a case study. The case study centers on TA Associates Realty, a Boston, MA based real estate investment advisor, who is in the process of investing a \$332 million fund for their institutional clients. They have to date invested approximately \$132 million in small, niche, opportunistic properties, and therefore, have approximately \$200 million left to invest on

individual real estate transactions. Appropriate diversification strategies are investigated in a modern portfolio theory context.

The methodology originally involved meeting with the partners of TA Associates Realty in informal meetings to get a feel for the environment and style of the organization. The meetings followed a non-directive approach allowing for flexibility in the discussion. With only broad guidance, the partners volunteered relative facts and opinions in order for their strategies and approaches to be clearly understood as pertains to their portfolio construction. In addition, they volunteered copies of the individual investment summaries for each acquisition to date, as well as their partnership agreement.

The next step involved an extensive literature search to seek out existing academic work which is relevant to diversification strategy as well as real estate investment. Subsequent to synthesis of the existing literature, follow-up discussions took place with the partners and the Director of Asset Management of TA Associates Realty. The goal of these discussions was to further understand the characteristics of their investment fund with the added perspective of the academic literature.

Chapter 2 is a literature review and synthesis of the existing articles which pertain to the subject topic. The majority of the work was published in the last seven years. Seven models of diversification are identified as well as three categories of manager account selection as viewed by institutional clients seeking efficient diversification results for their mixed asset portfolios. Chapter 3 contains a description of the data relating to the case

study and an attempt to clarify the information needed to draw conclusions concerning the unique components and characteristics of TA Associates Realty's investment fund. Finally, Chapter 4 has a recommendation for an appropriate and efficient diversification strategy for TA Associates Realty given their existing situation and the existing academic research on the topic. Chapter 4 also includes some general conclusions on the ability and necessary steps to truly diversify away from any given, already existing portfolio which was partially constructed in a purely opportunistic fashion.

In order for real estate investment managers to effectively compete for the business of the most important client in the business today, the institutional investors, they need to be able to quantify their return results in a fashion that is compatible with the portfolio theory approach of these clients. This paper concludes that it is possible for already existing portfolios to confront this problem and cater to the needs of this very important source of business. Indeed, their specific strategies and style might only need a few non-disruptive adjustments to produce required returns with minimized volatility. The key is to identify which model of diversification is appropriate for true diversification as well as the most practical to implement given the unique characteristics of the manager and their fund. Moreover, the manager must have a clear understanding of how their strategy fits into the larger diversification considerations of their client.



## CHAPTER 2

### LITERATURE REVIEW AND SYNTHESIS

In the past, very few real estate investors even considered the use of portfolio theory. However, in the 1980s, more and more attention was given to the practical application of portfolio theory as institutional investors became more of a significant factor in the real estate investment community. Conroy, Miles, and Wurtzebach, in 1986, discussed modern portfolio theory as it pertains to real estate portfolios.<sup>1</sup> As the pension funds began investing in real estate, they brought with them a portfolio theory mentality which they had been using for decision making in regards to other asset classes; in particular, stocks and bonds. Despite the alien nature of this type of analysis to traditional real estate professionals, "the sheer size of the pension funds has forced real estate people to cater to the funds - to change traditional ways of doing business to adapt to the funds' ways".<sup>2</sup> The authors believe that modern portfolio theory is consistent with traditional real estate analysis, and that understanding modern portfolio theory is essential to understand the needs of the increasingly important pension fund clients. Overall, this theory drives the allocation models of these clients; it has historically made money for the pension funds, and they have a great amount of human capital invested in the theory.

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<sup>1</sup> B. Conroy, M. Miles, C. Wurtzebach, "A Practical View of Real Estate and Modern Portfolio Theory." *Industrial Development*, (June, 1986), 11-20.

<sup>2</sup> *Ibid.*, p. 11.

Conroy, Miles, and Wurtzebach go on to explain the evolution of modern portfolio theory. People have always understood that the value of any single investment is defined by an expected return and the risk associated with that return. It is also understood today that the variance of the distributions of expected returns defines risk. However, portfolio theory tells us that it is not enough to make investment decisions based on the risk/return tradeoff for an individual asset. Consideration must be given to how the specific asset's risk interacts with the return of other assets in the overall investment portfolio. As correlation between two assets decreases, diversification benefits will increase.<sup>3</sup> This is the perspective being used by new investors in real estate. The authors go on to point out a specific diversification strategy with respect to real estate. It is known that having different property types and different property locations in a single portfolio has definite diversification benefits. However, this strategy can become overly expensive due to additional costs and difficulties related to information gathering and general management of investments. A more unique strategy concentrates on obtaining a mix of different types of leases within the same property type. Within-real estate diversification is then achieved by viewing the real estate portfolio as a collection of leases. This is not only less expensive, but also is true to a traditional view of real estate emphasizing specialization.<sup>4</sup> The pragmatic nature of this strategy certainly comes into question

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<sup>3</sup> Ibid., p. 14.

<sup>4</sup> Ibid., p. 14.

during periods where owners are not in a position to be particular about tenant selection. Does it make sense to leave a specific property vacant for long periods of time while waiting for a good fit as pertains to diversification?

The article summarizes some of the beliefs existing at the time. The first one is that real estate offers higher returns and lower risks than stocks or bonds. Critics argue that this result is based on averages of idiosyncratic information which smooth returns. In addition, they complain that returns based on appraised values are far less reliable than market prices that exist for stocks and bonds. Another research result shows that real estate investments represent an excellent diversification opportunity when combined with stock and bond portfolios.<sup>5</sup> The last result emphasizes the importance of real estate as an inflation hedge as opposed to stocks and bonds. Critics of general real estate investment research warn that traditional real estate analysis involving property specific attributes is being compromised just so as to accommodate the pension fund investors.<sup>6</sup> In concluding, Conroy, Miles, and Wurtzebach speculate that perhaps the lack of diversification within a real estate portfolio caused by specializing in specific property types or locations is not of concern. Needed diversification can instead be obtained by combining the real estate portfolio with stocks and bonds to form a mixed asset portfolio.<sup>7</sup>

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<sup>5</sup> Ibid., p. 19.

<sup>6</sup> Ibid., p. 19.

<sup>7</sup> Ibid., p. 20.

Hartzell, Heckman, and Miles (1986) identified other specific diversification categories for investment real estate.<sup>8</sup> They cite work done by Miles and McCue<sup>9</sup> which argues that the diversification techniques perceived as efficient by the investment managers at the time were actually naive as they were not based on mathematical proof. They concluded that the often used categories of property type and geographic location were not ideal for diversification. Overall, Miles and McCue demonstrate that using these categories leads to "the conclusion that - in a world of relatively expensive information - diversification away from the real estate investment managers' comparative advantage is probably not cost justified".<sup>10</sup> In Hartzell, Heckman, and Miles' article, more exacting categories of real estate investment are sought out. Their research is based on quarterly operating data from 1973 through 1983 provided by a large institutional manager of pension fund real estate investments. One of their results confirm previous findings that real estate in general has significant diversification benefits when combined with a portfolio of stocks and bonds. Within real estate, the diversification categories investigated are geographic location, property type, property size, SMSA growth rate, and lease maturity.

Some differences were identified within these categories that suggest that diversification benefits potentially exist. The South

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<sup>8</sup> D. Hartzell, J. Heckman, M. Miles, "Diversification Categories In Investment Real Estate." *AREUEA Journal*, Vol 14 (1986), 230-254.

<sup>9</sup> M. Miles, T McCue, "Historic Returns and Institutional Real Estate Portfolios." *AREUEA Journal*, (Summer 1982).

<sup>10</sup> Hartzell, Heckman, Miles, p. 231.

performed better during the downturn of the early 1980s, and the Midwest had the best overall risk adjusted returns. While office properties showed slightly higher returns over half the period, industrial properties had the highest returns for the whole period. Traditional logic was supported as industrial properties were at the low end of the risk spectrum, and hotels/motels were at the high end. Concerning property size, the highest risk and return results were demonstrated by the smallest and largest properties. Property samples grouped by SMSA growth rate had low correlations and offer good opportunity for within-real estate diversification. The past five years of the sample showed that, on a risk-adjusted basis, slow growth areas outperformed fast growth areas. However, it is pointed out that the fast growth areas had much better overall upside potential. The results pertaining to lease maturity show a strong preference for shorter term leases which obviously offer more flexibility.<sup>11</sup>

Hartzell, Heckman, and Miles conclude that there appears to be excellent potential for within-real estate diversification. However, due to the expense of diversifying across these five categories, and the fact that all categories of real estate are shown to provide diversification benefits when combined with stocks and bonds, they concede that the benefits of within-real estate diversification is not clear.<sup>12</sup>

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<sup>11</sup> Ibid., p. 240-244.

<sup>12</sup> Ibid., p. 246.

Corgel and Oliphant approached real estate diversification from a slightly different angle. They investigated pension fund strategy for choosing more than one investment manager with the goal of diversifying by style and judgement.<sup>13</sup> While many plan sponsors entirely allocate their funds to one or two open-end commingled funds which on their own are each considered well diversified by property type and geographic region, Corgel and Oliphant question whether this strategy is optimal for diversifying risk in a real estate core portfolio. They suggest that diversification of style and diversification of judgement are often times overlooked. "Style diversification reduces portfolio risk because investment managers analyze different subsets of assets. Judgement diversification reduces portfolio risk because different investment managers view any given subsets of assets differently."<sup>14</sup> It is argued that these categories of diversification offer substantial benefits for a number of reasons. Indeed, institutional investment managers vary in terms of research capabilities, specialization, financing expertise, acquisition policies, asset/property management arrangement, and asset sale policies.<sup>15</sup>

Corgel and Oliphant report findings of a study which assembled performance data from ten different large funds. It was demonstrated that it is beneficial and worthwhile for a plan sponsor to diversify across different real estate investment funds. Some

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<sup>13</sup> J.B. Corgel, M.L. Oliphant, "A Multifund Real Estate Strategy for Pension Funds." *Real Estate Review*, p.67-70.

<sup>14</sup> *Ibid.*, p. 68.

<sup>15</sup> *Ibid.*, p. 68.

other risk factors to consider in selecting appropriate managers are the timing of the investment as pertains to phase of development, lease quality, and exposure to leverage.<sup>16</sup> In conclusion, the results suggest that significant risk diversification can be achieved for plan sponsors by investing in three to four large, well-diversified real estate management groups.

In 1988, Firstenberg, Ross, and Randall completed a study which attempted to summarize diversification issues as perceived by the real estate investment community at the time.<sup>17</sup> They begin by explaining that investors in equity real estate have traditionally approached acquisitions with an eye toward each individual investment as a potential "good deal " in and of itself. The inefficient nature of the market has lead to the belief that success in real estate investment is determined by the skill in which an individual investment is sought out and negotiated. However, it is prudent to derive strategies which take into account diversification, and how each new acquisition contributes to the overall performance of the portfolio. Obviously, the intent is to select properties whose inclusion in the portfolio is of overall benefit. It is only after an appropriate risk level is determined for the entire portfolio that the individual character of a potential acquisition can be considered. At this time, it is then possible to determine the effect that a new

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<sup>16</sup> Ibid., p. 69.

<sup>17</sup> P. Firstenberg, S.A. Ross, C. Randall, "Real Estate: The Whole Story." *Journal of Portfolio Management*, Vol 14 (Spring 1988), 22-34.

investment will have on the overall risk and return objectives of the portfolio.<sup>18</sup>

Financial theory shows how the risk-adjusted rate of return can be maximized through diversification of an investment portfolio. Historically, real estate investors have attempted to achieve this diversification by selecting different property types and different geographical locations for investments. This practice is considered to be "naive" diversification because the strategy is not based on mathematical proof that the different categories have negative or low correlations. However, studies have investigated the correlations within different real estate categories. Such categories include property type and size, geographic and economic region, leasing structure and maturity, tenants, and investment vehicle. The conclusion of these quantitative studies is that within-real estate diversification is significant. It is possible to construct a well diversified portfolio with desired risk and return characteristics by acquiring different combinations of property types and economic regions with low or negative correlations. Indeed, "true" diversification can be achieved by "(employing) some familiar principles from modern portfolio theory (MPT) as guides in portfolio construction".<sup>19</sup> In a note prepared in 1988, Louargand discusses diversification in an MPT context by first pointing out that risk can be divided into a systematic category and a specific (unsystematic) category.<sup>20</sup> Systematic risk is market risk that affects the entire

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<sup>18</sup> Ibid., p. 22.

<sup>19</sup> Ibid., p. 25.



market that a particular asset is a part of. Specific risk is particular to the specific asset. It is possible to diversify away from specific risk while it is not possible to diversify away from systematic, or market, risk. Again, the goal in MPT is to combine assets with negative or no correlation to construct diversified portfolios. "If we can identify the ways in which assets behave under different circumstances, we can mix and match them so that the portfolio they comprise will have its own behavior, different from the behavior of the individual assets. If the portfolio has less total volatility than the individual assets, we will have achieved diversification."<sup>21</sup> Concerning real estate investments, Louargand emphasizes the need to examine the fundamental nature of the generated cash flows as well as their specific and systematic influences. This in turn allows comparison of the same types of cash flows resulting from different physical or geographical categories of real estate.<sup>22</sup>

Firstenberg, Ross, and Randall note that there still exists a strong sentiment in the real estate investment community that "good old-fashioned" and thorough due diligence in acquiring individual investments is equally as effective as MPT in providing desired returns while minimizing risk. The skill required to acquire, manage, and dispose of individual assets will always be a major factor in determining total return. Portfolio management is not a

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<sup>20</sup> M.A. Louargand, "Characteristics of Real Estate Investment Risk." MIT Center for Real Estate Development, 1988.

<sup>21</sup> Ibid., p. 2.

<sup>22</sup> Ibid., p. 7.

replacement or substitute for asset-specific management. However, it must be recognized that the overall composition of the portfolio does effect the variability of returns. Therefore, in considering an addition to the portfolio, two analyses are appropriate. The first involves traditional project analysis for real estate which focuses on the individual properties unique risk-reward characteristics. The other involves a macro analysis utilizing MPT concepts. This will determine the impact of the asset on the total portfolio and its objective. After all, while diversification does remove unsystematic risk, desired portfolio returns will not be achieved if poor analysis of local markets and other property-specific concerns results in paying too much for each investment. The goal is simply to insure that the whole is not less than the sum of the parts.<sup>23</sup> In addition, this strategy in no way jeopardizes the potential for opportunistic investment. Investors are still able to target growth corridors within the best markets, and then the best properties within those corridors.

Studies attempt to quantify the independence of different economic areas. It is understood that different geographical locations can actually be subject to the same macro economic variables. Geographic diversification can only be achieved by diversifying across areas with different industry-specific risks. This logic leads to an ultimate strategy of diversifying across leaseholds.<sup>24</sup>

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<sup>23</sup> Firstenberg, Ross, Randall, p. 24-25.

<sup>24</sup> Ibid., p. 26.

In MPT, portfolios on the efficient frontier have the highest return for their level of risk. In regards to economic regions, efficient portfolios which avoid the extremes of high returns/risk and low returns/risks tend to be more fully diversified among all regions considered. However, efficient portfolios considering property type alone can have as few as two asset types. Most agree though that when economic region diversification and property type diversification are combined, the subsequent risk reduction is even greater. Ultimately, it is up to the investor to determine the appropriate combination of risk and return. This decision will determine which efficient portfolio to select along a risk/return continuum.<sup>25</sup>

Firstenberg, Ross, and Randall do not preclude the idea of deviating from a predetermined strict plan for diversification. As long as investor and investment manager are well aware of a given investment strategy, creating a high risk/return portion in the portfolio can be justified. Added risk will obviously be compensated for by additional return. "One way to implement such a strategy is to divide the portfolio into a strictly diversified component (a core portfolio) and a higher risk/higher return portion (an opportunity portfolio), with the blend between the two reflecting an overall risk-return target."<sup>26</sup>

In 1989, Cole, Guilkey, Miles, and Webb identified some specific, intuitive subcategories of real estate which can be used

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<sup>25</sup> Ibid., p. 28.

<sup>26</sup> Ibid., p. 29.

for scientific diversification strategy.<sup>27</sup> While they find that "naive" diversification across many arbitrary property types and geographic locations can potentially result in significant risk reduction, the cost of obtaining information may outweigh the benefits from risk reduction that this diversification produces. Indeed, naive real estate acquisition across many different markets requires extensive information to insure profitable selection and management. They ultimately conclude that naive categories are inefficient for within-real estate diversification.<sup>28</sup> There are ten intuitive groupings that they develop and analyze for within-real estate diversification. The first two are oil-sensitive properties, and properties benefiting from trade deficit reduction. Next are player's world properties which are less than five years old and located outside the central business districts of faster growing cities. This category does not include industrial properties and is based on the perception that "players" like these properties because of the greater upside potential for new participants. Life-style properties are garden office buildings in counties with less than one million in population. This category stresses the desire of people to live on a "human scale". Distribution buildings are industrial buildings in counties with higher than average wholesale income located within one mile of interstate highways. Yuppieland properties are smaller retail properties in locations with greater than average income per capita. Tomorrowland properties are located in greater Los Angeles. Lastly,

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<sup>27</sup> R. Cole, D. Guilkey, M. Miles, B. Webb, "More Scientific Diversification Strategies for Commercial Real Estate." *Real Estate Review*, Vol 19 (Spring 1989), 59-66.

<sup>28</sup> *Ibid.*, p. 63.

they analyze New South properties, government-dependent properties, and zoning-protected properties.<sup>29</sup> Their study reveals that low correlations do exist among these subcategories, and therefore, diversification across these subcategories can result in significant within-real estate diversification. In addition, "if by selecting narrow real estate classes, the manager has reduced his cost of obtaining information and enhanced the possibility of comparative advantage, subcategories like those suggested here will prove to be a better way to achieve portfolio diversification".<sup>30</sup> The authors make the observation that the overall well diversified real estate portfolio in turn becomes a good broad asset class diversifier. MPT is used along with the subcategories for ultimate portfolio construction. "The asset manager's goal is to create an "efficient" portfolio that is a combination of assets that produces the highest possible return for any given level of risk or, alternatively, the lowest risk for any given return."<sup>31</sup> Given the means, standard deviations, and correlations of returns on assets for the groupings, the authors utilize proprietary computer programs to ultimately generate efficient portfolios. In concluding, they stress that their hypothetical categories are not exhaustive. Their main point is that more exact subcategories of commercial real

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<sup>29</sup> Ibid., p. 64.

<sup>30</sup> Ibid., p. 64.

<sup>31</sup> Ibid., p. 65.

estate can result in more efficient investment strategy than simple naive categories.<sup>32</sup>

In the winter of 1988, Hartzell, Shulman, and Wurtzebach first released a study which divided the U.S. into eight cohesive economic activity regions.<sup>33</sup> Previous studies that analyzed relative performance of real estate portfolios by geographic region used the four traditional and arbitrary classifications of East, Midwest, West, and South. The authors feel that besides the fact that the states are next to each other in these regions, there is little reason for them to be lumped together when considering their underlying economic activity. The study attempts to develop regional classifications that make sense when considering general economic conditions.

The authors cite two of the above mentioned articles which are the only previous studies to use sufficient property-specific data with which to analyze subportfolios. Miles and McCue used a data sample over the period from 1973 Q4 to 1981 Q3. It was comprised of holdings of large commingled real estate funds during a period in which inflation was rising and real estate performance was generally strong. They found that property type diversification was more efficient than regional diversification. The regions were defined as East, Midwest, West, and South.<sup>34</sup>

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<sup>32</sup> Ibid., p. 66.

<sup>33</sup> D. Hartzell, D. Shulman, C. Wurtzebach, "Refining the Analysis of Regional Diversification for Income-Producing Real Estate." *The Journal of Real Estate Research*, (December, 1987), 85-95.

<sup>34</sup> Ibid., p. 86.

As mentioned above, the Hartzell, Heckman, and Miles research includes additional characteristics such as property size, property location based on SMSAs, and lease maturity. In addition, the data is expanded to include 1982 and 1983. They find that within-real estate diversification has significant potential. They also conclude that the four broad based regions used in industry practice result in naive diversification. They emphasize that diversification can be too costly based on current distinction by property type and geographic region.<sup>35</sup> Their findings suggest little benefit to diversifying across region. Diversification is better achieved by focusing expertise in one region, and by varying property types and characteristics within that region. Critics claim that the regional classifications used in these two studies do not provide meaningful results because of their broad nature. It is for this reason that Hartzell, Shulman, and Wurtzebach were motivated to write their article.<sup>36</sup>

The authors regions often ignore state boundaries and are defined as New England, Mid-Atlantic Corridor, Old South, Industrial Midwest, Farm Belt, Mineral Extraction Area, Southern California, and Northern California (see Exhibit 2.1).

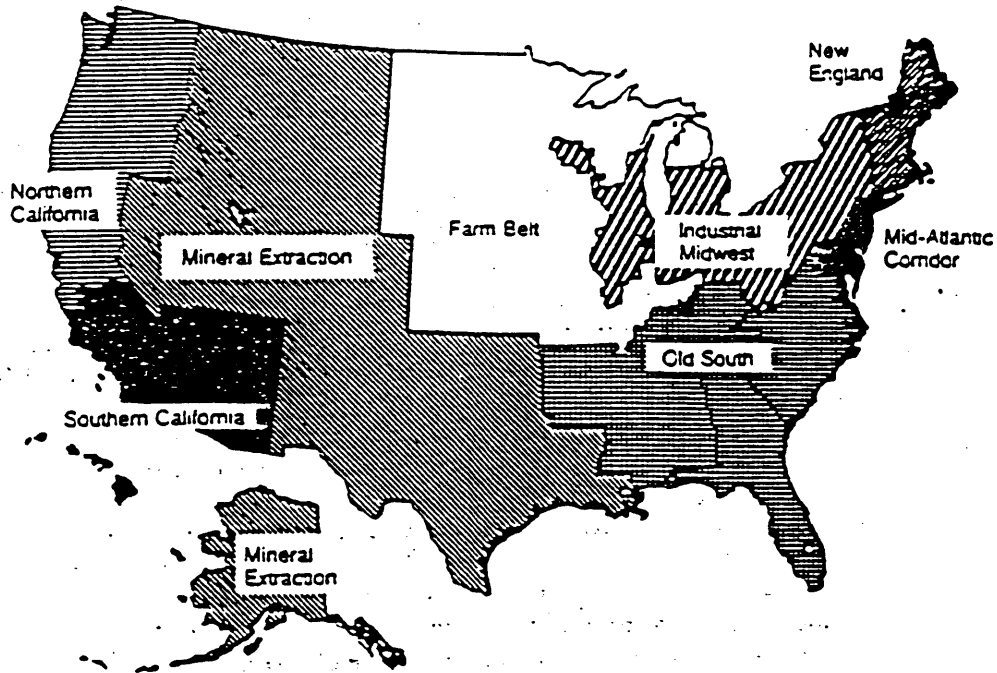
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<sup>35</sup> *Ibid.*, p. 86.

<sup>36</sup> *Ibid.*, p. 91.

## Exhibit 2.1

Eight-Region Segmentation



New England encompasses all of the New England states, but does not include Fairfield County, Connecticut which is included in the Mid-Atlantic Corridor. It is categorized by high-tech industry, financial services, defense spending, and education. Additions to supply is difficult due to strong land use regulation, and the region is a net energy importer.

Mid-Atlantic Corridor reaches from Fairfield County to Northern Virginia. It is known for financial and business services,



and government/defense as the region contains New York City and Washington, D.C. Regional benefits are a result of the import boom and increased debt from trade deficits and deregulation of financial services. It is also a net energy importer, and has the densest population in the country. Like New England, infrastructure is old.

Old South is south from Virginia to Florida and west to Arkansas. Its infrastructure is relatively new due to the relocation of manufacturing companies to the area in the 1970s. Highways, electric power, and military bases are all a result of much federal investment in the area. It has the highest percentage of low-income nonunion labor in the country which results in low production and living costs. Office development has resulted from the economic growth and the development of air conditioning.

Industrial Midwest is the Ohio and northern Mississippi valleys. This industrial heartland is characterized by unionized mass production industries; steel, automobiles, machinery, and farm equipment. Global competition has had significant negative impact on this region. The transportation system is extensive from Chicago and Detroit, and the region is also a net energy importer. While population diminished from late 1970s to mid-1980s, the condition has stabilized, and service economies have been structured in the larger cities. A lower exchange value of the dollar has positive impact on the region.

Farm Belt region is the flat land of the Great Plains. It is characterized by agricultural commodities, rural areas, and sparse population made worse by the 1980s agricultural depression. Kansas City is its major urban area.

Mineral Extraction Area encompasses the area from Louisiana to Montana, and it also includes Alaska. The economy of this region relies on the price of oil. The boom in the 1970s did allow bigger cities to structure finance and business services. The presence of these industries and others will contribute to the eventual recovery of the region; however, a recovery in energy is also necessary.

Southern California also includes Arizona, southern Nevada, and Hawaii. This region benefits from the trade deficit as it is key to the Pacific Basin and dominates trade and financial relations with the Far East. It attracts people from all over the world and subsequently has experienced high growth. Low-wage manufacturing and service industries have benefited from the high population of Mexican-Americans. It is also characterized by the highest defense production in the U.S., high incomes, high land prices, and recent growth restriction through land use control.

Northern California also includes northern Nevada, Oregon, and Washington. This area has also benefited from imports as foreign trade is important to their economy. It has high education levels, strong defense industry, and modern infrastructure. Finance and business services are strong contributors to the economy despite loss of some market share to southern California. The region has strong environmental concerns due to its focus on lumber and hydroelectric power.<sup>37</sup>

Hartzell, Shulman, and Wurtzebach update the previously mentioned sample period by adding data from 4Q 1983 to 3Q 1987.

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<sup>37</sup> Eight-region segmentation descriptions, *ibid.*, p. 87-88.

Therefore, the data is not only reflective of the real estate recovery subsequent to the 1974-75 down period, and the boom related to inflation in the late 1970s, but also the reactions to the oversupply which was spurred in 1981-83 and continued late into the sample period. The data set contained over 200 properties and was valued at approximately \$3 billion in 2Q 1987.<sup>38</sup> A weakness with the composition is that there are few properties representing the New England and Farm Belt regions during the early quarters of the sample set. The majority of the properties are in the Old South and Industrial regions with Mineral Extraction, Northern California, and Southern California also strongly represented. Obviously, it would be preferable to have a more even distribution of regional representation to enable better generalization of results; however, at the time, there did not exist a more comprehensive commercial real estate database. The limitations also make it difficult to draw conclusions from analyzing property type portfolios within the eight designated regions. Lastly, critics again cite problems associated with using appraisal-based return data to interpret results.<sup>39</sup>

The actual analysis performed by the authors involved developing summary statistics and the coefficients of correlation for the eight regions using subportfolios constructed from the previously mentioned fifty-five quarters of data. Overall, the authors conclude that it is more beneficial to practice regional diversification among the eight defined regions than it is to do so

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<sup>38</sup> Ibid., p. 88.

<sup>39</sup> Ibid., p. 90.

among the traditional four regions. Diversification within the eight regions reduces total risk of real estate portfolios.<sup>40</sup> The findings indeed provide insight into potential diversification strategies. For instance, Northern California and Southern California seem to exhibit differing underlying economies which suggests that simply diversifying in the West is too broad of a strategy. Properties should be held in both of the former, more exacting regions. In addition, New England is negatively correlated with the other seven regions from 3Q 1982 to 2Q 1987.<sup>41</sup>

In conclusion, the authors emphasize that their eight region segmentation is derived from an economic base-orientated concept. By constructing regions based on underlying economic fundamentals, results differ from the two studies previously mentioned which are based on simple geographic segmentation into East, Midwest, West and South regions. "Regional diversification does matter for real estate portfolios, in the sense that the eight-region categorization produces lower correlation coefficients than the traditional classification into four regions. (This) suggests that the traditional four-region analysis does not capture the impact of regional diversification."<sup>42</sup> They further conclude that property type diversification within a single, specific region, state, or SMSA is unlikely to provide efficient portfolio diversification. Location definitely matters, but effectively categorizing different locations

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<sup>40</sup> Ibid., p. 92.

<sup>41</sup> Ibid., p. 94.

<sup>42</sup> Ibid., p. 94.

by economic activity has not necessarily been mastered yet. Limited data did not allow the authors to pursue even more exacting categories. The inability to incorporate more specific information also inhibited analysis pertaining to the effectiveness of combining different property types within the eight regions.<sup>43</sup>

In a 1989 article discussing optimization of risk and reward trade-offs for commercial real estate investment, Firstenberg and Wurtzebach discussed diversification by property type as well as by economic location.<sup>44</sup> They point to the traditional perspective of theorists that real estate is a classic inefficient market where transactional skills afford an opportunity for superior returns. "Local market knowledge, shrewd negotiating tactics, and tough-minded asset management" all are critical to successful real estate investing.<sup>45</sup> They go on to emphasize that portfolio level management is equally as important due to the direct effect that individual property selection has on the overall risk and reward of a real estate portfolio. Concerning diversification, "an "optimal" portfolio yields maximum return at whatever relationship of return and risk is acceptable to the investor."<sup>46</sup> Portfolio risk is reduced through efficient diversification without sacrificing return.

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<sup>43</sup> Ibid., p. 95.

<sup>44</sup> P. Firstenberg, C. Wurtzebach, "Managing Portfolio Risk and Reward." *Real Estate Review*, Vol 19 (Summer 1989), 61-65.

<sup>45</sup> Ibid., p. 61.

<sup>46</sup> Ibid., p. 62.

The authors cite a study performed by Firstenberg, Ross, and Zisler in conjunction with Goldman Sachs & Co. titled "Managing Real Estate Portfolios" which supports the theory that portfolio level risk and return levels are affected by property type distribution. "It presents empirical evidence to show that the correlations of returns between property types differ enough to suggest that portfolio efficiency could be enhanced by the proper allocation among property types."<sup>47</sup> The sample data was comprised of approximately 600 properties from 1974 to 1987. Using a mean-variance portfolio optimization procedure, properties were grouped into different combinations to produce varying portfolios consisting of four different property types; office, retail, industrial, and apartment. Using 10.5-11.5 percent as a target range for expected portfolio return (IRR), the study developed optimal allocation targets considering the four property types. Optimal portfolios would consist of 10-20 percent allocation in apartments, 25-35 percent allocation in industrial, 30-40 percent allocation in office, and 20-30 percent allocation in retail.<sup>48</sup>

Concerning diversification by "economic" location, Firstenberg and Wurtzebach reference the previously described study pertaining to eight region segmentation. "(It) suggests that the choice of economic location can be an important strategic decision that has portfolio diversification implications."<sup>49</sup>

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<sup>47</sup> Ibid., p. 63.

<sup>48</sup> Ibid., p. 63.

<sup>49</sup> Ibid., p. 63.

The authors then discuss some general strategic options in portfolio management. Basically, there are two categories of risk/return trade-off strategies in real estate investment; market-level risk/return strategies, and above-market risk/return strategies.<sup>50</sup> A passive approach to the market-level category involves selecting investments based simply on property type and geographic location. From the perspective of a portfolio manager, diversification is achieved by choosing open-end commingled funds which do not specifically target allocations for property type and property location. An active approach to market-level risk/return goals requires the investor to choose a point on the risk/return spectrum. The investment manager is directed under this strategy to utilize an optimal portfolio model which results in a core portfolio diversified by property type and economic location. With the active approach, benefits are derived from using economic location versus broad geographic boundaries. In addition, specific property type allocations improve the efficiency of the risk/return relationship.<sup>51</sup>

For the above-market category, an "opportunity component is added to the market portfolio. According to this more aggressive strategy, "the investor accepts more risk in order to obtain higher returns, still working within the structure of an optimal portfolio".<sup>52</sup> As an example, this can be accomplished by entering investments at earlier phases of development, or by risking higher

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<sup>50</sup> Ibid., p. 64.

<sup>51</sup> Ibid., p. 64.

<sup>52</sup> Ibid., p. 64.

exposure in specific locations or property types deemed to be more attractive. This strategy obviously requires a close look at whether or not the added return compensates for the added risk. Also, it is intuitive that the larger the size of the opportunity position relative to the core position, the higher the risk. Another opportunistic type strategy involves seeking out the "best deals" in the marketplace without concern for diversification or optimal structure. This is most certainly the highest risk strategy, and investor risk tolerance will ultimately determine the size of this segment relative to the core portfolio. "The theory is that skilled investment managers can find and exploit inefficiencies in the market and produce higher returns."<sup>53</sup>

In conclusion, the authors highlight the first step in portfolio strategy selection which is to determine the specific risk/return trade-off that an investor is seeking. The role that any real estate portfolio plays in contributing to annual distribution will determine the level of exposure to core versus opportunity segments within the portfolio. If an investor is able to rely on other investment class assets to satisfy required distributions, then the real estate investor can afford to be more heavily weighted toward opportunistic style. It therefore obviously holds true that if the real estate portfolio is relied on for stable returns, the investor is wise to emphasize a diversified core portfolio.<sup>54</sup>

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<sup>53</sup> Ibid., p. 65.

<sup>54</sup> Ibid., p. 65.



In 1990, an article was released by Salomon Brothers written by Giliberto and Hopkins.<sup>55</sup> The study addresses the effect of employment change on local economies. "Employment growth in a market is the primary force that drives real estate demand, and demand in conjunction with supply determines real estate performance. Employment change in a local economy depends on the national economy, the mix of local industries, wage levels, migration patterns, quality of life, education of the population, cost of living, etc."<sup>56</sup> The authors attempt to uncover regional variations by splitting employment change into three broad components; national effect, industry-mix effect, and regional effect. The largest component of local economic growth is usually the national business cycle which overshadows the unique strengths and weaknesses of specific regions. However, as the authors point out, the potential benefits of regional diversification in a real estate portfolio result from variation in the local economies. The industry-mix component highlights the difference between a local industrial base and that of the entire nation. In this way, specific employment growth can be credited to the economic specialization of a region. The regional component in turn captures local employment growth not related to broad national or industry-mix effects.<sup>57</sup>

The analysis then aggregates employment change results from 97 large Metropolitan Statistical Areas regularly tracked by

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<sup>55</sup> S.M. Giliberto, R.E. Hopkins, "Metropolitan Employment Trends: Analysis and Portfolio Considerations." Salomon Brothers Research, (May, 1990).

<sup>56</sup> Ibid., p. 1.

<sup>57</sup> Ibid., p. 2.

Salomon Brothers into the eight economic regions defined by Hartzell, Shulman, and Wurtzebach. While the study indicates there are limits to the potential benefits of regional diversification based on correlations of total employment change, results do show that correlations are low for the "regional effect" components determined by the study. This leads to the conclusion that there do exist benefits from diversification among the eight region segmentation. "To understand a potential source of diversification gains, real estate investment managers can examine regional employment changes that remain after the removal of national and industry-mix effects."<sup>58</sup> Over-exposure to these region-specific factors is avoided through diversification. The authors do caution against extrapolating correlations in employment changes to investment return performance as employment data does not reflect the supply side.<sup>59</sup>

Louargand addresses supply side effects in a study on regional economic diversification.<sup>60</sup> Specifically, by observing the interaction of employment diversification and supply conditions effecting rental income, he finds that stability of apartment income streams is perhaps more greatly influenced by supply effects than by economic conditions. "Traditional views of real estate investment assume that income and appreciation will follow from entry into a

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<sup>58</sup> Ibid., p. 9.

<sup>59</sup> Ibid., p. 9.

<sup>60</sup> M.A. Louargand, "Apartment Earnings and Regional Economic Diversification." MIT Center for Real Estate Development, Working Paper FP#4 (June, 1989).

growing regional market. It appears that the investor may be better served by constraints on supply than by unbridled growth."<sup>61</sup>

In general, by 1990, diversification was being redefined in the context of modern portfolio theory (MPT). The new methods associated with MPT were a reaction to the enormous writedowns experienced by the major real estate investment funds. From 1987 to 1989 alone, it is estimated that values dropped \$327 million in 14 of these funds.<sup>62</sup> Managers began to accept the fact that what had historically been defined as diversification was no more than naive selection of properties in broad geographic regions. They learned that true diversification resulted from more quantitative approaches aimed at defining economic regions with regard to employment, economic, and demographic trends.<sup>63</sup> Some managers fear the implications of the top-down nature of modern portfolio techniques. They warn that the necessary common sense skills of real estate investment can be overshadowed by reading too much into the numbers. However, the consensus is that, "modern portfolio theory - or aspects of it that could more modestly be labeled "quantitative disciplines" - has come, perhaps inevitably, to real estate investing."<sup>64</sup>

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<sup>61</sup> Ibid., p. 7.

<sup>62</sup> S. Hemmerick, "Real Estate Managers Admit Their Mistakes." *Pensions and Investments*, Vol 18 (July, 1990), 3,33.

<sup>63</sup> Ibid., p. 33.

<sup>64</sup> J. Lewis, "MPT Comes to Real Estate." *Institutional Investor*, Vol 24 (February, 1990), 153-160.

Lewis describes the current environment in her article, "MPT Comes to Real Estate".<sup>65</sup> In addition to using models analyzing cash flows, lease structures, tax considerations, and leverage for individual acquisitions, managers are paying closer attention to models analyzing the total portfolio. The deal-oriented approach commonly practiced by managers to date involved snatching up "good deals", and disposing of properties when the price was right. Such random portfolio construction lead to "portfolios only vaguely diversified by geography and property type".<sup>66</sup> Even when attempts were made to diversify by region, the different regions often had the same economic base. Today, plan sponsors not only want to be diversified across city and property type, but also consider such categories as leasing structure, lease maturity, and tenant industry.

These macroeconomic as well as quantitative considerations result in a variety of approaches to more exacting portfolio construction. The eight region segmentation, already discussed extensively above, is considered to be on the more fundamental end of effective diversification strategies. The more quantitative end of the spectrum contains the above mentioned models that serve as a guide to percent exposure to specific property types.<sup>67</sup> Lewis also mentions technical work being performed by David Shulman, Salomon's real estate research director, which studies lease duration and structure as effected by interest rates and inflation.

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<sup>65</sup> Ibid.

<sup>66</sup> Ibid., p. 153.

<sup>67</sup> Ibid., p. 154.

The goal is to enable systematic portfolio diversification by lease terms. DeLisle, an economist at Equitable Real Estate, concentrates on grouping markets to better anticipate softness and growth. Markets are grouped by property type, location, investment performance and economic base. Dave MacMillan of Aetna Realty Investors investigates different city correlations regardless of regional location.<sup>68</sup>

Susan Hudson-Wilson, director of research for Aldrich, Eastman & Waltch, previously performed highly quantitative studies while working for John Hancock Properties. Her model is based on "clusters" of property types within specific cities. By looking at the correlations of return rates, both historical and forecasted, for different property types in 60 metropolitan areas, her model enables a manager to substitute investments associated with the same cluster. Critics of the model are quick to point out that such statistical results can be coincidental rather than meaningful. "You have to be able to explain the correlations, not just observe them."<sup>69</sup>

Another strategy involving the new disciplines of portfolio management was introduced by The RREEF Funds. The fund, called RARE Fund-I, recognizes that commercial real estate involves a fixed-income component and an equity component. It is a combination of nominal debt (leases) and real equity (residual and releasing rights). Typically, portfolios of nominal and real assets are expected to have a lower variance than each taken separately as

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<sup>68</sup> Ibid., p. 157.

<sup>69</sup> Ibid., p. 157.

they react oppositely to inflation. The fund managers recognize the claim that a lease does not help real estate in hedging against inflation, and perceive that a lease performs like a bond. Therefore they separate real estate into the fixed income and appreciation components to realize greater capital appreciation, inflation protection, and portfolio diversification. "Selling off the leasehold interest, a bondlike instrument, makes the residual equity interest behave more like a pure real estate play."<sup>70</sup>

Lastly, Cognetics, a consulting firm located in Cambridge, Massachusetts, contributed to the acceptance of MPT into real estate. They compiled information on all the tenants and leases of the State of Connecticut Trust Funds. By developing tenant profiles for every city where properties are owned, the fund managers expect to be diversified based on leases.<sup>71</sup>

While John Lillard, president of JMB Institutional Realty Corp., believed that MPT is no match for old-fashioned, thorough due diligence in constructing real estate portfolios, most managers feel that some of the elements of modern portfolio theory will become commonplace in real estate.<sup>72</sup> Indeed, some of the quantitative approaches will survive as recognized tools for efficient within-real estate diversification.

Ziering and Mueller, both of Prudential Real Estate Investors, attempt to link portfolio level analysis with property level analysis

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<sup>70</sup> Ibid., p. 157.

<sup>71</sup> Ibid., p. 157.

<sup>72</sup> Ibid., p. 160.

by creating a property attractiveness index.<sup>73</sup> They take the concept of economic region diversification one step further by linking demand, supply, and investment performance characteristics within this index. By focusing on 70 general attributes reflecting economic environment and property type, they investigate general as well as specific economic and market factors which affect all property types as well as individual property types. "The three characteristics of demand, supply, and investment performance are analyzed over different time frames including: long-term historic, near-term historic, current, and forecasted periods. The goal is to develop a ranking system which distinguishes markets, by property type, with respect to their investment attractiveness."<sup>74</sup> Analyzing demand involves investigating employment growth, employment structure reflecting industrial concentration, and general business environment conduciveness to property type relocation and expansion. Supply involves investigating stock growth, absorption, and square foot per employee multiplier which helps estimate future space demand. Investment performance investigates vacancy trends, rental price information, and sales price information. This comprehensive monitoring helps determine which markets can support long-term investment in specific property types.

In 1991, Louargand confirms that there is a new focus in real estate investment analysis. Indeed, modern portfolio theory is a tool

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<sup>73</sup> B.A. Ziering, G.R. Mueller, "Enhancing Real Estate Diversification Using a Property Attractiveness Index." *Prudential Real Estate Investors*, Presented at ARES Meeting, Sarasota, Florida, (April, 1991).

<sup>74</sup> *Ibid.*, p. 2.

for the 1990s.<sup>75</sup> Louargand clarifies some of the more technical jargon and ideas of MPT. Basically, MPT is used to monitor the relationships between product types, markets, and other combinations of characteristics. Diversification is achieved by finding assets whose behavior follows different patterns. The ultimate goal is to determine those assets whose returns move in opposite directions, or in statistical terms, are negatively correlated. Portfolio construction is most efficient if the combination of assets selected dominates any other combination of assets. Superiority of the portfolio results from lower risk and higher returns. When considering all investment choices, the best efficiency is achieved by selecting a set of portfolios with the best risk/return trade-offs. "That set lies along a line we call the efficient frontier. Portfolios lying on the efficient frontier have the highest return for their level of risk. Conversely, they also have the lowest risk for their level of return."<sup>76</sup> Using the MPT approach, simply mixing property types results in lower risk and therefore diversification as the constructed portfolio lies closer to the efficient frontier than a portfolio consisting entirely of any one property type.<sup>77</sup> Louargand also makes clearer the distinction between naive and true diversification. "Naive" diversification is simply a result of broadly selecting investments in different property type and property location categories without regard to

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<sup>75</sup> M.A. Louargand, "Portfolio Theory: Tool for the 1990s." *Property*, Vol 1 (Spring 1991).

<sup>76</sup> Ibid.

<sup>77</sup> Ibid.



mathematical proof that the selections actually behave differently. "True" diversification results in selections that actually exhibit low or negative correlations in a statistical sense. The often mentioned strategy of selecting properties based on the correlations of defined economic regions is an example of attempted true diversification.<sup>78</sup>

Louargand also emphasizes the sentiment that MPT is not effective as an exclusive strategy for analysis of real estate investment. It remains as important as ever, if not more so, that extensive, fundamental deal-based analysis be performed and used in conjunction with MPT. "Traditional deal-based analysis and management looks to make the best possible decisions about individual assets. MPT-based analysis looks to make the best possible decisions about the collective pool of assets."<sup>79</sup> In addition, it is never too late to incorporate the concepts of MPT to an existing portfolio. In fact, as a previously naively diversified portfolio grows in size, it becomes increasingly more important to consider how the different assets with unique characteristics perform as a group, not just by themselves. "Existing portfolios assembled from opportunistic acquisitions may have the seeds of good diversification within them, but just need a few acquisitions or dispositions in order to be turned around. Diversifying away from an existing group of properties simply requires that the identification and analysis of diversification variables begin with the existing portfolio and its markets and sub-markets. Understanding the

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<sup>78</sup> Ibid.

<sup>79</sup> Ibid.

contents of an existing portfolio at every level is the first step in turning it into a scientifically diversified, minimum risk, pool of assets."<sup>80</sup>

In reviewing the literature concerning real estate diversification over the past seven years, it is clearly evident that a unified view exists. Indeed, with institutional funds playing a substantial role in real estate investment, a portfolio theory mentality is pervasive not only in the academic environment, but also among practitioners. However, different approaches to diversification do prevail based on varying perspectives of what the underlying critical variables are in a real estate equity portfolio. From a pragmatic viewpoint, the literature suggests that individual real estate portfolios have their own unique characteristics and goals that determine which models of diversification are more appropriate than others.

The literature reveals seven broad models for diversification of core portfolios. None of them exclude the need for thorough, traditional, property specific analysis as well as portfolio level analysis.

The first model is "naive" diversification. As explained above, this strategy involves selecting a broad range of different property types situated in different categories, such as geographic location. The four geographic locations are East, Midwest, West and South. This strategy does not utilize the well-respected tool of MPT, and is therefore considered to be somewhat arbitrary in nature. Its

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<sup>80</sup> Ibid.

effectiveness is called into question due to the diversification benefits obtained relative to the inherent cost inefficiencies. By developing more exacting categories, these inefficiencies can be overcome.

This leads to a second model where geographic location becomes defined in terms of economic region. Using MPT, "true" diversification is achieved as mathematical proof suggests differing patterns of returns among the segmented regions.

The third model combines economic location strategy with selection of different property types within the regions. Again using MPT, optimal percentage ranges are defined for exposure to four different property types; office, retail, industrial, and apartments.

The fourth model attempts an even more exacting approach as the concept of economic location is taken one step further. Some practitioners believe in achieving true diversification by acquiring investments based on tenant industry. This is the same as diversifying across leaseholds as defined by SIC codes.

Again dealing with leases, the fifth model involves efficient diversification by lease maturity or lease structure. This strategy tries to avoid over-exposure to tenants with shorter-term leases, and to straddle soft markets with longer-term leases.

The sixth model involves a hybrid strategy of determining negative correlations of areas based on local employment growth. This model obviously involves investigation of demand side variables which are considered by many to be the most critical in real estate investment.

However, a seventh model does exist which concerns supply side variables. In particular, this strategy focuses on supply constraints in different localities.

In six of the models, MPT is obviously a key factor. Some of the models have basically the same essential arguments but vary in terms of broad versus more exacting approaches. Some models actually build off of others in trying to be more specific in regards to defining critical variables. It is generally agreed that all the models developed suffer from lack of sufficient original data to analyze. When attempting to determine the appropriateness of any one of these strategies, it is most important to consider them from a pragmatic viewpoint.

First of all, the practicality of determining the critical variables is key. Indeed, simply gathering the necessary information to implement a certain strategy may be unfeasible, or too costly. From this standpoint, it is clear that some models are better than others based on the unique qualities of a given portfolio. Massaging an existing group of investments to enhance diversification first requires defining a set of characteristics that define the existing portfolio. Unique characteristics of a portfolio, such as edge city location or age, can work against certain models of diversification. Investors who are considered to be niche players in certain capacities obviously do not want to diversify based on models which do not apply to their expertise. Overall, given the above described models, their arguments, and a thorough understanding of an existing portfolio's components, it is only then possible to select an

appropriate and efficient diversification strategy for a given portfolio.

In addition, formulation of a practical diversification strategy at the investment manager level requires an understanding of the original investor's goals and motivations. For instance, it is understood that pension fund sponsors invest in equity real estate so as to provide a stabilizing influence on their total mixed asset portfolio. As the literature points out, returns from equity real estate are negatively correlated with stocks and bonds. In other words, it reduces total portfolio risk without sacrificing total return, and therefore, is an effective portfolio diversifier. It is the plan sponsor's responsibility to set clear risk/return objectives for the real estate portion of their portfolio. Typically, the greater the experience and size of a plan sponsor, the greater the risk tolerance, and therefore, the greater the expected returns. Smaller funds with less experience are more likely to target lower risk/lower return investments. Within-real estate diversification can help to deliver whatever combination of risk and return that is required as long as the goals are clearly communicated and understood by all parties. To evaluate and determine risk/return performance, funds often split the real estate portion of the total portfolio into a "core" component, and an "opportunity" component.<sup>81</sup>

The core portion of the portfolio reflects market risk in its performance. Its performance is a result of true diversification in an MPT sense, and therefore, returns are expected to be stable and

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<sup>81</sup> B.R. Bruce, *Real Estate Portfolio Management* (Chicago, 1991), p. 22.

predictable. The opportunity portfolio has a higher risk/return target than the core. In addition, the goal of this portion does not involve being well diversified. The benefits of diversification are sacrificed for a stronger focus on higher-risk, higher-return opportunistic type real estate investments. "Strategies to attain the higher return might include choosing "hot" property types or locations, greater lease-up risk, development, or a bet on an economic sector, e.g., export industries."<sup>82</sup> Obviously, the size of the core position relative to the opportunity position is dependent on the risk tolerance of the sponsor. Generally, core positions range from 50% (high risk appetite) to 100% (no risk appetite) of real estate portfolio composition. The combination of the core and opportunity portfolios determines overall risk. It is the responsibility of the investment manager to be fully aware of the goals and objectives of the plan sponsor relative to these positions. Moreover, the investment manager needs to understand what role it plays in achieving the objectives.

There are basically three models of manager account selection by institutional investors. In the first model, the investor relies upon a single, well diversified manager account to achieve general within-real estate portfolio diversification. In the second model, the investor partially controls the diversification of their portfolio by choosing a variety of manager accounts based on their individual diversification styles. In the third model, diversification strategies are dictated solely by the investor who chooses a variety of manager

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<sup>82</sup> Ibid., p. 23.

accounts based on their individual niche. These niche managers do not pursue specific portfolio diversification strategies themselves.

Indeed, the plan sponsor benefits from a core position as well as an opportunity position. The investment manager is relied upon to achieve core results, opportunity results, or a combination of both. If the manager is expected to provide purely opportunistic benefit to a fund, then constructing an efficiently diversified portfolio is not only inappropriate, but a waste of time and money. If core results are required, a pragmatic portfolio strategy for within-real estate diversification must be pursued. If both core and opportunity type returns are appropriate, then the investment manager must pursue real estate portfolio construction as a single, well diversified account from the same perspective as the plan sponsor remembering that the core is the base upon which the total portfolio is built.

Risk-return goals, portfolio size, and expertise of the plan sponsor determine the objectives of the investment manager. If efficient diversification is part of the objective, it is the responsibility of an investment manager to fully understand the characteristics that define its existing portfolio so as to tease out appropriate portfolio diversification variables. Only then is it possible to construct a minimum risk real estate portfolio with specific return objectives given an existing portfolio partly constructed in an opportunistic style.

## CHAPTER 3

### DESCRIPTION OF CASE STUDY

A portfolio constructed by TA Associates Realty (TAR), a Boston based real estate investment advisor, is appropriate as a case study when considering issues of diversification away from an existing real estate portfolio partially constructed in an opportunistic style. As stated in their annual report dated December 31, 1991, the fund, Advent Realty Limited Partnership II, was organized for the purpose of investing in a diversified portfolio of income-producing properties. The partnership is a limited partnership consisting of the Limited Partners, REIT General Partner, and Advent Realty GP II Limited Partnership (the "Sponsor General Partner") whose collective capital commitments are approximately \$332 million. TAR has to date invested approximately \$132 million in small, niche, opportunistic properties. They maintain reserves at approximately 7% and plan to invest the remaining \$200 million on individual real estate transactions.

As stipulated in the Limited Partnership Agreement, the partnership should invest primarily in small to medium size office, industrial, and warehouse real estate properties with a net investment cost ranging from \$3 million to \$50 million, except that the partnership can invest up to approximately 15% of all capital commitments in the aggregate in other types of real estate properties, when such investments are advisable in the General Partners' determination. In addition, the partnership is required to invest primarily in investments in completed real estate projects,



but is allowed to invest approximately 15% of all capital commitments in the aggregate in projects under construction or to be constructed. The Agreement further restricts investment activity by requiring prior approval from an advisory committee before making an individual investment costing in excess of approximately 20% of all capital commitments. Similar approval is required if aggregate investment cost in any single market exceeds approximately 35% of all capital commitments. The markets are determined in the good faith judgement of the General Partners.

The descriptions of the individual real estate investments comprising the existing portfolio are summarized in Appendix A, and are as presented by TAR in their internal investment summaries. The industrial properties, which form the majority of the portfolio, are presented first (see Appendix A). On the next page is a short summary of the entire investment portfolio which lists properties in chronological order by acquisition date (see Exhibit 3.1).

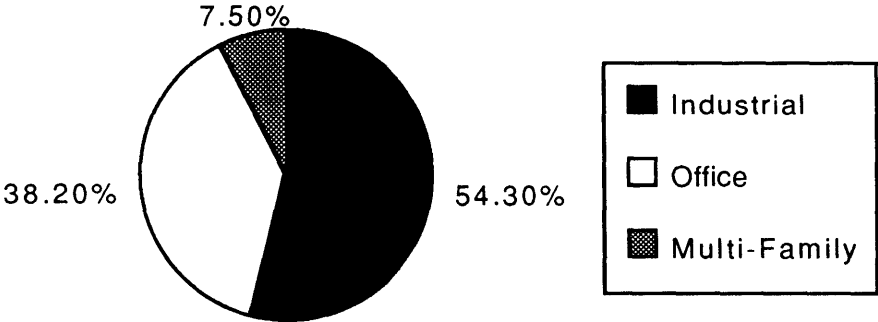
**Exhibit 3.1**

(Dollar Amounts in Millions)

Name	Type	Location	Number of Buildings	Acquisition Date	Gross Leasable Area (SF)	% Leased as of 3/31/92	Total Cost (\$)
Mass. Ave	Office	Cambridge, MA	1	Oct-90	95,891	100%	5.10
Mahwah	Industrial	Mahwah, NJ	1	Nov-90	92,000	100%	7.60
Kasota	Industrial	Kasota, MN	4	Dec-90	307,467	99%	8.21
Carson	Office	Carson, CA	1	Mar-91	131,193	99%	14.50
Konica	Industrial	Windsor, CT	1	Jun-91	225,461	100%	12.10
Atrium	Office	Rockville, MD	1	Jun-91	83,445	99%	6.90
Gardena	Industrial	Gardena, CA	2	Jul-91	129,400	100%	4.80
Burlingame	Industrial	Burlingame, CA	1	Sep-91	254,694	100%	12.80
El Paso	Industrial	El Paso, TX	8	Sep-91	481,638	98%	13.30
Kaiser	Industrial	Bridgeview, IL	1	Dec-91	101,140	100%	3.00
Gurnee	Industrial	Gurnee, IL	2	Jan-92	222,712	100%	4.70
303 Internat'l	Office	Hunt Valley, MD	1	Feb-92	136,649	88%	10.00
Hamptons	Industrial	Capitol Heights, MD	3	Mar-92	137,570	66%	5.10
Flower Hill	Residential	Gaithersburg, MD	9	Apr-92	210,000	92%	9.90
Newport Beach	Office	Newport Beach, CA	1	Apr-92	188,000	54%	13.9
			<u>37</u>		<u>2,797,260</u>		<u>\$131.91</u>

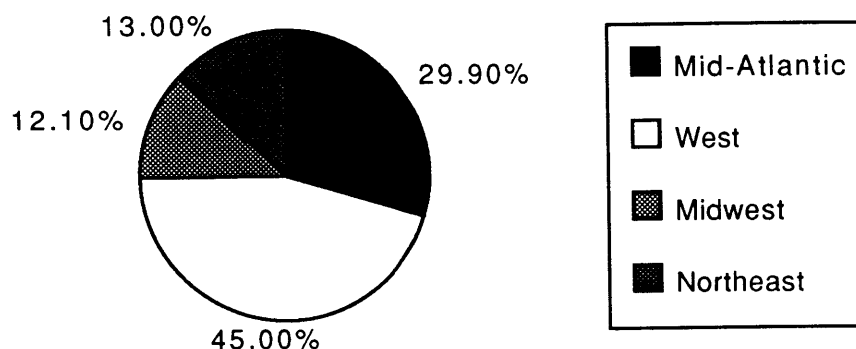
In total, TAR has invested \$71.61 million in the acquisition of industrial properties, \$50.4 million in the acquisition of office properties, and \$9.9 million in the acquisition of one multi-family property. Therefore, by dollars invested, the existing portfolio is comprised of 54.3% industrial properties, 38.2% office properties, and 7.5% multi-family properties (see Exhibit 3.2).

**Exhibit 3.2**



Concerning property location, TAR describes the geographic regions that it is currently exposed to as Mid-Atlantic, West, Midwest, and Northeast. According to TAR's segmentation, they have currently invested \$39.5 million in the Mid-Atlantic, \$59.3 million in the West, \$15.91 million in the Midwest, and \$17.2 million in the Northeast. By dollars invested, this equates to 29.9% exposure in the Mid-Atlantic, 45% exposure in the West, 12.1% exposure in the Midwest, and 13% exposure in the Northeast (see Exhibit 3.3).

**Exhibit 3.3**



It should be noted that dollar exposure to the Baltimore-Washington area comprises 24.2% of the total portfolio, or 80.8% of the Mid-Atlantic region. Also, dollar exposure to the Los Angeles area comprises 25.2% of the portfolio, or 56% of the West region. This observation has implications for strategy as TAR may really be exposed to specific markets instead of their defined regions. Therefore, if the defined regions are acting as a guideline, it is important for TAR to confirm that the specific markets have the same economic behavior as these regions.

## CHAPTER 4

### RECOMMENDATIONS AND CONCLUSIONS

To recommend a diversification strategy for TAR's portfolio, it is important to first identify the components of the existing portfolio as well as the existing general acquisition strategy being practiced. Indeed, because of the specific characteristics of the existing TAR portfolio, some diversification models are more appropriate than others. Moreover, it appears that, from a pragmatic viewpoint, diversification by economic region makes the most sense for TAR when considering the scope, costs, and expectations of their investment partners.

From the portfolio description, TAR's opportunistic style is quite evident. They use their style in combination with the directives of the partnership agreement to achieve their general strategy. While one goal is to create a well diversified portfolio of income producing properties, they are clearly niche, opportunistic players in a narrow product type. The majority of the portfolio is comprised of industrial properties which have always been considered relatively safe investments.<sup>83</sup> TAR expects steady and predictable cash flow from these properties which in turn leads to more stable returns with relatively less risk involved. This lower risk investment type results in lower relative internal rate of return (IRR) because of the lower potential for appreciation gains at disposition. TAR expects to generate higher IRR from their office

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<sup>83</sup> Cole, Guilkey, Miles, Webb, p. 63.

acquisitions as better upside potential exists at disposition of these investments. With these properties, they have the ability to add value through physical enhancements. In addition, by acquiring properties with higher relative vacancies, there is greater value adding potential through successful lease-up efforts. Outside of their narrow product type markets, 15% of the total anticipated dollar amount to be invested by the fund is allocated for non-industrial and non-office type product. Indeed, these investments in such property types as multi-family and retail offer TAR the ability to use their inherent style and capabilities to invest in purely opportunistic situations without regard to overall diversification benefits to the portfolio. These acquisitions should make up the highest risk/highest return portion of the portfolio.

TAR obviously practices diligent property-specific analysis in all of their acquisitions paying close attention to growth potential of the investment location as well as supply constraints present in these areas. The majority of the properties, industrial and office, are newer structures at edge-city locations, and the cities targeted typically have high growth potential. These characteristics closely match the description of "players' world properties" intuitively developed by Cole, Guilkey, Miles, and Webb. The category "assumes that potential "big pops" for new participants draw the "players" to these properties".<sup>84</sup> However, the category developed by these authors does not include industrial properties due to the safe nature of these investments as compared to other property types. But, it

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<sup>84</sup> Cole, Guilkey, Miles, Webb, p. 63.

should be noted that TAR typically selects locations for industrial properties outside of central business districts, which suggests that they position themselves on the more opportunistic end of the spectrum in regards to this narrow product type. Two industrial property investments in particular follow more closely a strategy involving lease-up risk. The Hamptons and Burlingame Business Center are higher risk/higher return plays due to their 67% and 60% occupancy respectively at acquisition. The majority of the office properties can be characterized as "players' world" with the exception of the property located on Massachusetts Avenue in Cambridge, MA. which was also 100% occupied at acquisition. The most opportunistic play concerning the office property niche is the Newport Beach, CA. investment with a 54% occupancy and subsequent lease-up risk at acquisition.

In constructing the remainder of the portfolio, TAR should strive to be a single, well diversified manager account for their investor partners. In other words, both core and opportunity positions are appropriate which lead to core and opportunity type returns as described in Chapter 2. The core is the base upon which the total portfolio is built. This portion should equate to approximately 85% of the total investments thus being sure not to exceed the risk threshold determined by the Partnership Agreement which stipulates an approximate 15% opportunity position. To achieve core results, a pragmatic portfolio strategy for within-real estate diversification must be pursued for this 85% portion. For the 15% opportunity position, diversification strategy is inappropriate. These divisions do not require that TAR's opportunistic style be set

aside for acquisitions to be included in the core position; it simply requires that these investments be diversified at the portfolio level so as to provide minimum risk in achieving core return objectives. The only concern for the opportunity portion is to achieve the highest returns possible without regard to variability of returns. The core and opportunity positions combined provide an appropriate risk/return level given the restrictions of the investor objectives.

Therefore, due to the scope of this report, recommendations are only appropriate for the core portion of the portfolio. Currently, TAR practices "naive" diversification in an MPT context. Again, this terminology is in no way intended to be insulting; it simply refers to the fact that selection of core investments are not based on mathematical proof that negative correlations exist to minimize risk. While intuitive selection of properties with an eye towards diversification has true merit, it is recommended that a more scientific approach be pursued by TAR going forward.

The components characterizing the existing portfolio give clear clues as to which model of diversification outlined in Chapter 2 is appropriate. Because of TAR's niche expertise in industrial and office properties and the Partnership Agreements emphasis on these property type acquisitions, diversification across a broad range of property types is obviously not practical. However, consideration should certainly be given to the strategy of pursuing the acquisition of narrow product type while diversifying across tenant base. While this strategy has potential benefits when considering the existing tenants of a property being considered as compared to tenants of other properties already acquired, the pragmatic nature of the



strategy loses credibility when opportunistic investments play to the ability of TAR to add value by selecting properties with lease-up risk. Especially because of the current real estate environment and the subsequent fierce competition for tenants in the marketplace, this rather selective strategy could prove unrealistic and therefore is not exclusively recommended. The same argument pertains to diversification by lease structure. The strategies which exist on the most exacting end of the spectrum are diversification by local employment growth and supply constraints of cities. While it is obviously necessary for TAR to investigate demand side variables as well as supply side variables in their property specific analysis, to gather the necessary information at the portfolio level could be too timely and costly for the benefits received. To investigate the varying behavior of the many potential, specific investment areas in a scientific manner is unfeasible, and moreover, stifling to the smaller, entrepreneurial, opportunistic structure that characterizes TAR. However, the models of diversification do provide an appropriate medium between the "naive" diversification currently being practiced and the suffocating strategies of the most exacting approaches.

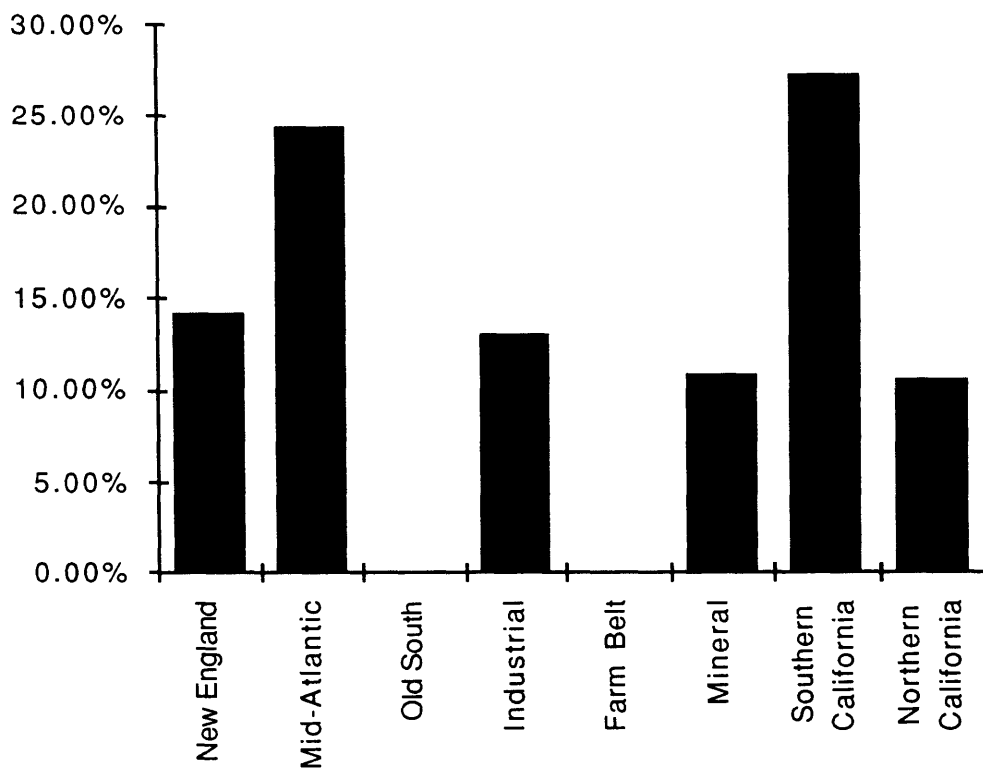
It is recommended that TAR pursue an economic region approach to diversification. Again, this strategy involves defining geographic markets by economic location, and it caters to the characteristics and style of TAR while offering the potential for "true" diversification of core investments in an MPT context. The Partnership Agreement requires that TAR determine markets in good faith judgement so as not to invest more than 35% of total funds in

any single market. Given this percentage allocation, economic region segmentation is realistic and practical, and also offers additional flexibility when considering exposure to any single market. In addition, the strategy remains consistent with the portfolio theory mentality of the institutional investors who are TAR's partners. These "determined" regions, derived from an economic base-oriented concept, will not inhibit the opportunistic strengths of TAR, but may provide lower correlations between existing properties and future acquisitions at the portfolio level than their current four region segmentation provides. As a result, risk may be minimized for any given level of return required, and investor partners will be further satisfied. It is again stressed that, in using the regional approach as a guideline, it is important to clarify that the specific markets represented within the portfolio reflect the economic character of their respective "determined" regions.

A specific application of this strategy is eight region segmentation as described by Hartzell, Shulman, and Wurtzebach, and as reviewed in Chapter 2. Based on this diversification strategy involving eight economic regions, the existing TAR portfolio currently has \$17.2 million invested in New England, \$29.6 million invested in Mid-Atlantic Corridor, \$0 invested in Old South, \$15.91 million invested in Industrial Midwest, \$0 invested in Farm Belt, \$13.3 million invested in Mineral Extraction, \$33.2 million invested in Southern California, and \$12.8 million invested in Northern California. The \$9.9 million currently invested in multi-family is not included in these figures as it is not considered to be part of the core portfolio, but instead part of the opportunity portfolio.

Exposure to each region by percentage dollars invested is currently 14.1% in New England, 24.3% in Mid-Atlantic Corridor, 0% in Old South, 13% in Industrial Midwest, 0% in Farm Belt, 10.9% in Mineral Extraction, 27.2% in Southern California, and 10.5% in Northern California (see Exhibit 4.1).

**Exhibit 4.1**



If this specific example of economic region segmentation was to be adhered to for portfolio construction going forward, it would first be wise to review the actual correlations of the eight region segmentation as reported by Hartzell, Shulman, and Wurtzebach (see Exhibit 4.2)<sup>85</sup>.

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<sup>85</sup> Hartzell, Shulman, Wurtzebach, p. 91.

## Exhibit 4.2

**Quarterly Asset Returns:  
Means, Standard Deviations and Correlation Coefficients: 4Q74-2Q87**

	Mean	SD	NE	MA	OS	I	FB	M	SC	NC
New England	3.44%	2.80	1.0							
Mid-Atlantic	3.80	4.10	-.154	1.0						
Old South	2.31	2.15	.225 <sup>b</sup>	.241 <sup>b</sup>	1.0					
Industrial	2.40	1.11	-.030	.396 <sup>a</sup>	.228 <sup>b</sup>	1.0				
Farm Belt	2.31	2.85	.010	.304 <sup>a</sup>	.209	.389 <sup>a</sup>	1.0			
Mineral	2.49	2.90	-.212	.092	.182	.351 <sup>a</sup>	.308 <sup>a</sup>	1.0		
Southern California	3.61	3.01	.131	.373 <sup>a</sup>	.359 <sup>a</sup>	.564 <sup>a</sup>	.307 <sup>a</sup>	.195	1.0	
Northern California	3.29	3.24	.039	.268 <sup>a</sup>	.089	.372 <sup>a</sup>	.069	.198	.312 <sup>a</sup>	1.0

<sup>a</sup>Significantly different from 0 at a 95% level of confidence

<sup>b</sup>Significantly different from 0 at a 90% level of confidence

Assuming that all of the existing industrial and office properties are core investments, it is now possible to view the correlations that exist within the current portfolio prior to any further acquisitions or dispositions. Ideally, even percentage exposure exists between regions with the lowest correlations. For example, let us look at the correlation between pairs of regions with approximately even exposure levels. From Exhibit 4.1, one can visualize the pairs; New England and Industrial Midwest, Mineral Extraction and Northern California, and Mid-Atlantic and Southern California. From Exhibit 4.2, the correlation between New England and Industrial Midwest is negative .030. The correlation between Mineral Extraction and Northern California is .198. And finally, the

correlation between Mid-Atlantic and Southern California is .373. The pairs as presented become progressively more correlated. However, as it stands, the portfolio in aggregate does provide relatively low correlations. The existing portfolio, constructed originally in opportunistic fashion, already shows the makings of a solid base for a well diversified core portfolio. To diversify away from risk going forward, regions with low correlations would be targeted for future acquisitions. Again, it is stressed that the individual acquisitions obviously have to make economic sense in their own right at the property-specific level. By combining effective micro-analysis with the type of macro-analysis proposed here, future scenarios could ultimately provide targeted returns with lower risk.

Moreover, specific acquisition strategies might redefine the existing core portfolio. For instance, TAR may consider some of their office property acquisitions to be purely opportunistic plays that belong in the opportunity portion of the portfolio. These would be investments where a higher return is being sought without regard to the subsequent increased risk. Perhaps the office property in Newport Beach fits this description due to the relatively higher lease-up risk. In this instance, the existing core portfolio would have substantially less exposure to Southern California and specific strategies would obviously need to be modified. The key is to clearly define the core versus opportunity positions on an ongoing basis to insure that the core position is maintained at an appropriate level and is well protected against risk.

Indeed, eight region segmentation is a good example of the economic region approach; however, it is only one application of the broader strategy being recommended. Moreover, it is questionable whether or not this specific application is still valid in today's environment. As pointed out in Chapter 2, eight region segmentation and the correlations developed for the regions apply to specific data from the 4th quarter of 1974 to the 2nd quarter of 1987 which is potentially deficient. The model developed by Hartzell, Shulman, and Wurtzebach ends up being driven by the New England classification as it contains the lowest correlations to the other regions. This raises doubt as to the validity of the model overall as New England is poorly represented in the data base. Indeed, the model shows very low correlation between New England and Southern California, yet both regions are currently experiencing economic distress at the same time. A possible explanation for this observation in the context of the eight region model is that New England is just now exiting a low point on its economic cycle and Southern California is just now exiting a high point on its economic cycle. Other possible explanations are that the model is not good anymore, or that systematic influences like a national recession override the regional effects.

Regardless, the point is that, while there are probably other interpretations of economic location which could be more useful to TAR's existing portfolio given today's economic environment, diversification by economic region as a general strategy does provide a good framework. By pursuing this type of dissection of the existing portfolio and subsequent construction through future

acquisitions and dispositions in appropriately targeted economic regions, TAR can achieve true core portfolio diversification at the most effective level considering their style and structure. The goal is to avoid being overexposed to any single region by constantly monitoring existing exposures, and then by diversifying away from that threat.

TAR's portfolio, as stated earlier, is comprised predominantly of industrial properties at fringe-city locations. The inherent nature of these investments requires attention to growth potential of the property locations. Therefore, in interpreting appropriate economic locations for portfolio construction and diversification, TAR should be concerned predominantly with growth sectors. They should concentrate on the relationship between cyclical and non-cyclical components of the portfolio. Attention should further be given to the relationship between durable and non-durable product represented in the portfolio's occupancy mix. Indeed, what are the dominant industries represented in the portfolio, and what characterizes the economic behavior of the overall occupancy? This type of information should be used as a guideline to develop economic regions which are useful, and which behave differently.

Research concludes that this type of portfolio construction, at a minimum, will provide lower variability of returns than a strategy which segments the country into broad geographic regions without consideration to the varying economic behavior of more exacting regions. The economic region segmentation is a natural fit for TAR as it is just an extension of their current acquisition mentality which stresses underlying economic behavior of property-specific

locations. By concentrating on the overall economic behavior of investments at the portfolio level on an ongoing basis, the whole will be worth more than the sum of the parts. Moreover, the MPT nature of this strategy caters to the mentality and language of important institutional investor clients.

In conclusion, it is possible to diversify away from an existing portfolio partially constructed in a purely opportunistic fashion concerned only with property-specific analysis. In addition, if an investment manager wishes to pay attention to the needs of a very important client base, in particular institutional investors, then the manager must understand the benefits and language of modern portfolio theory in regards to diversification. A few adjustments here and there may be all that is needed to turn a "naively" diversified group of individual real estate assets into a "truly" diversified real estate portfolio. The investment manager must first have a complete understanding of the desired risk/return objectives of their investors; then, within these guidelines, must determine whether core results, opportunity results, or a combination of both are expected. Within-real estate diversification is only appropriate for the predetermined allocation to the core portion of a portfolio. From a pragmatic viewpoint, some models of diversification are more appropriate than others depending on the specific characteristics which define the already existing portfolio.

The case study performed in this paper identifies the most appropriate diversification strategy for one real estate investment fund in particular. Further literature should attempt to define appropriate strategies for a taxonomy of real estate investment



portfolios based on the models presented in this paper. It would be beneficial to construct a matrix which clarifies what models of within-real estate diversification are both correct and doable for any given type of existing real estate investment portfolio. Moreover, all diversification strategies must cope with a moving target. To massage an ongoing, well diversified fund, specific strategies need to be developed to deal with the unique stock and flow characteristics of any given real estate investment portfolio.

APPENDIX A  
CASE STUDY INVESTMENT SUMMARIES

**MAHWAH**

In October of 1990, TAR closed on an all equity acquisition of Mahwah Technical Park II. \$7.6 million was invested in the 92,000 square foot office/industrial building located in Mahwah, New Jersey. The building was originally constructed in 1988, and the site contains eight acres. Mahwah is in northern New Jersey adjacent to the New Jersey-New York border. Mahwah is next to the very affluent towns of Upper Saddle River, Ho-Ho-Kus, and Ramsey. Interstate 287 was completed shortly after the acquisition with an exit approximately one mile from the subject property, and this dramatically improved the building's location and highway access within the northern New Jersey/metropolitan New York City area. The northern New Jersey industrial market (five county area of Bergen, Essex, Hudson, Morris, and Passaic) is one of the country's largest with over 200 million square feet and at the time of acquisition, had a nine percent overall industrial vacancy rate. The Mahwah, Ramsey, Upper Saddle River area is an approximate three million square foot industrial sub-market with vacancy reported at six percent. The Mahwah market is a supply constrained market as there are few sites remaining for industrial buildings. The building is fully occupied under lease with RAMCO American International, Inc. through the year 2003. RAMCO has in turn sublet approximately 50% of the space to one national and two local tenants, and is itself occupying the remaining 50%. RAMCO services the aircraft industry

with parts supplies and aircraft engine overhaul. The company is in partnership with Electra Aviation LTD, a very large United Kingdom based aircraft lessor and parts company, and with Israel Aircraft Industries, Israel's largest aircraft manufacturer.

## **KASOTA**

In December of 1990, TAR closed on an all equity acquisition of Kasota Avenue Industrial Park, a 207,217 square foot office/industrial park consisting of four one-story buildings in Minneapolis/St. Paul, Minnesota. The buildings were constructed in 1977-1981, and are situated on 12.24 acres. The office areas are approximately 13% of total building area with some mezzanine space. The buildings are centrally located between Minneapolis and St. Paul in the Midway Industrial area. The Midway Industrial area is a 30 million square foot industrial submarket within the Twin Cities area between downtown Minneapolis and downtown St. Paul. The subject properties are located directly off the Kasota Avenue exit ramp to I-280 and located two miles from both I-94 and I-35 (major east-west and north-south routes through the Twin Cities area). The Twin Cities industrial market is one of the largest in the country with over 200 million square feet. The Midway Industrial area is the top distribution location within the entire industrial market because of its immediate access to the interstate highway system. Many of the buildings within the Midway area are owner occupied with vacancies at the time under 4% for multi-tenant office/warehouse product similar to the subject property. There exists very little land available to build additional product in the Midway market. The

buildings are 99% leased to ten different tenants. The majority of the tenants are in food related distribution businesses. The major tenants are LaCanasta (39,000 square feet) and Blooming Prairie (39,000 square feet). These are both strong local food related companies that distribute from these locations. Six of the ten tenants have been in continuous occupancy since the buildings were built.

In June of 1991, TAR closed on the acquisition of 800 Kasota Avenue, a 100,250 square foot industrial building adjacent to the four buildings described above. TAR invested a total of \$8.21 million dollars in this property along with the above described properties of Kasota Avenue Industrial Park. Construction of 60,000 square feet of this building was completed in 1987, and an additional 40,000 square feet was completed in 1989. The building is 100% leased to two tenants, Universal Coating Company (72,000 square feet) and Universal Press & Label (28,250 square feet). Universal Coating is a paper processing company producing specialty paper products such as bumper stickers, labels, etc. The company is a wholly owned subsidiary of an Italian company named Retrama. Universal Press & Label is a printing company and is a wholly owned subsidiary of Northstar, a publicly traded company headquartered in Minneapolis.

## **KONICA**

Also in June of 1991, TAR invested \$12.1 million in the acquisition of the Konica Warehouse/Distribution Center, a 225,461 square foot building in Windsor, Connecticut (a suburb of Hartford). Construction of the building was completed in 1982, and it is

situated on 29 acres which includes 13 acres for building expansion. The building is located in an industrial and office area three miles from Interstate 91, ten miles from Hartford, and seven miles from Bradley International Airport. Hartford is a 60 million square foot industrial market with a reported vacancy rate of 8.7% in warehouse/distribution space at the time of acquisition. The building is fully occupied by Konica Business Machines, Inc. under a sublease through the year 2009. Konica leases the building from Volkswagon Corporation of America which has a master lease on the building through the year 2009. The net worth of Volkswagon Corporation of America is approximately \$350 million. The net worth of the subtenant, Konica, is \$6 million while its Japanese parent has a net worth of \$1.2 billion. The site has become Konica's main distribution and warehouse facility in the U.S. Across the street, Konica Business Machines' world headquarters is located in a 100,000 square foot office building.

## **GARDENA**

In July of 1991, TAR closed on the acquisition of Harbor Freeway Industrial Park. The \$4.8 million investment consists of two one-story warehouse buildings which total 129,600 square feet located in Gardena, California. The buildings were built in 1983 and are situated on 4.7 acres of land with ample parking for 281 vehicles. Gardena is located in the heart of the industrial area of Los Angeles County just south of the city of Los Angeles. The South Bay industrial area consists of over 80 million square feet of industrial space. The reported vacancy of multi-tenanted warehouse product

was roughly eight percent at the time of acquisition. The subject property is adjacent to The Harbor Freeway and offers easy access via the Redondo Beach Boulevard interchange. The Los Angeles International Airport and The San Diego Freeway are respectively ten and six miles from the property. The property also has easy access to the Long Beach and Artesia Freeways. The South Bay industrial market is one of the nation's largest and most established industrial markets. There exists a strong labor pool of professional, technical, and blue collar workers. Close proximity to the world's largest passenger and cargo airport as well as the third largest container seaport has a major impact on the growth and development of the South Bay industrial market. The buildings are 100% leased to eight warehouse tenants. Major tenants in the project include Sitag U.S.A., Inc., a subsidiary of a major Swedish industrial firm, and Ranford Corporation, a California distributor.

## **BURLINGAME**

In September of 1991, TAR invested \$12.8 million in a joint venture on Burlingame Business Center, a 254,100 square foot concrete tilt-up industrial building located in Burlingame, California. The building is located on 17.34 acres of land, and is a former distilling plant which at the time of investment was being converted to multitenant use. The property is located one and one-half miles south of San Francisco International Airport in an industrial area known as The Millsdale Industrial Park. It has excellent access to the 101 Freeway with entrances located one-half mile to the north and south. Virtually no developable land exists

in the Northern San Francisco Peninsula as geographic, environmental, and governmental constraints have combined to create a totally supply-constrained market. The lack of land and the subsequent lack of new construction has created relatively stable industrial vacancy rates over the last five years. As of the third quarter, 1991, the Northern Peninsula vacancy rate was seven percent. The project is 60% leased to Metropolitan Furniture which manufactures high-end furniture. Metropolitan signed a seven year lease with two three-year renewal options. Metropolitan is a subsidiary of, and the lease is guaranteed by, Steelcase Inc., a furniture manufacturer with a net worth in excess of \$1 billion. The location is attractive to Metropolitan due to its proximity to the residences of highly-skilled employees. The remainder of Burlingame Business Center (100,000 square feet) was vacant at the time of investment. TAR's joint venture partner is a local industrial and office developer located in South San Francisco. The partner has substantial experience developing industrial projects in the Burlingame/South San Francisco submarket.

## **EL PASO**

In October of 1991, TAR closed on eight tilt-up industrial buildings consisting of 481,278 square feet on 27 acres in Butterfield Trail Industrial Park in El Paso, Texas. The buildings were constructed between 1987 and 1990. TAR's investment totalled \$13.3 million, and the property is subject to a \$4.8 million mortgage due in 1999 at 9%. The buildings are also subject to a 40-year ground lease with automatic renewals with the local airport

authority. The property is in El Paso's premier industrial park adjacent to the airport and off of Airport Road with convenient connections to Route 54 going north and south and Routes 10 and 80 going east and west along the Mexican border. El Paso had one of the lowest industrial vacancy rates in the country at the time of acquisition when it was reported to be 5%. The industrial market base is 38 million square feet. Neighboring Juarez in Mexico has an additional 25 million square feet. The El Paso/Juarez metroplex is the capital of the burgeoning maquiladora industry. The maquiladora industry involves the use of low cost Mexican labor for assembly and packaging in Mexico with distribution and warehousing taking place across the border in El Paso. Mexico has one of the lowest labor rates in the world and the maquiladora industry is Mexico's largest industry outside of oil. Historically, El Paso/Juarez have been the center of transportation and commerce between the United States and Mexico because they are the crossroads for four major interstate highway systems (I-10, I-25, I-45 in the U.S., and the Cases Grandes Highway in Mexico), as well as five major rail systems (Southern Pacific, Union Pacific, Santa Fe, National Railway of Mexico, Chihuahua and Pacific). El Paso's superior location as a transportation hub is defined by its unique geographic location at the southern tip of the Rocky Mountains at the lowest point along the Continental Divide. This allows truck and rail freight to avoid steep terrain and winter weather delays common to the northerly routes. Interstate 10 and Southern Pacific's southerly rail line are the most heavily traveled east/west truck and rail arteries in the country. This is obviously beneficial to the maquiladora manufacturers as



well as accommodating to the increasing Pacific Rim trade volume headed to and from the Midwest and East Coast. The combined metro area growth over the last decade would easily rank El Paso/Juarez as one of the fastest growing cities in North America. Industrial relocation to the area is a result of low labor costs, low distribution costs, and access to the Mexican market for both production and trade. The major industries in El Paso are automotive, hospital supply, consumer, defense electronics, and apparel. There have been several major plant relocation announcements recently, including Ford's \$700 million new engine plant south of Juarez. Several major retailers are considering large facilities in El Paso to handle future trade with Mexico. Another locational benefit enjoyed by El Paso is the presence of Fort Bliss and White Sands Missile Range, one of the largest military bases in the world. The subject buildings are 97% leased to 14 tenants with staggered lease maturities. Approximately 70% of the tenants have sales of over \$50 million with the balance of tenants being smaller regional credits. Tenants include Becton Dickinson, Gillette, TDK, and North American Phillips. Other large users in the park include Zenith, Westinghouse, Baxter Travenol, Ford, Honeywell, Union Carbide, Johnson & Johnson, and Rockwell.

## **KAISER**

In December of 1991, TAR invested \$3 million in the acquisition of Kaiser Distribution Center, a 101,140 square foot office/warehouse building located in Bridgeview, Illinois. Construction of the building was completed in 1971. The building is

located at 9700 South Harlem Avenue, just south of 95th Street in Bridgeview, Illinois. Access to the property is from I-294 (either south or north) at the 95th Street exit. The building is just off the exit on the east side of I-294. I-294 is the main north-south thoroughfare through suburban Chicago. Bridgeview is approximately 20 minutes south of O'Hare Airport and approximately 30 minutes southwest of downtown Chicago, and it is located in Southwest Cook County. Besides having an excellent highway system, the area also has an equally impressive rail system. Portions of the Illinois Waterway also pass through this part of Cook County. The Waterways form a vital link between the Great Lakes and the remainder of the nation's Inland Waterway System. The building is 100% leased to Kaiser Aluminum & Chemical Corporation of Oakland, California for 15 years. Kaiser has a net worth in excess of \$500 million. The building is Kaiser's only distribution center outside of their Oakland headquarters.

## **GURNEE**

In January of 1992, TAR invested \$4.7 million in the acquisition of Gurnee Industrial Properties, two one-story industrial buildings totaling 222,712 rentable square feet. The property sits on 12.49 acres of land located in Gurnee, Illinois, a northern suburb of Chicago. Both buildings are located in the Hawthorne Industrial Park in Gurnee. One building is 122,712 square feet, is located on Northwestern Avenue, and was built in 1976. The other is 100,000 square feet, is located at Swanson Court, and was built in 1975. The Waukegan/Gurnee area is located in Lake County approximately 41

miles north of downtown Chicago, 29 miles north of O'Hare International Airport, and approximately 46 miles south of Milwaukee, Wisconsin. The major north-south thoroughfares through Lake County are Skokie Highway (Route 41), Green Bay Road (Route 131), and Waukegan Road (Route 43). They all run through the Waukegan/Gurnee area. A full interchange with the Tri-State Tollway (I-94) is situated at Grand Avenue (Route 132) approximately 3 miles away. There are seven tenants in the two buildings which are 100% occupied. The majority of tenants have been in occupancy for over ten years, and the buildings have a history of high occupancy.

## **HAMPTONS**

In March of 1992, TAR invested \$5.1 million in the acquisition of The Hamptons located at 9190 Hampton Overlook in Lanham (Capitol Heights), Maryland. The Hamptons consist of three one-story tilt-up industrial buildings on 12.12 acres of land with 137,570 of net rentable square feet. They are in Prince George's County, part of the Baltimore-Washington Common Market. Washington's circumferential Beltway (I-95/495) was one of the most significant factors in the growth and development of the County. The County is also served by a number of other major highways which include I-95, U.S. Route 1, U.S. Route 50, U.S. Route 301, and Baltimore-Washington Parkway as well as an excellent network of secondary thoroughfares and arteries. These major highways and secondary roads provide excellent access throughout the County and connect the Baltimore-Washington Metropolitan Areas. Many federal agencies are located in

the County and include Goddard Space Flight Center, Andrews Air Force Base, the U.S. Bureau of the Census, and the National Agricultural Research Center. The subject property is located in the central portion of Prince George's County and has convenient access to the Baltimore and Washington Metropolitan Areas. The immediate neighborhood is roughly formed by Central Avenue (MD Route 214) to the north, the Capital Beltway (I-495/95) to the east, Ritchie Road to the south, and Shady Glen Drive to the west. The neighborhood can best be described as industrial and commercial in nature with scattered pockets of residential use. The inventory of similar industrial space within the market area totaled approximately 14.2 million square feet (209 buildings) in 1990. Vacancy was reported at 3%. Industry groups represented in similar buildings cover a relatively broad range, but predominantly involve activities related to the assembly and storage of products and materials, in bulk, for distribution or sale to retailers or other businesses located throughout the Washington Metropolitan Area, and elsewhere along the Atlantic Seaboard. Warehousing operations maintained in the area by Safeway, Giant, Hechinger, Dart Drug, and Hub Furniture represent almost half of all space occupied. The subject building has a good tenant mix with no tenants rolling until 1995. The property is 67% leased to seven various tenants.

**MASS. AVE**

In October of 1990, TAR invested \$5.1 million in an all equity acquisition, subject to a 90 year ground lease, of 1033 Massachusetts Avenue: a six-story, first class office building with

ground floor storefront retail, and parking for 86 cars located in Cambridge, Massachusetts. The property is located on Massachusetts Avenue between Harvard Square and Central Square, and consists of 95,891 square feet including 6,066 square feet mezzanine and 11,390 square feet of below grade parking. Throughout the decade of the 1980s, the Cambridge market was one of the strongest markets in the Boston area. This was a result of a combination of factors, including a significant price differential for first-class office space as compared to neighboring Downtown Boston, as well as Cambridge's excellent road and mass transit access and its diversified housing stock. At the peak of the market, new first-class office space in Downtown Boston was renting at rates ranging from \$32 to \$42 gross per square foot, while comparable quality space in Cambridge was leasing at rates from \$28 to \$32. In addition, the Cambridge market combines proximity to two of the leading research universities in the world, Harvard University and Massachusetts Institute of Technology. The City of Cambridge has been a leader in the country in limiting and controlling new development making it very difficult and expensive to build. The Cambridge office market is divided into three distinct geographic submarkets; East Cambridge/Kendall Square, Alewife/Route 2, and Harvard Square/Massachusetts Avenue. The total market consists of approximately 9.4 million square feet of relatively new or rehabilitated office buildings, of which approximately 6.4 million square feet is located in the East Cambridge/Kendall Square market area. The balance of the space is roughly equally divided between the Alewife and Harvard Square markets. The Cambridge office vacancy

was reported at 13.5% at the time of acquisition. The subject building is 100% leased with two tenants, Stubbins Company and LeMessurier Consulting, occupying 88% of the space until 1998. Stubbins and LeMessurier are internationally recognized architecture and structural consulting firms respectively.

### **303 INTERNATIONAL**

In February of 1991, TAR invested \$10 million in the acquisition of 303 International Circle, a 136,649 square foot first class five-story office building located in Hunt Valley, Maryland. Hunt Valley is located in the central part of Baltimore County, north of the Baltimore Beltway (I-695) and is primarily accessed by Interstate 83. Hunt Valley encompasses a large area extending north and south from the Shawan Road corridor. Construction of the building was completed in November of 1989, and it is situated on 5.82 acres. The immediate Hunt Valley area has approximately 6 million square feet in 36 office buildings, and there remains a limited inventory of land available for future commercial development. The general Baltimore area has a diverse economic structure which manifests itself in the varied type of industries based in the region. The manufacturing industry still maintains a presence, along with high-tech contractors, educational institutions, retailers, and financial institutions. The subject building, as part of Longview Executive Park, lies at the northwestern fringe of the Baltimore/Washington Common Market. This market is comprised of the Standard Metropolitan Areas of Washington and Baltimore, and St. Mary's County in southern

Maryland. When consolidated, Washington and Baltimore is one of the largest and wealthiest urban areas in the country. The Baltimore metropolitan office market is broken down into five market segments: Downtown, Suburban North, Suburban West, Suburban South, and Howard County. The total market size is 462 buildings and approximately 34.1 million square feet. The subject building is located in the Suburban North office market which enjoys the lowest vacancy in the region. At the time of acquisition, the vacancy rate for Class A buildings was at 10.25%. The building was 88% leased at closing and included as tenants, Maryland Casualty (39% of space), GE Capital (10% of space), and Proctor & Gamble/Noxell (26% of space). Others with a significant presence in the office marketplace of Hunt Valley are McCormick & Co., Becton Dickinson, AT&T, Westinghouse, PHH, Genstart Stone Products, AAI Corporation, C&P Telephone Company, and Black & Decker.

## **CARSON**

In March of 1991, TAR invested \$14.5 million in the all equity acquisition of Carson Civic Center. One Civic Plaza is a six-story Class A office building with steel framed construction completed in July of 1989. The building consists of approximately 131,193 gross square feet and 182 parking spaces. The structure is situated on .60 gross acres within Carson's civic center complex directly adjacent to the San Diego (405) Freeway. The Civic Plaza complex includes hotel, a conference center, and the administrative offices of the Municipal buildings of the City of Carson. One Civic Plaza contained approximately 30% of the space in the Carson office market at the

time of acquisition. One Civic Plaza is bounded on the south by Carson Street, on the northeast by the San Diego Freeway, on the northwest by residential development, and on the west by Carson City Hall offices. Freeway access is provided from Avalon Boulevard which is a major arterial north/south connector and is located approximately one block west of the property. The property has excellent identity with approximately 94 million freeway car trips passing by annually. One Civic Plaza is located between two of the six South Bay submarkets (LAX, South LAX, Central Torrance, Freeway Torrance, Freeway Long Beach, and Downtown Long Beach). Freeway Long Beach and Freeway Torrance usually compete with One Civic Plaza for tenants. Close proximity to the world's largest passenger and cargo airport and the third largest container seaport has had a profound impact on the growth and development of commercial real estate activity in the South Bay. Driven by international import and export activity, along with close proximity to downtown Los Angeles and Orange County, the South Bay is home to diverse domestic and international business activities. It contains a total of 28.5 million square feet of competitive space located in 212 Class A and B buildings in the six South Bay office markets. Vacancy increased to 19% in 1990. The market is driven by the demands of aerospace/defense, computer/hi-technology, automobile and service industries around the Los Angeles International Airport and Long Beach Airport. Effective rental rates are very competitive in comparison to other L.A. Basin markets. The subject building is 94% leased to 27 various tenants. Some other companies that have located in the City of Carson include: Nissan



Motors, Volvo, Pioneer Electronics, McDonnell Douglas, Mercedes Benz, Sun Computers, TRW, Alpha Romeo, Atlantic Richfield, Kraft Foods, Inc., Sharp Electronics, and Pepsi Cola Bottling Company.

## **ATRIUM**

In June of 1991, TAR invested \$6.9 million in an all equity acquisition of The Atrium Building in Rockville, Maryland. The Atrium Building is an 83,445 square foot, three-story office building with parking for 268 cars. Rockville is a northwest suburb of Washington, DC in Montgomery County. The Atrium Building is a niche building in a niche market bounded on the south by the Washington Beltway and Wisconsin Avenue, and bounded on the east by Nicholson Metro Station with direct access to downtown via the Shady Grove Line. It is also near the White Flint Mall which is one of the region's most successful and high priced shopping malls. To the west of the building is I-270, the major 12 lane north/south interstate highway. Montgomery County is one of the close-in suburbs of Washington, DC and has experienced tremendous growth in population and non-residential construction, particularly since the construction of the Metrorail system over 15 years ago. Office vacancy at the time of acquisition was reported to be 16.5% with virtually no further planned development. The attraction of the subject 6101 Executive Boulevard site is its relatively close-in location (without the congestion of downtown Bethesda), proximity to housing, subway service, and access to the main County thoroughfares; namely I-495, I-270, and Route 355. The building is 91% leased to eleven tenants. Tenants in the building include Liberty

Mutual with 22,164 square feet (27% of space), and GMAC with 8,554 square feet (10% of space). The balance of tenants are mostly regional service firms in insurance, consulting, and engineering. The first lease turnover is due in 1995.

## **NEWPORT BEACH**

In April of 1992, TAR invested \$13.9 million in a 188,000 square foot, first class, nine-story office building located in Newport Beach, California just south of Los Angeles. The building was constructed in 1989, and is ideal for single tenant floors with 22,000 square foot floor plates. The building is well situated with Corona Del Mar (73) Freeway to the southwest, and San Diego (405) Freeway to the northeast. The Newport Beach Market consists of three general submarkets; South Coast Plaza Market, Newport Center Market, and Airport Market which connects with the Irvine Markets. The subject property is located closest to the Airport Market. The Airport Office Area consists of approximately 13.6 million square feet and vacancy was reported at 20.36% in the first quarter of 1992. As reported by CB Commercial, the Airport Area continues to dominate both the statistics and the profile of Orange County's office market picture with approximately one-half of the County's existing office space. Good freeway access and a prestigious image contribute to the desirability of the sub-market. With the recent decline of effective rents, the Airport Area offers a high prestige image to a much larger group of potential tenants who could not previously afford to move into the area. The area usually attracts regional professional firms, regional Fortune 500 firms, and service

oriented companies. At the time of purchase, the building was 54% occupied by 18 various tenants. The largest tenant is National Bank with approximately 29,000 square feet.

## **FLOWER HILL**

Also in April of 1992, TAR invested \$9.9 million in the all equity acquisition of a multi-family property called Flower Hill Apartments located in Montgomery County, Gaithersburg, Maryland. The 240 unit development is situated on 14 and one-half acres of land 17 miles from central Washington, D.C. Part of the overall "Flower Hill" planned community, the project was completed in 1986 and presents a comfortable low-density appearance consistent with the surrounding community. The project includes a mix of 1 and 2 bedroom apartment configurations designed with amenities as are typical of the quality competition in the market area. The community includes two large outdoor swimming pools, an indoor club, recreation facilities, and tennis courts. These quality recreational amenities provide the project with a distinct advantage versus the smaller amenities typically offered by apartment competitors. The affiliation of Flower Hill in a planned community provides greater stability to the project, greater amenities, and it will likely have a more stable resident base reducing turn-over costs and vacancies over the long term. The project is located 2.5 miles from the Shady Grove Metro Station and Interstate I-270. Access to nearby employment centers (Rockville, Montgomery Village, Rockville Pike Business Corridor) is provided by a network of highways which were largely "pre-planned" during the 1970s for the anticipated growth in

the subject area. Service shopping facilities are adjacent to the site with regional shopping facilities located within 4 miles. In addition, quality elementary and middle schools, as well as regional park facilities are within walking distance. Montgomery County is the wealthiest county contiguous with major cities such as Chevy Chase, Bethesda, and Rockville; headquarters to several government agencies, and regional or national headquarters to several major U.S. corporations including Martin Marrietta, Marriot Corporation, Comsat, and IBM's Federal Systems Division. To maintain the County's high income per capita and attractive quality of life, the County government imposes stringent requirements on developers for expansion or future development. The Flower Hill Apartments are "grandfathered-in" for condominium conversion. The property was acquired out of foreclosure from the portfolio of a major regional commercial bank. The property is currently rented at below market rents and needs substantial cosmetic work since it was a "wasting asset" while in foreclosure. The intention of TAR is to bring rents to market level and upgrade the property.

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