

A CASE STUDY AND RETROSPECTIVE ANALYSIS OF INSTITUTIONAL
OPEN-END EQUITY REAL ESTATE FUNDS:
John Hancock Equity Real Estate Account 1977-1987

By

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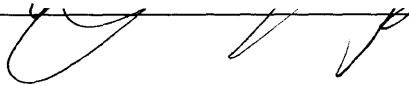
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Abstract

Fueled by two major forces: 1) Congress' 1974 passage of the Employment Retirement Income Security Act (ERISA) mandating pension funds to look for alternative investments to reduce portfolio risk; and 2) the sound performance of the asset class in the face of high inflation during the 1970's, real estate became an attractive investment to pension fund investors by the late 1970's.

Experienced in managing other investment assets for pension funds and managing real estate held in their general account, the John Hancock Mutual Life Insurance Company saw the opportunity to provide a "new" service to pension funds. In December of 1976, Hancock opened a separate account vehicle for pension fund investors to satisfy their real estate investment objectives. That vehicle was an open-end commingled fund called the Equity Real Estate Account (ERA). In the early years, the ERA enjoyed favorable returns that were indicative of real estate and the strong market fundamentals of the time. By 1980, the account was so successful it had a swell of investor contributions that induced exponential growth of the account in three short years.

Initially constructed as a portfolio of predominantly lower risk industrial-warehouse properties, much of the new investor contributions were invested in office properties, particularly in the oil belt regions of the South and West. In the mid 1980's, when the oversupply of capital invested in real estate and over building started to outstrip the demand for product, returns began to fall. Due to an imbalance in market fundamentals and a significant decline in oil prices, the first market sector hard hit was the office and R&D sectors of these oil industry based economies. As a result, the ERA experienced early and severe hits to their returns, eventually prompting a "run on" withdrawal requests and ultimately liquidation, as managements' attempts to reposition the account became hamstrung from a lack of liquidity.

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CHAPTER I

INTRODUCTION AND OVERVIEW

INTRODUCTION AND OVERVIEW OF THESIS AND CASE STUDY

When property values began to decline in the mid-1980's many commingled equity fund investors saw the returns on their real estate investments quickly erode. Frustrated pension fund investors lost patience as quarter by quarter they saw their investment in the asset class not meet their plan performance objectives. Real estate had provided a favorable performance since the post inflationary years of the late 1970's, but pension fund investors became disillusioned with the asset when the market turned. The romance was over, the asset class thought to be the stable source of income and ultimate hedge against inflation was now on a downhill roll.

Among the first fund managers to have the value of their real estate assets written down to more accurately reflect the change in market conditions, John Hancock bore the brunt of this increasing disillusionment with the asset class. They became the subject of early criticism by investors for their fund performance. Several pension fund investors and

advisors soon began to feel that higher yields could be achieved from other real estate investments, and lined up with their withdrawal requests. Declining returns, partially initiated by the conservative approach to writing down property values, ultimately resulted in a “run on” of withdrawal requests and contributed to what amounted to a forced closure and liquidation of the fund in 1988.

The objective of this thesis is to get at the answer to the following questions:

- **How did the ERA perform relative to the NCREIF index and other funds?**
- **What factors contributed to the ERA’s sub-optimal performance?**

Was John Hancock more conservative in their property valuations than other fund managers, ultimately contributing to lower returns compared to the NCREIF Index, and the pre-mature demise of the fund? Did the portfolio consist of too many under performing properties and/or properties in economic locations hardest hit by the downturn in the market when the market turned?¹

- **How has the real estate portfolio management industry evolved in response to problems encountered during the late 1980’s and early 1990’s?**

To properly address these questions and do this case study justice, it is first necessary to step back and look at the investment environment prior to the formation of the Equity Real Estate Account (ERA) and during the time it was in existence. In order to provide a frame of reference and background information on the ERA, Chapter II--THE

¹ “Under performing” properties and “economic regions hardest hit (by downturn in the economy)” will be identified and further defined in comparing the portfolio investments to the “benchmark”, the NCREIF index.

STAGE IS SET FOR INSTITUTIONAL INVESTMENT IN REAL ESTATE offers a brief discussion and historical overview of institutional investment in real estate and the evolution of real estate portfolio management during the 1970's and 1980's.

The aforementioned background information is followed by Chapter III-- THE EQUITY REAL ESTATE ACCOUNT: A CASE STUDY the main focus of this thesis. In an attempt to objectively address the questions mentioned above, this case study includes an in-depth retrospective analysis of both qualitative and quantitative aspects of the fund. This retrospective analysis was accomplished by extensive interviews with the Fund managers and investment advisors, review of annual reports and reconstructing the portfolio return information on an asset by asset basis and comparing it to index information provided by the National Council of Real Estate Investment Fiduciaries (NCREIF). The qualitative analysis portion of the case study is centered on the ERA investment goals and objectives, management investment strategy, appraisal policy and characteristics of the fund. The quantitative analysis portion focuses on the Fund's performance in terms of total, income and appreciation rates of return, by property type and region, and compares those returns to the NCREIF Index. Also, a brief comparative analysis will be made between the ERA and six (6) other similar open-end commingled funds, managed by insurance companies during the same period that the ERA was in operation. This comparison includes the analysis of each fund's characteristics and rates of return (at the portfolio level) between 1978 and 1987.

Chapter IV--THE ERA IN RETROSPECT: SUMMARY, ISSUES AND ANALYSIS is a synthesizes of all information gained in the analysis/case study process and provides answers to the questions posed at the beginning of this introductory chapter. The final chapter, Chapter V--INSTITUTIONAL INVESTMENT IN REAL ESTATE (REVISITED) concludes this thesis with discussion on recent developments in institutional investment in real estate.

CHAPTER II

THE STAGE IS SET FOR INSTITUTIONAL INVESTMENT IN REAL ESTATE

PENSION FUND INVESTMENT IN REAL ESTATE ²

Pre 1970

Institutional investors' interest in real estate is only a recent phenomena. Life insurance companies and pension funds primary investment objective were (and still are) to achieve the highest yield possible with minimal risk and preservation of capital.³ In the 1950's and 1960's that objective translated into the majority of their assets being held in long-term bonds. It wasn't until the early 1970's that the typical institutional investment portfolio consisted of stock, with the prototype portfolio consisting of approximately 60% bonds and 40% stocks.⁴

² The material from this section was primarily taken from *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Executive Summary and Sections IV-VI

³ *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Pg. 4, Executive Summary

⁴ Geoffrey Dohrmann, "The Evolution of Institutional Investment in Real Estate", in *The Handbook of Real Estate Portfolio Management*, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 4-6

Life insurance companies were among the first big players in the arena of institutional investment in real estate. New legislation in the late 1940's opened up the opportunity for insurance companies to increase their allowable investment limits in owned real estate. Much of their early real estate investment experience came in the form of mortgage debt secured by property, eventually owning some properties as a result of foreclosure. Other investments were in the form of purchased triple net leased properties with large creditworthy corporate tenants and purchased or developed office buildings for their own use.^{5 6}

A relatively newer phenomena is pension fund investment in real estate. Taking a similar investment path as insurance companies, pension fund plans started investing in real estate as lenders, and in more recent time as holders of net leased properties.⁷ The growth of pension fund investment in real estate, however, was very limited up until the late 1960's and early 1970's. The general perception at the time was that the risks associated with the asset were much higher than those normally taken by pension fund investors. Other contributing factors why pension funds shied away from investing in real estate were:⁸

⁵ Geoffrey Dohrmann, "The Evolution of Institutional Investment in Real Estate", in *The Handbook of Real Estate Portfolio Management*, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 4-6

⁶ Bruce Ricks, *Recent Trends in Institutional Real Estate Investments*, The Center for Real Estate and Urban Economics, Institute of Urban and Regional Development, University of California, Berkeley, 1964.

⁷ Bruce Ricks, *Recent Trends in Institutional Real Estate Investments*, The Center for Real Estate and Urban Economics, Institute of Urban and Regional Development, University of California, Berkeley, 1964.

⁸ Blake Eagle and Susan Hudson-Wilson, "Real Estate Markets: A Historical Perspective" in *Managing Real Estate Portfolios*, ed. Susan Hudson-Wilson and Charles H. Wurtzebach (New York: Irwin 1994), pg. 3

- A lack of expertise and understanding of the asset class and its characteristics
- A lack of appropriate investment vehicles
- Concern over the fact that the investment characteristics of real estate were too dissimilar from other asset classes, and therefore the asset had several perceived barriers to entry. Namely, the market was fragmented, pricing was infrequent and often not reflective of the “true” market, there was no “auction” market, and information was inadequate and inefficient.

1970-1985

Perceptions about the asset class began to change in the late 1960’s when Wall Street underwrote the real estate investment trust (REIT) industry. But pension fund interest in real estate was elevated to a new plateau in the mid-1970’s fueled by a number of events, such as:⁹

- The advent of new academic research which supported applying the principles of modern portfolio theory in managing total risk. Specifically, the notion that the interrelationship among the asset classes is as important, in terms of mitigating risk and maximizing returns, as the individual assets’ expected return. And additional research which concluded that real estate risk and return characteristics behaved differently than other asset classes (i.e. stocks and bonds).

⁹ Blake Eagle and Susan Hudson-Wilson, “Real Estate Markets: A Historical Perspective” in *Managing Real Estate Portfolios*, ed. Susan Hudson-Wilson and Charles H. Wurtzback (New York: Irwin 1994), pg. 3

- The negative impact of inflation on the other asset classes and the apparent opposite effect on real estate. Specifically, that real estate was a “hedge” against the effects of inflation.
- Congress passing the Employment Retirement Income Security Act (ERISA) in 1974. One of the main objectives of ERISA was to mandate private pension fund managers to look for alternative investments in order to reduce the overall risk in their portfolio.

By the mid-1970's pension fund investors appetites for real estate were just starting to swell. The time had come to seriously consider other investments, in particular, those that offered significant hedge against inflation. The main objectives of pension funds investing in real estate were to achieve high level of current returns (compared to stocks) and inflation protection through expected appreciation in property values. An overriding condition in attempting to achieve these two main objectives was to do so at low to moderate risk levels. At the time, pension funds did not clearly define exactly what their risk tolerance was, but indirectly made some risk/return trade off decisions by consciously avoiding investing in higher risk real estate such as development, construction and highly leveraged built products. Based on the investment objectives of high current income and inflation protection from capital appreciation, the criteria for an acceptable real estate investment was loosely defined as:¹⁰

¹⁰ *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Pg. 6, Section IV

- Well located, high quality, multi-use, tenanted, operating income producing, commercial properties.
- Emphasis was placed on office building, shopping centers, and industrial property types because they were typically multi-tenant and could be actively managed for higher potential returns.
- Other investments of interest (with much less importance) included large, non-government supported, multi-family residential complexes and urban, destination-city hotels

By the 1970's, the top 1000 private and public pension funds had serious allocation commitments to real estate with few investment vehicles to satisfy their investment needs. But they were not comfortable investing directly in properties for their own account. Not only did they lack the experience, but most lacked the allocation commitment to achieve a comfortable level of property type and geographical diversification. Additionally, an equity position was the only way to realize the full benefits as an inflation hedge from investing in the real estate asset class. Therefore, the issues were how to acquire the necessary experience to invest in the asset and what vehicle provided the best opportunity.

Emerging simultaneously, partially as a result of this swell of pension fund interest, was a new industry of real estate advisory services that allowed pension funds to tap into companies with the real estate expertise necessary for direct equity investment. Three

types of advisory companies surfaced from this new found opportunity: independent real estate companies, banks and life insurance company. Under ERISA guidelines, advisors had to qualify as a co-fiduciary in order to be able to service the private pension fund sector, allowing plan investors the opportunity to transfer the liability of their real estate investments to the advisor.

Life insurance companies, by this time had a long history of investing in commercial real estate, albeit most of this experience was through their commercial mortgage operations. Many life insurance companies were able to secure the bulk of the early real estate investment management market simply because they had demonstrated experience in managing their own direct mortgage investments. In 1970 the life insurance industry had approximately \$40 billion in commercial loans outstanding.¹¹ Also, insurance companies had an established relationships with pension fund investors, as qualified co-fiduciary's, providing them with investment services in other asset classes. They were quick to pick up on the opportunity of providing an additional complimentary service to satisfy this budding demand. The real motivation behind this move was twofold: 1) pension fund capital invested in their real estate accounts provided a source of replacement capital for their own investments, particularly during a period when they were under capital disintermediation; and 2) pension fund investment in real estate provided a major source of income from asset management fees.¹²

¹¹ Claude Zinngarbe, "Real Estate Investment by Insurance Companies", in *Urban Land* (March 1994), Pg. 14

¹² *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Pg. 11, Section VI

In the early days of the real estate advisory business the investment vehicle offered were the open and closed-end commingled fund. For pension funds, co-investing with peers, thus limiting investment to pooled funds, helped reinforce the prudence of the decision to invest in real estate. Pooled real estate funds provided the desired diversification that was not possible to achieve with direct investment. Because the open-end fund was set up to operate like a publicly traded equity mutual fund it soon became the vehicle of choice. These vehicles were similar to stock and bond mutual funds already established for pension funds. Investors could invest and withdrawal their moneys on demand, for the market rate of a “share”. The fund net inflows of income are invested in property assets. From 1975-1979, U. S. pension fund investment in real estate had increased to more than \$4.5 billion with nearly \$4 billion of that amount invested in pooled funds.^{13 14}

Those pension funds that invested in real estate in the late 1970’s were well rewarded. Real estate’s performance over the last five years of the decade well out performed bonds and returns were very close to those of stocks, with less volatility. The perceived principal risk of stocks and bonds (defined as the variability of returns as measured by the standard deviation of an asset) had increased substantially in the eyes of investors. They were now perceived as “more risky” than first thought. On the other hand,

¹³ JMB Institutional Realty Corporation, “Structuring Pools for Real Estate Investment in the 1990’s”, *JMB Perspectives*, n.d., Pg. 8-9

¹⁴ *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Pg. 4, Executive Summary

real estate contributed to lowering the overall risk to a portfolio by its higher real rates of return and better inflation hedge attributes. Therefore, pension funds concluded the benefit from investing in real estate outweighed the main negative attribute of real estate, illiquidity.

By the early 1980's more pension funds were ready to diversify. Planned investment in real estate for 1980 was targeted to increase by \$6-8 billion dollars. Pension funds overall knowledge base was increasing and so was the comfort level with the asset. Open-end commingled funds provided the main vehicle source of investment because of its general acceptance as a broadly diversified index-type portfolio. For those pension funds looking for more specialized investment in the asset class, closed-end funds offered a specific focus in various market segments and/or property types. Larger funds, with more expertise, acquired properties for their own core portfolio. The percent of money allocated to open-end commingled funds had tapered off and was in decline, not because of rejection of the investment vehicle, but because it reflected a change in pension fund attitudes. As their strategies became more focused and decision making more savvy, some pension funds wanted to incorporate their own multiple investment styles, in an effort to best capture the benefits of the asset class to their individual portfolio objectives.¹⁵

At the end of 1979, there were 27 pooled funds which contained the approximate \$4.6 billion in pension fund equity investment in commercial real estate. Seventeen open-

¹⁵ *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Pg. 5-6, Section VI

end and 10 closed-end funds contained 75% and 14% (respectively) of the total amount with only 11% in direct investment in real estate. By 1984 there were 70 pooled funds and approximately \$41 billion dollars invested (vs. \$6-8 billion!). Even though the open-end funds' value increased from \$3.5 to \$16.5 billion, their market share dropped from 75% to 40%. The closed-end fund market share remained about the same. Most of the dollar increase was from first-time pension fund investors making their initial core portfolio investments in single property funds, private separate accounts, or direct investments. More seasoned pension fund investors shifted to investment in closed-end funds and direct investments. The pension fund profile had changed dramatically over that five year period.¹⁶

As new managers entered the business each tried to differentiate themselves from the competition in terms of investment approach or style. While there was some strategic mobility, when it came down to specific investment policy, almost all offered diversified portfolios (by type and location) and a portfolio of assets purchased primarily on an all equity basis. Smaller closed-end managers stressed specialization by region, property type or emphasis on a narrow range of investment values. Larger open-end funds tried to distinguish themselves from “the first” open-end fund established in 1971, Prudential’s PRISA account. They tried to promote certain distinguishable factors like relationships with other industry professionals (i.e. brokers or certain developers), or unique ability to acquire and manage properties. But the bottom line was most managers offered diversified

¹⁶*Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Pg. 5-6, Section VI

portfolios purchased with all cash. Portfolio managers in an attempt to distinguish their “specialized” management style from the competition often promised higher rates of return. In the early 1980’s their ability to come through on this promise was helped by high inflation and supply shortages.¹⁷

THE EARLY EVOLUTION OF REAL ESTATE PORTFOLIO MANAGEMENT¹⁸

“Diversification”

Real estate portfolio management as an investment function, and for some a profession, essentially evolved with and out of the management of commingled equity real estate funds. The first real estate commingled fund was offered in 1968, but it was not until the pension funds’ interest in real estate intensified in the mid-late 1970’s that this investment vehicle took off.¹⁹ During that same period, “portfolio management” and what we know commonly refer to as Modern Portfolio Theory (MPT) were in their initial stages of development.

Prior to, and well into the 1970’s, however, there really was no such thing as real estate portfolio management or diversification. It was acquisitions and asset management.

¹⁷ *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Pg. 10, Section IV

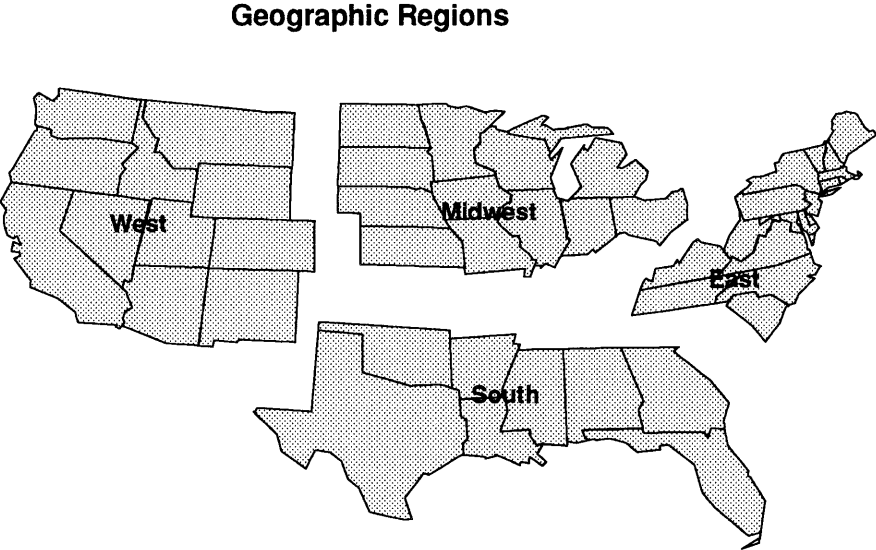
¹⁸ The material from this section was primarily taken from Charles Wurtzebach, “Real Estate Portfolio Management”, in *Managing Real Estate Portfolios*, ed. Susan Hudson-Wilson and Charles H. Wurtzebach (New York: Irwin 1994), pg. 165-183.

¹⁹ Geoffrey Dohrmann, “The Evolution of Institutional Investment in Real Estate”, in *The Handbook of Real Estate Portfolio Management*, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 6

The task involved building a portfolio of real estate assets one transaction at a time with a lot of focus on returns and little on exposure to risk from concentration in a particular type of real estate or economic region. By the mid-1970's, portfolio theory and the understanding as to how it could be applied to real estate portfolio construction and management could be summed up in one word, "diversification". At the time, there was only a naive understanding of minimizing exposure to risk through diversification. The main reason for this naiveté could be explained by the fact that there was little empirical evidence to provide a precise approach in which to base your investment strategy. It was common practice, during the early stages of the Equity Real Estate Account, for a manager representing pension fund investors to minimize their risk exposure to a particular type of real estate investment by holding a variety of property types and properties in different geographic regions in the country. Therefore, in the early days of pension fund investment in real estate, the typical commingled fund focused on investment in a variety of national metropolitan areas, equally weighted in four different property types: office, industrial/warehouse, retail and apartments. It was pretty clear to portfolio managers that diversification was good, but total understanding of how to use it to its fullest advantage as economic conditions changed, was not.

Initial diversification strategy focused on property type and location. The five major property types included office, industrial/warehouse, retail, apartment, and to a lesser extent hotel properties, which were held only by the larger funds. The four broad

geographic regions were the East, Midwest, South and West. Below is a map of how the four regions of the U. S. were defined.²⁰



Although there was little empirical research about the inter-correlation of risk and return between property types, intuitive and practical understanding of how different market factors influence different property types was obvious based on common urban economic theory. Less understood were the distinctions of performance and risk between regions. Early definition of these regions were extremely broad based in their focus and made on the basis of state boundaries versus referring to specific real estate markets and their difference. Specific target weights for each of the property type and regional categories were not well developed. The approach was to, first and foremost, invest in “institutional quality” real estate and second monitor “diversification” in the allocation of invested dollars across property type and regions. If a company had a strategic

²⁰ “Regions” as defined by NCREIF index.

diversification goal of a national portfolio equally weighted across property types it was thought of as being on the cutting edge of real estate portfolio management. Even though being equally weighted among property types was naive at best, managers often did not achieve that level of diversification because it competed with other investment goals (i.e. concentrating in lower risk industrial properties because of the low risk tolerance of their investors). Depending on the risk and return objectives of their investors, managers would often end up with some concentration of investment in property type or region, or a combination thereof. For example, many pension funds main investment objective was for modest income and appreciation returns at a low risk. For real estate portfolio managers the property type that best fit this qualification was industrial properties because of their historically stable income, modest appreciation and low risk associated with having one creditworthy tenant. Thus, this led to an early concentration in industrial properties over those other property types. While at the time the overriding objective was to build a portfolio of “institutional quality” properties, risk and return were often not discussed. If they were discussed, it was in the context of the broader goals of the pension funds portfolio of multiple assets and not specific to real estate. This “loose” strategy of diversification by property type and region remained the bench mark for nearly 20 years. Even the newly developed industry index, the Russell-NCREIF Property Index introduced in 1978 used these dimensions to differentiate and report commercial real estate returns.

Two major factors initiated re-evaluation/reconsideration of the current thinking in diversification. One event actually forced change and the other facilitated it, and to this

day continues to facilitate change in the way we look at the real estate asset. The steep decline of real estate performance in the mid-1980's brought the issue of "diversification strategy" to the forefront and forced investors, consultants and investment managers to question the appropriateness and current thinking of property type and geographic region as diversification classifications. The decline in real estate performance initiated change, but change was possible due in part to the availability of new information on commercial real estate and its use in academic research which sought to explain the inter-correlation between different real estate characteristics and regional economic factors.

This paradigm shift in understanding the investment behavior of the asset and change in real estate portfolio management did not begin to take hold, however, until the mid-late 1980's, toward the end of the life of the Equity Real Estate Account. During the late 1970's and 1980's the structure of an existing portfolio had little impact on the decision making process used to pursue a specific acquisition. Likewise, little consideration was given to the impact of an acquisition on the total portfolio or subsequent acquisitions. What the industry lacked was a more strategic, disciplined process of real estate portfolio construction based on the explicit risk and return objectives of their clients. Portfolio strategy, portfolio structure and the measurement and management of risk were given little attention. As long as property values continued to rise, and income and appreciation yields were acceptable, there was little complaint.²¹

²¹ Charles Wurtzebach, "Real Estate Portfolio Management", in *Managing Real Estate Portfolios*, ed. Susan Hudson-Wilson and Charles H. Wurtzebach (New York: Irwin 1994), pg. 187.

From the late 1980's to today pension fund investment in real estate has undergone significant change. These changes are important, however, because this period is outside the time in which the Equity Real Estate Account existed, further discussion about these changes is reserved for the final chapter on pension fund investment and real estate portfolio management "today".

With background on how pension funds became interested and started investing in real estate and understanding of the what real estate portfolio management was all about in the late 1970's and 1980's, attention is now turned to the focus of the thesis, the case study of John Hancock Equity Real Estate Account.

CHAPTER III

THE EQUITY REAL ESTATE ACCOUNT (ERA) 1977-1987:

A CASE STUDY

INTRODUCTION (Circa 1975)

The Equity Real Estate Account (ERA) was an open-end commingled fund established by John Hancock in December of 1976 as a separate account vehicle specifically for pension fund investors to satisfy their real estate investment objectives. Like other life insurance companies in the early 1970's, Hancock already owned a portfolio of properties and was well equipped to take on the function of managing real estate investments for pension funds. Having recently weathered a recessionary period, much of Hancock's real estate investment activity had been pared back and John Hancock had staff capacity and investment expertise in place.

Hancock's pension fund representatives saw their pension fund clients' recent budding appetite for real estate as a real opportunity. Prudential's PRISA account had been on line for about four years by this time and was showing signs of early success

having recently achieved the \$500 million mark in investments. Optimistic that the economy would soon turn around, John Hancock formed a committee in 1975 to look into starting its own commingled equity real estate open-end fund. The committee identified several advantages as to why John Hancock should get into the business of managing real estate investments for pension funds. The most attractive reason, of course, was the opportunity to add an additional source of fee income. Additionally, by establishing the ERA it would provide John Hancock with the opportunity to diversify services to institutional clients, deploy in-house staff expertise and expand the size of assets under management without investing their own capital in real estate assets. The “new” business would also offer the ancillary benefits of publicity and an expanded industry network.

Why did pension fund investors turn to John Hancock? There were several reasons: Insurance companies seemed safe, they had the “brand name” that could be trusted; they also had an established reputation and experience in investing through their large general account investments in mortgages and equity real estate; and they had an existing national network of commercial brokers and developers which provided an immediate foundation of contacts in most major metropolitan markets in the U.S. Some pension fund investors simply had a good working relationship with John Hancock in other pension fund investment products. Hancock had the right ingredients for early success, saw and took the opportunity to capture the excess demand of large amounts of pension fund money chasing the limited supply of real estate investment vehicles.

THE ERA FUND INVESTMENT STRATEGY AND CHARACTERISTICS

Much of the ERA's investment goals and objectives were directly linked to those of their pension fund clients, as loosely defined as they were at times. What pension funds were looking to get out of real estate was not unlike what they were looking for from other assets, that included: preservation of capital, a stable income stream and long term capital appreciation. Early on most investors didn't articulate specific performance goals for their real estate investment. More often than not the return goals for real estate were derived from the base actuarial return goals for the entire fund, typically 8-9% nominal and 6% real. Bottom line, they wanted an inflation hedge but not at the expense of income returns. Two other big issues for pension fund investors were: 1) could they get their money out when they wanted it, and 2) was their money invested in real estate versus sitting in an account as cash.

1977-1979

Hancock set out to plan and construct a new portfolio that was based on the goals and objectives of their early pension fund clients. In an attempt to distinguish themselves from other competing funds they marketed the ERA open-end fund as a "diversified pool of properties...with the (main) objective of achieving current income and long term capital appreciation".²² This was initially to be achieved by acquiring a collection of properties heavily weighted toward smaller industrial/warehouse properties, fully leased to a single

²² Equity Real Estate Account Annual Report 1982, (John Hancock), Pg. 2

(vs. multi) tenant with short term lease agreements. Historically these properties had a reputation for good occupancy, stable rents and low return volatility because of the tendency toward being occupied by a single creditworthy corporate tenant. With the extreme swings in inflation prevalent at that time, the perception was that short term leases were the only way to avoid the impact of high inflation. The strategy of investing in lower risk, modest return properties dominated Hancock's investment and acquisition approach for the first five years of the fund. This "conservative" approach was marketed by Hancock as "the" distinguishing feature that separated the ERA from other similar funds. By 1980 the portfolio consisted of 40-50% industrial/warehouse, 20% retail and 18% office and 50% properties were in the \$5-\$20 million range.²³

1980-1983

The "mini-recession" of the early 1980's, marked by high interest rates and high inflation, coupled with experts' projections for higher than normal inflation in the near term, caused pension fund investors to seriously consider increasing their allocations to the real estate asset class.²⁴ Investor contributions to the ERA in 1980 and 1981 totaled \$225 million with only negligible withdrawal request. As a comparison, by the end of 1979 the entire fund had a total value of slightly more than \$350 million. Part of the increased popularity in the Equity Real Estate Account was its stellar performance in the late 1970's and early 1980's when the account was consistently earning around 10% in income return and reporting total returns of 12% to 19% per annum. The huge increase in investment

²³ For a complete description of the fund characteristics see Appendix 2.

²⁴ *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), Pg. 3, Section VI

contributions brought enormous pressure on management to step up acquisitions to meet these investment obligations. Investors did not like funds to hold “their” money in cash, cash drags down the total returns of the account. Investors would often threaten to withdraw money if an account held “too much” cash. The ERA was not the only fund in this predicament, however, a lot of pension fund money was chasing real estate at the time, and the acquisitions “game” for “institutional quality” real estate became very competitive. Management had projected and documented in their annual reports to investors a plan for \$200 million in annual acquisitions for both 1981 and 1982. Actual acquisitions in 1981 came close to the target at approximately \$194 million, but fell short in 1982 with only about \$118 million in acquisitions actually realized.²⁵

By this time portfolio strategy and composition had to take a back seat to the primary investment task of acquiring properties to absorb the inflow of funds. One of the best ways to accomplish such an aggressive undertaking was to look to larger size properties, namely office buildings in the \$10-\$20+ million dollar value range. One of the big attractions to office was the good returns these properties had provided in recent years.

The number of properties in the account jumped from 36 in the first quarter of 1980 to 99 by the fourth quarter of 1982, nearly reaching its all time high of 104 properties in two short years. Not surprisingly the composition of the Fund had also changed. From 1980 to 1982 the ERA’s mix of property types shifted from 20% to 46%

²⁵ Equity Real Estate Account Annual Report 1981-1983, (John Hancock)

in office, from 44% to 26% in industrial/warehouse and from 22% to 12% in retail property. Also during this period, the Fund's "equal" distribution by geographical region shifted from the Midwest and East to a heavier concentration in the South. Specifically, the property mix concentration in the South increased from 23% to 30%. Most of the shift to a higher concentration in the South was attributed to heavy investment in office and R&D in the oil based economy of Houston. This shift in portfolio composition began in 1980 and held almost constant well into 1984. This change from investing in smaller, lower risk industrial and retail properties to larger multi-tenant office properties was a clear departure from the original strategy used in constructing the fund.

In 1982, the Fund's performance had its first "soft" year since its inception. The economy had not fully recovered from the recession and was still registering negative economic growth (as measured by GNP). The year had been marked by erratic interest rates and lower inflation. The 1979-1982 boom in office construction out stripped the underlying demand for office space, which translated into high office vacancy rates. The outlook for office in the coming years was bleak. Housing and retail were showing signs of recovery in late 1982, but office and industrial performance was clearly lagging the economic rebound. In anticipation of this "lag" in industrial and office occupancy the fund management "took steps to bring property values more in line with the lower rent projections".²⁶

²⁶ Equity Real Estate Account Annual Report 1982, (John Hancock)

The resulting impact was a one-two punch on the ERA. The ERA total return dropped to 8.8% in 1982 from 14.3% in 1981.²⁷ Total return for 1982 consisted entirely of income return with 0% capital return, due in part to a spike in interest rates and the resulting hike in the discount rate used to value properties. The ERA was not the only real estate account hard hit that year, however. As a comparison, the Index total and capital returns for 1982 also fell sharply, to 8.6% and 0.5%, respectively.

Fund contributions dropped significantly from \$108 million in 1981 to \$9 million in 1982, and for the first time in the history of the Fund withdrawal requests exceeded contributions by nearly \$2 million. In 1982 the Fund became so strapped for cash that it opened a \$50 million dollar line of credit. For the first time, in 1982, the ERA annual report mentioned property sales as a strategy to increase liquidity and dispose of under performing assets.

By 1983, the economy was in a vigorous recovery mode and inflation was well under control. The Fund's performance temporarily rebounded with a total return of 13.2%. However, over 1/3 of that total was from capital appreciation. The income return of 8.4% for the year was below the 1982 level of 8.8%. Withdrawal requests increased from \$11 million in 1982 to \$52 million in 1983.

²⁷ Returns noted in this section are returns taken from the Annual Reports, which include returns from real estate investments as well as those from other asset. Note that these returns may vary from those stated later in the chapter because they are returns from real estate investments only.

1984-1987

By 1984, management realized that the portfolio had to be repositioned. In the ERA's 1983 annual report, management identified a plan to "refine the portfolio".²⁸ Besides the obvious issue of the office market over supply and high vacancy rates the report goes on to describe a shift in industrial/warehouse tenant's way of doing business and thus change in their demand for and use of space. Specifically noted were the technological changes in production, better inventory control and desires to keep overhead cost down. These factors all translated to the need for less space and a shift from the older, larger industrial/warehouse to small bay, highly finished business park and R&D office properties. Also noted in the 1984 annual report was the fact that apartment supply and demand looked very strong and the opportunity for high returns existed in certain retail sectors namely large retail centers with anchor tenants (which allowed the center to draw from a larger market area).

The time just prior to and including 1984 would prove to be a distinct transitional period for the fund and for management. Weaker performances by industrial/warehouse investments made during the early days of the Fund's construction, and heavy investments made in the early 1980's in office, were dragging down the entire overall performance of the fund. By 1984 the income return dropped further to 7.8%, and withdrawal requests were now at \$86 million, up 65% from 1983.²⁹ Contributions rebounded slightly, but withdrawal requests still exceeded contributions by approximately \$50 million. This was

²⁸ Equity Real Estate Account Annual Report 1982, (John Hancock)

²⁹ Equity Real Estate Account Annual Report 1983-1984, (John Hancock)

partially attributed to the plan termination and complete withdrawal of one large pension fund client, valued at \$55 million. Illiquidity, which started to be a problem in 1983, was now a very serious problem for the account. The ability of management to initiate significant changes in its investment strategy and the composition of the portfolio was greatly limited. Most of the income from the account had to go to pay off withdrawal requests versus being reinvested. Below is a summary of contractholder contributions and withdrawals between 1981 and 1986.

ERA INVESTMENT SUMMARY (1981-1986)

<u>Contractholders' Activity</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
Contributions	107,895,745	9,225,000	22,200,000	36,575,000	4,503,280	0
Withdrawals	(787,762)	(10,904,478)	(52,000,000)	(86,081,571)	(93,876,747)	(54,773,087)
Variance	107,107,985	(1,679,478)	(29,800,000)	(49,506,571)	(89,373,467)	(54,773,087)

Management clearly had identified the need to reposition the portfolio away from its regional concentration and under performing office and industrial properties to apartments, specific types of retail and better designed industrial and R&D/office facilities. The problem was their hands were tied. There was no liquidity in the account and certainly not enough money to implement a major repositioning of the account. The next two years would be spent, without new money coming in, trying to reposition the account by attempts to increase income through higher occupancy, an intense asset management strategy and through the sale of properties, but to little avail. The larger office properties in the energy belt economies couldn't be leased and couldn't be sold without huge losses. Even with a promising economic outlook for 1986 the fund experienced a -2% total return

on the year. In comparison, the NCREIF total return for the year was 6.4%.

Contractholder activity for the year included no new contributions and \$54 million in outstanding withdrawal requests.

By the end of 1987 management decided to close and liquidate the account. The ERA inception-to-date (1978-1987) annualized total return was 10.1% and the NCREIF total return, during the same period, was 12.8%.

FUND PERFORMANCE

The ERA vs. NCREIF

In discussing the ERA performance, it is important to briefly review the highlights of the Fund's characteristics and its property weightings by region, and in particular, by product type. In the private real estate market, the best proxy for a market portfolio is the NCREIF Index. If a fund has a different property type or region weighting than that of the Index, then it can be argued that the fund has implicitly made "bets" on those particular product types or regions and is taking on a certain level of unsystematic risk with the intention of achieving higher returns, than the market. Concentrations in property types or regions can translate into exposure to certain exogenous economic variables that may significantly impact a particular region or property type "sector", positively or negatively.³⁰ Thus, "economic exposure" can have a significant impact and influence on a fund's risk and performance.

In comparing the concentrations of the ERA to those of the Index a few overriding observations were made. Specifically, there were certain differences in concentration between the Fund and the Index that were maintained over the ten year life of the Fund. These include:

- The ERA was more heavily weighted in warehouse/industrial and R&D properties, particularly in the Midwest

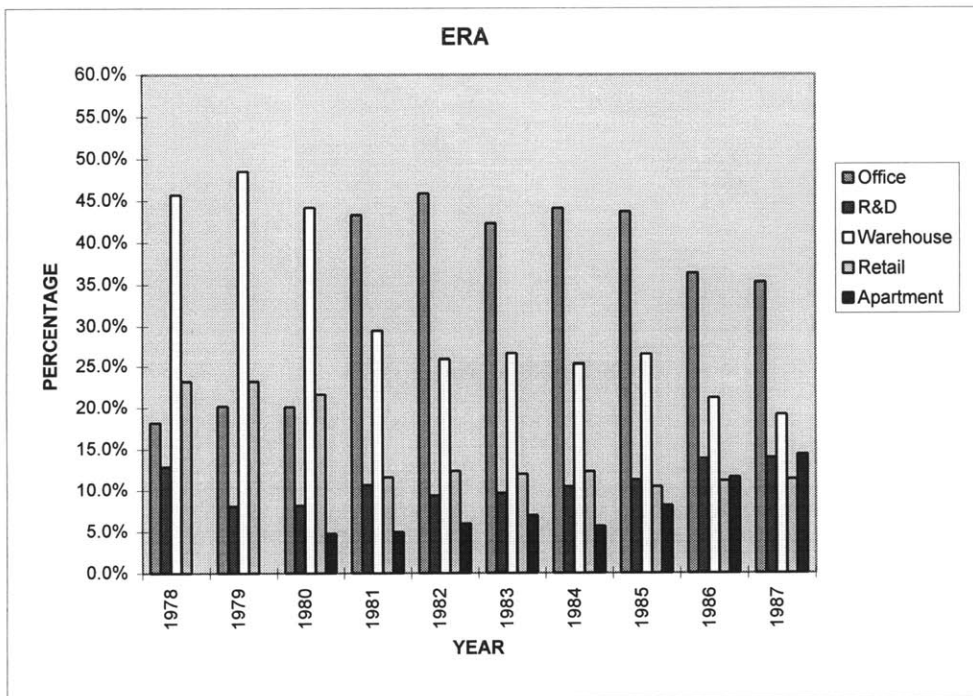
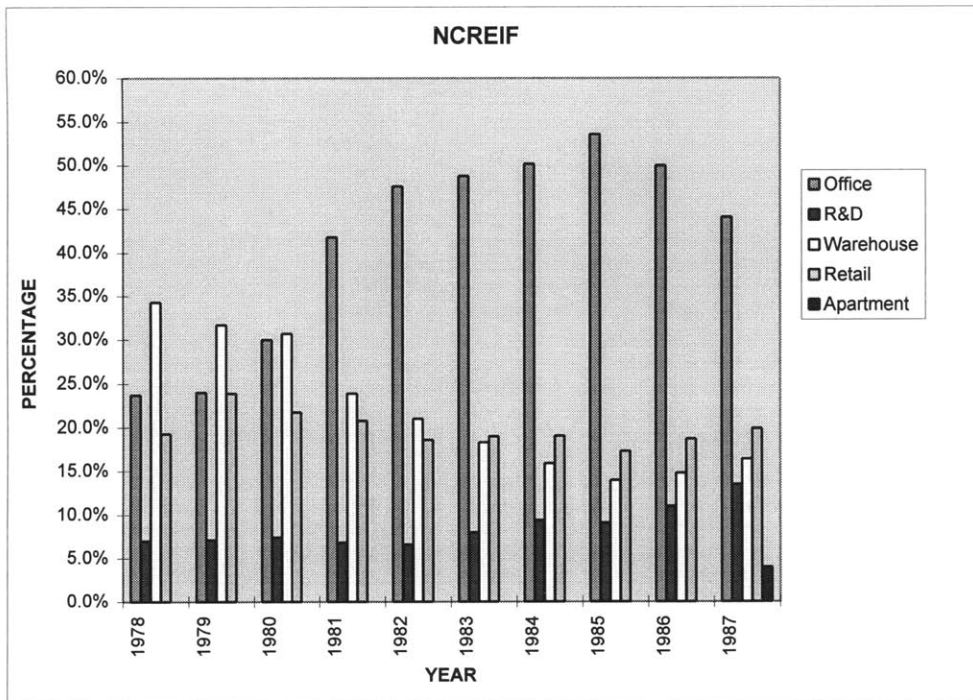
³⁰ For discussion purposes, the word "sector" is used in this section to refer to property type sector.

- The ERA was typically less weighted in office and retail properties. However, the Fund had an early concentration of office in the East (1978-1979) and later in the South and West (1981-1985), which contributed to less of a variance in office weighting between the ERA and the Index during those periods.
- The ERA, although fairly well distributed among regions, was heavier weighted in the East in the early years and the Midwest and South in the middle to later years of operation.
- The Index was consistently more heavily weighted in all sectors in the West.

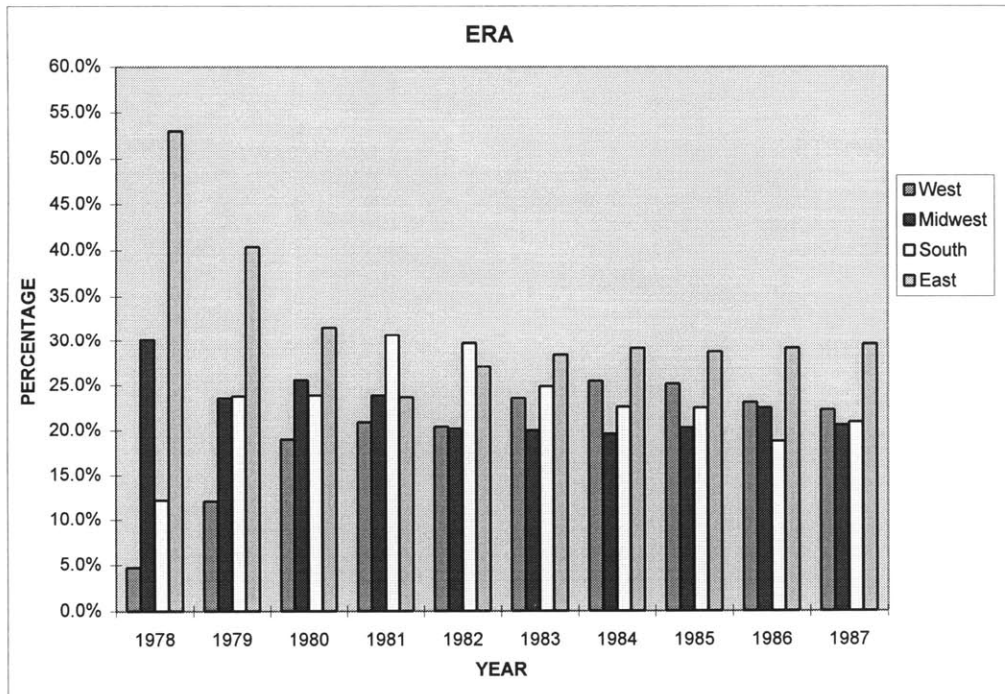
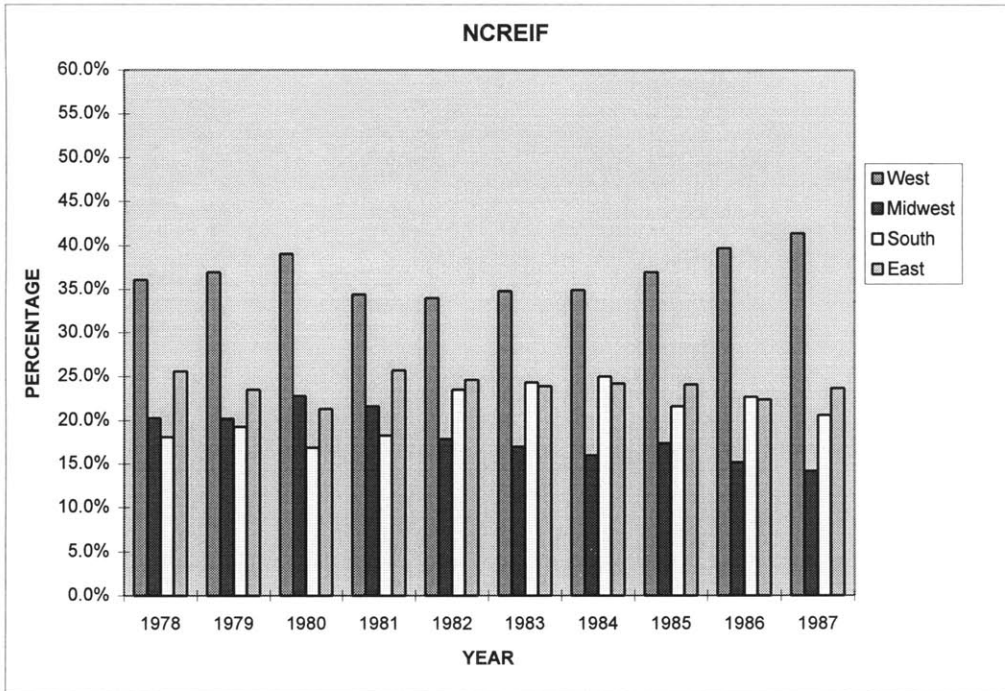
The following pages contain a summary of the ERA and NCREIF weightings by property type and region from 1978 to 1987.³¹

³¹ Refer to Appendix 2 for more detailed information on NCREIF and the ERA weightings by region, property type and region-property type.

NCREIF/ERA WEIGHTINGS BY PROPERTY TYPE



NCREIF/ERA WEIGHTINGS BY REGION



How did these differences in concentration play out in terms of performance?

Overall, the Equity Real Estate Account total returns consistently under performed the Index. In nearly every sector, however, the ERA income returns met or slightly exceeded those of the Index. The Fund's consistent under performance in capital appreciation returns was the dominant factor. Of particular significance is the variance in capital returns in the office sector in nearly all regions. Also important was the lack luster performance of the R&D sector, particularly in the West. Separately, R&D was not a significant portion of the portfolio. But the combined concentration of office and R&D (55%) is of particular concern because of the similar risk/return performances of both property types. R&D properties typically include high finished office space and thus, attract similar tenants as office properties, particularly suburban office.³² Below is a summary of annualized rates of return for the 10 year period in which the ERA was in operation (1978-1987).

ANNUALIZED PERFORMANCE RATES OF RETURN (1978-1987)

	<u>TOTAL</u>			<u>INDUST</u>			<u>OFFICE</u>		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
NCREIF	12.8%	7.9%	4.7%	13.0%	8.1%	4.7%	13.3%	7.5%	5.5%
ERA	10.1%	8.3%	1.7%	12.0%	9.1%	2.7%	6.3%	7.7%	-1.3%
VARIANCE	-2.8%	0.4%	-3.0%	-1.0%	1.0%	-2.0%	-7.0%	0.2%	-6.8%

	<u>R&D</u>			<u>RETAIL</u>			<u>APT.</u>		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
NCREIF	14.2%	8.3%	5.6%	11.9%	8.2%	3.5%	15.0%	8.6%	6.0%
ERA	12.0%	8.1%	3.7%	10.9%	9.6%	1.2%	15.0%	8.6%	6.0%
VARIANCE	-2.2%	-0.2%	-1.9%	-1.0%	1.5%	-2.3%	15.0%	8.6%	6.0%

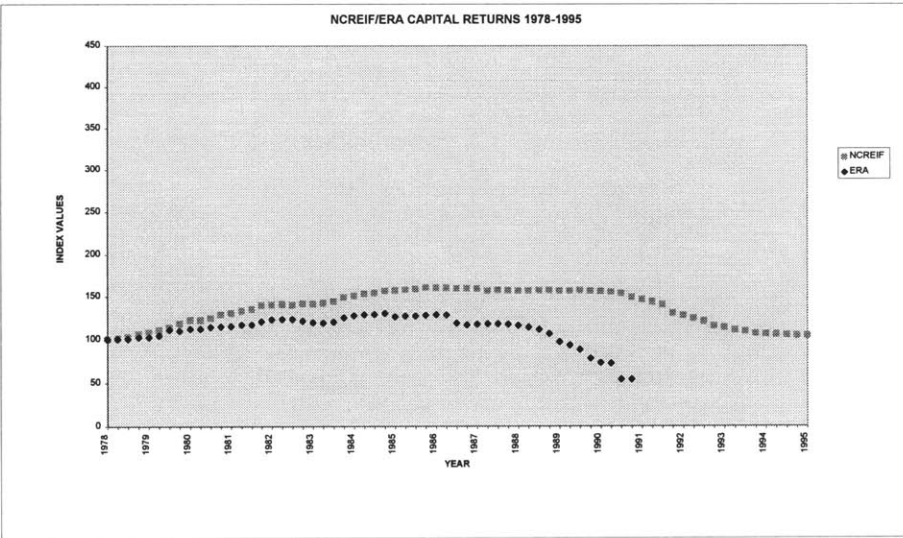
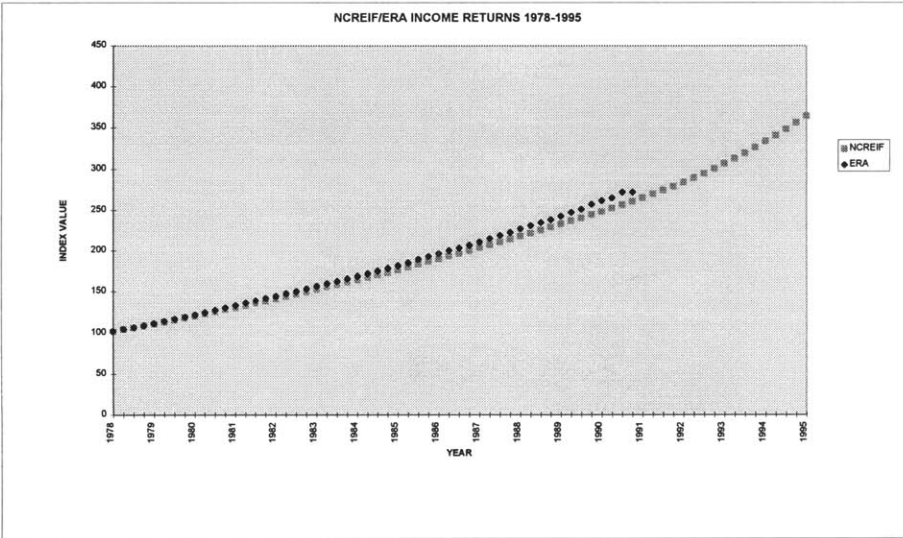
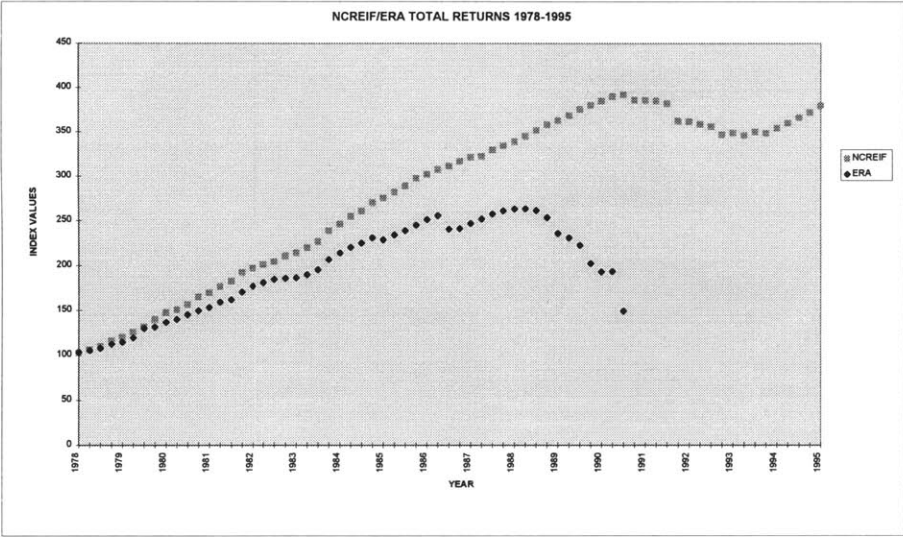
	<u>WEST</u>			<u>SOUTH</u>			<u>MIDWST</u>		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
NCREIF	13.7%	7.8%	5.6%	9.5%	7.8%	1.7%	10.5%	8.0%	2.3%
ERA	11.8%	8.2%	3.4%	7.5%	7.6%	-0.0%	8.8%	9.0%	-0.2%
VARIANCE	-1.9%	0.4%	-2.2%	-2.0%	-0.2%	-1.7%	-1.7%	0.9%	-2.5%

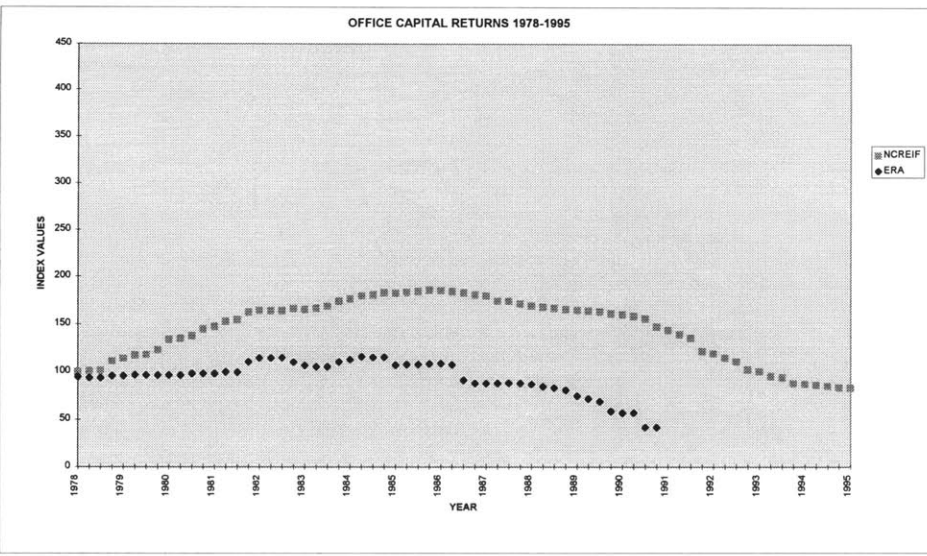
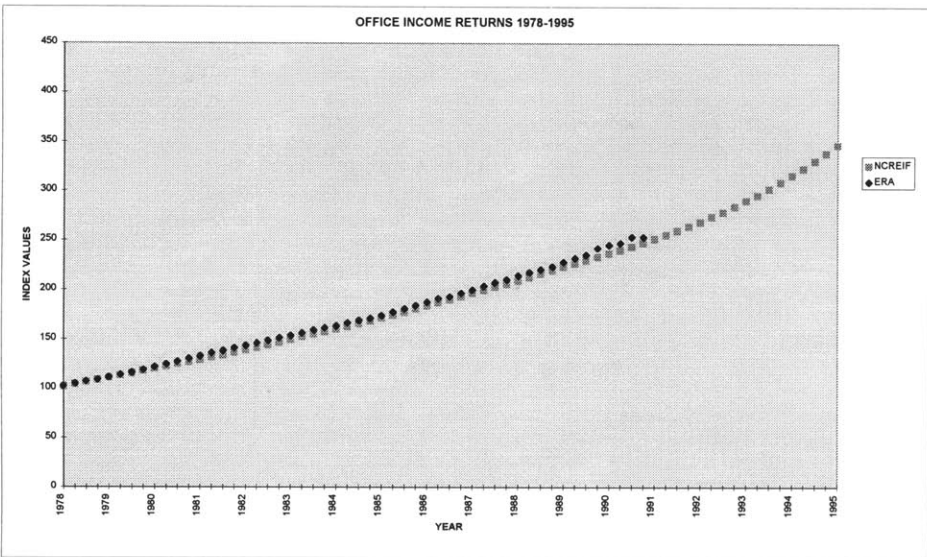
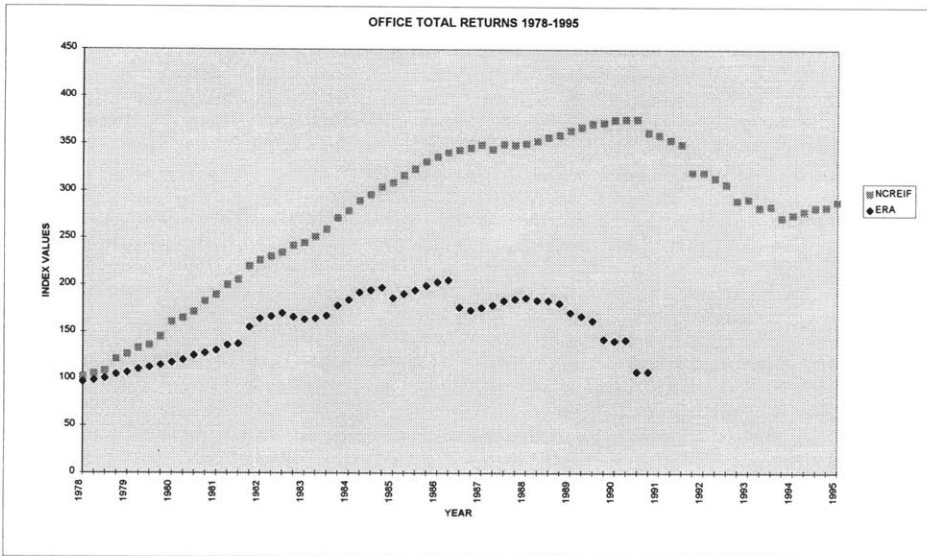
	<u>EAST</u>		
	TOTAL	INCOME	CAPITAL
NCREIF	17.0%	8.2%	8.3%
ERA	11.9%	8.8%	3.1%
VARIANCE	-5.1%	0.6%	-5.2%

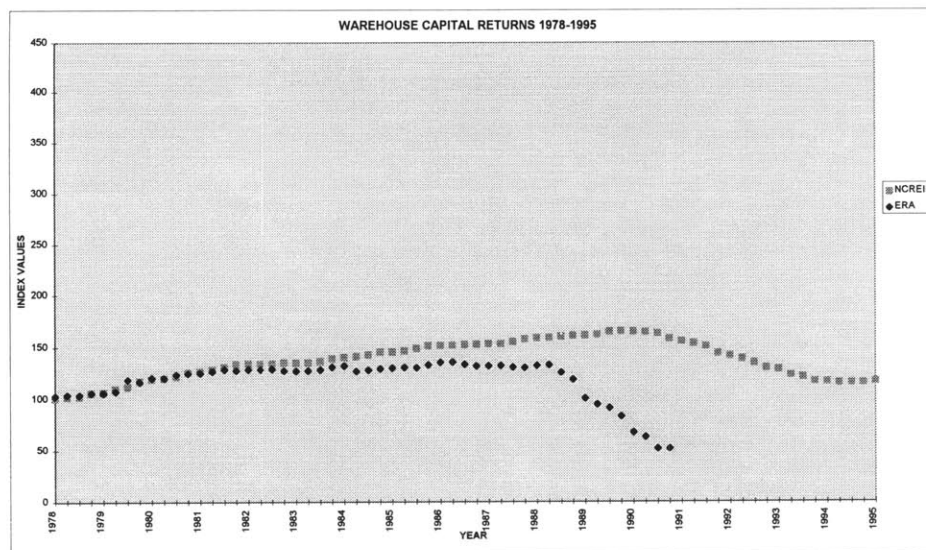
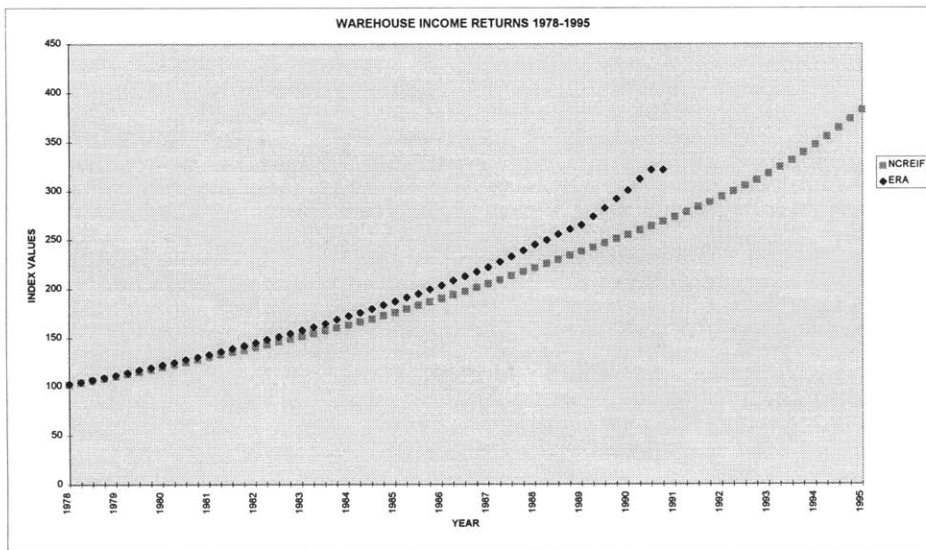
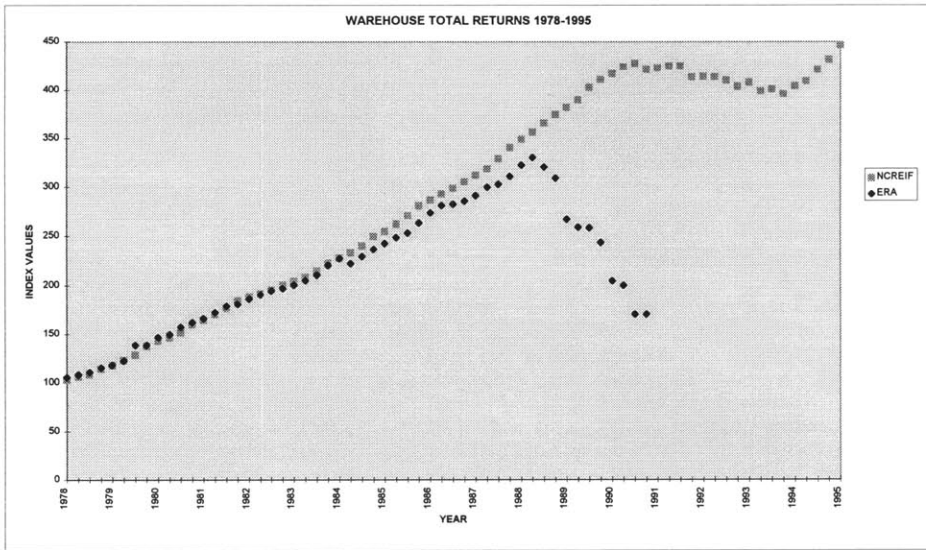
³² Most of the office properties in the ERA are suburban office (vs. CBD office).

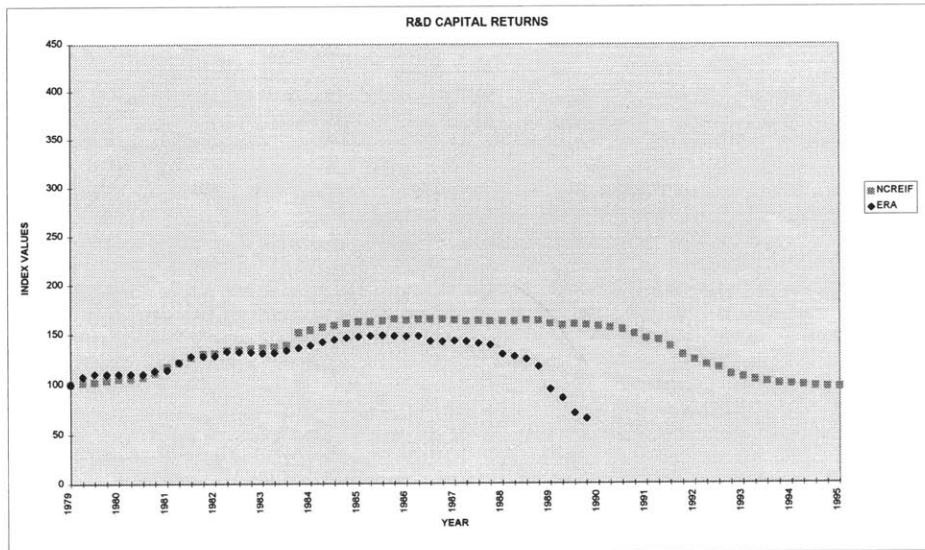
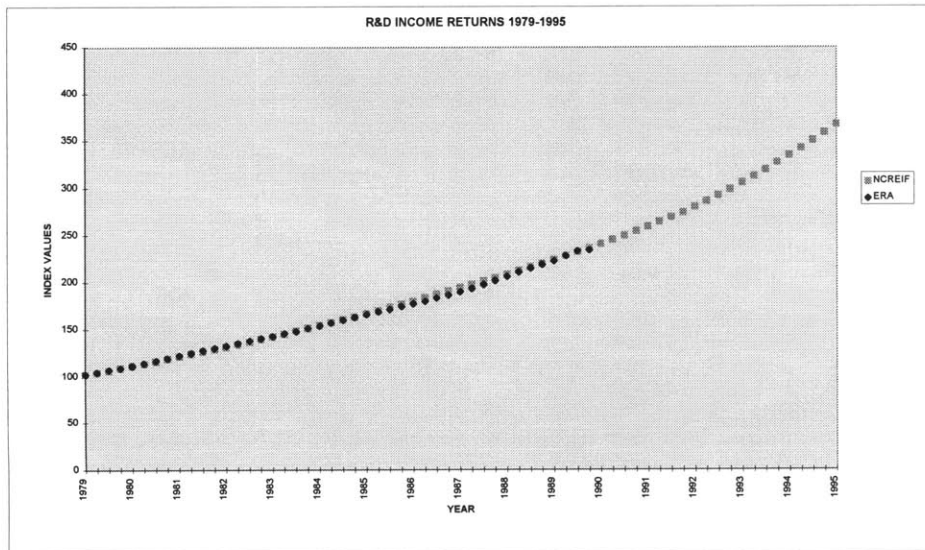
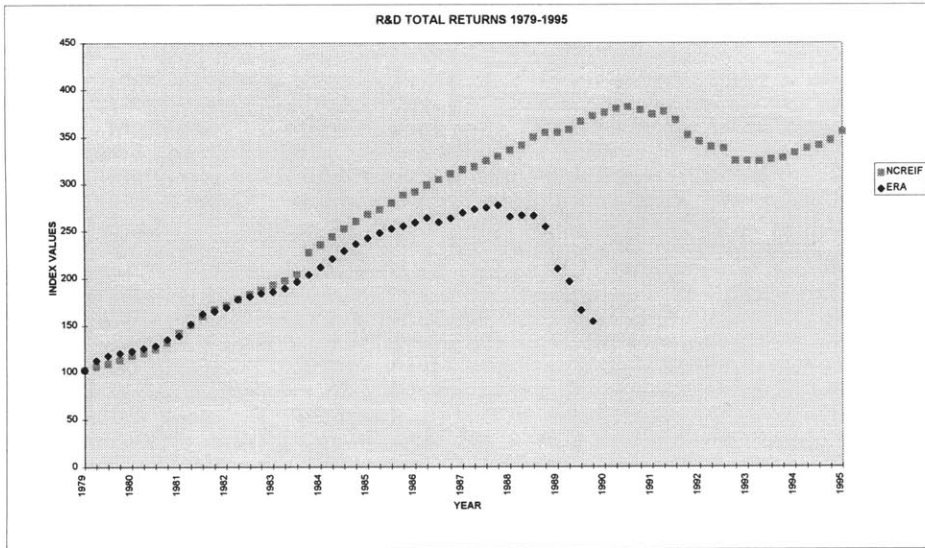
The following pages contain indexed quarterly return graphs (ERA vs. NCREIF) for the total Fund/Index and by property type, showing total, income and capital returns for each. Note that there are no return graphs for apartment property due to the fact that NCREIF did not start reporting returns for the apartment sector until 1989. These graphs are followed with a detailed annualized return performance summary by region-property type. This region-property type format follows the same format used by the NCREIF Index. The reader should note, however, that the time period in which each category's returns are annualized varies, depending on when the ERA first purchased (and last sold) a property in a particular region (i.e. the first retail property acquired in the west was purchased in 1980, therefore the annualized period began in the quarter in which that property or properties were purchased, in 1980).³³

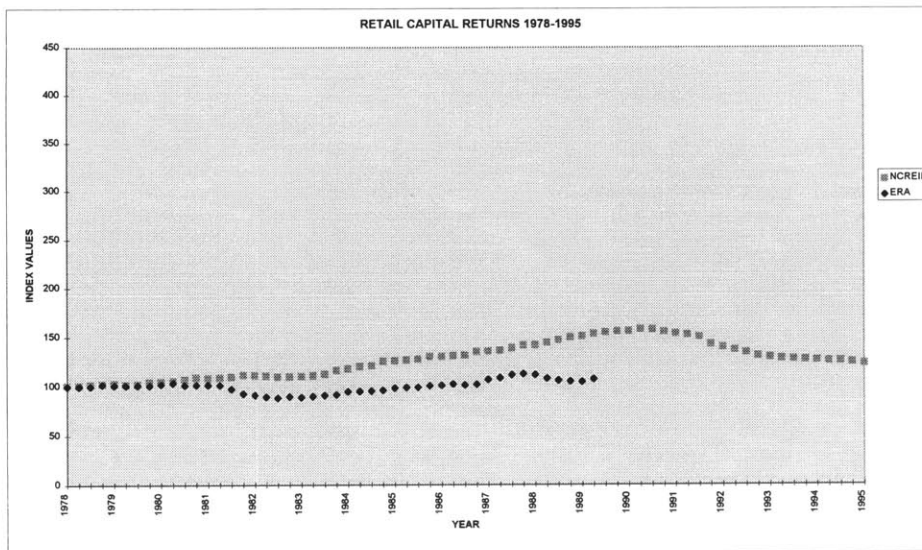
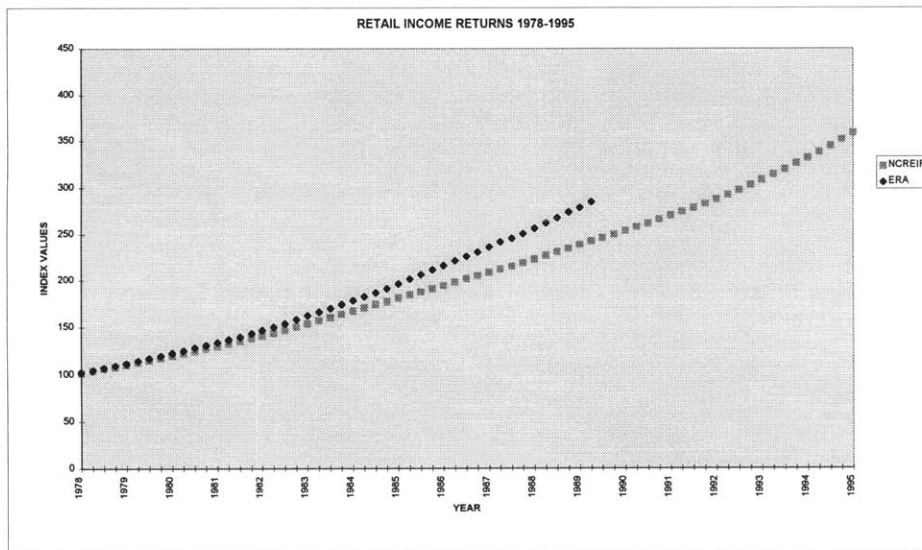
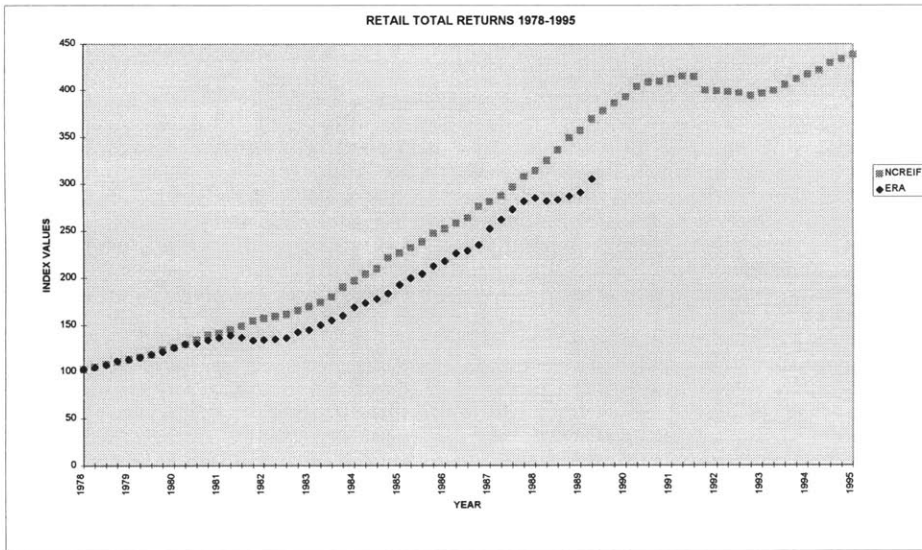
³³ See Appendix 3 for complete performance return information and additional graphs of returns by region.











REGION-PROPERTY TYPE ANNUALIZED PERFORMANCE RATES OF RETURN (ERA VS.NCREIF)

OFFICE PROPERTY

	<u>WEST</u> 1981-1987			<u>SOUTH</u> 1981-1987			<u>MIDWEST</u> 1982-1987			<u>EAST</u> 1978-1987		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
NCREIF	8.9%	7.2%	1.7%	4.2%	6.7%	-2.4%	10.5%	7.4%	2.9%	19.1%	7.6%	10.9%
ERA	8.0%	6.4%	1.4%	-3.0%	5.8%	-8.4%	3.5%	8.2%	-4.4%	10.8%	8.7%	2.0%
DIFFERENCE	-1.0%	-0.8%	-0.3%	-7.2%	-0.9%	-6.0%	-7.0%	0.8%	-7.3%	-8.3%	1.1%	-8.9%

INDUSTRIAL/WAREHOUSE PROPERTY

	<u>WEST</u> 1978-1987			<u>SOUTH</u> 1978-1987			<u>MIDWEST</u> 1978-1987			<u>EAST</u> 1978-1987		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
NCREIF	15.5%	7.9%	7.1%	11.4%	8.3%	2.9%	10.3%	8.1%	2.1%	14.1%	8.4%	5.3%
ERA	13.1%	9.0%	3.8%	13.5%	9.1%	4.1%	9.2%	8.9%	0.2%	12.1%	8.6%	3.3%
DIFFERENCE	-2.4%	1.1%	-3.4%	2.1%	0.9%	1.2%	-1.1%	0.9%	-1.9%	-2.0%	0.2%	-2.0%

R&D PROPERTY

	<u>WEST</u> 1980-1987			<u>SOUTH</u> 1979-1987			<u>MIDWEST</u> 1979-1987			<u>EAST</u> 1979-1987		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
NCREIF	17.5%	7.8%	9.2%	13.2%	8.5%	4.5%	10.0%	8.6%	1.3%	13.2%	7.8%	5.2%
ERA	10.8%	7.7%	2.9%	11.9%	7.5%	4.2%	11.5%	8.8%	2.5%	10.2%	5.4%	4.7%
DIFFERENCE	-6.7%	-0.1%	-6.3%	-1.4%	-1.0%	-0.3%	1.5%	0.3%	1.1%	-3.1%	-2.4%	-0.5%

RETAIL PROPERTY

	<u>WEST</u> 1980-1987			<u>SOUTH</u> 1978-1987			<u>MIDWEST</u> 1978-1987			<u>EAST</u> 1978-1987		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
NCREIF	13.2%	7.7%	5.2%	9.0%	7.3%	1.6%	8.5%	8.4%	0.0%	14.2%	8.8%	5.1%
ERA	12.1%	9.9%	2.0%	9.2%	8.5%	0.6%	5.0%	8.7%	-3.5%	13.7%	10.0%	3.5%
DIFFERENCE	-1.1%	2.3%	-3.2%	0.2%	1.3%	-1.0%	-3.5%	0.3%	-3.6%	-0.5%	1.1%	-1.5%

APARTMENT PROPERTY*

	<u>WEST</u>			<u>SOUTH</u> 1981-1987			<u>MIDWEST</u> 1986-1987			<u>EAST</u> 1981-1987		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
NCREIF	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ERA	0.0%	0.0%	0.0%	13.9%	4.9%	8.7%	2.2%	1.5%	0.8%	9.1%	6.2%	2.8%
DIFFERENCE	0.0%	0.0%	0.0%	13.9%	4.9%	8.7%	2.2%	1.5%	0.8%	9.1%	6.2%	2.8%

*NCREIF return data for Apartments is not available prior to 1988.

Clearly, the main sectors that had the most significant impact on the account and ultimately dragged down the Fund performance were the office and R&D sectors. Specifically, it would appear the primary source of the Fund under performing the Index was office investments, and to a lesser extent R&D investments, made in the East early in the construction of the portfolio, and in the South and West, made in the early 1980's. Relatively stable and "above index" return performances from industrial/warehouse properties in the South and R&D properties in the Midwest helped to prop up the overall performance of the Fund, but fell short of mitigating the heavy "hits" taken from the office sector. Likewise, retail and particularly the apartment sector returns were fairly positive (in comparison to the Index). But because of the light weighting in the retail (10-12%) and apartment (5-12%) sectors, plus the late entry into the apartment market, these investments could not provide the needed strong returns to counter the heavy "losses" from the office sector. As noted in the summary tables (above), over the life of the fund, the variance in annualized total returns between 1978 and 1987 were the worst for the office sector at -7.0% and the East region at -5.1%. Although office significantly dragged down the Fund's performance in the South and Midwest regions, other property type sectors, such as industrial/warehouse, retail and apartment property for the South and R&D and apartment property for the Midwest, helped to prop up returns in these respective regions.

Why did the ERA under perform the index in office and R&D? The possible answers to this question are explored later in this chapter. Attention is now turned to comparing the Fund's performance to that of its competition.

The ERA vs. The Competition

In order to thoroughly address the question, "how did the Fund stack up against the competition", fund characteristic and return information was gathered for six comparable open-end "diversified" commingled funds managed by insurance companies during approximately the same period that the ERA was in operation.³⁴ The funds selected for a comparative analysis include: AETNA's Real Estate Separate Account (RESA), Cigna's Separate Account R (SAR), Equitable's Prime Property Fund, Metropolitan's Tower Fund, Prudential's PRISA (I) and PRISA II accounts. An analysis was performed comparing the differences in characteristics and returns between the ERA, the NCREIF Index and those of the six comparable funds during the period of 1978-1987.³⁵

The first phase of this analysis involved review of a "snap-shot" comparison of the weightings of each fund during the mid 1980's (roughly "mid-life of the ERA) to determine significant variations (if any) in fund concentration. In general, most of these commingled real estate funds closely resembled the Index in terms of having less industrial

³⁴ Three funds have inception dates later than that of the ERA, they are Cigna's SAR account (October 1981), Metropolitan's Tower Fund (January 1981) and Prudential's PRISA II account (July 1980).

³⁵ Beginning date of annualized returns vary depending on inception date of fund (see footnote above for additional information).

property and more retail than the ERA. Interestingly, all accounts are below the Index in the combined office/R&D property type category, with the ERA coming closest to the Index and having the highest weighting in these sectors. Additionally, from a regional weighting perspective, the six comparable funds are generally heavier weighted in the West than the ERA. The fund that most closely resembles the ERA, in terms of property type weightings, is Prudential's PRISA account, and in terms of regional weightings, is Equitable's Prime Property Fund. Two fund's, Metropolitan's Tower Fund and Prudential's PRISA II account, were essentially "outlier's" for comparison purposes, because of their extreme difference from all other funds in property type weightings. In the mid 1980's, the Metropolitan account consisted of nearly all industrial/R&D (50%) and retail (40%) property and Prudential's PRISA II account was almost all office (50%) and hotel (38%) property. Even with the different investment strategies, however, these funds are still of interest for comparison purposes because they represent investors preferences toward certain property types during this period. Regarding property size, the ERA is generally heavier weighted in smaller properties than the six comparable funds.

A detailed summary of each funds' weightings by property type, region and property size is summarized in the table on the following page.

FUND CHARACTERISTICS (ERA VS. "THE COMPETITION"): 1983-1985³⁶

ORGANIZATION/ OPEN-END FUND	Hancock ERA	Aetna RESA	CIGNA SAR	Equitable Prime	Metropolitan Tower Fund	Prudential PRISA	Prudential PRISA II	NCREIF Index
PROPERTY TYPE								
Office/R&D	53.0%	42.0%	38.0%	42.0%	10.0%	50.0%	50.0%	59.0%
Industrial	26.0%	24.0%	32.0%	15.0%	50.0%	20.0%	0.0%	16.0%
Retail	11.0%	20.0%	12.0%	33.0%	40.0%	15.0%	12.0%	19.0%
Residential	7.0%	0.0%	18.0%	0.0%	0.0%	5.0%	0.0%	0.0%
Hotel	3.0%	4.0%	0.0%	10.0%	0.0%	10.0%	38.0%	6.0%
REGION								
East	28.0%	12.0%	8.0%	30.0%	40.0%	25.0%	45.0%	24.0%
South	24.0%	20.0%	50.0%	32.0%	15.0%	25.0%	5.0%	24.0%
Midwest	21.0%	10.0%	12.0%	18.0%	0.0%	15.0%	10.0%	17.0%
West	26.0%	48.0%	30.0%	20.0%	45.0%	35.0%	40.0%	35.0%
PROPERTY SIZE								
<\$1.0M-\$5.0M	31.0%	18.0%	10.0%	15.0%	10.0%	15.0%	0.0%	
\$5.0M-\$10.0M	27.0%	14.0%	50.0%	8.0%	40.0%	10.0%	0.0%	
\$10.0M-\$20.0M	31.0%	20.0%	30.0%	12.0%	15.0%	18.0%	0.0%	
\$20.0M+	11.0%	50.0%	10.0%	65.0%	35.0%	57.0%	100.0%	

Of the seven funds, the ERA ranks 6th in total return performance, 4th in income return and 7th in capital return performance during the period in which the account was fully operational (1978-1987). In comparison, the top three ranking funds (based on total returns) are Prudential's PRISA (I) account, Metropolitan's Tower Fund and Equitable's Prime account. Below is a summary of the commingled real estate fund's annualized performance in total, income and capital returns for 1978-1987.

ANNUALIZED PERFORMANCE RATES OF RETURN (ERA VS. "THE COMPETITION")

FUND	TOTAL	1978-1987	
		INCOME	CAPITAL
PRUDENTIAL PRISA	13.6%	8.5%	5.1%
METROPOLITAN TOWER*	12.9%	7.5%	5.5%
NCREIF	12.8%	7.9%	4.7%
EQUITABLE PRIME	12.7%	8.1%	4.2%
CIGNA SAR*	12.4%	9.1%	3.3%
AETNA RESA	12.1%	8.9%	3.1%
HANCOCK ERA	10.1%	8.3%	1.7%
PRUDENTIAL PRISA II*	9.5%	6.5%	3.1%

*Funds with inception dates later than 1978 are annualized over a shorter period of time.
SOURCE: Evaluation Associates

³⁶ All percentages are approximate. Information was derived from graphs and tables prepared by Evaluation Associates and may vary from the NCREIF index. For general comparison purposes only.

In taking a closer look at these fund weightings and returns it would appear that a couple of bets or concentrations in certain sectors paid off for some of the funds vs. the ERA.³⁷ Metropolitan's low concentration in office and heavy bet in retail in the mid to late 1980's seems to have helped their fund returns, particularly in terms of capital appreciation. Prudential's PRISA account, after having a very strong performance early on, had only modest returns toward the end of this period. Their strong early performance could be explained by their slightly higher concentration in office in the late 1970's and early 1980's. The declining returns in the later half of the decade was undoubtedly due to the poor office markets, however, the Fund returns may have had support, in terms of higher returns from their hotel and retail property, during this period. Similarly, Equitable's heavier weighting in retail and hotel and lighter weighting in industrial property probably helped prop up their returns. Aetna's better performances may be attributed to slightly heavier weighting in retail property, and Cigna's, to a heavier residential weighting. PRISA II's performance appears to have been hurt by the fact that it had a high combined concentration in office and hotel property, both of which are historically higher risk investments.

WHY DID THE ERA UNDER PERFORM THE INDEX ?

Total returns of the ERA consistently under performed the Index and five of six of its competitive funds. In almost every case, when comparing the ERA's total returns to

³⁷ Refer to Appendix 4 for annual return performances for each fund (1978-1987). Note that all weighting comparisons are between those of the ERA and the specific fund of discussion.

these benchmarks, under performance can be attributed to lower capital returns. Why were the ERA capital returns lower?

Three Theories Explored

In an attempt to address this question, and get closer to an explanation as to why the Fund under performed, three theories are hypothesized and tested. The following summarizes the quantitative and qualitative analysis used to test the theories and the results of each.

Theory #1: Hancock was more conservative in their appraisal policy, and thus, their property appraised values more accurately reflected actual market values than those properties in portfolio's of its competitors or those that make up the Index.

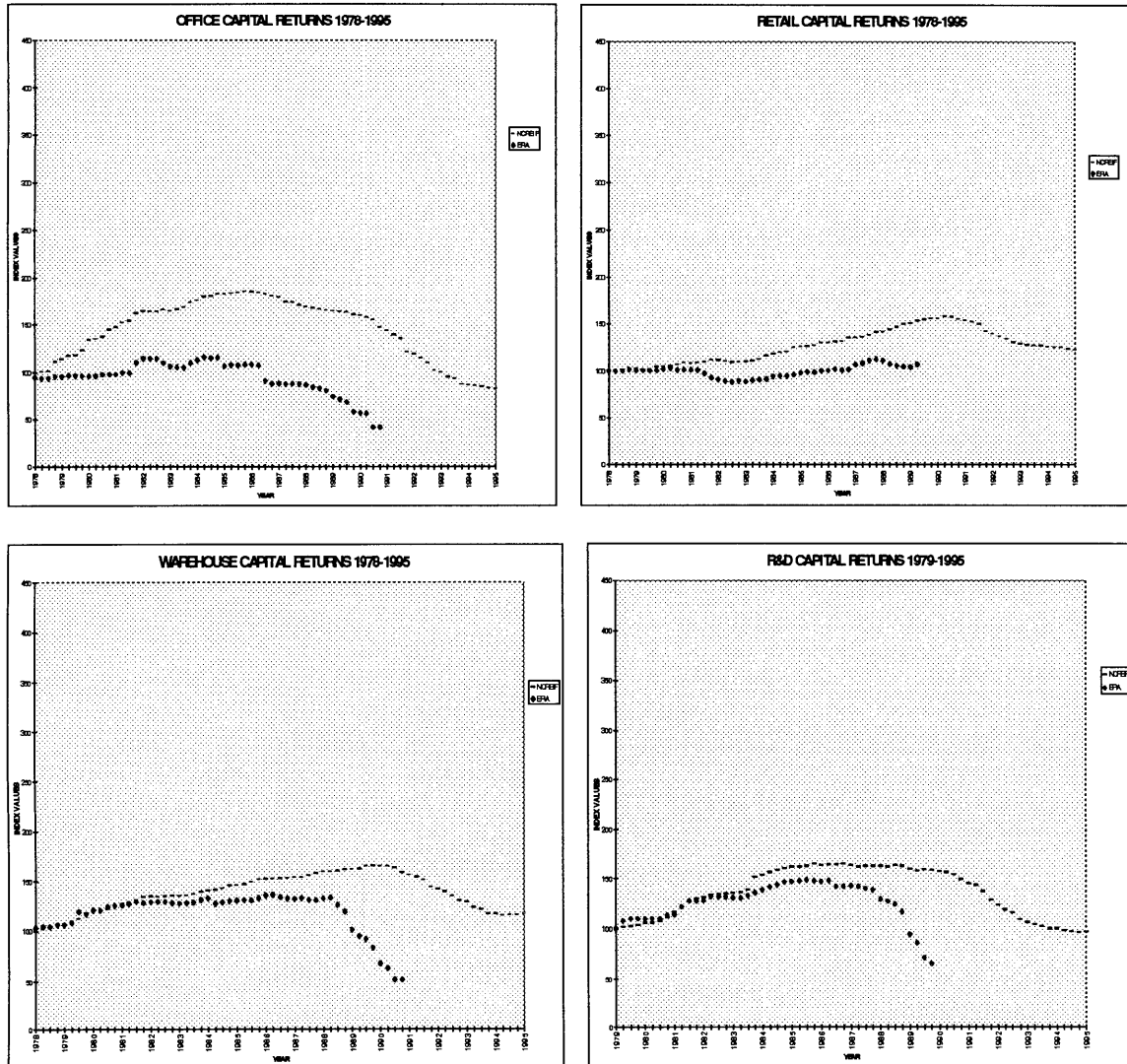
This theory is based on the notion that if Hancock was more realistic and forthright in writing down the value of their properties, this could partially explain why the capital returns of the ERA were lower at an earlier point in the cycle. This theory is difficult to prove conclusively as true or false, through quantitative methods, without additional data. However, by drawing upon available data and using this information to address Theory #1, the results may uncover new information to help answer the question “Why were the ERA capital returns lower (than the Index)?”

The method used to address this theory is both quantitative and qualitative in nature. The qualitative portion of this analysis involved conducting interviews with management to review and discuss appraisal policies and procedures. From these interviews, management confirmed that no additional downward adjustments were made to outside appraisals by Hancock portfolio managers, in valuing properties. Base assumptions were often discussed with appraisers, however, there was never any attempt by Hancock to have appraisers change values even if Hancock disagreed with a particular property's valuation estimate. Management confirmed that to the extent there were any exceptions to appraisal assumptions, they would not have been significant enough to change the market value of the property.

The quantitative portion of this analysis involved taking another look at the capital returns for each property type and comparing the behavior of the returns for both the ERA and NCREIF, prior to liquidation and after liquidation. This review of capital returns pre-liquidation vs. post-liquidation is grounded in the assumption that any differences between appraised value and market value that existed in the mid to late 1980's has now been realized and accounted for in the Index through "today's" appraisals. In the case of the ERA, any difference between appraised and market value was realized through the actual sale of property during liquidation.

In revisiting the property type capital return graphs (reprinted below) some interesting observations were made. The capital return curves for the ERA office and retail

properties are more level than that of the Index, and have less of a severe fall during the liquidation period. In contrast, industrial/warehouse and R&D appreciation curves closely follow that of the Index, and just prior to and during liquidation drops significantly.



On the surface, these results appear to flush out some differences in appraisal valuation and “lag” between the ERA and NCREIF property values and actual market values. A possible reason for this “difference” might be explained by the fact that the decline in office markets where the ERA had concentrations, namely in the East in the late

1970's and in Houston and Denver in the early 1980's, was more blatantly severe and therefore, were marked to market on a more timely basis (i.e. with less appraisal lag) than office, industrial and R&D properties in the broader market Index. It is plausible that because Hancock was so heavily weighted in the office sector of these particular markets, with their low to negative capital returns from the early to mid 1980's forward, that they bear a heavy burden from "accurate" marked to market office appraisal valuation (vs. lagged appraisal valuation) in those markets. Thus, the ERA capital returns suffered during that period. On the other hand, however, their capital returns in the industrial and R&D sector may have been more in-line with the normal appraisal lag cycle and therefore, these appraised values weren't reflecting, in a timely manner, the free-fall of prices during the late 1980's. This could explain the Funds' early slip in performance and the post liquidation decision under performance. In terms of specifically addressing Theory #1, however, it appears that there is no definitive evidence that supports Hancock's appraisals as being any more "conservative", than the market.

As a side note, comparing returns pre-liquidation vs. post-liquidation is somewhat suspect. The reason, the analysis involves comparing returns based on actual sales transactions with those of an appraisal based index. The "extended" (post-liquidation) period return numbers will "favor" the Index over the ERA, because of the likelihood that appraised values still continue to lag the actual market. Thus, Hancock's current liquidation sales values are being compared to lagged appraised values, inflating returns over a longer period of time, thus "propping up" and slightly inflating appraisal based

returns. Additionally, appraised values do not typically account for the 3-5% transaction costs which the ERA had to pay when a property was sold.

Theory #2: The ERA portfolio held a higher concentration in lower risk real estate assets and thus, its expected total rate of return should have been lower, as indeed they were (lower risk/lower return).

In analyzing this theory, it is important to define what categorizes “low risk” and then draw upon comparisons between the ERA and the Index. Low risk for the purposes of this investigation is defined in two ways. The first category deals with the risk associated with certain attributes of a real estate asset. Often referred to in diversification theory, these main attributes include property size, property type, and economic region.³⁸ Over or under concentration (or weighting) in a particular property type, property size or location can translate into a higher or lower risk portfolio than the Index. The second category is risk in terms of volatility of property returns (or conversely the stability of returns) generated from a “portfolio” of properties. This type of return risk is analyzed by comparing the standard deviation of property level returns for the Fund vs. those of the Index, during the period in which the ERA contained a minimum number of properties to make such a comparison worthwhile (1980-1988).

³⁸ Economic region as defined in the Hartzell, Shulman and Wurtzbach article “Refining the Analysis of Regional Diversification for Income-Producing Real Estate”. See Appendix 7 for additional information.

Recent research on real estate performance by property size has identified that the smallest (<\$1.0M) and the largest properties (\$20.0M+) have both the highest return potential and the highest risk.³⁹ On average, the ERA was made up of medium sized properties in between the high and low categories of higher risk property sizes. Nearly 80-90% of the ERA's property values were in the \$2.5-\$20.0M range, mainly due to the fact that most all properties were suburban office and industrial properties. Based on this benchmark alone, it is reasonable to observe that the ERA portfolio held a higher percentage of lower risk/lower return assets than the Index portfolio.⁴⁰

In the late 1970's the Fund consisted of nearly 50% industrial properties, but as the account expanded rapidly in the early 1980's, due to huge capital in-flows, weighting in industrial declined to 25-30% at the expense of heavy investments in larger office buildings. Historical return behavior and contemporary empirical research support the notion that industrial properties are at the low end of the risk/return spectrum of all real estate sectors. Most industrial properties income returns are very stable, due to long term leases from a single corporate tenant. With this stable income also comes lower capital returns (and risk). The lower total returns are as close as you'll get to a "bond-like" investment in real estate.

³⁹ David Hartzell, John Hekman and Mike Miles, "Diversification Categories In Investment Real Estate", AREUEA Journal, Vol. 14, No. 2, 1986, pp. 230-254.

⁴⁰ Additional information regarding average property size of the ERA vs. NCREIF is contained in Appendix 2.

During the early years of the Fund, the weighting in industrial properties was substantial enough to characterize the account as a lower risk real estate fund. The heavy investment into office and R&D in the early 1980's, however, substantially changed the risk (and potential return) composition of the portfolio. Unfortunately, by the mid to late 1980's, the income and capital returns of certain industrial properties were negatively impacted by a paradigm shift in business that made them more risky as well. Specifically, certain types of industrial properties became subject to more rapid obsolescence from changes in inventory technology and "just-in-time" production, eliminating the need for certain facilities. So, even though from an income return performance standpoint industrial property might have demonstrated a lower risk profile, from the perspective of the capital return component there was an added exposure to risk in holding a large percentage of certain types of industrial buildings over a long period of time. This appears to have been the case with a number of Hancock's industrial properties.

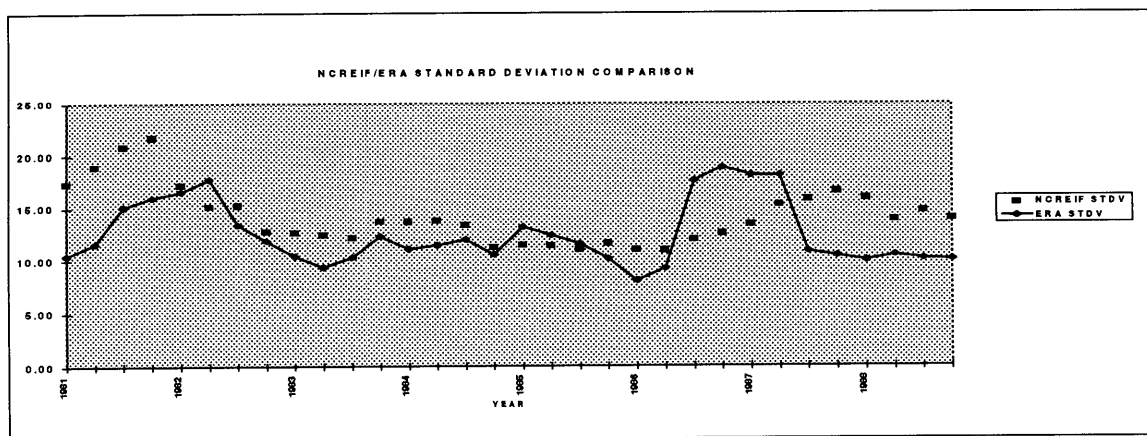
Although the results of recent research on opportunities for real estate portfolio diversification, as a means to minimize risk, have been more favorable toward diversifying by property type than by region, there are proven benefits and disadvantages in diversification based on regional economic factors that influence risk.⁴¹ Specifically, not concentrating investments in locations influenced by just a few exogenous economic factors. Concentrated holdings in one economic region can also substantially increase risk. The ERA's over weighting of industrial properties in the Midwest and office in the Oil

⁴¹ David Hartzell, John Hekman and Mike Miles, "Diversification Categories In Investment Real Estate", AREUEA Journal, Vol. 14, No. 2, 1986, pp. 240-241 and M. Miles and T. McCue, Historic Returns and Institutional Real Estate Portfolios, AREUEA Journal, Summer 1982.

Belt (specifically Houston and Denver) added significant risk to the portfolio. The Houston and Denver markets have long been heavily dependent on the oil market.

An analysis of “risk”, based on a measure of standard deviation (benchmark for defining investment risk), was performed using a method that compares the volatility of property level returns for the ERA vs. NCREIF, on a rolling annual basis. This was done for each quarter during the approximate ten year period in which the Fund was most active (1980-1988).⁴²

In comparing standard deviations of the ERA to those of the NCREIF index, with the exception of a period between late 1986 and early 1987 the ERA standard deviation’s were consistently lower than those of the Index. This supports the notion that the ERA was made up of less volatile, lower risk/lower return real estate assets than those properties that make up the Index. Below is a graph showing quarter by quarter rolling annual return standard deviations for both NCREIF and the ERA.



⁴² Property level annual rolling return standard deviation’s (on a quarterly basis) were calculated and compared to those of the NCREIF Index (see Appendix 5 for additional information).

In summary, regarding Theory #2, it appears that the ERA held a fairly high concentration of lower risk real estate assets (as indicated by the results of return standard deviation analysis and concentration in small/medium sized industrial properties), however, these “lower risk” fund attributes were effectively negated by concentrations in certain under performing property type sectors (office/R&D) and economic locations (oil belt).

Theory 3# : Concentrations of investments in under performing markets and property type sectors dragged down the performance of the entire fund.

The primary method used in analyzing this theory and defining a “below average” investment was to run IRR calculations on each individual property, sort them by property type and region, and review the percent of each (% based on property purchase price) that fell into each of the following categories: <0%-4% Poor, 4%-8% Below Average, 8%-12% Average and 12%+ Above Average. These categories were based on the commonly accepted industry “benchmark” of 6%-8% real returns above an average inflation rate of 4%. On the following page is a summary of IRR’s by property type and for the total Fund.⁴³

⁴³ A complete summary of IRR investment performances by property type, region and for the total Fund are provided in Appendix 6. Note all IRR’s are “real”, with no adjustment for inflation.

IRR RANKINGS	%	\$ VALUE*	COUNT
<u>TOTAL FUND</u>			
Poor (<0%-4%)	33%	\$198,977,899	27
Below Average (4%-8%)	18%	\$108,627,592	17
Average (8%-12%)	29%	\$176,849,192	45
Above Average (12%+)	19%	\$116,932,527	36
Total		\$601,387,210	125
<u>INDUSTRIAL/WAREHOUSE</u>			
Poor (<0%-4%)	6%	\$8,135,777	3
Below Average (4%-8%)	36%	\$52,550,034	9
Average (8%-12%)	24%	\$34,276,758	16
Above Average (12%+)	34%	\$49,931,181	18
Total		\$144,893,750	46
<u>OFFICE</u>			
Poor (<0%-4%)	50%	\$116,619,362	12
Below Average (4%-8%)	20%	\$46,038,491	5
Average (8%-12%)	23%	\$53,678,568	8
Above Average (12%+)	7%	\$15,673,461	4
Total		\$232,009,882	29
<u>R&D/OFFICE</u>			
Poor (<0%-4%)	47%	\$30,492,546	8
Below Average (4%-8%)	15%	\$10,039,067	3
Average (8%-12%)	29%	\$19,053,727	8
Above Average (12%+)	9%	\$5,554,667	4
Total		\$65,140,007	23
<u>RETAIL</u>			
Poor (<0%-4%)	10%	\$6,350,000	1
Below Average (4%-8%)	0%	\$-	0
Average (8%-12%)	75%	\$48,659,450	9
Above Average (12%+)	16%	\$10,197,050	4
Total		\$65,206,500	14
<u>APARTMENTS</u>			
Poor (<0%-4%)	34%	\$23,630,214	2
Below Average (4%-8%)	0%	\$-	0
Average (8%-12%)	27%	\$18,780,689	2
Above Average (12%+)	40%	\$28,015,668	3
Total		\$70,426,571	7

ERA IRR Summary

Total Fund	7.75%
Industrial/Warehouse	10.15%
Office	4.48%
R&D	6.33%
Retail	10.02%
Apartments	12.45%

The IRR results confirm the notion that the office and R&D sectors were the greatest drag on the accounts performance. Industrial and retail properties performed at “par” with the total Fund’s 10 year annualized total return performance of 10.1%. Apartment properties performed above average. Fourteen properties with purchase price values of approximately \$125 M, had negative IRR’s. The majority of these properties were office (7 total) and R&D (4 total) and of the fourteen, six were office properties in Houston and one office in Denver. Another eleven properties worth approximately \$50M had IRR’s between 0-4%. Again, the majority of those properties were office and R&D with the majority of those property types in the Midwest and the balance evenly distributed among other regions. Seventeen of the twenty five properties with IRR’s less than 4% were from the Mineral Extraction and Industrial Midwest “economic locations”.⁴⁴ Eighteen of the twenty five were purchased prior to 1982.

Note: This analysis based on IRR’s assumes that Hancock property management and capital improvement programs were not significantly different than other fund’s in the NCREIF index.

In summary, the key factors contributing to lower capital returns and overall under performance of the Fund, include:

- Poor timing in the decision to invest heavier in office, particularly in the oil belt region

⁴⁴ Economic locations are as defined by Hartzell, Shullman and Wurtzebach in “Refining the Analysis of Regional Diversification for Income-Producing Real Estate”, see Appendix 7 for further information.

- Close to marked to market appraiser devaluation's of office property bought early in the late 1970's (in the East), and early 1980's (in Houston and Denver)
- High concentration of investments in specific lower performing property types (office and R&D) and economic locations (oil belt) that significantly impacted and dragged down performance of entire portfolio

LIQUIDATION

Although actual liquidation of the account began in January 1988, the accounts' destiny and the makings of a liquidation arguably began as early as 1984. Pension fund investors interested in squeezing percentage points out of their investment returns often used the commingled funds as a tool to increase returns, moving moneys from fund to fund in search of incrementally better returns. In 1982, after Hancock's first year of sluggish total returns, attributed entirely to low capital appreciation returns, investor contributions all but stopped. The variance between contributions and withdrawals in fact was slightly negative.⁴⁵ Regardless if Hancock's real returns were better than the Index that year, investors, struggling to achieve higher returns from their real estate investments began looking to other funds with higher (total) returns. The ERA returns rebounded in 1983, but withdrawals continued to gradually mount.

⁴⁵ Refer to Appendix 1 for more information on investment and contractholder activity.

A plan developed in 1984 to reposition the account, to dispose of poorly performing properties and re-diversify away from the concentration in office to apartments, retail and better performing industrial properties, never happened. Investors rapidly laid claim to the Fund's cash flows and strangled management's ability to compete. A major pension fund client had submitted a withdrawal request for their entire investment of \$55M. This request, combined with additional withdrawal requests valued at \$30M (in 1984), severely constrained management's ability to further operate the account. After enjoying nearly \$325 M in contributions from 1979-1981, the account was virtually drained between 1984 and 1987. Withdrawal requests totaled over \$275 M, and with only \$40 M in new money coming into the fund, virtually all net income generated from operations went toward paying off withdrawal request.

Investors wanted their money back. John Hancock's long standing reputation in the pension fund investment community was at risk of being tarnished if the company didn't make every effort to pay off disgruntled investors. Other John Hancock pension fund products and investment services were also at risk if they failed to respond to investor requests to liquidate their real estate positions. So, with no new money coming in, the decision was made to close the account. Hancock solicited withdrawal requests from all clients thereby converting the ERA to a liquidating account. Beginning in early 1988 Hancock implemented a liquidation strategy to sell off all properties over the next three years, with all sale proceeds being distributed to investors on a pro-rata basis. During this

period the John Hancock Mutual Life Insurance Company waived all management fees, an unprecedented action and one probably not fully appreciated.

CHAPTER IV

THE ERA IN RETROSPECT: SUMMARY, ISSUES AND ANALYSIS

What is now understood about the funds performance and the major factors contributing to the “fall” of the Equity Real Estate Account ? What can be gained from this analysis of the ERA?

THE ERA’S PERFORMANCE

A summary of the case study highlights outlining the Fund’s performance, include the following:

- In nearly all cases the ERA under performed the Index
- This under performance can be attributed to the ERA’s poor appreciation returns
- Nine out of the ten years that the account was in full operation, the ERA out performed the Index in income returns
- Of the seven commingled real estate fund performances reviewed in this case study (six comparable funds, plus the ERA), the ERA ranked sixth in total returns, fourth in income returns and last in appreciation returns

Why did the Fund under perform the Index and most of “the competition” ?

What factors contributed to the Fund's liquidation?

FACTORS EXPLAINING THE ERA's PERFORMANCE (and Ultimate Liquidation)

Early investment strategy and marketing of the fund focused on lower risk, smaller industrial/warehouse properties with expected stable income and modest capital appreciation. During the early years the ERA Performed as expected. Return performance dipped slightly in 1980 from a stellar performance the prior year. From an investor's and investment manager's perspective, returns are the name of the game. As much as the account might have been marketed as "different", that is as a lower risk real estate fund, investors apparently expected above average returns when the real estate markets began to evidence more risk. In order to attract and maintain investor money, returns had to at least keep pace with other open-end commingled funds. With this reality in mind, it was in 1980, that the character and outlook for the ERA hit a turning point. In hindsight, it is now understood, that from this point in time a series of factors and key events would unfold that would collectively and eventually lead to the down fall of the account. Those factors included:

- A surge of investor money into the account, nearly \$325 million over a three year period between 1979 and 1981, which contributed to a significant change in the investment strategy, from low risk industrial/smaller size properties to larger higher risk office properties. The objectives, to boost returns while at the same time absorbing the "new" inflow of cash contributions.

- The new strategy resulted in a high concentration in office and R&D property⁴⁶ (56%), particularly in the Houston and the Denver market (\$115M). The first signs of severe over building started to become evident in the office market, which began in 1982 with the rapidly declining regional oil economy. It was in this market that appraisers first reported huge declines in values of office properties. Hancock's timing couldn't have been worse.
- Unexpected investor withdrawal requests and no new contributions. Investors turned to other open-end real estate funds in search of incrementally higher total returns. Management's inability to reposition the portfolio while markets were changing put the ERA into a free fall from which it could not recover.

Was John Hancock and the ERA that much different from other funds and other fund manager's? Not really. Other funds and their managers were for the most part chasing after many of the same properties (yes, even office in Houston and Denver) in search of investment outlets and higher returns. Several commingled real estate funds displayed similar property type weightings, as proven by the ERA's close alignment to the Index from 1981-1985.⁴⁷ What then, happened to the ERA that resulted in its demise when many other commingled real estate funds survived?

⁴⁶ In the case of the ERA, R&D property was very similar in nature to suburban office. Nearly all of the accounts office sector was suburban office, therefore R&D and office both competed for essentially the same tenants. Although R&D was not a significant part of the fund, it is the combined weighting that is of most concern (for reasons noted).

⁴⁷ See Appendix 2 for information regarding portfolio weighting .

It appears that it was the early and significant declines in capital values from those properties situated in Houston and Denver (the oil belt), and office and R&D investments. Coupled with lack of any substantial appreciation return “support” from the other “heavy weight”, the industrial/warehouse sector of the portfolio. The combination, ultimately overwhelmed the relatively modest size of the ERA.⁴⁸ With the only significant “return support” coming from industrial properties, it’s not surprising that total portfolio capital value fell behind the competition. The industrial property sector, with its historically low appreciation returns, and “new burden” from obsolescence, could not sustain the Fund total returns through the tough times in other market sectors. Other comparable funds were apparently more fortunate to enjoy the benefit of better “support” from less industrial, or more retail, hotel or apartment properties, the sectors whose return performance behave differently then office or industrial.⁴⁹ Or simply, maybe they were just fortunate enough not to be as heavily invested in office in the oil belt markets in the early 1980’s.

With the benefit of hindsight, what has been learned? The ERA is only one of several open-end funds of its time to be trapped by “naive diversification” (i.e. concentrated in a particular property type and/or an “economic location”, subject to significant, unexpected, exogenous economic events).

⁴⁸ The ERA total value at its peak was approximately \$500M. In comparison, Prudential’s PRISA account, which was similarly weighted in office, had a value of approximately \$5.1B (in 1984). Therefore, just by pure difference in scale, Prudential could have had as much (or more) oil belt office and not been as hard hit, in terms of appreciation returns.

⁴⁹ David Hartzell, John Hekman and Mike Miles, “Diversification Categories In Investment Real Estate”, AREUEA Journal, Vol. 14, No. 2, 1986, pp. 240-241

WHAT HAVE WE LEARNED?/ “DIVERSIFICATION TODAY”

Much more recent contemporary research on diversification within the real estate asset class has addressed the mix of assets to optimize return at the lowest possible level of risk. So called “naive diversification” was based solely on property type and geographic location. This was the model used by Hancock and others during the 1970’s and 1980’s. It turned out to be extremely inefficient. It wasn’t until the late 1980’s that portfolio composition was given any serious analytical attention. A new method of further defining the benefits of real estate portfolio diversification was required but not available. Information and research had simply not kept pace with the need for a more scientific approach to managing real estate risk. The collapse of the oil belt economy followed by a free fall in office building values caused pension funds and life insurance companies to seek out better, more precise methods of portfolio assembly.⁵⁰

Current industry trends have evolved toward methods of portfolio construction that are more exacting. Investors want to not only understand their portfolios diversification by location and property type, but also by other factors that include: financial structure, lease structure and maturity, tenant mix and creditworthiness of the

⁵⁰ Geoffrey Dohrmann, “The Evolution of Institutional Investment in Real Estate”, in *The Handbook of Real Estate Portfolio Management*, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 87; Cole, Guilkey, Miles and Webb (1987); Hartzell, Shulman and Wurtzebach (1987); J. Lewis, “MPT Comes to Real Estate”, *Institutional Investor*, February 1990, p.153.

tenants. Portfolio holdings today are grouped by “economic location”⁵¹ in which exogenous economic forces such as employment base, projected employment growth, demographic trends and competitive facilities are analyzed to determine current and future market conditions. Supply constraints, such as growth moratoria, physical barriers and height restrictions, are also considered as to their potential future impact on supply and demand. Some portfolio managers have gone as far as to classify tenants by industrial SIC code to evaluate the industry-related risk associated with their individual properties and overall portfolio.⁵²

These new developments in diversification within the real estate asset class were only beginning to surface about the time the ERA was forced into liquidation mode. With the benefit of hindsight, and this “new” knowledge it is now more readily understandable that the account was over exposed to a single property type, the office sector, at the precise time when fundamentals for office were rapidly eroding. At the same time the portfolio was over weighed in an economic location whose major industry was in severe cyclical decline. As events turned out, the ERA took on excessive risk, and paid the price when two markets in which the ERA was over invested, oil and office, both collapsed at about the same time. The ERA was not nearly as diversified as internal management had assumed.

⁵¹See Appendix 7 for additional information regarding “economic location”.

⁵² Geoffrey Dohrmann, “The Evolution of Institutional Investment in Real Estate”, in *The Handbook of Real Estate Portfolio Management*, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 87; Susan Hudson-Wilson and William Wheaton from lectures delivered at MIT Center for Real Estate.

Another important experience gained from the ERA and other open-end funds of that period, was the awareness of certain issues related to the limitations of the open-end structure. Most open-end real estate funds were marketed as completely liquid investment vehicles. During the growth years of the late 1970's and early 1980's, virtually all funds were able to satisfy withdrawal requests. However, the source of liquidation capital was from new contributions or cash flow, not from property sales. As a result, these funds gave the appearance of more liquidity than what actually was the case. When real estate investment growth turned negative in the late 1980's, however, investors submitted withdrawal requests to reduce their real estate holdings with little to no new contributions. Fund managers were quickly run out of cash. To meet redemption requests management had to either use large amounts of cash flow from existing investments or sell property. Selling property at appraised values in declining markets was virtually impossible. Often the top-quality properties are the first sold, though they sell at discounts. Investors who decide to hold on for the long term end up owning the less desirable properties.⁵³ This is why Hancock moved to liquidate the entire fund and distribute cash proceeds on a pro-rata basis.

Although the ERA went through an extended period of illiquidity, which ultimately contributed to the decision to liquidate, investors in the Fund were fortunate. Hancock acted prudently. All were treated equally because the account was liquidated in total. Further, a majority of properties were sold prior to when the market hit bottom. Most

⁵³ Glenn Mueller and Marc Louargand, "Developing a Portfolio Strategy", in *The Handbook of Real Estate Portfolio Management*, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 980.

open-end fund managers today have re-evaluated their sales strategies and have worked toward a more equitable plan to accommodate all investors. However, illiquidity will always represent a potential problem for open-end funds.

CHAPTER V

INSTITUTIONAL INVESTMENT IN REAL ESTATE (REVISITED)⁵⁴

PENSION FUND INVESTMENT AND REAL ESTATE PORTFOLIO MANAGEMENT TODAY

By the mid 1980's, Hancock was not alone in its predicament. Competing funds were experiencing similar declines in returns and significant withdrawal requests. Several commingled real estate funds were liquidated, including First Chicago's Fund F, Travelers Separate Account R, Wachovia's Real Estate Fund, Bank of America's and Crocker Bank's and others. The real estate portfolio management industry, as a whole, had been operating with no disciplined process of portfolio construction. By not having a well defined strategy, there was no clear and direct link between client investment objectives and portfolio strategy and composition.⁵⁵ Part of the problem was the lack of access to good information about what was currently going on in the marketplace and a reliance on the appraisal valuation (which relies on historical data) in making investment decisions.⁵⁶

⁵⁴ The material for this section is primarily taken from *Revisiting the Case for Pension Fund Investment in Real Estate*, (Frank Russell Company), pp. 4-6, Section VII and Geoffrey Dohrmann, "The Evolution of Institutional Investment in Real Estate", in *The Handbook of Real Estate Portfolio Management*, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 94-99.

⁵⁵ Charles R. Lightner, "What Saved PRISA? A Case Study", in *Managing Real Estate Portfolios*, ed. Susan Hudson-Wilson and Charles H. Wurtzback (New York: Irwin 1994), pg. 188.

⁵⁶ Blake Eagle, "Institutional Investors and Real Estate: Investment Trends and Opportunities", Frank Russell Group of Companies, Tacoma WA.

As property values declined due to massive over building, pension funds became very disillusioned with a marketplace that lacked adequate measurement systems to track supply-side expansion. The entire investment process became suspect, from acquisition pricing and periodic valuations using appraisals, to lack of sell disciplines. Pension funds began to re-examine the wisdom of their decision to invest in real estate. When investment performance fell way off and the promised liquidity of open-end funds vanished the pension fund love affair with real estate was over.⁵⁷

Today the direction of the private real estate investment business is to more closely follow the path established by the public real estate market. Pension fund managers are now more sophisticated about the asset and demanding more of their investment managers. Four distinct trends are emerging in the industry. These include:

- **Property sector specific**-fund managers are moving away from commingled funds to property sector funds, diversification is up to the investor
- **Investors have more control**-vehicles offered today give more rights to the shareholder and less discretion to the manager
- **Compensation is based on performance**-managers compensation is tied to performance vs. “assets under management”
- **Pricing based on current yield**-real estate pricing is becoming more based on current yield vs. future capital appreciation

⁵⁷ Blake Eagle, “Institutional Investors and Real Estate: Investment Trends and Opportunities”, Frank Russell Group of Companies, Tacoma WA.

The investment “decision-making process” has finally evolved to rely on investigation into the underlying forces that effect market demand. In the past, the real estate professional made subjective judgments based on “experience”, input from a network of contacts, and “gut instinct”. In the 1990’s, growing institutional investment in real estate has increased the demand for the most subjective decisions to be grounded in quantitative support.⁵⁸

With lesson’s learned, institutional investors are playing by a new set of rules regarding how they will participate in future real estate investments. First, new pricing models are needed. Ones that allow for more consensus vs. opinion of value. These new models will asses both risk and return in order to better enable pension funds to analyze real estate forecasted returns on the same basis as investors analyze expected stock and bond returns. This will allow for better comparisons among asset classes when making asset allocation decisions. Secondly, pension fund investors will be looking for real estate in more liquid or marketable forms. This will provide more ease in making adjustments in asset allocation and to change their exposure to the asset class, as well as make strategic changes within the asset classes (i.e. “sell” office and “buy” retail). Thirdly, investors are demanding more alignment between their interests and those of fund managers. Pension fund investors want managers to have their own capital at stake and/or to be paid not solely on a set fee but on the basis of performance. Performance will be measured on

⁵⁸Geoffrey Dohrmann, “The Evolution of Institutional Investment in Real Estate”, in *The Handbook of Real Estate Portfolio Management*, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 94-99 and “MegaShifts”, *The Institutional Real Estate Letter* (Late 1980’s, Early 1990’s)

actual results (or property interests) vs. appraised values. Lastly, investors will require improved information flow, and sufficient information from which to conduct a comparative analysis with the other asset classes and to make pricing decisions.⁵⁹

Looking ahead, two things are certain: first, for the real estate investment industry to continue accessing pension fund capital resources the real estate market must be grounded in the fundamentals of supply and demand vs. artificial influences such as “making the deal” or “getting the fee”; and secondly, the capital markets will be setting the rules for risk/return trade off’s that will ultimately translate into real estate pricing.⁶⁰

⁵⁹ Blake Eagle, “Institutional Investors and Real Estate: Investment Trends and Opportunities”, Frank Russell Group of Companies, Tacoma WA.

⁶⁰ Blake Eagle, “Institutional Investors and Real Estate: Investment Trends and Opportunities”, Frank Russell Group of Companies, Tacoma WA.

APPENDIX 1

ERA Investment Summary*

Appendix 1. This summary includes key investment activity published in the ERA Annual Reports from 1979-1990. Of special importance is the Performance Summary* and Contractholders Activity (Contributions and Withdrawals).

* Performance information in this appendix may vary from other return data contained in this document. Annual report performance data includes returns from all assets (vs. real estate only).

JOHN HANCOCK EQUITY REAL ESTATE ACCOUNT INVESTMENT SUMMARY

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988***	1989****	1990
Number of Properties	10	18	34	55	89	102	101	100	93	75	70	34	7	0
Investment Summary														
Net Assets			\$ 180,019,000	\$ 352,762,000	\$ 533,122,000	\$ 584,966,000	\$ 623,541,000	\$ 677,326,000	\$ 623,138,000	\$ 533,269,000	\$ 545,350,000	\$ 281,692,000	\$ 64,199,000	\$ 4,952,308
Investment Income*			\$ 10,124,000	\$ 24,754,000	\$ 41,811,000	\$ 47,072,000	\$ 47,170,000	\$ 47,684,000	\$ 46,560,000	\$ 39,378,000	\$ 38,384,000	\$ 28,015,000	\$ 18,714,000	\$ 3,238,066
Appreciation			\$ 9,980,000	\$ 8,227,000	\$ 17,452,000	\$ 39,000	\$ 26,096,000	\$ 24,588,000	\$ (6,496,000)	\$ (50,915,000)	\$ 1,993,000	\$ (39,673,000)	\$ (48,530,000)	\$ (12,509,231)
Performance Summary														
Investment Income*	9.1%	9.3%	10.2%	10.6%	10.3%	8.8%	8.4%	7.8%	7.5%	6.5%	7.2%	6.6%	7.4%	5.7%
Appreciation	1.2%	2.5%	8.8%	3.6%	4.0%	0.0%	4.8%	4.0%	-0.9%	-8.5%	0.3%	-8.8%	-23.7%	-24.0%
Total Return	10.3%	11.8%	19.0%	14.2%	14.3%	8.8%	13.2%	11.8%	6.6%	-2.0%	7.5%	-2.2%	-16.3%	-18.2%
Contractholders' Activity														
Contributions			\$ 100,868,000	\$ 117,156,275	\$ 107,895,745	\$ 9,225,000	\$ 22,200,000	\$ 36,575,000	\$ 4,503,280	\$ -	\$ -	\$ -		
Withdrawals			\$ -	\$ (1,200,000)	\$ (787,762)	\$ (10,904,478)	\$ (52,000,000)	\$ (86,081,571)	\$ (93,876,747)	\$ (54,773,087)	\$ (38,661,073)	\$ (189,437,823)		
Difference			\$ 100,868,000	\$ 115,956,275	\$ 107,107,983	\$ (1,679,478)	\$ (29,800,000)	\$ (49,506,571)	\$ (89,373,467)	\$ (54,773,087)	\$ (38,661,073)	\$ (189,437,823)		

*Gross before management fee. Includes income from interest and joint ventures

**All information extracted from the ERA Annual Reports

***ERA liquidation plan began January 1, 1988

****1989 depreciation is 1/3 attributed to realized losses on sales and 2/3 attributed to adjustments to appraisals

*****1990 significant downward adjustment due to unrealized losses on property with toxic waste, Denver office property and weak New Mexico markets.

APPENDIX 2

NCREIF/ERA Weightings Information and Fund Characteristics

Appendix 2. The exhibits in this appendix provide a comparative analysis of the ERA portfolio and NCREIF Index weightings, by: Total Fund, Property Type, Region, Region-Property Type, Age of Property and Value of Property. Also included is summary table of information regarding the ERA “fund characteristics” and a table comparing the ERA vs. NCREIF average property size (based on \$ value).

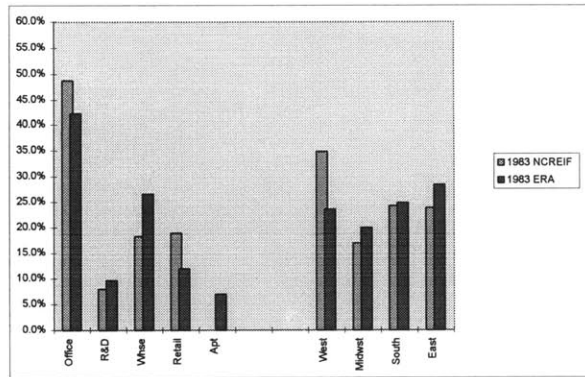
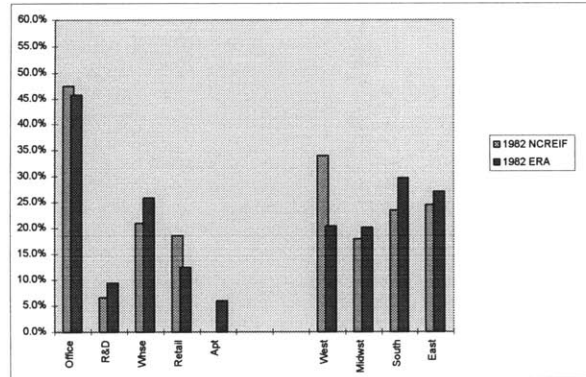
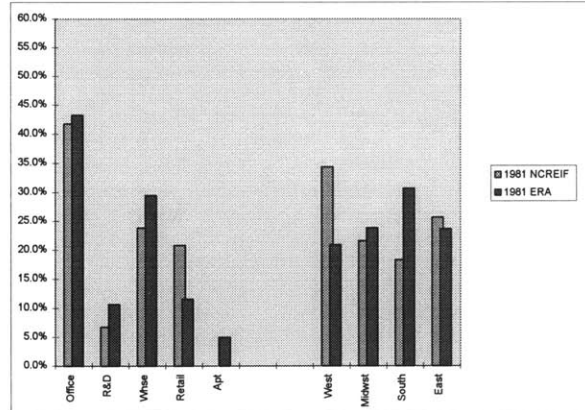
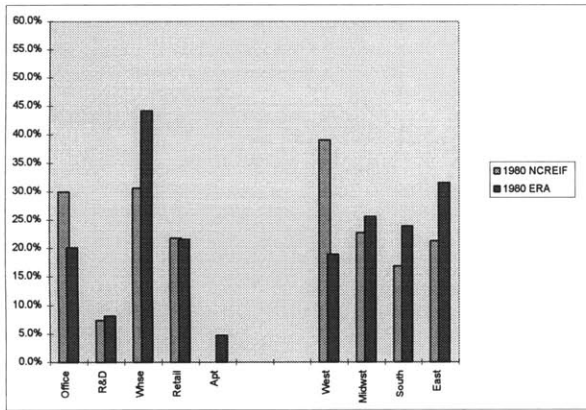
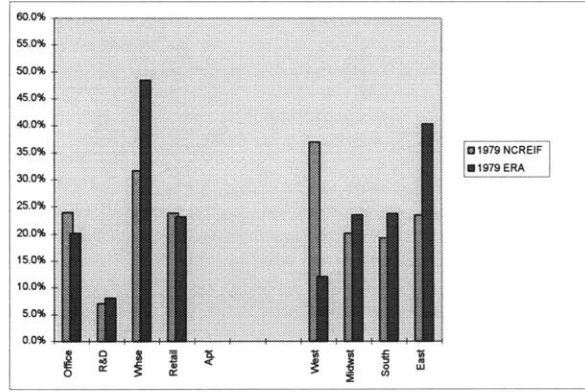
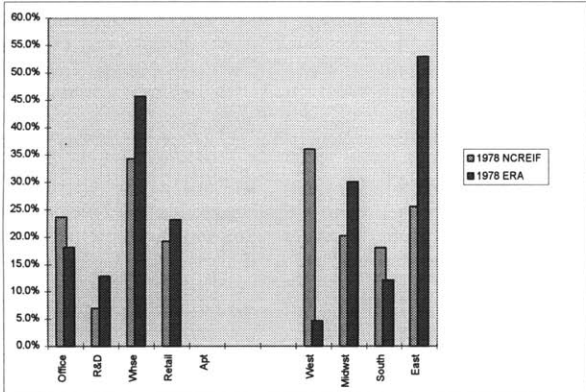
NCREIF*/ERA WEIGHTINGS BY PROPERTY TYPE AND REGION (1978-1987)

PROPERTY TYPE	1978		1979		1980		1981		1982	
	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA
Office	23.7%	18.2%	24.0%	20.2%	30.0%	20.1%	41.8%	43.3%	47.6%	45.9%
R&D	7.0%	12.9%	7.1%	8.1%	7.4%	8.2%	6.8%	10.7%	6.6%	9.4%
Warehouse	34.3%	45.7%	31.7%	48.5%	30.7%	44.2%	23.9%	29.5%	21.0%	25.9%
Retail	19.3%	23.2%	23.9%	23.2%	21.8%	21.6%	20.8%	11.6%	18.6%	12.4%
Apartment						4.8%		5.0%		6.0%
REGION										
West	36.1%	4.7%	37.0%	12.1%	39.1%	19.0%	34.4%	20.9%	34.0%	20.4%
Midwest	20.3%	30.1%	20.2%	23.6%	22.8%	25.6%	21.6%	23.9%	17.9%	20.2%
South	18.1%	12.2%	19.3%	23.8%	16.9%	23.9%	18.3%	30.7%	23.5%	29.7%
East	25.6%	53.0%	23.5%	40.4%	21.3%	31.6%	25.7%	23.7%	24.6%	27.1%

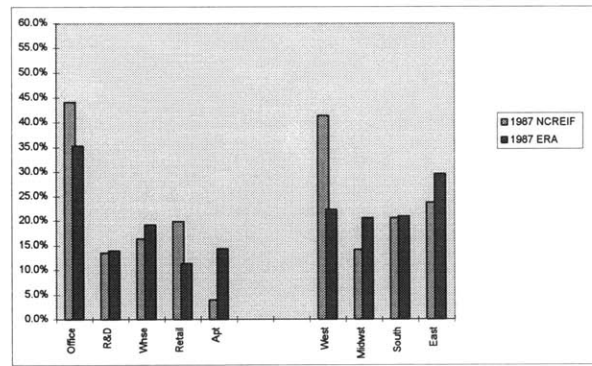
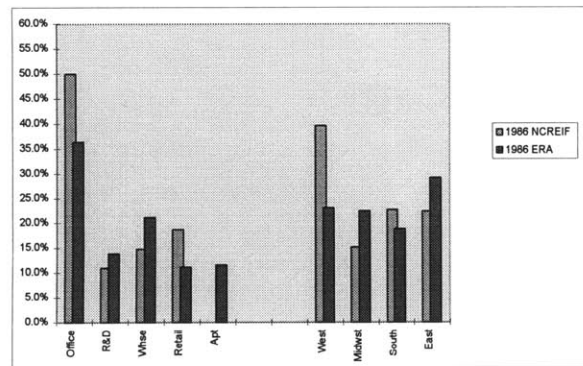
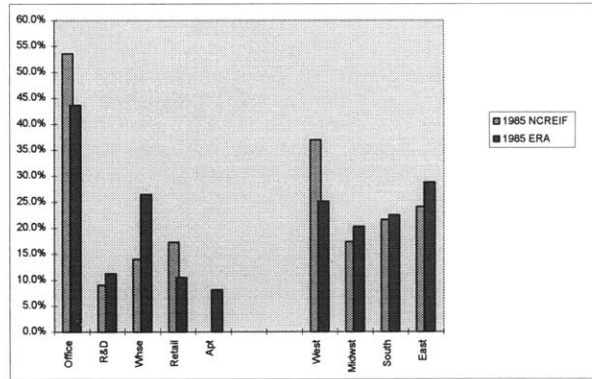
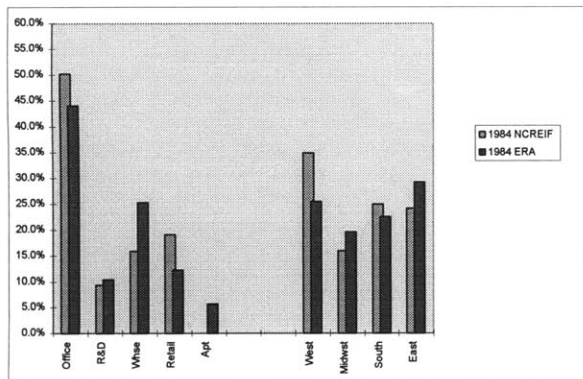
PROPERTY TYPE	1983		1984		1985		1986		1987	
	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA
Office										
R&D	48.8%	42.3%	50.2%	44.1%	53.6%	43.7%	50.0%	36.4%	44.1%	35.3%
Warehouse	8.0%	9.7%	9.4%	10.5%	9.1%	11.3%	11.0%	13.9%	13.5%	14.0%
Retail	18.3%	26.6%	15.9%	25.3%	14.0%	26.5%	14.8%	21.2%	16.4%	19.2%
Apartment	19.0%	12.0%	19.1%	12.3%	17.3%	10.5%	18.7%	11.2%	19.9%	11.4%
		7.0%		5.7%		8.2%		11.6%		4.0%
REGION										
West	34.8%	23.6%	34.9%	25.5%	37.0%	25.2%	39.7%	23.1%	41.4%	22.3%
Midwest	17.0%	20.0%	16.0%	19.6%	17.4%	20.3%	15.2%	22.5%	14.2%	20.6%
South	24.3%	24.9%	25.0%	22.6%	21.6%	22.5%	22.7%	18.8%	20.6%	20.9%
East	23.9%	28.4%	24.2%	29.2%	24.1%	28.8%	22.4%	29.2%	23.7%	29.6%

*NCREIF percentages for the category "Property Type" do not total 100% because hotel properties are not included in this summary and apartment properties are only

NCREIF/ERA WEIGHTINGS BY PROPERTY TYPE AND REGION 1978-1983



NCREIF/ERA WEIGHTINGS BY PROPERTY TYPE AND REGION 1984-1987



NCREIF/ERA WEIGHTINGS BY REGIONAL PROPERTY TYPE

REGIONAL PROPERTY TYPE	1978		1979		1980		1981		1982	
	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA
West Office	7.1%	0.0%	6.6%	0.0%	9.5%	0.6%	11.0%	10.8%	13.2%	12.1%
West Warehouse	13.7%	4.7%	12.9%	9.8%	12.6%	10.7%	9.3%	5.9%	7.9%	4.7%
West R&D	4.3%	0.0%	3.9%	0.0%	3.9%	4.0%	3.0%	3.2%	2.6%	2.8%
West Retail	8.3%	0.0%	11.8%	2.3%	10.4%	3.6%	9.7%	1.8%	8.8%	1.5%
West Apartment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Office	2.3%	0.0%	2.3%	0.0%	3.2%	9.1%	7.0%	20.7%	12.8%	21.2%
South Warehouse	6.6%	8.0%	6.6%	13.3%	5.8%	8.9%	4.8%	3.6%	4.5%	2.9%
South R&D	0.2%	0.0%	0.5%	1.1%	0.4%	0.9%	0.6%	2.1%	0.9%	1.8%
South Retail	3.0%	4.2%	4.4%	9.5%	4.0%	4.9%	3.7%	2.4%	3.5%	2.1%
South Apartment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	1.7%
Midwest Office	2.4%	0.0%	4.8%	0.0%	6.9%	0.0%	8.2%	1.1%	7.1%	0.9%
Midwest Warehouse	9.9%	17.1%	9.1%	17.0%	8.6%	17.8%	6.2%	15.6%	5.1%	13.4%
Midwest R&D	1.8%	0.0%	1.8%	1.9%	2.1%	0.9%	2.2%	3.8%	1.8%	3.4%
Midwest Retail	3.3%	13.0%	2.5%	4.8%	3.7%	6.9%	3.9%	3.4%	3.1%	2.5%
Midwest Apartment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
East Office	11.9%	18.2%	10.2%	20.2%	10.3%	10.3%	15.7%	10.7%	14.5%	11.7%
East Warehouse	4.2%	15.9%	3.1%	8.4%	3.6%	6.8%	3.6%	4.5%	3.5%	4.9%
East R&D	0.6%	12.9%	1.0%	5.1%	1.1%	2.4%	0.9%	1.6%	1.3%	1.4%
East Retail	4.7%	6.0%	5.1%	6.7%	3.7%	6.1%	3.6%	4.0%	3.3%	6.3%
East Apartment	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	0.0%	3.0%	0.0%	4.7%
	1983		1984		1985		1986		1987	
	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA	NCREIF	ERA
West Office	14.0%	13.7%	14.9%	15.3%	17.6%	15.2%	17.3%	12.3%	16.3%	12.3%
West Warehouse	7.0%	6.0%	5.8%	6.1%	5.6%	5.8%	6.2%	6.3%	6.9%	5.4%
West R&D	3.8%	2.9%	5.0%	3.0%	5.1%	3.2%	5.8%	3.8%	7.5%	3.9%
West Retail	9.2%	1.6%	8.5%	1.7%	7.4%	1.8%	9.0%	2.0%	9.2%	2.1%
West Apartment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South Office	12.6%	15.5%	13.2%	15.0%	10.4%	14.3%	10.4%	10.3%	7.6%	9.8%
South Warehouse	4.4%	3.5%	4.1%	3.7%	3.7%	4.0%	4.0%	1.9%	4.0%	1.8%
South R&D	1.5%	1.8%	1.8%	2.0%	1.4%	2.1%	2.0%	2.5%	2.2%	2.5%
South Retail	3.2%	1.8%	3.7%	2.0%	4.4%	2.1%	4.5%	2.0%	5.0%	2.4%
South Apartment	0.0%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	0.0%	6.1%
Midwest Office	8.0%	1.0%	7.4%	1.1%	10.3%	1.1%	7.6%	2.5%	6.9%	2.5%
Midwest Warehouse	4.0%	13.1%	3.6%	12.4%	2.9%	13.4%	3.0%	10.0%	3.6%	9.0%
Midwest R&D	1.5%	3.4%	1.3%	3.8%	1.3%	4.2%	1.4%	8.0%	1.4%	8.0%
Midwest Retail	2.7%	2.5%	2.9%	2.4%	2.1%	1.6%	2.4%	1.7%	1.4%	0.7%
Midwest Apartment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	1.7%
East Office	14.1%	12.2%	14.7%	12.7%	15.3%	13.2%	14.7%	13.0%	13.3%	12.5%
East Warehouse	2.8%	5.3%	2.4%	4.4%	1.9%	4.8%	1.6%	4.6%	1.9%	4.7%
East R&D	1.2%	1.5%	1.3%	1.6%	1.3%	1.7%	1.8%	1.9%	2.4%	1.9%
East Retail	3.8%	6.1%	4.0%	6.3%	3.3%	5.0%	2.8%	5.4%	4.3%	6.1%
East Apartment	0.0%	5.8%	0.0%	6.6%	0.0%	6.6%	0.0%	6.4%	0.0%	6.7%

*NCREIF property market value for Apartments is not available prior to 1988.

FUND CHARACTERISTICS 1980-1988

	1980	1981	1982	1983	1984	1985	1986	1987	1988
CHARACTERISTIC									
Property Type									
Retail (Shopping Centers and Stores)	19.9%	11.0%	12.0%	12.0%	11.9%	9.60%	10.3%	10.8%	7.4%
Apartments	4.8%	5.0%	6.0%	7.0%	5.7%	8.20%	11.6%	14.4%	7.8%
Hotels	6.7%	4.0%	3.0%	3.0%	2.9%	3.20%	2.7%	2.3%	5.1%
Industrial/Warehouse	50.1%	40.0%	37.0%	37.0%	36.0%	25.80%	24.2%	22.5%	12.7%
Office	18.5%	40.0%	42.0%	41.0%	43.5%	39.80%	35.1%	34.0%	51.8%
R&D/Office *						13.40%	16.1%	16.0%	15.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.00%	100.0%	100.0%	100.0%
Geographical Distribution**									
West	26.1%	24.0%	24.0%	25.0%	26.4%	25.9%	25.4%	24.4%	37.0%
Midwest/North Central	24.1%	23.0%	20.0%	20.0%	20.2%	21.4%	22.9%	21.8%	12.0%
East/North East	20.7%	14.0%	15.0%	16.0%	15.9%	29.4%	30.2%	31.4%	21.8%
South	29.1%	39.0%	41.0%	39.0%	37.5%	23.3%	21.5%	22.4%	29.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Age of Property									
< 5 Years	46.5%	72.0%	70.0%	68.0%	Not incl.	39.0%	18.0%	9.0%	8.0%
5-10 Years	25.8%	12.1%	9.9%	9.0%		30.0%	48.0%	59.0%	69.0%
10-20 Years	23.0%	12.4%	17.8%	20.0%		27.0%	26.0%	24.0%	20.0%
Over 20 Years	4.7%	3.5%	2.3%	3.0%		4.0%	8.0%	8.0%	3.0%
Total	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%	100.0%	100.0%
Value of Property									
Under \$2.5M	15.0%	13.0%	11.0%	9.0%	6.0%	Not incl.	5.0%	5.0%	3.0%
\$2.5-\$5.0M	16.0%	21.0%	21.0%	22.0%	24.0%		14.0%	11.0%	12.0%
\$5.0-\$10.0M	28.0%	28.0%	26.0%	27.0%	24.0%		31.0%	29.0%	39.0%
\$10.0-\$20.0M	23.0%	22.0%	32.0%	31.0%	31.0%		46.0%	51.0%	46.0%
Over \$20.0M	18.0%	16.0%	10.0%	11.0%	15.0%		4.0%	4.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%	100.0%

* In 1985 some Office and Industrial/Warehouse properties were re-classified as R&D/Office property type (+/- 24properties).

**Properties located in Kentucky, West Virginia, Virginia, Maryland and Delaware were re-classified out of "South" into "East" geographical regions in 1986 (+/- 8 properties total).

Note: All data above was gathered from the ERA Annual Reports. Weighting information may vary from NCREIF data found elsewhere in this document (for reasons noted above).

TOTAL FUND/INDEX AVERAGE PROPERTY SIZE

YYQ	RN-COUNT	NCREIF MV	AVG. SIZE	JH-COUNT	HANCOCK MV	AVG. SIZE
781	233	580990824	\$ 2,493,523	10	20133000	\$ 2,013,300
782	259	618339141	\$ 2,387,410	12	29330918	\$ 2,444,243
783	283	688675929	\$ 2,433,484	14	32716994	\$ 2,336,928
784	291	729986518	\$ 2,508,545	16	43691156	\$ 2,730,697
791	309	817048986	\$ 2,644,171	19	51694848	\$ 2,720,781
792	331	933456479	\$ 2,820,110	25	76471502	\$ 3,058,860
793	356	1070684326	\$ 3,007,540	26	84253514	\$ 3,240,520
794	370	1231133627	\$ 3,327,388	32	119476672	\$ 3,733,646
801	405	1430115931	\$ 3,531,150	36	155431458	\$ 4,317,541
802	428	1582310228	\$ 3,696,987	41	171943073	\$ 4,193,733
803	465	1775851147	\$ 3,819,035	47	191488228	\$ 4,074,218
804	493	1976014374	\$ 4,008,143	54	251666836	\$ 4,660,497
811	526	2290643221	\$ 4,354,835	59	287617154	\$ 4,874,867
812	569	2689864442	\$ 4,727,354	69	348470414	\$ 5,050,296
813	621	3061085019	\$ 4,929,283	83	421728406	\$ 5,081,065
814	681	3668148597	\$ 5,386,415	88	466818452	\$ 5,304,755
821	724	4123217680	\$ 5,695,052	94	509648194	\$ 5,421,789
822	757	4538598298	\$ 5,995,506	96	522625886	\$ 5,444,020
823	776	4716148768	\$ 6,077,511	96	526191950	\$ 5,481,166
824	781	4893870665	\$ 6,266,160	99	573844384	\$ 5,796,408
831	815	5174157867	\$ 6,348,660	97	564855165	\$ 5,823,249
832	841	5647505655	\$ 6,715,227	99	573515528	\$ 5,793,086
833	851	5798154848	\$ 6,813,343	98	574709211	\$ 5,864,380
834	849	6119099415	\$ 7,207,420	97	581147461	\$ 5,991,211
841	853	6334843885	\$ 7,426,546	94	577607632	\$ 6,144,762
842	911	7298308038	\$ 8,011,315	94	584350165	\$ 6,216,491
843	918	7539424690	\$ 8,212,881	94	586812358	\$ 6,242,685
844	912	7984552463	\$ 8,754,992	94	593736587	\$ 6,316,347
851	914	8718373892	\$ 9,538,702	94	578699057	\$ 6,156,373
852	969	9501617694	\$ 9,805,591	91	569322476	\$ 6,256,291
853	981	10005886444	\$10,199,680	88	568655517	\$ 6,461,995
854	1000	11101330568	\$11,101,331	84	562905992	\$ 6,701,262
861	1098	12230440172	\$11,138,834	87	604871625	\$ 6,952,547
862	1103	12576237975	\$11,401,848	81	613876589	\$ 7,578,723
863	1097	12594774082	\$11,481,107	76	546008798	\$ 7,184,326
864	1070	12521961078	\$11,702,767	76	541219526	\$ 7,121,310
871	1097	12685410957	\$11,563,729	73	530860537	\$ 7,272,062
872	1117	12730242354	\$11,396,815	72	544360781	\$ 7,560,566
873	1100	12681064775	\$11,528,241	72	541156630	\$ 7,516,064
874	1120	13234607882	\$11,816,614	72	543090763	\$ 7,542,927
881	1138	13704021813	\$12,042,198	71	539044066	\$ 7,592,170
882	1190	15450886036	\$12,983,938	65	511833361	\$ 7,874,359
883	1184	15709944680	\$13,268,534	54	437704116	\$ 8,105,632
884	1213	16335160233	\$13,466,744	47	386097382	\$ 8,214,838
891	1222	16866084542	\$13,802,033	30	214768301	\$ 7,158,943
892	1286	17414058548	\$13,541,259	25	170781922	\$ 6,831,277
893	1300	18125578037	\$13,942,752	17	115627616	\$ 6,801,624
894	1318	18541637839	\$14,068,011	11	72576544	\$ 6,597,868
901	1425	21014981715	\$14,747,356	6	40454468	\$ 6,742,411
902	1446	21581494718	\$14,924,962	3	33300000	\$ 11,100,000
903	1474	22356649456	\$15,167,333	3	25550760	\$ 8,516,920
904	1534	22759566056	\$14,836,744	0		
911	1670	24402111772	\$14,612,043			
912	1681	24015932401	\$14,286,694			
913	1647	23493899401	\$14,264,663			
914	1672	22367318024	\$13,377,583			
921	1719	23589354112	\$13,722,719			
922	1787	23586526954	\$13,198,952			
923	1873	24628491124	\$13,149,221			
924	1859	24002436484	\$12,911,477			
931	1709	23662549184	\$13,845,845			
932	1700	23246809106	\$13,674,594			
933	1665	23062720482	\$13,851,484			
934	1628	22585500187	\$13,873,157			
941	1582	23063371705	\$14,578,617			
942	1580	23171626290	\$14,665,586			
943	1565	23581467238	\$15,068,030			
944	1558	23553056335	\$15,117,494			
951	1605	24952150950	\$15,546,511			

APPENDIX 3

NCREIF/ERA Annual Performance Summaries 1978-1990

Appendix 3. The exhibits in this appendix provide annual performance information on total, income and appreciation returns for the Total Fund, Property Type, Region and Region-Property Type of both the ERA and NCREIF index. Also included, are the property type and region quarterly return graphs (ERA vs. NCREIF).

TOTAL FUND, PROPERTY TYPE AND REGION ANNUAL PERFORMANCE (YEAR ENDING MARCH 31)

	<u>TOTAL FUND/INDEX</u>						<u>OFFICE</u>						
	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978	17.14%	8.79%	7.84%	11.35%	9.12%	2.09%	1978	23.51%	8.89%	13.71%	10.33%	9.05%	1.19%
1979	22.46%	8.90%	12.73%	19.70%	9.42%	9.62%	1979	26.83%	8.16%	17.63%	9.71%	9.19%	0.49%
1980	15.19%	8.26%	6.53%	11.98%	9.13%	2.67%	1980	17.92%	7.31%	10.06%	11.22%	9.25%	1.84%
1981	16.10%	7.98%	7.67%	15.58%	8.61%	6.56%	1981	19.44%	7.52%	11.30%	25.58%	7.69%	16.94%
1982	8.61%	8.03%	0.54%	5.28%	8.17%	-2.72%	1982	8.12%	7.70%	0.39%	-0.36%	6.95%	-6.95%
1983	14.76%	7.49%	6.89%	14.79%	7.79%	6.61%	1983	14.06%	6.85%	6.86%	12.52%	6.39%	5.83%
1984	11.86%	7.40%	4.23%	6.83%	7.62%	-0.75%	1984	10.75%	6.94%	3.62%	1.11%	6.46%	-5.11%
1985	9.75%	7.56%	2.07%	9.72%	7.95%	1.67%	1985	8.87%	7.40%	1.40%	9.14%	7.66%	1.39%
1986	6.42%	7.22%	-0.76%	-1.69%	7.35%	-8.55%	1986	3.71%	6.85%	-2.98%	-13.33%	6.69%	-18.99%
1987	5.50%	6.89%	-1.42%	6.54%	7.72%	-1.12%	1987	0.43%	6.57%	-5.86%	5.96%	7.16%	-1.14%
1988	7.03%	7.02%	0.00%	-10.32%	6.92%	-16.38%	1988	3.87%	6.56%	-2.56%	-8.40%	6.42%	-14.16%
1989	5.99%	6.63%	-0.61%	-16.18%	7.91%	-24.62%	1989	3.13%	6.16%	-2.89%	-17.52%	7.59%	-23.85%

	<u>WAREHOUSE</u>						<u>R&D</u>						
	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978	14.18%	8.00%	5.83%	11.95%	8.96%	2.81%	1978	13.26%	9.16%	3.84%			
1979	21.30%	8.66%	11.88%	24.30%	9.39%	13.97%	1979	14.71%	9.18%	5.18%	20.13%	9.27%	10.17%
1980	15.18%	8.55%	6.23%	13.20%	9.06%	3.88%	1980	20.88%	8.97%	11.18%	13.11%	9.36%	3.51%
1981	14.27%	8.06%	5.86%	12.05%	9.15%	2.72%	1981	20.62%	8.27%	11.65%	21.90%	8.57%	12.56%
1982	8.40%	7.98%	0.39%	7.53%	8.72%	-1.12%	1982	12.63%	8.31%	4.07%	9.71%	7.68%	1.92%
1983	11.76%	7.56%	3.98%	13.54%	9.31%	3.96%	1983	22.06%	8.23%	13.05%	14.07%	7.79%	5.94%
1984	11.88%	7.91%	3.75%	6.79%	8.62%	-1.71%	1984	13.65%	8.05%	5.28%	14.42%	7.80%	6.26%
1985	12.63%	8.09%	4.29%	12.86%	8.66%	3.95%	1985	9.00%	8.00%	0.94%	6.74%	6.56%	0.17%
1986	8.79%	7.79%	0.94%	6.32%	9.03%	-2.54%	1986	8.02%	7.80%	0.21%	3.92%	7.21%	-3.12%
1987	11.86%	7.93%	3.71%	10.71%	10.46%	0.23%	1987	6.80%	7.32%	-0.68%	-1.42%	8.50%	-9.34%
1988	9.33%	7.63%	1.60%	-17.11%	8.28%	-23.88%	1988	5.62%	7.51%	-1.80%	-20.73%	7.95%	-27.00%
1989	9.31%	7.10%	2.10%	-23.39%	13.23%	-33.22%	1989	5.79%	7.52%	-1.64%	-26.76%	5.21%	-30.91%

	<u>RETAIL</u>						<u>APARTMENT</u>						
	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978	10.48%	8.34%	2.02%	10.36%	9.54%	0.76%	1978						
1979	11.26%	8.90%	2.22%	11.30%	9.71%	1.48%	1979						
1980	11.84%	8.36%	3.28%	8.44%	9.03%	-0.55%	1980						
1981	11.12%	8.28%	2.67%	-1.51%	9.53%	-10.30%	1981				8.01%	9.58%	-1.46%
1982	7.95%	8.95%	-0.94%	7.91%	10.62%	-2.49%	1982				22.96%	9.75%	12.33%
1983	16.30%	8.78%	7.07%	16.52%	9.84%	6.23%	1983				35.38%	8.36%	25.44%
1984	15.01%	8.09%	6.53%	14.29%	10.07%	3.93%	1984				23.70%	8.45%	14.39%
1985	11.18%	7.56%	3.43%	12.82%	9.97%	2.66%	1985				3.72%	7.85%	-3.90%
1986	11.49%	7.25%	4.02%	15.82%	9.36%	6.05%	1986				4.83%	8.24%	-3.22%
1987	11.78%	6.85%	4.70%	12.91%	8.46%	4.18%	1987				8.40%	7.21%	1.13%
1988	13.63%	7.04%	6.27%	2.14%	8.80%	-6.25%	1988	6.98%	6.96%	0.02%	-12.37%	7.93%	-19.14%
1989	9.96%	6.35%	3.45%				1989	5.93%	6.93%	-0.95%			

	<u>WEST</u>						<u>SOUTH</u>						
	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978	18.07%	8.53%	8.98%	15.06%	9.21%	5.48%	1978	12.83%	8.39%	4.17%	7.28%	9.35%	-1.94%
1979	21.04%	8.46%	11.85%	25.10%	9.25%	14.83%	1979	22.06%	8.60%	12.66%	44.07%	9.10%	32.90%
1980	19.82%	8.15%	11.00%	13.72%	9.15%	4.28%	1980	10.30%	8.68%	1.52%	7.66%	8.43%	-0.73%
1981	19.20%	7.60%	10.99%	25.64%	7.22%	17.48%	1981	16.17%	8.59%	7.13%	20.03%	8.59%	10.76%
1982	9.49%	7.99%	1.42%	-0.65%	7.63%	-7.86%	1982	10.28%	8.03%	2.12%	2.79%	7.84%	-4.77%
1983	14.56%	7.55%	6.64%	19.98%	7.53%	11.81%	1983	11.79%	7.35%	4.21%	12.08%	6.65%	5.17%
1984	11.26%	7.57%	3.50%	10.68%	7.34%	3.15%	1984	7.88%	7.13%	0.72%	-6.32%	6.29%	-12.08%
1985	9.64%	7.44%	2.09%	11.31%	8.44%	2.69%	1985	7.01%	7.22%	-0.20%	6.66%	6.75%	-0.09%
1986	6.15%	7.18%	-0.98%	-6.65%	8.15%	-13.91%	1986	0.11%	6.56%	-6.14%	-21.20%	5.65%	-25.67%
1987	7.14%	6.93%	0.21%	8.13%	7.78%	0.33%	1987	-5.34%	6.49%	-11.29%	4.31%	6.46%	-2.04%
1988	8.32%	6.90%	1.34%	-1.79%	7.12%	-8.47%	1988	3.65%	6.73%	-2.93%	-12.40%	7.34%	-18.73%
1989	7.74%	6.59%	1.10%	-21.96%	6.23%	-27.04%	1989	1.79%	6.27%	-4.28%	-9.18%	8.52%	-16.62%

	<u>MIDWEST</u>						<u>EAST</u>						
	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978	9.27%	7.63%	1.55%	9.53%	9.27%	0.24%	1978	26.36%	10.69%	14.51%	12.50%	9.00%	3.29%
1979	12.13%	8.62%	3.30%	12.10%	9.70%	2.24%	1979	35.10%	10.10%	23.28%	11.39%	9.46%	1.81%
1980	12.51%	8.56%	3.71%	13.54%	9.21%	4.06%	1980	13.84%	7.85%	5.66%	11.64%	9.42%	2.07%
1981	11.93%	8.27%	3.45%	8.45%	9.28%	-0.76%	1981	16.11%	7.81%	7.86%	10.06%	9.41%	0.60%
1982	6.86%	7.98%	-1.05%	2.80%	8.74%	-5.57%	1982	7.26%	8.14%	-0.83%	14.30%	8.66%	5.73%
1983	11.18%	7.61%	3.37%	10.87%	8.97%	1.76%	1983	21.02%	7.46%	12.86%	16.71%	8.39%	8.55%
1984	13.27%	8.04%	4.93%	5.72%	8.00%	-2.18%	1984	16.06%	6.95%	8.67%	15.18%	8.77%	6.56%
1985	9.59%	8.36%	1.16%	9.72%	8.12%	1.51%	1985	12.56%	7.53%	4.76%	10.82%	8.48%	2.40%
1986	8.96%	7.68%	1.21%	6.90%	8.67%	-1.66%	1986	11.99%	7.66%	4.09%	10.26%	7.99%	2.30%
1987	9.55%	7.70%	1.75%	6.02%	9.50%	-3.24%	1987	11.22%	7.14%	3.88%	8.19%	8.44%	-0.27%
1988	5.35%	6.99%	-1.55%	-22.58%	6.72%	-27.82%	1988	8.57%	7.48%	1.03%	-12.54%	7.26%	-19.55%
1989	6.01%	6.79%	-0.74%	-26.24%	13.07%	-35.54%	1989	6.19%	6.88%	-0.66%			

REGION-PROPERTY TYPE ANNUAL PERFORMANCE (YEAR ENDING MARCH 31)

OFFICE/WEST

	NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978						
1979	18.02%	8.68%	8.78%			
1980	23.55%	8.02%	14.66%			
1981	27.26%	7.95%	18.21%			
1982	23.99%	6.99%	16.19%	44.32%	4.69%	38.16%
1983	8.74%	7.91%	0.78%	-8.95%	5.83%	-14.18%
1984	9.40%	7.13%	2.16%	23.79%	5.90%	17.16%
1985	8.75%	7.30%	1.37%	7.88%	5.80%	1.99%
1986	7.51%	7.29%	0.21%	10.00%	7.94%	1.94%
1987	1.98%	6.90%	-4.68%	-16.75%	7.67%	-22.99%
1988	1.03%	6.64%	-5.34%	5.30%	6.47%	-1.11%
1989	3.06%	6.32%	-3.11%	-2.57%	5.27%	-7.54%
1990	4.04%	5.80%	-1.68%	-17.62%	4.31%	-21.39%

OFFICE/SOUTH

	NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978						
1979	9.84%	7.83%	1.90%			
1980	13.22%	9.17%	3.78%			
1981	14.51%	8.26%	5.89%			
1982	19.96%	8.54%	10.75%	24.99%	8.56%	15.47%
1983	11.24%	7.46%	3.57%	-1.70%	7.26%	-8.49%
1984	9.94%	6.50%	3.28%	5.15%	5.93%	-0.76%
1985	3.50%	6.38%	-2.75%	-13.94%	5.10%	-18.40%
1986	5.37%	6.58%	-1.16%	4.77%	6.00%	-1.17%
1987	-5.59%	5.61%	-10.75%	-33.23%	2.72%	-35.14%
1988	-15.95%	5.53%	-20.60%	0.94%	4.33%	-3.27%
1989	-1.48%	5.65%	-6.84%	-7.08%	5.20%	-11.88%
1990	-1.61%	5.66%	-6.97%	-5.87%	9.17%	-14.06%

OFFICE/MIDWEST

	NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978						
1979	11.24%	8.18%	2.89%			
1980	9.40%	8.19%	1.13%			
1981	8.32%	7.31%	0.95%			
1982	13.47%	7.21%	5.93%			
1983	9.24%	6.94%	2.19%	6.75%	9.41%	-2.49%
1984	13.10%	7.14%	5.66%	-0.05%	8.80%	-8.28%
1985	12.99%	7.76%	4.94%	6.20%	8.11%	-1.80%
1986	9.61%	8.27%	1.26%	-2.71%	6.30%	-8.58%
1987	7.25%	7.16%	0.09%	-0.57%	7.41%	-7.53%
1988	6.99%	7.04%	-0.05%	2.71%	7.64%	-4.64%
1989	2.98%	5.96%	-2.85%			
1990	2.97%	6.37%	-3.24%			

OFFICE/EAST

	NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978						
1979	33.25%	9.52%	22.15%	10.33%	9.05%	1.19%
1980	43.23%	8.04%	33.24%	9.71%	9.19%	0.49%
1981	17.62%	6.52%	10.59%	11.16%	9.21%	1.83%
1982	20.08%	7.47%	11.96%	9.31%	9.10%	0.18%
1983	4.57%	8.10%	-3.33%	9.87%	7.33%	2.40%
1984	23.84%	6.72%	16.31%	12.47%	7.43%	4.76%
1985	18.74%	6.59%	11.60%	12.96%	8.84%	3.87%
1986	12.44%	7.61%	4.57%	14.07%	9.29%	4.47%
1987	11.39%	7.53%	3.66%	13.68%	8.44%	4.93%
1988	8.62%	6.93%	1.60%	10.56%	9.04%	1.41%
1989	8.24%	7.62%	0.59%	-14.12%	7.65%	-20.56%
1990	4.33%	6.50%	-2.30%			

WAREHOUSE/WEST

	NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978						
1979	17.94%	8.29%	9.09%	15.06%	9.21%	5.48%
1980	29.69%	8.36%	20.09%	28.84%	9.10%	18.48%
1981	17.81%	7.96%	9.30%	12.75%	9.07%	3.45%
1982	16.07%	7.38%	8.25%	10.19%	8.82%	1.29%
1983	8.36%	7.63%	0.69%	4.97%	9.01%	-3.79%
1984	14.24%	7.48%	6.42%	14.04%	9.40%	4.34%
1985	11.84%	8.03%	3.60%	12.29%	9.15%	2.94%
1986	14.98%	7.97%	6.62%	15.29%	8.95%	5.96%
1987	9.68%	7.86%	1.73%	8.42%	8.70%	-0.26%
1988	13.76%	7.63%	5.81%	13.07%	8.88%	3.93%
1989	11.45%	7.16%	4.07%	0.41%	10.83%	-9.93%
1990	10.60%	6.81%	3.61%	-20.35%	14.47%	-31.28%

WAREHOUSE/SOUTH

	NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978						
1979	12.40%	8.04%	4.11%	9.68%	9.23%	0.42%
1980	19.65%	8.55%	10.45%	48.33%	9.05%	37.00%
1981	10.11%	8.74%	1.28%	9.28%	8.26%	0.96%
1982	15.48%	8.61%	6.46%	11.26%	8.77%	2.33%
1983	7.75%	8.88%	-1.05%	11.68%	9.75%	1.80%
1984	14.41%	8.14%	5.92%	20.92%	9.53%	10.65%
1985	12.68%	8.02%	4.40%	11.20%	9.34%	1.74%
1986	11.71%	8.49%	3.03%	11.72%	9.15%	2.40%
1987	5.06%	7.41%	-2.23%	-1.12%	9.63%	-10.03%
1988	2.25%	7.58%	-5.05%	3.12%	7.17%	-3.88%
1989	3.37%	7.91%	-4.28%	-18.32%	5.48%	-22.78%
1990	6.34%	7.01%	-0.64%	-14.25%	6.80%	-20.10%

WAREHOUSE/MIDWEST

	NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978						
1979	10.58%	6.84%	3.57%	9.65%	9.27%	0.35%
1980	13.99%	8.66%	5.01%	11.35%	9.64%	1.59%
1981	13.96%	8.91%	4.73%	15.29%	9.12%	5.78%
1982	11.55%	8.71%	2.67%	9.82%	9.45%	0.35%
1983	5.34%	8.00%	-2.51%	4.58%	8.48%	-3.66%
1984	5.41%	7.05%	-1.56%	9.31%	8.81%	0.47%
1985	10.61%	7.77%	2.68%	1.09%	7.33%	-5.88%
1986	9.09%	8.28%	0.76%	12.03%	8.21%	3.60%
1987	11.26%	8.33%	2.76%	7.03%	8.48%	-1.36%
1988	15.09%	8.68%	6.03%	8.58%	10.91%	-2.15%
1989	9.03%	8.50%	0.49%	-19.72%	7.55%	-25.72%
1990	9.14%	7.58%	1.48%	-26.48%	12.92%	-35.67%

WAREHOUSE/EAST

	NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978						
1979	13.74%	9.95%	3.53%	12.87%	8.87%	3.77%
1980	14.49%	10.06%	4.13%	9.93%	9.58%	0.32%
1981	17.34%	9.43%	7.42%	12.67%	9.84%	2.64%
1982	12.80%	8.14%	4.40%	21.09%	9.53%	10.81%
1983	14.32%	7.59%	6.37%	16.23%	8.51%	7.26%
1984	11.10%	7.62%	3.29%	16.48%	8.63%	7.36%
1985	12.61%	7.63%	4.71%	10.97%	8.38%	2.43%
1986	14.21%	7.39%	6.46%	9.02%	6.52%	2.39%
1987	10.24%	7.52%	2.58%	3.30%	7.31%	-3.80%
1988	21.26%	8.44%	12.08%	11.36%	8.96%	2.26%
1989	11.74%	7.53%	3.99%	-9.11%	7.15%	-15.48%
1990	8.09%	7.70%	0.37%			

REGION-PROPERTY TYPE ANNUAL PERFORMANCE (YEAR ENDING MARCH 31)

<u>R&D/WEST</u>							<u>R&D/SOUTH</u>						
	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978							1978						
1979	15.36%	9.05%	5.92%				1979	12.06%	10.88%	1.10%			
1980	15.53%	9.06%	6.07%				1980	31.23%	9.59%	20.25%	27.97%	6.25%	20.88%
1981	27.06%	9.06%	16.89%	13.64%	6.98%	6.37%	1981	18.05%	8.82%	8.68%	13.54%	8.66%	4.59%
1982	28.81%	7.88%	19.80%	14.88%	8.85%	5.65%	1982	18.25%	8.52%	9.16%	22.53%	9.07%	12.63%
1983	12.76%	7.63%	4.86%	16.98%	8.16%	8.31%	1983	14.28%	8.85%	5.10%	10.10%	8.15%	1.84%
1984	33.34%	8.01%	23.93%	10.61%	8.17%	2.30%	1984	16.07%	8.44%	7.18%	14.57%	6.49%	7.70%
1985	13.73%	7.35%	6.05%	15.59%	7.67%	7.50%	1985	13.25%	8.53%	4.44%	6.90%	6.71%	0.14%
1986	8.53%	7.56%	0.91%	5.66%	7.37%	-1.63%	1986	5.20%	8.44%	-3.04%	7.77%	4.99%	2.68%
1987	8.65%	7.70%	0.89%	1.06%	5.58%	-4.35%	1987	2.08%	7.62%	-5.25%	-2.20%	7.73%	-9.36%
1988	6.82%	7.26%	-0.42%	5.74%	7.65%	-1.81%	1988	0.13%	7.38%	-6.87%	5.83%	7.89%	-1.93%
1989	5.68%	7.76%	-1.97%	-9.03%	8.09%	-16.12%	1989	5.15%	7.64%	-2.35%	-5.82%	7.27%	-12.38%
1990	9.09%	8.11%	0.93%	-26.23%	4.18%	-29.78%	1990	-4.35%	5.93%	-9.84%	-25.00%	5.09%	-29.16%

<u>R&D/MIDWEST</u>							<u>R&D/EAST</u>						
	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978							1978						
1979	10.87%	9.00%	1.75%				1979	4.65%	7.14%	-2.38%	2.29%	2.29%	0.00%
1980	10.72%	8.88%	1.73%	18.78%	9.39%	8.79%	1980	12.74%	10.02%	2.53%	16.98%	9.34%	7.16%
1981	14.05%	9.49%	4.26%	10.77%	10.92%	-0.14%	1981	17.35%	7.79%	9.04%	9.15%	9.15%	0.00%
1982	11.43%	8.87%	2.41%	16.48%	9.09%	6.92%	1982	15.63%	8.19%	7.02%	30.10%	8.09%	20.81%
1983	6.96%	8.75%	-1.67%	2.40%	8.44%	-5.68%	1983	18.08%	8.64%	8.90%	14.18%	4.31%	9.63%
1984	10.69%	7.99%	2.55%	19.38%	8.93%	9.79%	1984	12.90%	8.95%	3.71%	7.81%	5.93%	1.80%
1985	10.31%	8.50%	1.70%	15.23%	9.07%	5.78%	1985	17.38%	9.64%	7.23%	20.12%	6.34%	13.13%
1986	9.48%	8.54%	0.88%	8.83%	8.29%	0.51%	1986	14.49%	8.76%	5.39%	2.54%	2.88%	-0.34%
1987	9.41%	8.28%	1.07%	6.64%	7.68%	-0.99%	1987	11.67%	7.94%	3.52%	4.31%	1.58%	2.70%
1988	5.45%	7.30%	-1.76%	3.13%	7.64%	-4.28%	1988	12.92%	7.43%	5.20%	-41.62%	4.16%	-44.01%
1989	4.35%	6.72%	-2.25%				1989	6.55%	7.10%	-0.53%	18.59%	4.31%	-22.00%
1990	1.98%	7.17%	-4.93%				1990	6.05%	7.17%	-1.06%			

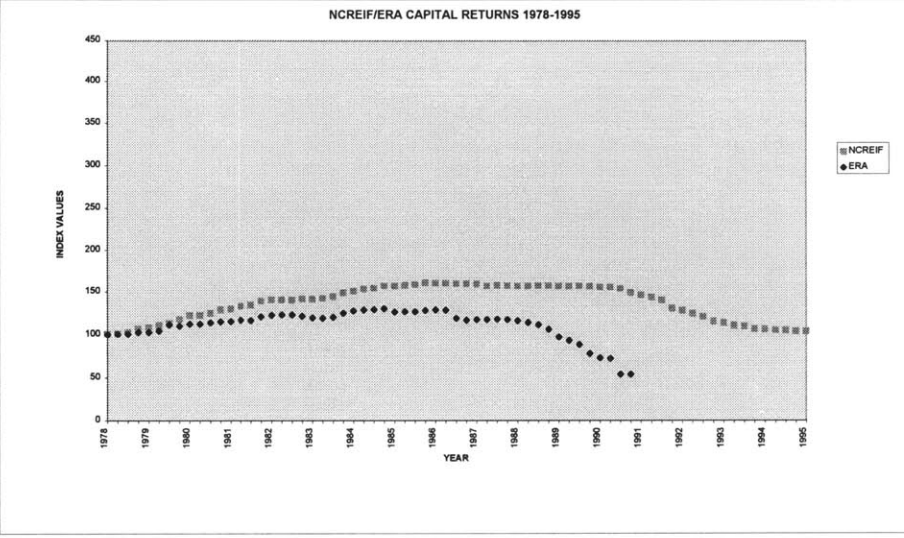
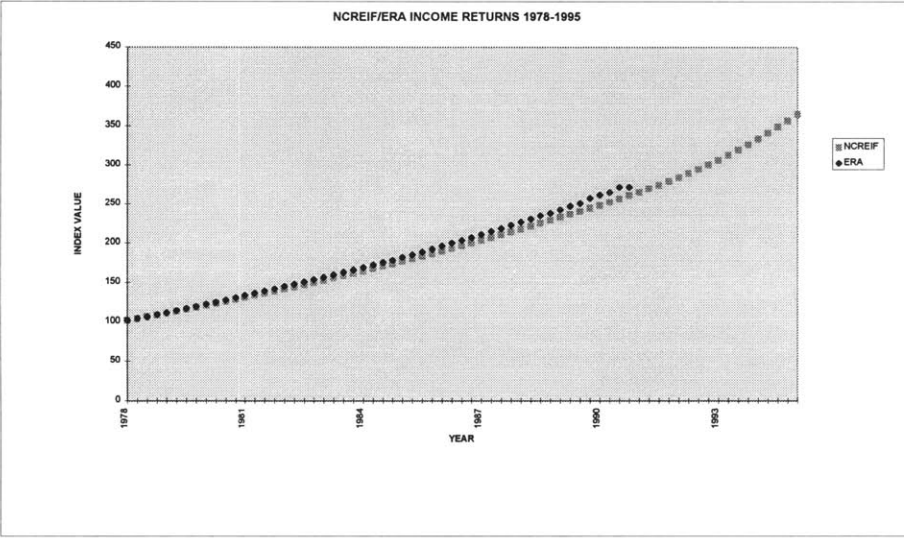
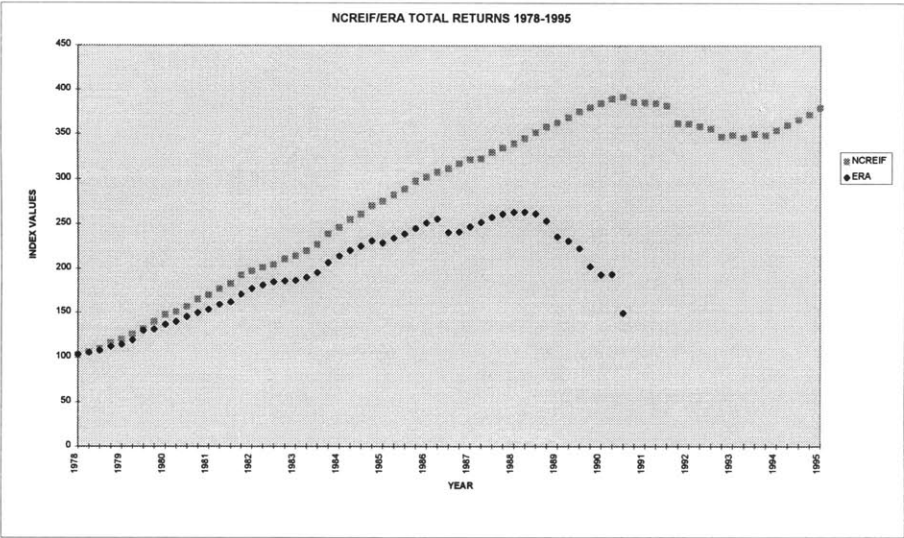
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	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978							1978						
1979	16.24%	8.99%	6.81%				1979	10.65%	7.97%	2.53%			
1980	12.68%	8.80%	3.65%				1980	11.85%	7.56%	4.05%	12.39%	9.07%	3.11%
1981	16.07%	8.36%	7.27%	12.29%	9.58%	2.54%	1981	3.23%	7.28%	-3.84%	5.17%	8.60%	-3.22%
1982	14.61%	8.12%	6.12%	-1.13%	9.78%	-10.15%	1982	9.32%	8.10%	1.15%	-4.18%	9.22%	-12.54%
1983	8.40%	8.35%	0.04%	6.26%	10.89%	-4.29%	1983	7.33%	8.61%	-1.20%	18.74%	9.80%	8.34%
1984	16.04%	7.98%	7.62%	18.79%	9.55%	8.64%	1984	11.60%	9.20%	2.24%	23.74%	8.82%	13.94%
1985	14.37%	7.68%	6.33%	17.37%	11.53%	5.38%	1985	17.24%	8.15%	8.57%	12.05%	9.72%	2.18%
1986	10.60%	6.97%	3.45%	15.50%	9.63%	5.48%	1986	9.19%	7.64%	1.47%	9.21%	9.27%	-0.06%
1987	10.71%	6.77%	3.76%	17.38%	10.05%	6.83%	1987	9.50%	7.38%	2.01%	5.80%	9.48%	-3.41%
1988	13.68%	6.58%	6.78%	11.59%	7.84%	3.53%	1988	5.41%	6.82%	-1.34%	10.20%	9.07%	0.99%
1989	16.97%	6.90%	9.58%	7.67%	7.85%	-0.17%	1989	10.05%	7.05%	2.85%			
1990	11.87%	6.35%	5.28%				1990	4.80%	6.42%	-1.55%			

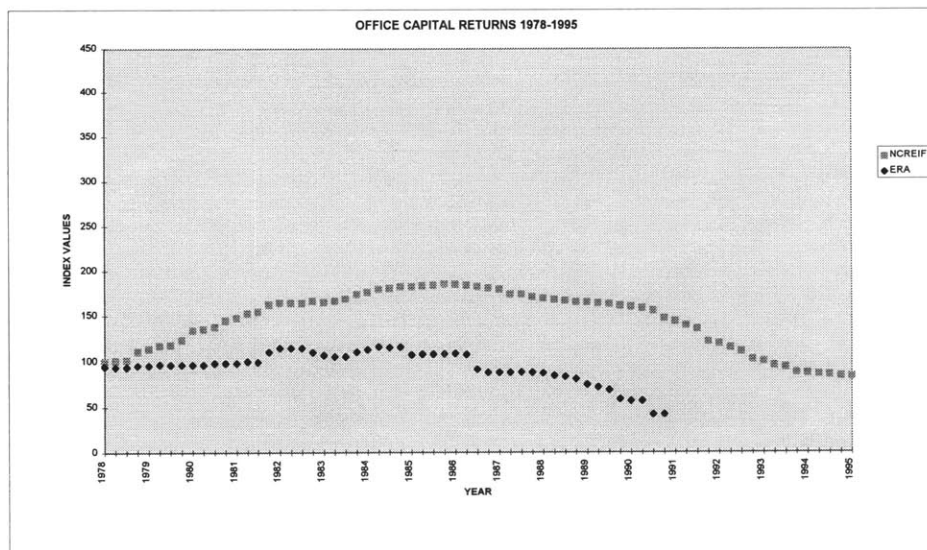
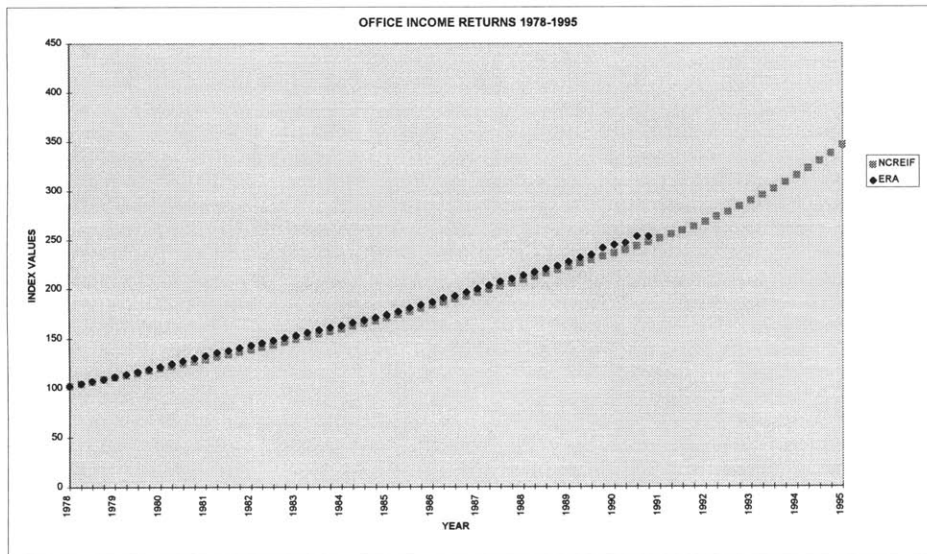
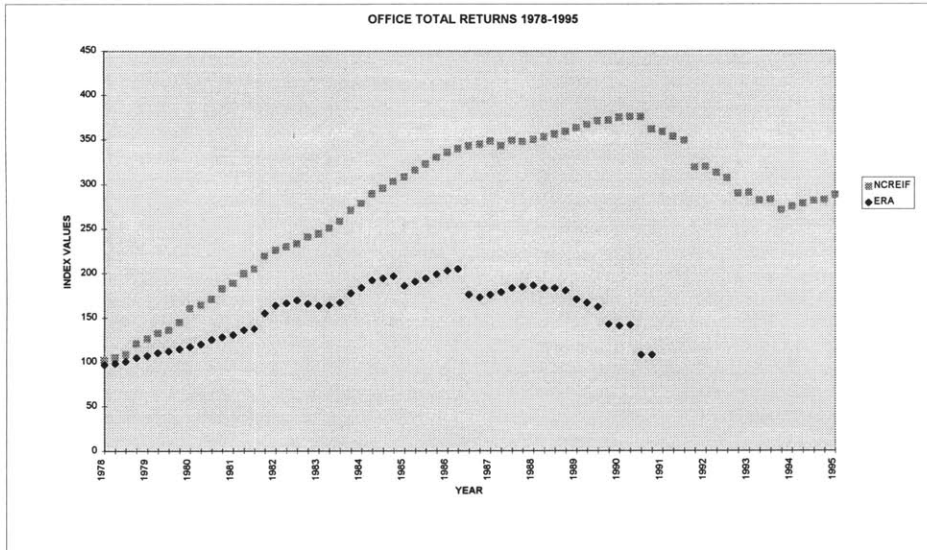
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	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	TOTAL	NCREIF INCOME	CAPITAL	TOTAL	ERA INCOME	CAPITAL	
1978							1978						
1979	-0.72%	6.76%	-7.09%	9.43%	9.42%	0.01%	1979	10.39%	8.66%	1.62%	15.56%	7.21%	7.97%
1980	3.05%	8.08%	-4.75%	10.83%	9.74%	1.02%	1980	13.62%	10.70%	2.71%	9.82%	9.82%	0.00%
1981	10.62%	8.86%	1.65%	8.23%	9.18%	-0.89%	1981	12.12%	9.02%	2.90%	13.77%	9.47%	4.04%
1982	7.95%	8.84%	-0.84%	-0.26%	9.18%	-8.85%	1982	7.08%	8.30%	-1.15%	-1.07%	9.89%	-10.21%
1983	1.39%	9.45%	-7.52%	-6.48%	10.23%	-15.50%	1983	14.32%	10.42%	3.62%	11.96%	11.01%	0.89%
1984	13.17%	9.14%	3.77%	12.73%	9.98%	2.57%	1984	23.63%	10.15%	12.58%	15.38%	10.16%	4.85%
1985	17.40%	8.81%	8.06%	16.12%	9.89%	5.84%	1985	12.60%	8.41%	3.94%	13.49%	9.89%	3.37%
1986	8.91%	8.71%	0.19%	2.60%	8.16%	-5.27%	1986	16.89%	8.04%	8.36%	16.71%	10.97%	5.33%
1987	11.87%	8.28%	3.38%	4.66%	5.82%	-1.08%	1987	16.83%	7.63%	8.72%	21.83%	9.83%	11.40%
1988	13.44%	8.39%	4.75%	-0.59%	4.39%	-4.73%	1988	14.76%	6.84%	7.54%	16.40%	8.92%	7.00%
1989	11.33%	7.88%	3.25%	-7.48%	3.99%	-11.12%	1989	12.09%	6.91%	4.93%	4.95%	8.90%	-3.70%
1990	11.24%	6.46%	4.56%				1990	11.32%	6.20%	4.90%			

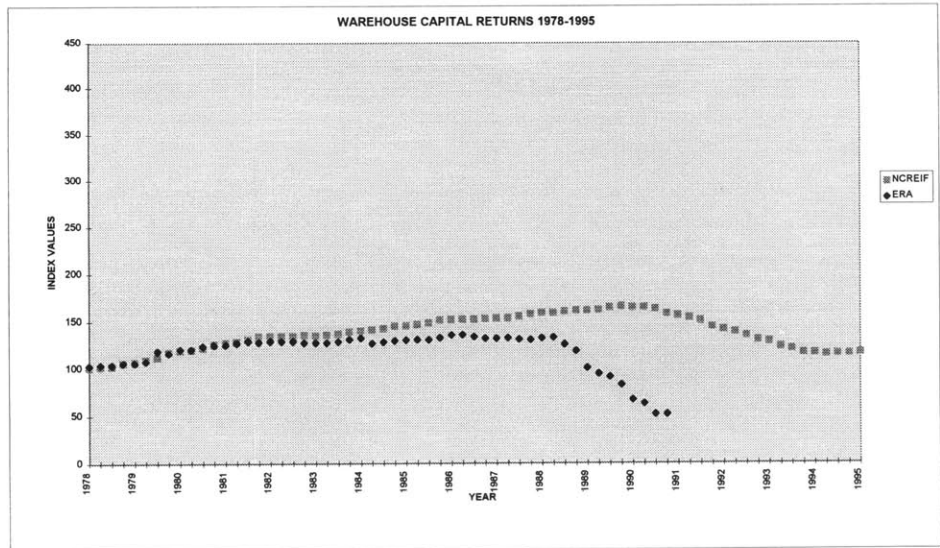
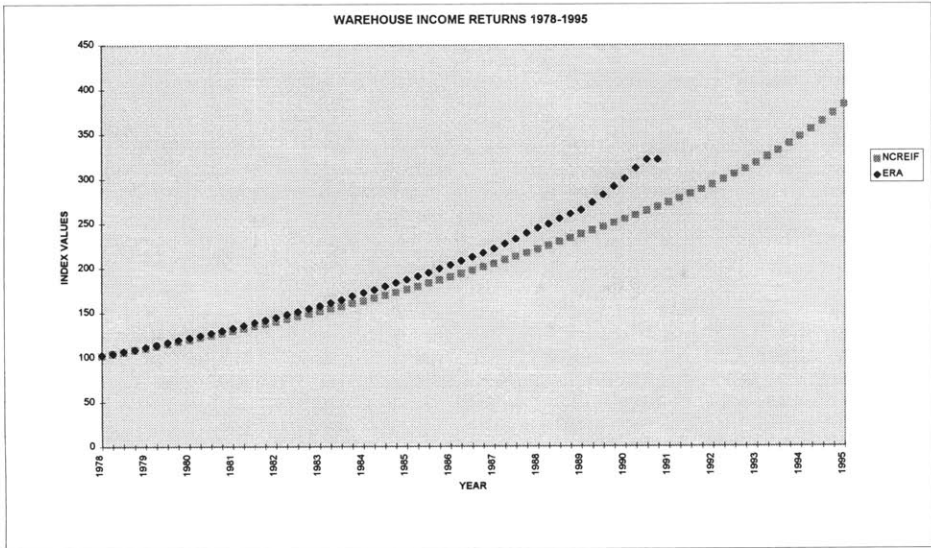
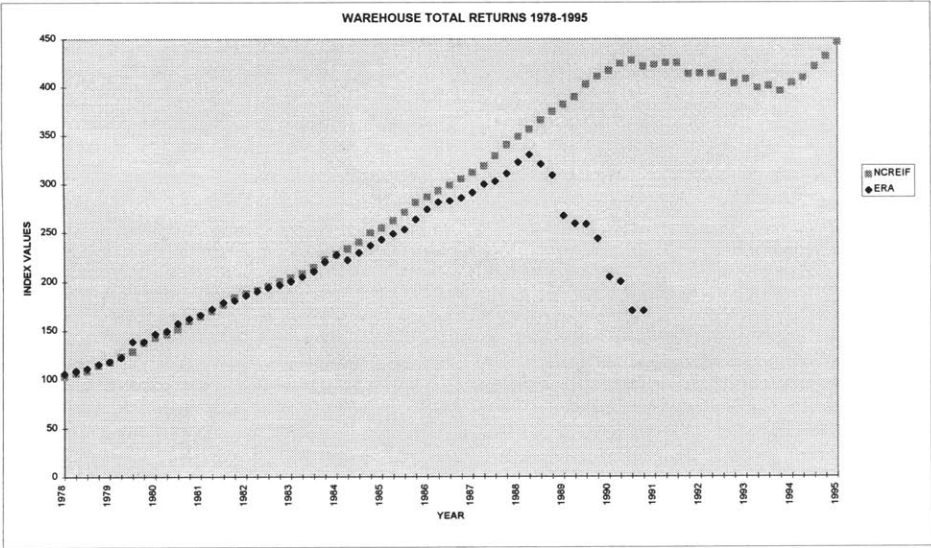
REGION-PROPERTY TYPE ANNUAL PERFORMANCE (YEAR ENDING MARCH 31)

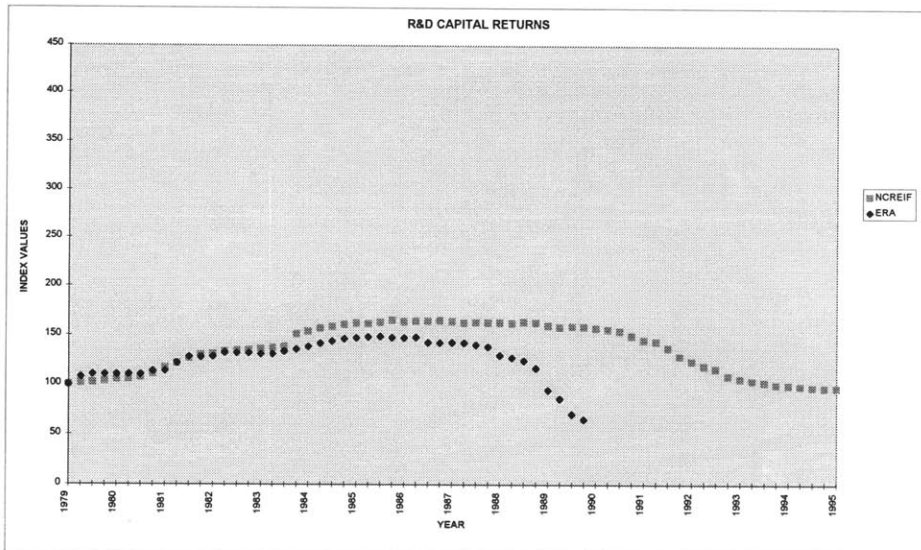
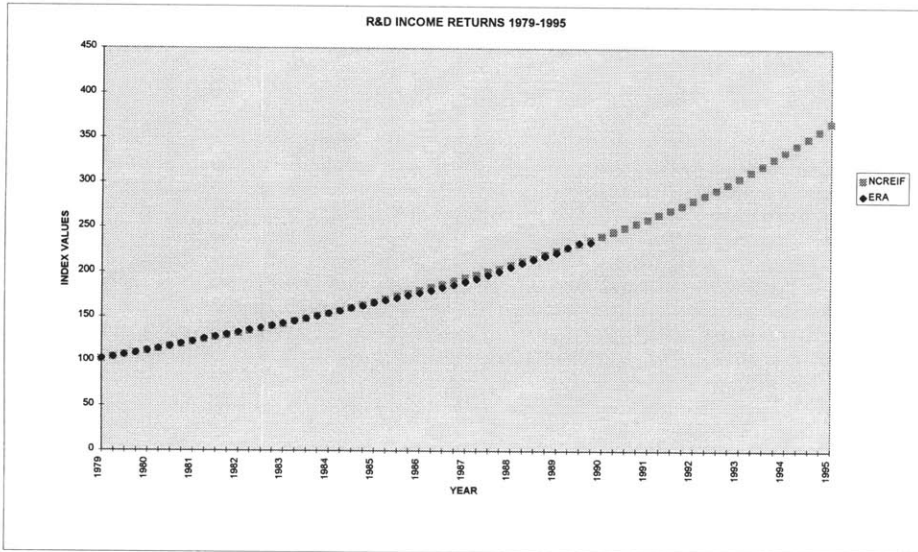
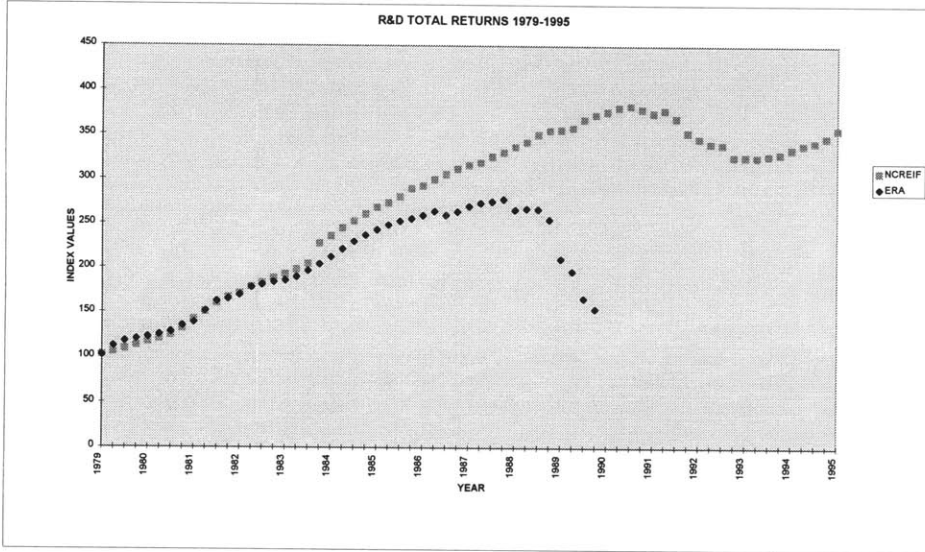
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	NCREIF			ERA			NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978												
1979												
1980												
1981												
1982									15.77%	5.44%	9.93%	
1983									18.70%	8.70%	9.36%	
1984									43.11%	4.66%	37.02%	
1985												
1986												
1987									13.40%	8.87%	4.24%	
1988									5.88%	6.14%	-0.24%	
1989									-13.27%	8.40%	-20.37%	
1990												

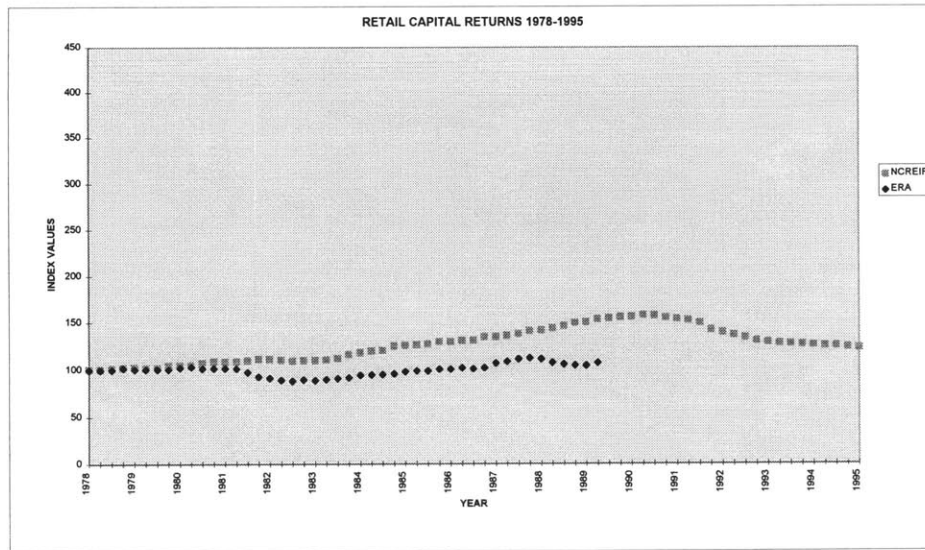
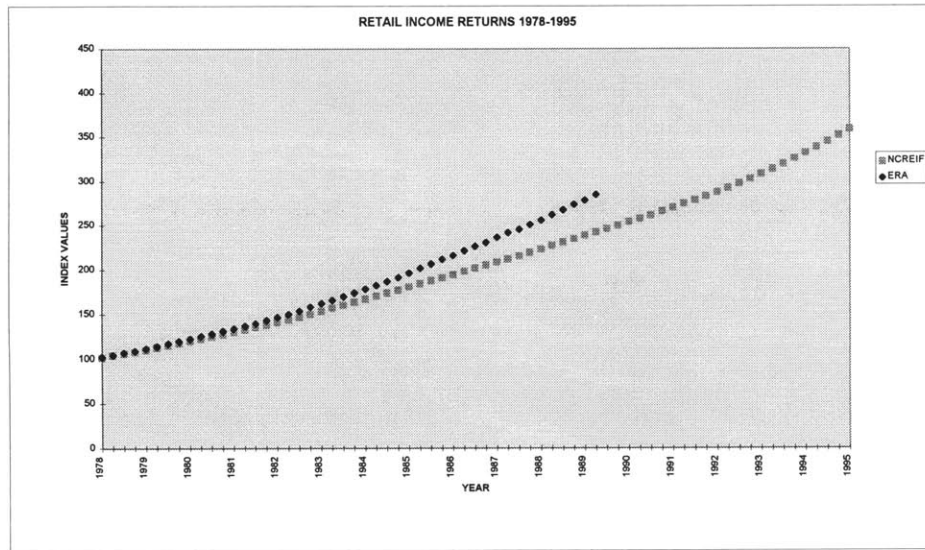
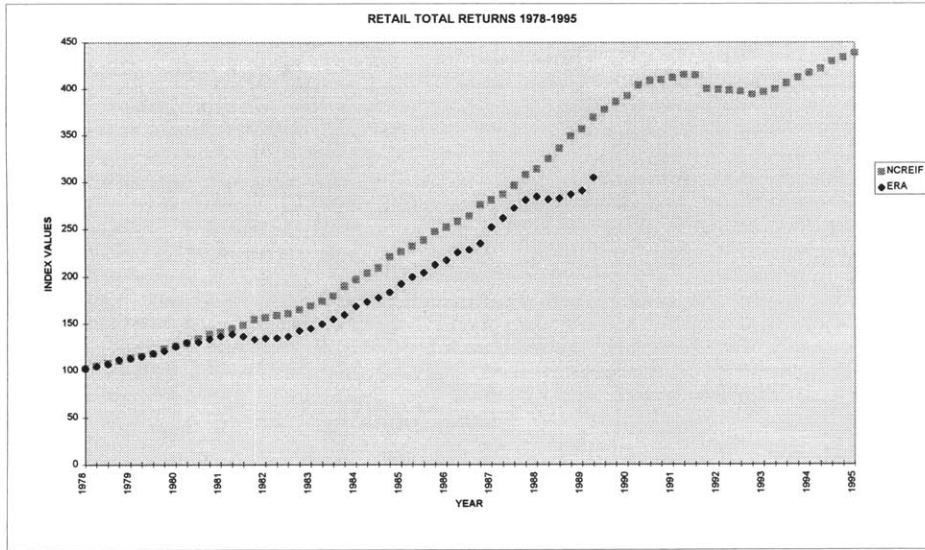
<u>APARTMENT/MIDWEST</u>							<u>APARTMENT/EAST</u>					
	NCREIF			ERA			NCREIF			ERA		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
1978												
1979												
1980												
1981												
1982									2.28%	10.55%	-7.60%	
1983									24.53%	10.12%	13.30%	
1984									31.71%	8.99%	21.21%	
1985									23.70%	8.45%	14.32%	
1986									3.72%	7.85%	-3.90%	
1987				12.21%	8.79%	3.21%			0.94%	8.19%	-6.84%	
1988				9.31%	8.15%	1.09%			-9.60%	7.74%	1.76%	
1989				-0.93%	5.12%	-5.86%			-7.33%	4.56%	-11.49%	
1990												

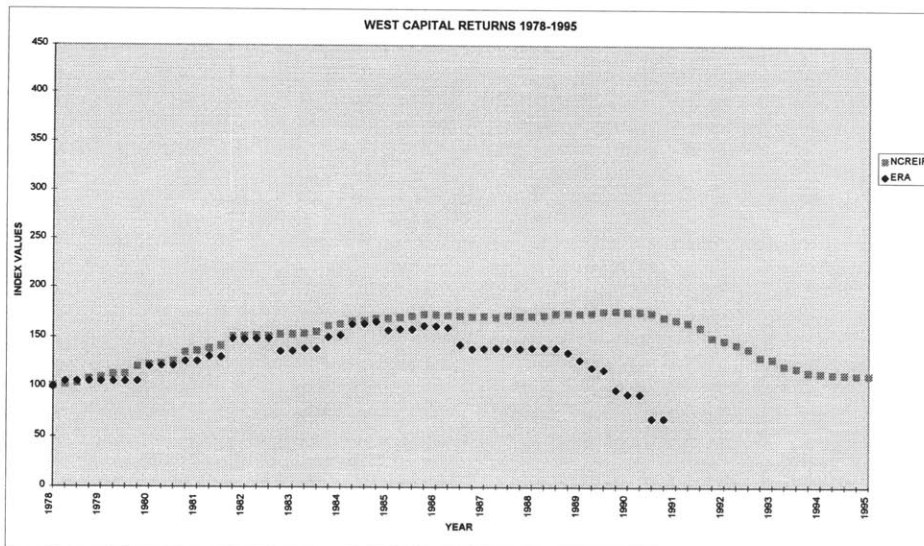
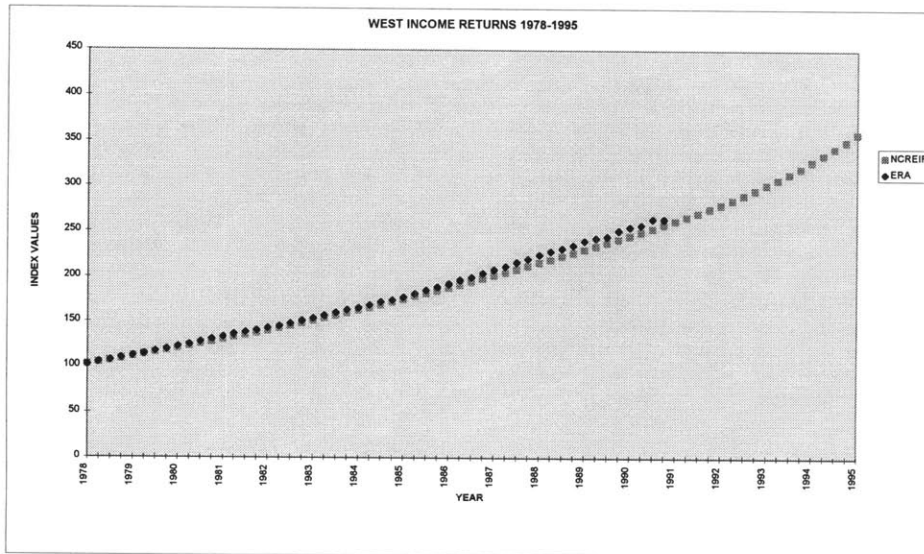
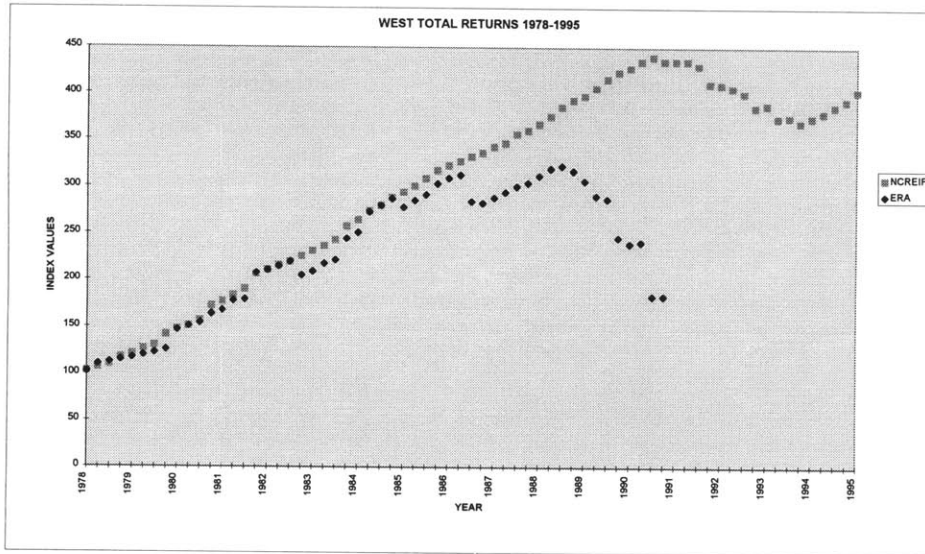


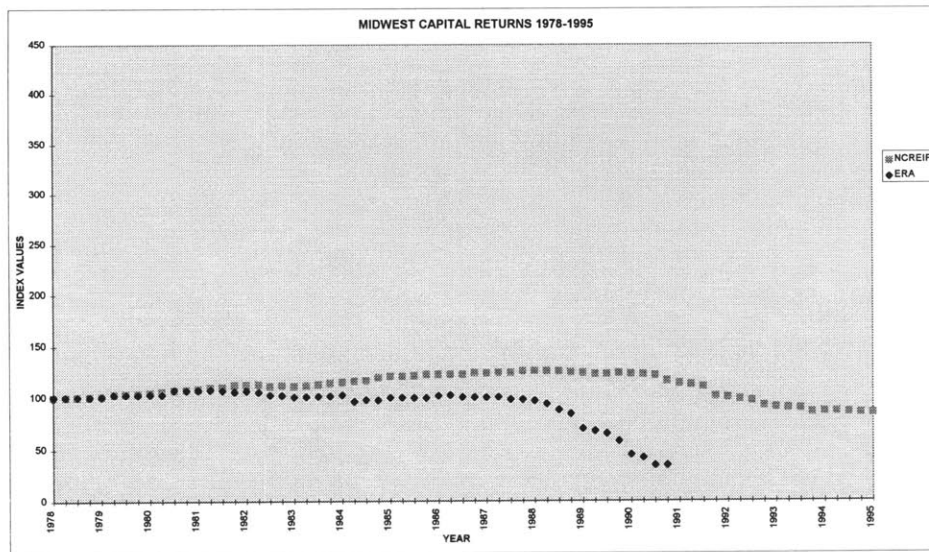
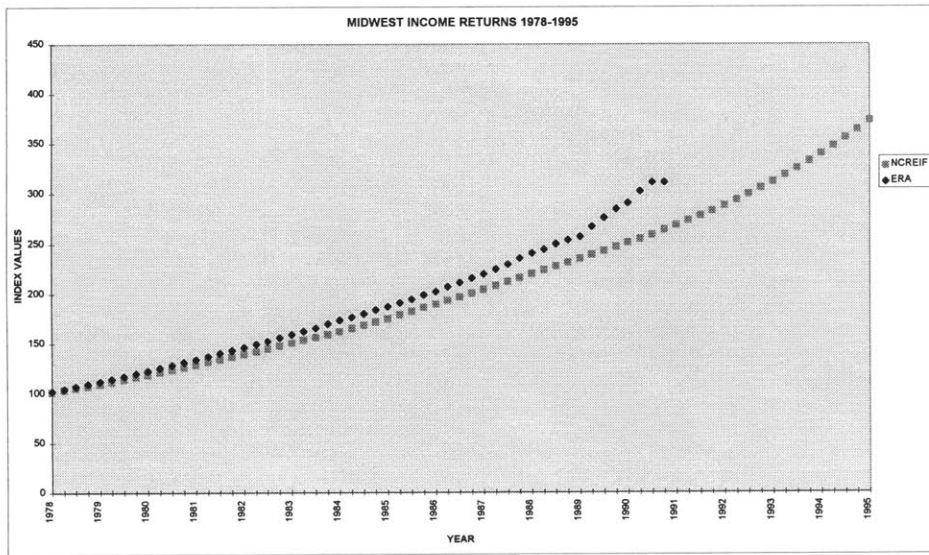
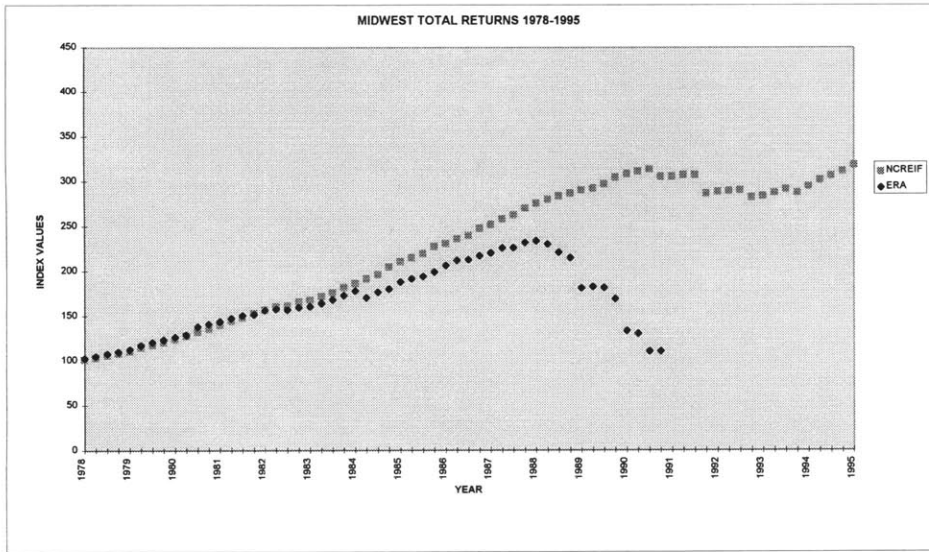


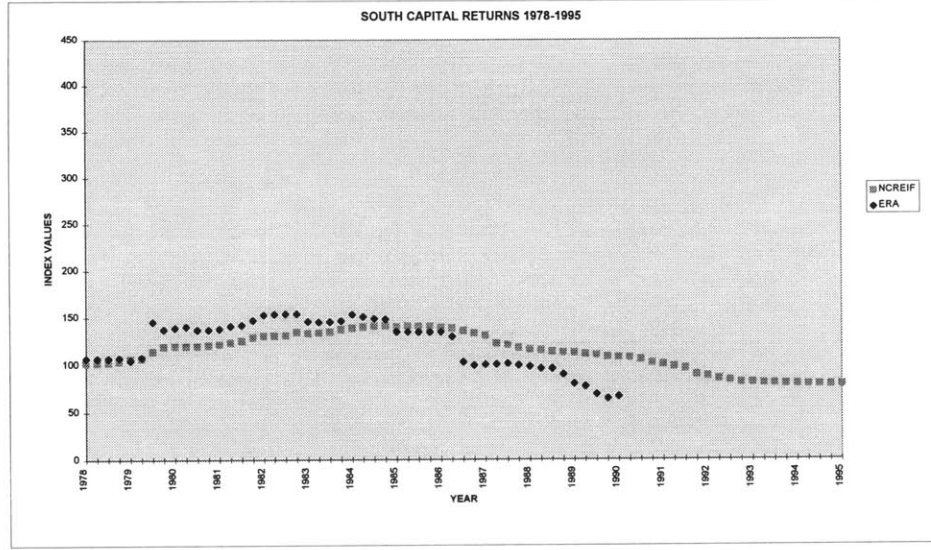
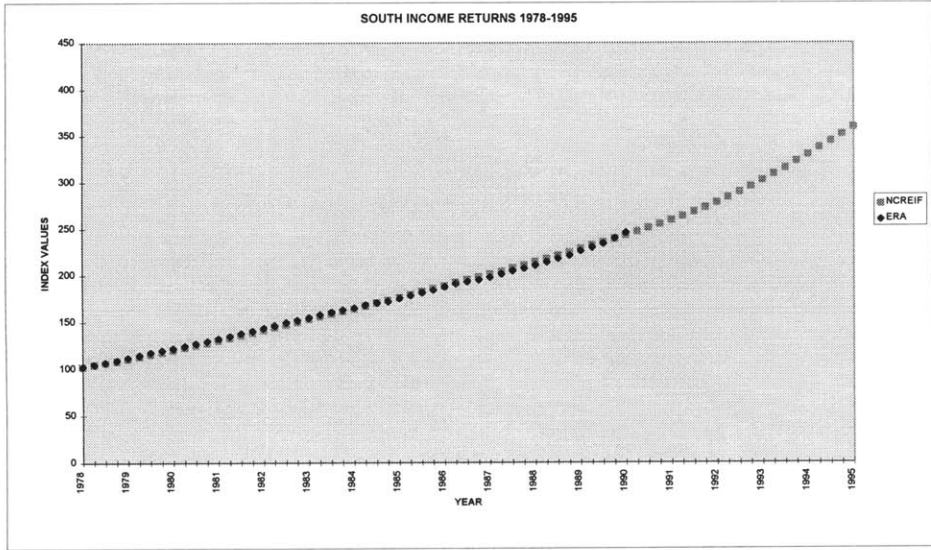
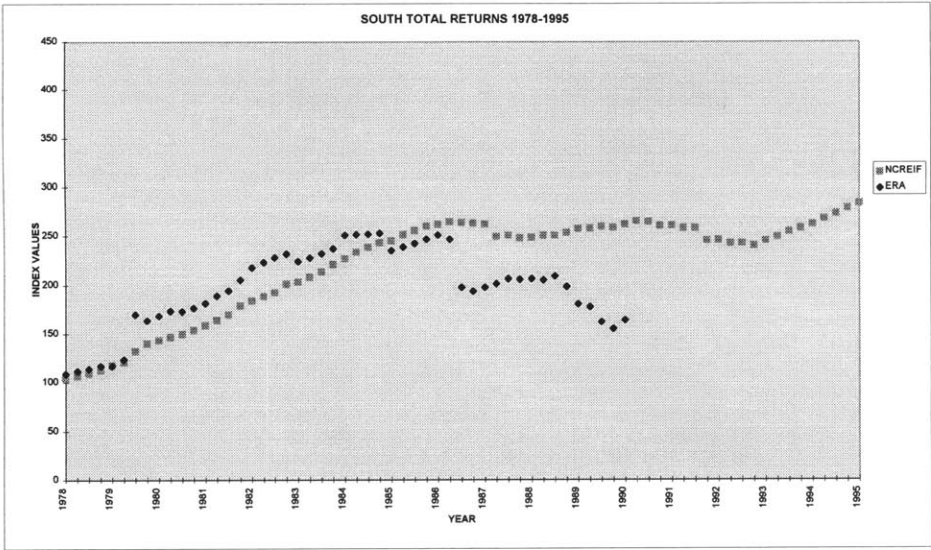


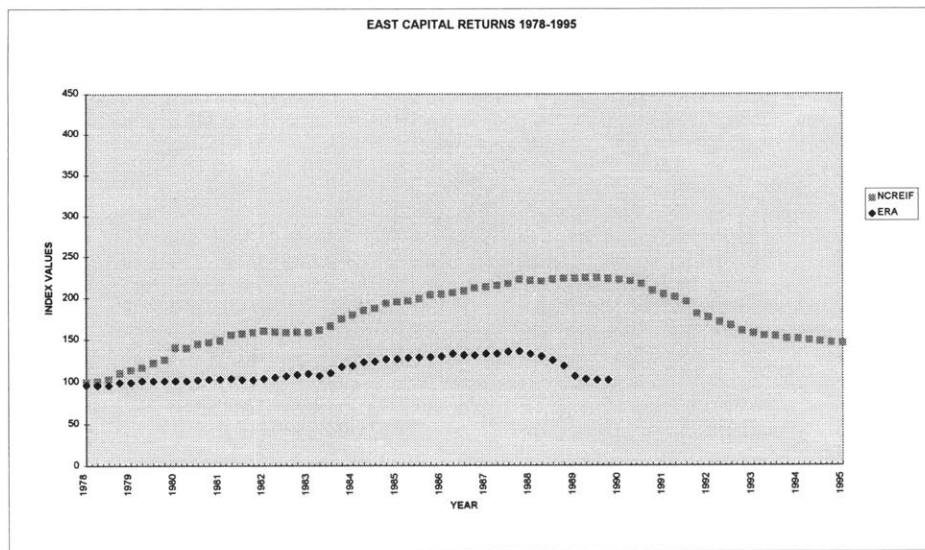
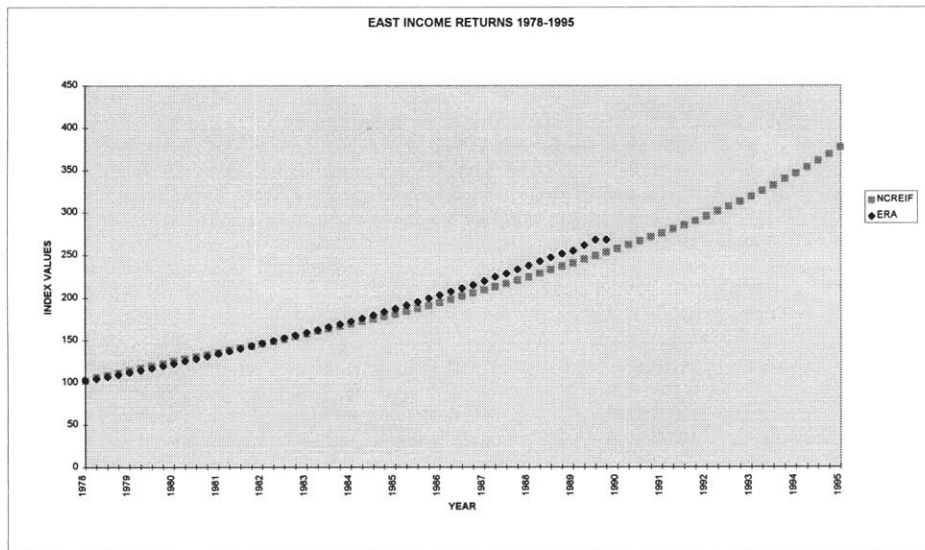
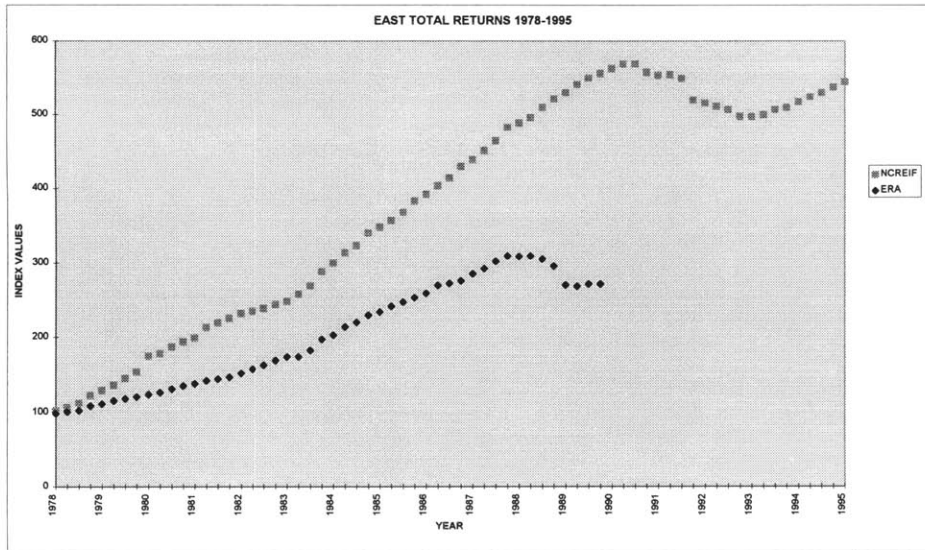












APPENDIX 4

ERA vs. “The Competition”

Appendix 4. The exhibit in this appendix provides detailed annual performance information between 1978-1987 for the ERA, the NCREIF index and six comparable insurance company open-end commingled funds.

ANNUAL PERFORMANCE/RATES OF RETURN: THE ERA VS. "THE COMPETITION"

FUND	1978			1979			1980			1981			1982		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
HANCOCK ERA	11.8%	9.3%	2.5%	19.0%	10.2%	8.8%	14.2%	10.6%	3.6%	14.3%	10.3%	4.0%	8.8%	8.8%	0.0%
AETNA RESA	N/A	N/A	N/A	13.5%	10.0%	3.5%	17.6%	9.9%	7.7%	17.4%	10.2%	7.2%	9.8%	9.1%	0.7%
CIGNA SAR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16.3%	9.5%	5.8%
EQUITABLE PRIME	14.0%	9.3%	4.7%	14.9%	9.4%	5.5%	12.6%	8.6%	4.0%	17.3%	9.0%	8.3%	8.3%	8.7%	-4.0%
METROPOLITAN TOWER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.8%	6.0%	3.8%
PRUDENTIAL PRISA	20.9%	10.4%	10.5%	25.4%	10.3%	15.1%	23.4%	9.8%	13.6%	17.0%	8.9%	8.0%	5.3%	8.0%	-2.7%
PRUDENTIAL PRISA II	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16.2%	10.3%	5.9%	11.2%	9.0%	2.2%
NCREIF	17.1%	8.8%	7.8%	22.5%	8.9%	12.7%	15.2%	8.3%	6.5%	16.1%	8.0%	7.7%	8.6%	8.0%	0.5%

FUND	1983			1984			1985			1986			1987		
	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL	TOTAL	INCOME	CAPITAL
HANCOCK ERA	13.2%	8.4%	4.8%	11.8%	7.8%	4.0%	6.6%	7.5%	-0.9%	-2.0%	6.5%	-8.5%	7.5%	7.2%	0.3%
AETNA RESA	12.9%	9.0%	3.9%	13.1%	9.0%	4.1%	9.5%	8.4%	1.1%	7.7%	7.5%	0.2%	6.9%	6.8%	0.1%
CIGNA SAR	14.9%	9.3%	5.6%	14.2%	10.0%	4.2%	14.3%	10.1%	4.3%	8.7%	8.4%	0.3%	6.7%	7.1%	-0.5%
EQUITABLE PRIME	18.5%	7.7%	10.8%	14.1%	7.5%	6.6%	9.7%	7.1%	2.6%	8.4%	7.0%	1.4%	9.4%	7.0%	2.4%
METROPOLITAN TOWER	18.0%	9.8%	8.2%	20.0%	7.8%	12.2%	6.6%	6.7%	0.0%	10.4%	7.2%	3.3%	13.3%	7.3%	6.0%
PRUDENTIAL PRISA	11.2%	8.3%	3.0%	14.4%	8.2%	6.2%	8.9%	7.0%	1.9%	6.2%	7.0%	-0.8%	5.6%	7.2%	-1.6%
PRUDENTIAL PRISA II	14.1%	9.8%	4.3%	17.2%	10.1%	7.1%	11.7%	9.6%	2.1%	17.4%	9.4%	8.0%	9.5%	8.1%	1.4%
NCREIF	14.8%	7.5%	6.9%	11.9%	7.4%	4.2%	9.8%	7.6%	2.1%	6.4%	7.2%	-0.8%	5.5%	7.0%	-1.4%

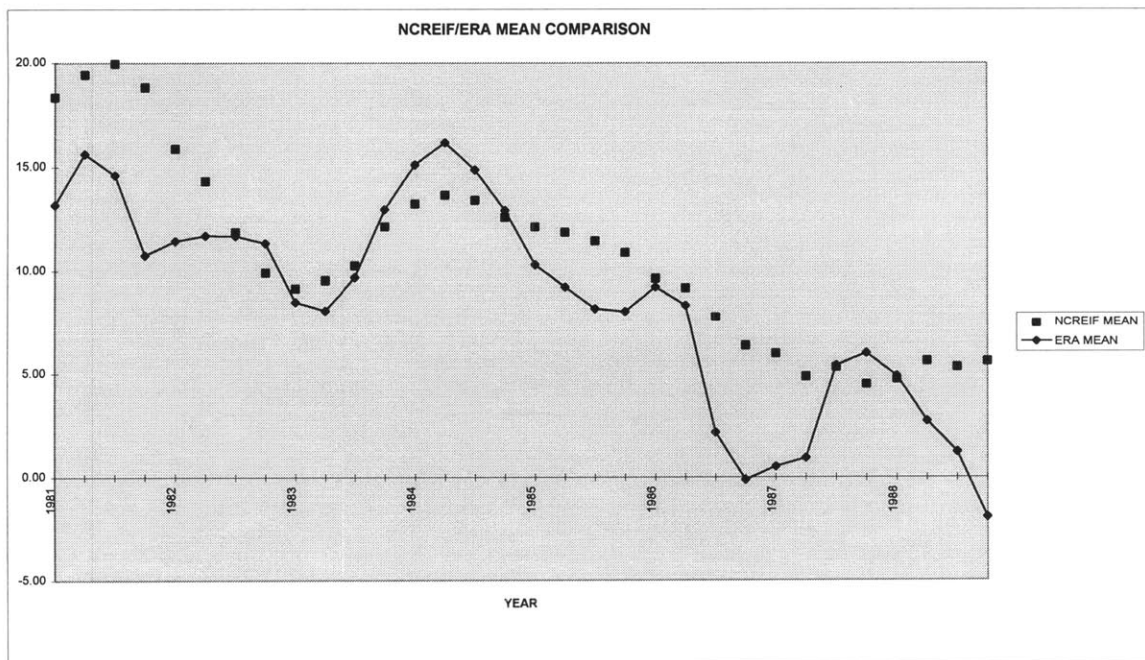
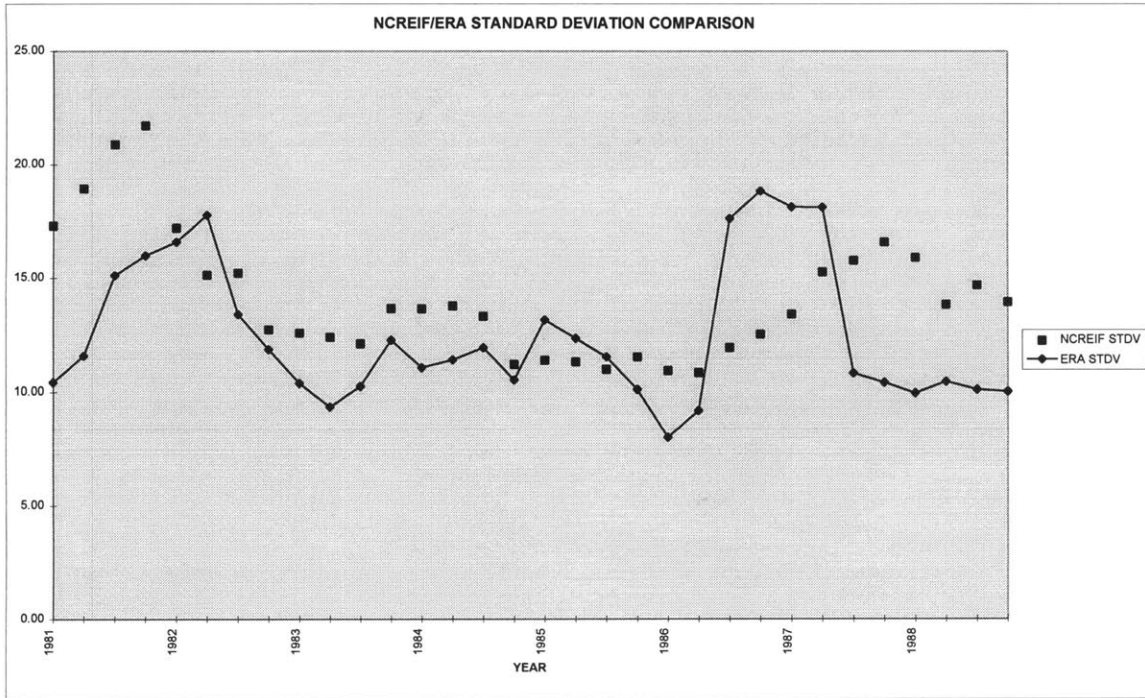
APPENDIX 5

NCREIF/ERA Standard Deviation Analysis

Appendix 6. The exhibits in this appendix provide an analysis (NCREIF vs. ERA) of property level rolling one year return standard deviations on a quarter by quarter basis for the entire Fund/Index.

**NCREIF/ERA Rolling One Year Returns
Standard Deviation Analysis**

	NCREIF	ERA							
	Number of	Number of	NCREIF	ERA	MEAN	NCREIF	ERA	STDV	
YYQ	Properties	Properties	MEAN	MEAN	VARIANCE	STDV	STDV	VARIANCE	
791	255	10	15.12	9.86	-5.26	9.73	2.97	-6.76	
792	279	12	17.54	11.71	-5.83	13.84	6.01	-7.83	
793	291	14	18.35	11.20	-7.15	15.14	5.87	-9.27	
794	309	16	19.10	10.50	-8.60	15.52	4.88	-10.64	
801	329	20	19.87	17.64	-2.23	19.19	21.72	2.53	
802	354	26	17.87	16.94	-0.93	17.01	20.45	3.44	
803	367	27	18.90	11.15	-7.75	17.03	9.57	-7.46	
804	404	34	17.98	12.41	-5.57	17.61	9.09	-8.52	
811	425	38	18.34	13.18	-5.16	17.30	10.42	-6.88	
812	463	43	19.43	15.62	-3.81	18.94	11.58	-7.36	
813	490	47	19.95	14.61	-5.34	20.88	15.12	-5.76	
814	522	54	18.83	10.76	-8.07	21.72	15.99	-5.73	
821	565	59	15.88	11.44	-4.44	17.20	16.59	-0.61	
822	613	69	14.31	11.71	-2.60	15.13	17.77	2.64	
823	674	82	11.85	11.68	-0.17	15.22	13.40	-1.82	
824	709	88	9.92	11.33	1.41	12.72	11.86	-0.86	
831	738	92	9.17	8.52	-0.65	12.57	10.39	-2.18	
832	754	94	9.55	8.10	-1.45	12.39	9.36	-3.03	
833	755	93	10.26	9.71	-0.55	12.10	10.26	-1.84	
834	785	95	12.13	12.97	0.84	13.65	12.27	-1.38	
841	804	92	13.23	15.11	1.88	13.64	11.06	-2.58	
842	814	94	13.65	16.19	2.54	13.76	11.41	-2.35	
843	809	94	13.40	14.87	1.47	13.31	11.94	-1.37	
844	788	94	12.58	12.93	0.35	11.19	10.52	-0.67	
851	838	94	12.12	10.31	-1.81	11.38	13.16	1.78	
852	850	91	11.86	9.24	-2.62	11.30	12.34	1.04	
853	862	90	11.44	8.19	-3.25	10.98	11.54	0.56	
854	859	86	10.89	8.06	-2.83	11.52	10.12	-1.40	
861	881	83	9.64	9.24	-0.40	10.92	8.03	-2.89	
862	885	73	9.18	8.35	-0.83	10.84	9.19	-1.65	
863	892	68	7.80	2.17	-5.63	11.93	17.61	5.68	
864	982	68	6.37	-0.12	-6.49	12.51	18.83	6.32	
871	989	71	5.99	0.53	-5.46	13.39	18.13	4.74	
872	998	72	4.87	0.95	-3.92	15.25	18.11	2.86	
873	979	70	5.32	5.42	0.10	15.77	10.82	-4.95	
874	1016	70	4.51	6.02	1.51	16.57	10.41	-6.16	
881	1041	69	4.75	4.91	0.16	15.90	9.96	-5.94	
882	1040	63	5.63	2.73	-2.90	13.82	10.45	-3.37	
883	1045	52	5.33	1.25	-4.08	14.67	10.12	-4.55	
884	1051	46	5.62	-1.93	-7.55	13.93	10.03	-3.90	
891	1092	30	5.61	-10.59	-16.20	14.03	13.62	-0.41	
892	1096	25	4.89	-13.64	-18.53	14.77	15.33	0.56	
893	1128	17	4.97	-16.04	-21.01	14.28	17.15	2.87	
894	1120	11	4.14	-17.38	-21.52	14.36	12.65	-1.71	
901	1139	6	3.87	-23.97	-27.84	13.15	20.73	7.58	
902	1160	3	4.06	-17.46	-21.52	12.11	9.63	-2.48	
903	1189	3	2.80	-35.55	-38.35	13.09	5.31	-7.78	



APPENDIX 6

The ERA IRR Summary

Appendix 5. The exhibits in this appendix provide detailed IRR information for the entire fund, by property type and region, over the life of the Fund (1977-1990).

ERA RANKINGS OF PROPERTY IRR's (Total Fund and by Property Type)

IRR RANKINGS	%	\$ VALUE*	COUNT
<u>TOTAL FUND</u>			
Poor (<0%-4%)	33%	\$ 198,977,899	27
Below Average (4%-8%)	18%	\$ 108,627,592	17
Average (8%-12%)	29%	\$ 176,849,192	45
Above Average (12%+)	19%	\$ 116,932,527	36
Total		\$ 601,387,210	125

INDUSTRIAL/WAREHOUSE

Poor (<0%-4%)	6%	\$ 8,135,777	3
Below Average (4%-8%)	36%	\$ 52,550,034	9
Average (8%-12%)	24%	\$ 34,276,758	16
Above Average (12%+)	34%	\$ 49,931,181	18
Total		\$ 144,893,750	46

OFFICE

Poor (<0%-4%)	50%	\$ 116,619,362	12
Below Average (4%-8%)	20%	\$ 46,038,491	5
Average (8%-12%)	23%	\$ 53,678,568	8
Above Average (12%+)	7%	\$ 15,673,461	4
Total		\$ 232,009,882	29

R&D/OFFICE

Poor (<0%-4%)	47%	\$ 30,492,546	8
Below Average (4%-8%)	15%	\$ 10,039,067	3
Average (8%-12%)	29%	\$ 19,053,727	8
Above Average (12%+)	9%	\$ 5,554,667	4
Total		\$ 65,140,007	23

RETAIL

Poor (<0%-4%)	10%	\$ 6,350,000	1
Below Average (4%-8%)	0%	\$ -	0
Average (8%-12%)	75%	\$ 48,659,450	9
Above Average (12%+)	16%	\$ 10,197,050	4
Total		\$ 65,206,500	14

APARTMENTS

Poor (<0%-4%)	34%	\$ 23,630,214	2
Below Average (4%-8%)	0%	\$ -	0
Average (8%-12%)	27%	\$ 18,780,689	2
Above Average (12%+)	40%	\$ 28,015,668	3
Total		\$ 70,426,571	7

ERA RANKINGS OF PROPERTY IRR's (by Region)

IRR RANKINGS	%	\$ VALUE*	COUNT
<u>WEST</u>			
Poor (<0%-4%)	28%	\$ 30,650,336	4
Below Average (4%-8%)	28%	\$ 31,388,491	3
Average (8%-12%)	27%	\$ 29,369,000	9
Above Average (12%+)	17%	\$ 19,286,738	4
Total		\$ 110,694,565	20
<u>SOUTH</u>			
Poor (<0%-4%)	55%	\$ 100,321,009	10
Below Average (4%-8%)	10%	\$ 18,263,000	3
Average (8%-12%)	15%	\$ 27,840,562	7
Above Average (12%+)	20%	\$ 36,791,268	10
Total		\$ 183,215,839	30
<u>MIDWEST</u>			
Poor (<0%-4%)	24%	\$ 30,469,554	8
Below Average (4%-8%)	42%	\$ 53,726,101	11
Average (8%-12%)	33%	\$ 42,103,281	15
Above Average (12%+)	1%	\$ 1,639,667	1
Total		\$ 127,938,603	35
<u>EAST</u>			
Poor (<0%-4%)	14%	\$ 23,787,000	3
Below Average (4%-8%)	3%	\$ 5,250,000	1
Average (8%-12%)	47%	\$ 77,536,349	13
Above Average (12%+)	36%	\$ 59,214,854	13
Total		\$ 165,788,203	30

APPENDIX 7

“Economic Location” Defined

Appendix 7. Provides excerpts from contemporary literature defining the diversification theory using “economic location” (see below).

Economic location is a market based concept initially defined in terms of employment performance zones (EPZs). Employment growth rates for individual markets are compared with the growth rate of the U.S. as a whole. Differences between markets are statistically measured and similar markets are grouped together and used for diversification purposes. The second definition of economic location involves dominant employment categories (DEC). This scheme focuses on the characteristics of local economies which import and export goods, services and capital in a fashion similar to the larger U.S. economy.

For additional information refer to:

“Managing Real Estate Portfolios”, ed. Susan Hudson-Wilson and Charles H. Wurtzebach (New York: Irwin 1994), pg. 177-179.

“The Handbook of Real Estate Portfolio Management”, ed. Joseph L. Pagliari, Jr. (Chicago: Irwin, 1995), pg. 86-87.

“Refining the Analysis of Regional Diversification for Income-Producing Real Estate”, David Hartzell, D. Shulman and C. Wurtzebach, *The Journal of Real Estate Research*, (Winter 1987)

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