



NCREIF

National Council of Real Estate Investment Fiduciaries

FREQUENTLY ASKED QUESTIONS ABOUT NCREIF AND THE NCREIF PROPERTY INDEX (NPI)

WHO/WHAT IS NCREIF?

Overview

The National Council of Real Estate Investment Fiduciaries (NCREIF) is a not-for-profit institutional real estate investment industry association. It was established in 1982. NCREIF is supported by a membership base that includes institutional real estate investment managers, institutional investors – predominately pension funds – and certain classes of professional businesses that provide services to institutional investors - public accountants, pension real estate consultants, and appraisers – and academics.

NCREIF serves the institutional real estate investment industry as its non-partisan central databank clearinghouse. NCREIF collects, processes, validates and then disseminates investment and operating information reporting on the risk/return behavior of real estate assets owned by institutional investors. NCREIF collects data on the performance of both individual commercial properties and collective investment funds. NCREIF publishes the NCREIF Property Index (NPI) and other statistical measures of performance on a quarterly basis.

Mission

NCREIF's primary mission is to promote understanding of real estate performance within the institutional real estate investment industry.

NCREIF executes its mission through:

- Collecting and managing high quality proprietary real estate investment performance and operating information supplied by its Data Contributing Members for use by industry and academia in researching and quantifying private market real estate risk and return behavior, all with the objective of improving market transparency.

- Calculating and publishing the NCREIF Property Index (NPI), along with other statistical measures of investment and operating results.
- Providing leadership and resources in codifying a single set of desired industry practices to improve standardization of financial accounting, property valuation procedures and reporting real estate investment results, all of which is published in a body of work known as the Real Estate Information Standards (REIS).

History

NCREIF dates its origins to the mid 1970s, when tax-exempt institutional investors, mostly large corporate and public defined benefit pension funds, first began allocating capital to investment in U.S. commercial real estate. Investment attributes sought included rates of return competitive with mainstream assets, stocks and bonds, portfolio diversification benefits and inflation protection.

Even though many pension funds were intuitively receptive to adding real estate to their portfolios, the lack of any historical risk and return performance information was a barrier to entry. There was neither a time series of real estate returns going back twenty or even ten years, nor a suitable benchmark against which to compare a given real estate portfolio's return with that of a peer universe.

NCREIF was set up specifically to address the tax-exempt institutional investors need to develop private real estate market databases and risk and return measures. At the same time, NCREIF accepted the responsibility of promoting independent academic research using NCREIF data. Institutional investors often look to the academic community to independently validate or dispute the veracity of investment research published by the investment industry, particularly asset classes never before subjected to independent research.

Well-known pension consultant Frank Russell Company was the initial impetus behind the establishment of NCREIF. Russell began recommending real estate investment to its pension fund clients in the early 1970s. It wasn't long before clients were asking for a standard measure of real estate performance.

Russell began working closely with fourteen real estate managers who agreed, under letters of confidentiality, to supply proprietary property level data needed for constructing a proto-type performance index. Academics from the fields of real estate and finance accepted invitations to participate. This effort was launched in 1977. A trial index was constructed and presented to data contributors in 1979. It was then subjected to in-depth analysis and critique by Russell's in-house quantitative research team, the individual data contributors themselves, and, most important, the real estate and finance scholars whose expertise was called upon and whose opinions were sought.

In 1981, a decision to proceed with the development and publication of the first ever private real estate performance index was approved. The Index was named the FRC Property Index.

NCREIF was established in 1982 in recognition that there was a clear need for ongoing industry involvement in the entire process of data collection, index production and setting standards of information reporting. The fourteen managers that supplied the data for the trial index became the founding members of NCREIF. NCREIF in turn entered into an arrangement with the Frank Russell Company to collect data and publish the Index under joint sponsorship.

Over the next few years, membership increased and the NPI database and Index grew. The acceptance of the Index as a real estate measure gained a broader following as more tax-exempt capital flowed into real estate. In 1991, the name of the Index was modified to the Russell-NCREIF Property Index to reflect NCREIF's identity and its increasing role in overseeing data collection and promoting standardization.

In 1994, it was mutually agreed between NCREIF and Russell that NCREIF had evolved to the point where it was capable of taking over data collection and Index production. On January 1, 1995, thirteen years after inception, NCREIF assumed full Index responsibility. The name was changed to the NCREIF Property Index.

WHO ARE THE MEMBERS OF NCREIF?

NCREIF members are firms, not individuals except in the case of Academic Members, and the current count of member firms is 215. Membership is broken out into three major categories:

- Data Contributor Members which include institutional investors (mostly tax-exempt pension funds) and investment managers;
- Professional Members which include accountants, appraisers, pension consultants, or information vendors; and
- Academic Members which consists of full-time professors of real estate in the United States and other countries.

Attached is a list of Data Contributing Members that submit quarterly data to the NPI and also attached is a list of plan sponsor members, (or institutional investors), whose data is reported to NCREIF quarterly for inclusion in the NPI by investment managers or in a few cases, by their own internal staff.

According to the most recent data published by Pensions & Investments (P&I, September 30, 2004), an industry trade publication, the NCREIF investment manager Data Contributing Members manage in excess of \$150.0 billion of real estate on behalf of some 500 tax-exempt institutional investors. This same universe

of managers reports more than \$250.0 billion of total real estate assets under management.

NCREIF's institutional investor, (or plan sponsor), Data Contributing Members are among the nations largest public and private pension funds. They report combined portfolio assets of nearly \$1.0 trillion. Real estate target allocations range between 5% and 10% of total assets. The P&I publication reported that this group owns real estate investments valued at more than \$56.0 billion.

As a condition of NCREIF membership, a real estate investment manager/advisor or a plan sponsor agrees to submit to NCREIF all requested property level and fund level data on those real estate investments/assets under their stewardship. The NCREIF Board of Directors has the authority to require members to submit additional data fields or types of data at any time.

If an organization chooses not to submit data to NCREIF going forward, their membership will be revoked automatically. This has not happened historically except in cases such as mergers/acquisitions of firms, firms that go out of business or in some instances the securitization of properties.

Any organization that qualifies as a NCREIF Data Contributing Member must join under that category and submit their data to NCREIF quarterly, they cannot join as a Professional Member. This rule is to specifically prohibit "free riders" and index selectivity bias. Professional Membership is strictly for firms that do not have assets under management and are service providers to the industry.

Another type of Data Contributing Member are specialty investment managers/advisors that acquire and manage farmland and timberland real estate assets for tax-exempt institutional real estate investors. All rules of data submission requirements apply to this group of Data Contributing Members as well. NCREIF publishes quarterly Farm and Timber investment return indices.

Within the Data Contributing Membership is also a subcategory called a Non-NPI Qualifying Data Contributing Member (formerly called an Affiliate Member). These members can be real estate investment managers, life insurance companies, public or private real estate operating companies or real estate developers that have assets under management but those assets do not qualify for inclusion in the NPI. These members are still required to submit certain data to NCREIF, such as operating data, for the larger "research" database but their data will not be included in the NPI. An example of this might be property types that are not currently in the NPI such as Senior Housing or Self Storage, or properties held by taxable investors, such as Public REITs or Insurance Company General Accounts. Assets that NCREIF currently does not collect any data on at all include mezzanine debt, real estate operating company entity level investments and foreign real estate.

The membership of any Data Contributing Member who fails to comply with NCREIF's data submission rules is terminated.

Professional Members

Professional Membership is open to individuals or businesses who provide services to the institutional real estate industry. NCREIF Professional Members include public accounting firms, pension real estate consultants, commercial real estate appraisers, investment bankers, asset strategy consultants, real estate brokerages, law firms, and information vendors.

Academic Members

NCREIF strongly encourages individuals with full-time academic appointments who pursue study in real estate or related fields – urban economics, real estate finance, urban planning, business administration, and corporate finance – become academic members. Of specific interest – scholars who have research interest in using NCREIF data.

HOW IS NCREIF GOVERNED?

Management and governance is the responsibility of NCREIF's full time staff and its Board of Directors.

Staff

Day to day operations are managed by a full-time staff of five. NCREIF also retains, on a project by project basis, outside consultants to manage certain initiatives whenever the situation warrants. Outsourcing to qualified third parties is an integral part of operations.

The internal staff is responsible for data collection and processing, production of NCREIF statistical products, website development and management, membership management, conference planning, education programs, annual business plan and manager of REIS revisions and Standing Committee projects, initiatives and responsibilities.

Committees

NCREIF's information collection, processing and dissemination is overseen and supported by NCREIF's seven working committees:

- Accounting
- Database & Indices
- Information Management
- Performance Measurement

- Portfolio Management
- Research
- Valuation

Each committee is made up of representatives of the broader NCREIF constituency. It is at the committee level where new NCREIF initiatives are first conceived; where completed initiatives are converted to information products; where outdated initiatives are removed from the docket. Each committee has a mission statement. When the individual committee mission statements are combined, they add up to the total mission of NCREIF. Each standing committee has responsibility for overseeing the execution of a segment of NCREIF's overall mission. Each of the Committee's mission statements can be found on the NCREIF web site. A link will also be provided.

Committees play an active and critically important role in NCREIF governance. Because of NCREIF's committee structure, NCREIF is very much a "bottom up" organization. Committees meet at least three times a year. They report to the Board of Directors on the progress of open business issues and make recommendations on completed business in need of Board approval. Any committee recommendation to the Board follows a lengthy period of inquiry, open discussion and debate. While the Board is the final decision maker, it is at the individual NCREIF committee level where all of the issues are taken under advisement, addressed and brought to resolution. It is the committee which makes the final decision as to when a new initiative or old business revisited requires Board action.

Board of Directors

The activities and affairs of NCREIF are managed by its Board of Directors. The Board operates within the rules, regulations and limitations as set forth in NCREIF's Articles of Incorporation and Bylaws.

The Board has delegated the day-to-day management of NCREIF's affairs to a full-time association staff. The staff conducts the business of NCREIF in accordance with the wishes of the Board.

The number of directors is nine. They serve four year staggered terms. Directors are elected by the membership. A subcommittee of the Board and key staff members serves as the Board's Nominating Committee. Five Board seats are set aside for Data Contributing Members - three to investment advisors/managers and two to plan sponsors. The remaining four Board seats are occupied by representatives of Professional or Academic members.

The Board meets at least three times a year. Committee Chairs report to the Board on the status of each committee's ongoing projects whenever the Board convenes. Board members are drawn from the ranks of CEOs, senior research professionals,

senior portfolio managers or other high-level decision makers of NCREIF member organizations.

WHAT IS REIS (REAL ESTATE INFORMATION STANDARDS)?

Since its inception, NCREIF has collaborated to formulate policies and procedures for standardizing the reporting of performance results for real estate investments acquired by tax-exempt institutional investors and owned in a fiduciary setting.

The Real Estate Information Standards (REIS) represents an evolving body of work that presents guidance and recommendations on behalf of the tax-exempt institutional real estate investment industry for calculating, presenting and reporting real estate investment returns. It is an ongoing effort to identify and codify a single set of desired industry practices and to improve standardization of valuation procedures, financial accounting and reporting of performance return information. The overriding objective is to promote disclosure of reliable information, which is relevant to investment decision making that includes adequate descriptions of policies and practices to facilitate analysis.

REIS seek to govern tax-exempt institutional investment in U.S. real estate only. REIS incorporates by reference, governance from other standard setting bodies where applicable to institutional investment in private equity real estate. Most importantly, REIS provides guidance in specific areas of valuation, market value accounting and performance measurement primarily because existing standards do not adequately address these particular issues, which are extremely important to tax-exempt institutional investors since they report to their beneficiaries using market value based financial reporting.

REIS specifically addresses Property Valuation Standards, Market Value Accounting and Reporting Standards, and Performance Measurement Standards. REIS is not authoritative. It provides guidance and recommendations based on current best practices and accounting standards.

NCREIF strongly encourages its members to comply with REIS but does not presently require third party verification of compliance from its members.

WHAT IS THE NCREIF PROPERTY INDEX (NPI)?

The NCREIF Property Index is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only.

All properties in the NPI have been acquired, at least in part, on behalf of tax-exempt institutional investors – the great majority being pension funds. As such, all properties are held in a fiduciary environment.

Properties in the NPI are accounted for using market value accounting standards, not historical cost. U.S. pension funds report investment performance to plan beneficiaries on a market value basis. NCREIF Data Contributing Members report investment results to NCREIF substantially in compliance with the REIS Market Value Accounting Manual, which has been developed to specifically accommodate tax-exempt institutional investors. Accordingly, data contributed to NCREIF is expected to comply with REIS. Because the NCREIF Property Index measures performance at the property level without considering investment or capital structure arrangements, information reported to the index will be different from information reported to investors. For example, interest expense reported to investors would not be included in the NCREIF Property Index. However, because the property information reported to the index is expected to be derived from the same underlying books and records, because it is expected to form the underlying basis for investor reporting, and because accounting methods are required to be consistent, fundamentally consistent information expectations exist.

NCREIF requires that properties included in the NPI be valued at least quarterly, either internally or externally, using standard commercial real estate appraisal methodology. Each property must be independently appraised a minimum of once every three years.

Because the NPI is a measure of private market real estate performance, the capital value component of return is predominately the product of property appraisals. As such, the NPI is often referred to as an “appraisal based index.”

Qualifications For NPI Inclusion

- Operating properties only; must be 60% occupied when entering the NPI.
- Property types - apartments, hotels, industrial properties, office buildings, and retail only.
- Can be wholly owned or in a joint venture structure.
- Investment returns are reported on a non-leveraged basis. While there are properties in the NPI that have leverage, returns are reported to NCREIF as if there is no leverage.
- Must be owned/controlled by a qualified tax-exempt institutional investor or its designated agent.

The NPI is a dynamic database. The Index increases in number of properties: when Data Contributing Members add more properties to their portfolios than what is sold or transferred; due to increases in NCREIF Data Contributing membership.

Properties exit the NPI when assets are sold or otherwise leave the database. All historical data remains in the database and in the Index.

The Index represents investment returns from a single class of investor. As such, the NPI may not be representative of the market as a whole.

As of December 31, 2004 the number of properties in the NPI stood at 4,152, with a combined market value of \$145.4 billion. Exhibit I is a summary of the growth of the NPI in terms of property count and corresponding market values.

Exhibit I

Growth of the NCREIF Property Index Data as of December 31, 2004 All \$ in Billions

Year	Number of Properties	Number of Data Contributors	Market Value
1977	233	14	\$580.0M
1980	493	16	1,976.0
1985	1,159	38	15,408.0
1990	1,877	56	37,971.0
1995	2,322	59	48,279.0
2000	2,972	51	95,779.0
2004	4,152	52	145,443.0

Index Methodology

- The Index is set at 100 starting fourth quarter of 1977. Calculations are based on quarterly returns of individual properties before the deduction of portfolio-level management fees, but inclusive of property level management fees.
- Each property's return is weighted by its market value.
- Index values are calculated for income, capital value and total.

Exhibit II sets out NCREIF Property Index Values for the three return components for selected periods of time.

Exhibit II
NPI Selected Period Index Values
Periods Ending December 31
All \$ in Millions

Year	# Properties	\$ Market Value	Index Values		
			Total	Capital	Income
1977	233	\$580	0.0	0.0	0.0
1978	291	730	116.1	106.8	108.9
1980	493	1,976	165.2	129.1	128.6
1985	1,159	15,408	301.9	162.9	187.1
1990	1,877	37,971	426.8	164.3	262.3
1995	2,322	48,279	447.4	116.0	386.8
2000	2,972	95,779	816.7	139.9	588.0
2004	4,152	145,443	1,167.5	143.4	803.9

Note: for purposes of derivatives based on the NCREIF Property Index, the quarterly returns (discussed below) will be calculated to four decimal places rather than one decimal place as shown above. Index values will be published to four decimal places but be calculated from unrounded quarterly returns so rounding is not compounded from quarter to quarter. These returns and index values will be available on the NCREIF website in an area designed to be used to obtain the official returns for settlement of derivative contracts.

Rate of Return Methodology

The NPI quarterly, annual and annualized total returns consist of three components of return – income, capital and total.

The **Income Return** measures that portion of total return attributable to each NPI property's net operating income, or NOI. Net operating income is gross rental income plus any other income less operating expenses - utilities, maintenance, taxes, property management, insurance, etc. The NOI return is computed by dividing NOI by the average daily investment for each quarter. The formula takes into consideration any capital improvements and/or any partial sales that occurred during the quarter.

NOI

Beginning Market Value + 1/2 Capital Improvements - 1/2 Partial Sales - 1/3 NOI

The **Capital Value Return** measures the change in market value from one period to the next. A property's value can go up (appreciation) or it can decline (depreciation) depending on market forces. The formula takes into consideration any capital improvements and/or any partial sales that occurred during the quarter. When a

property enters the Index, the capital return is not impacted until the second quarter of inclusion.

$$\frac{(Ending\ Market\ Value - Beginning\ Market\ Value) + Partial\ Sales - Capital\ Improvements}{Beginning\ Market\ Value + 1/2\ Capital\ Improvements - 1/2\ Partial\ Sales - 1/3\ NOI}$$

$$Beginning\ Market\ Value + 1/2\ Capital\ Improvements - 1/2\ Partial\ Sales - 1/3\ NOI$$

Total Return is computed by adding the Income Return and the Capital Value Return.

An NPI quarter-to-quarter return provides an estimate of the quarterly Internal Rate of Return (IRR) as if a property was purchased at the beginning of the quarter and sold at the end of the quarter with the investor receiving all net cash flow (NOI-Cap X) during the quarter.

The NPI rate of return formula assumes:

- NOI is received at the end of each month during the quarter.
- Capital Expenditures occur at mid-quarter.
- Partial Sales occur at mid-quarter. A partial sale is the sale of a portion of the property such as excess land.

These assumptions are the reason that the formulas above include terms in the denominator for adding $\frac{1}{2}$ Capital Expenditures, subtracting $\frac{1}{2}$ Partial Sales and subtracting $\frac{1}{3}$ NOI. These adjustments make the denominator an estimate of the average investment during the quarter.

For example since it is assumed that capital expenditures occur half way through the quarter, on average capital expenditures increase the average investment during the quarter by $\frac{1}{2}$ of the amount spent on capital expenditures. Similarly, since it is assumed that NOI is received monthly, the cash flow received from the NOI in effect reduces the average investment in the property during the quarter by $\frac{1}{3}$ of the NOI.

The NPI formula can be thought of as calculating an internal rate of return (IRR) for the property each quarter as if the property was purchased at the beginning of the quarter and sold at the end of the quarter and NOI being received monthly and any capital expenditures and partial sales occurring mid quarter. The formula takes into consideration that cash flows occur throughout the quarter. If the formula did not have the adjustment for $\frac{1}{3}$ NOI in the denominator it would be as if all the NOI was received at the end of the quarter, which would understate the IRR. Similarly, if we assume that capital expenditures did not occur until the end of the quarter rather than mid quarter it would overstate the IRR,

This methodology is well accepted in performance measurement and is consistent with what is referred to as the “Modified Dietz” formula for measuring investment performance which considers the average daily investment in an asset. In this case it is as if the NOI was received on days 30,60 and 90 of the quarter and capital expenditures and partial sales occur on day 45.

Creating Index from Quarterly Returns

Quarterly returns are first calculated for each individual property using the formula discussed above. These returns are then weighted by the market value of each property (using the average investment calculated in the denominator of the NCREIF formula) to arrive at the market value weighted return for all properties that are included in the index. The NPI can be thought of as a market cap weighted index as opposed to an equal weighted index. Thus, larger properties in terms of market value have a greater impact on the index than smaller properties. What is being calculated is essentially the return for the entire portfolio of NCREIF properties.

The index discussed earlier is calculated from the quarterly returns by increasing the index level by the return for each quarter. This in affect assumes quarterly compounding of the returns. For example, the index at the end of the fourth quarter of 2000 was 816.75625. The return for the first quarter of 2001 was 2.3607% and the return for the second quarter of 2001 was 2.4737%. Thus, the index after the first quarter would be $816.75625 \times 1.023607 = 836.03741$. Similarly the index after the second quarter of 2001 would be $836.03741 \times 1.024737 = 856.71847$. Note that the index value the second quarter can also be calculated as $816.75625 \times 1.023607 \times 1.024737 = 856.71847$. This can be thought as chain linking the quarterly returns.

Annual and Annualized Returns are computed by chain-linking quarterly rates of return to calculate time-weighted rates of return for the annual and annualized periods under study. Returns are assumed to be compounded quarterly. For periods over one year, returns are expressed on a return per-year basis. Continuing the above example, the returns for the third and fourth quarters of 2001 were 1.5957% and 2.4737% respectively. The annual return for 2001 would therefore be $(1.023607 \times 1.024737 \times 1.015957 \times 1.024734) - 1 = 9.2024\%$.

Data Submission Policies

Two sets of data are collected for the NPI. The first represents property specific descriptor information submitted when a property enters the database for the first time. Key data fields include:

- Property Name, Address, Zip Code
- Property Type, Property Sub-Type
- Acquisition Date
- Investment Cost
- Number of Floors, Units (Apartments, Hotels)

- Gross and Net Rentable Square Feet
- Year Built
- Date of Most Recent Renovation
- Occupancy Rate
- Retail Anchor Store Square Feet
- Retail Non-Anchor Store Square Feet
- How Acquired
- Joint Venture – Note, on JV properties, the data is reported to NCREIF as if 100% owned.

The second data set is collected quarterly and includes the components of return needed to calculate quarterly rates of return and index values. NCREIF collects considerably more data than what is required to calculate the NPI. Additional data are used in NPI data validation tests, to calculate additional statistical measures of performance, to develop operating benchmarks and for use in real estate research. The key quarterly data fields include:

- Market Value (MV)
- Gross Revenues Breakouts
- Operating Expenses Breakouts
- Net Operating Income (NOI)
- Capital Expenditures (Cap. X.)
- Partial Sales Proceeds
- Appraisal Activity
- Percentage Leased
- Percentage Occupied
- Leaseable Area
- Leasing Commissions
- Tenant Improvements

Data Submission

Data are submitted in accordance with NCREIF's data submission manual, *NCREIF Property Indexes Data Collection and Reporting Procedures*. The manual is a detailed step-by-step narrative, which clearly identifies all data components required for submission and instructions on how to deliver data to NCREIF. The manual is periodically updated to reflect any additional data submission requirements and/or whenever technological improvements in the information delivery systems are made.

The data NCREIF collects originates from the accounting and property management systems of Data Contributors. The process involves uploading data files to a NCREIF standard data submission template through a secured members-only area at NCREIF's web site. Data are then extracted from each Data Contributors' files and downloaded into NCREIF's database server. The server is under the operation and control of NCREIF's Database Manager.

Data are maintained in a state of confidentiality. Individual property data are masked in order to protect each Data Contributor's proprietary property level information. Individual property data cannot be accessed without Data Contributor approval.

Once the quarterly data submission process is completed and the NPI and other standard quantitative products have been published, the data are transferred to a second secured database for web site queries. All data are available for research. To protect the identity of individual property level data, the minimum number of properties accessible for research is four and must be owned/managed by two or more Data Contributors.

Data Submission and Publication Schedules

NCREIF Data Contributing Members are required to deliver all NPI qualifying data no later than the 20th calendar day following the end of the most recent business quarter. *Note: NCREIF operates on a January-December calendar-year.*

If a member is late in contributing data to NCREIF and the result is a delay in the release of the Index, the member's name is published in the Index report. This has only happened one time since this rule was established in 2000. In the case of a late member submission, NCREIF staff will work with the manager to try to help resolve any issue(s) that might cause a delay and if a delay is inevitable, the Index Oversight Committee (IOC) will have to make a decision to wait a day or two in hopes of receiving the data or to publish without the member's data. The size of the manager will have a large impact on this decision.

NCREIF Staff meets with the Index Oversight Committee (IOC) via conference call the 25th calendar day following the end of the business quarter to review the data and approve the release of the Index.

NCREIF produces various data products once the index is released, a description of those products are attached. Most products are released the day the index is approved and released.

How Are Index Data Validated?

NCREIF has set up a three-step data validation process. It is designed to identify and correct data submission errors. Data are delivered to NCREIF via a standard data submission software package specifically designed for this process. Built into the system of the Data Contributors are validation tests run on a pre-submission basis to indicate any data errors or other warnings.

Errors are defined as problems needing fixing before final submission. Warnings are defined as outliers evidencing deviations from standard norms. Warnings require being checked into before final submission. Typically, a warning is issued when an

unusually large change in an individual property's market value takes place from one quarter to the next. Most often, a big change in value is the result of a property sale, the net proceeds of which deviate significantly from its most recent appraised value.

Data Contributors represent the first level of validation screen. A significant majority of data errors and outliers are flagged at the front end of the submission process. Individual Data Contributor systems include NCREIF compatible software to run validation tests. Data Contributors are in the best position to identify and correct data errors.

When the data are delivered to NCREIF, NCREIF conducts its own level of validation. This is a two-step process. The first involves running the same validation tests as run by the Data Contributor. The second involves comparing a Data Contributor's returns with those of all Data Contributors. This test produces a summary report of potential errors and outliers, which is then sent to each Data Contributor flagged for review. When a Data Contributor is notified of possible data errors or warnings, the Data Contributor reviews the report, makes whatever corrections are necessary, resubmits the corrected data, and then signs off on the accuracy of the returns reported for the quarter.

Examples of validation rules that are performed include examining properties with the greatest increase or decrease in value, properties with the highest or lowest income, capital or total returns, properties with a price per square foot that is outside of the normal range for peers of the same property type, excessive capital expenditures, partial sales that are a high percentage of the property value, and other similar tests for any input that differs significantly from the norm.

A third level of data validation is conducted by NCREIF's Index Oversight Committee (IOC). At the end of each data reporting period and prior to the release of the NPI quarterly returns, the IOC reviews property type and regional returns for purposes of comparing current NPI returns with industry forecasted returns based on current market conditions. Any data concerns raised by the IOC are immediately checked and, if necessary, confirmed or corrected via Data Contributor follow up.

The Index Oversight Committee (IOC)

IOC responsibilities include reviewing and recommending changes to the Board of Directors in index policies and procedures, required data elements, qualifying properties, quarterly index production review and the taking of any other actions deemed necessary to assure index statistical integrity.

The IOC is also responsible for reviewing and recommending to the Board for approval any changes to the Index Policies and Procedures, including, but not limited, to sanctions for failure to report data in a timely, thorough and accurate manner, all required data elements and qualifying properties.

The IOC is made up of 5 senior researchers from member firms that have a significant understanding of the database, the index and its methodologies, and also an understanding of the current markets. A majority vote is technically required to approve and release the index or to make recommendations to the Board of Directors on policy changes or other such items.

Is the NPI Ever Revised?

The NPI was “frozen” each quarter beginning First Quarter 2003. This means that a snapshot of the index was taken each quarter and changes are not made historically unless there is a significant error that is caught later that would require the restatement of the NPI. A significant error is considered to be one that affects the National, Property Type or Regional returns by 10 basis points or greater. A restatement has only happened once since the “freeze.” The restatement took place in Fourth Quarter 2004 due to a manager submission error that affected a property type return by 16 basis points.

Prior to 2003, the NPI was restated historically every quarter for various reasons, the majority being the fact that when there were property sales in a given quarter, the previous quarter’s ending market value was changed to reflect the sales price.

Changes in data were also due to the fact that when a new member joined NCREIF, their historical data was put into the database and would be included in the NPI returns on future releases. There were also data errors that were caught after the release of the index and those would be corrected historically, though over time errors became less and less frequent as new and better validation screens were built into the systems and as information technology programs were enhanced and upgraded to catch potential errors during the submission process.

Beginning First Quarter 2003 NCREIF made a decision to “freeze” the NPI for two reasons. First, the database had reached a size, in both number of properties and market values, that the benefits of backdating were no longer important. Secondly, more and more investment managers and in-house real estate staffs’ compensation is being tied to outperforming the NPI. The market wants a single return number at the time when NCREIF releases the quarterly NPI.

Database Composition

The NPI database consists of all qualifying properties whose returns represent the most recent quarterly NPI calculation, plus all properties that have been in the database historically, but are no longer included in the Index. Exhibit III provides a December 31, 2004 snapshot of the NPI database composition.

Exhibit III
Data as of December 31, 2004
All \$ in Billions

Database	Number	Value	%
NPI Properties	4,152	\$145.4	33.3%
NPI Sold Properties	5,116	104.9	41.1%
NPI Event Properties	<u>3,187</u>	<u>86.1</u>	<u>25.6%</u>
Total	12,455	\$336.4	100.0

Of the 12,455 properties that have been in the Index, 5,116 with a combined net sales proceeds generated of \$104.9 billion represent outright sales. When a property is sold, the Data Contributor submits to NCREIF the net sales proceeds received, which represents the final quarterly value for that particular property. When a sale takes place, the property “exits” the Index. While the sold property no longer remains in the NPI, its history is a permanent part of the NPI’s historical returns.

More properties leave the NPI database as the result of outright sales than for any other reason.

An “Event” property exits the database for reasons other than an outright sale. These include when: a pool of properties is sold as a portfolio; a Data Contributor is merged or consolidated with another manager; a Data Contributor is terminated or goes out of business; a property was destroyed by an act of God; a property was transferred to a lender or joint venture partner.

Two “Events” cause properties to exit the database more than all others combined. The first is a portfolio sale. A portfolio sale occurs where a manager sells a number of properties to a single buyer in a single transaction. When this happens, while technically a sale, portfolio sales prices are not allocated on a property-by-property basis. Under these circumstances, the individual properties that make up the portfolio exit the NPI database at their respective most recent market values.

“Event” properties also represent properties transferred from one manager to another as a result of a merger, consolidation or termination. When such an event takes place, the property exits the database at its most recent appraised value. If the property is then transferred to another Data Contributing Member, the property re-enters the database under the name of the successor manager. This type of *event* results in a property being counted as a separate/new property, which results in the same property being counted more than once. This does not affect the returns but it does skew the property count. However, the number of properties that change hands among Data Contributing Members is relatively small. Most importantly, the performance calculations do not overlap.

The NPI is not, and was never intended to be, a static database. It is both dynamic and evolving. Each quarter, the database property mix changes due to:

- New property purchases
- Property sales
- Changes in NCREIF data Contributing membership
- “Events,” such as portfolio sales, manager mergers, terminations

Property Valuations

Each quarter, the Data Contributing Members submit a market value for each NPI qualifying property. The value the Data Contributor submits is the value they believe is the property’s fair market value as of that particular reporting period – i.e., the end of each calendar quarter.

A change in value from one quarter to another can be for one of several reasons.

- The property was externally appraised by an independent third party appraiser.
- Observed changes in market conditions as so determined by the manager to recognize any changes during the quarter in occupancy, rental rates, capitalization rates, interest rates, a partial sale, unexpected capital expenditures, or changes in discount rates.
- A property value may be adjusted only for capital expenditures made during the quarter – effectively, an accounting adjustment to reflect the amount of the capital expenditure.
- The value submitted can be the previous quarter’s value because, in the judgment of the manager/owner, the property’s value did not change during the period.

Appraisal Practices

An appraisal is an estimate of a property’s current market value at a particular point in time based on traditional appraisal methodology and techniques. Appraisers take into account recent sales of comparable properties, replacement cost, and other appraisals of similar type assets, when such information is available.

Whenever an NPI property is appraised, Data Contributing Members are required to report as to whether the appraisal was *internal* or *external*. An *internal* appraisal is one prepared at the investment manager or institutional investor level by the in-house professional real estate staff. An *external* appraisal is one performed by an independent party, typically an MAI (Member of the Appraisal Institute).

Attachment A – List of NPI Data Contributing Members

AEW Capital Management, L.P.
AMB Capital Partners, LLC
American Ventures Realty Investors
BlackRock Realty
CB Richard Ellis Investors
CommonWealth Partners, LLC
Cornerstone Advisors, Inc.
Cornerstone Real Estate Advisers LLC
DRA Advisors LLC
Draper & Kramer Realty Advisors, Inc.
Fidelity Management & Research Co.
First Washington Realty, Inc.
Great Point Investors LLC
Hart Advisers, Inc.
Heitman Real Estate Investment Management
Henderson Global Investors
Hines National Office Partners
ING Clarion Partners
INVESCO Real Estate
JP Morgan Investment Management
Kennedy Associates Real Estate Counsel, Inc.
Kensington Realty Advisors
L&B Realty Advisors, Inc.
LaSalle Investment Management, Inc.
Legg Mason Real Estate Services
Lincoln Advisory Group, Ltd.
Lowe Enterprises Investment Management
MIG Realty Advisors
Miller Capital Advisory, Inc.
Morgan Stanley Real Estate
National Electrical Benefit Fund Investments
Principal Global Investors
Prudential Real Estate Investors
Regency Centers Advisors, LLC
Rockwood Capital Corporation
Sarofim Realty Advisors
Sentinel Real Estate Corporation
State Teachers Retirement System of Ohio
TA Associates Realty
The General Investment & Development Companies
Thomas Properties Group, Inc.
TIAA - CREF
UBS Realty Investors LLC
VEF Advisors
Washington Capital Management, Inc.

Attachment B - Methodology

- The value of the Index is set at 100 at the fourth quarter of 1977. Calculations are based on quarterly returns of individual properties before deduction of asset management fees.
- Each property's return is weighted by its market value.
- Income and Capital Appreciation changes are also calculated.
- The current quarter's return is considered preliminary and subject to adjustment in the subsequent quarter, and previous quarter returns may be slightly adjusted annually as data submission errors are corrected.

Attachment C - Universe of Properties

- All properties have been acquired on behalf of tax-exempt institutions and held in a fiduciary environment.
- Property Types include - Apartment, Industrial, Office and Retail.
- Universe Includes:
 - Existing properties only - no development projects.
 - Only investment-grade, non-agricultural, income-producing properties: Apartment, Industrial, Office, and Retail.
 - The database increases quarterly as participants execute transactions and as new members join NCREIF and submit data.
 - Sold properties are removed from the Index in the quarter the sale takes place but the historical information remains in the database.
 - Each property's market value is determined by real estate appraisal methodology, consistently applied.

Attachment D - Rates of Return

- **Total Return:** includes appreciation (or depreciation), realized capital gain (or loss) and income. It is computed by adding the Income and Capital Appreciation return on a quarterly basis.
- **Income Return:** Measures the portion of total return attributable to each property's net operating income (NOI). It is computed by dividing the NOI by the average quarterly investment.

Income Return Formula:

$$\frac{\text{NOI}}{\text{Beginning Market Value} + \frac{1}{2} \text{ Capital Improvements} - \frac{1}{2} \text{ Partial Sales} - \frac{1}{3} \text{ NOI}}$$

- **Capital Appreciation Return:** measures the change in market value adjusted for any capital improvements/expenditures and partial sales divided by the average quarterly investment.

Capital Appreciation Return Formula:

$$\frac{(\text{Ending Market Value} - \text{Beginning Market Value}) + \text{Partial Sales} - \text{Capital Improvements}}{\text{Beginning Market Value} + \frac{1}{2} \text{ Capital Improvements} - \frac{1}{2} \text{ Partial Sales} - \frac{1}{3} \text{ NOI}}$$

- **Annual and Annualized Returns:** are computed by chain linking quarterly rates of return to produce time-weighted rates of return for the annual and annualized periods under study. For time periods beyond one year, the annualized returns are expressed as an average (geometric) return per year.
- **Quartile Ranges:** the distribution of annual total returns and annual total property type returns is characterized by calculating quartiles and percentiles. The lower quartile break is the property return in the Index such that one-fourth of the property returns in the Index are below it; the upper quartile break is the return in the Index such that three-fourths of the property returns in the Index are below it (or alternatively) such that one-fourth of the property returns in the Index posted higher returns.
- **Mean and Median Returns:** the median is the exact midpoint of the distribution whereby one-half of the properties have a better return and the other half a poorer return. The mean is the equal weighted arithmetic average of returns determined by summing the one-year returns and dividing by the number of properties in the Index.