# *Property-Level Investment Performance Attribution*

*(Ch. 10 Appendix & Ch.27 Sect. 27.1.1)*

# Real Estate Investment
## "*Performance Attribution*"

**DEFINITION:**
**The *decomposition* (or "breaking down", or "parsing") of the total investment return of a subject property or portfolio of properties (or an investment manager).**

**PURPOSE:**
**To assist with the *diagnosis* and understanding of what caused the given investment performance.**

**USAGE:**
**By investment managers (agents) and their investor clients (principals).**

## Two levels
## at which performance attribution is performed:

- **Property level**

  **Pertains to individual properties or static portfolios of multiple properties.**

- **Portfolio level**

  **Pertains to dynamic portfolios or investment manager (or fund) level.**

**Major *attributes* (return components):**

**At the PROPERTY LEVEL:**

***Initial Cash Yield***

***Cash Flow Change***

***Yield Change***

**At the PORTFOLIO LEVEL:**

***Allocation***

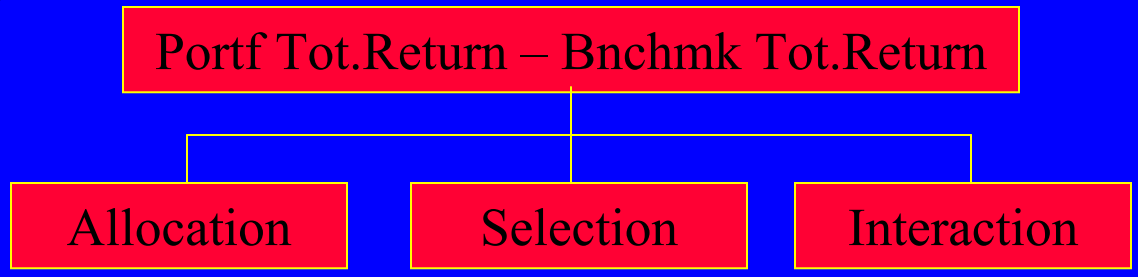
***Selection***

***Interaction***

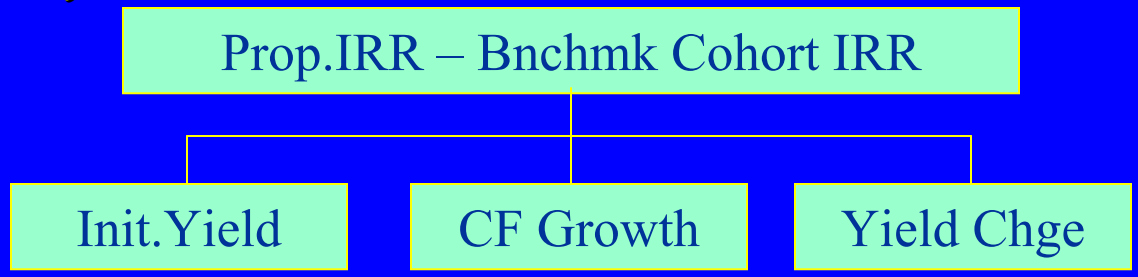
## "*Performance Attribution*":

**• Often useful for *diagnostic* purposes to compare *subject* portfolio or mgr with an appropriate *benchmark* . . .**

***Portfolio Level:***




***Property Level:***



## *Property-Level Performance Attribution . . .*

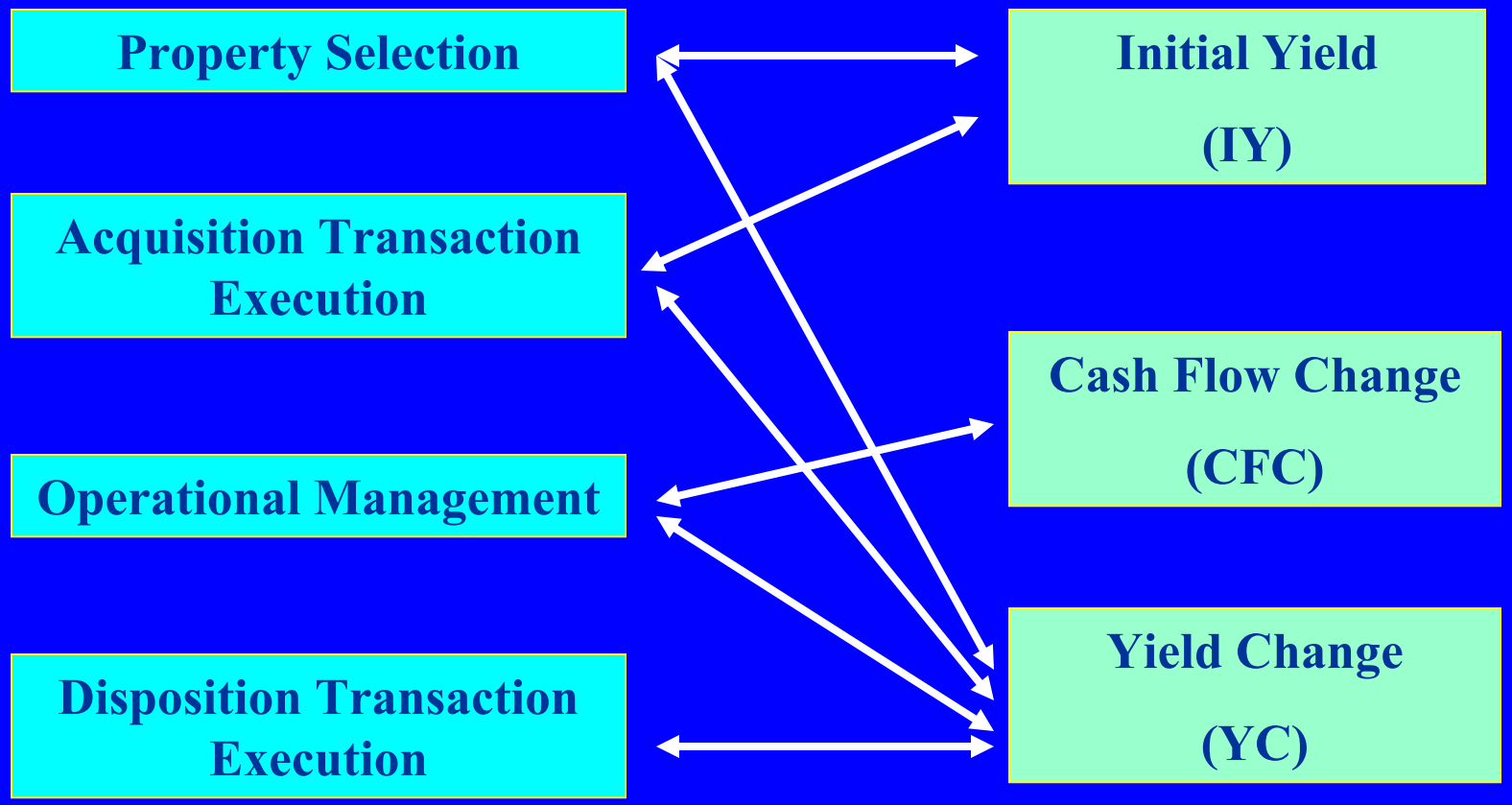
**Property level performance attribution focuses on "*property level*" investment performance, i.e., the total return achieved within a given property or a static (fixed) portfolio of properties (that is, apart from the effect of investment allocation decisions, as if holding allocation among categories constant).**

**Property level attribution should be designed to break out the property level total return performance in a manner useful for shedding light on the four major property level investment management functions:**

- **Property selection (picking "good" properties as found);**
- **Acquisition transaction execution;**
- **Operational management during the holding period (e.g., marketing, leasing, expense mgt, capital expenditure mgt);**
- **Disposition transaction execution.**

## *Property-Level Performance Attribution . . .*

**These property-level management functions are related generally to three attributes (components) of the property-level since-acquisition IRR, essentially as indicated below…**



## *Property-Level Performance Attribution . . .*

**Conventional property level performance attribution is based on periodic returns, or on time-weighted multi-period returns (TWRRs, e.g., as implemented by IPD in England and PCA in Australia).**

**But IRR-based performance attribution is arguably more useful for property level management diagnostic purposes, because:**

- **At the property level, the investment manager is typically responsible for the major cash flow *timing* decisions that can significantly effect property level (static portfolio) returns, e.g., leasing decisions, capital expenditure decisions.**
- **The IRR is sensitive to the effect of cash flow timing, the TWRR is not.**
- **The IRR is cash flow based (net of capital improvement expenditures), therefore, more accurately reflecting the investment return effect of capital improvement decisions.**

## *Property-Level Performance Attribution . . .*

**Useful IRR-Based property level performance attribution benchmarking requires the use of:**

### *Since-acquisition IRR*

- **IRR is computed since acquisition of property (or portfolio):**
  - **In order to reflect investment operational performance during entire holding period since acquisition;**
  - **Property investment holding periods are typically multi-year (single period or periodic returns do not reflect effective investment management holding period).**
- **IRR is computed for appropriate benchmark cohort, defined as universe of similar investments by competing managers, measured from same inception date (equal to property acquisition date).**

## *Property-Level Performance Attribution . . .*

**Simple Numerical Example:**

- **Property (or static portfolio) bought at initial cash yield of 9%.**
- **Net cash flow grew at 2% per year.**
- **Property (or properties) sold (or appraised) after 10 years at a terminal yield of 10%, based on yr.11 projected cash flow (also 2% more than yr.10).**
- **IRR is 10.30%.**
- **How much of this IRR is due to 3 components: Initial Yield (IY), Cash Flow Change (CFC), and Yield Change (YC)?…**

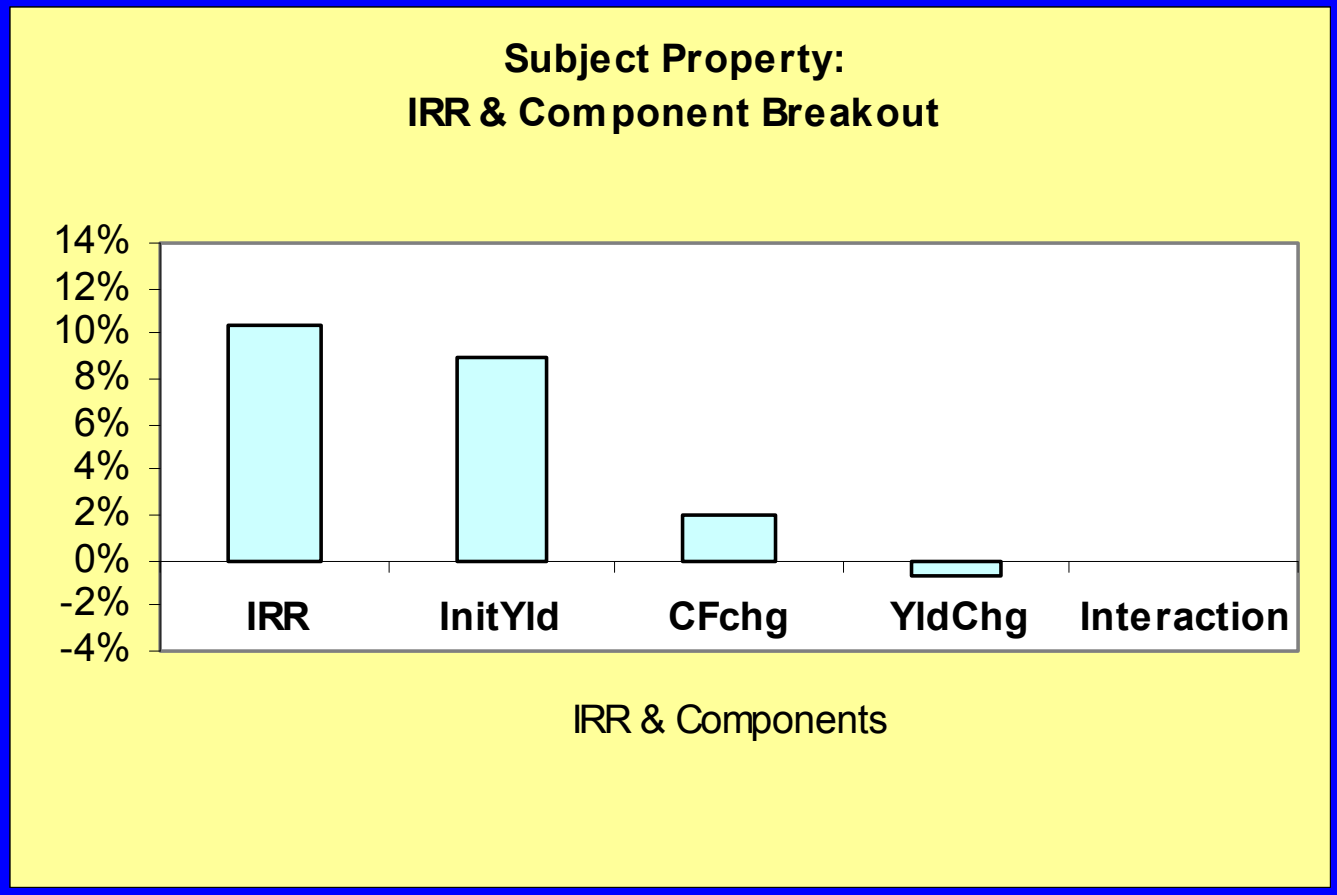
**There are several ways one might answer this question. The approach that seems most intuitively related to the 4 basic mgt fcns is presented here…**

| Yr | *IRRs:* | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) Actual Oper.CF | | | 1.0000 | 1.0200 | 1.0404 | 1.0612 | 1.0824 | 1.1041 | 1.1262 | 1.1487 | 1.1717 | 1.1951 | 1.2190 |
| (2) Actual Capital CF | | -11.1111 | | | | | | | | | | 12.1899 | |
| **(3) Actual Total CF (=1+2)** | **10.30%** | **-11.1111** | **1.0000** | **1.0200** | **1.0404** | **1.0612** | **1.0824** | **1.1041** | **1.1262** | **1.1487** | **1.1717** | **13.3850** | |
| (4) Init.Oper.CF constant | | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| (5) Capital CF @ Init.Yld.on(4) | | -11.1111 | | | | | | | | | | 11.1111 | |
| **(6) Init.CF @ Init.Yld (=4+5)** | **9.00%** | -11.1111 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 12.1111 | |
| (7) Capital CF @ Init.Yld.on(1) | | -11.1111 | | | | | | | | | | 13.5444 | |
| **(8) Actual Oper. CF @ Init.Yld (=1+7)** | **11.00%** | **-11.1111** | **1.0000** | **1.0200** | **1.0404** | **1.0612** | **1.0824** | **1.1041** | **1.1262** | **1.1487** | **1.1717** | **14.7395** | |
| (9) Capital CF @ ActualYld.on(4) | | **-11.1111** | | | | | | | | | | 10.0000 | |
| **(10) Init.CF @ Actual Yld (=4+9)** | **8.32%** | **-11.1111** | **1.0000** | **1.0000** | **1.0000** | **1.0000** | **1.0000** | **1.0000** | **1.0000** | **1.0000** | **1.0000** | **11.0000** | |

- **Initial yield = 9.00%, computed from line (6) IRR.**
- **Cash flow change component = 2.00% = 11%-9%, computed as the line (8) IRR less the line (6) IRR: = IRR with actual CF – IRR with no CF growth, (with constant yld at initial rate).**
- **Yield change component = -0.68% = 8.32%-9.00%, computed as the line (10) IRR less the line (6) IRR: = IRR with actual yld chg – IRR with no yld chg, (with constant CF at initial level).**
- **Interraction effect = -0.02%, the difference bertween the line (3) overall IRR and the sum of the three other attributes [10.3%-(9%+2%-0.68%)].**

# *Property-Level Performance Attribution . . .*

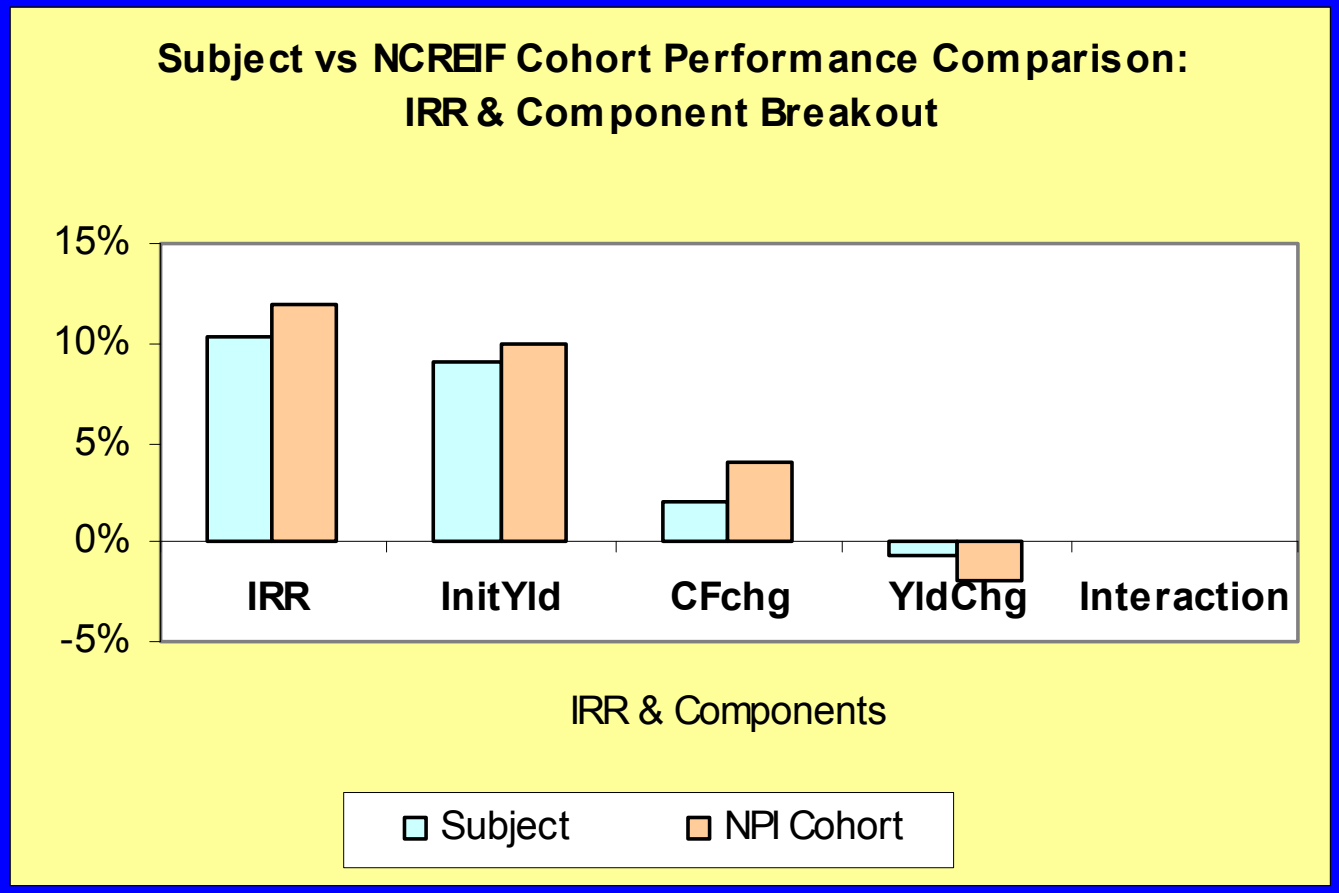
**Here is a graphical presentation of the IRR-Based property-level performance attribution we just performed:**




**Suppose we computed the same type of IRR component breakdown for an appropriate benchmark, that is, a NCREIF sub-index cohort spanning the same period of time…**

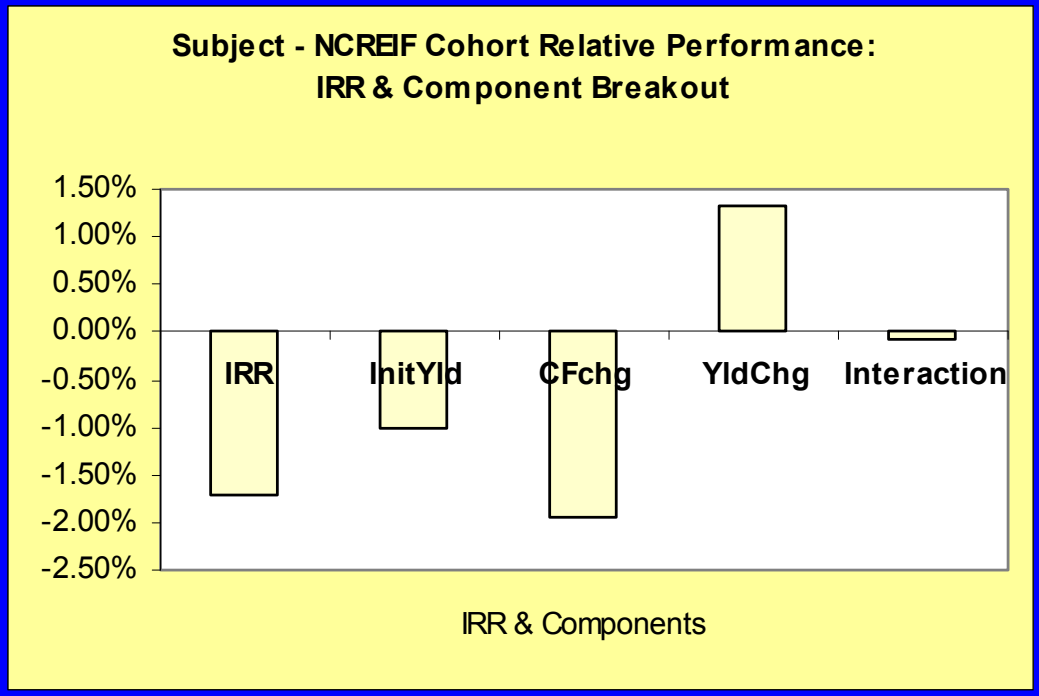
# *Property-Level Performance Attribution . . .*

**We could compare our subject performance with that achieved by a peer universe of managers, for similar properties (e.g., Calif. Industr. bldgs):**



# *Property-Level Performance Attribution . . .*

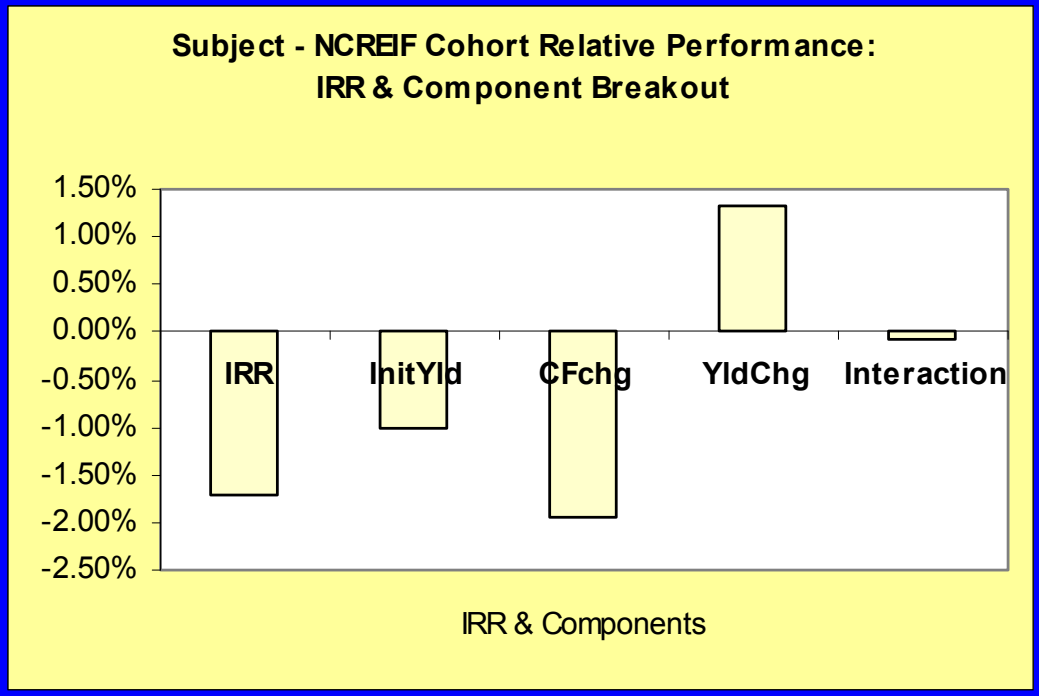
**Here is the *relative performance*, the *difference* between our subject property and its benchmark, by attribute:**




**The above pattern could be plausibly interpreted as tentative evidence for the following hypothesis: Subject performed relatively poorly due largely to some combination of poor selection, acquisition, and operational mgt, partially offset by some combination of good disposition execution (or optimistic terminal appraisal), future-oriented capital improvements, &/or market movements during the holding period.**

# *Property-Level Performance Attribution . . .*

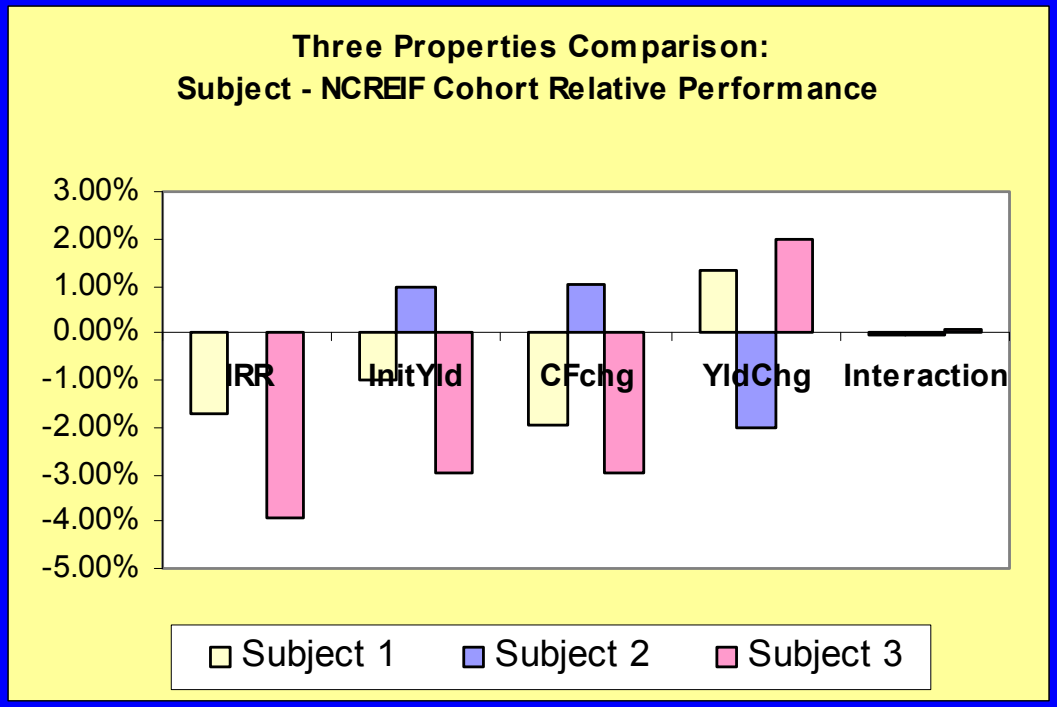
**Here is the *relative performance*, the *difference* between our subject property and its benchmark, by attribute:**




**Now suppose we computed these relative performance differentials across a number of different properties (or portfolios) we have invested in…**

# *Property-Level Performance Attribution . . .*

**We might gain some insights about our property-level investment and management performance:**




**In this case Subject Properties #1 & 3 have similarly poor performance (rel to benchmk), due to poor initial yield & poor CF change, suggesting poor acquisition & poor operational mgt. Property #2 did better, with good InitYld & CFchg, but poor YldChg (suggesting good acquisition, but poor disposition or mgt actions that hurt future outlook (e.g., inadequate Cap.Improvement). Mkt movements can also affect these results (less so the longer the holding period).**