"Of Granularity and Cocktails"
Methodological Issues in the Tracking of Commercial Property Values: Some Observations Based on the U.S. Experience

David Geltner, PhD, F.RICS
Massachusetts Institute of Technology

Remarks for the
ECB/Eurostat
Conference on Commercial Property Price Indicators
May 10-11, 2012
Frankfurt

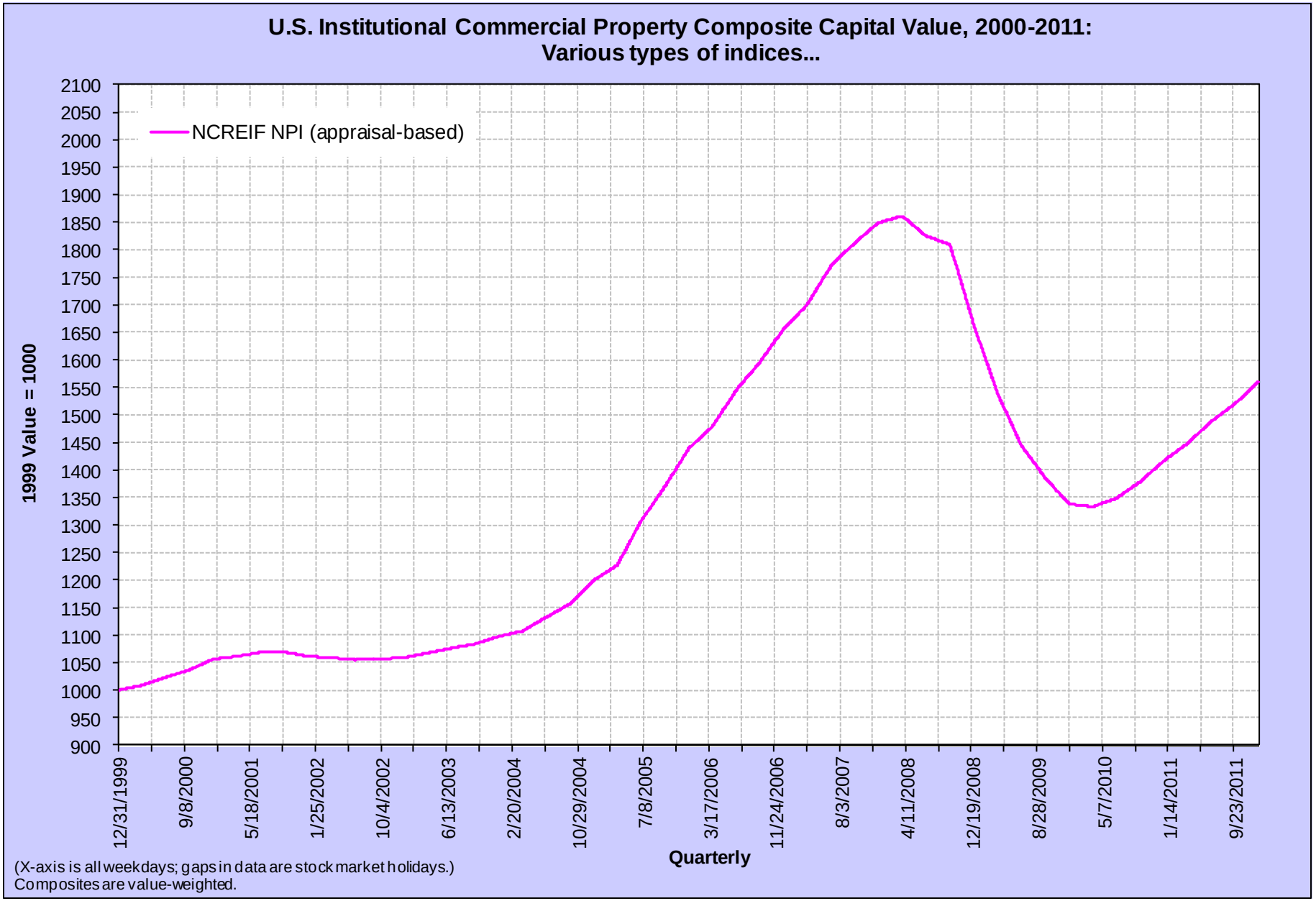
Outline:

1. Evolution of commercial property price indexing in the U.S.
    - From appraisal-based;
    - To transactions price-based;
    - And stock market-based.

2. What have we learned from the new transactions-based indices:
    - Need to track dynamic segmentation in markets ➔ Importance of index granularity
    - Complementarity of different types of indices

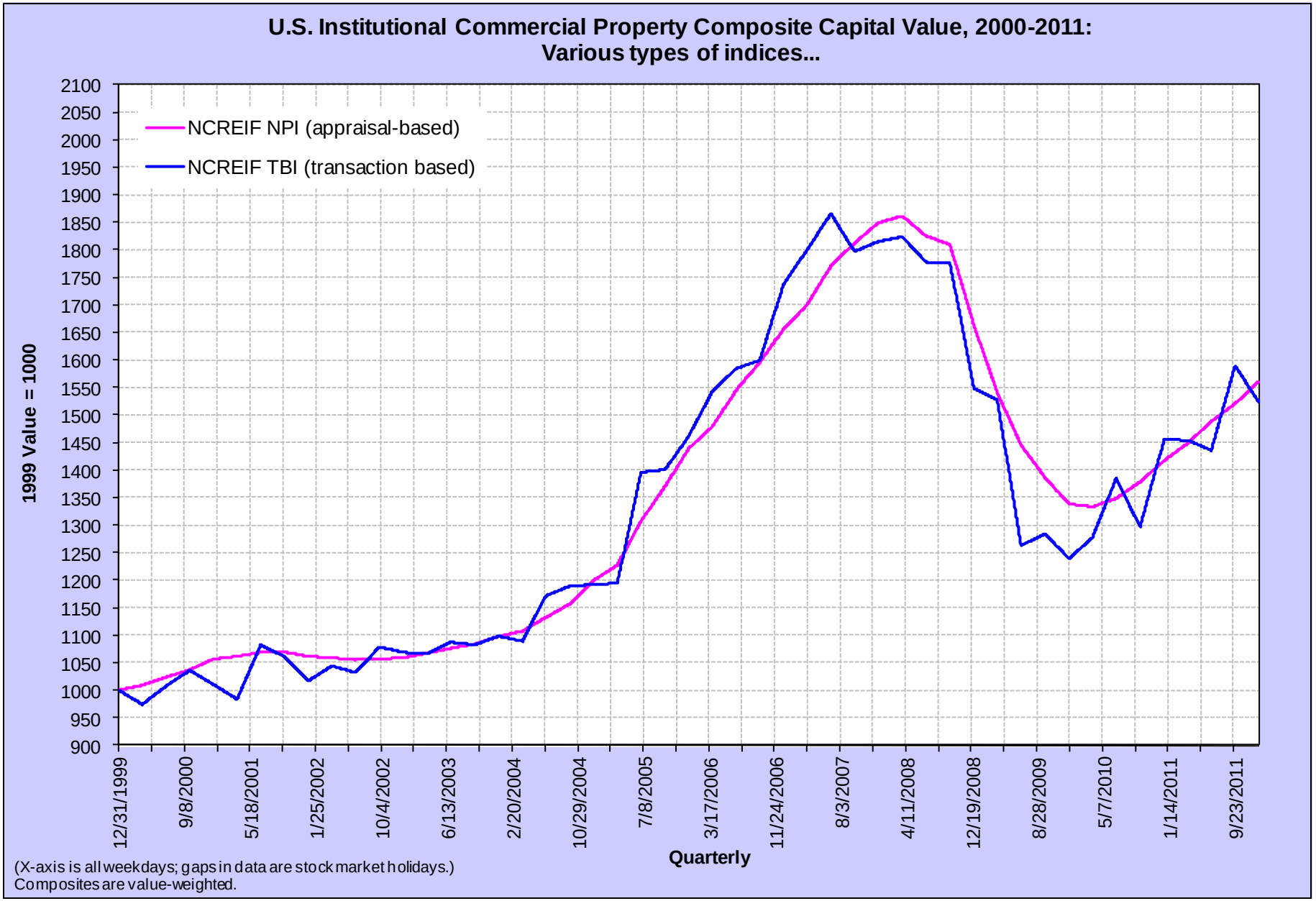
3. Recommendation:
    - "Triangulation" (or use of "cocktails" of indices).

First: NCREIF Property Index (NPI), since 1982, **appraisal-based**



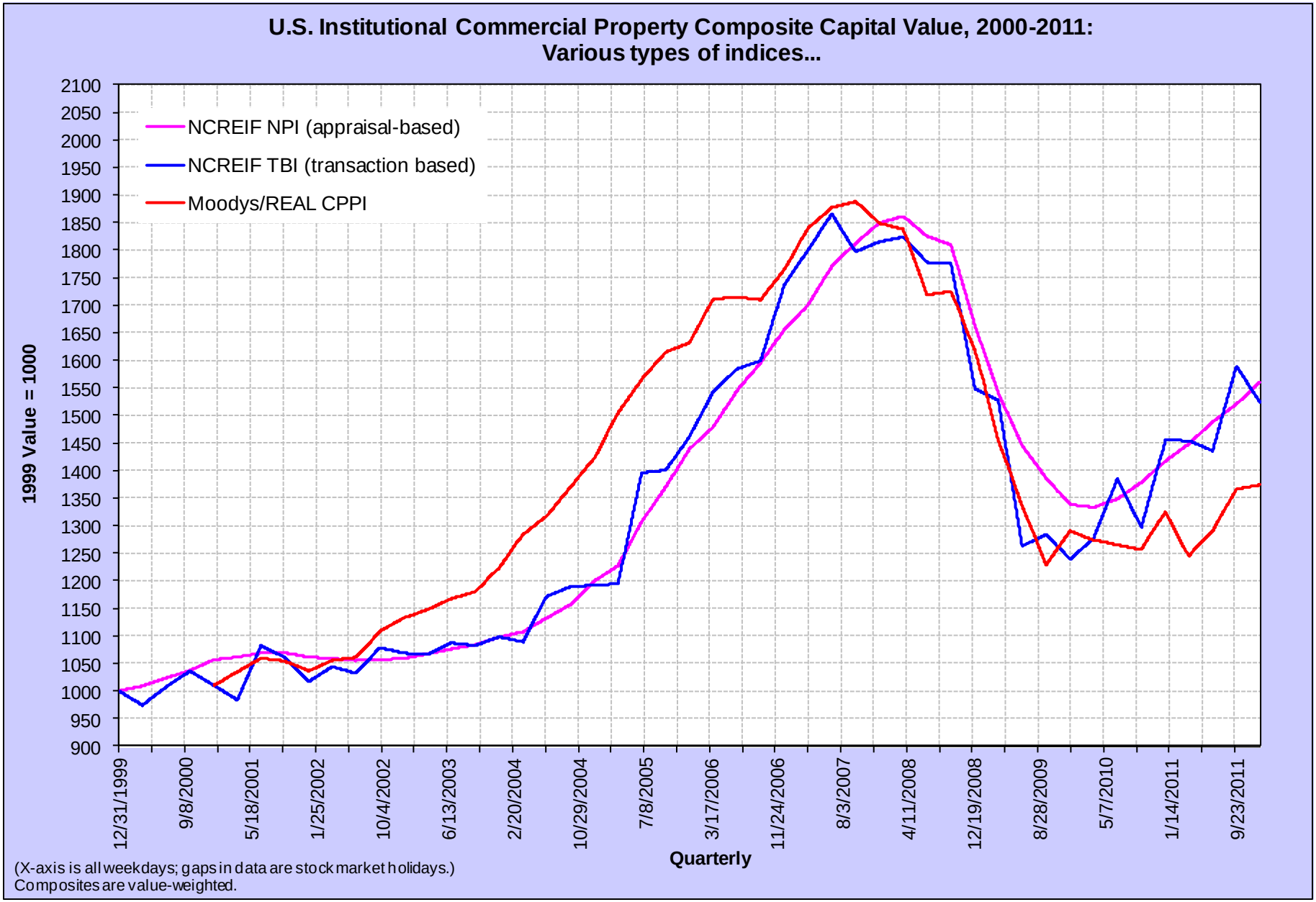
Based on small (but important) population (pension funds), law requires regular re-appraisal. (U.S. GAAP does not require appraisals.)
Tracks same-property valuations & total returns. Appraisals lag & smooth market values, but widely accepted & used by industry.

2005: NCREIF-based "TBI", **transaction based**



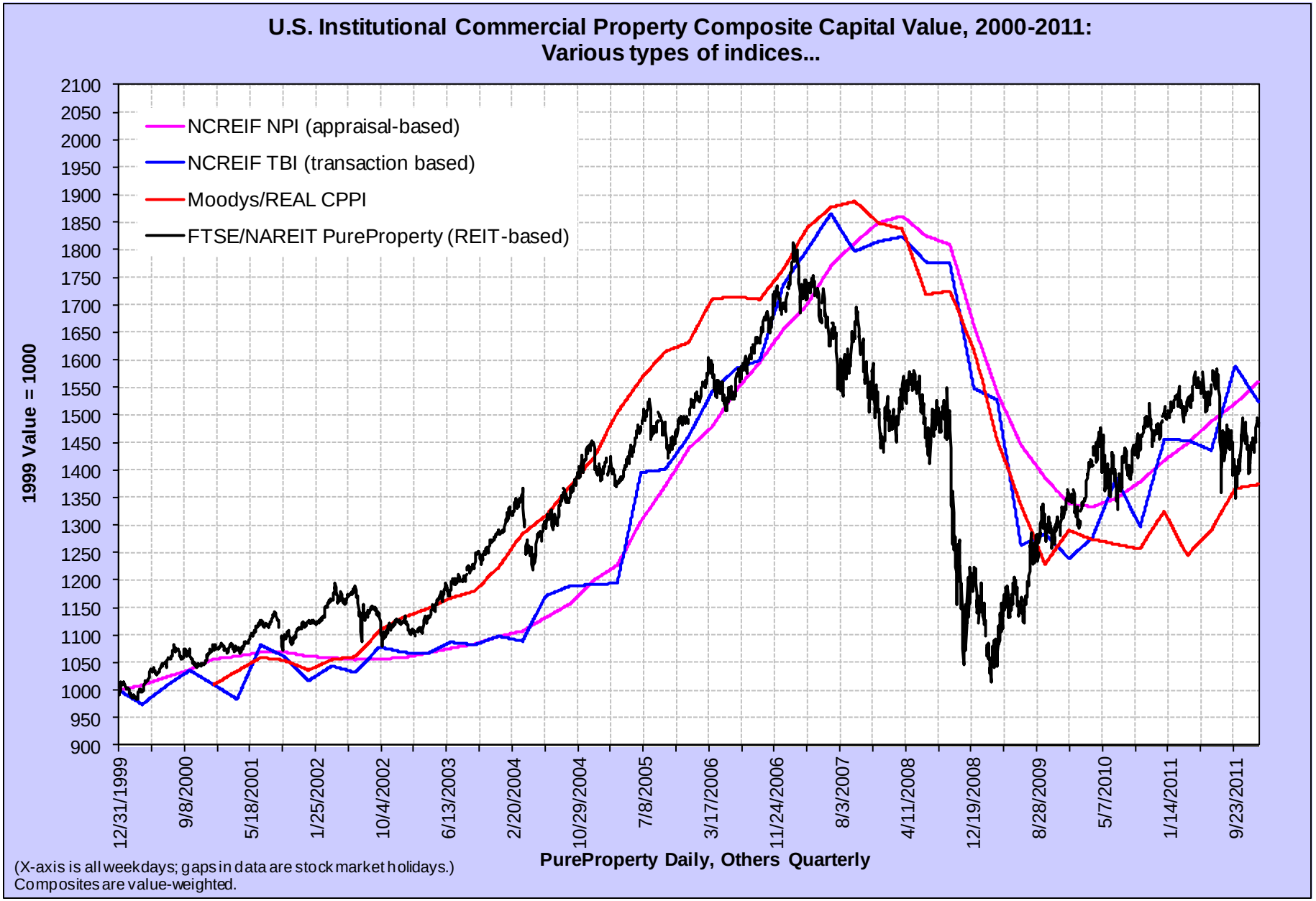
Originally developed at MIT Center for Real Estate, now produced by NCREIF, based on same population as NPI, but transaction prices of sold properties. "Hedonic price model" approximated by ratio: TBI(t) = (P(t)/A(t))NPI(t).

2006: Moody's/REAL "CPPI", **repeat-sales index** (transactions based)



1st CRE index using repeat-sales methodology. Based on larger population of properties than NCREIF:
Real Capital Analytics database of all sales > $2,500,000. Tracks same-property prices (not total returns). Similar method to Case-Shiller.

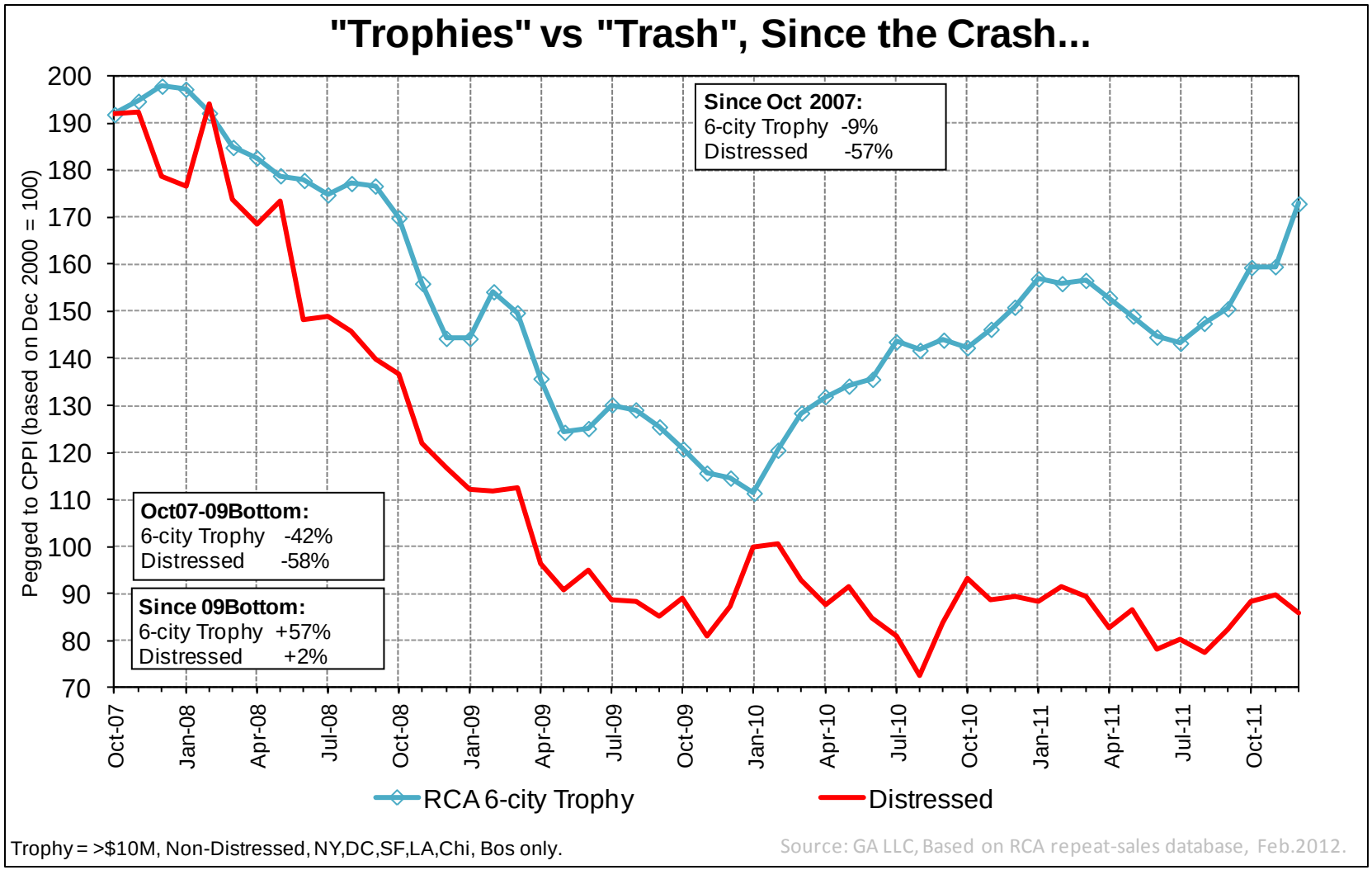
2012: FTSE/NAREIT "PureProperty" Indices, **stock mkt based…**



Daily-updated index, based on de-geared REIT share prices. REITs are "pure plays" in commercial property. Index statistically infers movements in underlying property assets implied by movements in REIT share prices. Uses information efficiency and liquidity of stock market.

Example of Market Segmentation:

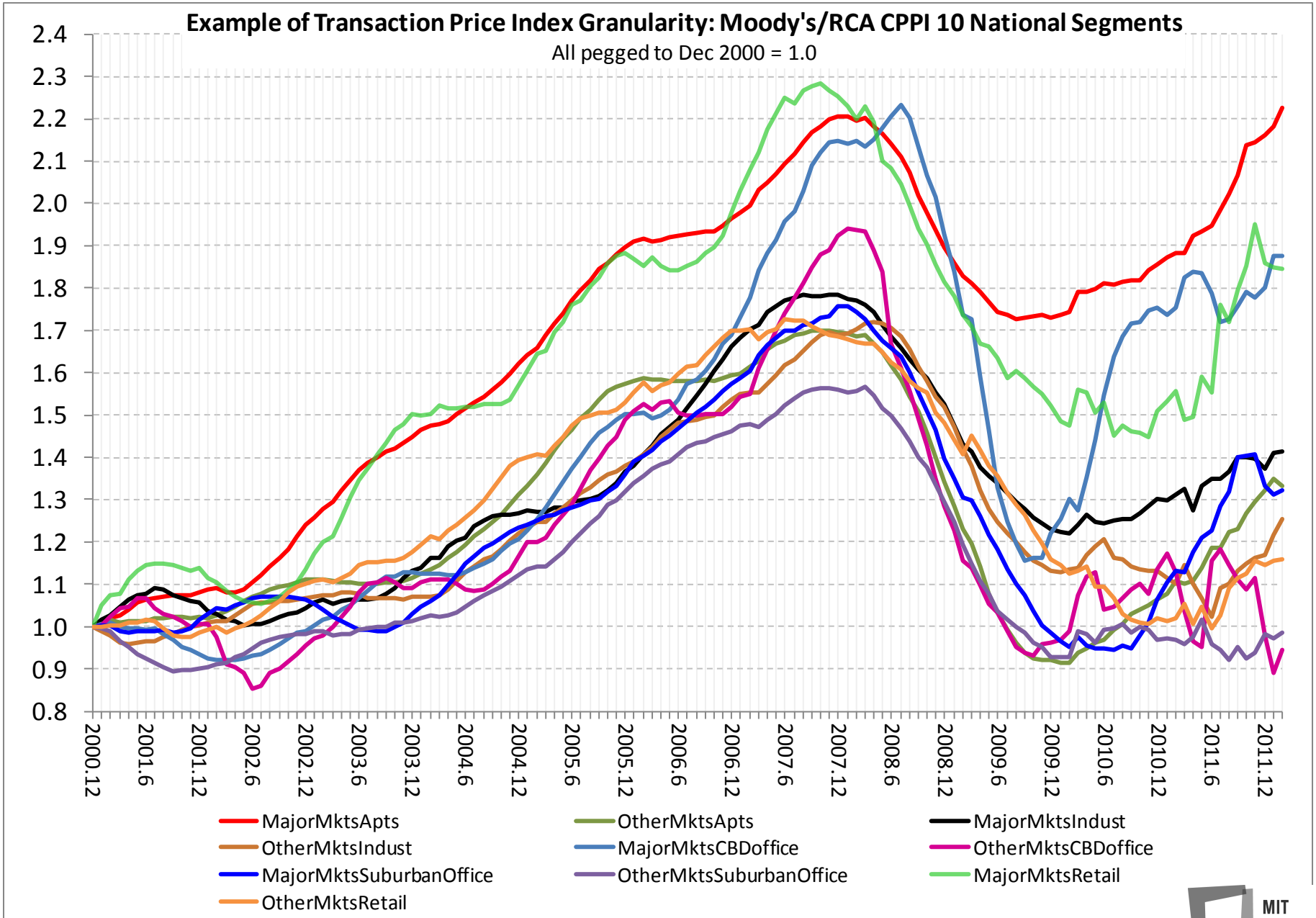
Large, non-distressed properties in major mkts, vs distressed properties



Monthly same-property repeat-sales transactions price based indices based on the Real Capital Analytics database of all sales > $2,500,000.

MIT CENTER FOR REAL ESTATE

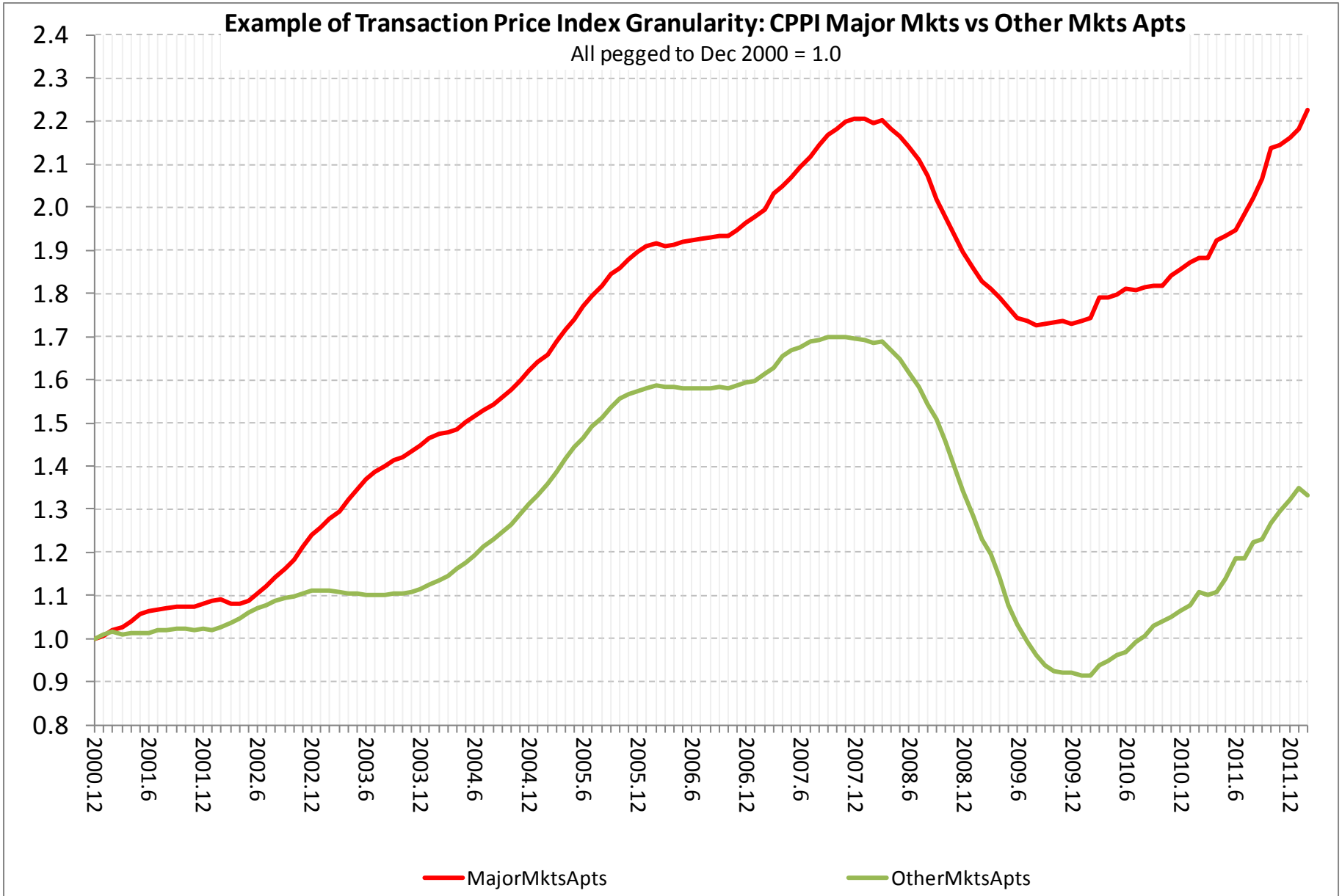
Market segmentation ➔ Need for index **granularity**…



Data source: RCA repeat-sales Mar2012 database.

MIT CENTER FOR REAL ESTATE

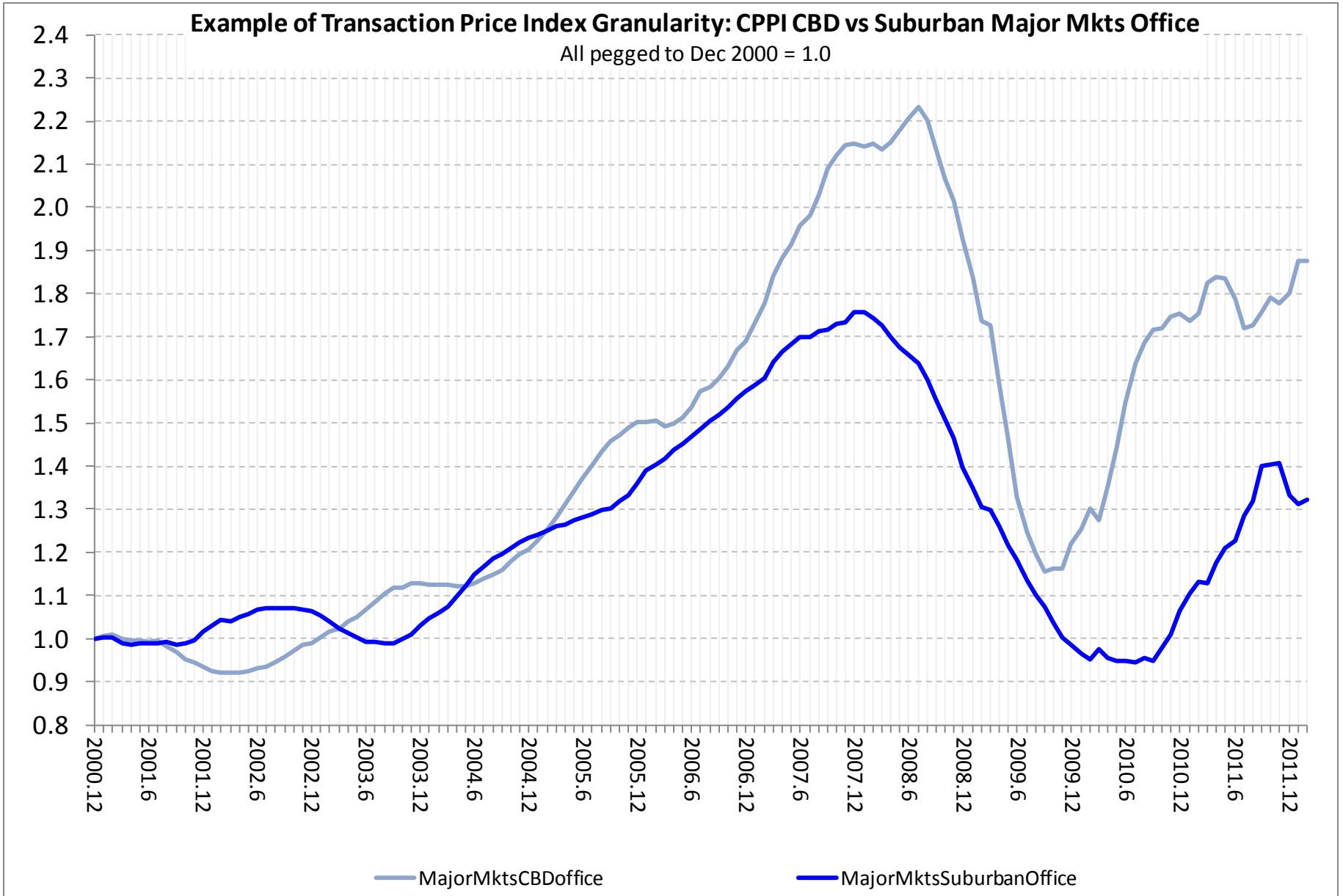
Market segmentation ➔ Need for index **granularity**…



Data source: RCA repeat-sales Mar2012 database.

MIT CENTER FOR REAL ESTATE

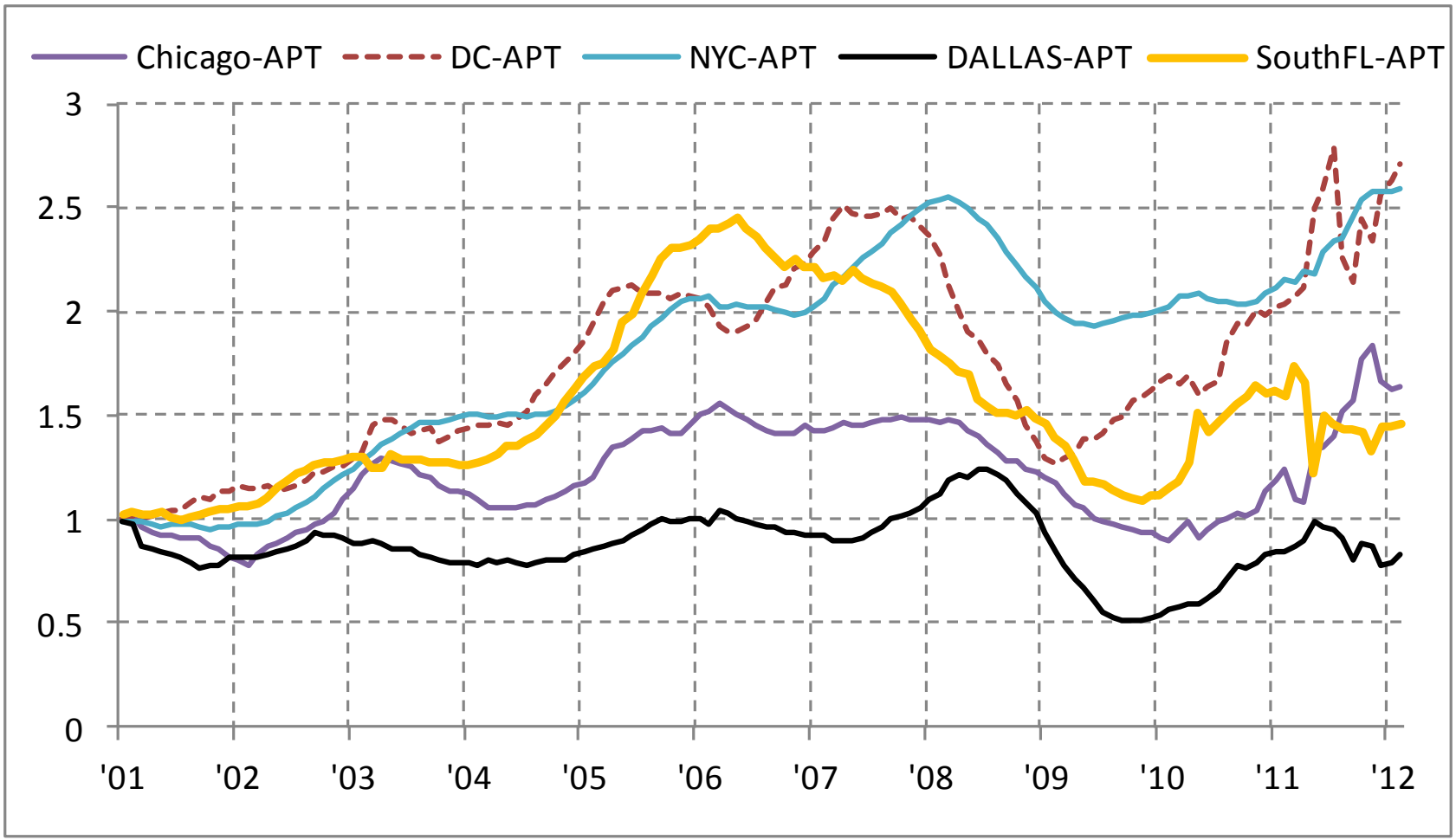
Market segmentation ➔ Need for index **granularity**…



Data source: RCA repeat-sales Mar2012 database.

MIT CENTER FOR REAL ESTATE

Market segmentation ➔ Need for index **granularity**…



Metro-level Apartment Properties Price Indices

Monthly same-property repeat-sales transactions price based indices based on the Real Capital Analytics database of all sales > $2,500,000.

MIT CENTER FOR REAL ESTATE

Different types of indices have different strengths & weaknesses (& this balance varies by country)…

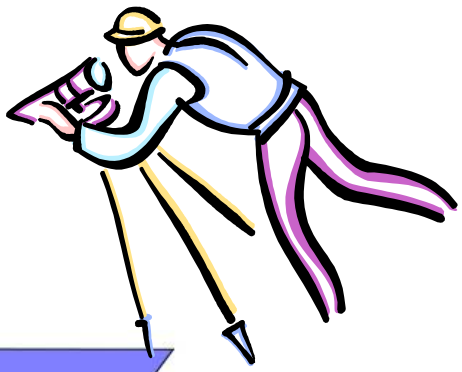
Index Type:	Strengths	Weaknesses
Appraisal-based	• Can be available when others not • Strong profession & tradition in some countries	• Opinions not actual prices • Tend to lag & smooth market values • Can be subject to influence
Transactions-based	• Actual prices directly reflect mkt equilibrium • Objective info, less susceptible to manipulation	• Requires large historical database • Statistical models
Stock Mkt-based	• REITs (or property "pure plays") traded in many countries • Uses information efficiency & liquidity of stock mkt • Leading indicator, daily updates	• Some countries have few REITs, or short history, or thin market • Information only indirect about actual property mkt

Therefore…

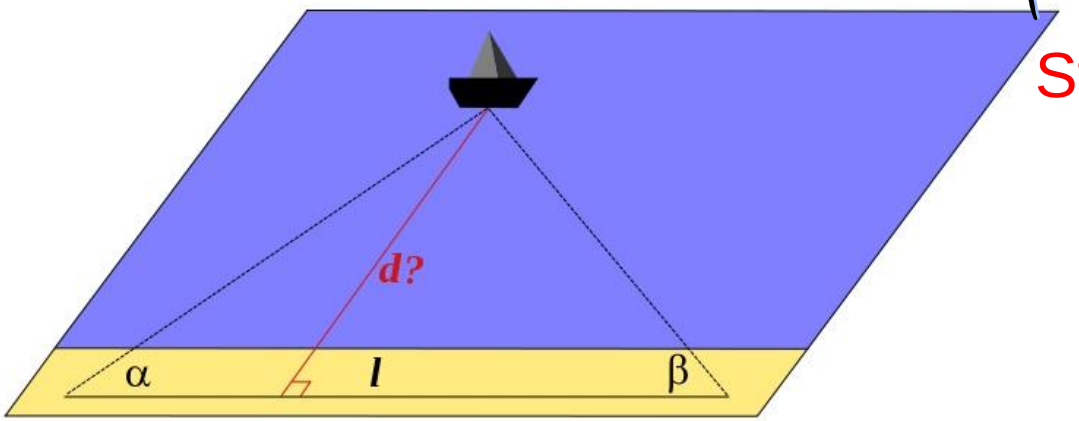
MIT CENTER FOR REAL ESTATE

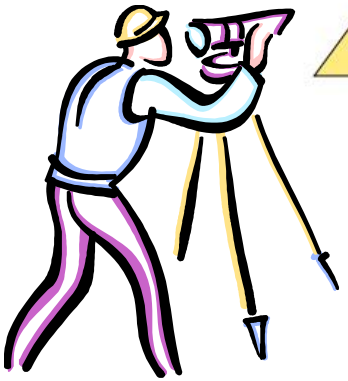
Suggested method for tracking commercial property prices:

Triangulation…



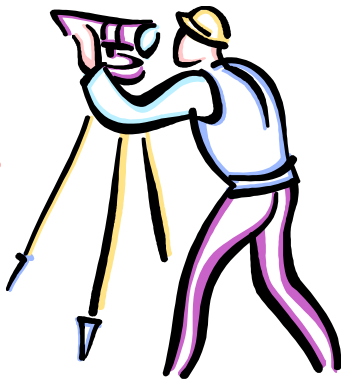
Stock Mkt





Transaction Prices

Appraisals



Or, if you prefer…

A *"cocktail"*…

Transaction Prices Based Index

Stock Mkt Based Index

Appraisal Based Index

(We can debate which ingredient corresponds to which index…)

VERMOUTH

Transaction Prices Based Index

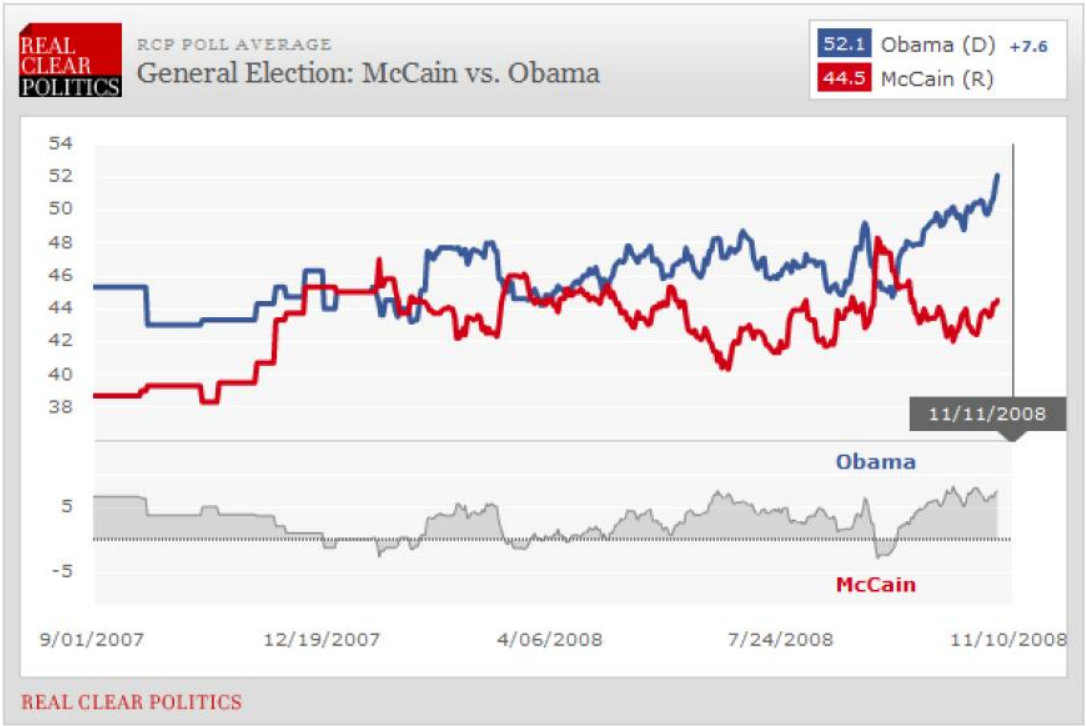
GIN

Stock Mkt Based Index

The OLIVE

Appraisal Based Index

Similar to the approach in political analysis, where meta-data (averages across different polls) provides better predictions than any one poll…



Polling Data						
Poll	**Date**	**Sample**	**MoE**	**Obama (D)**	**McCain (R)**	**Spread**
Final Results	--	--	--	**52.9**	**45.6**	**Obama +7.3**
RCP Average	**10/29 - 11/3**	--	--	**52.1**	**44.5**	**Obama +7.6**
Marist	11/3 - 11/3	804 LV	4.0	52	43	Obama +9
Battleground (Lake)*	11/2 - 11/3	800 LV	3.5	52	47	Obama +5
Battleground (Tarrance)*	11/2 - 11/3	800 LV	3.5	50	48	Obama +2
Rasmussen Reports	11/1 - 11/3	3000 LV	2.0	52	46	Obama +6
Reuters/C-SPAN/Zogby	11/1 - 11/3	1201 LV	2.9	54	43	Obama +11

Summary:

1. Evolution of commercial property price indexing in the U.S.
   - From appraisal-based;
   - To transactions price-based;
   - And stock market-based.

2. What have we learned from the new transactions-based indices:
   - Need to track dynamic segmentation in markets ➔ Importance of index granularity
   - Complementarity of different types of indices

3. Recommendation:
   - "Triangulation" (or use of "cocktails" of indices).