Real Estate Cycles

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&

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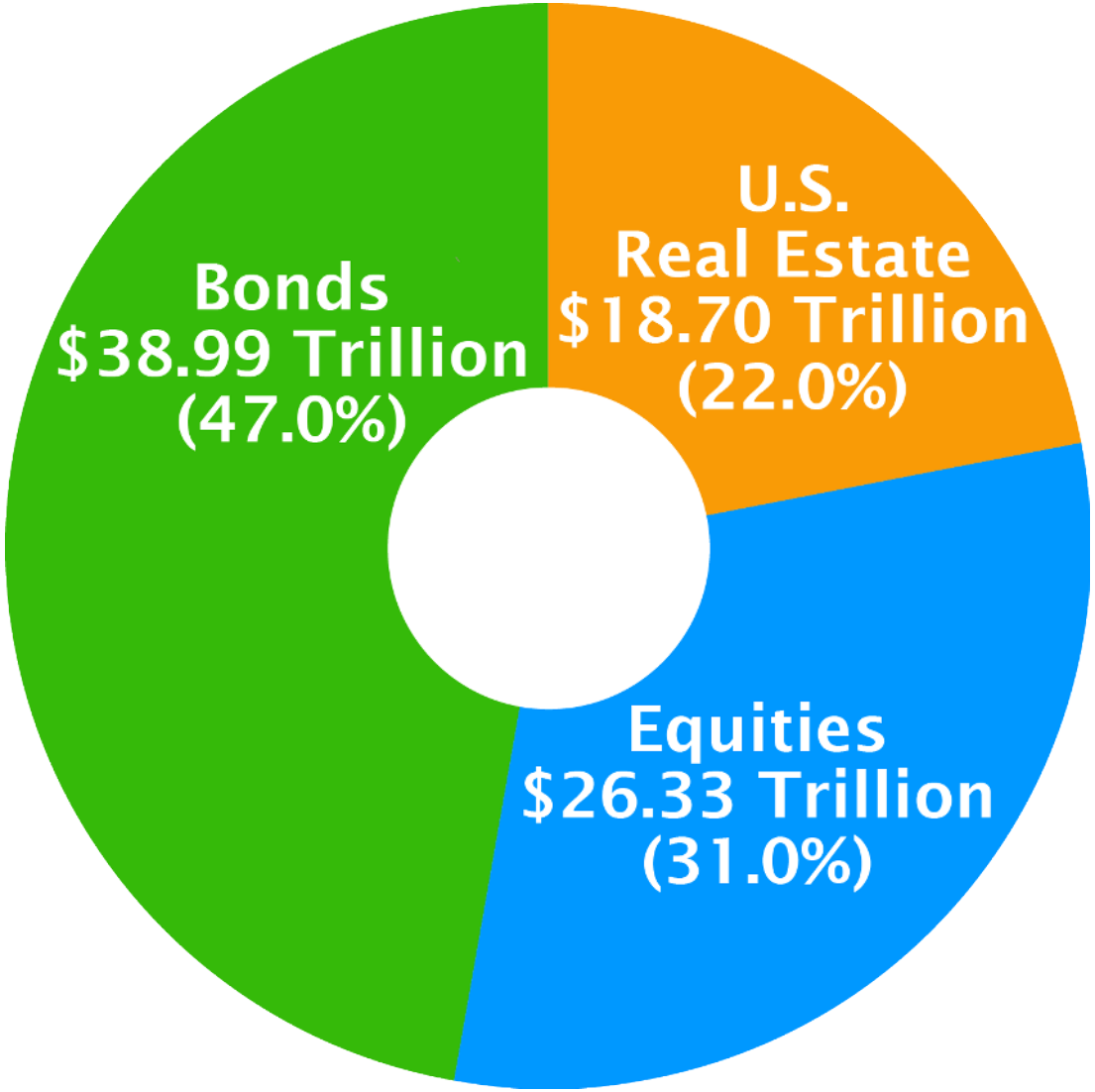
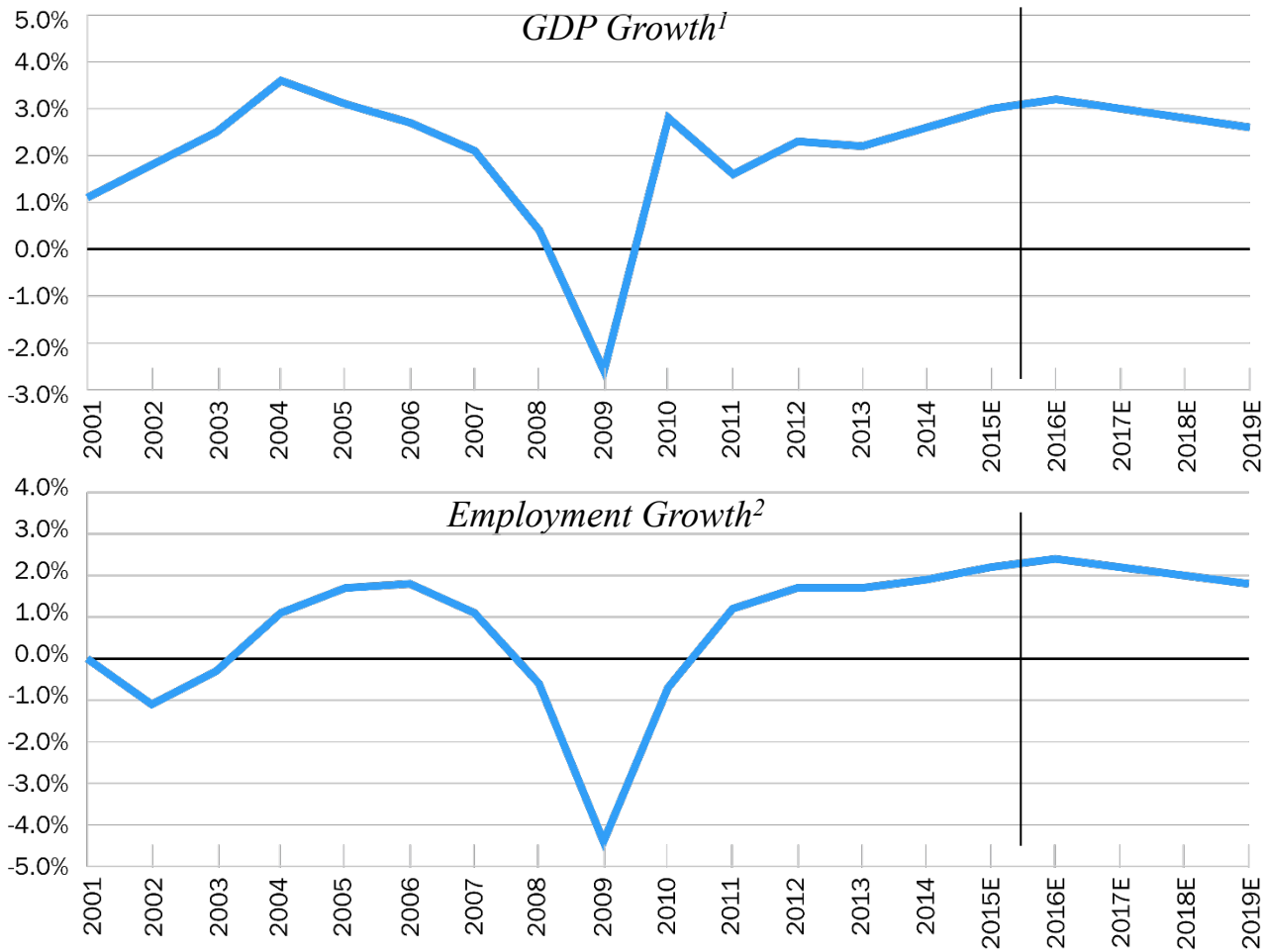
Why Real Estate Fits an Investment Portfolio = SIZE

U.S. Real Estate vs. Other Asset Classes



Source: Bonds = SIFMA, January 2015; Equities = World Federation of Exchanges for Equities, January 2015; U.S. Real Estate = Moody's Real CPPI, January 2015. Commercial real estate are subject to real estate risks associated with operating and leasing properties. Additional risks include changes in economic conditions, interest rates, property values, and supply and demand, as well as possible environmental liabilities, zoning issues and natural disasters.

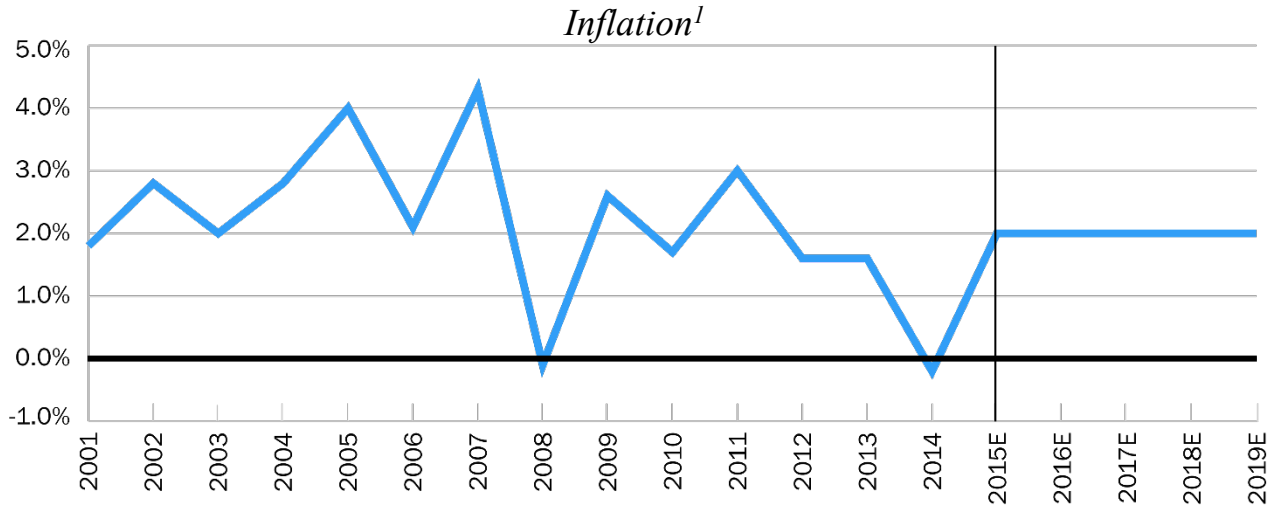
Five Key Macro Economic Factors

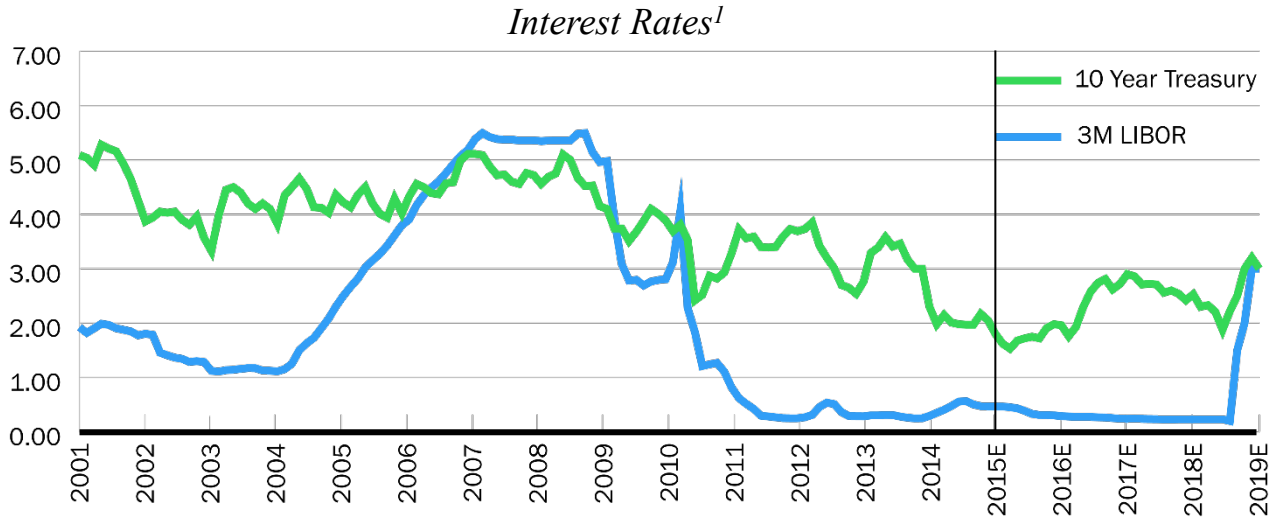


Population Growth = 0.9% Annual

[1] *Source: U.S. Bureau of Economic Analysis, March 2015; Moody's, 2015.*
[2] *Source: U.S. Bureau of Labor Statistics, March 2015; Moody's, 2015.*

Five Key Macro Economic Factors



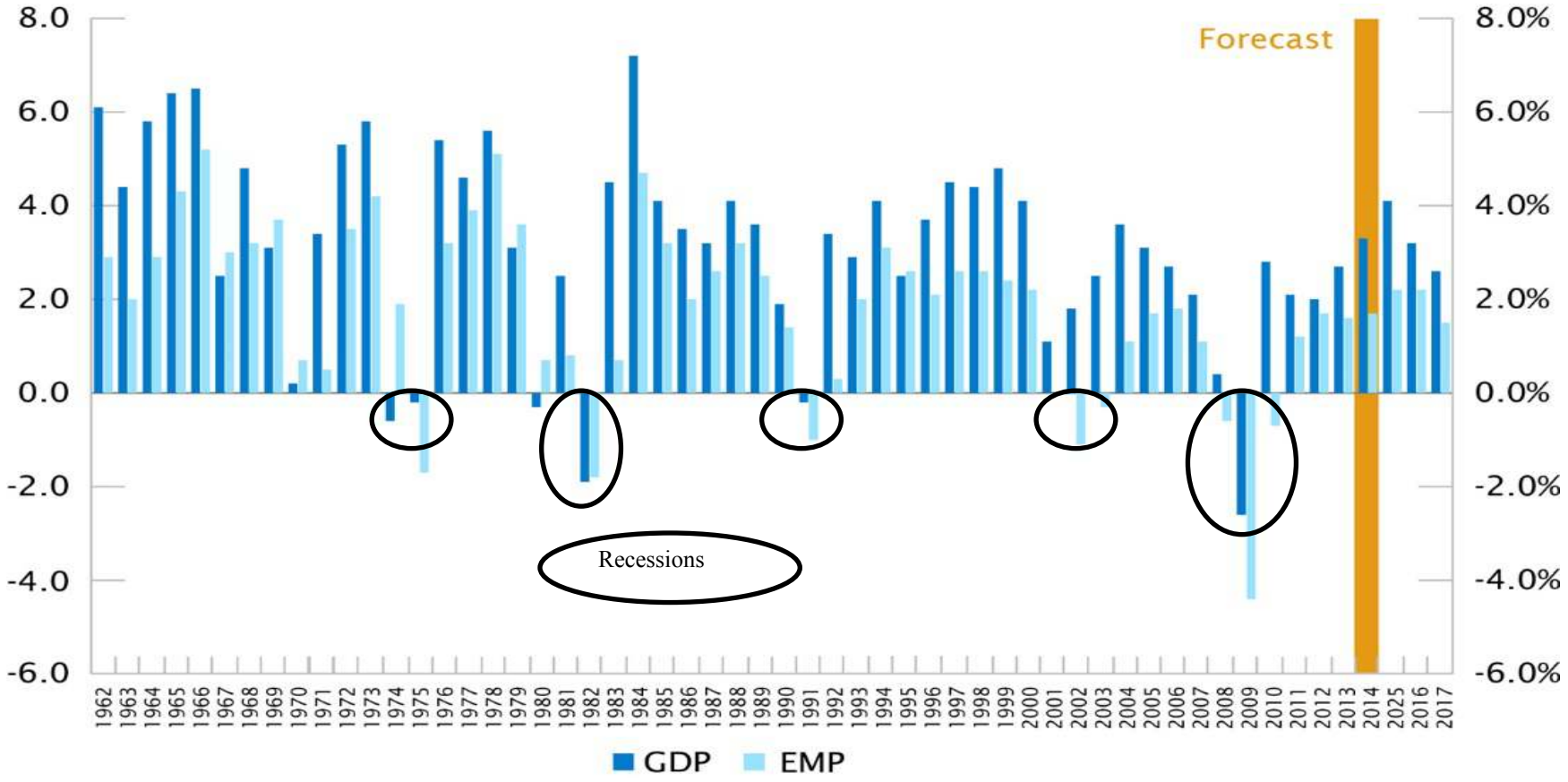


[1] *Source: U.S. Bureau of Labor Statistics, March 2015; Moody's, March 2015.*

Positive GDP Leads Employment Recovery

Recessions last a year or less - Recovery & Growth cycles can be short of long

GDP & EMP Growth

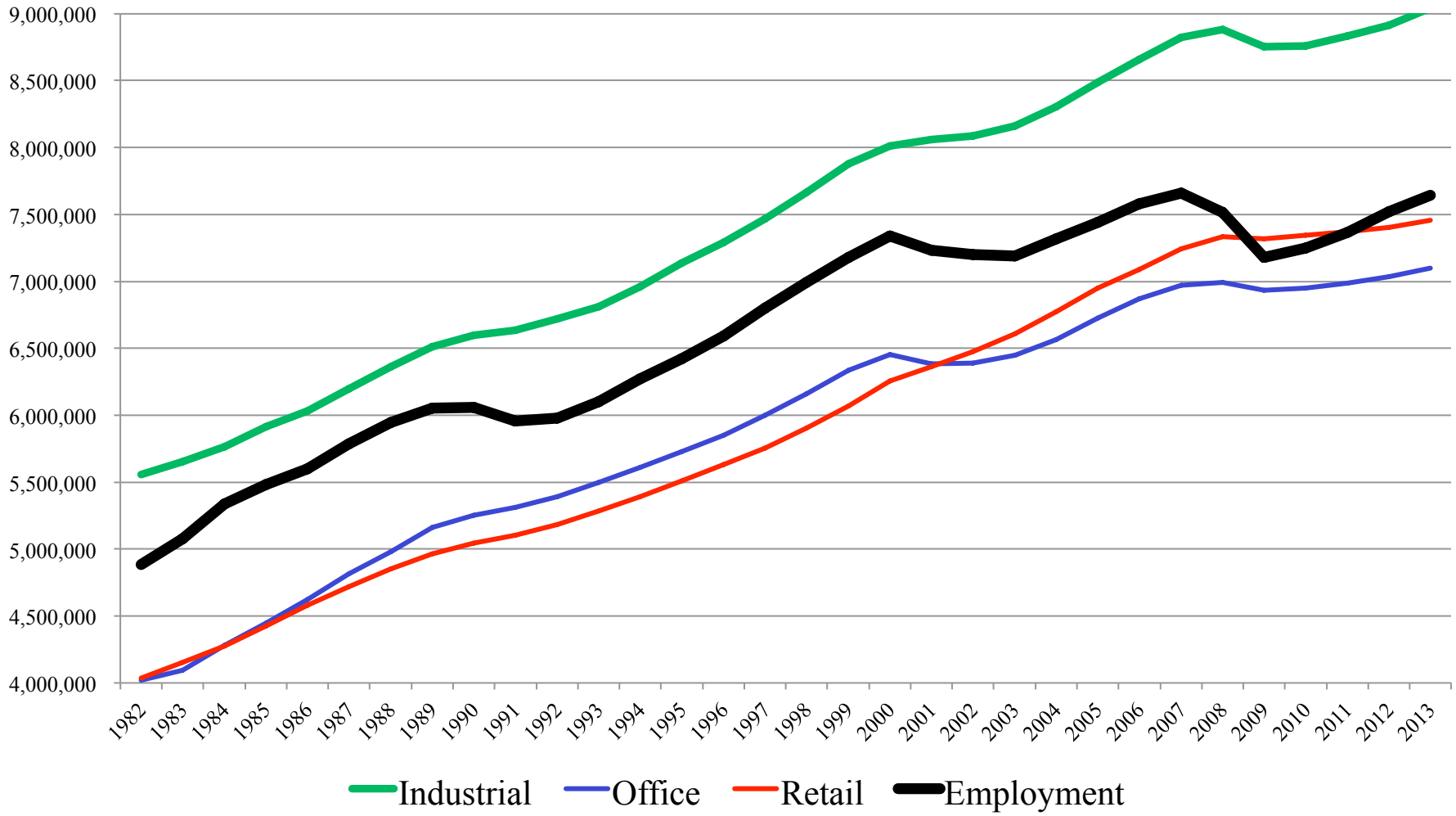


Source: U.S. Bureau of Labor Statistics, December 2013; U.S. Bureau of Economic Analysis, December 2013; Moody's, 2013.

Economic Outlook

Real Estate Occupancy is Demand Driven by Employment Growth

Real Estate — a Delayed Mirror of the Economy



Source: CoStar Portfolio Strategy, January 2015. Employment & Property Occupied Stock is the top 54 MSA's covered by PPR

US Commercial Real Estate Cycle

Follows US Economic Cycles

3 Key Metrics:

- **Occupancies**
- **Rents**
- **Prices**

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Source: Glenn Mueller, PhD

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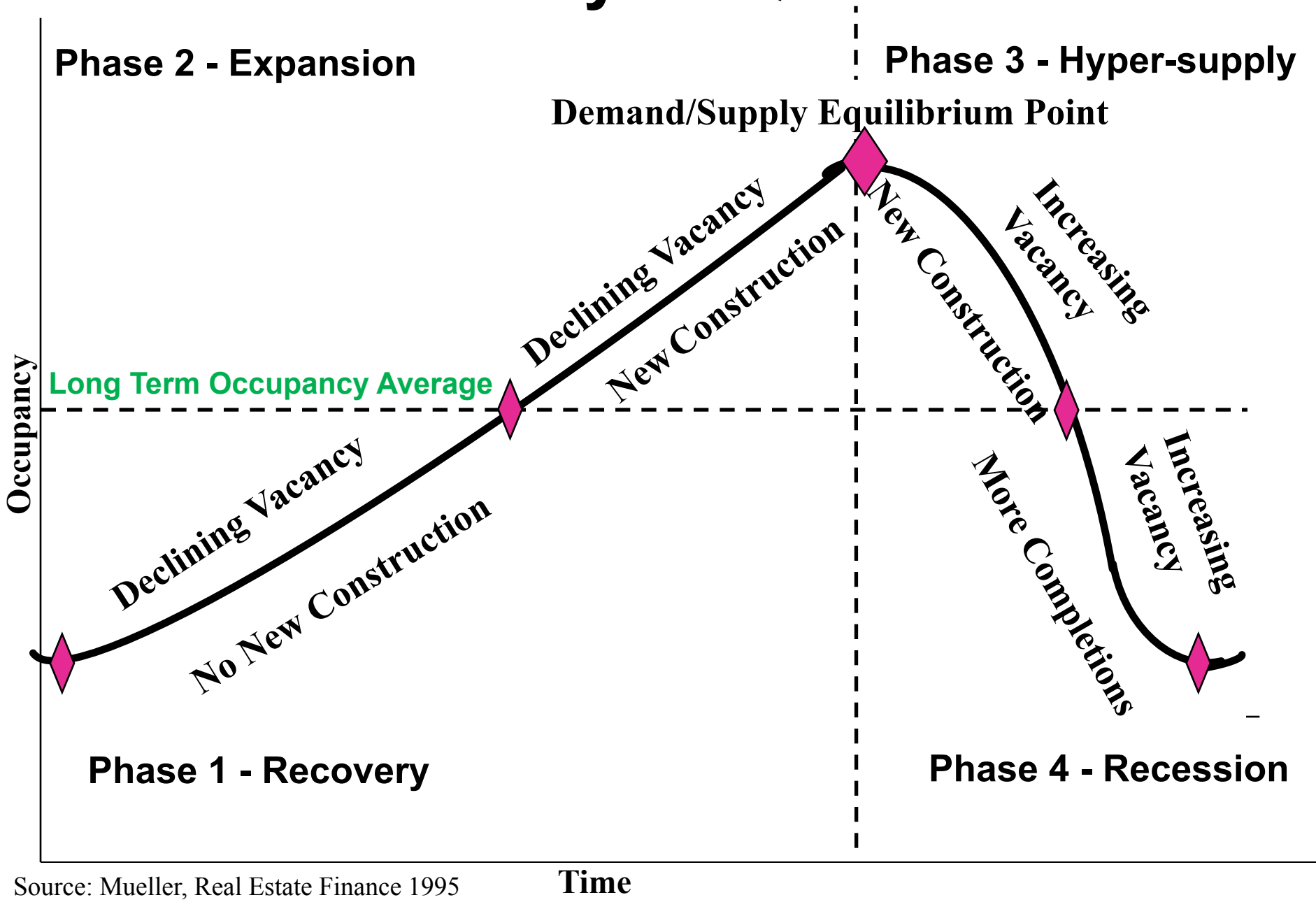
Market Cycle Analysis

Physical Cycle

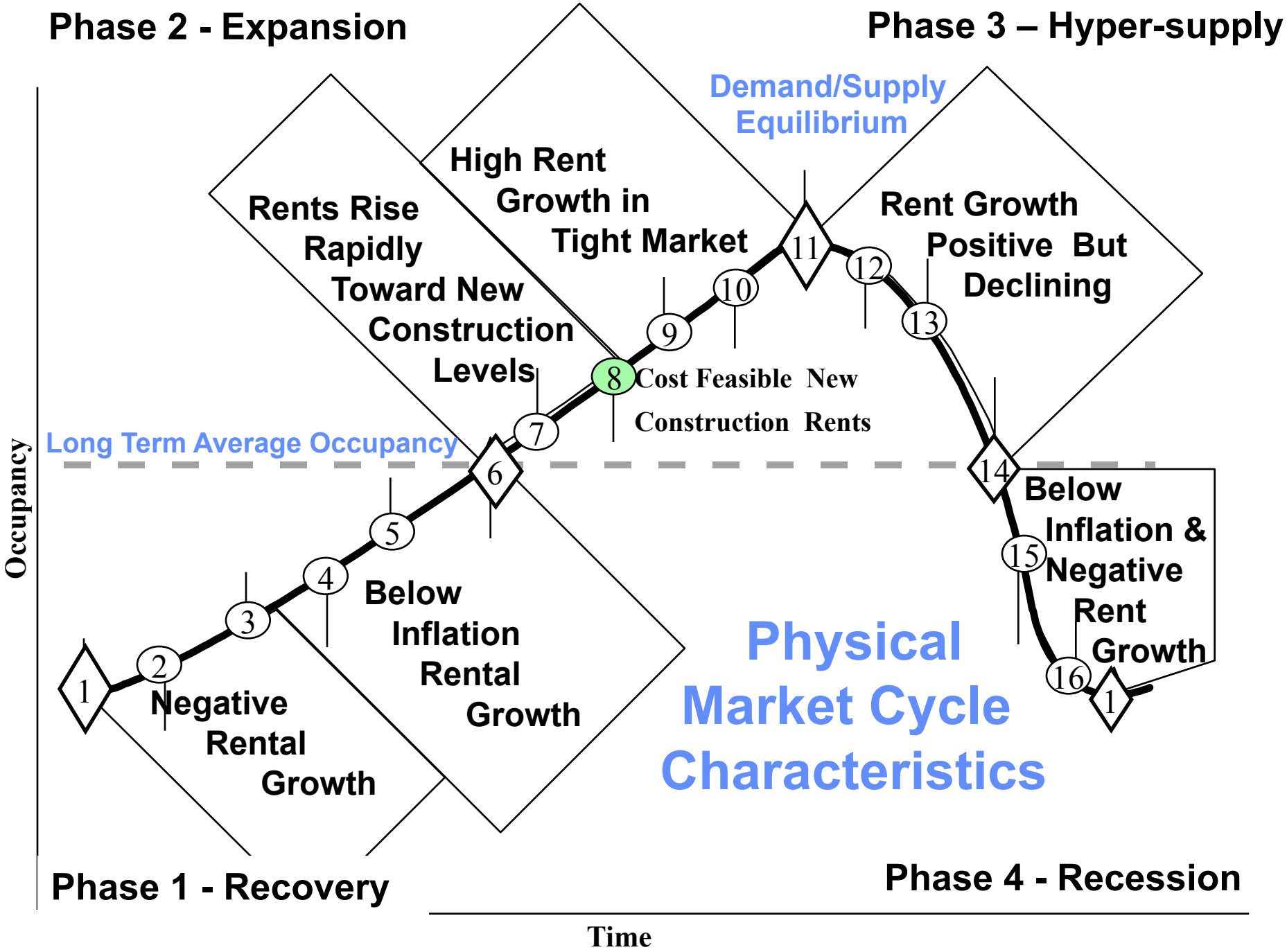
Demand & Supply drive Occupancy

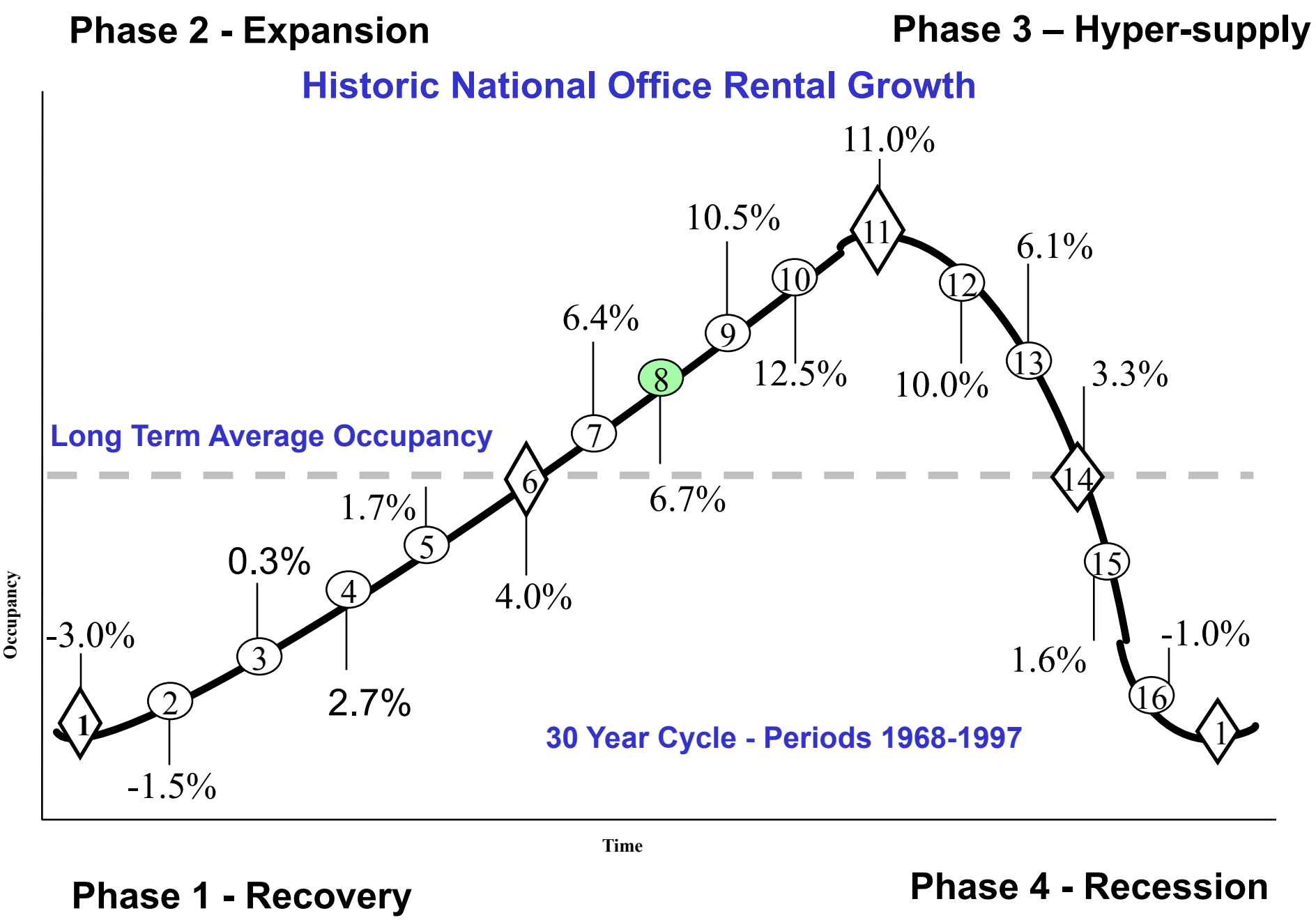
Occupancy drives Rental Growth

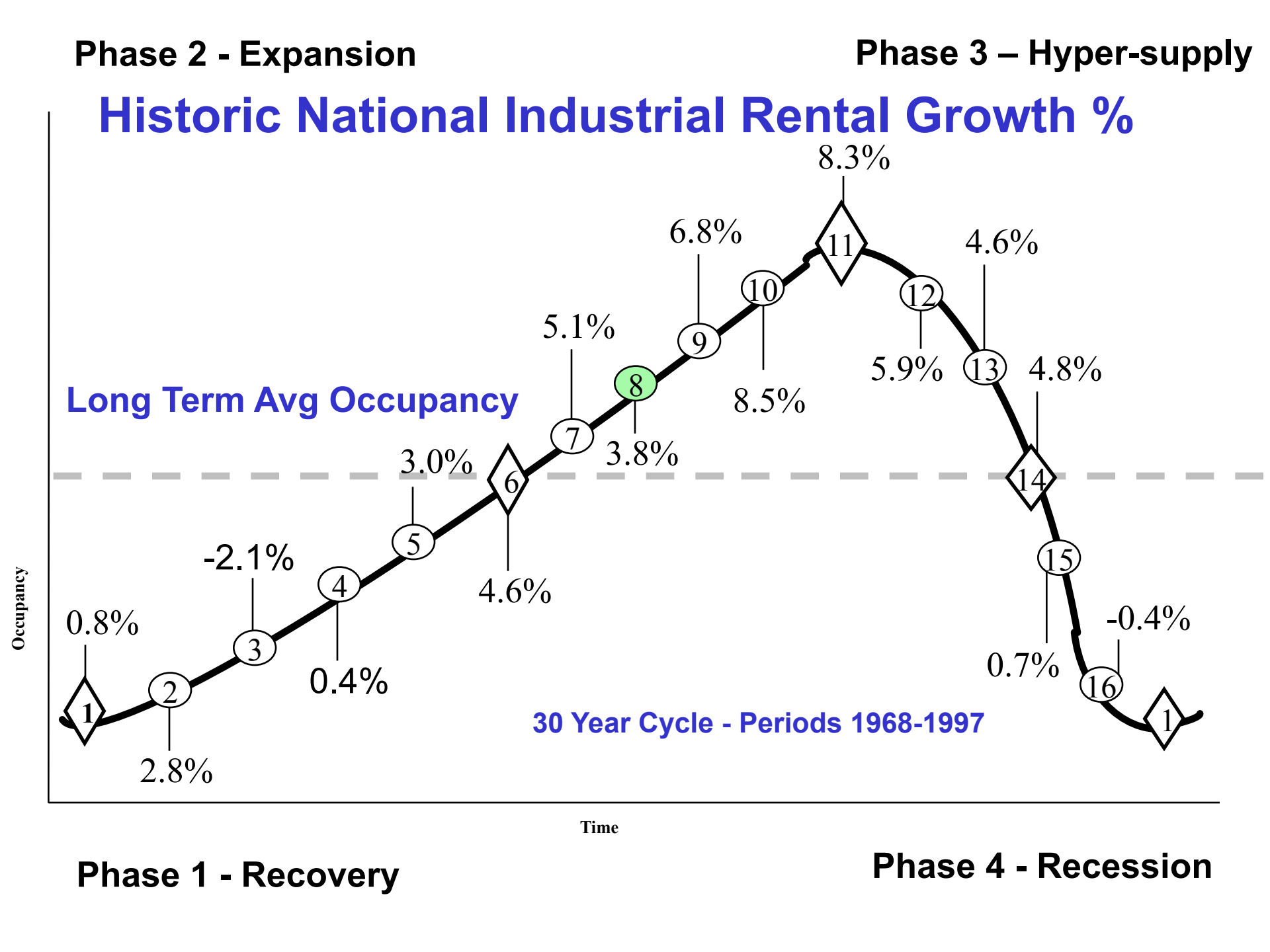
Market Cycle Quadrants



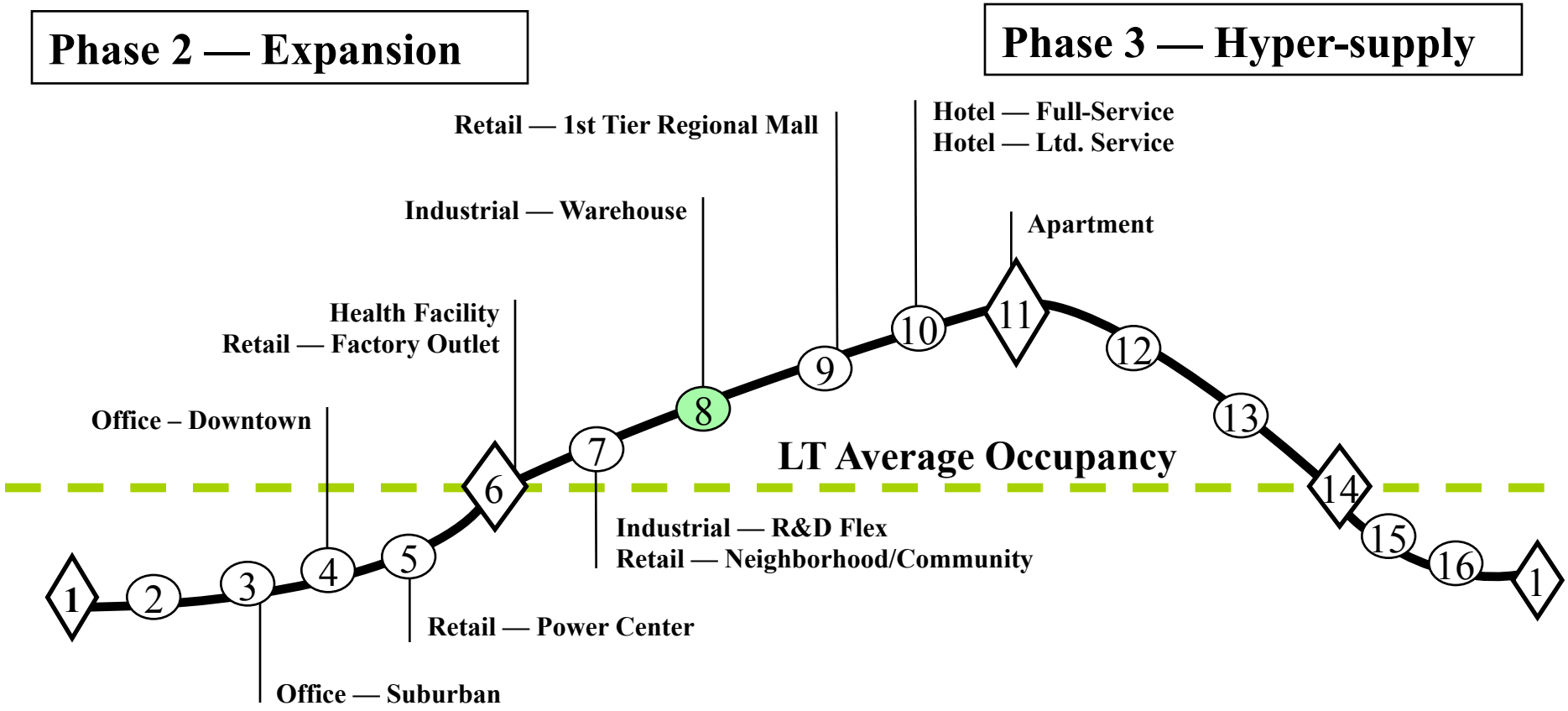
Source: Mueller, Real Estate Finance 1995


Phase 2 - Expansion
Phase 3 – Hyper-supply
Demand/Supply Equilibrium
Rents Rise Rapidly Toward New Construction Levels
High Rent Growth in Tight Market
Rent Growth Positive But Declining
Cost Feasible New Construction Rents
Long Term Average Occupancy
Below Inflation & Negative Rent Growth
Below Inflation Rental Growth
Negative Rental Growth
Physical Market Cycle Characteristics
Occupancy
Phase 1 - Recovery
Phase 4 - Recession
Time
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
1


Phase 2 - Expansion
Phase 3 – Hyper-supply
Historic National Office Rental Growth
11.0%
10.5%
6.1%
6.4%
12.5%
10.0%
3.3%
Long Term Average Occupancy
6.7%
1.7%
0.3%
4.0%
-3.0%
2.7%
1.6%
-1.0%
-1.5%
30 Year Cycle - Periods 1968-1997
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
1
Occupancy
Time
Phase 1 - Recovery
Phase 4 - Recession


Phase 2 - Expansion
Phase 3 – Hyper-supply
Historic National Industrial Rental Growth %
Long Term Avg Occupancy
0.8%
2.8%
-2.1%
0.4%
3.0%
4.6%
5.1%
3.8%
6.8%
8.5%
8.3%
5.9%
4.6%
4.8%
0.7%
-0.4%
30 Year Cycle - Periods 1968-1997
Occupancy
Time
Phase 1 - Recovery
Phase 4 - Recession

National Property Type Cycle Locations



2nd Qtr 2015

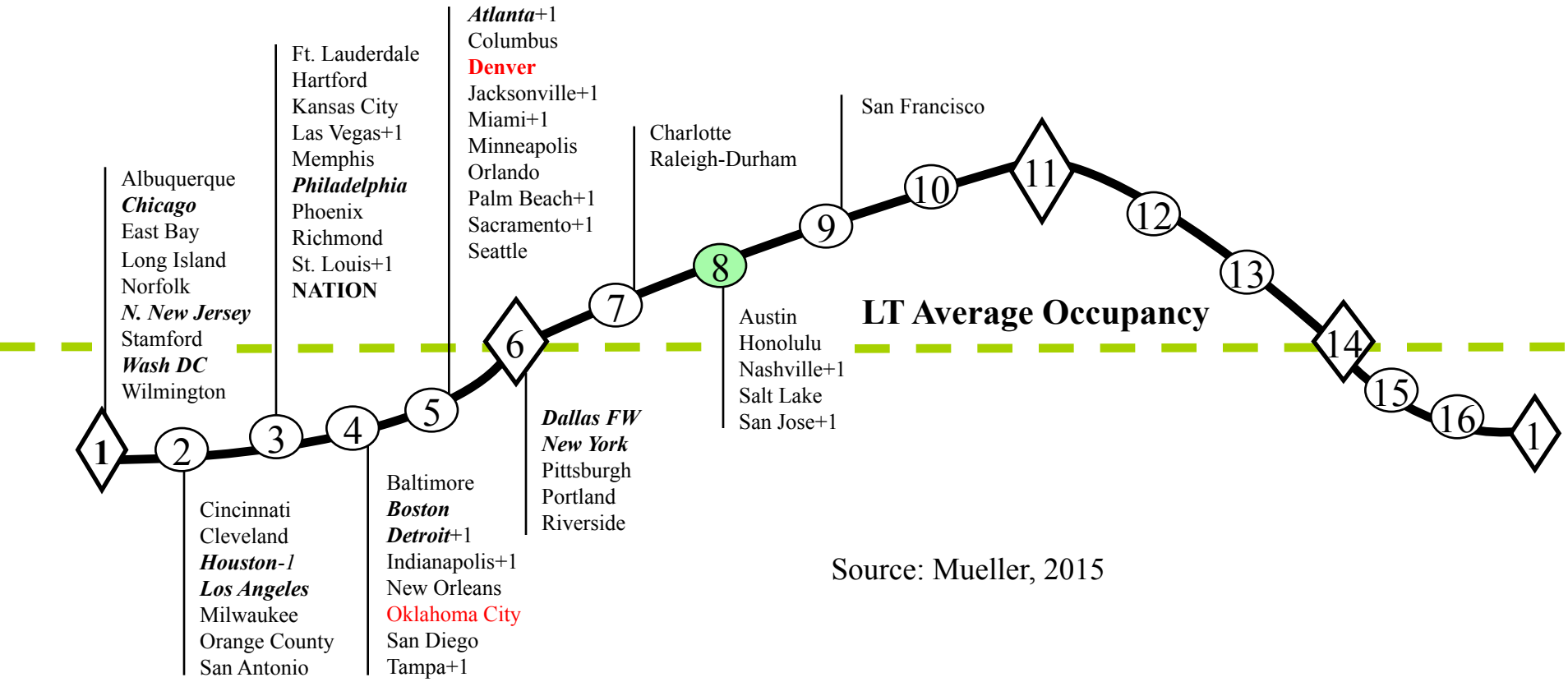
Source: Mueller, 2015

Phase 1 — Recovery

Phase 4 — Recession

Office Market Cycle Analysis

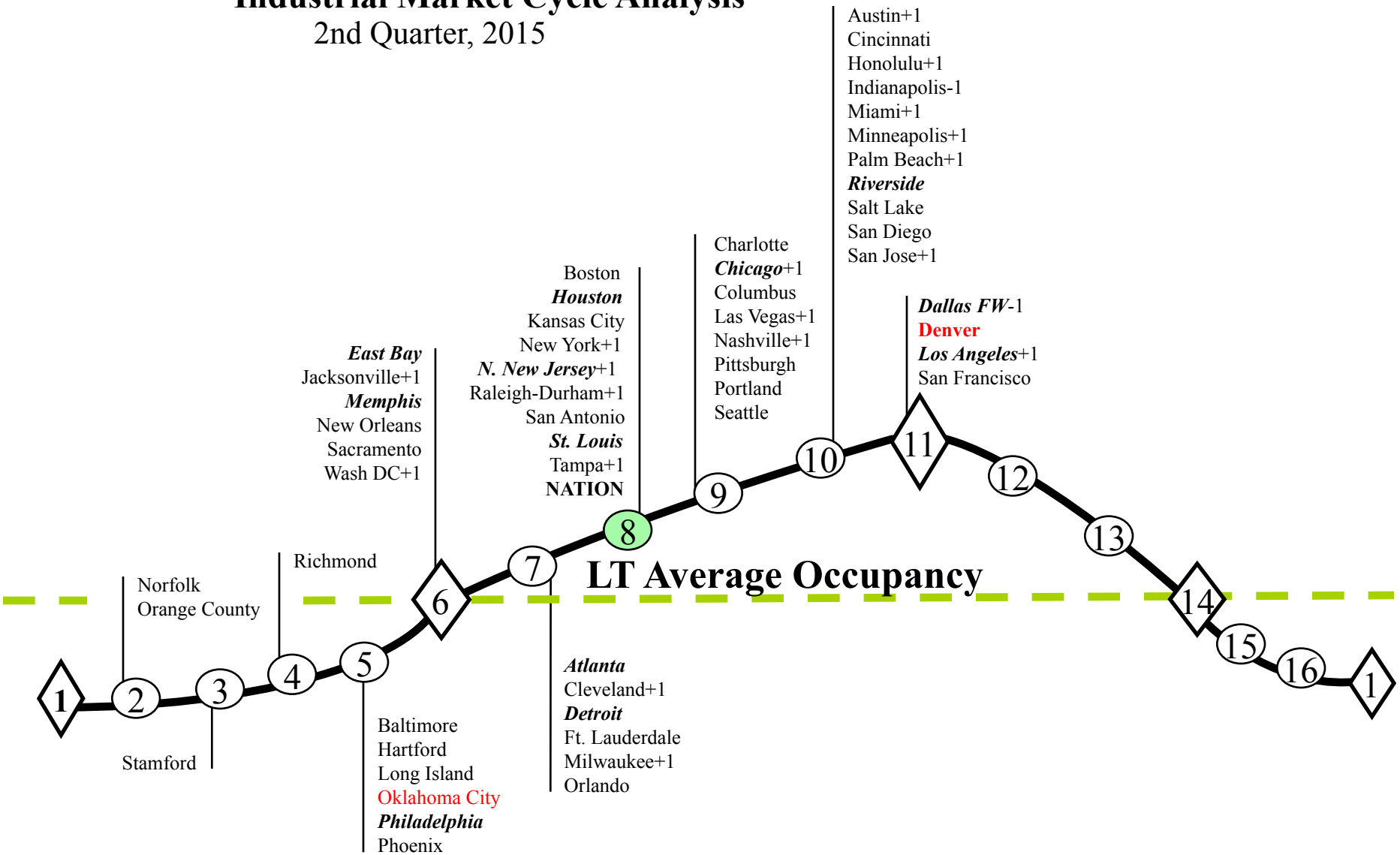
2nd Quarter, 2015



Source: Mueller, 2015

Industrial Market Cycle Analysis

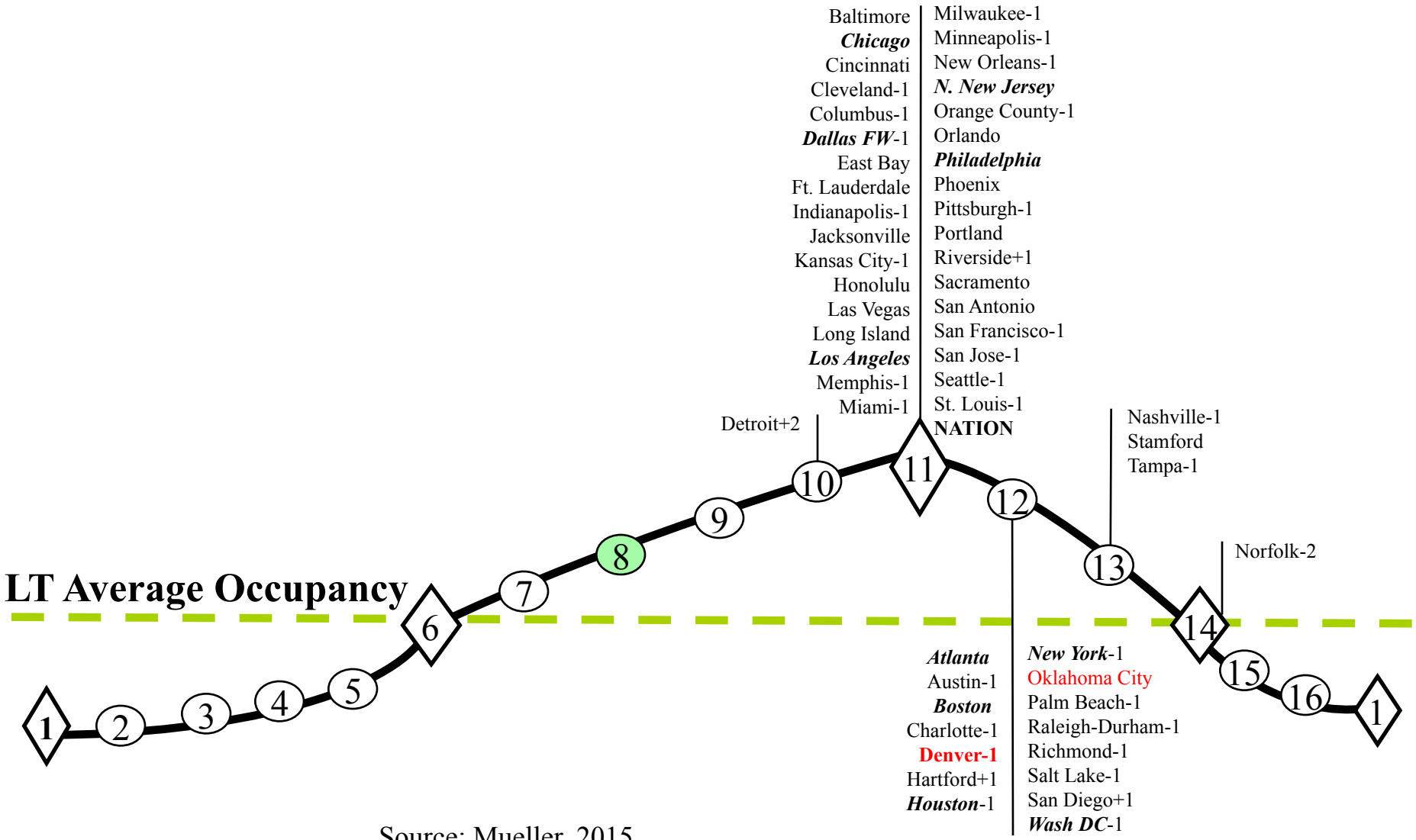
2nd Quarter, 2015



Source: Mueller, 2015

Apartment Market Cycle Analysis

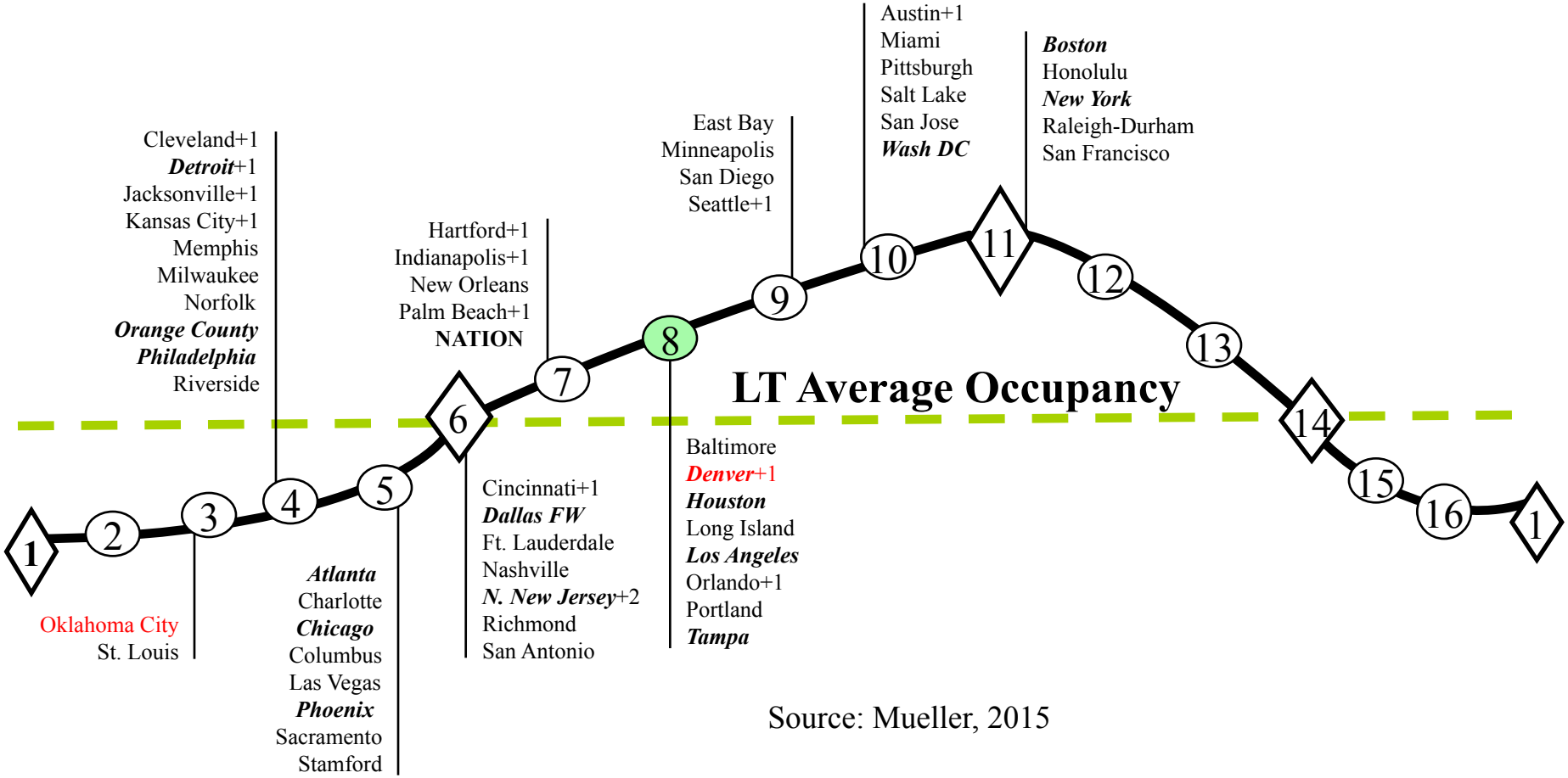
2nd Quarter, 2015



Source: Mueller, 2015

Retail Market Cycle Analysis

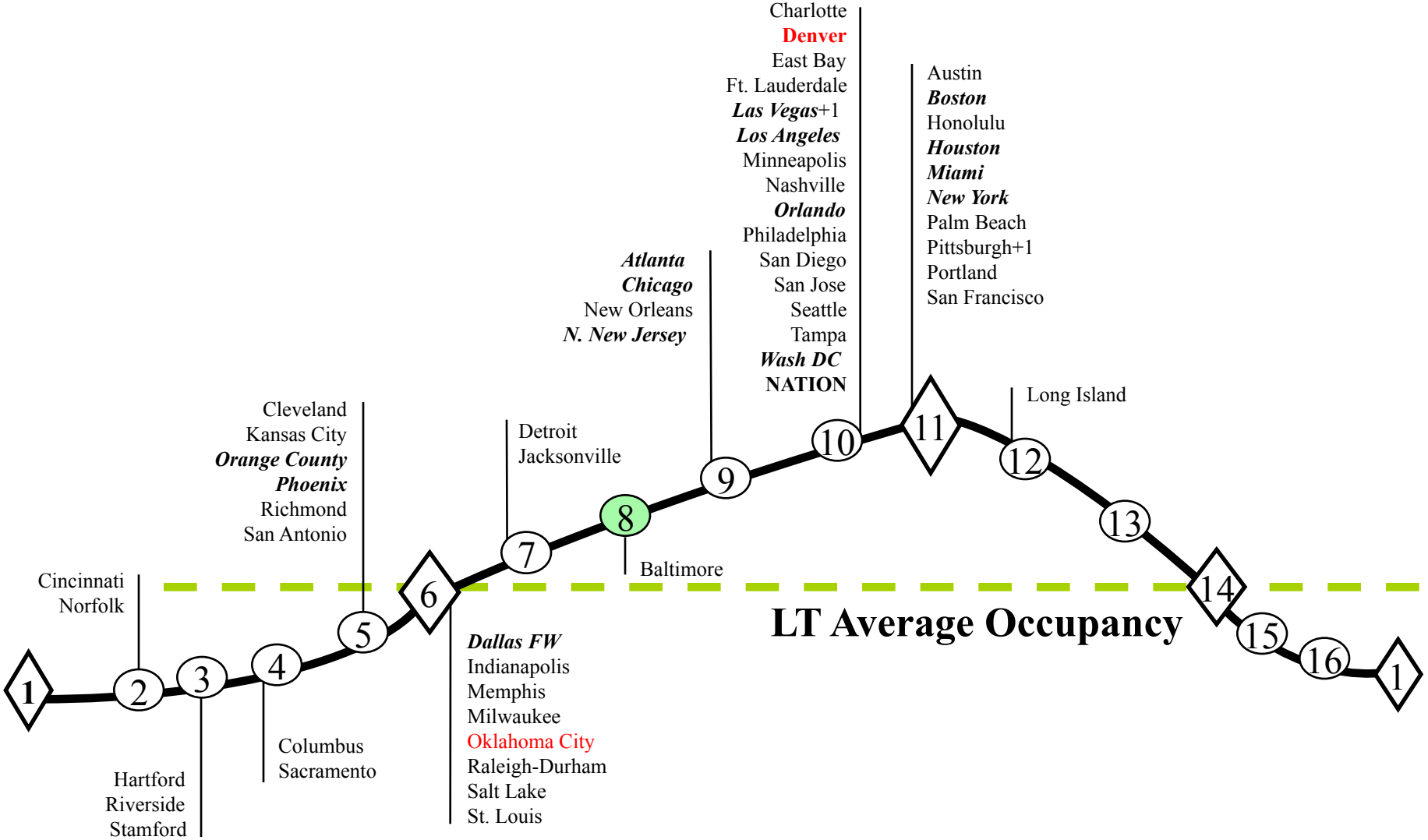
2nd Quarter, 2015



Source: Mueller, 2015

Hotel Market Cycle Analysis

2nd Quarter, 2015

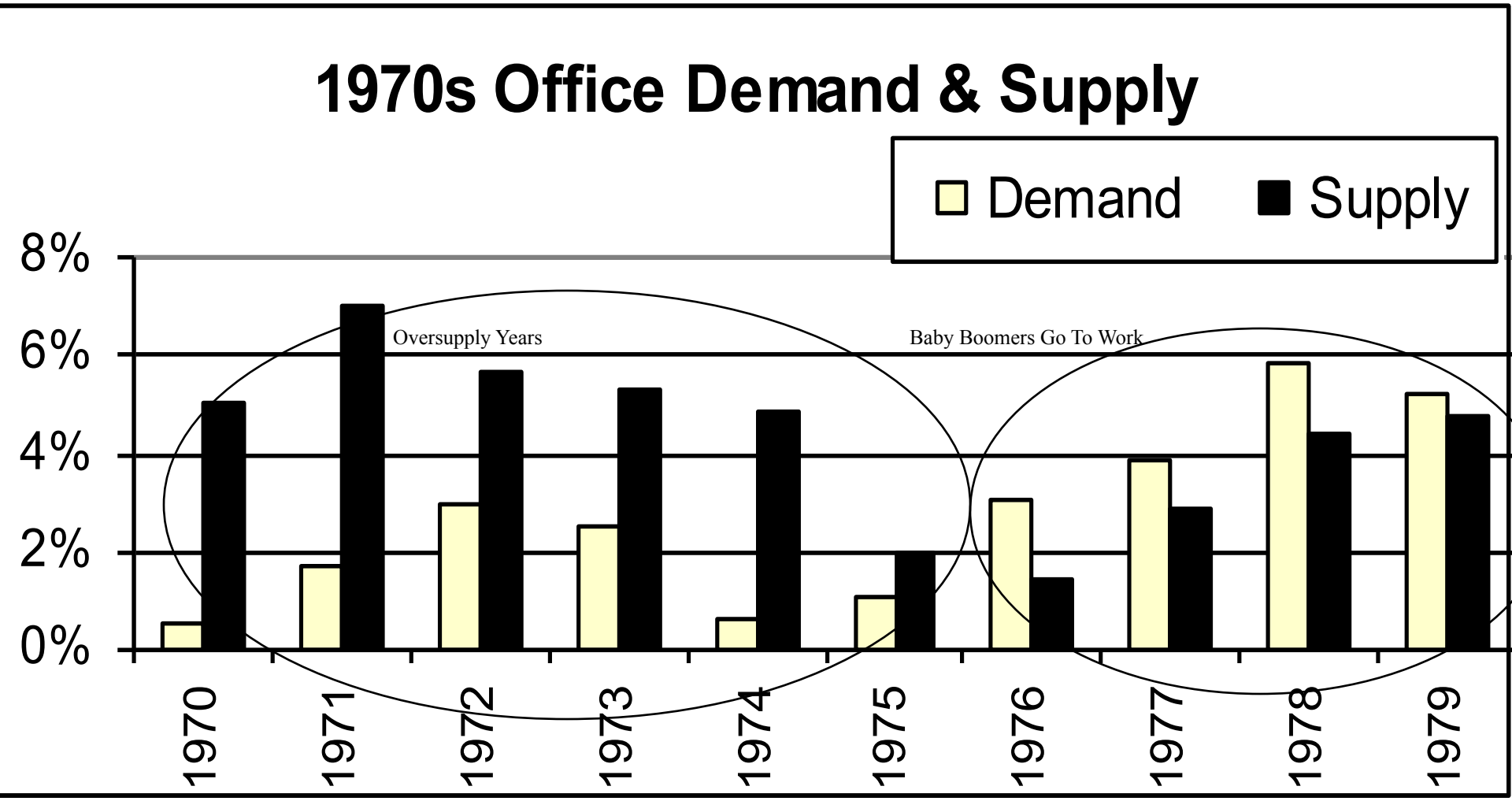


Source: Mueller, 2015

1970s Cycle

- Factors Driving <u>The First Half</u> Cycle (5 Year)
  - Strong Demand from the 1960s that stopped
  - Recession 1974
  - Capital Flow - Mortgage REITs produced oversupply

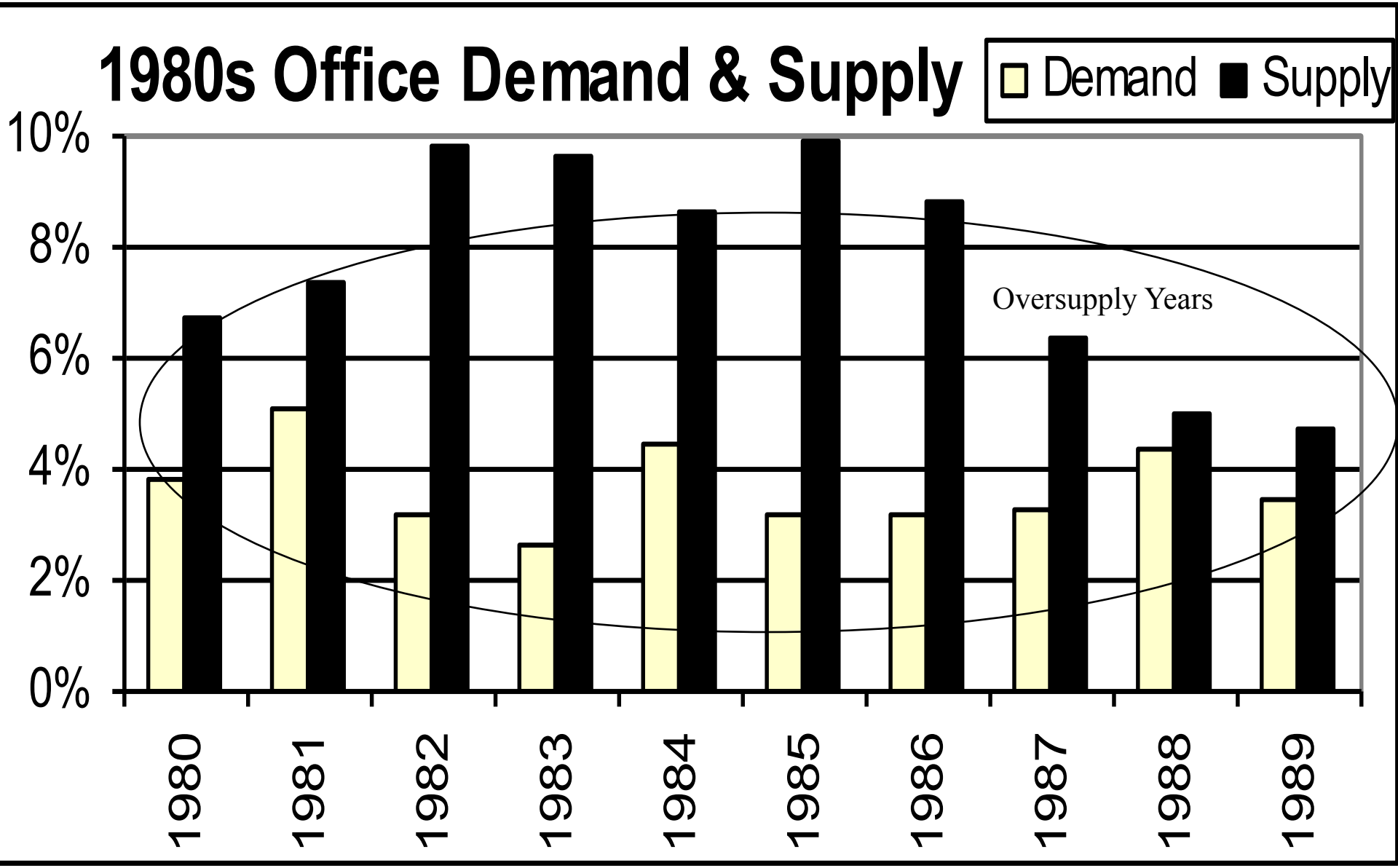
- Factors Driving <u>The Second Half</u> Cycle (5 Year)
  - Baby Boom Generation Goes to Work = Demand
  - Capital Flow Shut Down = no supply = Lenders Recover
  - Markets tighten and reach peak occupancy 1979 (5% vacancy)



Source: FW Dodge, CB Commercial, BLS, Mueller

1980s Cycle

- Factors Driving <u>The First Half</u> Cycle (5 Year)
  - 1979 Tight market pushed rents & prices up
  - Inflation pushed prices higher
  - 1981 Tax Act attracted taxable investors
  - Thrift Deregulation allowed capital to flow
- Factors Driving <u>The Second Half</u> Cycle (5 Year)
  - 1986 Tax Act slowed taxable investors - not tax free
  - Poor stock market attracted Pension & Foreign capital
  - Rising R.E. prices masked poor income returns

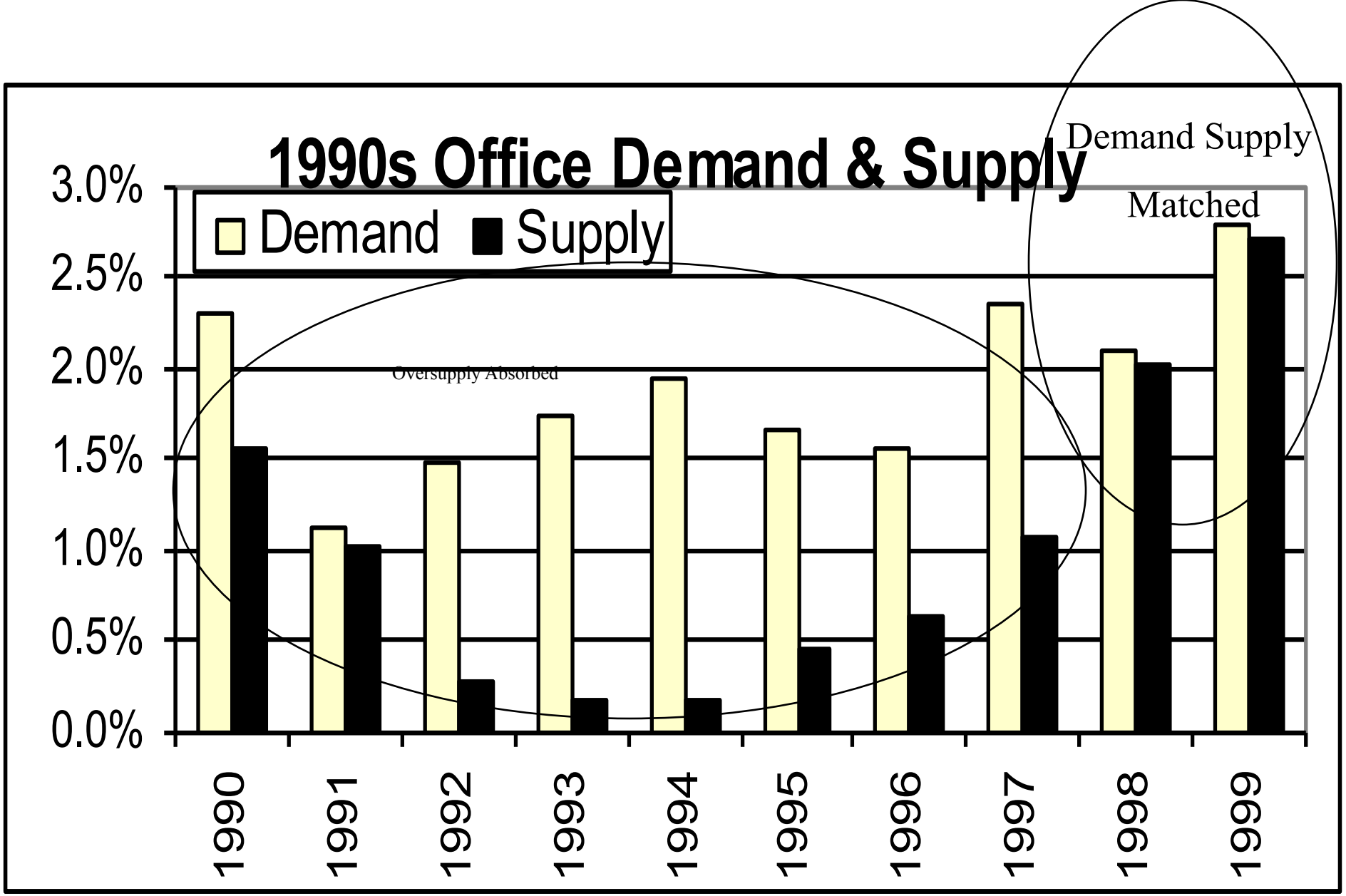


Source: FW Dodge, CB Commercial, BLS, Mueller

1990s Cycle

- Factors Driving <u>The First Half</u> Cycle (5 Year)
  - Moderate / stable demand growth (1991 recession minor)
  - Oversupply & Foreclosures shut down construction
  - Excess space Absorbed – "***Markets Recover***"

- Factors Driving <u>The Second Half</u> Cycle (5 Year)
  - Moderate Demand growth Continued
  - Oversupply Absorbed - Return Performance improved
  - Construction "***Constrained***" caused rents & prices to rise
  - More "***Efficient Markets***" matched supply to demand



Source: FW Dodge, CB Commercial, BLS, Mueller

2000s Cycle

Demand

- "***Globalization***" - created more stable U.S. economy
- Job Growth out of "***Technology Change***"
- 2.8 million population growth ***per year*** for 10 years
- Baby boomers entered "highest income earning" years
    - second home market wave
- Echo boom children – college, first job, & renting
- Aging population – boomers *START* retiring in 2014
- ***Employment Growth*** drives commercial demand

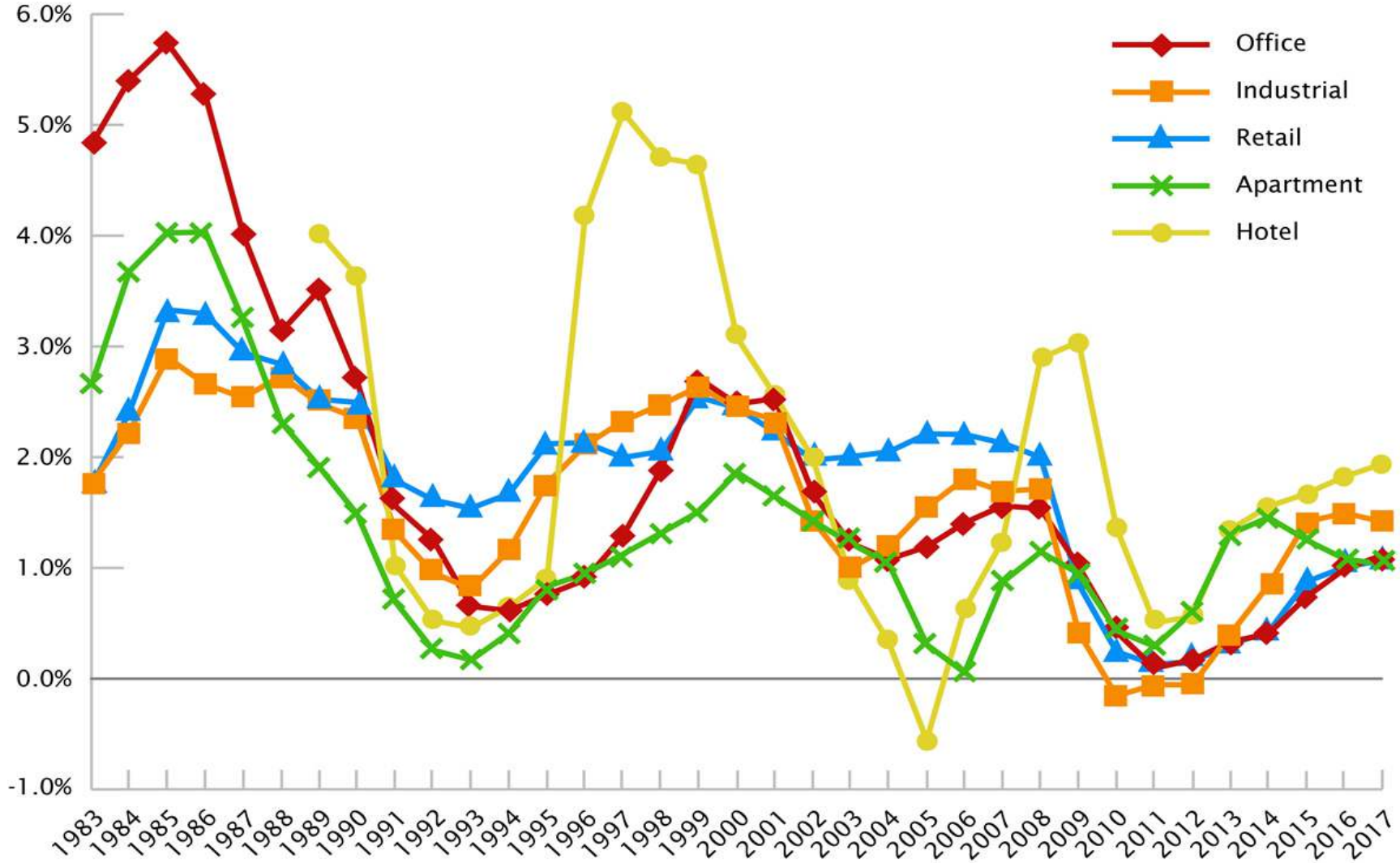
2000s Cycle

Supply Constraint

- ***Public Markets*** make R.E. Capital markets efficient
  - ***Economically Driven*** capital - low spec construction
  - 500 + Research Watchdogs – ***Data Available***
- Constrained Supply (economically driven capital)
  - construction labor harder to find
  - Steel & concrete costs increasing
  - infrastructure problems constrain growth
- Feedback loop keeps demand & supply balanced
  - Greater transparency
  - Faster reaction to demand slowdown

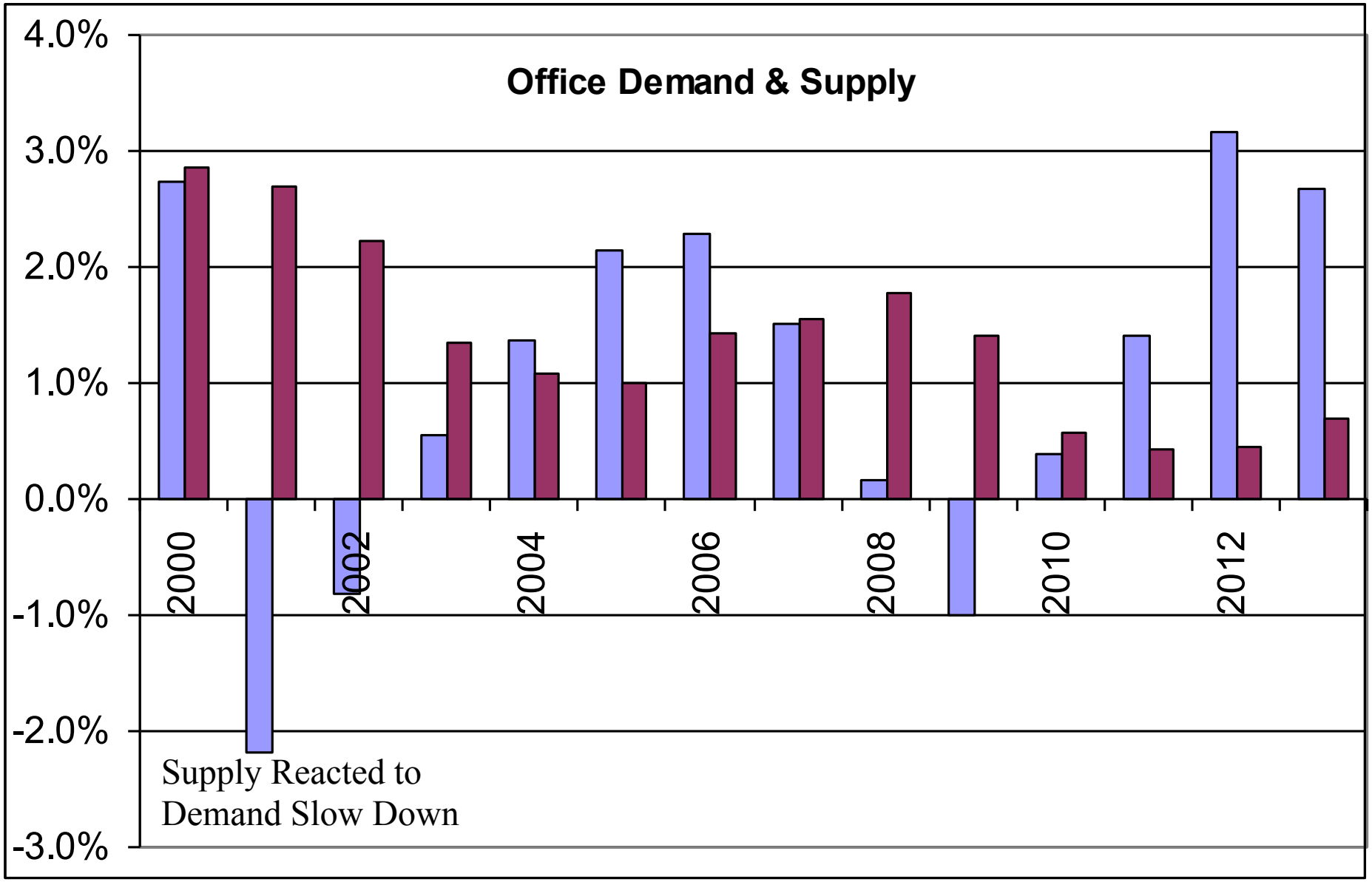
Stock Growth Recovering

- Supply growth started increase in 2013 from a 42 year low



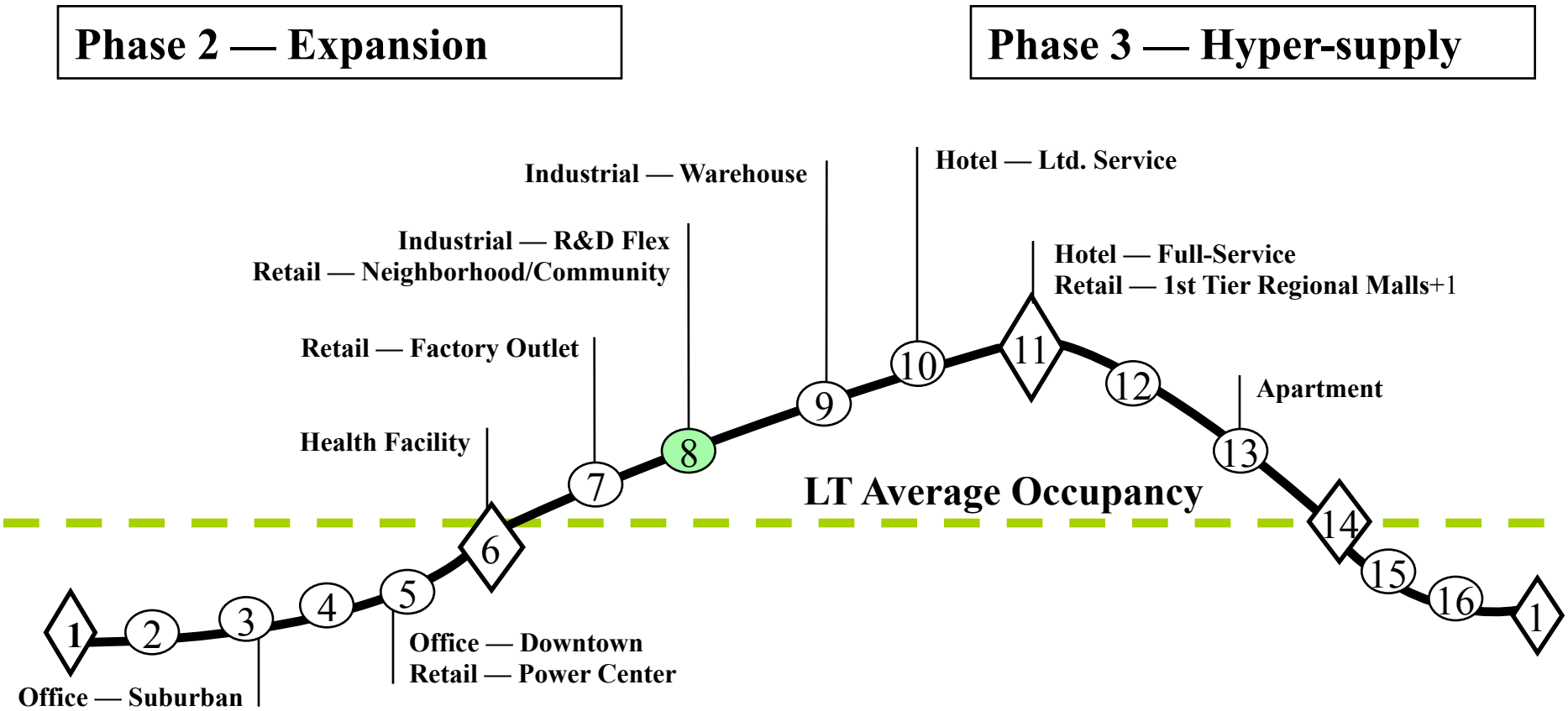
Source: Costar Portfolio Strategy, January 2015

2000s US Office Demand & Supply



Source: Property & Portfolio Research, Grubb & Ellis, Mueller 2009.

National Property Type Cycle Forecast



Phase 1 — Recovery

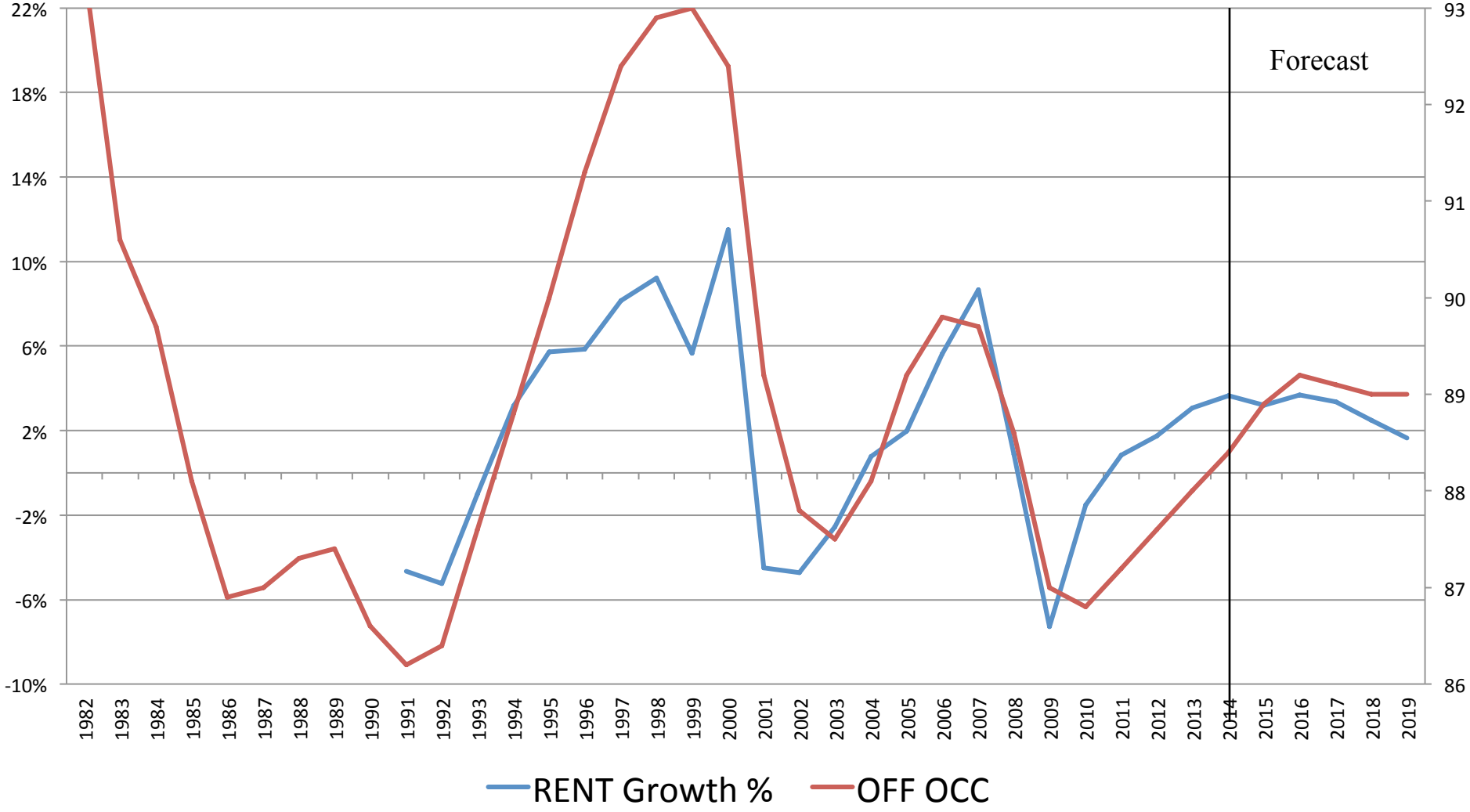
2nd Qtr 2016 ESTIMATE

Source: Mueller, 2015

Phase 4 — Recession

Occupancy Cycle and Rent Growth

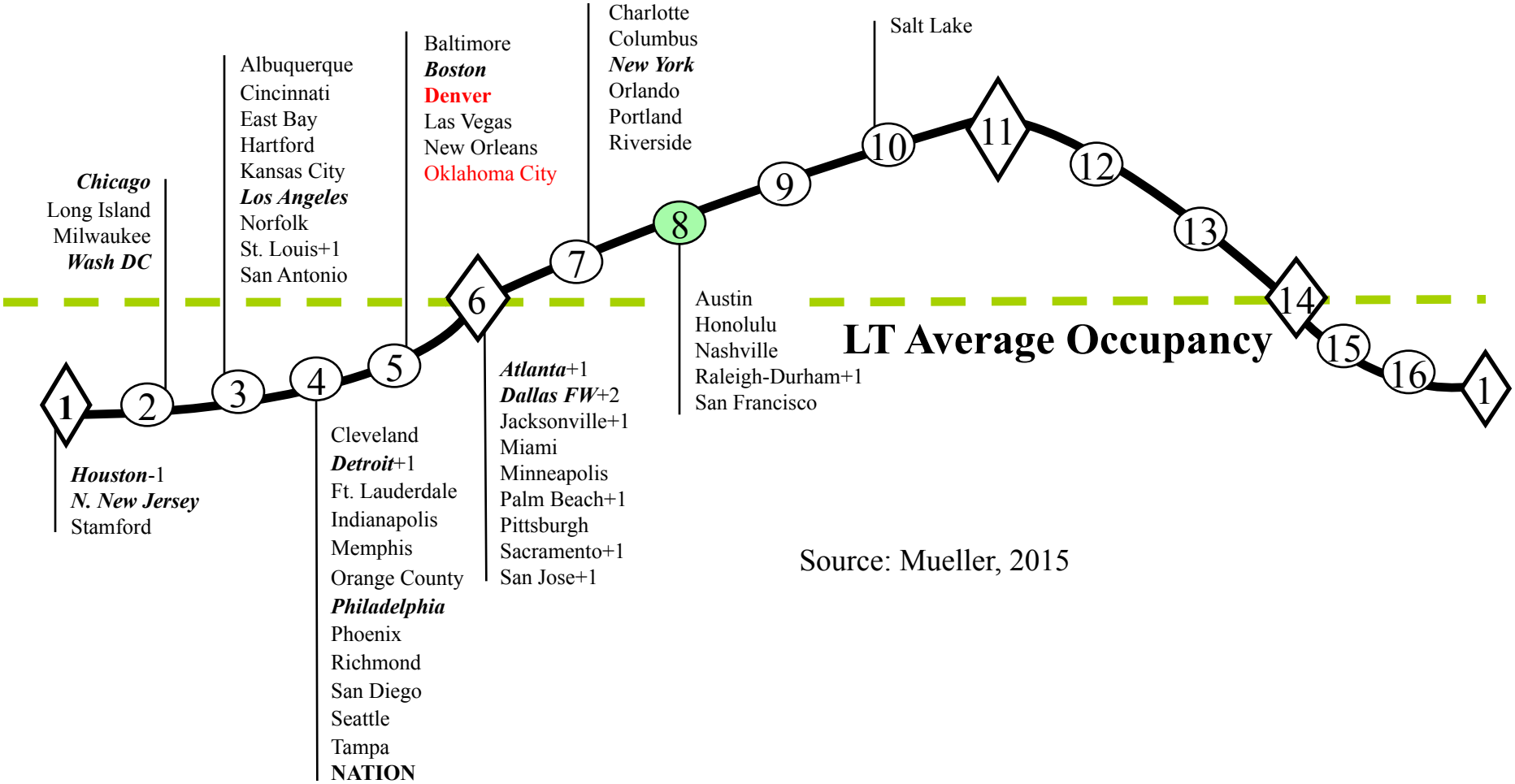
Office



Source: Costar Portfolio Analytics, Mueller — March 2015.

Office Market Cycle FORECAST

2nd Quarter, 2016 Estimates



Source: Mueller, 2015

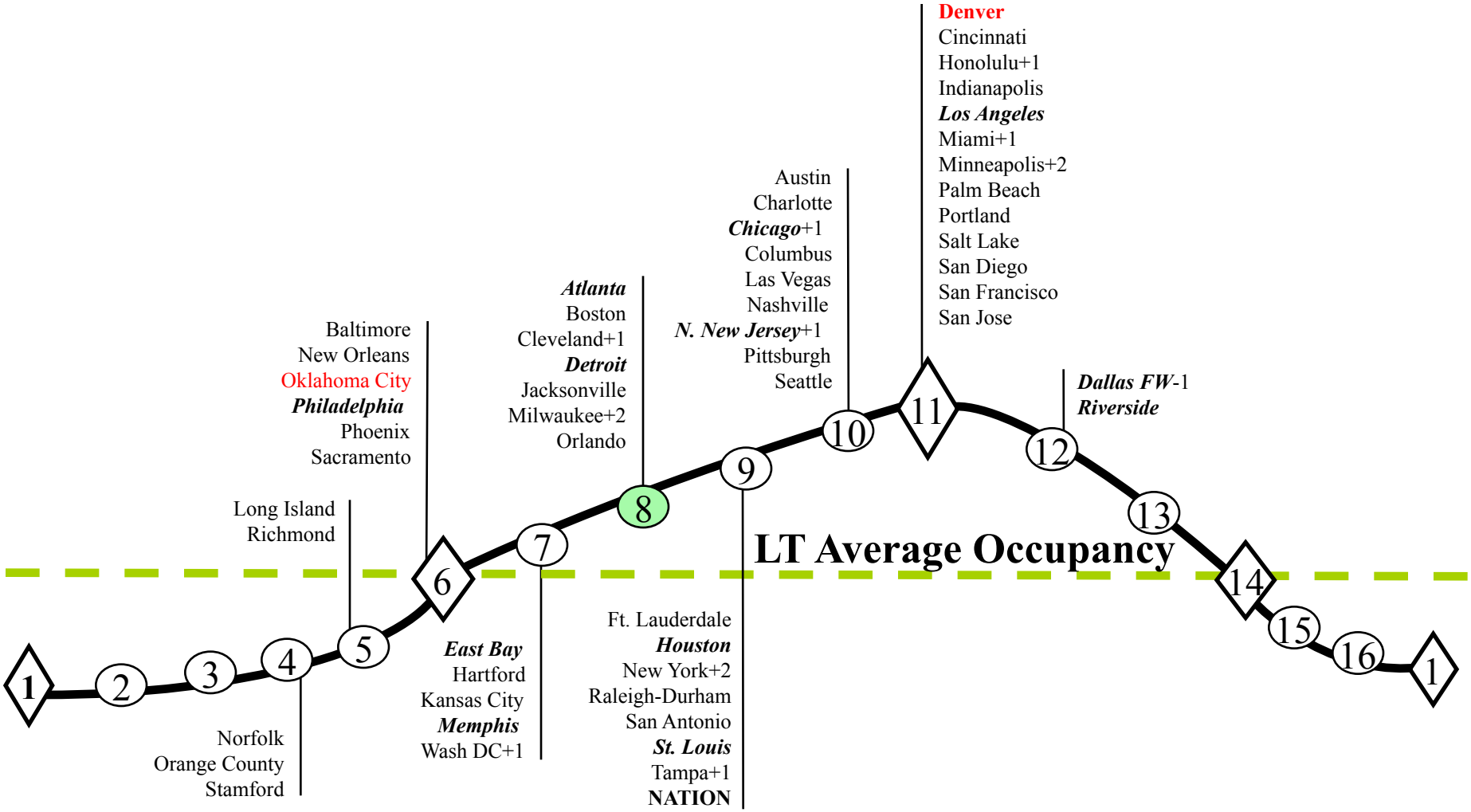
Occupancy Cycle and Rent Growth

Industrial

Source: Costar Portfolio Analytics, Mueller — March 2015.

Industrial Market Cycle FORECAST

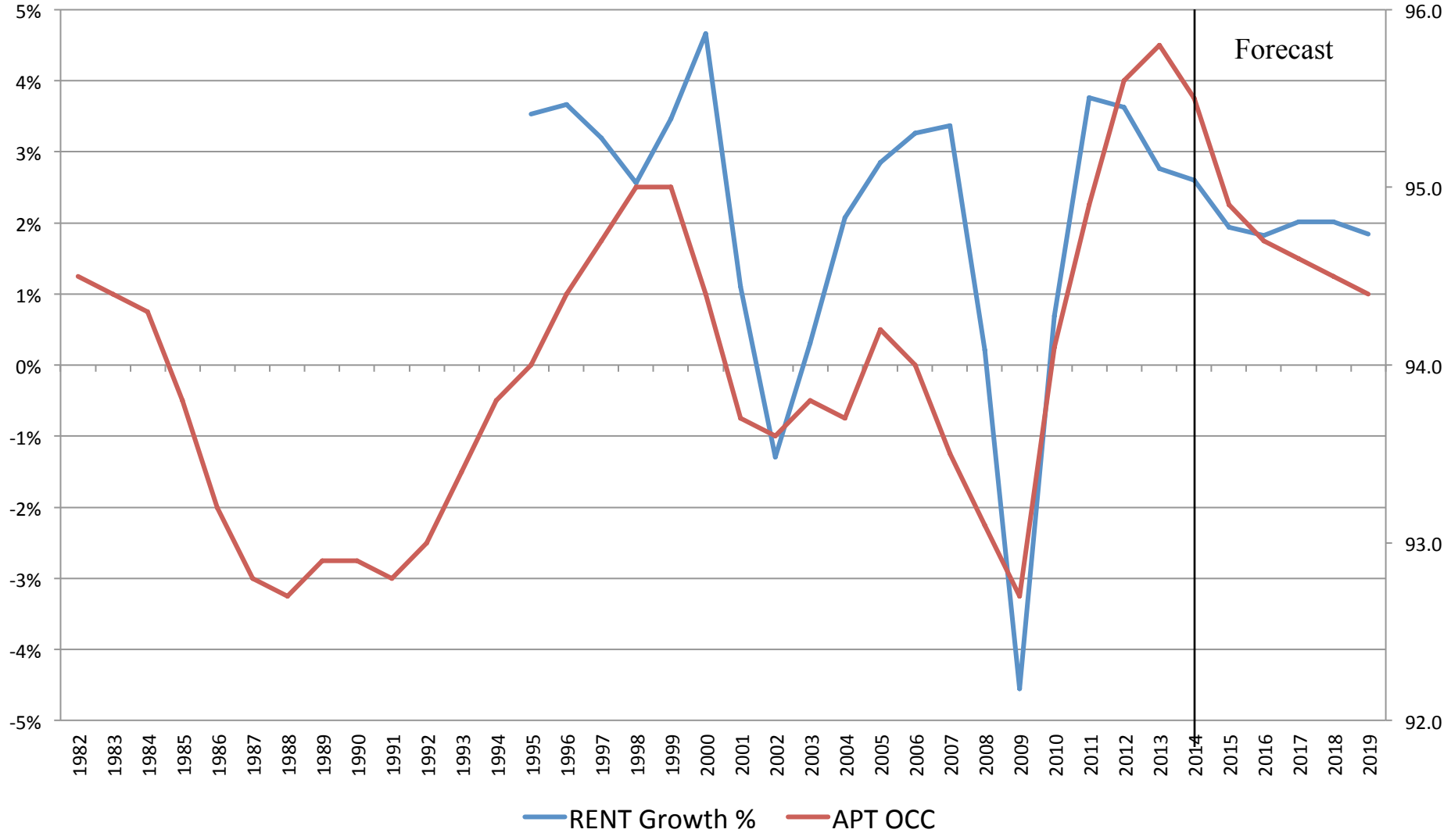
2nd Quarter, 2016 Estimates



Source: Mueller, 2015

Occupancy Cycle and Rent Growth

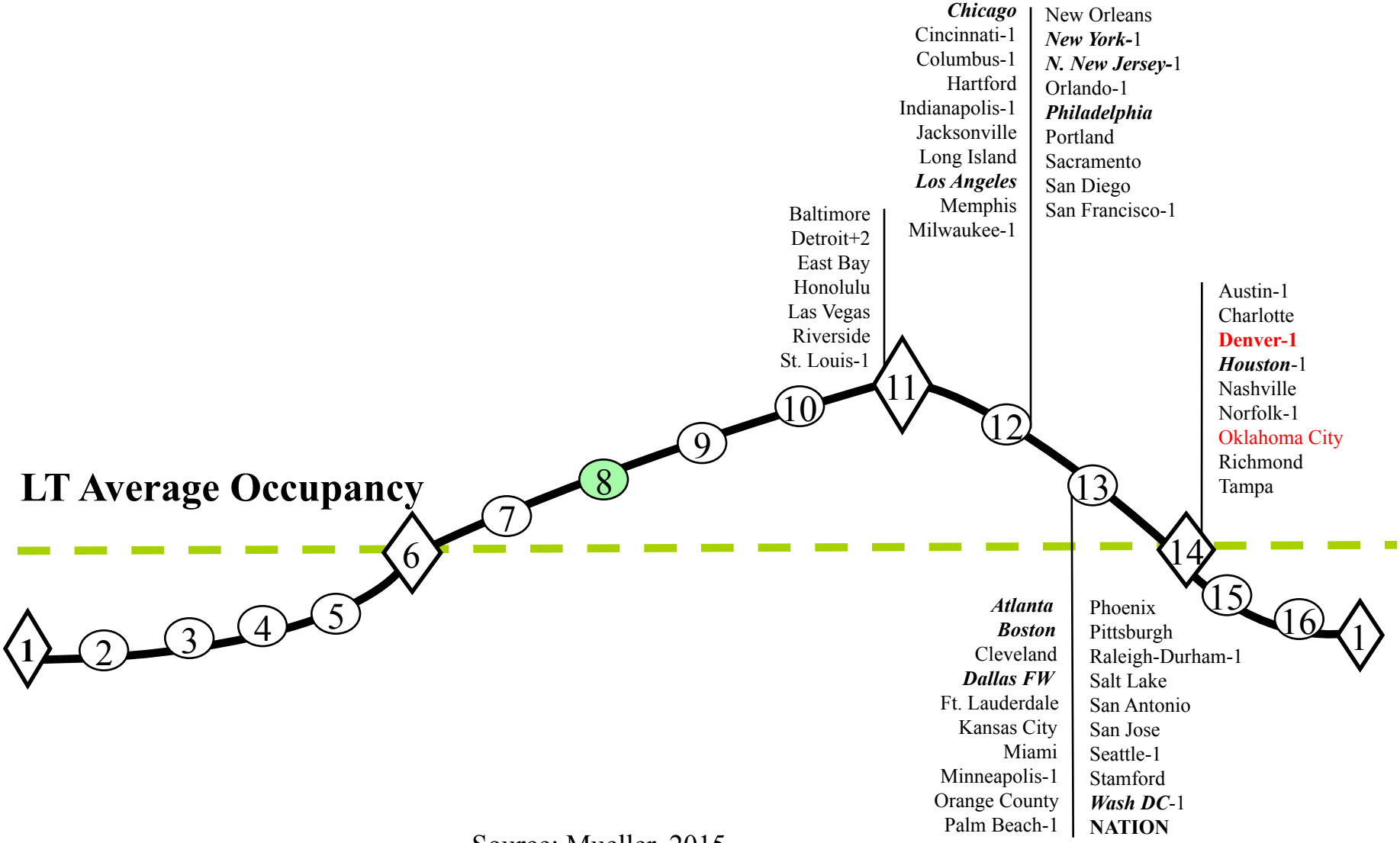
Apartment



Source: Costar Portfolio Analytics, Mueller — March 2015.

Apartment Market Cycle FORECAST

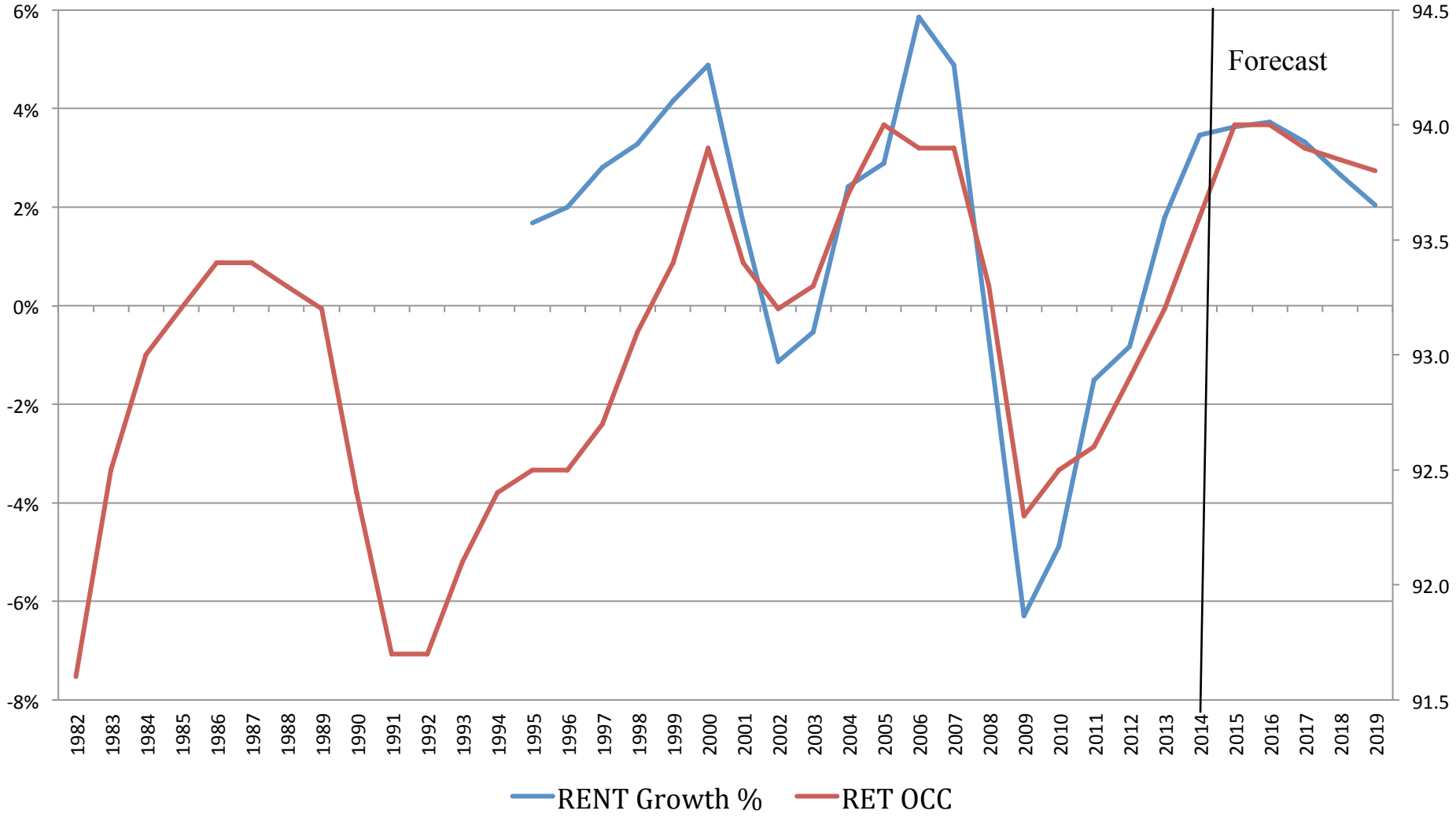
2nd Quarter, 2016 Estimates



Source: Mueller, 2015

Occupancy Cycle and Rent Growth

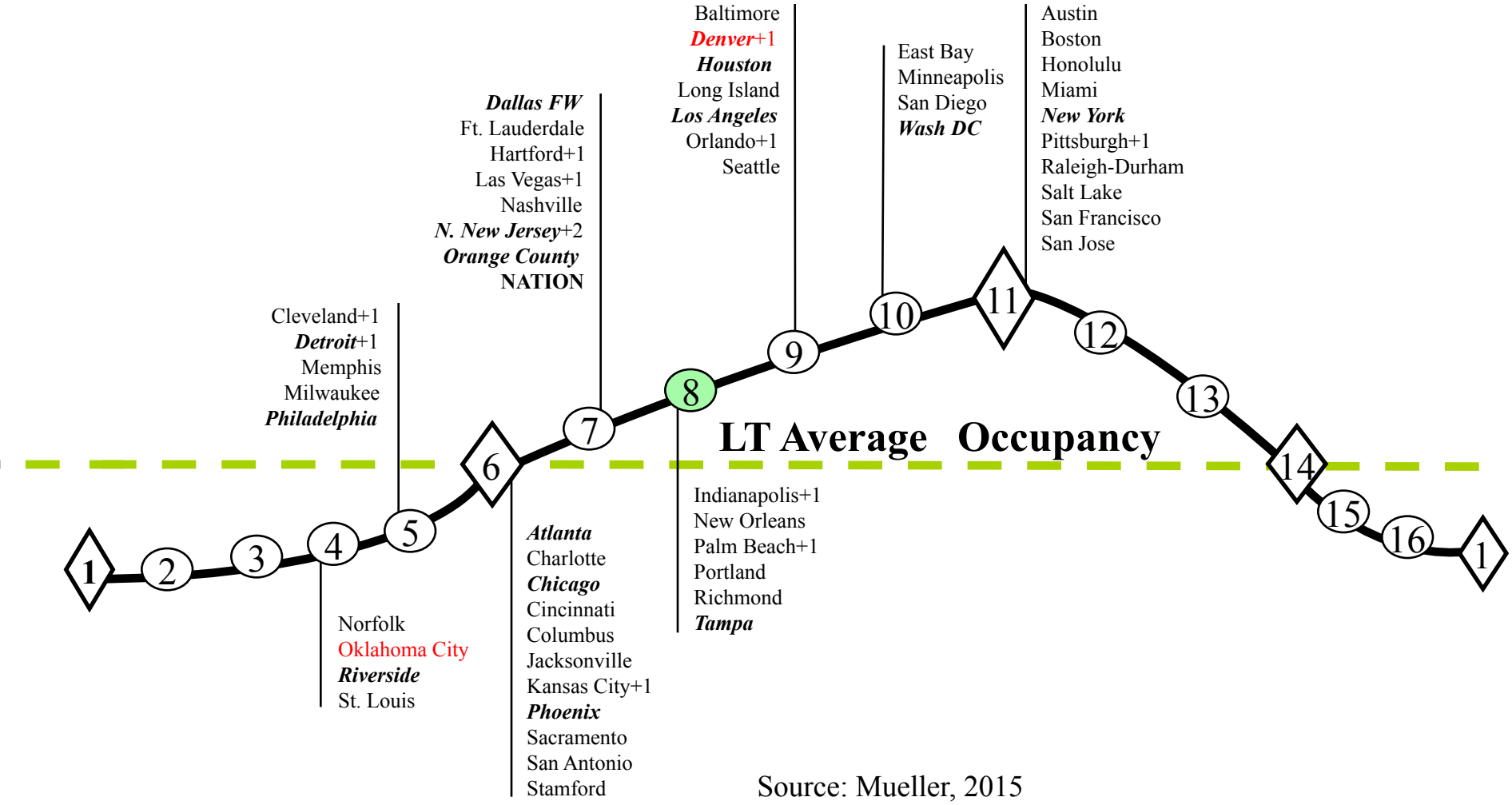
Retail



Source: Costar Portfolio Analytics, Mueller — March 2015.

Retail Market Cycle FORECAST

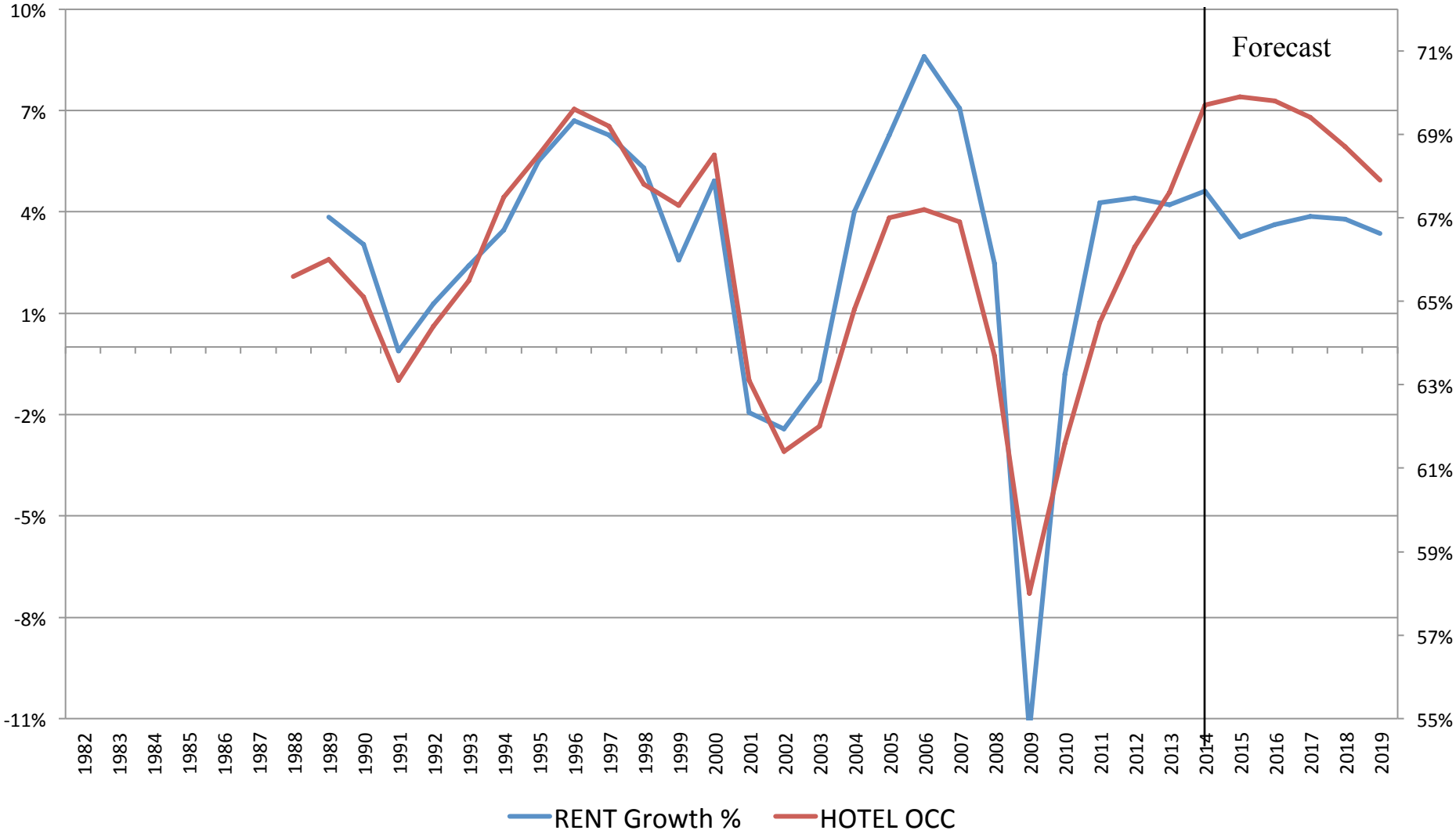
2nd Quarter, 2016 Estimates



Source: Mueller, 2015

Occupancy Cycle and Rent Growth

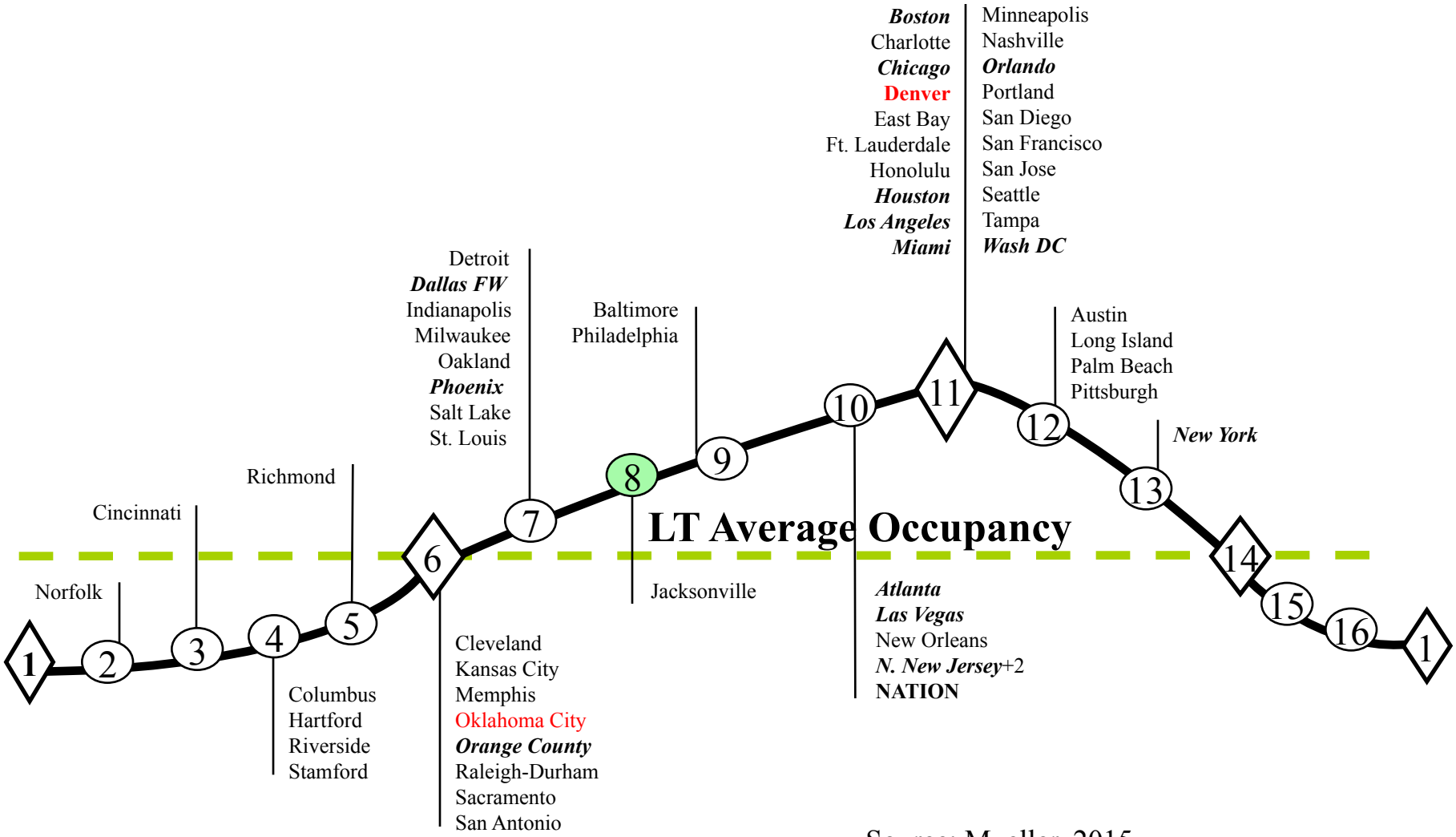
Hotel



Source: Costar Portfolio Analytics, Mueller — March 2015.

Hotel Market Cycle FORECAST

2nd Quarter, 2016 Estimates

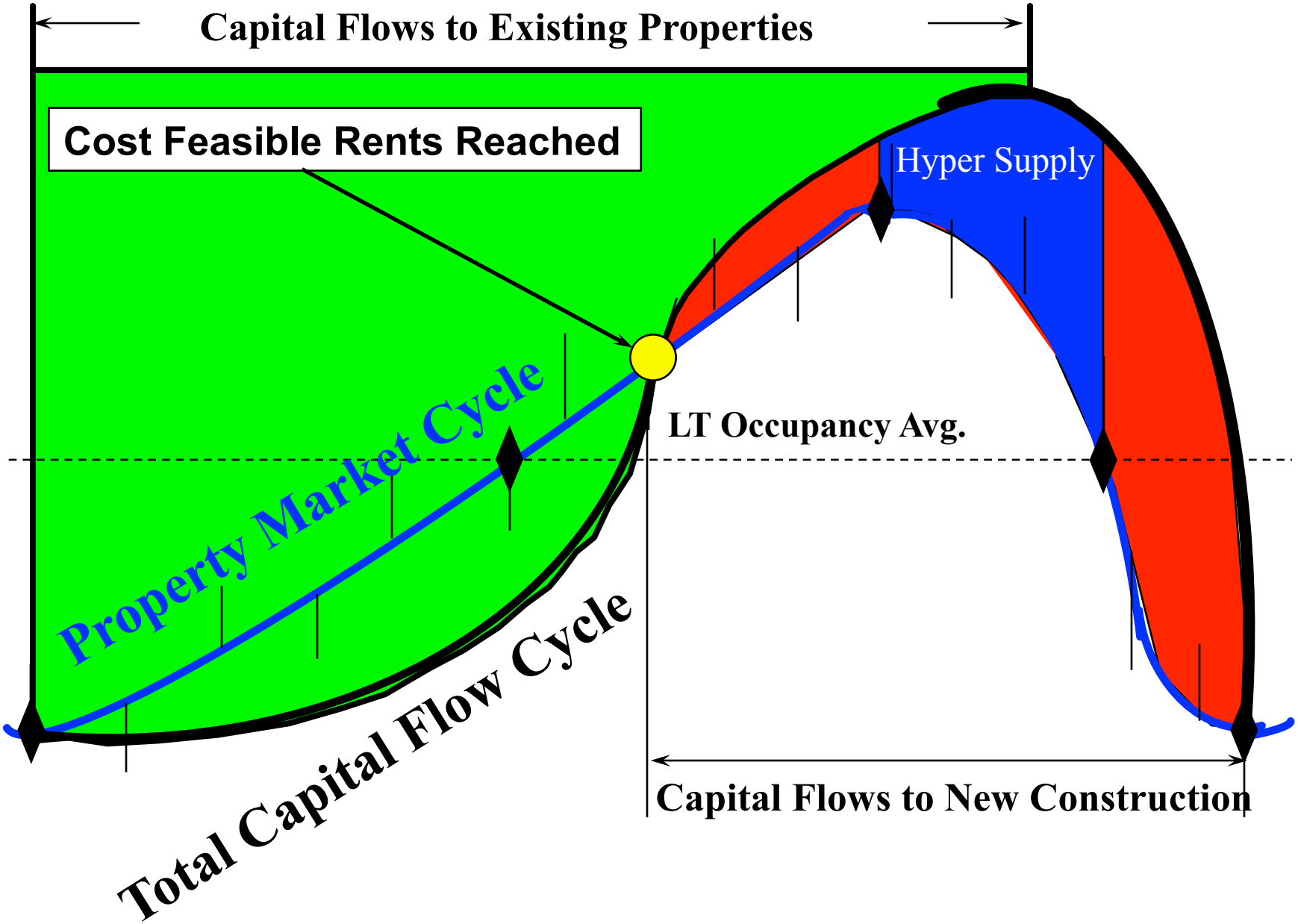


Source: Mueller, 2015

Financial Cycle

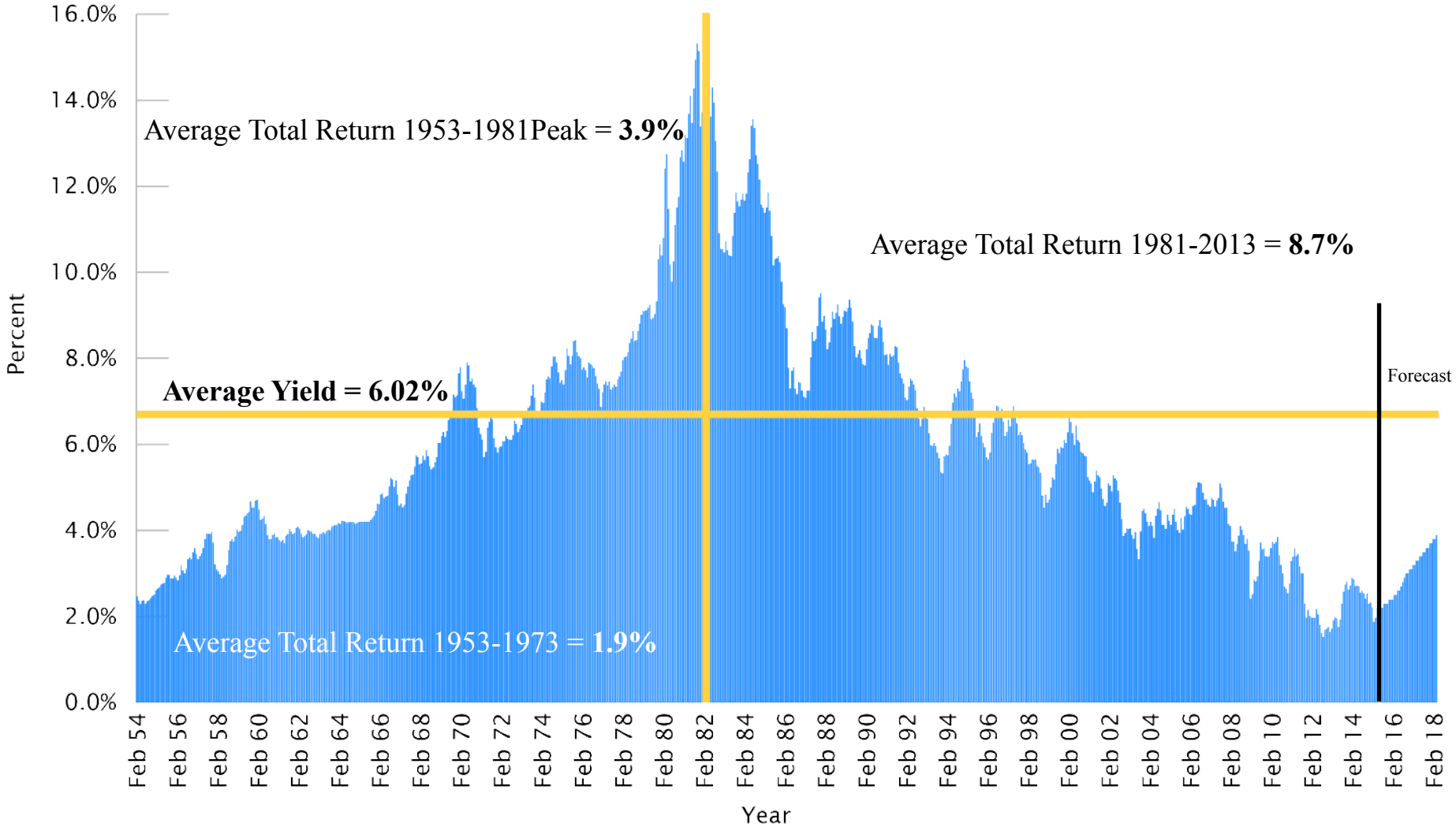
$Capital$ Flows affect Prices

Market Cycle Capital Flow Impact



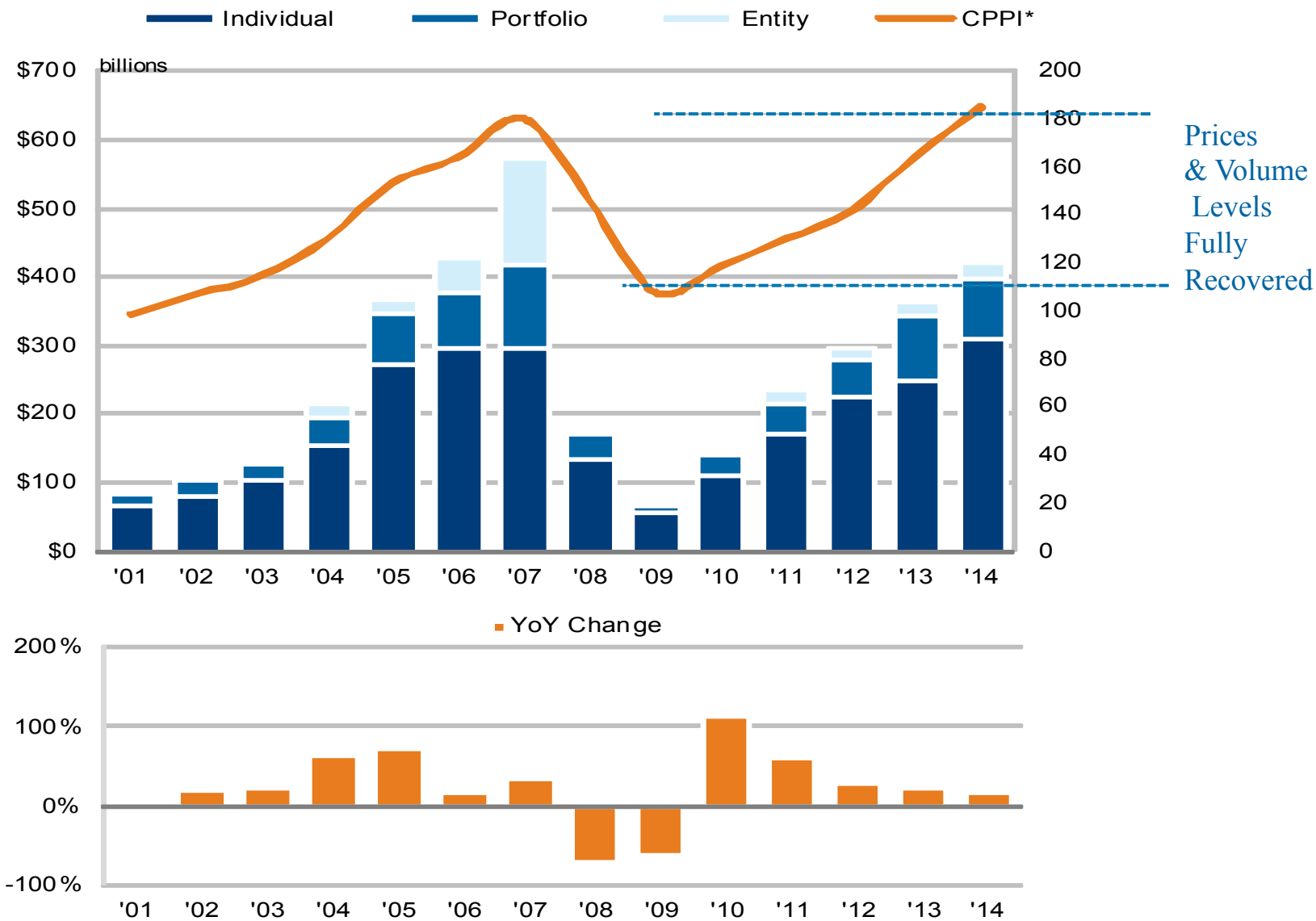
Bond Values DROP as Interest Rates Rise
10 Year Treasury Yields 1953 - 2015

10-Year Treasury Yield



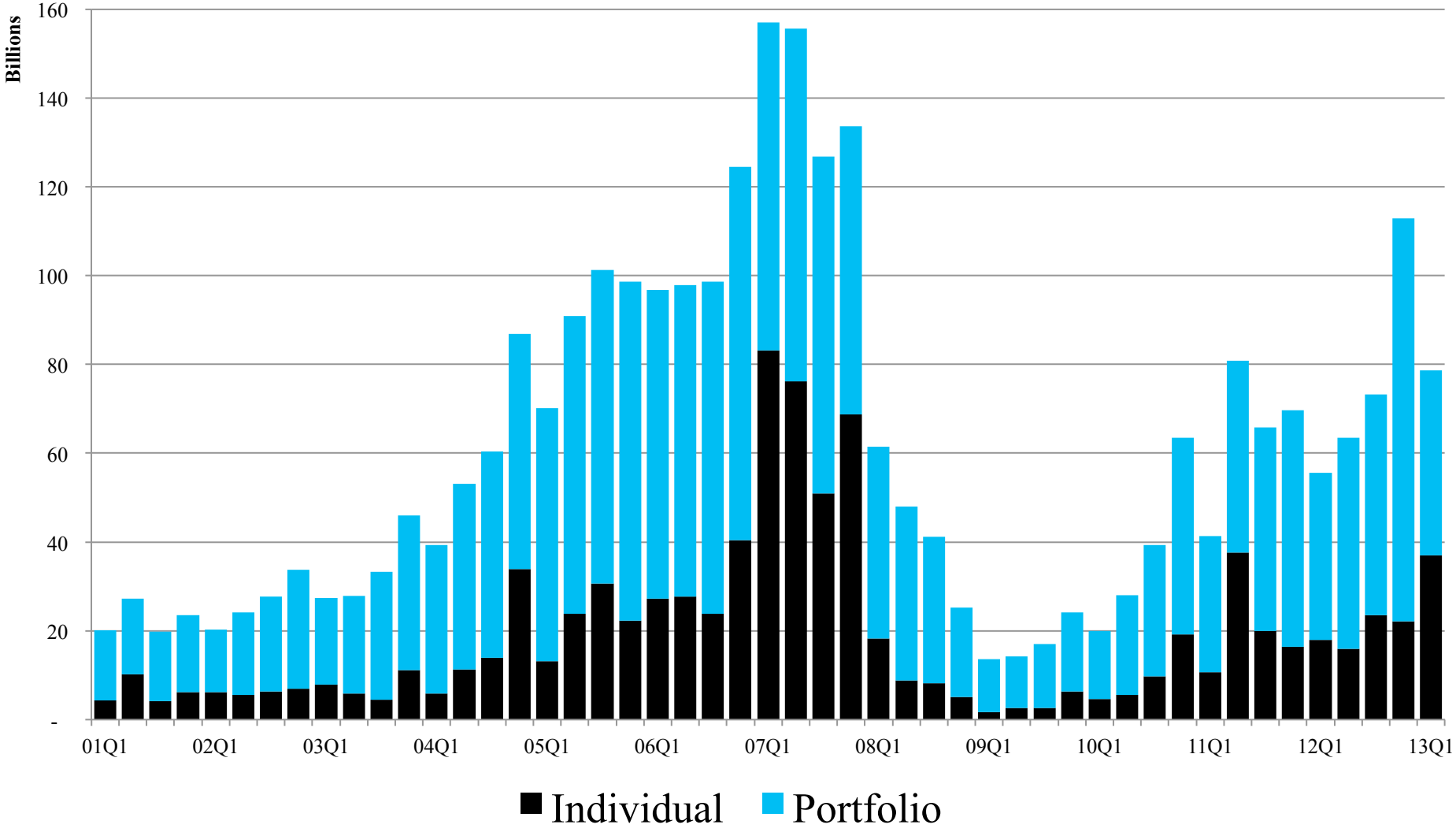
Source: U.S. Treasury — Federal Reserve Bank of St. Louis, May 2015; Moody's Forecast, 2015.

US CAPITAL MARKET TRENDS



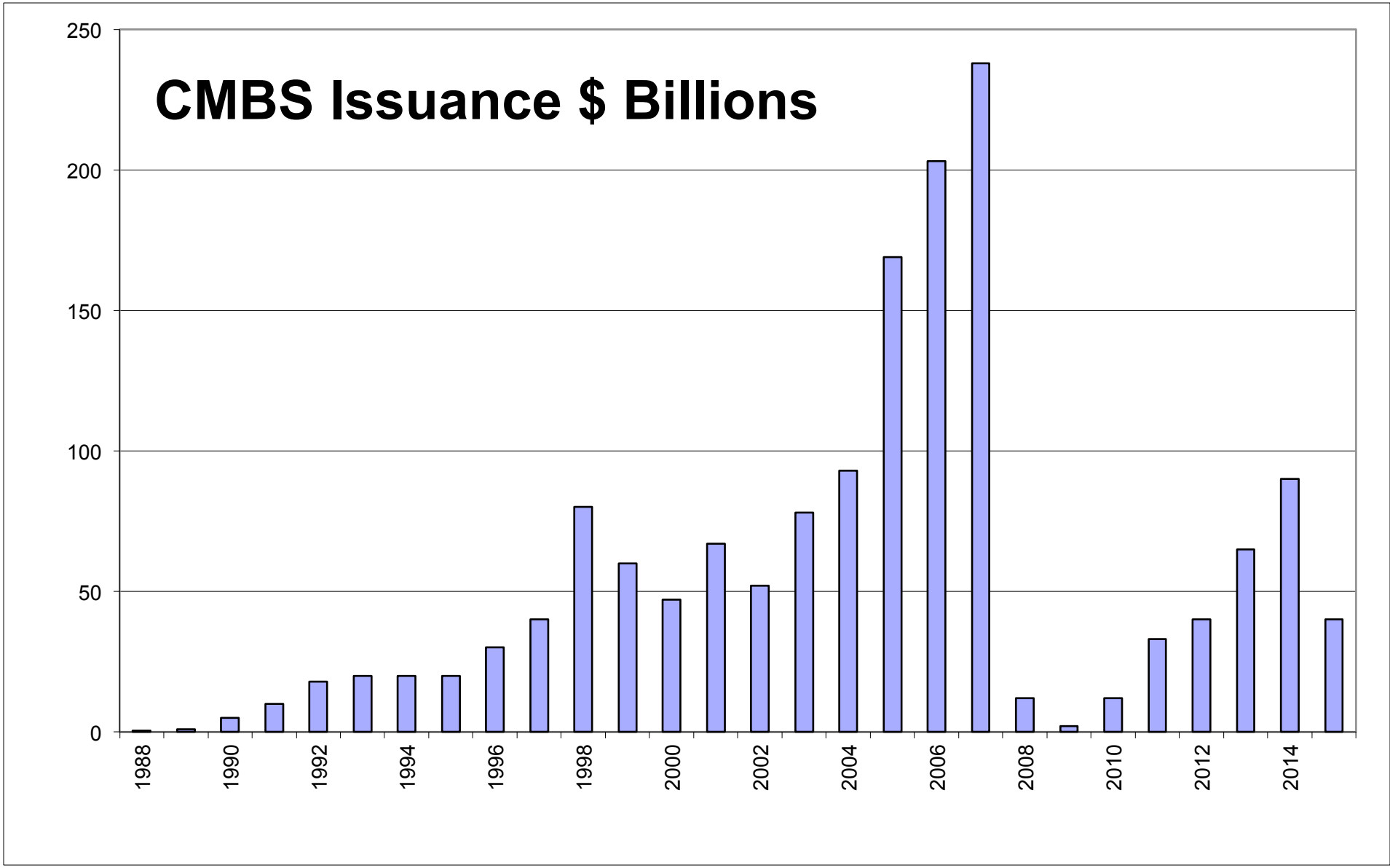
Source: Real Capital Analytics, March 2015

Portfolio Buyers Dominate Trades



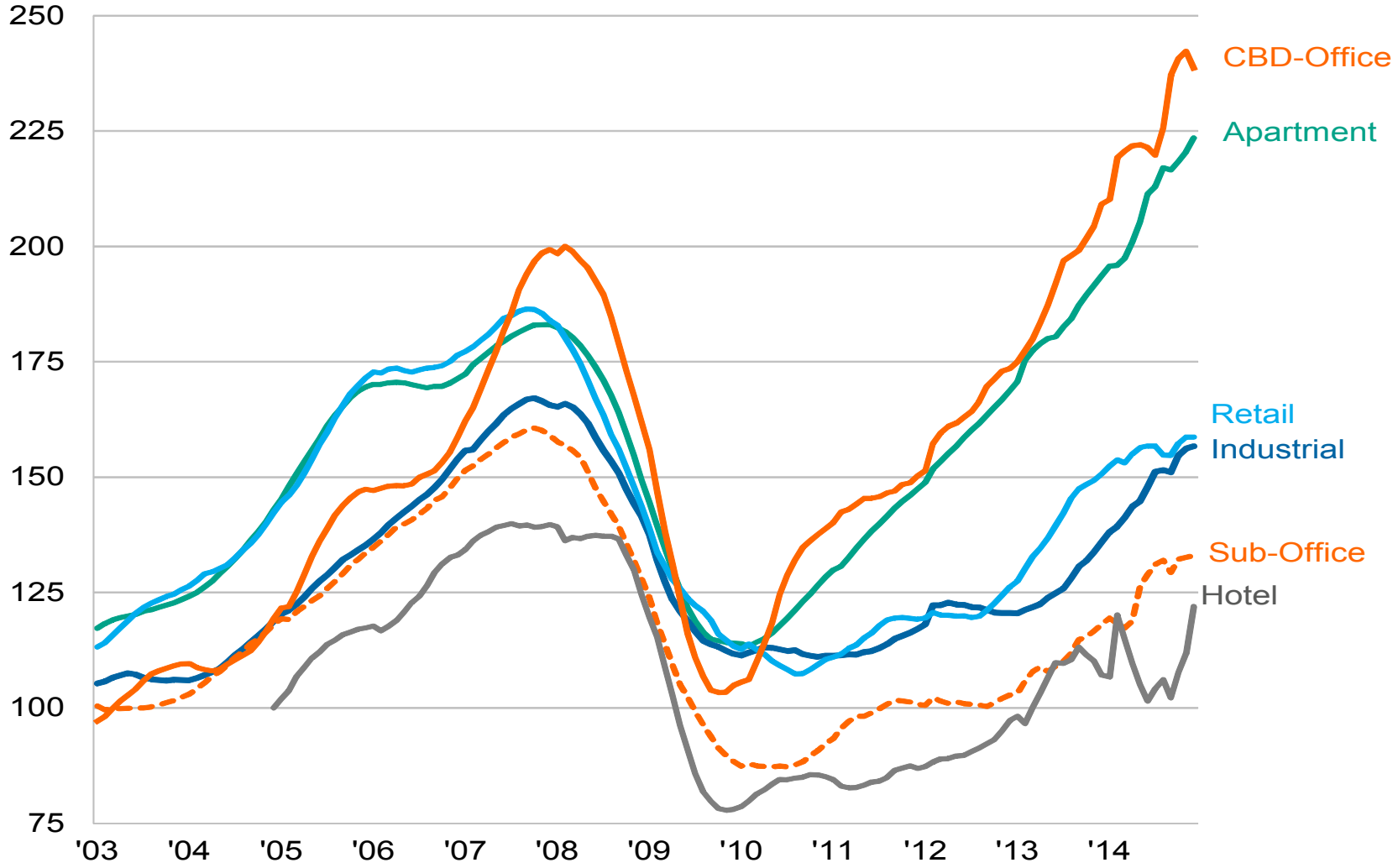
Source: Real Capital Analytics April 2013

Debt Capital Flows



Source: Commercial Mortgage Alert 3-2015

PRICE TRENDS BY PROPERTY TYPE



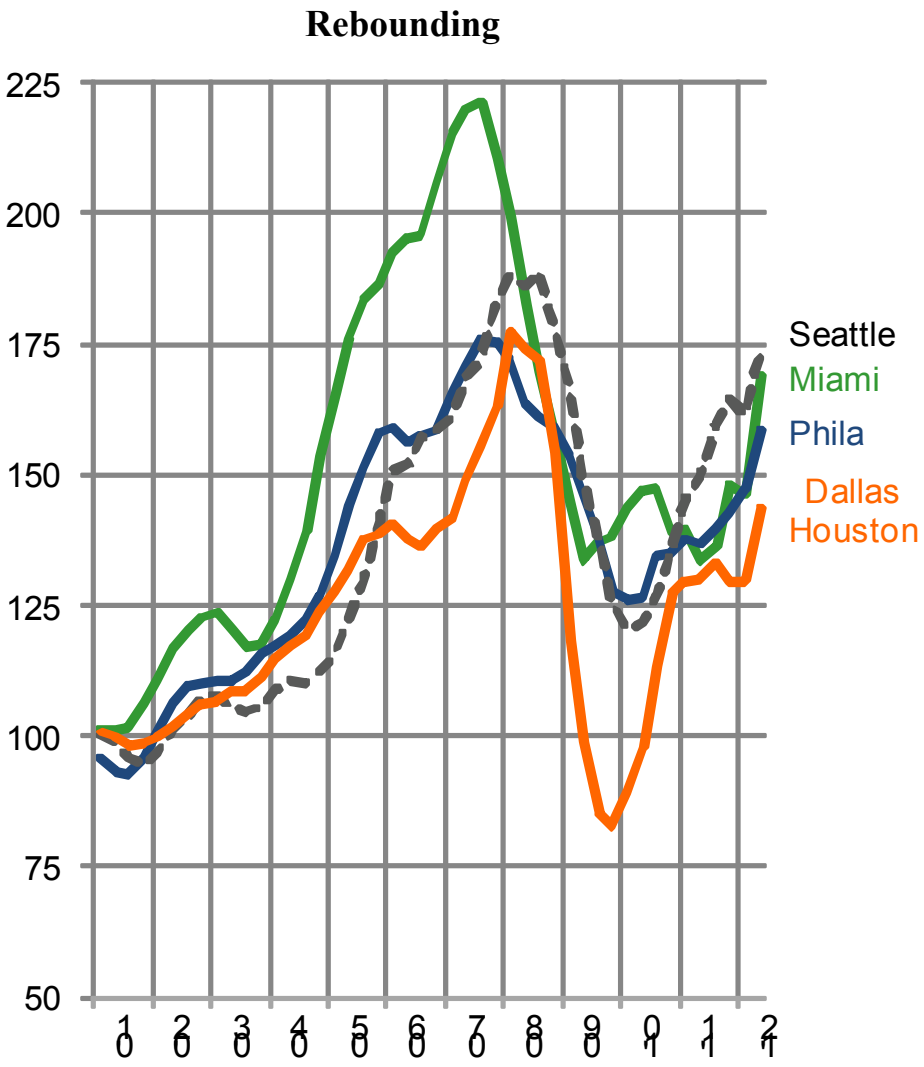
Source: Real Capital Analytics, Inc., May 2015.

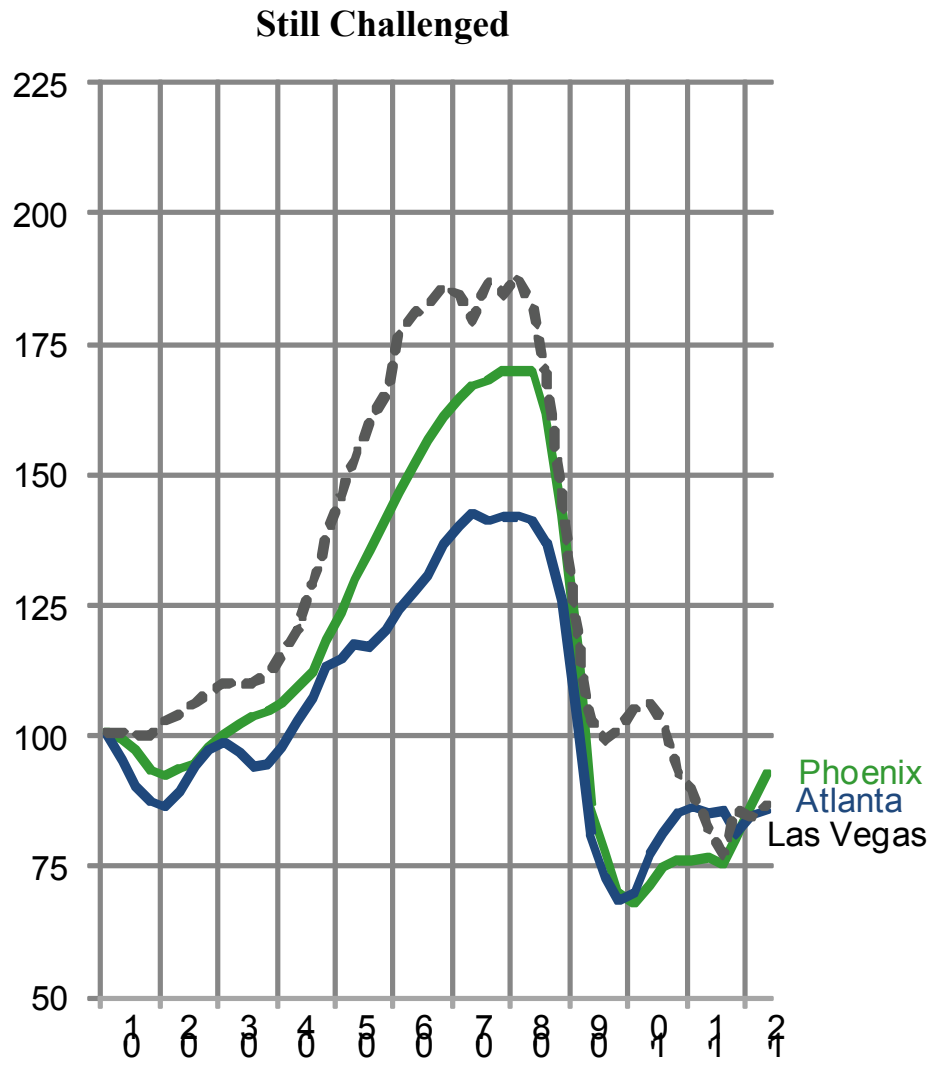
MOST ACTIVE MARKETS OF 2014

Rankings									
2008	2009	2010	2011	2012	2013	2014	Market	2014 Sales Volume ($M)	YOY Change
1	1	1	1	1	1	1	Manhattan	$42,467	17%
2	2	2	2	2	2	2	Los Angeles	$25,682	4%
3	3	3	3	3	3	3	Chicago	$15,823	9%
24	14	9	8	5	12	4	San Francisco	$15,344	116%
4	6	5	4	6	4	5	Dallas	$15,262	7%
8	7	7	5	8	7	6	Boston	$13,701	33%
5	5	10	9	10	6	7	Atlanta	$13,514	22%
6	11	4	6	7	5	8	Houston	$11,039	-22%
10	15	20	17	13	11	9	NYC Boroughs	$9,780	35%
7	16	13	15	4	8	10	Seattle	$8,654	-6%
14	18	24	13	14	13	11	Denver	$8,558	23%
11	21	16	16	9	10	12	San Jose	$8,366	12%
12	12	14	14	11	14	13	Phoenix	$7,749	17%
15	8	8	12	15	17	14	DC	$6,767	16%
9	9	11	11	19	16	15	No NJ	$6,671	12%
13	13	15	10	17	15	16	San Diego	$6,606	10%
18	4	12	22	16	22	17	Orange Co	$6,253	39%
22	32	22	26	18	18	18	Austin	$6,140	16%
21	22	21	19	23	23	19	East Bay	$5,900	32%
16	20	18	21	20	21	20	Miami	$5,583	13%
37	56	34	50	42	32	21	Hawaii	$5,257	97%
25	29	28	25	30	26	22	Philadelphia	$5,254	45%
20	10	6	7	12	9	23	DC VA burbs	$5,170	-40%
17	19	17	20	22	19	24	Inland Empire	$4,556	-10%
32	28	26	24	26	29	25	Tampa	$4,464	42%
28	53	42	28	24	28	26	Charlotte	$4,383	29%
27	25	25	30	29	20	27	Orlando	$4,221	-15%
41	23	23	32	28	33	28	Broward	$4,190	59%
30	30	29	23	27	27	29	Minneapolis	$4,101	20%
26	31	32	31	31	34	30	Raleigh/Durham	$3,963	54%
23	27	31	33	33	30	31	Portland	$3,731	28%
45	52	40	34	32	31	32	Nashville	$3,417	23%
19	17	19	18	25	24	33	DC MD burbs	$3,407	-16%
29	26	27	29	21	37	34	Baltimore	$3,363	66%
47	49	43	37	36	35	35	San Antonio	$3,025	36%
34	40	46	27	34	25	36	Las Vegas	$2,811	-24%
42	33	30	38	44	44	37	Palm Beach	$2,700	74%
33	41	39	46	38	36	38	Detroit	$2,558	22%
46	55	49	52	46	41	39	Jacksonville	$2,531	50%
38	38	36	42	37	39	40	Central CA	$2,375	28%

Next Favored Tier of Markets Emerging

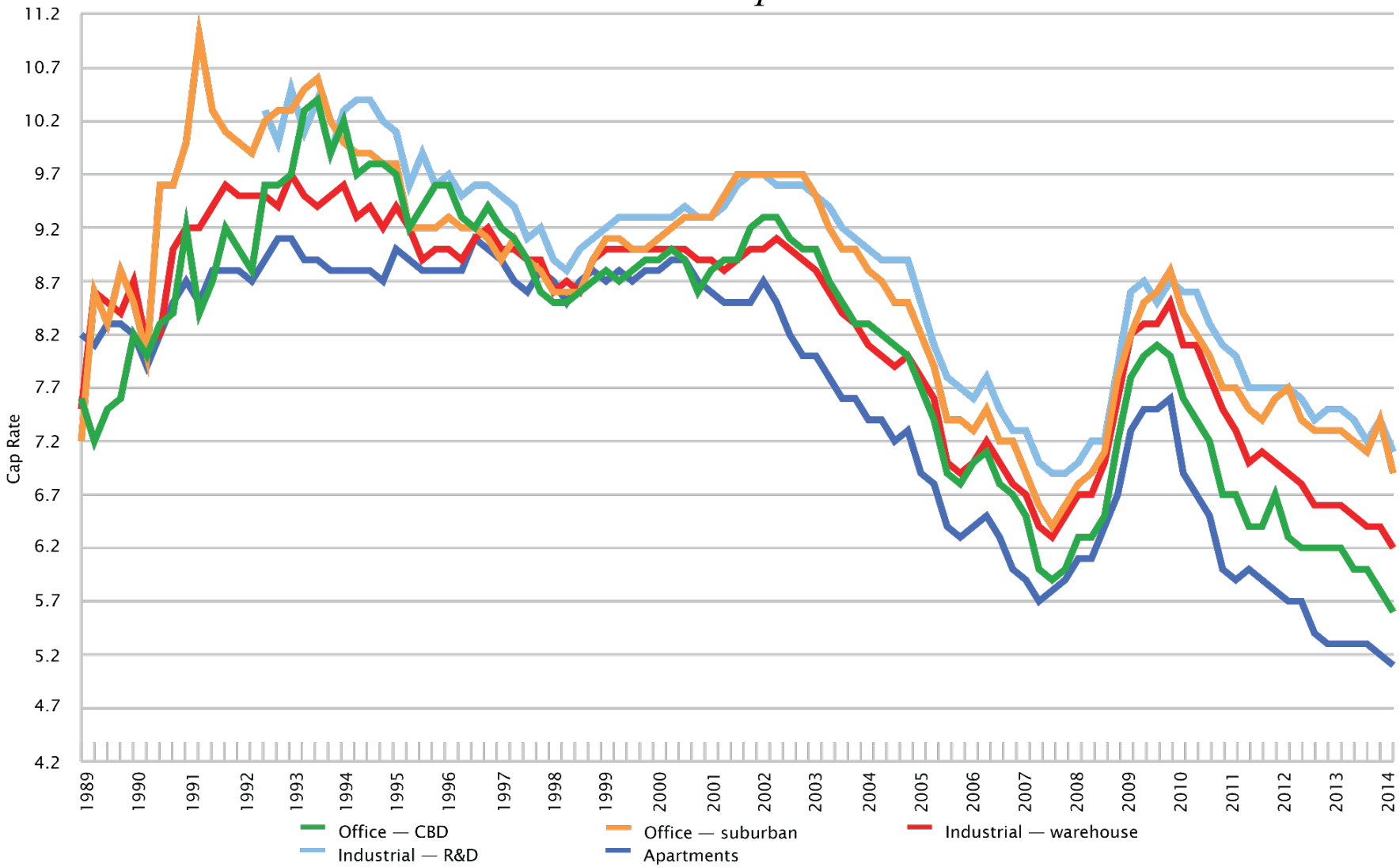
RCA CPPI





Property Price Cycle — Recovering

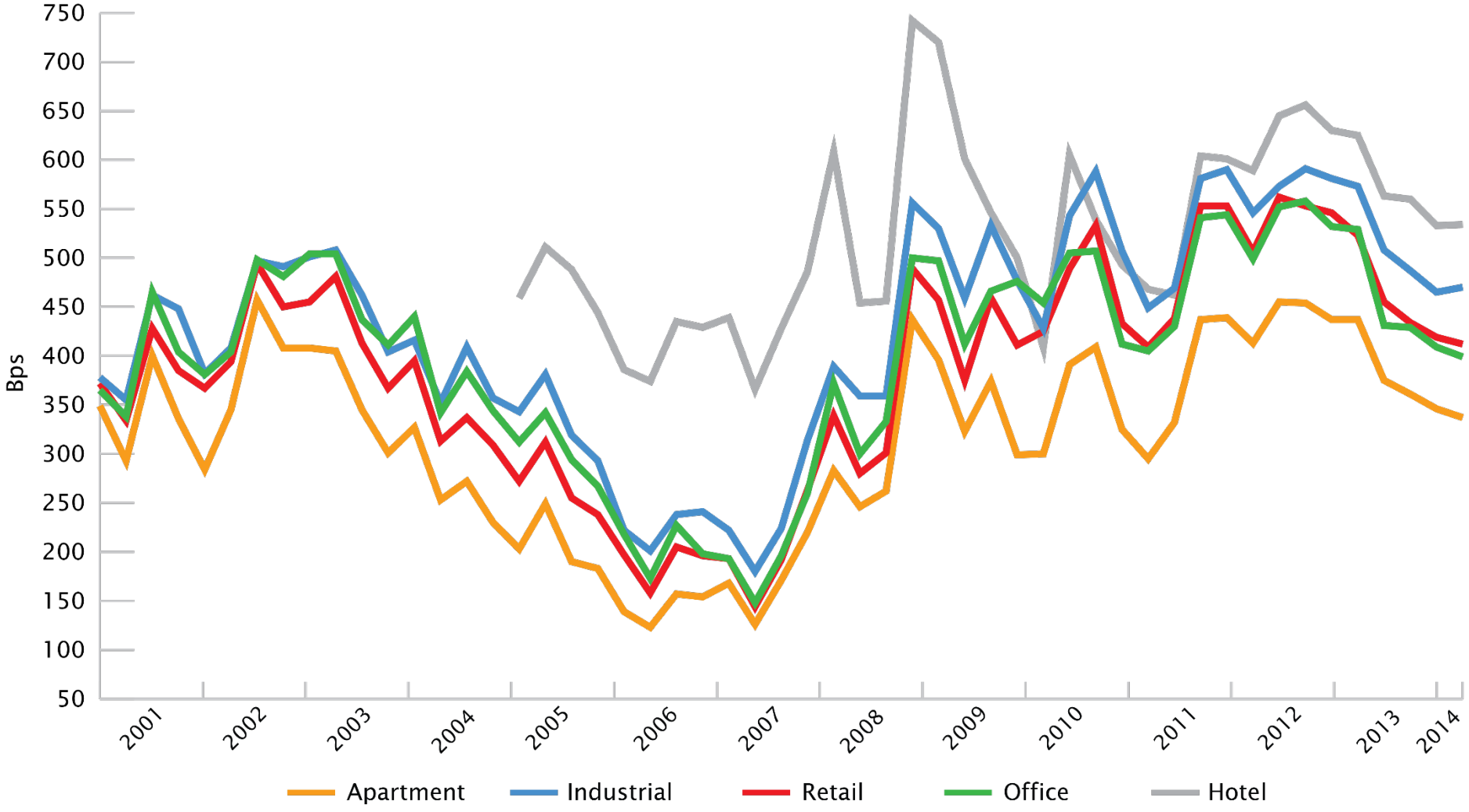
Historic Cap Rates



Source: Real Estate Research Corporation — Chicago, February 2015.

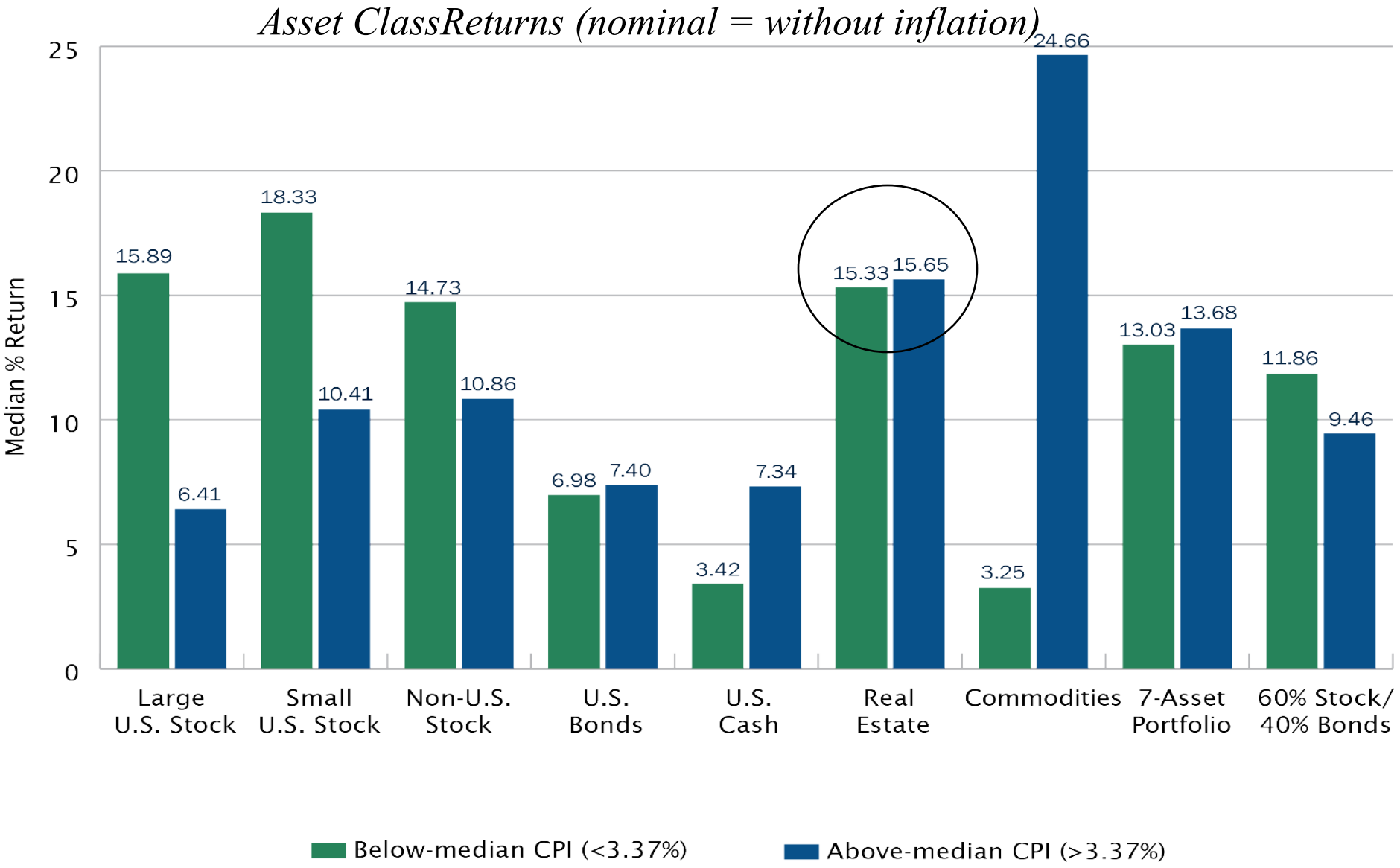
Wide Yields Attracting Capital

Spread Between Cap Rates and 10-Year Treasury by Property Type



Source: Real Capital Analytics, 1Q 2015.

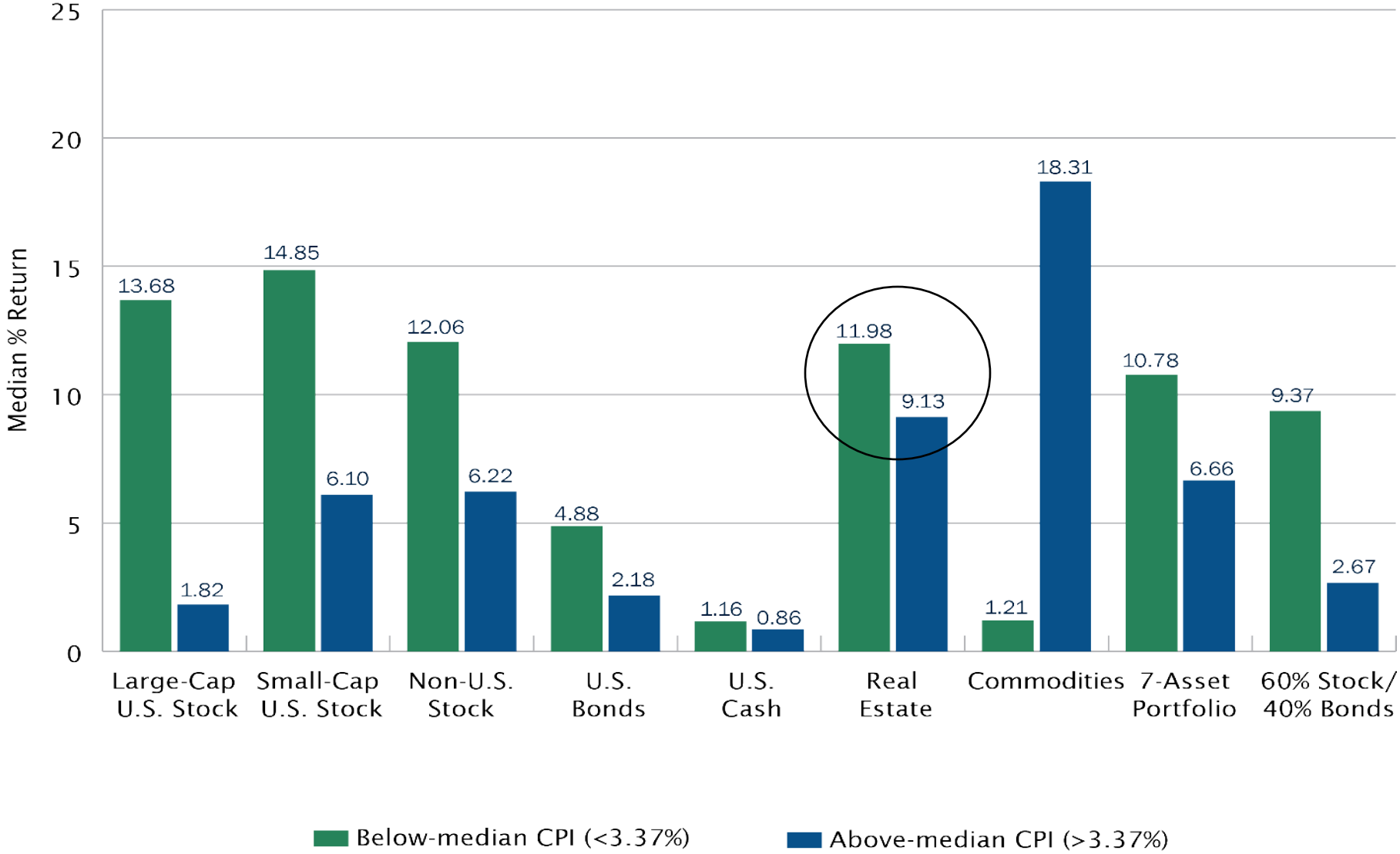
Nominal Returns during Low & High Inflation Periods



Source: Economic Report of the President, March 2014; "Analysis: How Inflation Affects a Portfolio," April 2014.

Real Returns during Low & High Inflation Periods

REAL Asset Class Returns (inflation-adjusted)

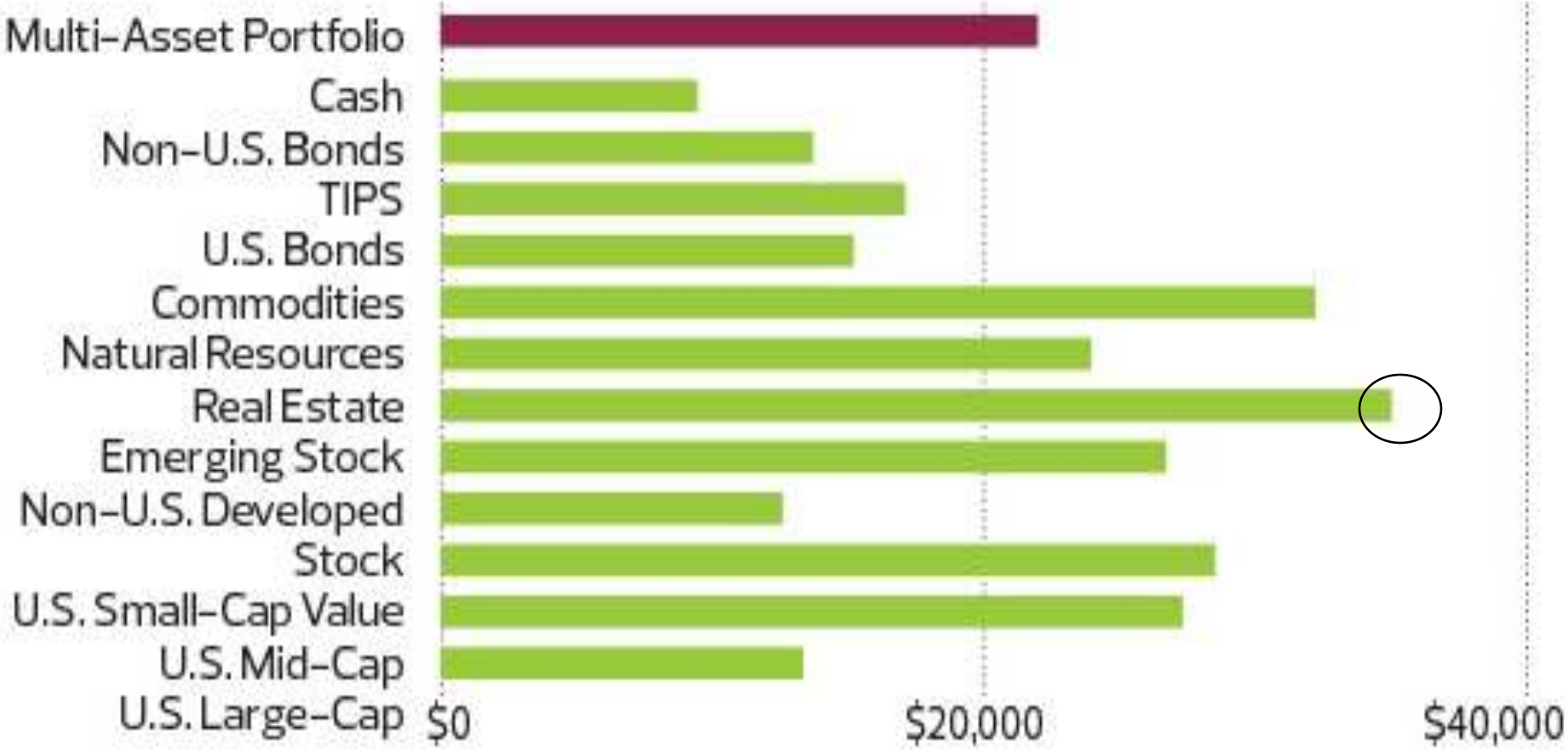


Source: Economic Report of the President, March 2014; "Analysis: How Inflation Affects a Portfolio," April 2014.

Lump-Sum Performance

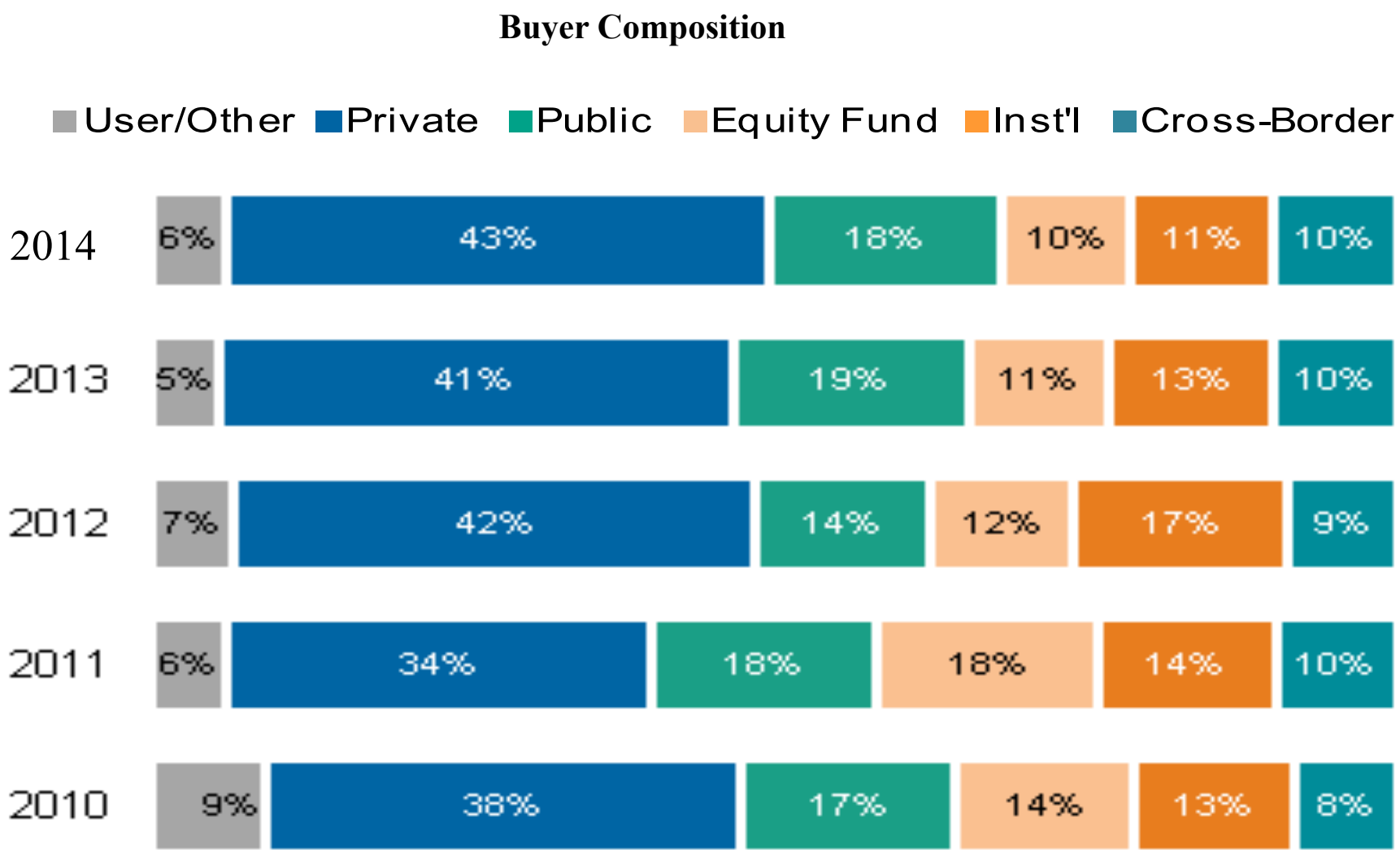
$10,000 investment in 12 asset classes vs equally weighted portfolio for the 15-year period.

Lump-sum Performance - August 1, 1999 – July 31, 2014



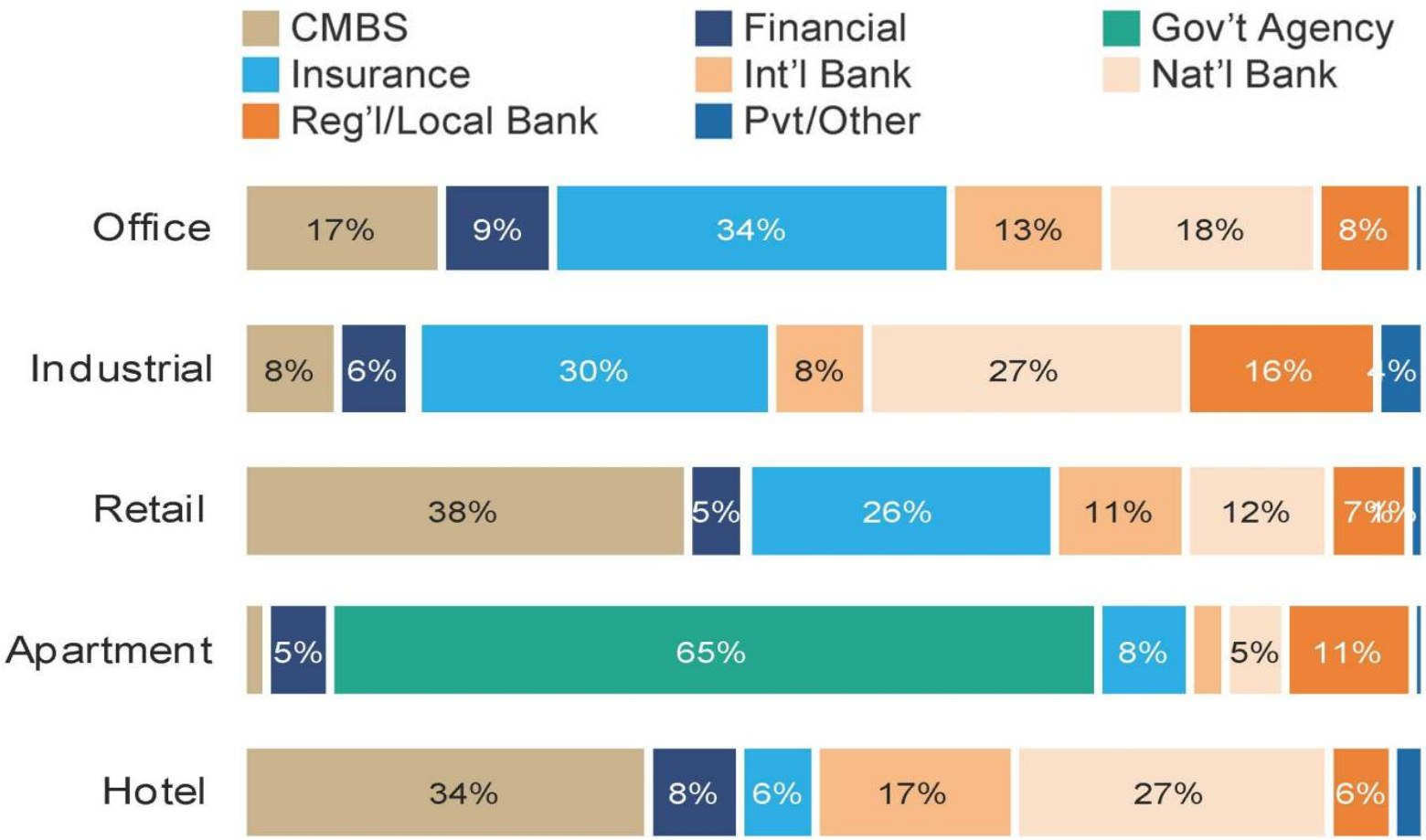
Source: Lipper, www.financial-planning.com "Which Assets Perform When Inflation Is Low?," September 25, 2014.

PLENTY OF CAPITAL FROM ALL SECTORS

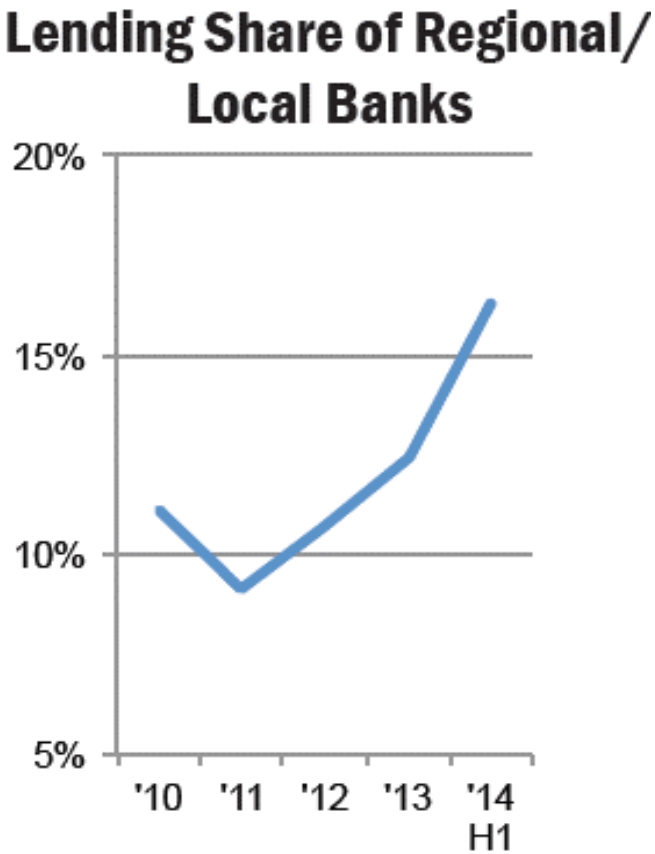


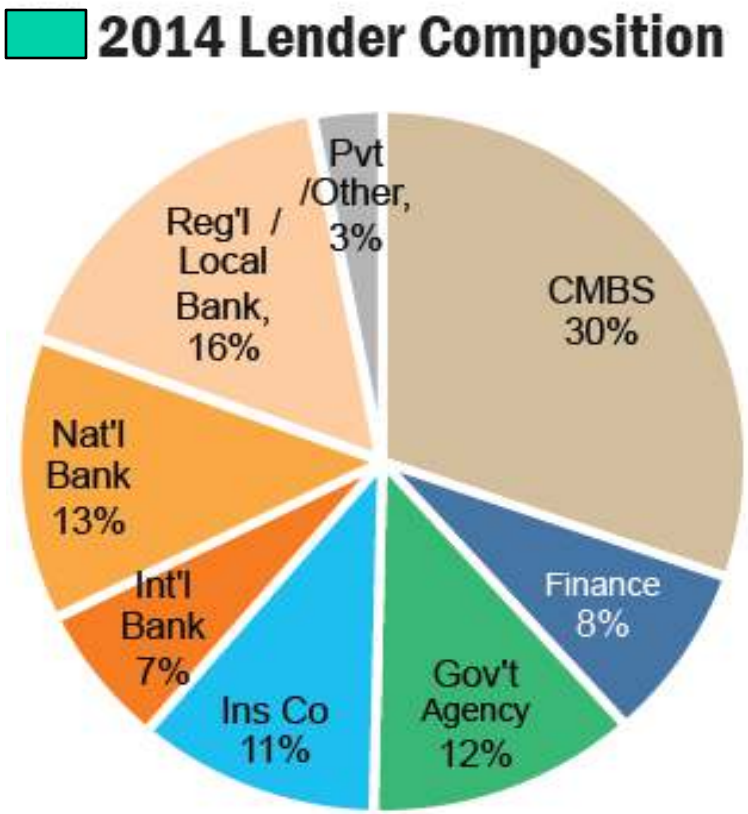
Debt Capital: Credit Conditions Improving

Composition of Lenders 2014



HEIGHTENED COMPETITION AMONG LENDERS

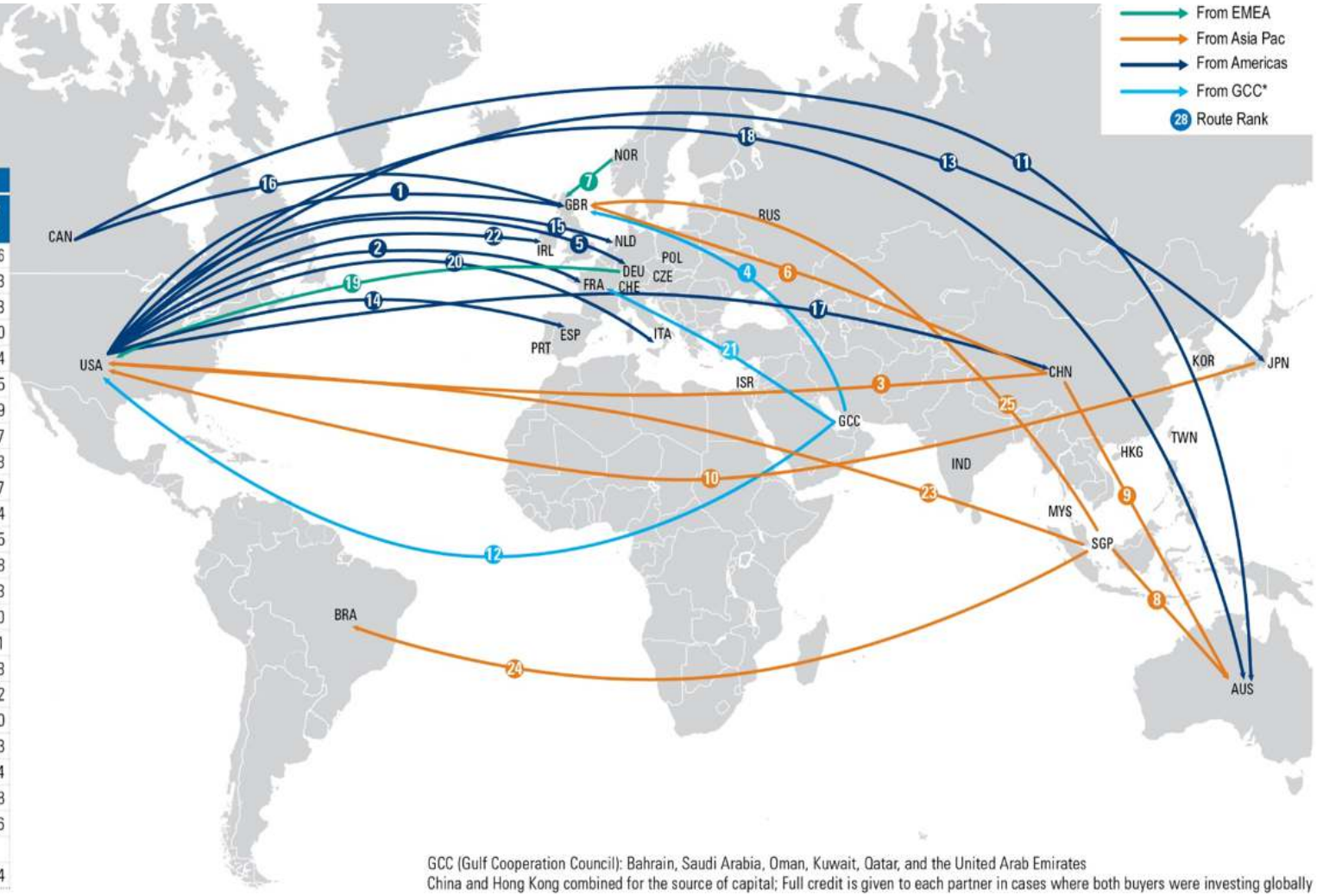




GROWING INFLUENCE OF CROSS-BORDER CAPITAL

Top Trade Route Flows Double From 2013 - 2014

Rank		Route		Vol ($M)	
2014	Year Ago	Source	Target	2014	Year Ago
1	1	USA	GBR	$22,594	$10,736
2	3	USA	FRA	$7,868	$4,873
3	4	CHN	USA	$7,727	$3,793
4	7	GCC	GBR	$7,451	$3,140
5	6	USA	DEU	$7,032	$3,284
6	2	CHN	GBR	$4,864	$6,435
7		NOR	GBR	$4,357	$2,029
8	12	SGP	AUS	$4,186	$2,547
9	21	CHN	AUS	$4,108	$1,818
10	43	JPN	USA	$3,909	$727
11	62	CAN	AUS	$3,789	$384
12	8	GCC	USA	$3,703	$3,085
13	9	USA	JPN	$3,634	$2,918
14	33	USA	ESP	$3,586	$1,133
15	25	USA	NLD	$3,144	$1,460
16	18	CAN	GBR	$2,992	$1,971
17	11	USA	CHN	$2,912	$2,728
18	10	USA	AUS	$2,671	$2,752
19	15	DEU	USA	$2,636	$2,360
20	24	USA	ITA	$2,518	$1,573
21	20	GCC	FRA	$2,432	$1,824
22	30	USA	IRL	$2,265	$1,308
23	13	SGP	USA	$1,894	$2,506
24		SGP	BRA	$1,871	
25	5	SGP	GBR	$1,852	$3,544



GCC (Gulf Cooperation Council): Bahrain, Saudi Arabia, Oman, Kuwait, Qatar, and the United Arab Emirates
China and Hong Kong combined for the source of capital; Full credit is given to each partner in cases where both buyers were investing globally

2015 Physical Cycle

- Demand & Supply affect occupancies → ***drives*** rental growth
- Employment & Demand growth resumed 2Q 2010
- Supply growth slowest in 43+ years (2013 bottom) supply increasing 2014&15
- RE growth phase 2014-2016 (depending on market & property type)

2015 Financial Cycle

- Capital flows affect prices — stock market rebound 2013, volatile 2014 & 2015!
- Real estate ***safest*** investment alternative 2000-2007, pushed prices up
- Prices ***dropped*** 2008, 2009 = buying opportunities 2010 – 2014 now?
- **Debt financing harder** 2013 - 15 - creating buying opportunity for C***ash Buyers***

- ***Differentiate*** residential <u>versus</u> commercial real estate to your investors!

QUESTIONS?

Topics Covered

Economic Fundamentals

5 key Macro Economic Drivers of Real Estate Performance
Economic Base Analysis

Real Estate Physical Cycle Fundamentals

Demand for Real Estate
Supply of Real Estate
Occupancy Cycles
Rent Cycles

Real Estate Financial Cycle Fundamentals

Interest Rates
Capital Flows
Real Estate Prices
Cap Rates