

Real Estate Forecast 2019

Moderator:



JOSEPH L. PAGLIARI, JR.

Clinical Professor of Real Estate
The University of Chicago
Booth School of Business

Panelists:



JENNIFER BOSS

Executive Vice President
Portfolio Management
Heitman LLC



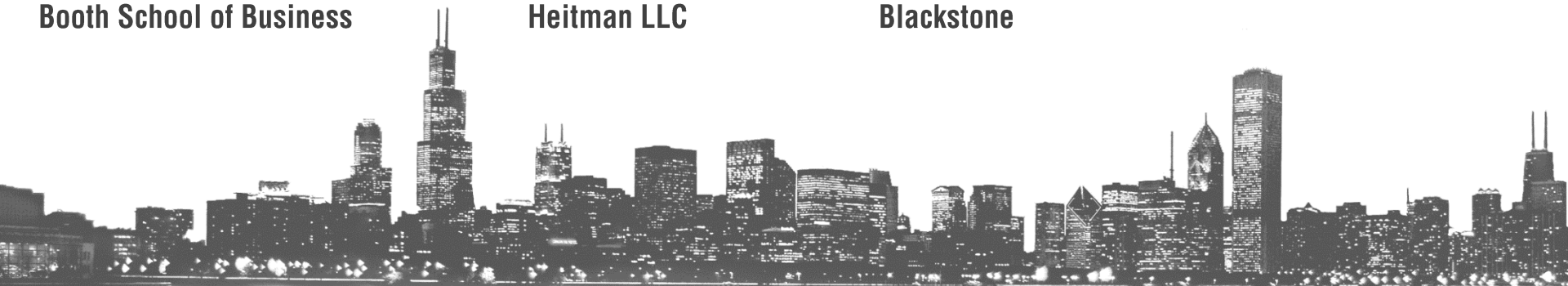
MICHAEL EGLIT

Managing Director,
Real Estate Debt Strategies
Blackstone



DAVID SCHERER

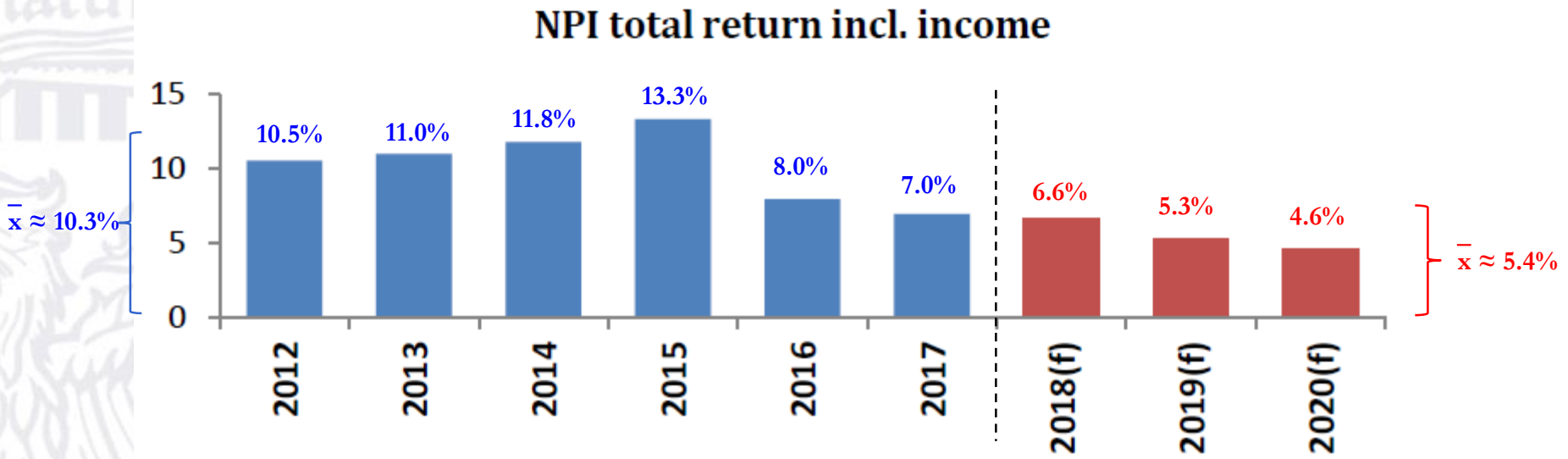
Principal
Origin Investments



- **Commercial Real Estate Pricing:**
 - Historically Low Capitalization Rates
 - Long-Term Interest Rates
 - “Disruptions” → Pace of Change Quickening?
- **Gateway v. Non-Gateway Markets:**
 - Fiscal Solvency
 - “Red Tape” & Other Infirmities
- **High-Yield Debt Funds:**
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 - Expected Performance
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Background: Low-Return Environment

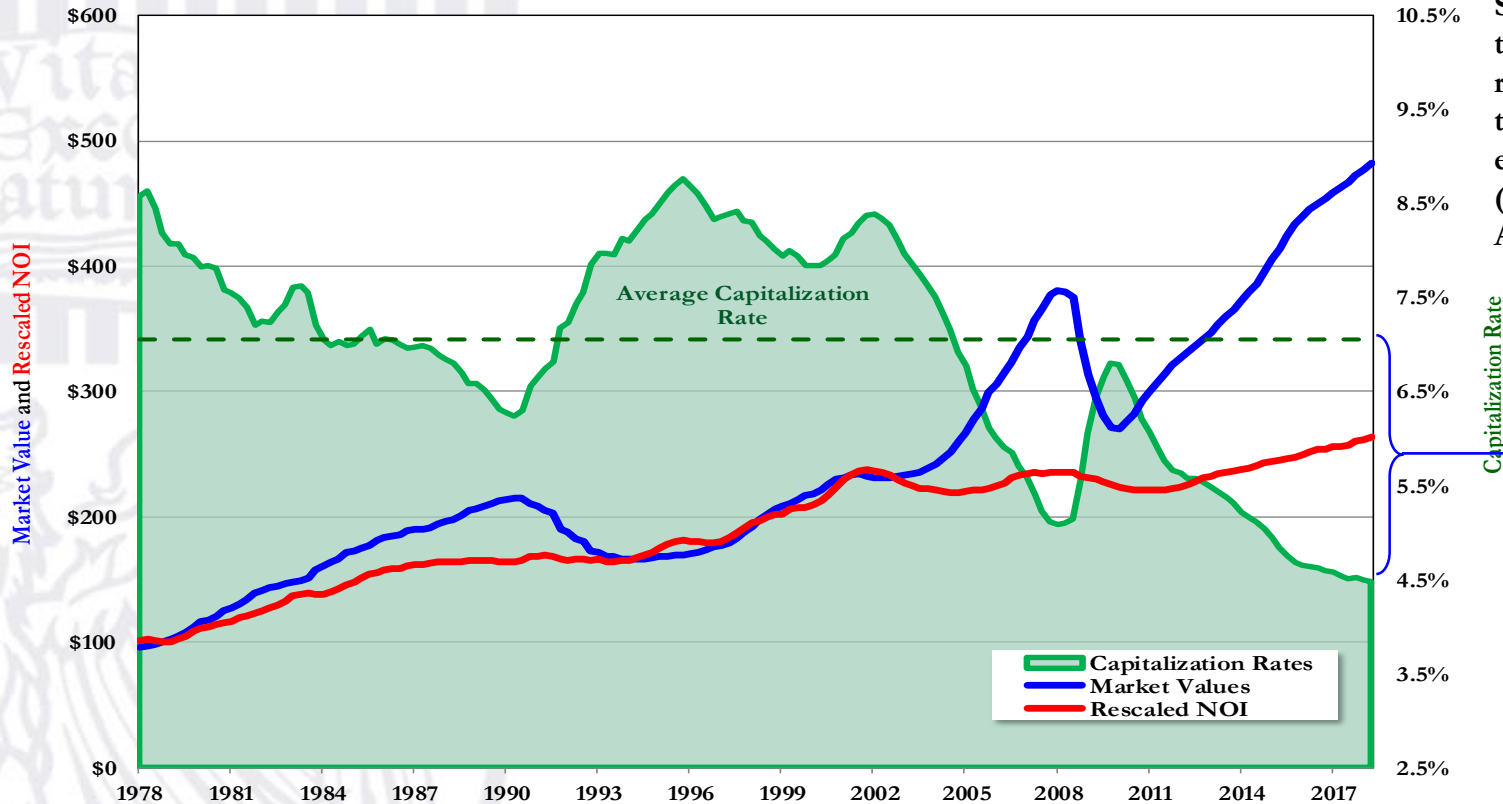
- Significant decline in (unlevered) core returns and the decline is expected to continue:



Source: PREA Consensus Forecast of the NCREIF Property Index as of 3rd Quarter, 2018.

Bubble Pricing? Greenspan Definition

NCREIF Index - Market Values, Rescaled NOI and Capitalization Rates Based on a \$100 Investment for the Period 1978 through (the Second Quarter of) 2018



Some high-yield funds tout that the possible repricing of CRE makes the high-yield safer than equity, but with higher (expected) return. A point we shall revisit!

"... I define a bubble as a protracted period of falling risk aversion that translates into *falling capitalization rates* that decline measurably *below their long term trendless averages*. Falling capitalization rates propel one or more asset prices to unsustainable levels. All bubbles burst when risk aversion reaches its irreducible minimum, i.e. credit spreads approaching zero, though analysts' ability to time the onset of deflation has proved illusive." *{emphasis added}*

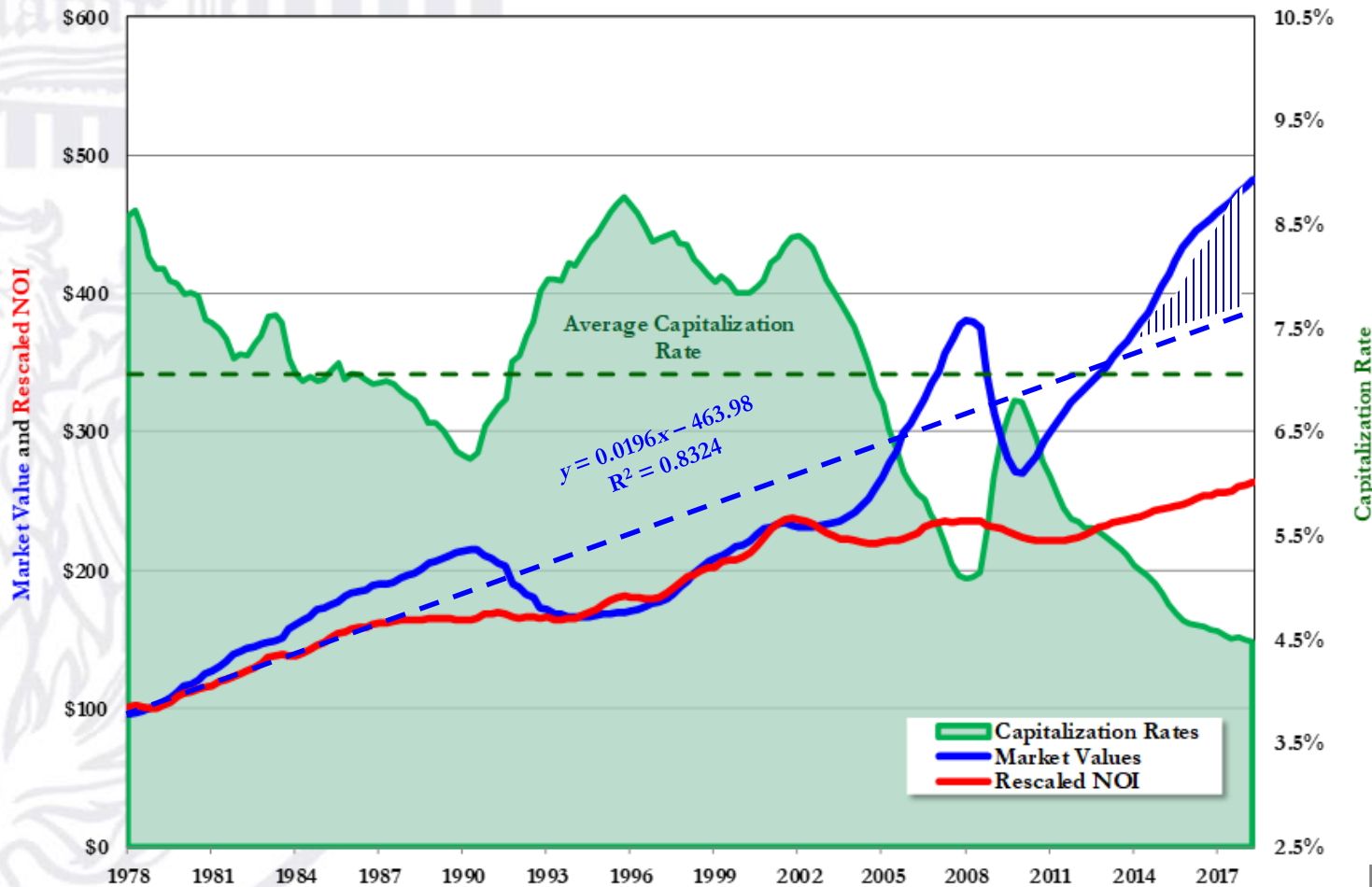
Alan Greenspan, "The Crisis," Brookings Institute working paper, April 15, 2010.

Cap-Rate Compression:	
Current Cap Rate	4.48%
Long-Term (Trendless) Average	<u>7.05%</u>
Difference	<u>-2.57%</u>

Asset Bubble? Deviations from Trend?

Commercial real estate differs from many other assets in that the “crash” generally does not push asset values to zero (v. dot.com stocks being vaporized). Instead, changing property values can be considered as deviations around a trend:

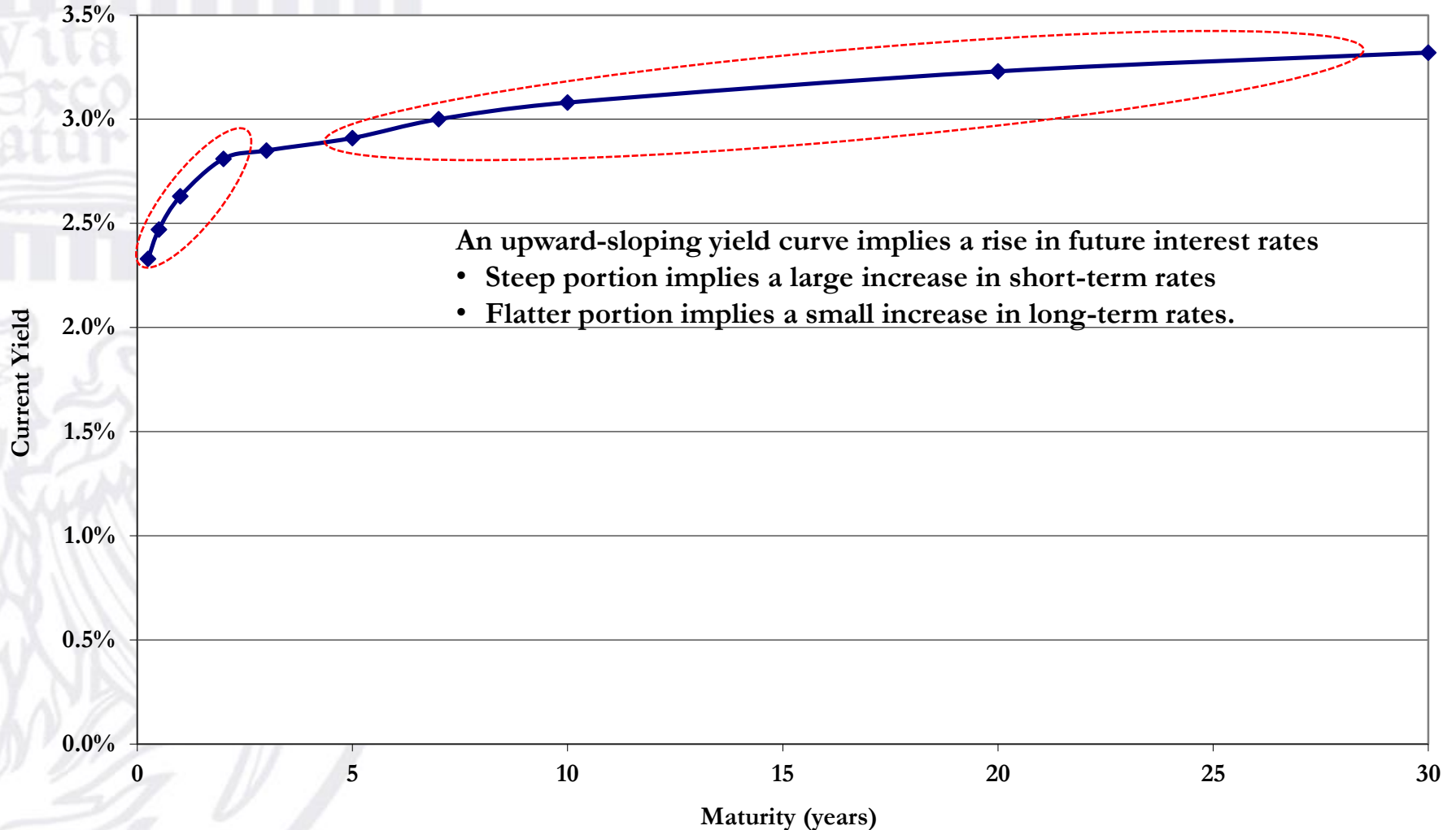
NCREIF Index - Market Values, Rescaled NOI and Capitalization Rates Based on a \$100 Investment for the Period 1978 through (the Second Quarter of) 2018



This sort of analysis is not meant to be conclusive about future CRE pricing. Clearly, expected returns on other assets influence the pricing of CRE – as does the path of interest rates (see next slide).

Today's Yield Curve

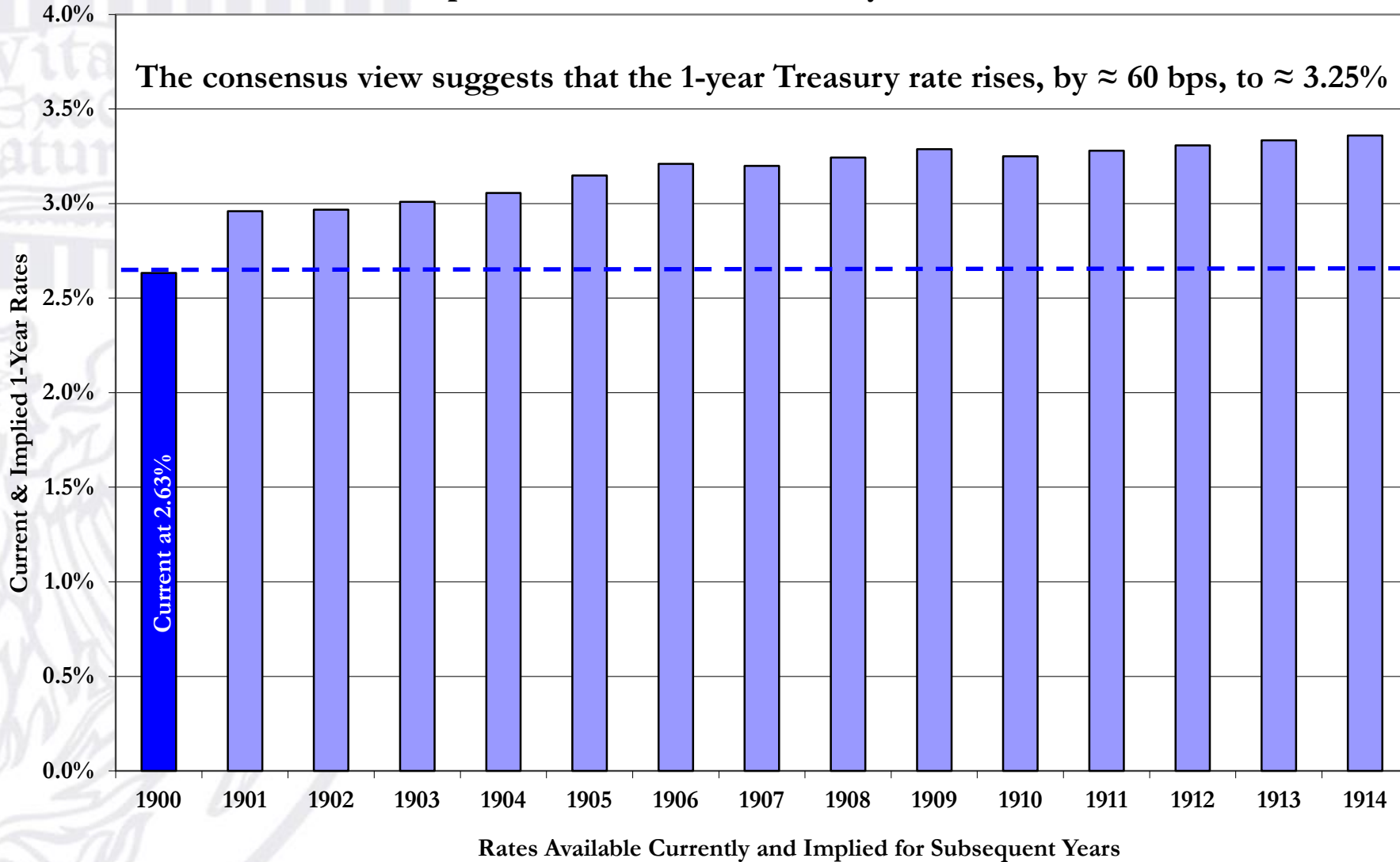
Yield Curve for U.S. Treasury Rates as of October 26, 2018



Sources: US Department of the Treasury and Instructor's calculations.

Market's View of Expected Future One-Year Treasury Rates

Current and Implied Forward 1-Year Treasury Rates as of October 26, 2018



Market's View of Expected Future Ten-Year Treasury Rates

Current and Implied Forward 10-Year Treasury Rates as of October 26, 2018



Examples of “Disruptions”

Is the Pace Quickening?

- By now, the disruptions taking place in the retail sector are well-known (which may differ from being fairly priced):



⇒ industrial sector has become “the other side of the trade”

- Other well-known disruptions:

– Co-working:



– Co-living:

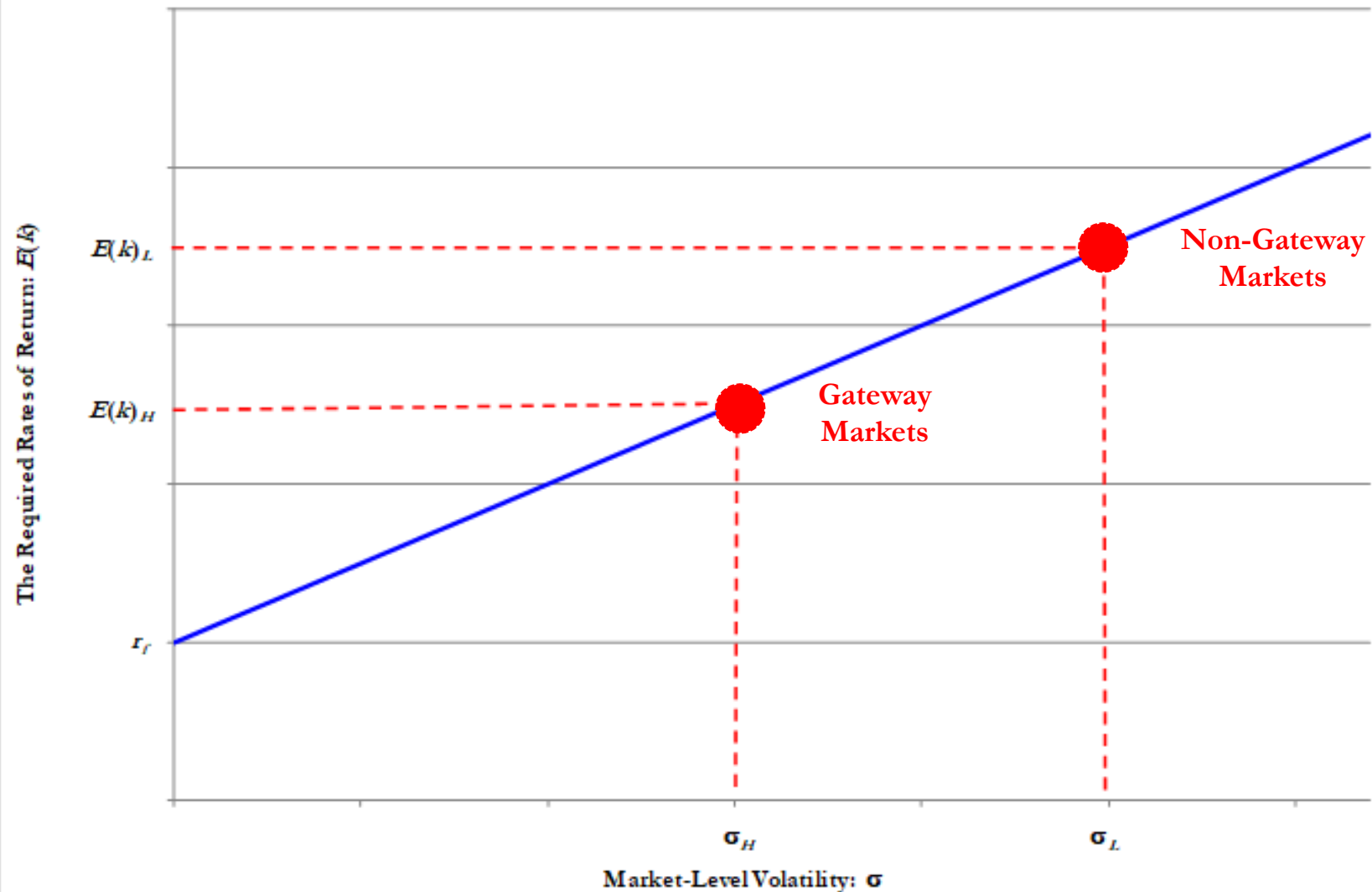


Will such disruptions lead to changes in how we view core real estate?

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Equilibrium Beliefs About Markets

Pricing Illustration of High- v. Low-Barrier Markets
In Order to Produce Identical Risk-Adjusted Returns



Equilibrium Beliefs → Cap Rates

PROPERTY TYPE	SECTOR	CLASS/ SEGMENT	CAP RATE			
			H1 2018 (%)	H2 2017 (%)	CHANGE (BPS)	
OFFICE	CBD	ALL	6.63	6.64	-2	
		AA	5.21	5.23	-2	
		A	6.01	6.07	-5	
		B	6.88	6.89	-2	
		C	8.60	8.55	5	
	SUBURBAN	ALL	7.91	7.88	3	
		AA	6.37	6.38	-1	
		A	7.11	7.14	-3	
		B	8.30	8.23	7	
		C	9.76	9.67	9	
INDUSTRIAL	ALL	ALL	6.42	6.51	-10	
		A	5.14	5.25	-11	
		B	6.11	6.27	-17	
		C	8.06	8.07	-1	
RETAIL	NEIGHBORHOOD/ COMMUNITY CENTER	ALL	7.41	7.32	9	
		A	5.86	5.79	7	
		B	7.34	7.22	12	
		C	9.09	9.02	8	
	POWER	ALL	8.23	7.97	26	
		A	6.97	6.84	13	
		B	8.18	7.95	23	
		C	9.54	9.11	43	
		HIGH STREET	A	4.77	4.67	10

Average cap rate difference between A and B markets ≈ 95 bps

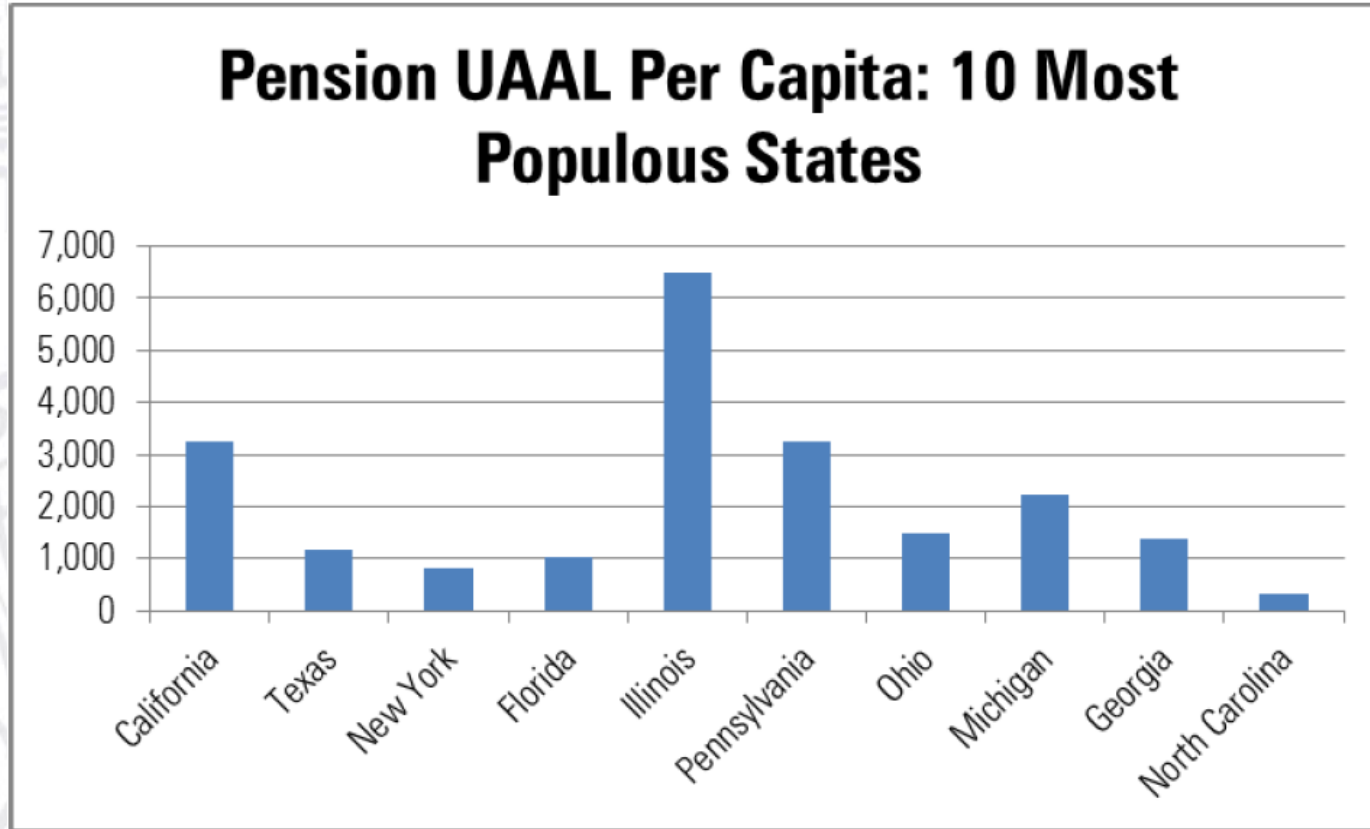
The difference in cap rates = f(•)

- expected growth, &/or
- risk

Source: CBRE Cap Rate Survey, First Half, 2018.

But, What If the Market's Wrong?

- Low returns have placed significant performance pressures on pension and endowment funds. As one example, consider unfunded pension-fund obligations:



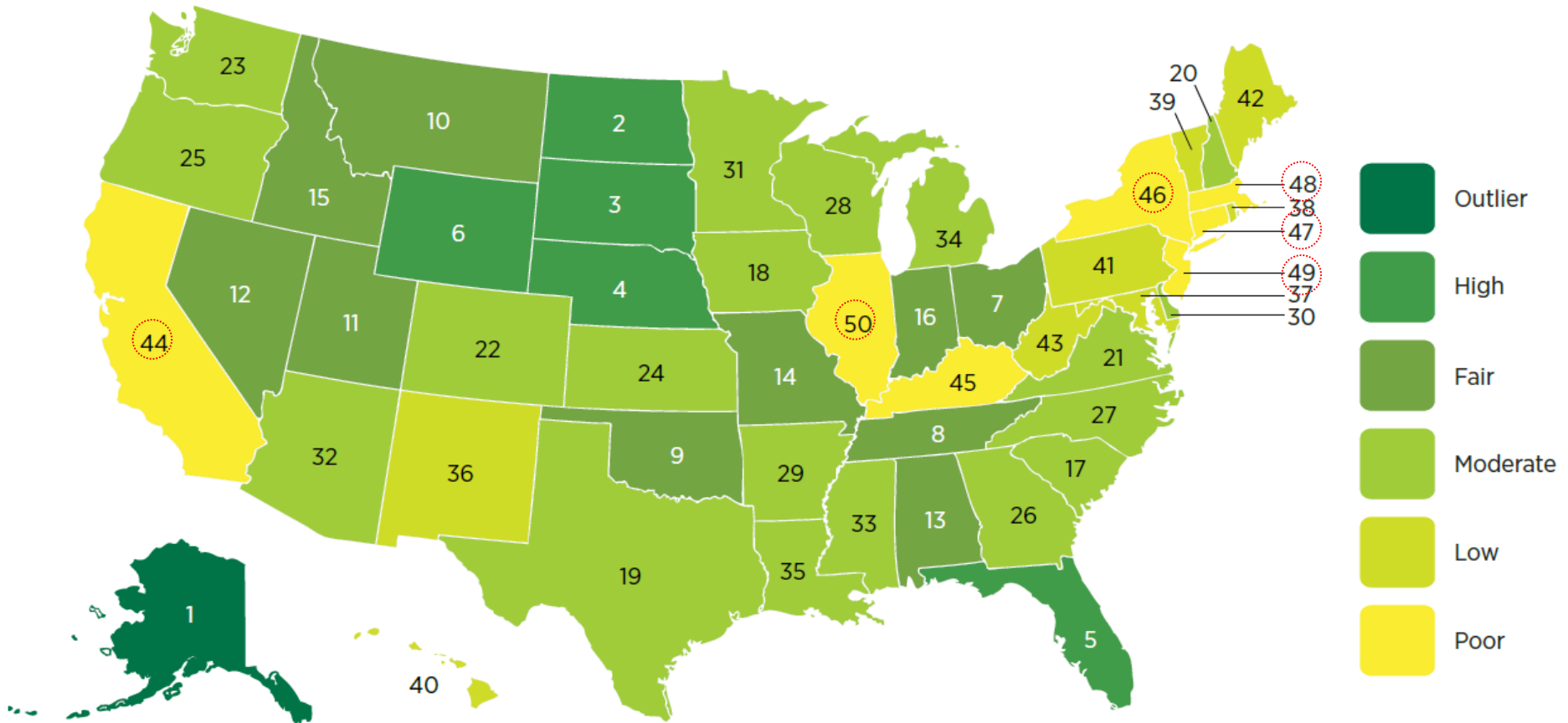
Source: Rachel Barkley, "State and Local Pensions 101," Morningstar, October 19, 2012.

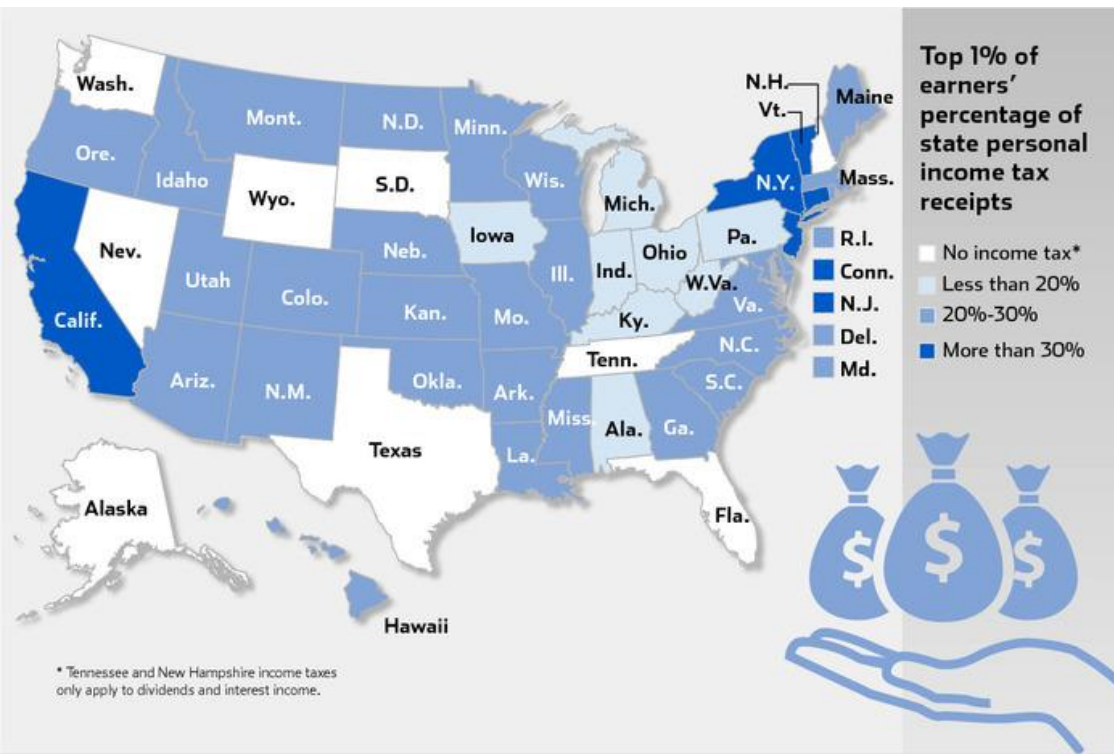
Consider State Solvency

- Under-funded pension-fund obligations is part of larger picture about state-level fiscal solvency:

Note the six worst-ranked states – covers 5 of the 6 “gateway” markets (excludes Washington, D.C.)

OVERALL FISCAL SOLVENCY
How do the 50 states rank?





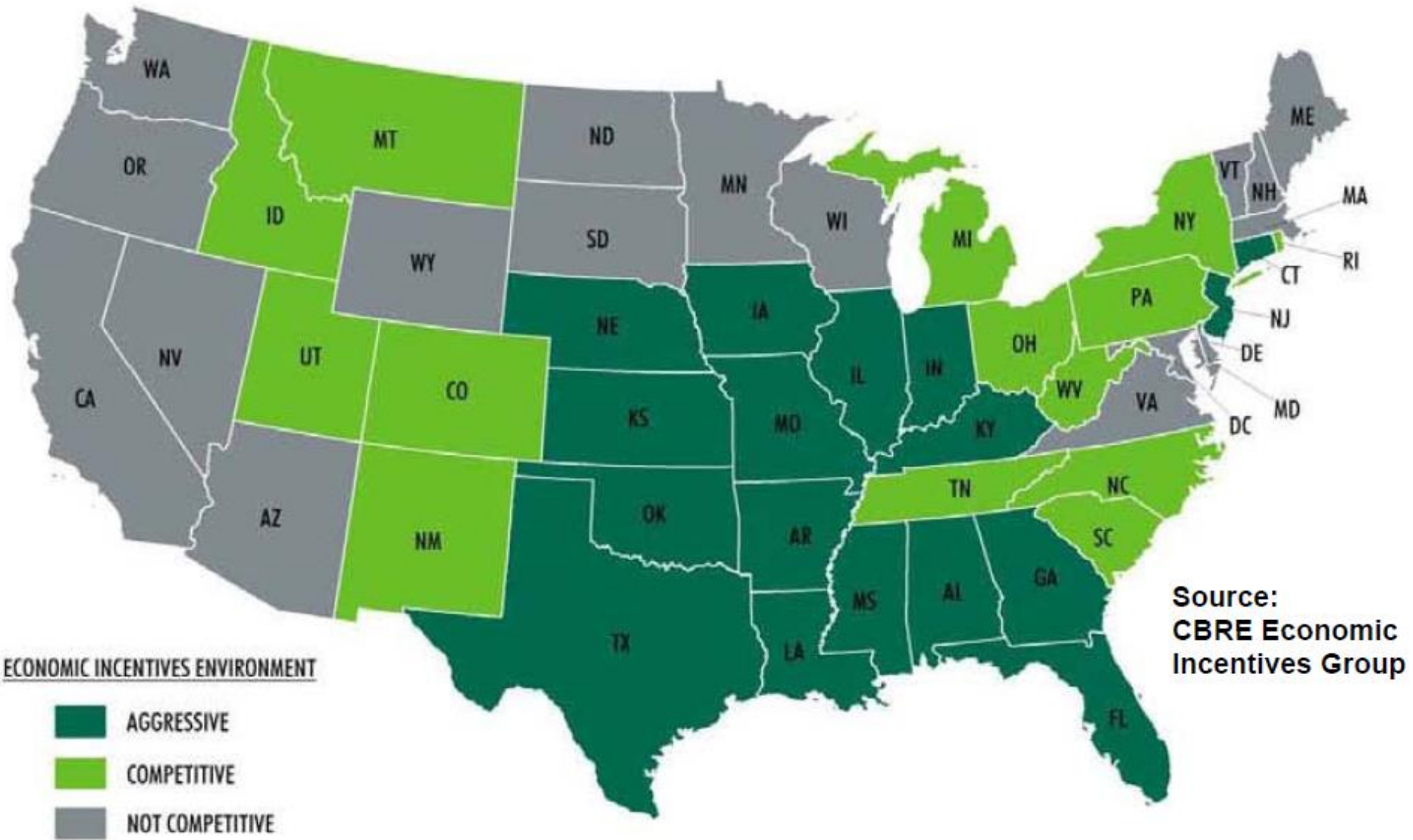
- At the state & local levels, “tax the rich” policies are increasingly problematic:
 - The income of the rich is more variable than lower brackets
 - The rich move to other states (e.g., Florida and Texas) with lower income taxes
- Calls for “broadening the (income) tax base” will be met with political resistance.
- In order to cope, state & local authorities considering a range of service cuts &/or increasing other forms of taxation (e.g., property and transfer taxes)
 - Both the cuts and the tax increases adversely affect commercial real estate values

Taxing the Top | How high-earners fare in selected states

STATE	PERCENTAGE OF STATE REVENUE MADE UP BY INCOME TAXES	HIGHEST INCOME TAX RATE	INCOME LEVEL WHERE IT KICKS IN	PERCENTAGE OF INCOME TAX RECEIPTS PAID BY TOP 1%
California	43.9%	10.3%	\$1 million	45%
Connecticut	49.3	6.5	500,001	40
Hawaii	28.4	11.0	200,001	20
Illinois	31.4	5.0	All income	25
Maryland	42.8	5.5	500,001	25
New Jersey	39.2	8.97	500,000	41
New York	56.7	8.97	500,001	41
Vermont	21.3	8.95	373,651	34

Sources: Institute on Taxation and Economic Policy; Federation of Tax Administrators; Tax Policy Center, Urban Institute and Brookings Institution

Will Aggressiveness Change with State Fortunes?



Source: Jim Costello and Mark Seely, "Industrial, Economic & Workforce Trends,"
CBRE Client Conference, October 28, 2010.

It Seems Regulatory Burden Associated with Finances

Which US states are worst for small business?

Overall

Tax code

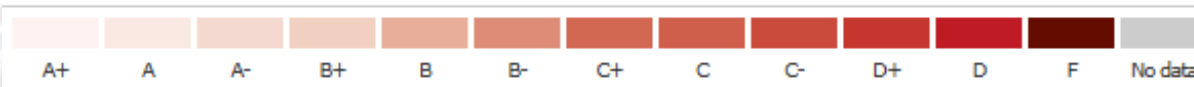
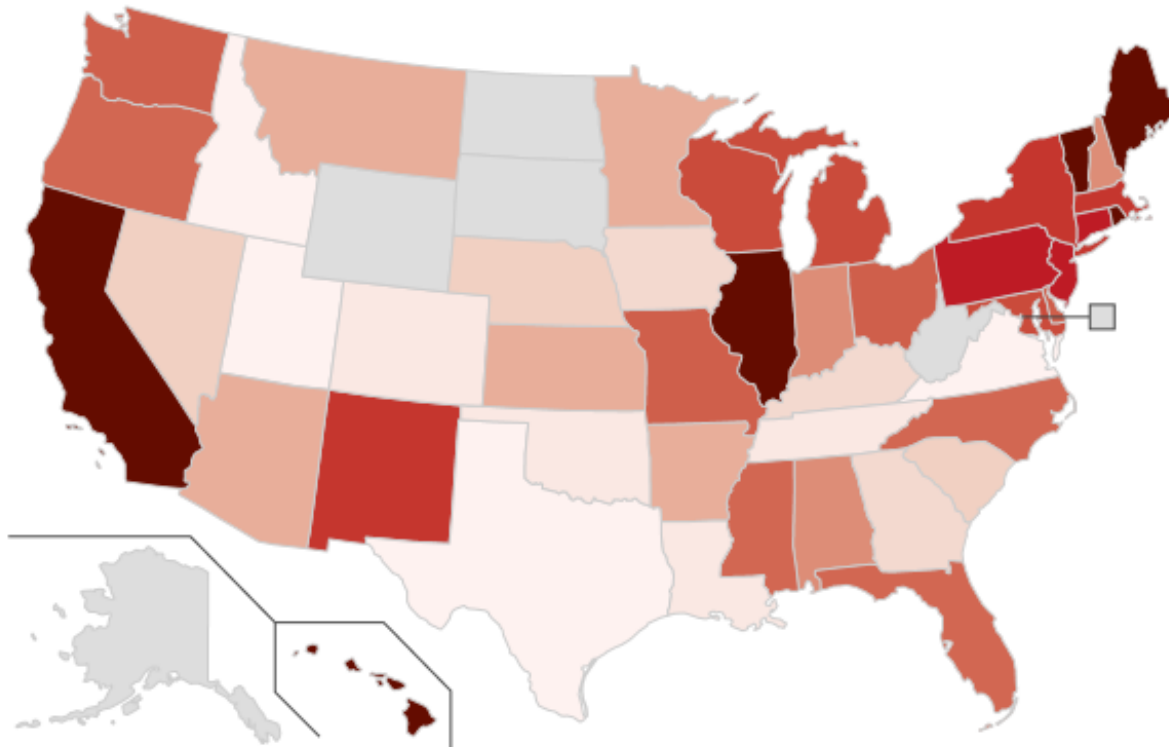
Regulations

Licences

Overall friendliness to small business

A+: best; F: worst

Zoom to ▼



Source: Thumbtack

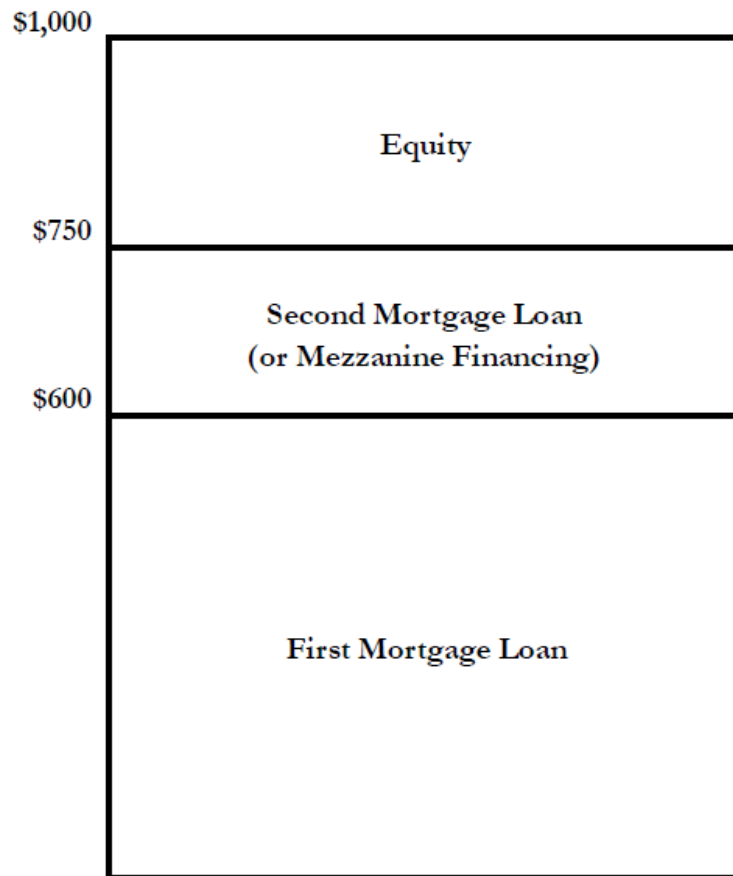
Prepared by Chicago Booth for ULI Chicago

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Searching for Yield: Middle of Capital Stack!

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- As the real estate markets have become more sophisticated and as investors “search for yield,” understanding all elements of the capital stack has become increasingly important.



As but one example, consider (see next slides) the explosion in private high-yield debt fund.

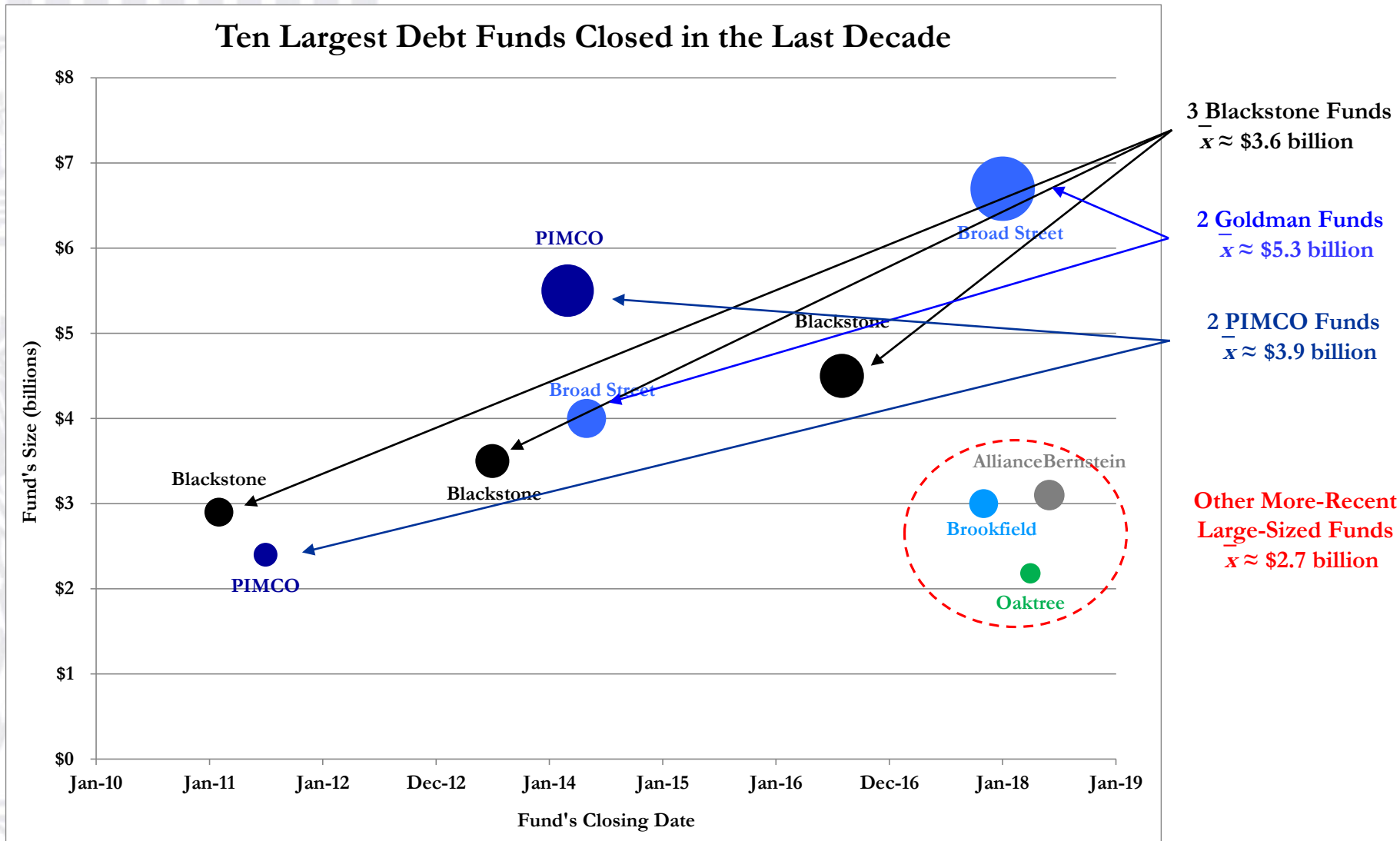
- For (year-to-date) 2018, there are 70 high-yield debt funds in the market, looking to raise nearly \approx \$65 billion of equity capital.
- The median targeted net return was 11.0%, with a weighted average of \approx 12.6%.
- Over the same time, the yield on the 5-year U.S. Treasury bond has averaged \approx 2.7%.

Sources: *Commercial Mortgage Alert*, St. Louis Federal Reserve Bank and the author's calculations.

- The figures above do not include the high-yield mortgage REITs; *e.g.*:
 - Blackstone (BMXT): \$3.9 billion (of equity), and
 - Colony Northstar: \$3.2 billion (of equity).

High-Yield Debt Fund-Raising (continued)

- A look at the ten largest debt funds:

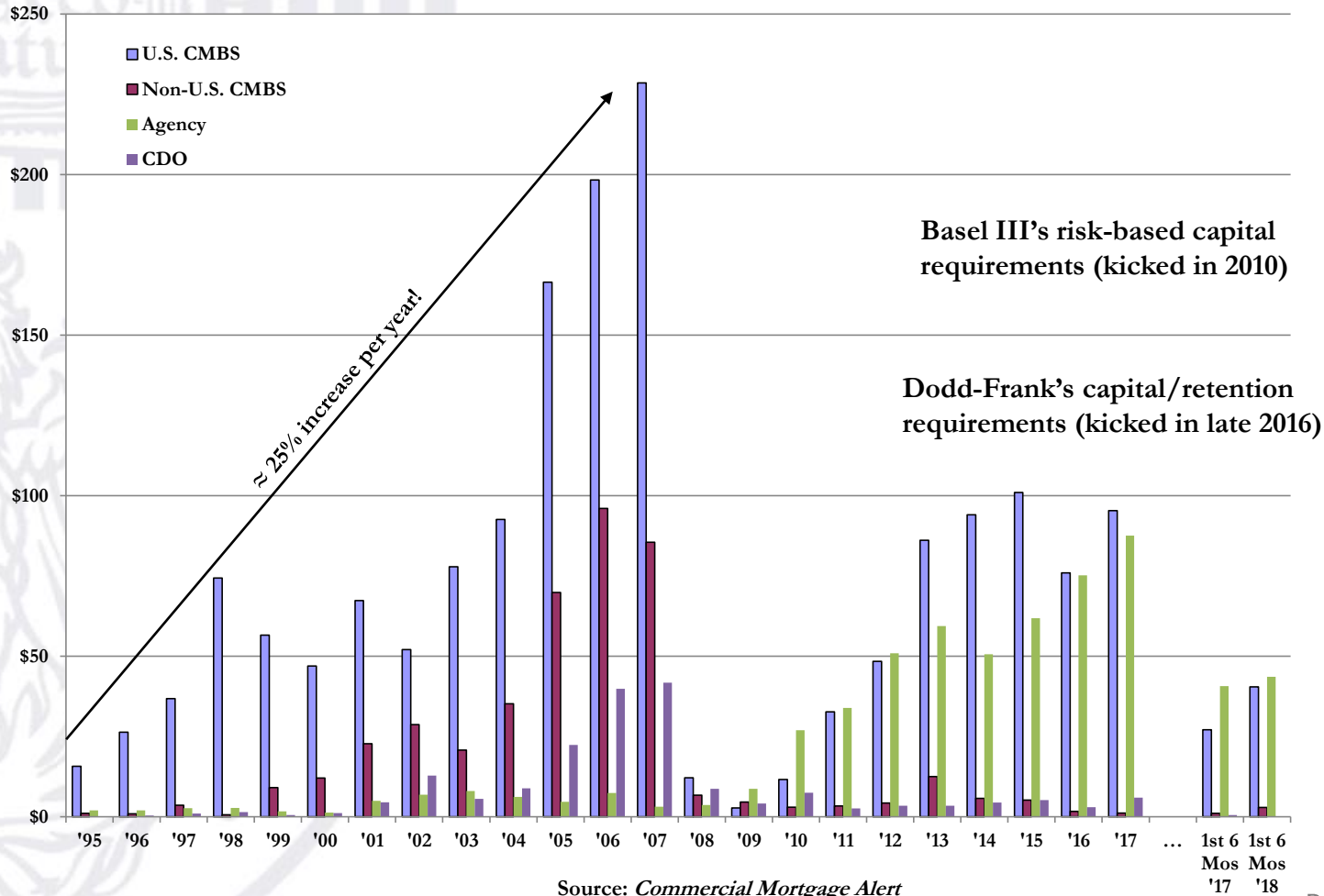


Sources: *Bisnow*, Preqin, Ltd. and the author's calculations.

Another Example of Disruptions: Legislative Constraints

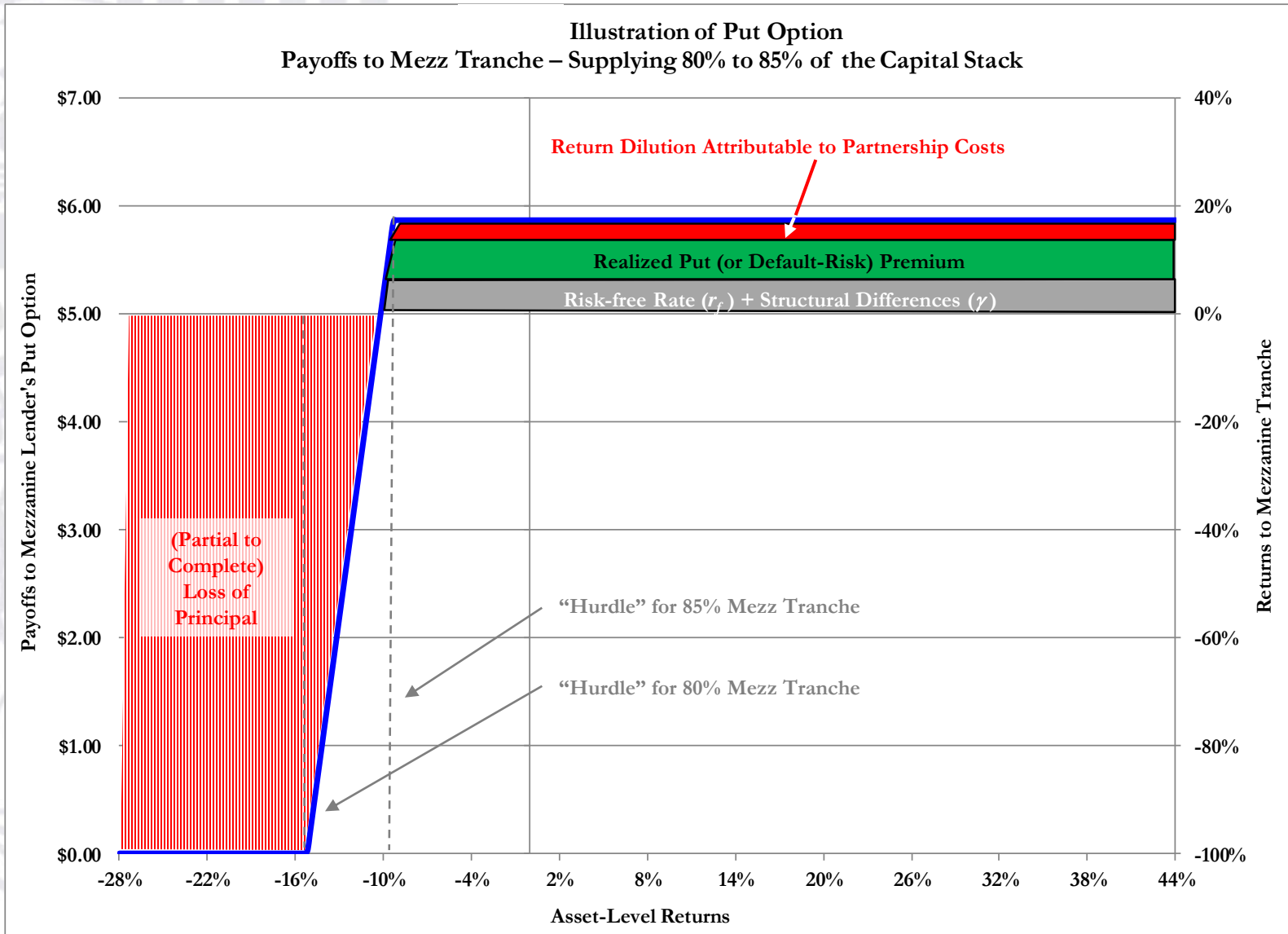
- Consider conventional mortgage sources:

Annual CMBS Issuance (\$ billion) for the Period 1995 - YTD 2018



Net Returns to a Particular Debt Tranche

- Consider the LPs' payoff to one of the riskier mezz tranche, across a range of asset-level returns:



The typical base fees (1.5%) + pref (8%) & promote (20%) structure is hereafter ignored

[Note: The *JPM* removed this exhibit from the original version of the article.]

Exhibit 14: Illustration of Risk & Return by Mezzanine Tranche
Assuming with and without Lender (or Fund) Liquidity

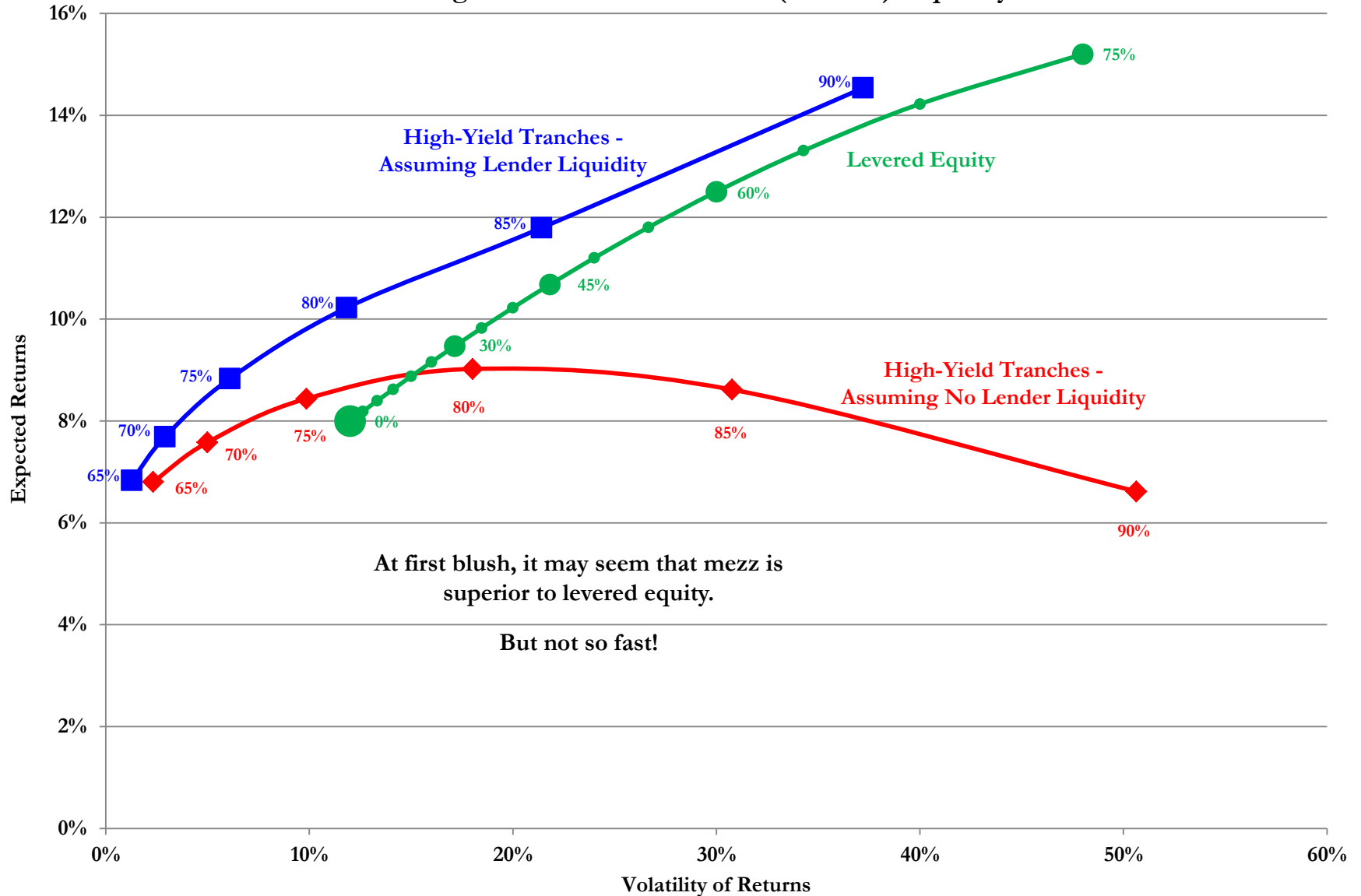
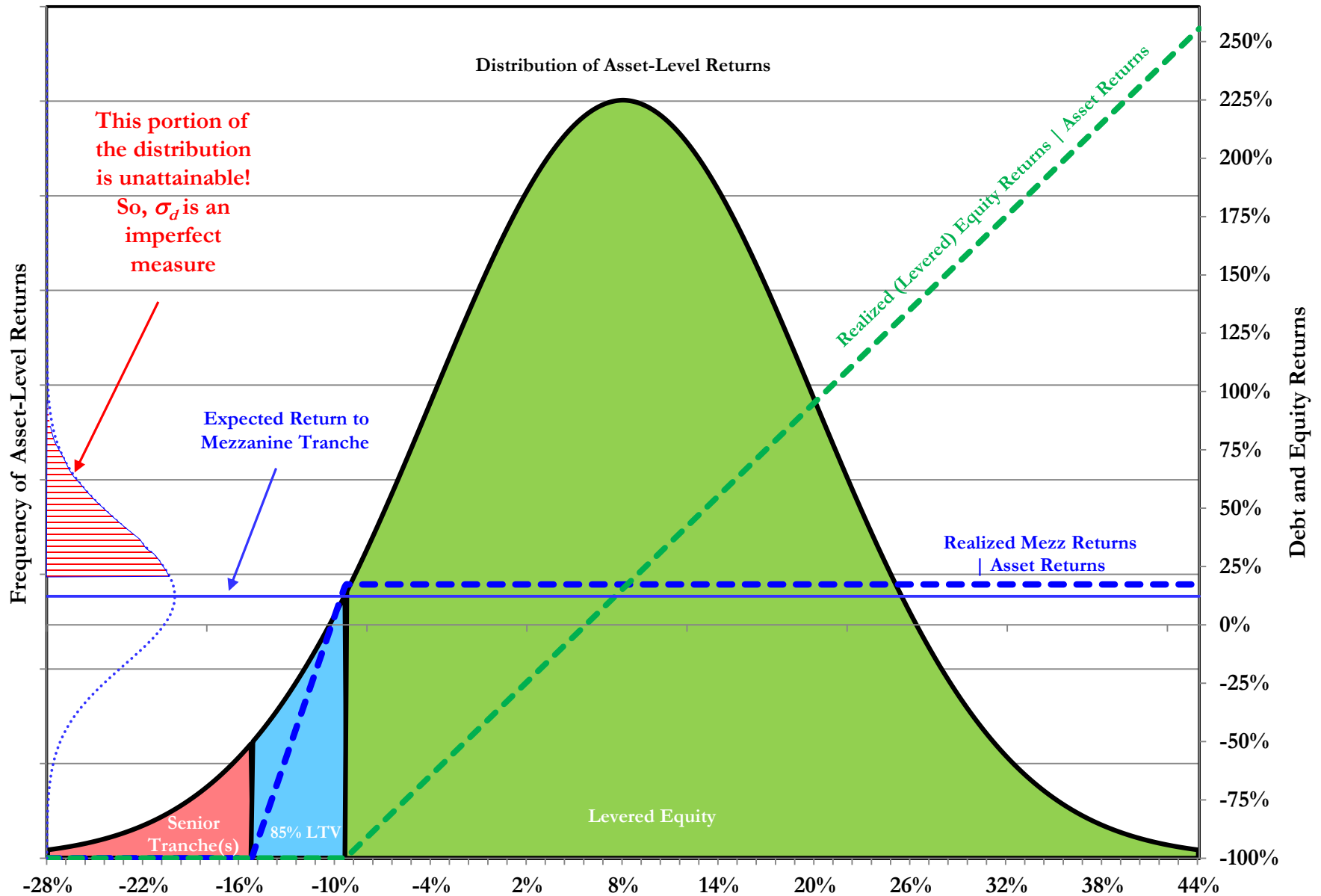


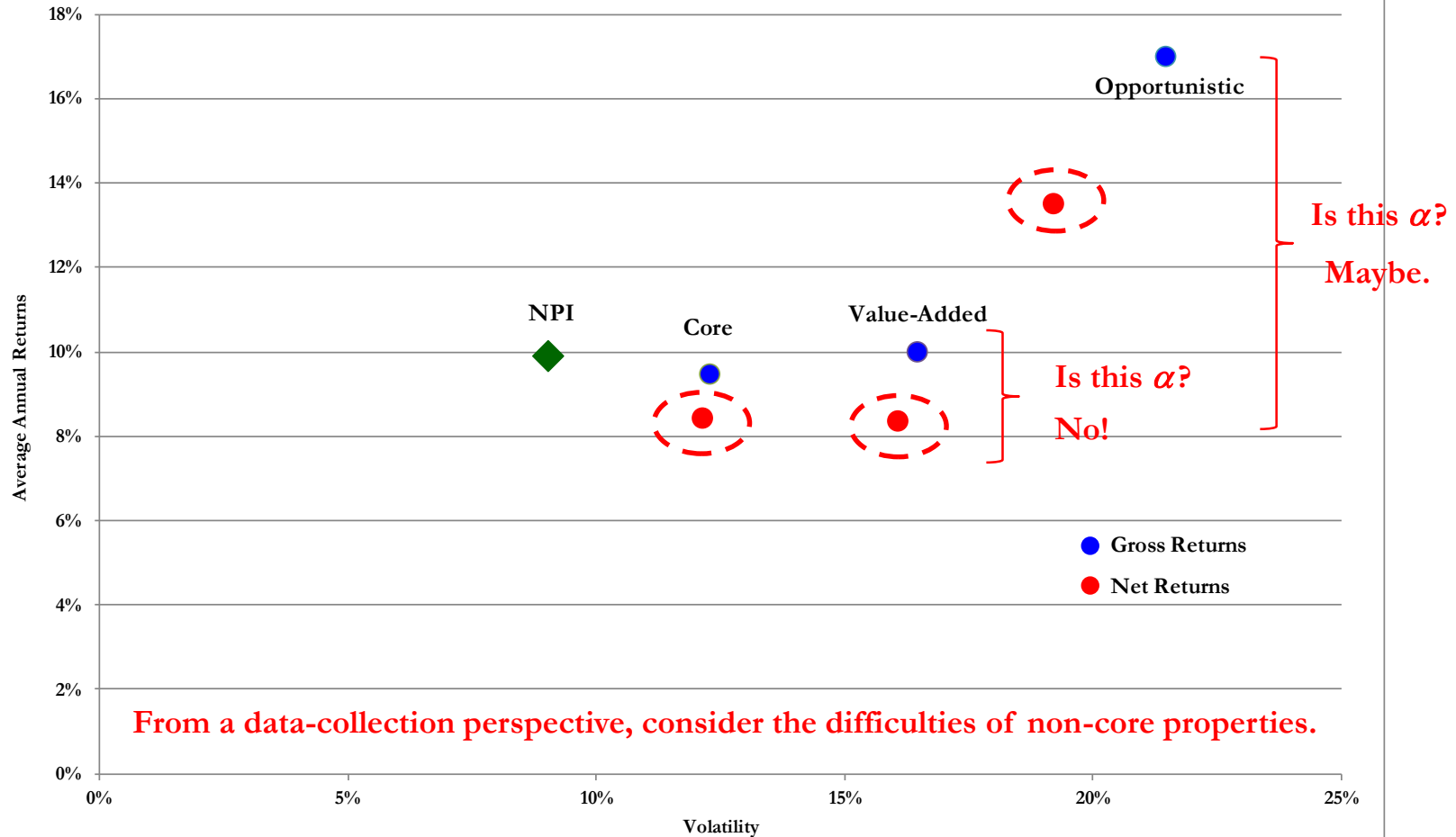
Exhibit 16: Illustration of Payoff Regions to Junior-Most Mezzanine Tranche and Levered Equity



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Alpha? Gross & Net Returns by Strategy

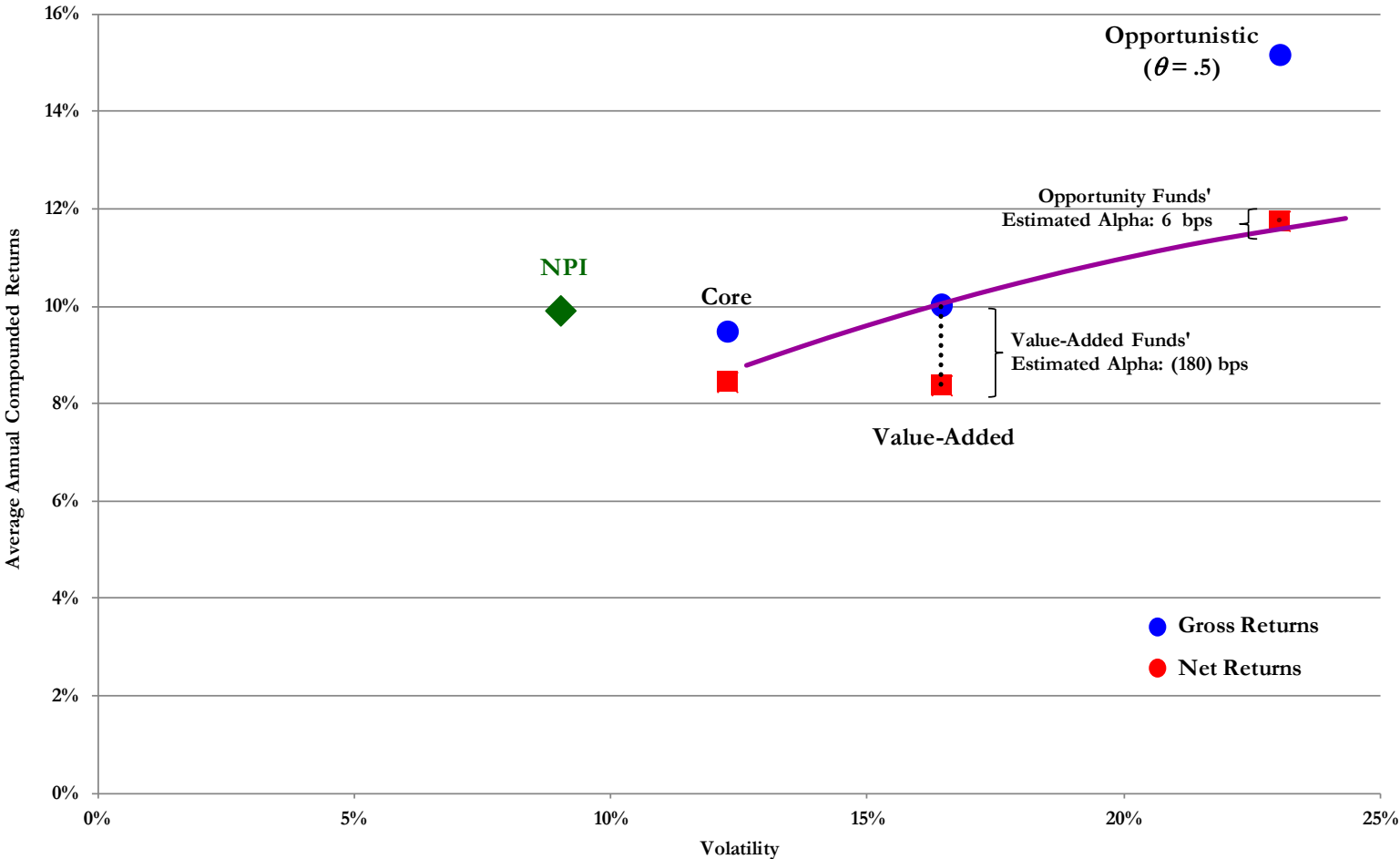
Exhibit 62: Reported Performance by Fund Type for the 17-Year Period Ended December 31, 2012



From a data-collection perspective, consider the difficulties of non-core properties.

Source: NCREIF/Townsend and Author's Calculations

**Exhibit 76: Estimated Alpha for Non-Core Funds
for the 17-Year Period Ended December, 2012**



Results:

For Opportunistic Funds, an “efficient market” type answer : investors receive a “fair” return, while managers receive the “surplus”

For Value-Added Funds, no such answer: dramatic under-performance

“Mountain” Chart for Value-Added Index’s Alpha

- Repeat the earlier (α) exercise for differing vintages
- Choose any beginning and ending date, with minimum 6-year hold
- Value-add funds underperform before, during & after the financial crisis
 - The pre-financial-crisis underperformance is particularly damning!

Exhibit 78: Value-Added Funds' Estimated Alpha for Various Holding Periods

Incoming Year	Exiting Year											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
2007												(3.19%**)
2006											(3.05%**)	(2.92%**)
2005										(2.96%*)	(2.74%**)	(2.68%**)
2004									(1.59%)	(2.45%*)	(2.34%*)	(2.34%**)
2003								(2.82%***)	(1.35%)	(2.13%*)	(2.07%*)	(2.10%**)
2002							(1.39%*)	(2.50%***)	(1.31%)	(2.00%*)	(1.97%**)	(2.00%**)
2001						0.31%	0.06%	(1.62%)	(0.77%)	(1.46%)	(1.47%)	(1.53%*)
2000					0.04%	(0.08%)	(0.24%)	(1.83%*)	(1.00%)	(1.58%)	(1.58%*)	(1.63%*)
1999				0.28%	(0.43%)	(0.52%)	(0.65%)	(2.02%**)	(1.20%)	(1.70%*)	(1.69%*)	(1.73%**)
1998			NA*	(0.04%)	(1.45%)	(1.56%)	(1.63%)	(2.72%**)	(1.88%*)	(2.27%**)	(2.21%**)	(2.21%**)
1997		(1.10%)	(0.79%)	(0.95%)	(1.39%)	(1.48%)	(1.59%)	(2.41%*)	(1.47%)	(1.87%*)	(1.86%*)	(1.88%*)
1996	(0.89%)	(0.94%)	(0.69%)	(0.87%)	(1.29%)	(1.39%)	(1.48%)	(2.30%**)	(1.40%)	(1.77%*)	(1.76%*)	(1.80%**)

Note: */**/** indicates a 10%/5%/1%, respectively, confidence level. The test statistic for alpha uses a 2-sided (*t* distribution) critical value.

“Mountain” Chart for Opportunistic Index’s Alpha

- Repeat the earlier (α) exercise for differing vintages
- The index of Opportunistic funds underperforms before the financial crisis
- Yet, they overperform during & after the financial crisis!
 - How can this be? It cannot [=f(“flight to quality”)]
 - Provides another perspective on data problems & survivorship bias

Exhibit 79: Opportunity Funds' Estimated Alpha for Various Holding Periods

Incoming Year	Exiting Year											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
2007												(2.46%)
2006											(2.46%)	(2.86%)
2005									3.96%	0.51%		(0.37%)
2004									7.22%	4.60%	1.52%	0.60%
2003								(0.88%)	6.19%	4.05%	1.39%	0.58%
2002							(3.78%)	(0.32%)	5.46%	3.62%	1.26%	0.53%
2001						0.76%	(1.54%)	0.36%	5.04%	3.42%	1.27%	0.60%
2000					(0.41%)	(0.65%)	(2.47%)	(0.46%)	4.14%	2.78%	0.89%	0.31%
1999				(1.52%)	(2.24%)	(2.38%)	(3.87%)	(1.54%)	3.03%	1.90%	0.24%	(0.25%)
1998			(0.47%)	(2.38%)	(3.71%)	(3.81%)	(4.95%)*	(2.53%)	2.18%	1.23%	(0.24%)	(0.66%)
1997		(1.99%)	(1.66%)	(2.27%)	(3.50%)	(3.60%)	(4.68%)*	(2.31%)	2.41%	1.52%	0.11%	(0.31%)
1996	(2.00%)	(1.26%)	(1.11%)	(1.64%)	(2.78%)	(2.95%)	(3.93%)	(1.84%)	2.66%	1.82%	0.48%	0.06%

Our earlier result

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