September 2016

Real Estate Investment Quarterly Highlights

What's Inside?

- State of the U.S. real estate cycle
- Leading Indicators
- U.S. real estate sector performance update

Summary of investment performance prospects

- Ongoing softening in total return as cycle transitions to NOI-driven performance with only minor potential for more cap rate compression
- The PREA consensus forecast as of 2Q2016 expects 8.4% total return in 2016 and 6.8% in 2017
- No indications of an imminent cycle downturn; macro-economic and credit market environment remains positive
- Metro market supply-demand fundamentals generally well-balanced
- Pricing still attractive and above long-term average spread
- Risks largely on downside from macro-economic and financial markets sources

State of the U.S. real estate cycle

U.S. commercial real estate cycle

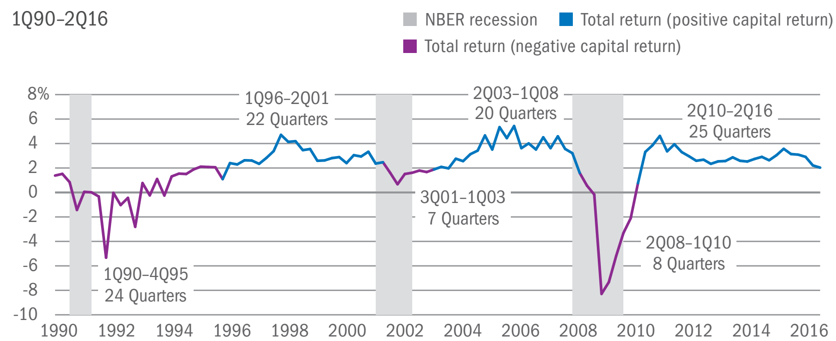
- After 6 consecutive calendar years of double-digit returns, NPI total returns are reverting toward their long-term average.
- NPI posted a 2.03% total return in 2Q16 which will equate to roughly 8% annualized, the weakest since 1Q10.
- The cooling off reflects the cycle's maturity and the increasing reliance on NOI growth as the driver of performance. NOI growth for the four quarters ending June was a robust 5.7% and current value cap rates have flattened.
- Transactions activity (not shown) declined in 2Q versus 1Q but still remains above the pace recorded in 2014. The decline is attributable to fewer very large deals and fewer portfolio transactions.
- The still solid pace of transactions helped to revive transactions prices as reported in the Moody's CPPI (not shown). That index was more or less flat between August 2015 and April 2016, but delivered a 3.7% price increase over 2Q16.

Probability of U.S. real estate downturn

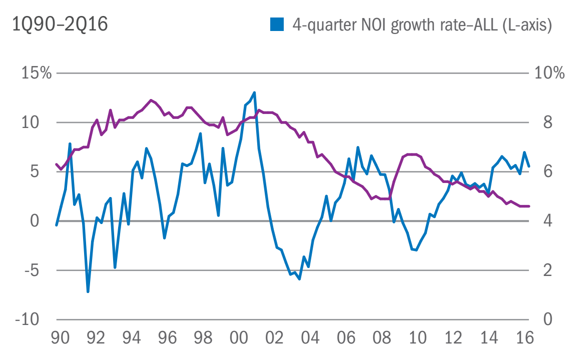
- The probability of a downturn is best assessed through pricing as shown in NPI-derived initial yields and their spread versus the 10-year Treasury yield. This metric is akin to a backward-looking cap rate and is a gauge of relative value.
- Note the slight up-tick in the spread in 2Q implying that current property pricing is still attractive with potential for further gain.
- Our model estimates the probability of downturn during the coming four-quarters at less than 20% and lower than last quarter's estimate.
- Past experience shows that worry is warranted when downturn probabilities exceed 40% to 50%

Sources: NBER; NCREIF, as of 2Q16; Moody's Analytics; US Board of Governors of the Federal Reserve System; TIAA.

NCREIF Property Index (NPI)[1] total returns and U.S. recessions

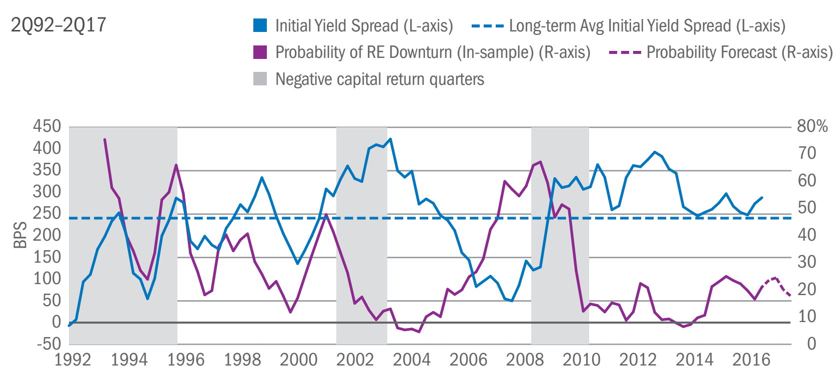


NPI[1] current value cap rates and 4-quarter NOI growth rates



ALL	Cap Rate (%)	NOI Gr. (%)	10-Yr Tsy (%)
1992-15	6.9	2.8	4.6
2005-15	5.6	3.1	3.2
Mar-16	4.6	7.1	1.9
Jun-16	4.6	5.7	1.7

NPI-derived[1] Initial Yield Spreads (IYS) (1Q92–2Q16) and probability of U.S. real estate downturn in 4 quarters[2]



Leading indicators

Leading indicators of U.S. commercial real estate performance (2Q16)

	Indicators	Position
Capital Markets	**Interest rates**	Safe haven flows following Brexit have pushed the 10-year Treasury yield to historical lows below 1.4%; Lower rates for longer continue to make real estate investment appealing
	Investor risk appetite	High-yield spreads moderating and investor risk appetite reviving; Distress concentrated in HY energy sector. CRE property price appreciation resumed in May and June
Debt Availability	**Debt for investors**	Commercial real estate financing is readily available from insurance companies; banks pulling back at regulators urging and CMBS issuance way down due to implementation of risk retention rules
	Debt for construction	Construction lending supporting a growing supply pipeline that bears watching; Recourse loans and moderate loan-to-cost ratios prevail
Labor Market	**Employment growth**	Job situation has recovered on a national basis, benefiting real estate demand; But, demographic and geographic employment recovery has been uneven
	Unemployment rate	Unemployment rate at FOMC's median estimate of long-run normal rate; Unfortunately, labor force participation rate remains stubbornly low
CRE Fundamentals	**Vacancy rates**	Even with rising new construction, fundamentals generally remain balanced; Vacancy rates are expected to remain in proximity of long-term averages
	Commercial property rents	Rent growth trends are mixed across property types depending on new supply; APT have absorbed elevated deliveries, moderating rent growth expected

- Leading indicators suggest a still positive foundation for property operational performance
- With all indicators in the "green" zone, conditions are supportive of solid NOI growth
- Sharp drop in CMBS issuance and pick-up in risk appetite as shown in drop in high yield spreads are worth watching.

Source: TIAA-CREF, as of August 2016.

Apartments (APT)

APT performance and pricing

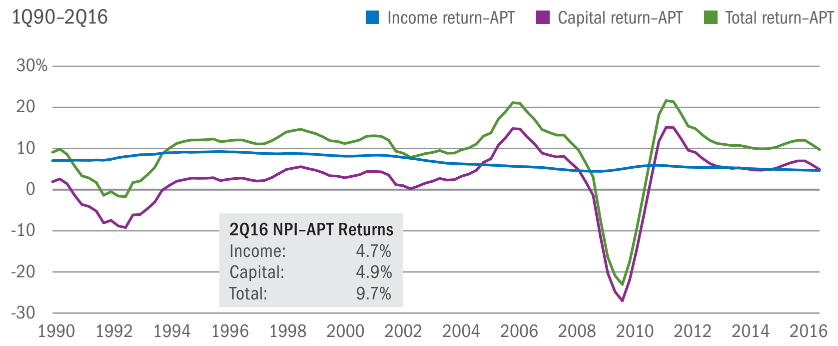
- APT's 9.7% total return ranked third of the four major property types in 2Q16.
- Average current value cap rate was unchanged at 4.5%.
- APT's 4-quarter NOI growth rate was 9.1% in 2Q16, well above its long-term average.

APT fundamentals outlook

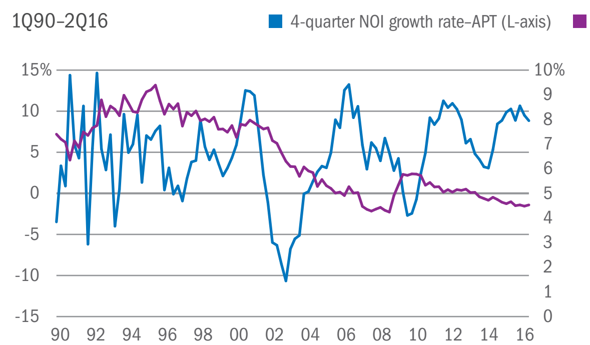
- Of the four major property types, APT sector is likely the furthest along in its real estate cycle.
- Most APT markets have absorbed recent deliveries without adversely impacting fundamentals but, the 2Q16 vacancy rate inched up slightly to 4.4% from 4.3% last year. This change is too small to suggest that the flow of construction has finally put a lid on further improvements in APT's national metrics.
- Looking forward, APT sector faces the greatest concerns regarding new supply and expectations are for rent growth and vacancy improvements to moderate as shown in the majority of metros adding supply at a stronger pace than historical averages. The pace of construction reflects available credit especially agency-backed, strong NOI growth, and the presumption that there is still pent-up demand especially among millennials. That presumption might prove to be overly aggressive.

Sources: NCREIF; CBRE-EA; US Board of Governors of the Federal Reserve System; as of 2Q16; TIAA.

NPI[1] rolling 4-quarter total, income, and capital returns

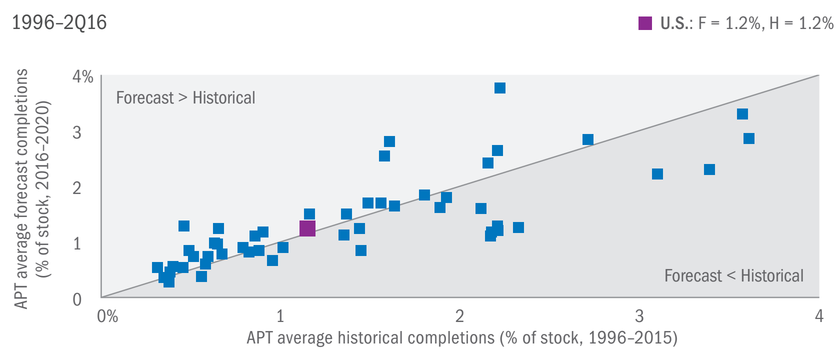


NPI[1] current value cap rates and 4-quarter NOI growth rates

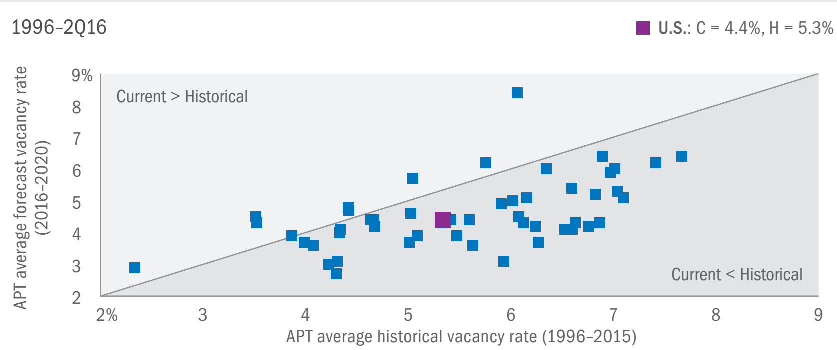


APT	Cap Rate (%)	NOI Gr. (%)	10-Yr Tsy (%)
1992-15	6.5	4.7	4.6
2005-15	5.0	6.5	3.2
Mar-16	4.5	9.8	1.9
Jun-16	4.5	9.1	1.7

Historical and forecast completions for 50 largest APT markets[3]



Historical and forecast vacancy rates for 50 largest APT markets[3]

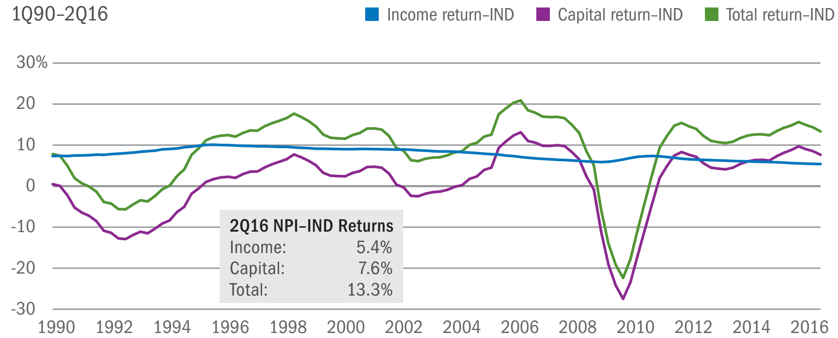


Industrial (IND)

Performance and pricing

- With a 13.3% total return, IND was the best performing sector of the 4 major property types over the year ending June
- Average current value cap rate was 5.0% in 2Q16 in line with the prior quarter.
- IND's 4-quarter NOI growth rate was a roaring 9.6% continuing its acceleration in the face of strong space demand driven in part by e-commerce.

NPI[1] rolling 4-quarter total, income, and capital returns



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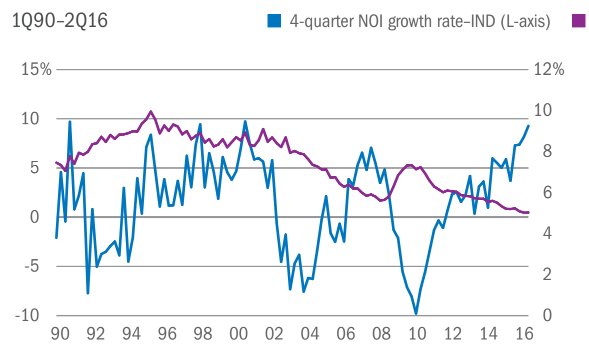
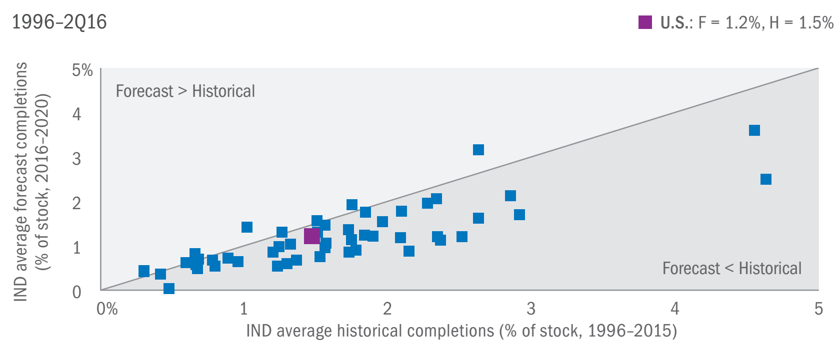


IND	Cap Rate (%)	NOI Gr. (%)	10-Yr Tsy (%)
1992-15	7.5	1.4	4.6
2005-15	6.2	1.0	3.2
Mar-16	5.0	8.4	1.9
Jun-16	5.0	9.6	1.7

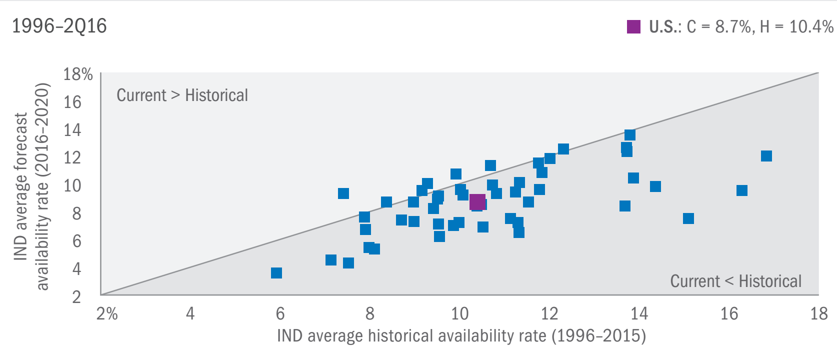
Fundamentals outlook

- IND markets have benefitted from healthy consumer spending, the ongoing strong growth trend in e-commerce and a solid flow of imports.
- The average availability rate improved to 8.7% in 2Q16 from 9% the prior quarter. The vast majority of metro markets have availability rates below their long-term historical averages
- Construction has increased in response to historically low availability rates but it is concentrated in relatively few markets. The largest space additions are under construction in California's Inland Empire, Central Pennsylvania and the Dallas-Fort Worth area.

Historical and forecast completions for 50 largest IND markets[3]



Historical and forecast availability rates for 50 largest IND markets[3]



Sources: NCREIF; CBRE-EA; US Board of Governors of the Federal Reserve System; as of 2Q16; TIAA.

Office (OFC)

Performance and pricing

- Total return for OFC over the four quarters ending June remained in last place at 9.3% due largely to its 4.6% capital appreciation component which is also the slowest among the four sectors.
- Average current value cap rate was 4.5% in 2Q16, up slightly from 4.4% in the prior quarter. This widening is too recent and too small to declare that any meaningful shift has occurred in OFC pricing.
- NOI growth plummeted for the four quarters ending June to 3% from 7% over the prior four-quarter period. While still above the long-term average for OFC, the decline is troubling.

Fundamentals outlook

- OFC has been among the slowest of the four major property types to recover, but progress is continuing
- Given current job growth trends in many metro areas, OFC market demand conditions should continue to improve
- Current OFC vacancy rate is 13%, down slightly from 13.1% in 1Q16. As shown in the chart, the metro markets with high current vacancy rates are those with historically high rates. At the same time, in the metros with vacancy rates below 10%, conditions support landlord pricing power.
- Forecast completions validate the disciplined pace of construction with the vast majority of metros expecting less than 2% additional to stock. The two extreme outliers are San Jose and Salt Lake City which are both small markets enjoying the tech boom.

Sources: NCREIF; CBRE-EA; US Board of Governors of the Federal Reserve System; as of 2Q16; TIAA.

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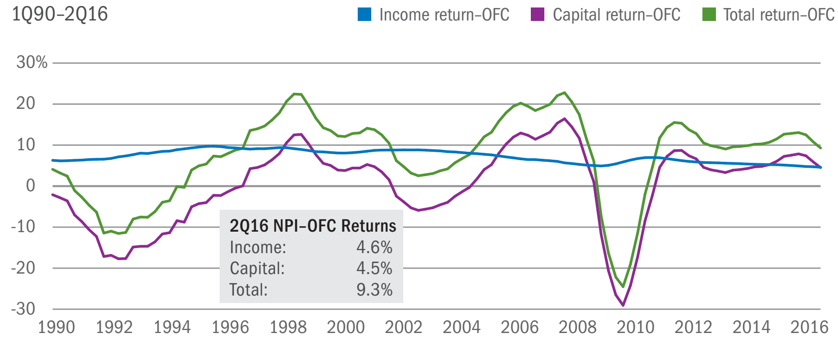

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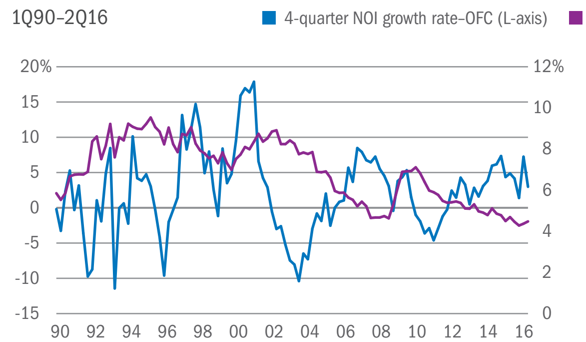
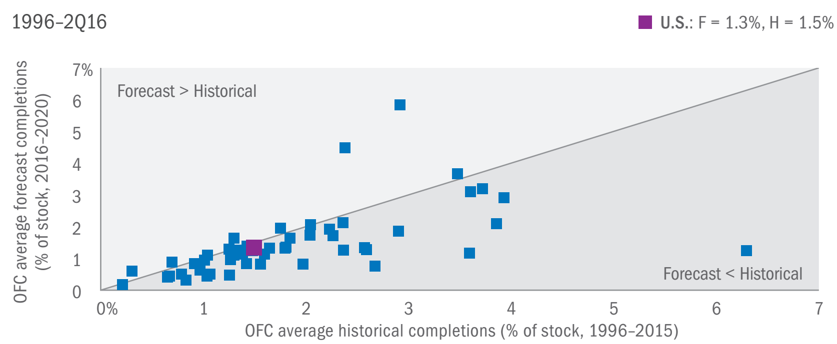
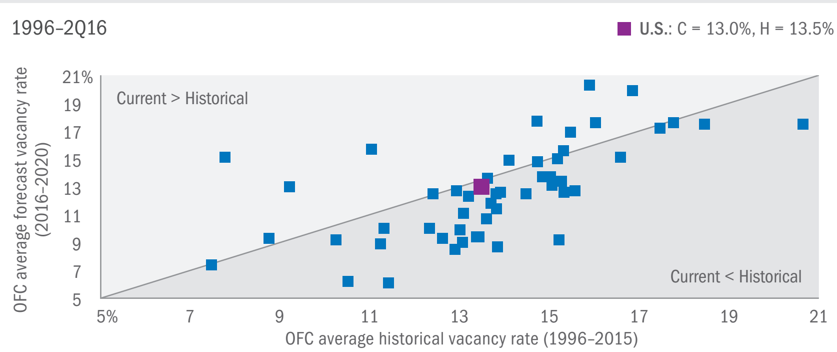


OFC	Cap Rate (%)	NOI Gr. (%)	10-Yr Tsy (%)
1992-15	7.0	2.4	4.6
2005-15	5.5	2.5	3.2
Mar-16	4.4	7.1	1.9
Jun-16	4.5	2.8	1.7

Historical and forecast completions for 50 largest OFC markets[3]



Historical and forecast vacancy rates for 50 largest OFC markets[3]



Retail (RTL)

Performance and pricing

- Second best performing sector for year ending June; 12.2% total return. Material surge in appreciation index at 7%.
- Average current value cap rate was 4.6%, slightly lower than in 1Q16.
- RTL's 4-quarter NOI growth rate strengthened to 4.4% but that is still muted versus apartment and industrial though still above 3.0% long-term average for RTL.

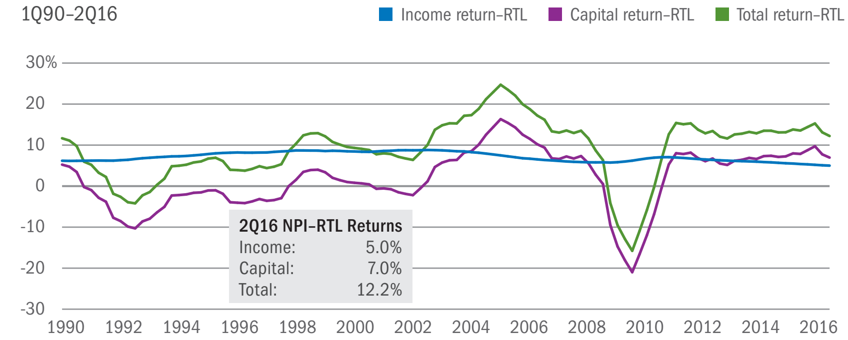
Fundamentals outlook

- Retail sales growth strengthened in 2Q16 supported by a small pickup in wage growth, ongoing solid job growth, low gasoline prices and overall low inflation.
- Current vacancy rates, as of 2Q16, average 10.9% for neighborhood, community and strip centers, down from 11% in 1Q16.
- Dispersion of vacancy rates across metro markets remains enormous reflecting the challenges to RTL from shifting demographics and shopping trends which are contributing to a build-up of essentially obsolete space.
- Forecast completions, as of 2Q16, are solidly below the historical average and reflect the above-mention challenges to RTL.

Sources: NCREIF; CBRE-EA; US Board of Governors of the Federal Reserve System; as of 2Q16; TIAA.

NPI[1] rolling 4-quarter total, income, and capital returns

1Q90–2Q16



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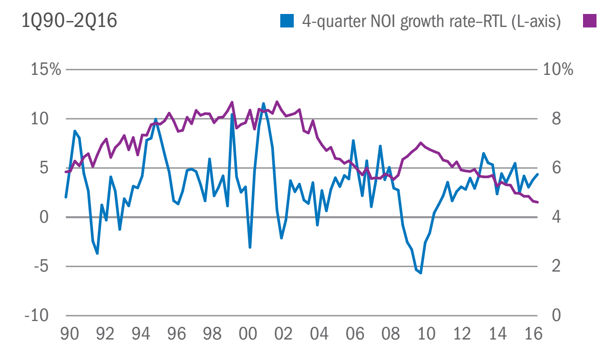
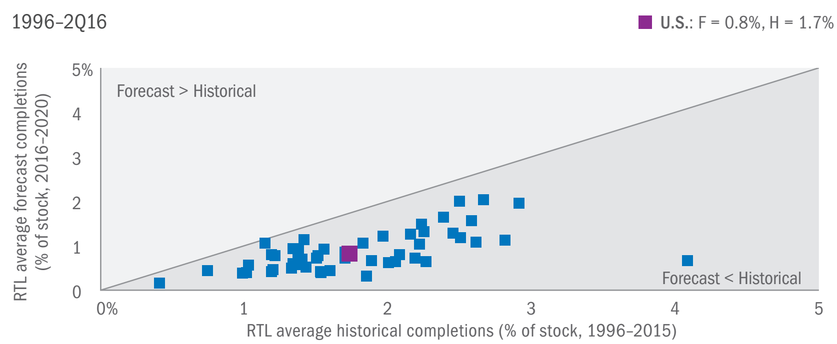
1Q90–2Q16



RTL	Cap Rate (%)	NOI Gr. (%)	10-Yr Tsy (%)
1992-15	6.9	3.0	4.6
2005-15	5.9	2.5	3.2
Mar-16	4.7	3.8	1.9
Jun-16	4.6	4.4	1.7

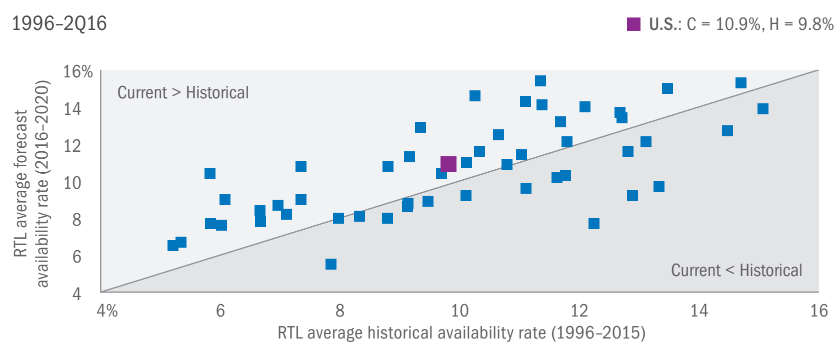
Historical and forecast completions for 50 largest RTL markets[3]

1996–2016



Historical and forecast availability rates for 50 largest RTL markets[3]

1996–2016



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GLOBAL ASSET MANAGEMENT

1. It is not possible to invest in an index. Performance for indices does not reflect investment fees or transactions costs.
2. Probabilities are for the quarter indicated and are calculated using data from 4 quarters prior.
3. Largest 50 markets are determined by ranking markets according to existing stock. Data for 1996 through 2015 are actuals; data for 2016 to 2020 are forecasts.

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