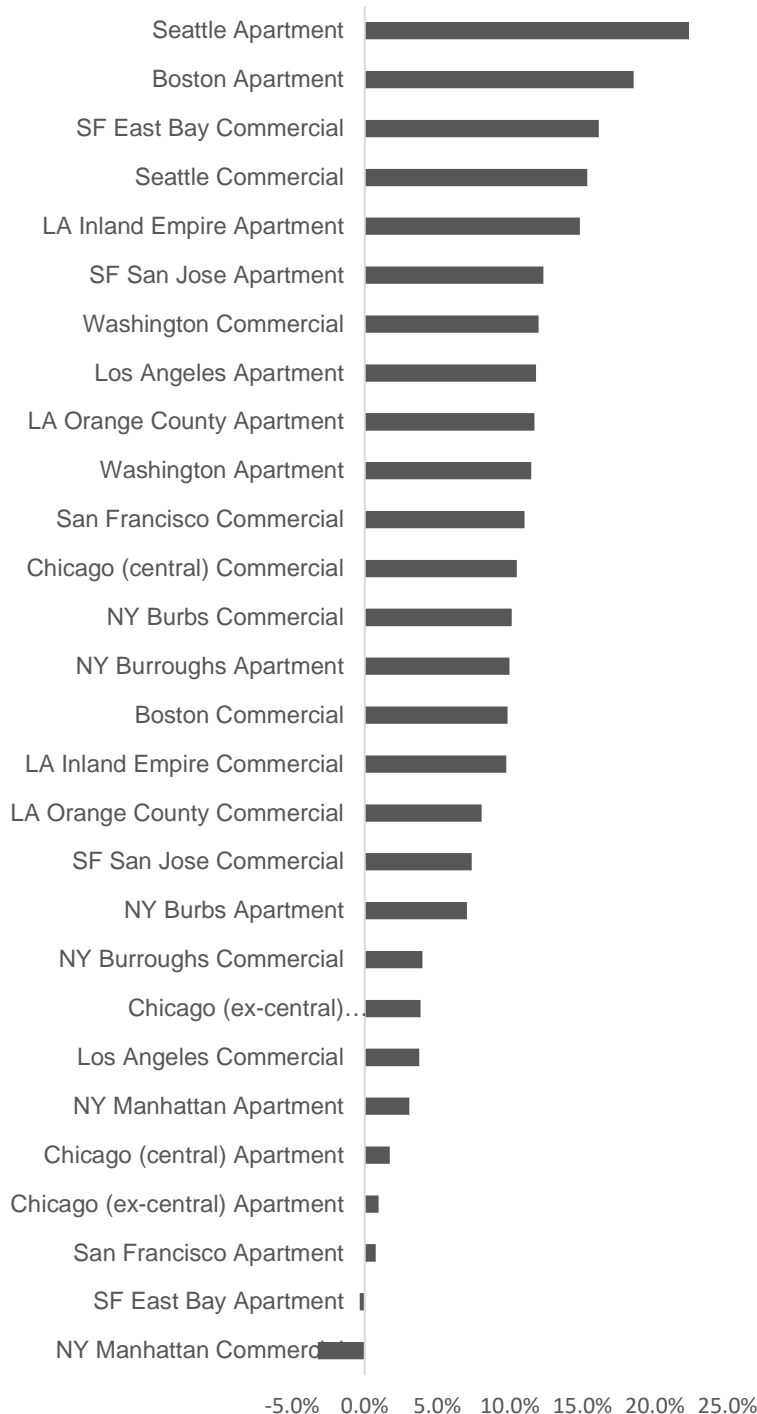


# TOTAL RETURN INDEX REPORT

*Cumulative total return from 2017Q2 through 2018Q2.*



**The Total Return Index (TRI) rose 8.7% on average from end of 2017Q2 through end of 2018Q2.**

All markets except two, showed positive total returns over the course of our analyzed period. The exceptions being San Francisco East Bay apartments and Manhattan commercial.

Seattle and Boston apartments are the clear 'winner' with each about 20% total returns in the previous year. Seattle commercial also showed a big total return in the last year with 15.3%, making Seattle one of the top performing markets in general.

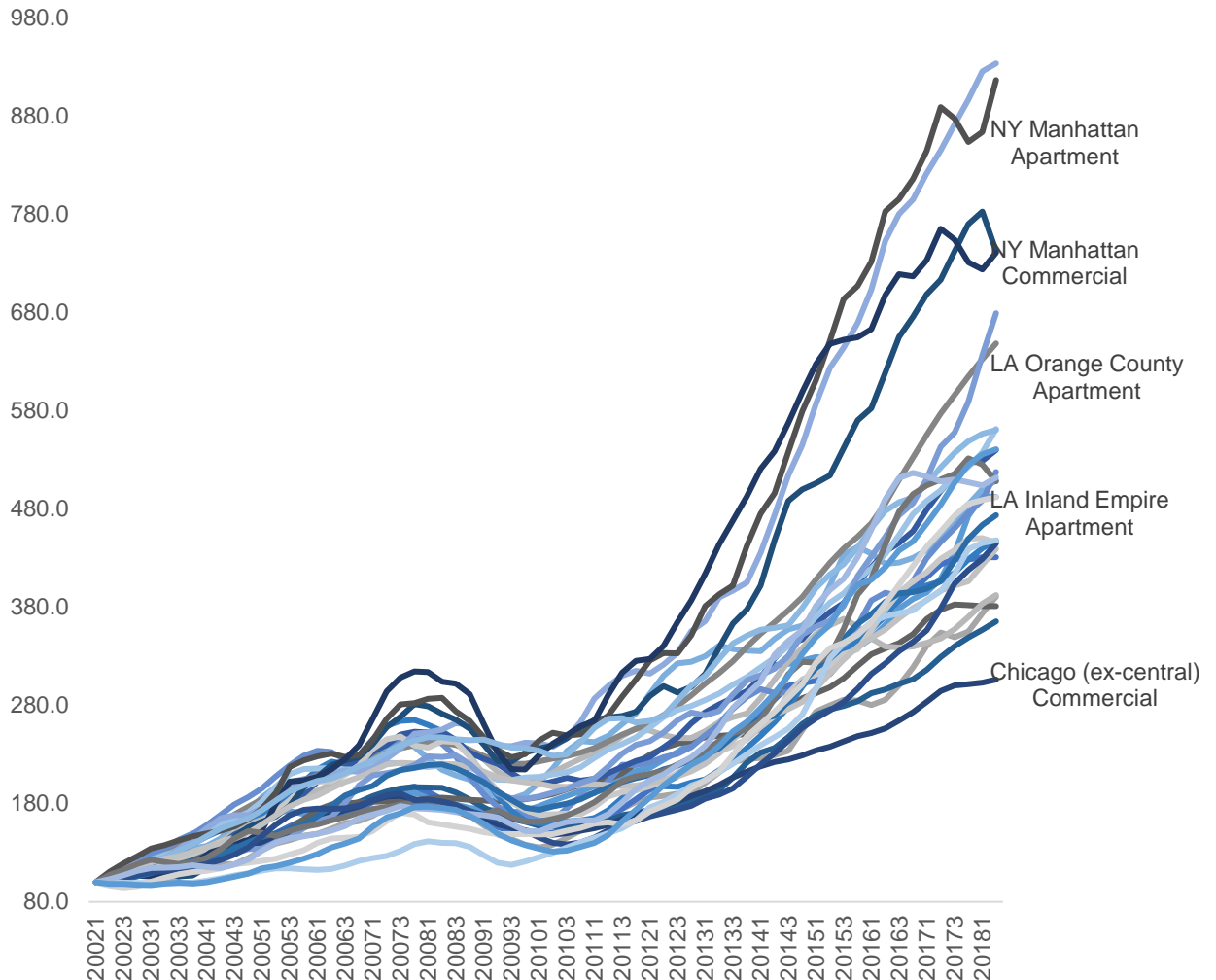
Interestingly, is that some of the previous 'hot' markets are struggling in recent years. Most notably apartments in San Francisco itself, and in the East Bay. Manhattan apartment and commercial are also below its own long-term average, although both seem to be picking up again in the most recent two quarters. About half of the markets underperform compared to its long-term average.

The total return consists of three components: the capital gain plus cap rate minus the estimated capital expenditures. The average capital gain was 4.8%, the average cap rate was 5.4% and the average capital expenditures was 1.5% between 2017Q2 and 2018Q2.

## Methodology

Total returns are defined as the capital gains plus cap rate minus capital expenditures. The capital gains are given to us by Real Capital Analytics (the RCA CPPI), we calculate the cap rates by estimating a chained hedonic model using RCA data. Approximations for the cap ex in each market are taken from previous research that used NCREIF data.

Historical total return index levels highlighting selected markets, 2002Q1 = 100.



### About the Real Estate Price Dynamics Platform

The MIT Center for Real Estate’s Price Dynamics Platform (PDP, or “Platform” for short) serves at the intersection between Academia and the Real Estate Industry. Seeded by a generous gift by Real Capital Analytics in 2017, we utilize the newest data combined with cutting-edge and interdisciplinary econometric techniques from many fields not just real estate, such as (space) navigation, weather forecasts, and healthcare. We develop innovative tools that potentially have a global impact for real estate stakeholders, resulting in a more transparent real estate market.

We presently publish three products; (1) the Total Return Index, (2) CPPI Forecasts and (3) Investors Supply/Demand Indexes. We aspire to update our products on a regular basis. For more information on the methodology, to get access to the data or other reports, or to subscribe to our products, visit us at: <http://pricedynamicsplatform.mit.edu/>.