

# The Outlook for California Property Markets

## COVID-19, Economic Scenarios, and What May Follow

# Agenda

1. Welcoming Remarks
2. COVID-19 – Thinking Through Economic Scenarios
3. COVID-19 – California Property Markets
4. What's Next, and What Can We Really Know?
5. Questions & Answers

1

# Welcoming Remarks

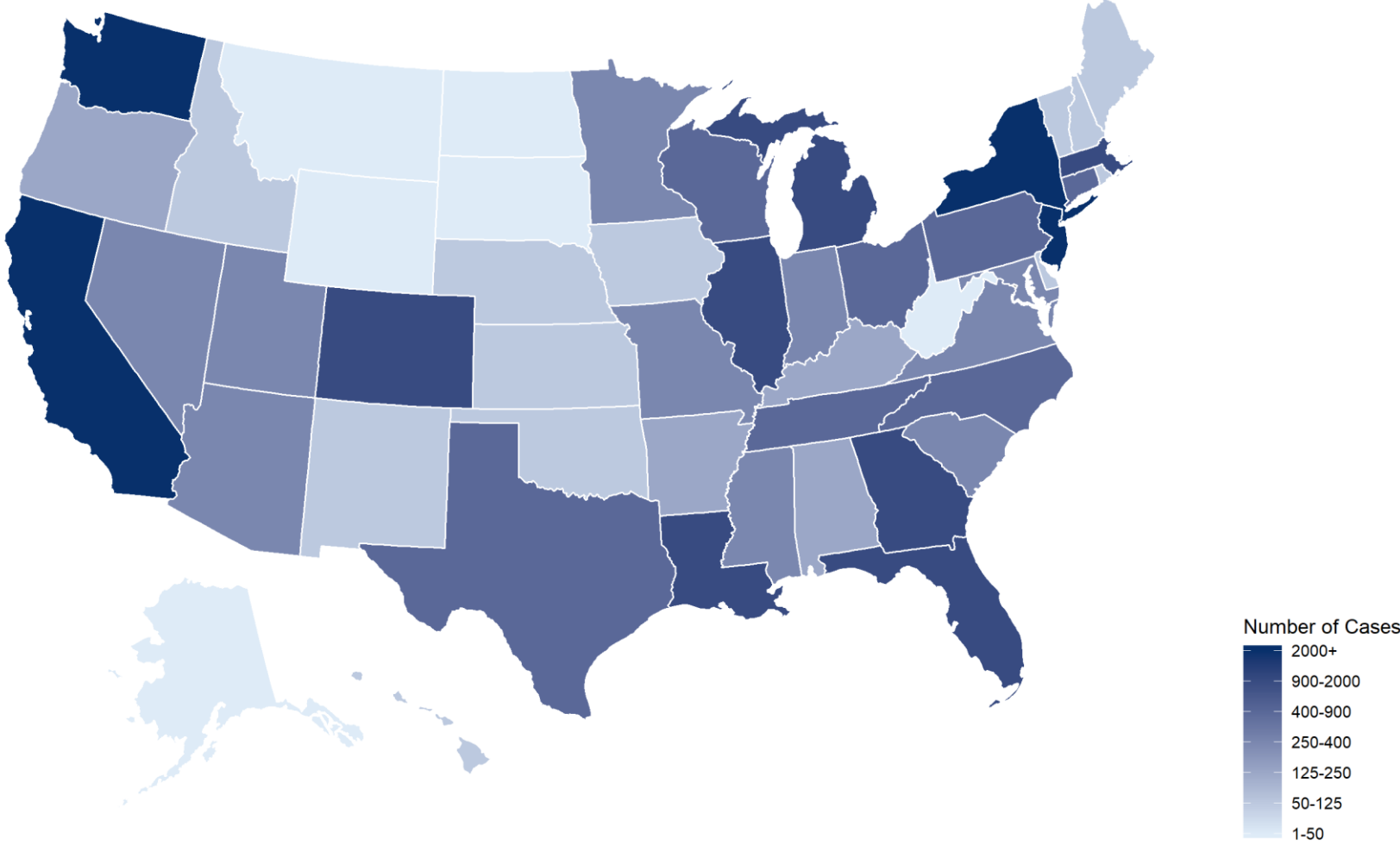
Cristina Pieretti, *Managing Director | Head of REIS*  
**Moody's Analytics**

# 2

## COVID-19 – Thinking Through Economic Scenarios

Victor Calanog PhD, *Head of CRE Economics*  
**Moody's Analytics**

# Concentration Risk Apparent Given Identified Cases



Source: US CDC, as of March 25, 2020

# COVID-19 Economic Transmission Channels

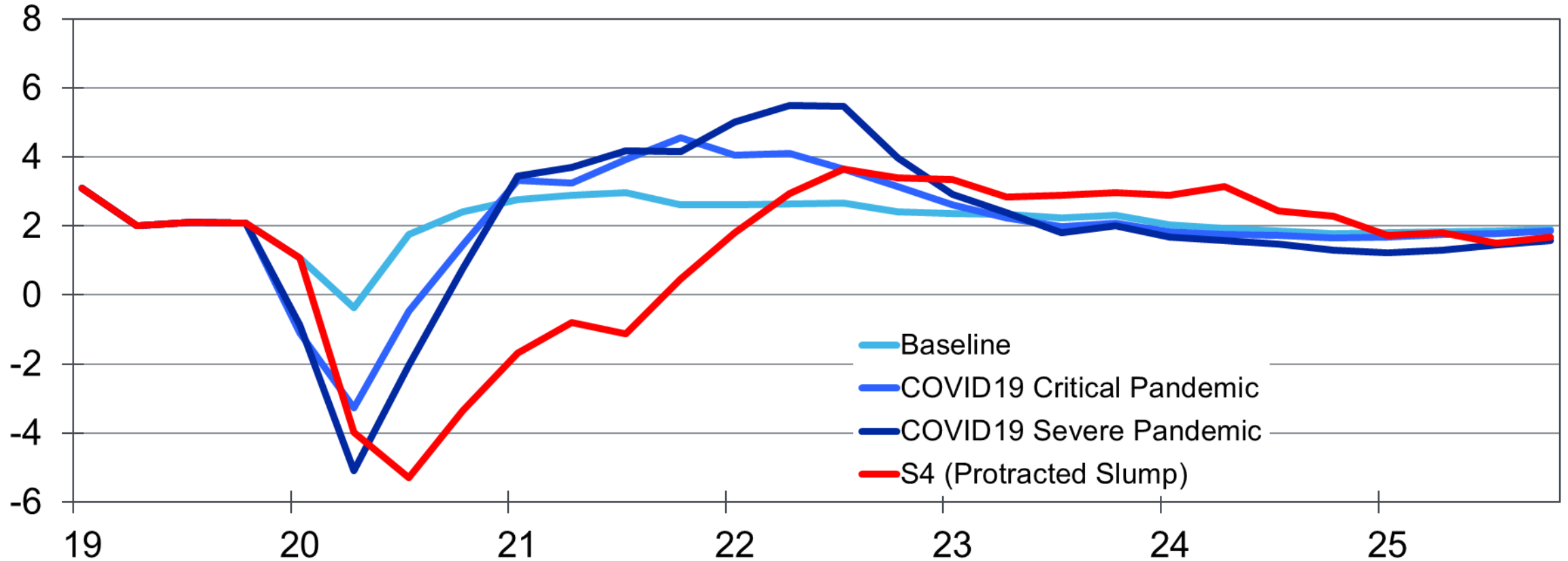
1. Tourism/Leisure/Hospitality
2. Trade
3. Commodity prices
4. Financial markets
5. Confidence



**Combination of Supply and Demand  
Shocks Complicates Forecasts**

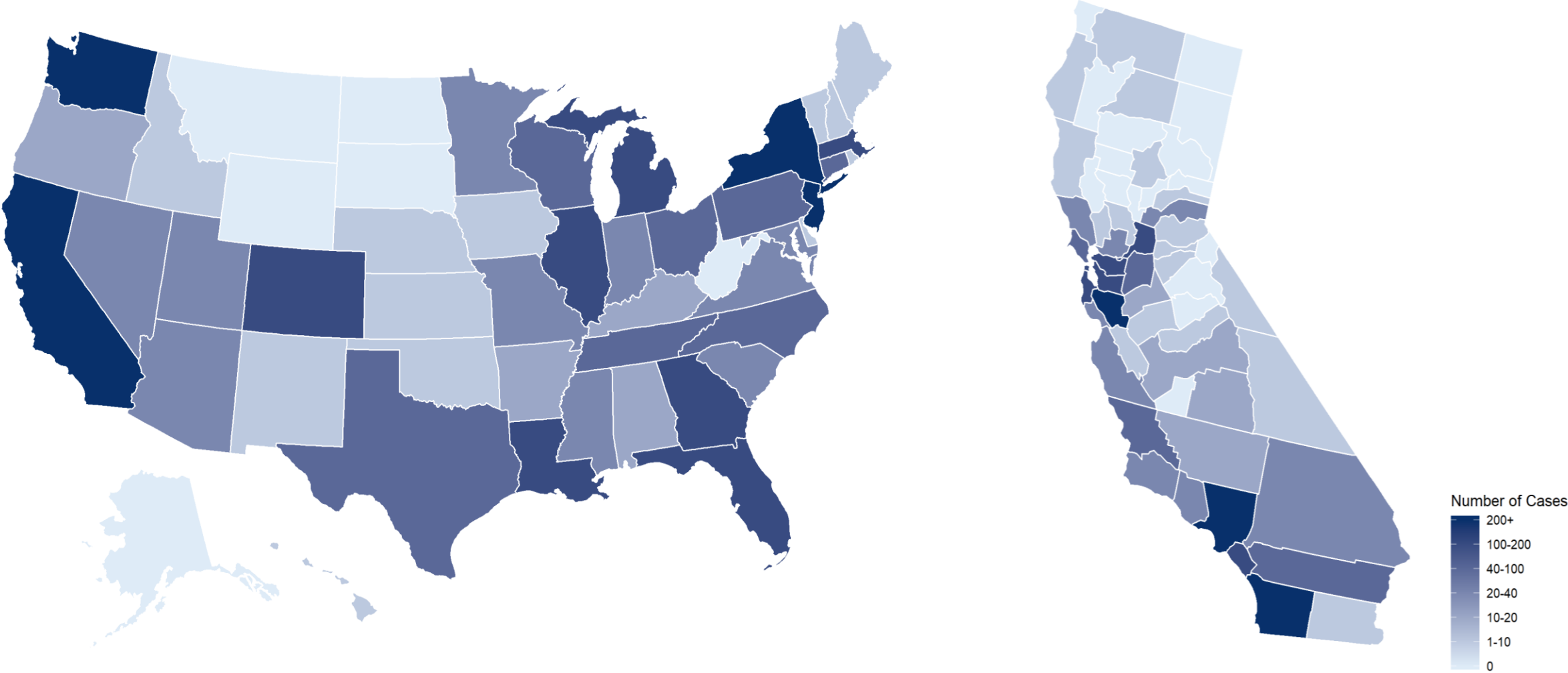
# Use Economic Scenarios to Model Downside Risk

Real GDP, annualized quarter/quarter growth rate, March 2020 Forecast Vintage



Sources: BEA; Moody's Analytics

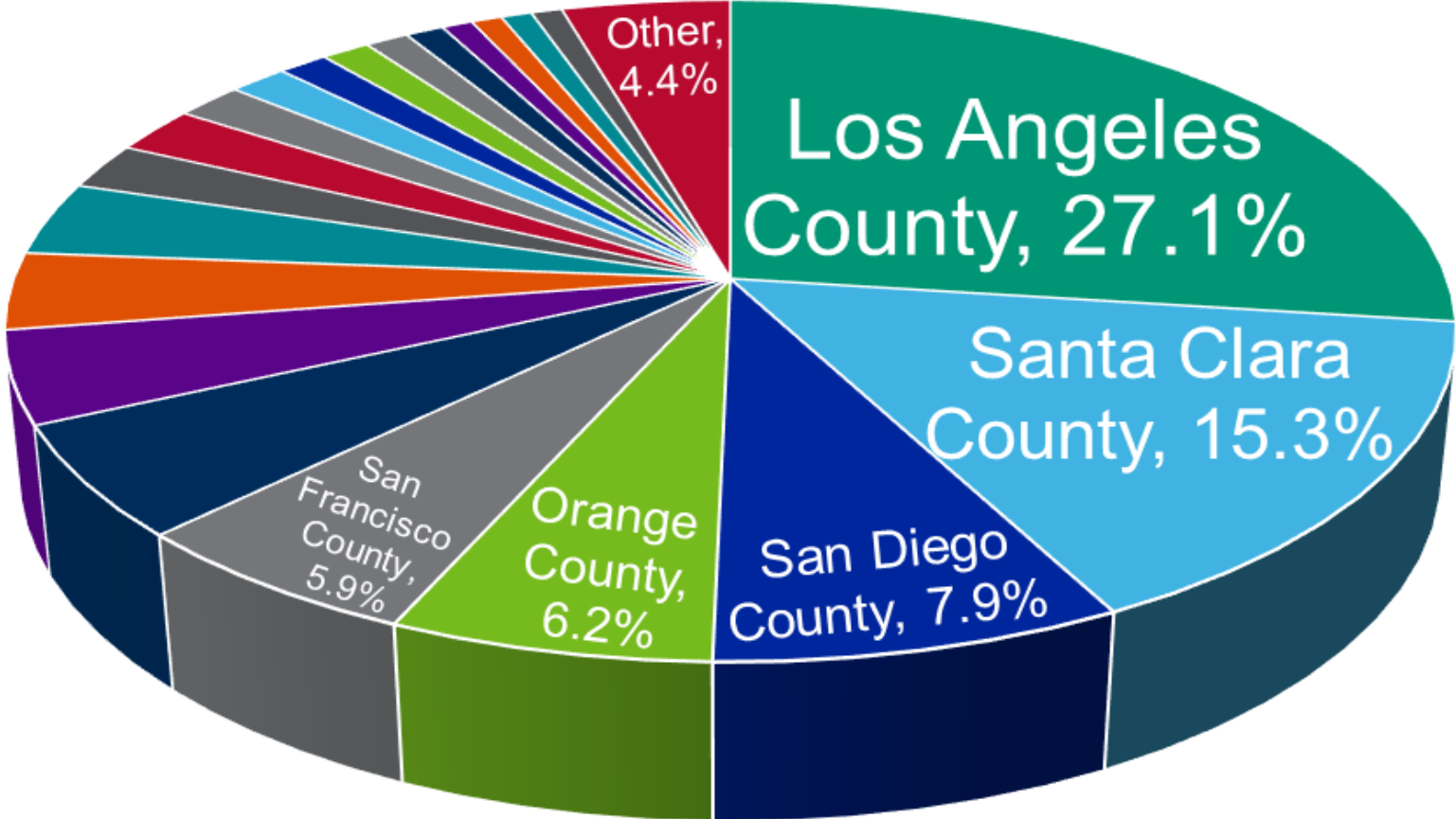
# The California Situation



Source: US CDC, as of March 25, 2020

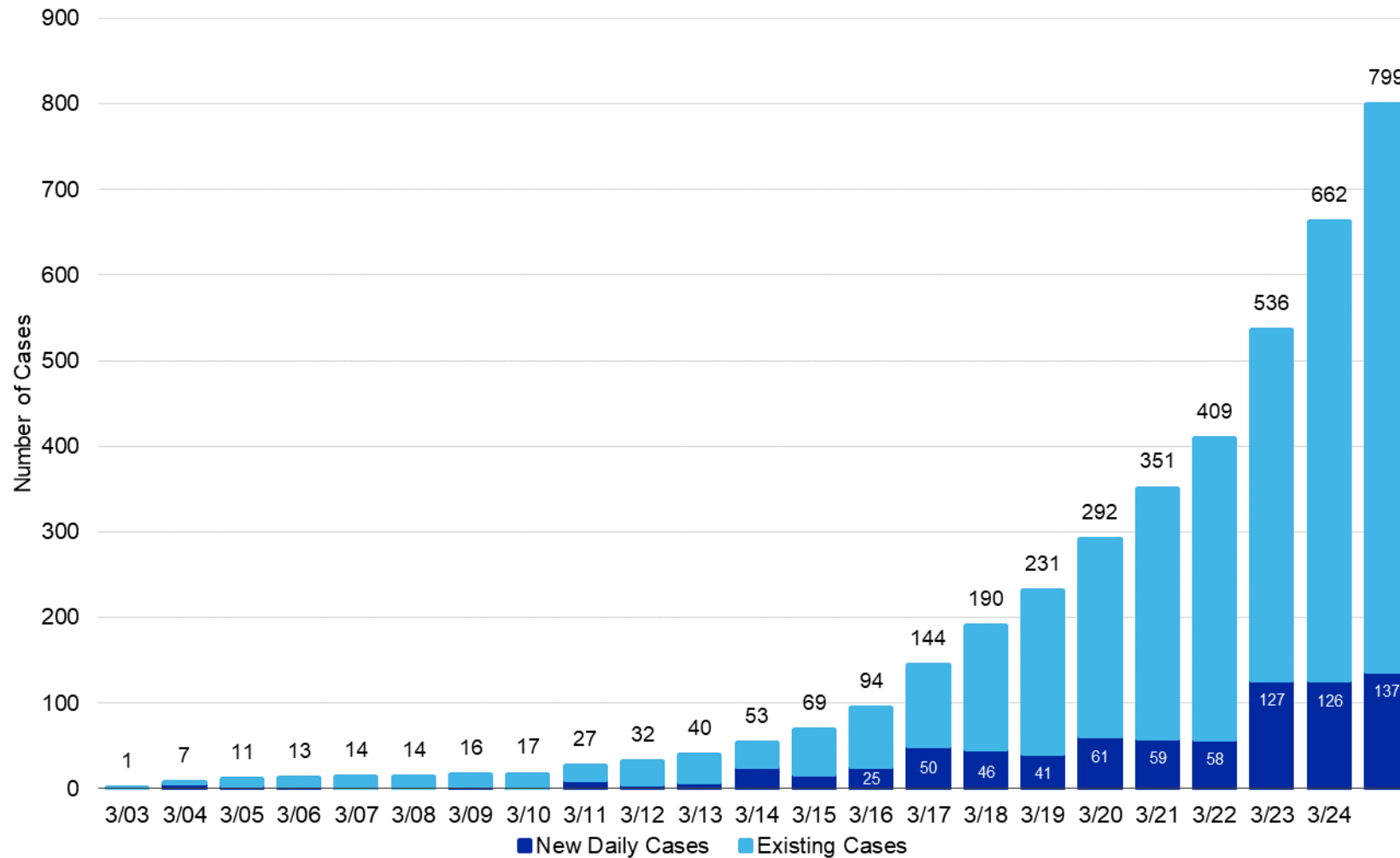


# COVID-19 Cases in California: Share by County



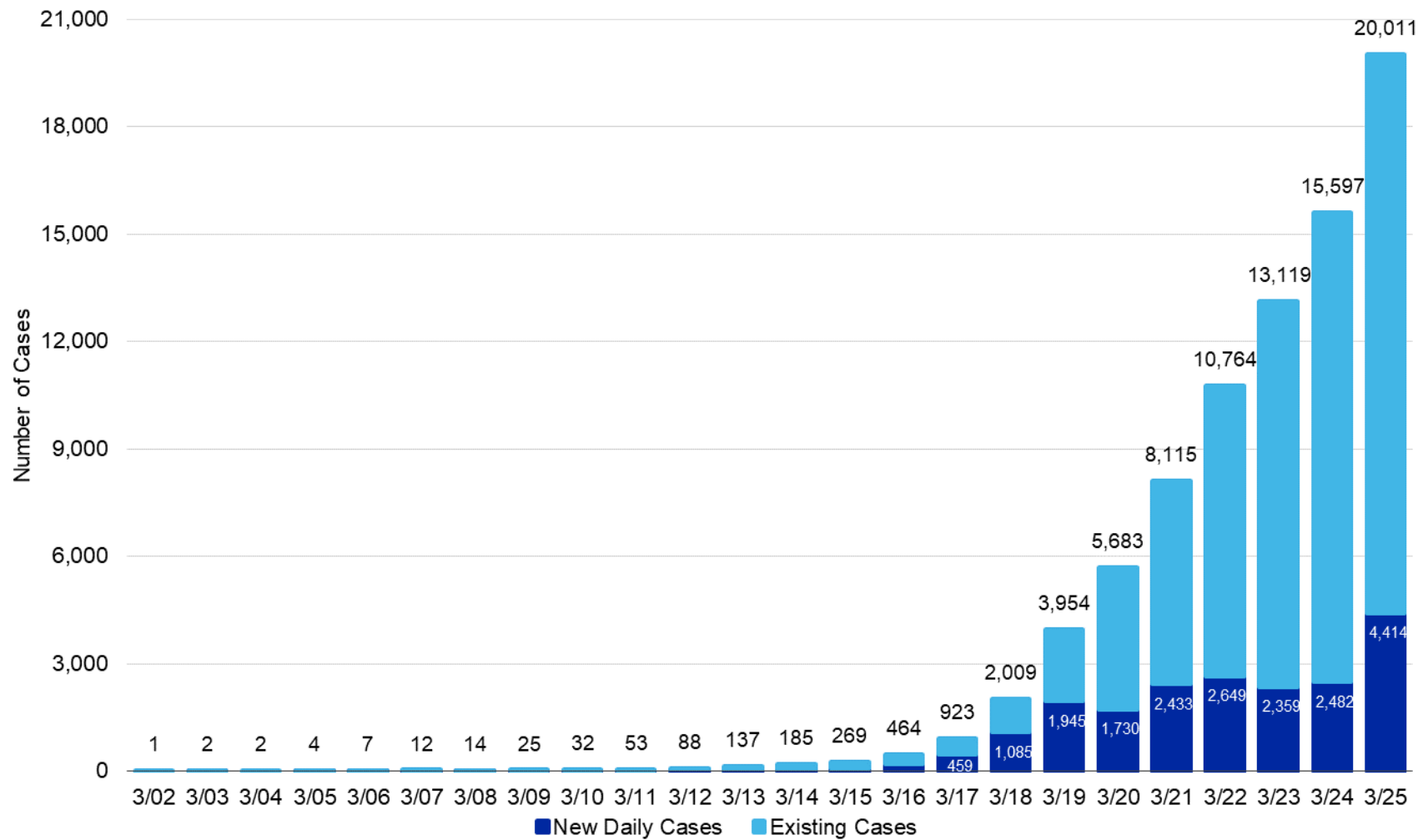
Source: US CDC, as of March 25, 2020

# Los Angeles County is the COVID-19 Epicenter (for California)



Source: Los Angeles County Department of Public Health, March 26, 2020

# New York City is the COVID-19 Epicenter (for the US)



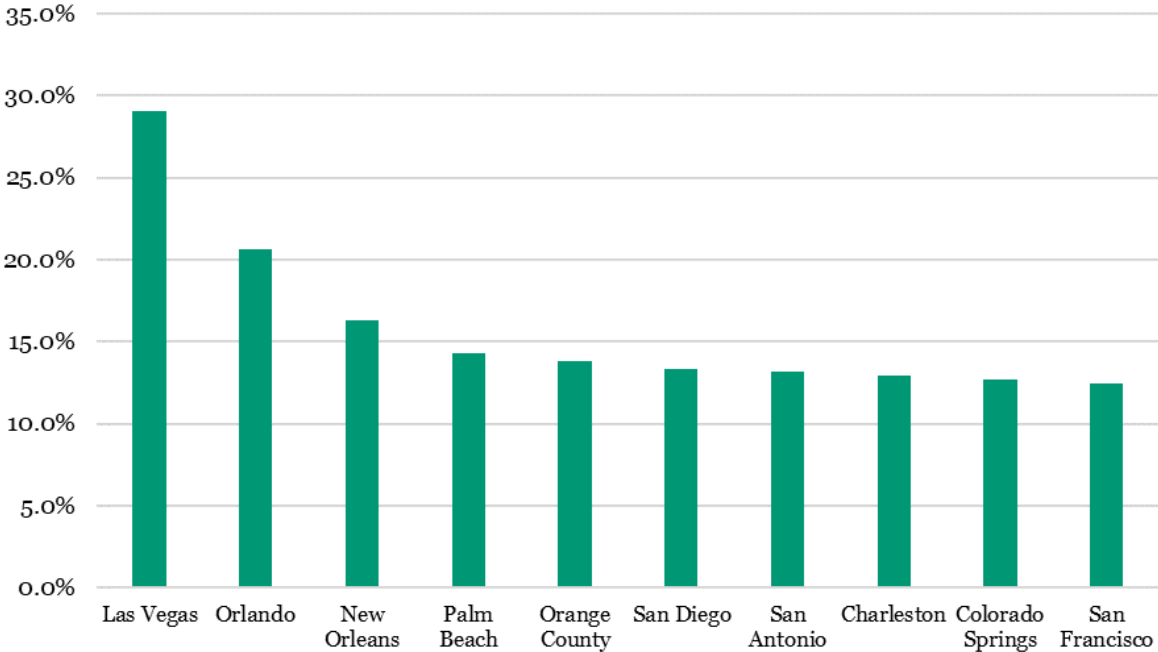
Source: New York City Department of Health, March 26, 2020

3

California Property Markets

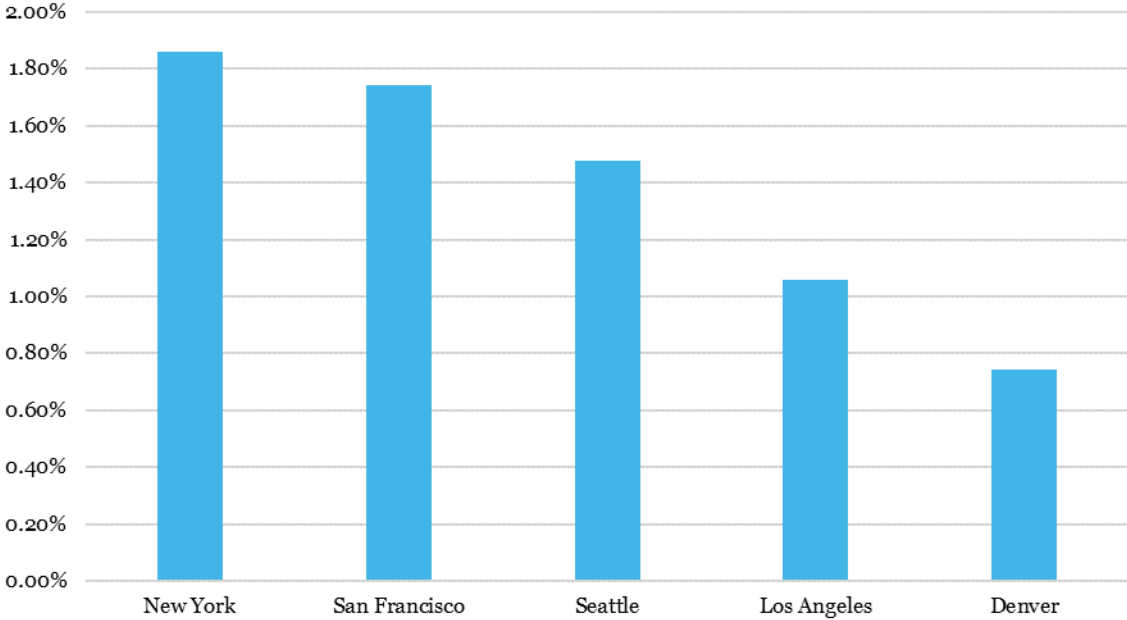
# California Markets in the Front Lines

Share of Leisure and Hospitality Employment



Source: Moody's Analytics

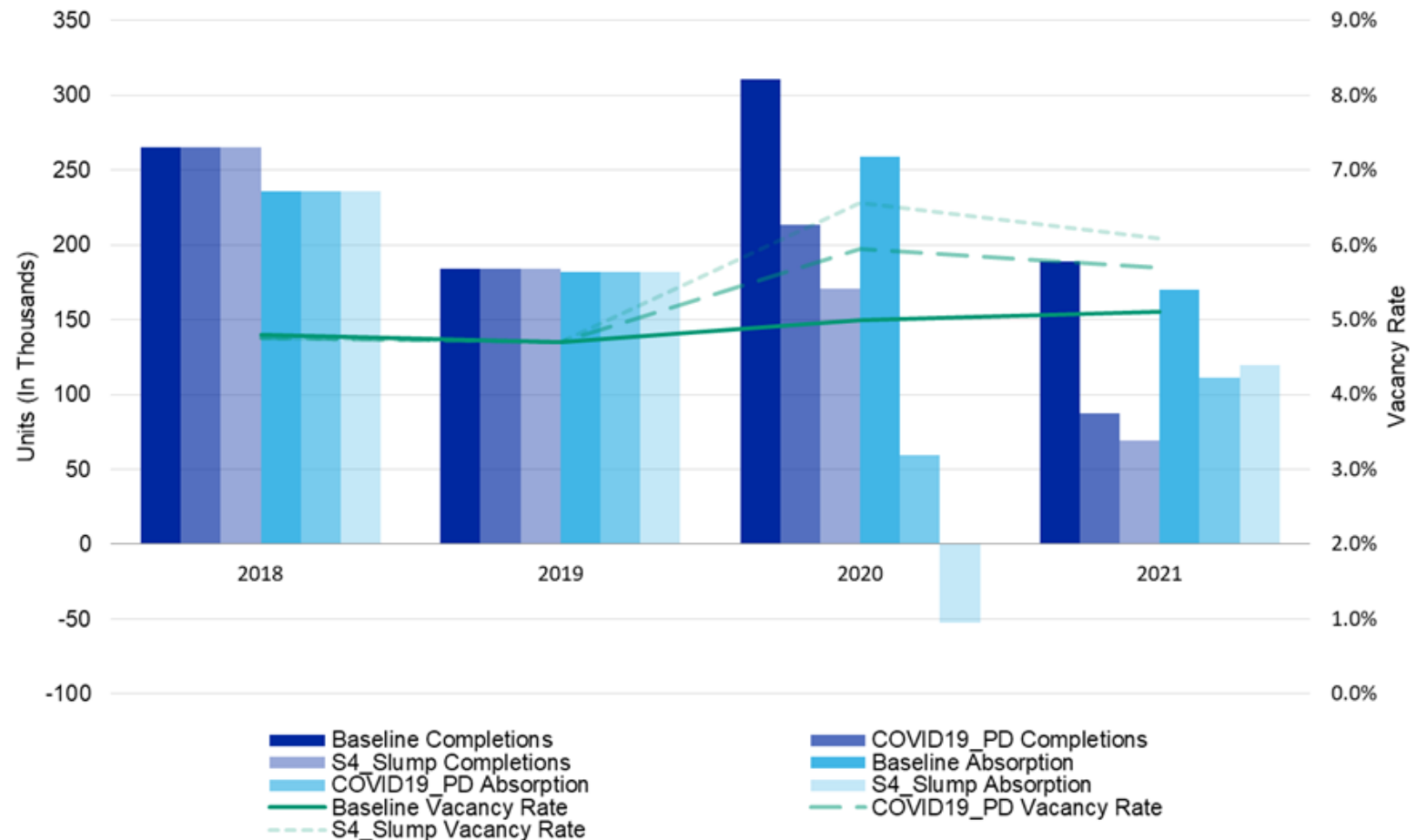
Largest WeWork Leases Relative to Metro Inventory



Source: Moody's Analytics REIS; CompStak

# Pandemic & Protracted Slump | Multifamily

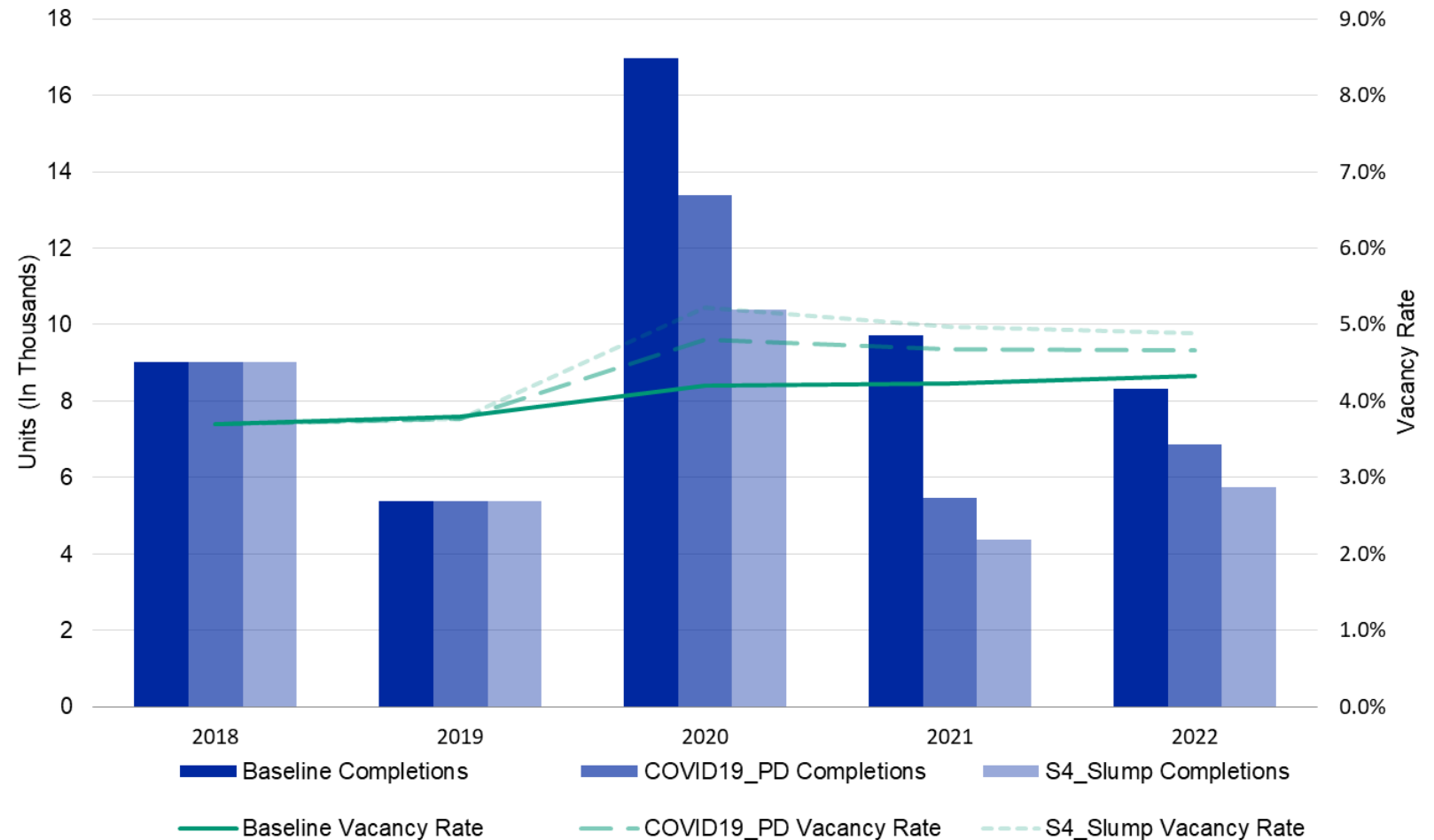
- Baseline expected a record high in terms of deliveries for 2020: over 300,000 new units.
- Severe pandemic and protracted slump scenarios produce an increase in vacancies, but construction pullback is a countervailing effect.



Source: Moody's Analytics REIS

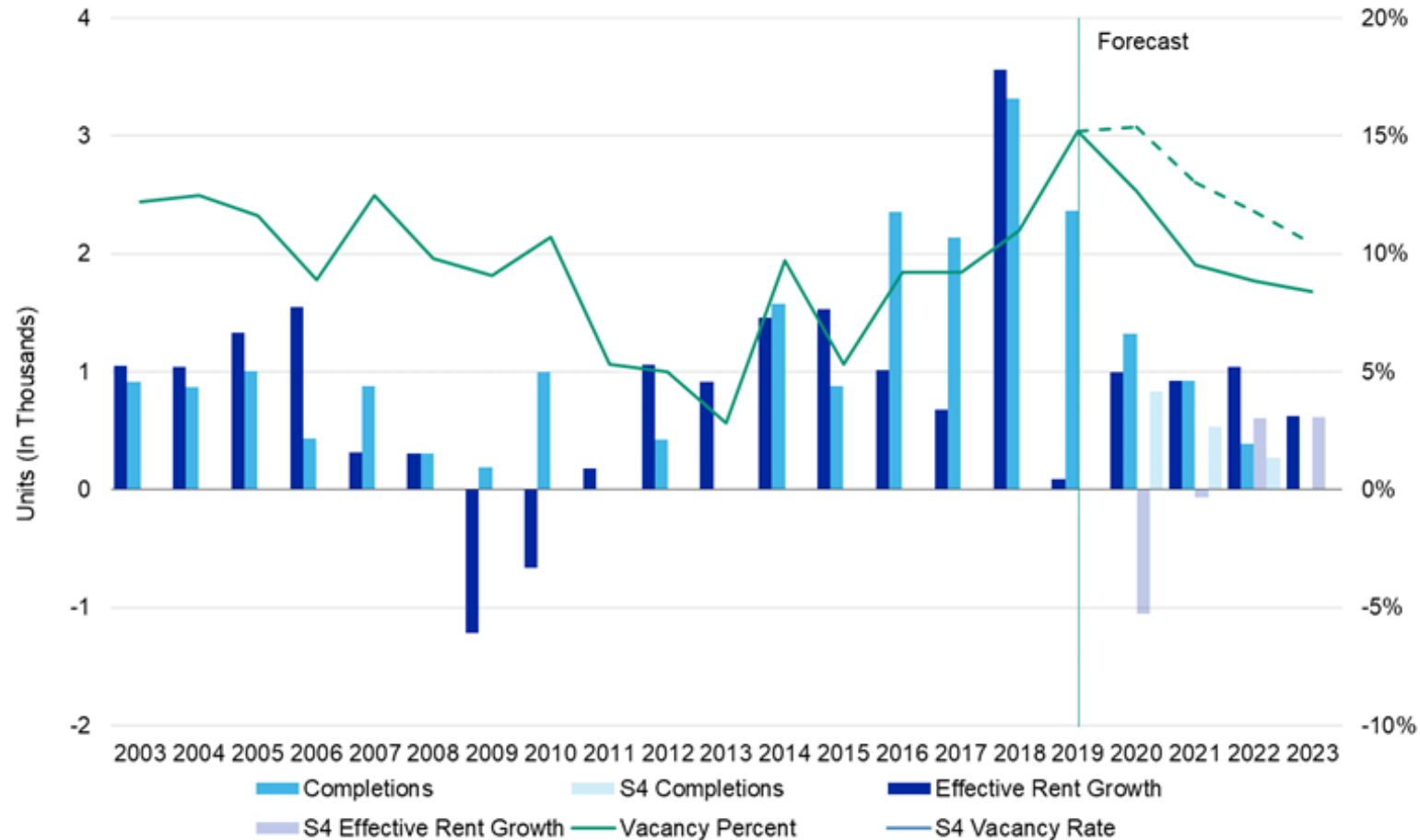
# Pandemic & Protracted Slump | Los Angeles

- For Los Angeles, we were expecting close to 17,000 new units to come online by year-end 2020 (highest figure since 1990).
- 21% supply growth pullback for Severe Pandemic & 39% pullback for Protracted Slump means vacancies still rise, but not as much.



Source: Moody's Analytics REIS

# Pandemic & Protracted Slump | Downtown LA

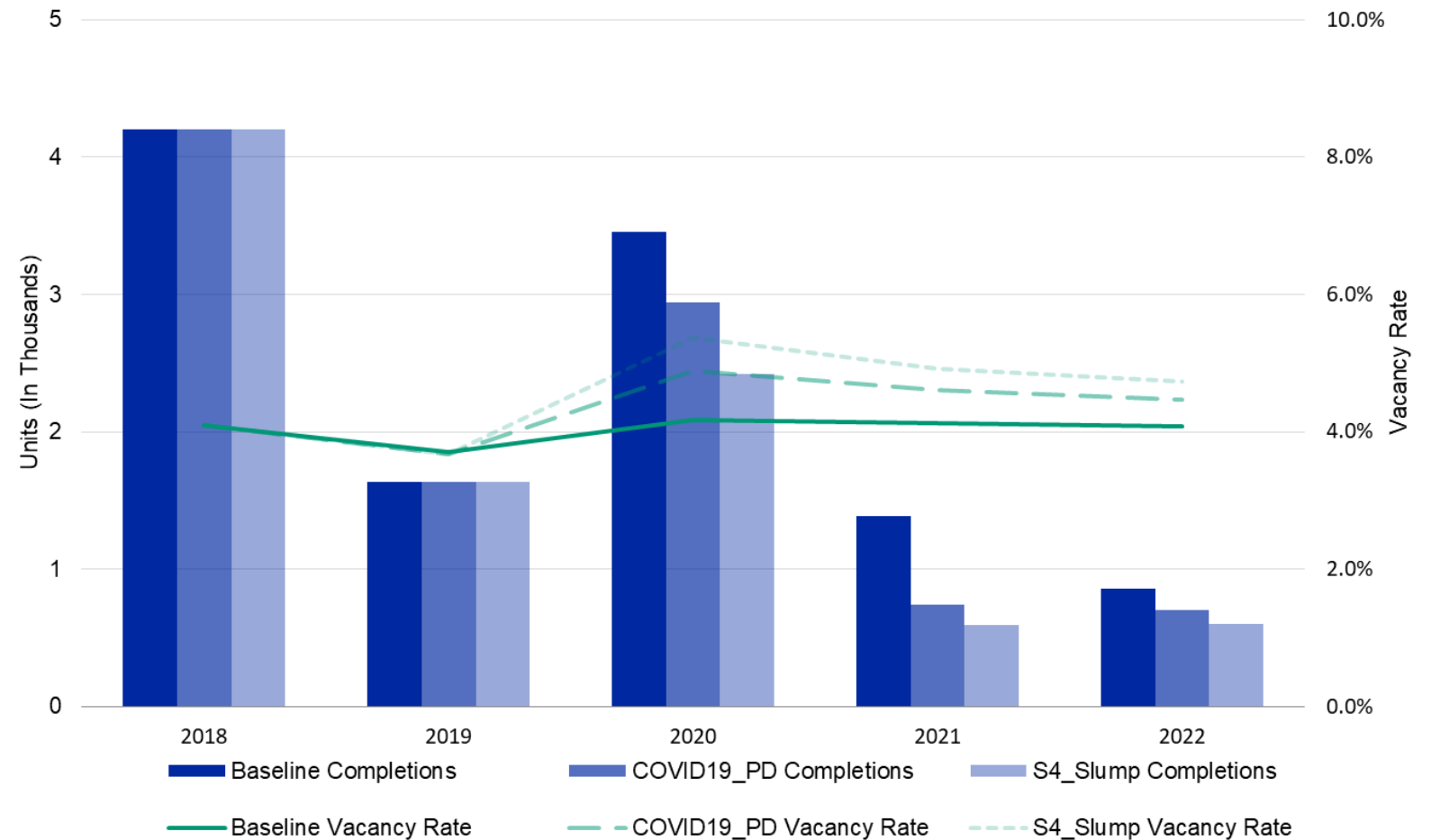


Source: Moody's Analytics REIS



# Pandemic & Protracted Slump | Orange County

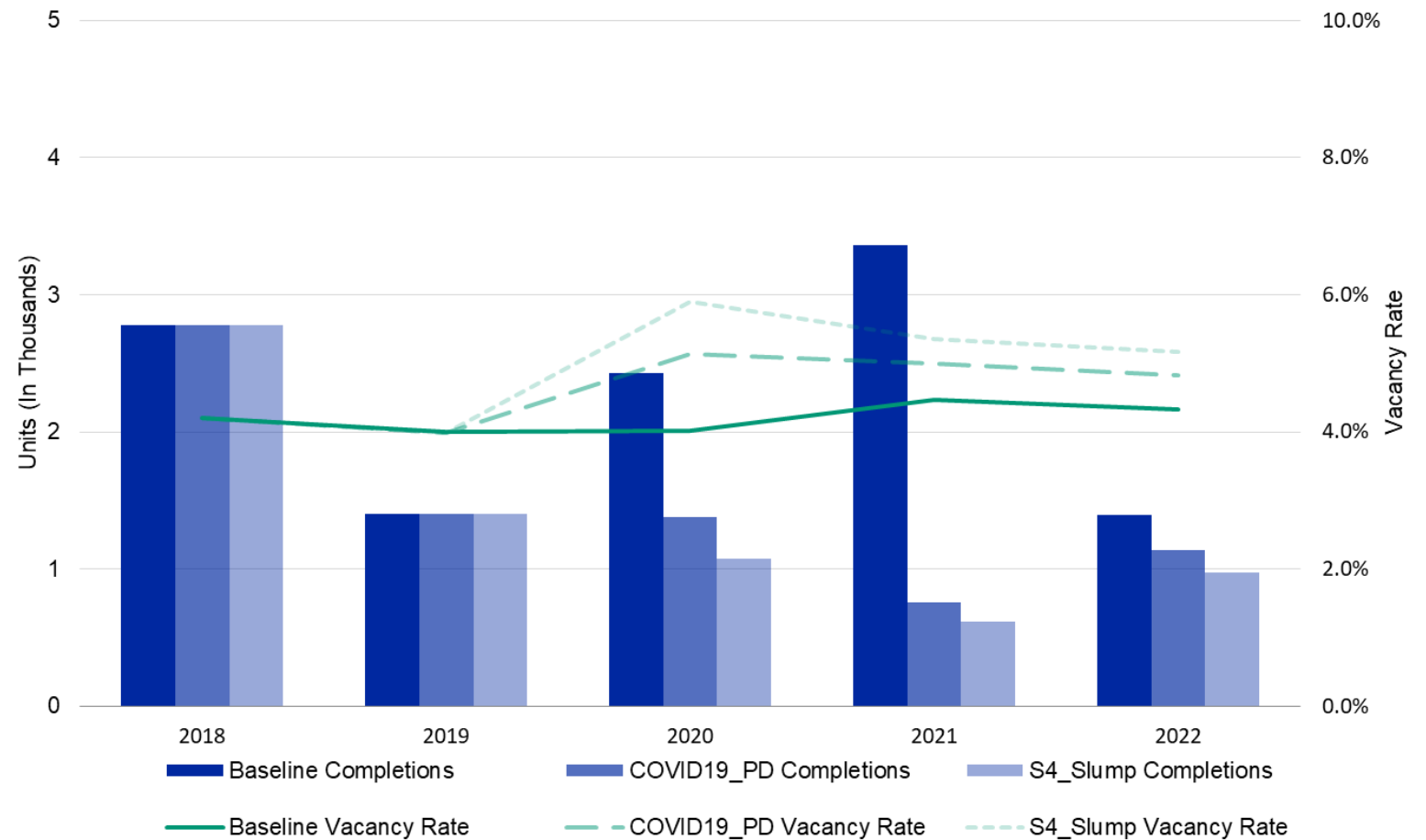
- For Orange County, more reasonable supply growth (~2,400 units in 2020) suggests less of a construction pullback (15% for Severe Pandemic; 31% for Protracted Slump).
- Vacancies top out at 5.4% in 2020 before recovering in 2021.



Source: Moody's Analytics REIS

# Pandemic & Protracted Slump | San Francisco

- For San Francisco, close to record deliveries for several years (with an expected spike in 2021), so supply growth pullback in 2020 more pronounced (43% under Severe Pandemic; 56% for Protracted Slump)
- Vacancies stay relatively tight at 5.9%.
- However....



Source: Moody's Analytics REIS

# Protracted Slump | Major California Multifamily Markets

- Historical reaction functions to downturns determine the relative focus and magnitude of distress in various property types and geographic markets.

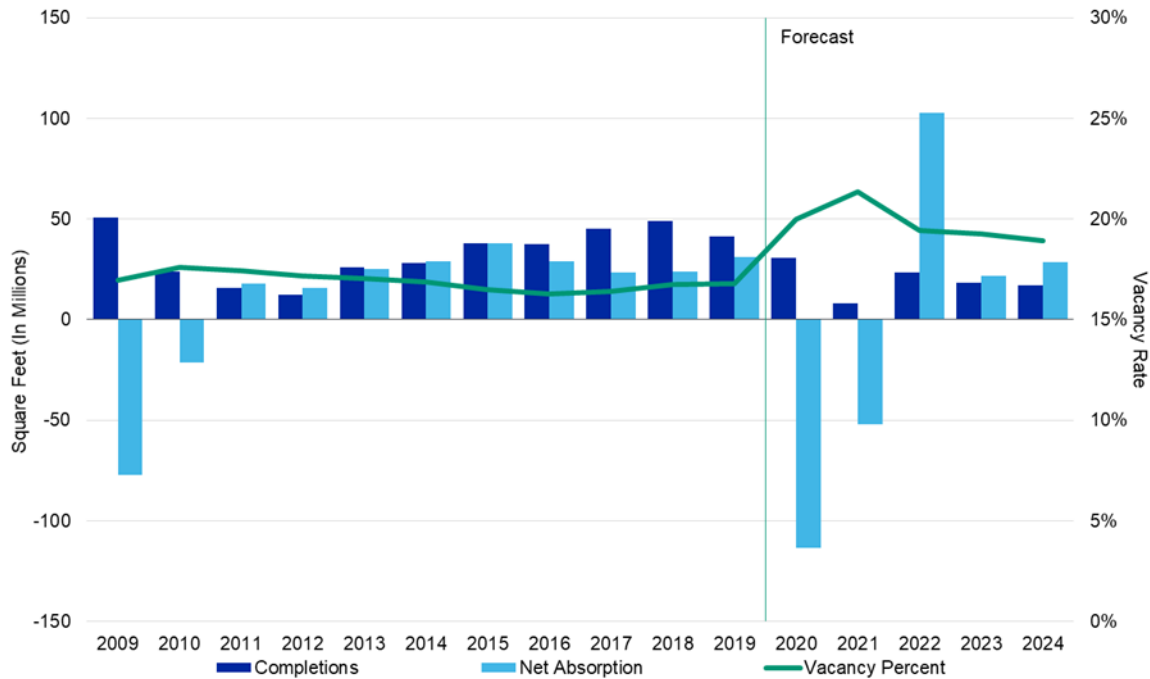
MSA	State	Year	Vacancy	Vacancy Change - BPS	Effective Rent Change
Sacramento	CA	2020	5.10%	222	-3.43%
San Bernardino/Riverside	CA	2020	5.49%	215	-3.09%
San Francisco	CA	2020	5.89%	190	-10.81%
San Jose	CA	2020	6.13%	175	-13.18%
Oakland-East Bay	CA	2020	5.45%	172	-5.79%
Orange County	CA	2020	5.36%	169	-4.30%
Los Angeles	CA	2020	5.22%	146	-4.43%
Ventura County	CA	2020	4.43%	118	-4.17%
San Diego	CA	2020	4.98%	111	-2.79%

Source: Moody's Analytics REIS

- Recent record of oversupply will position any geographic market for distress, if demand pulls back abruptly (as per a severe pandemic or protracted slump scenario).
- Recent record of poor performance, particularly when vacancies have been rising and/or rent growth has been moderating, suggests markets will not fare as well in a downturn.
- Sacramento takes the hit in occupancies, but San Francisco and San Jose tend to be more volatile in terms of effective rent declines.

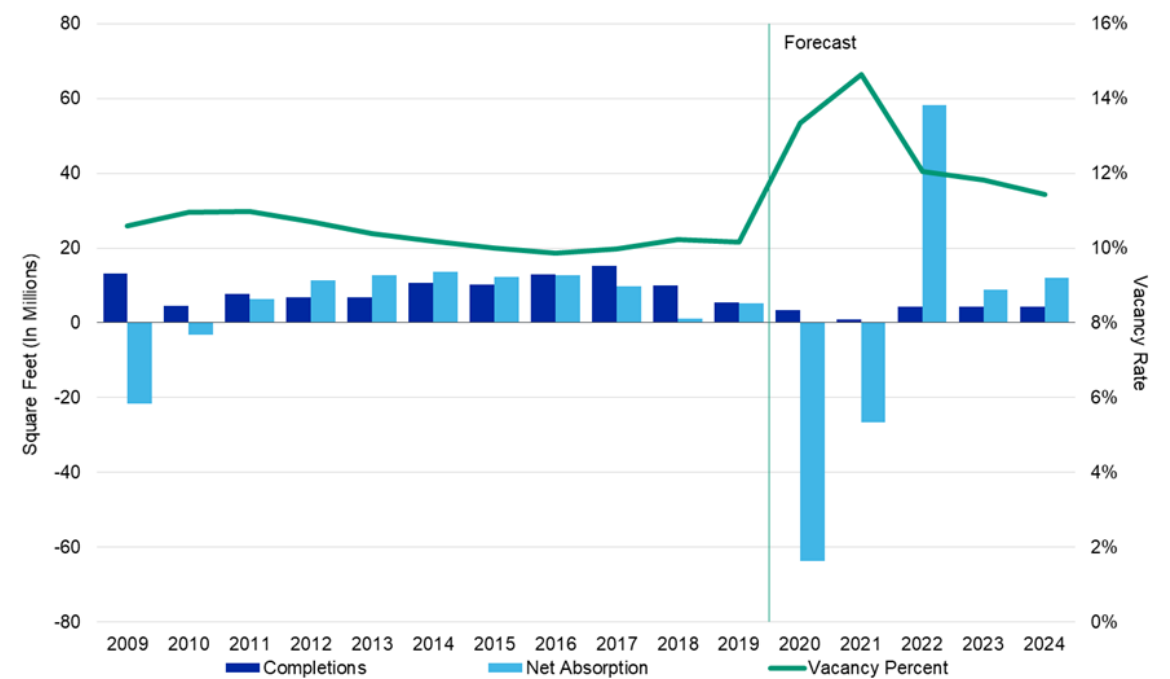
# Office & Retail Do Not Fare as Well

## Office Fundamentals | Protracted Slump



Source: Moody's Analytics REIS

## Retail Fundamentals | Protracted Slump



Source: Moody's Analytics REIS

# California Markets in a Protracted Slump: Office

MSA	State	Year	Vacancy	Vacancy Change - BPS	Effective Rent Change
Los Angeles	CA	2020	17.27%	327	-3.11%
San Francisco	CA	2020	12.08%	325	-13.17%
Orange County	CA	2020	19.71%	322	-4.40%
San Jose	CA	2020	21.42%	321	-9.50%
San Diego	CA	2020	18.84%	319	-3.49%
Oakland-East Bay	CA	2020	18.38%	318	-5.78%
Sacramento	CA	2020	21.70%	318	-2.45%
Ventura County	CA	2020	21.55%	317	-2.52%
San Bernardino/Riverside	CA	2020	19.69%	315	-2.09%

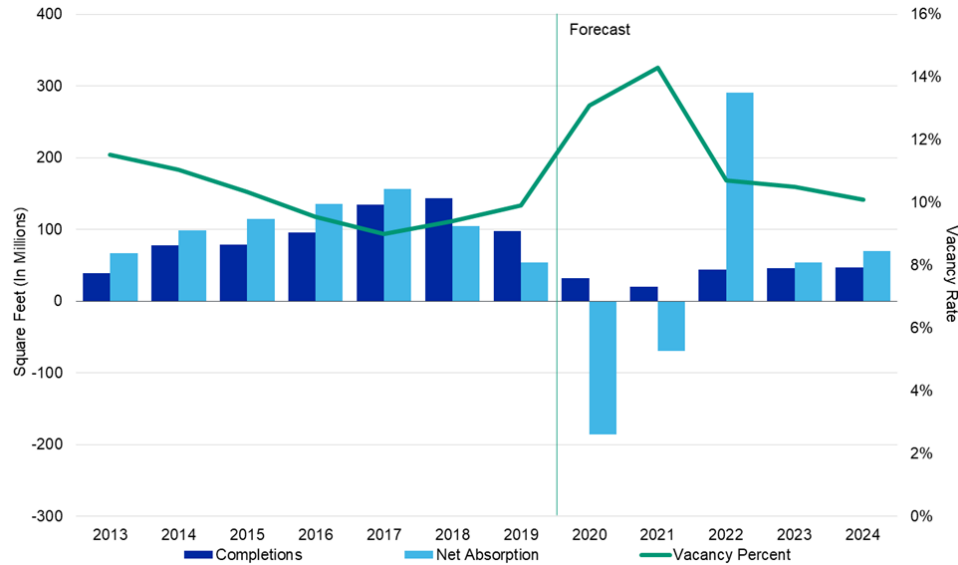
Source: Moody's Analytics REIS

# California Markets in a Protracted Slump: Retail

MSA	State	Year	Vacancy	Vacancy Change - BPS	Effective Rent Change
Sacramento	CA	2020	13.28%	319	-7.33%
San Jose	CA	2020	8.67%	317	-4.70%
Los Angeles	CA	2020	10.51%	317	-4.74%
San Bernardino/Riverside	CA	2020	13.07%	317	-5.43%
Ventura County	CA	2020	11.81%	316	-4.34%
San Diego	CA	2020	9.06%	316	-3.19%
Orange County	CA	2020	8.89%	316	-4.72%
Oakland-East Bay	CA	2020	11.17%	315	-4.58%
San Francisco	CA	2020	7.32%	313	-3.43%

Source: Moody's Analytics REIS

# California Warehouse/Distribution Markets



Source: Moody's Analytics REIS

MSA	State	Year	Inventory Change (2015-2020)	Vacancy	Vacancy Change - BPS	Effective Rent Change
San Bernardino/Riverside	CA	2020	19.43%	12.39%	314	-4.99%
Oakland-East Bay	CA	2020	5.37%	12.97%	313	-5.18%
San Diego	CA	2020	4.10%	12.23%	313	-5.03%
Los Angeles	CA	2020	3.20%	8.51%	315	-4.74%
Sacramento	CA	2020	2.24%	12.95%	315	-4.64%
Orange County	CA	2020	2.23%	10.43%	315	-5.20%
San Jose	CA	2020	1.07%	11.38%	313	-4.23%
San Francisco	CA	2020	0.06%	8.72%	312	-4.75%

# The Insight: San Bernardino/Riverside

## The Insight

### San Bernardino/Riverside Metro Industrial Market

Report generated 14 February 2020  
Last updated 2020 Q1

#### The Insight

### San Bernardino: Still Growing Against the Odds



#### Economy and Demographics

Few metros adhere to one commercial real estate property type more so than the Inner Empire does to the ware/distribution market. With 361.6 million SF of for-lease inventory, San Bernardino/Riverside has 5.6% of the total U.S. inventory. The transportation and utilities sector employs 9% of the total workforce in this metro, nearly three times the U.S. equivalent ratio of 3.7% of the total.

Accordingly, the transportation and utilities sector added 4,500 jobs (+5.2%) in this metro. This accounted for 70% of the total job growth in the Inner Empire of 29,200 jobs. This represents a slowdown from previous years in that this sector has grown by 57% over the last five years, adding 50,000 jobs which accounts for 20% of the total job growth in this metro.

Naturally, this growth has spurred job growth in other industries along with strong demand for apartments.

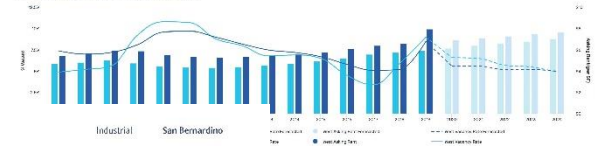
Nearly every industry in San Bernardino/Riverside saw job growth in 2019 except for wholesale trade and other services that had minor losses. Even retail added 1,000 jobs in 2019. The health and education sector grew 5.3% with 92,200 jobs in 2019 driven by strong population growth. This strong growth has pushed home prices up more so than most southern California metros.

The median family home price of \$377,200 climbed 5.3% in 2019, well above Los Angeles's growth of 3.7%. San Bernardino/Riverside apartment rents have seen similar growth rates of 4.5% (+4.2% effective), above the U.S. rate of 3.7%.

San Bernardino still faces risks, especially given its reliance on this key industry that is subject to continued volatility given outstanding trade war issues. Still, the emergence from the 2018-2019 trade-war period with only some deceleration in growth. Thus, it should withstand future headwinds.

#### The Insight

Asking Rent and Vacancy Trends By Year (per SF)



#### with

Higher vacancy rate, rent growth in San Bernardino/Riverside was 2.5% (effective) in 2019. Not this was down from a growth asking and effective) in 2018. For 1 sector, rents grew 2.8%/3.1% (effective) in 2019, down slightly from 3.8% effective

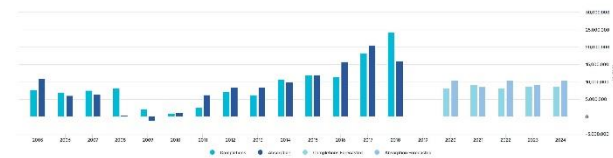
#### Transaction Analytics

Sales volume of warehouse/distribution space declined to \$210 million in the fourth quarter, down from an average of \$900 million in the two prior quarters. Investors have been eager to buy industrial properties in the Inner Empire, but many were cautious given the uncertainty stemming from the

#### Submarkets in San Bernardino/Riverside Metro

Submarket	Inventory	Vacancy (Jan 2020)	Vacancy (Jan 2019)	Rent Growth (2019)	Job Growth (2019)
Covina	37,590,000	3.8%	9.6%	3.7%	5.8%
Pomona/Moreno Valley	45,446,000	4.2%	17.5%	5.4%	3.7%
Riverside	40,340,000	4.8%	9.9%	3.6%	3.8%
Rancho Cucamonga	31,078,000	3.0%	5.1%	1.5%	2.8%
Ontario	84,983,000	3.0%	4.7%	2.7%	3.0%
Menlo Park	4,891,000	3.0%	4.4%	3.0%	2.2%
Chico	28,488,000	3.0%	10.0%	1.8%	0.7%
San Bernardino/Redlands/Yucaipa	92,140,000	4.8%	8.2%	1.9%	3.8%
Fontana	3,274,000	3.8%	10.5%	0.4%	4.5%
Palm Springs	3,151,000	3.9%	16.4%	0.6%	0.6%
Victorville	10,642,000	3.8%	14.7%	1.2%	4.8%
San Bernardino/Riverside Metro	287,000,000	3.9%	8.9%	2.5%	3.1%

#### Supply and Demand: San Bernardino Industrial



REIS Copyright © 2020 REIS, Inc.

REIS Copyright © 2020 REIS, Inc.

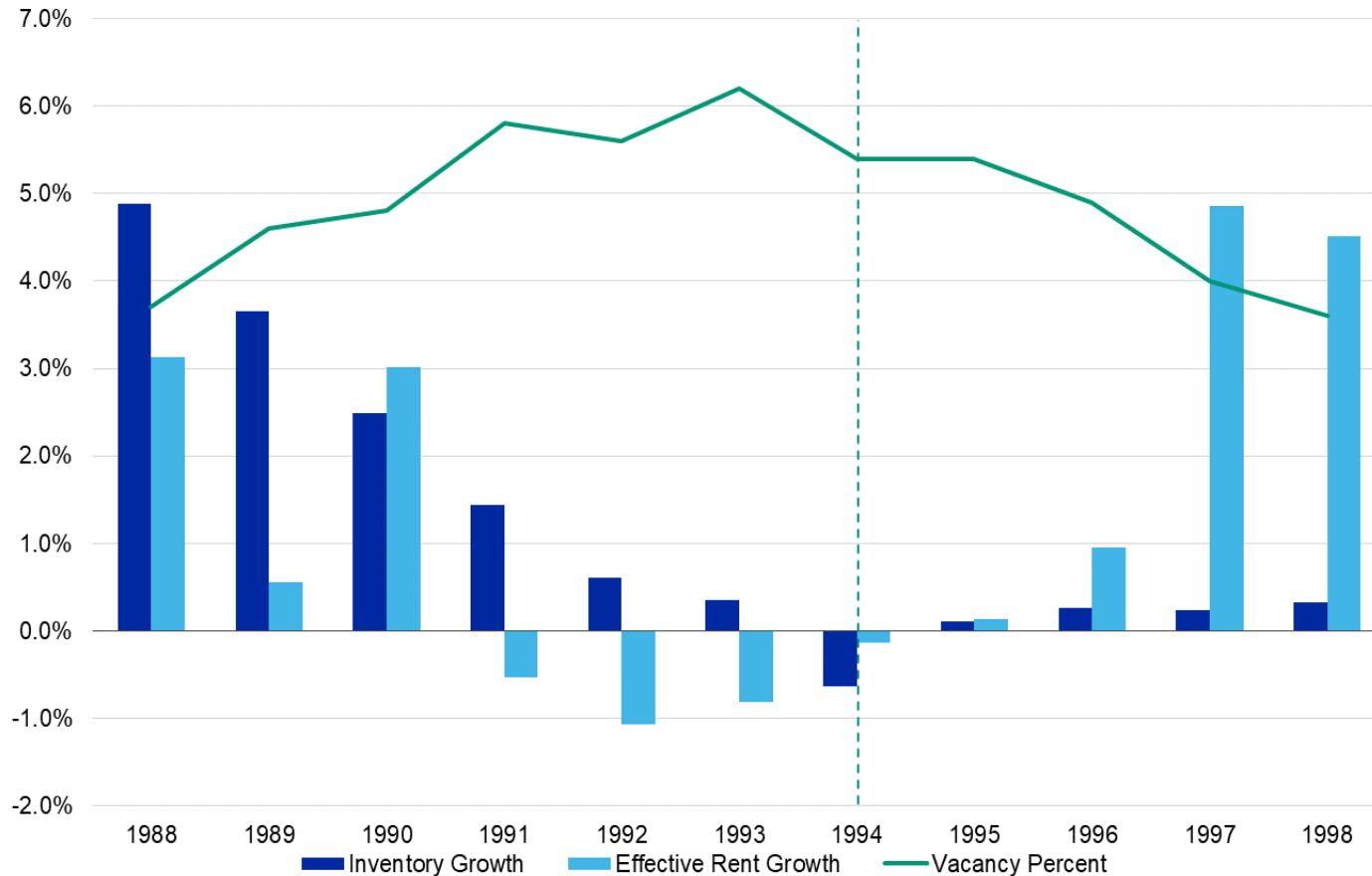


# 4

What's Next, and What Can We Really Know?

# Idiosyncratic Shocks? Some Experience

## Los Angeles Multifamily Fundamentals, 1988 to 1998

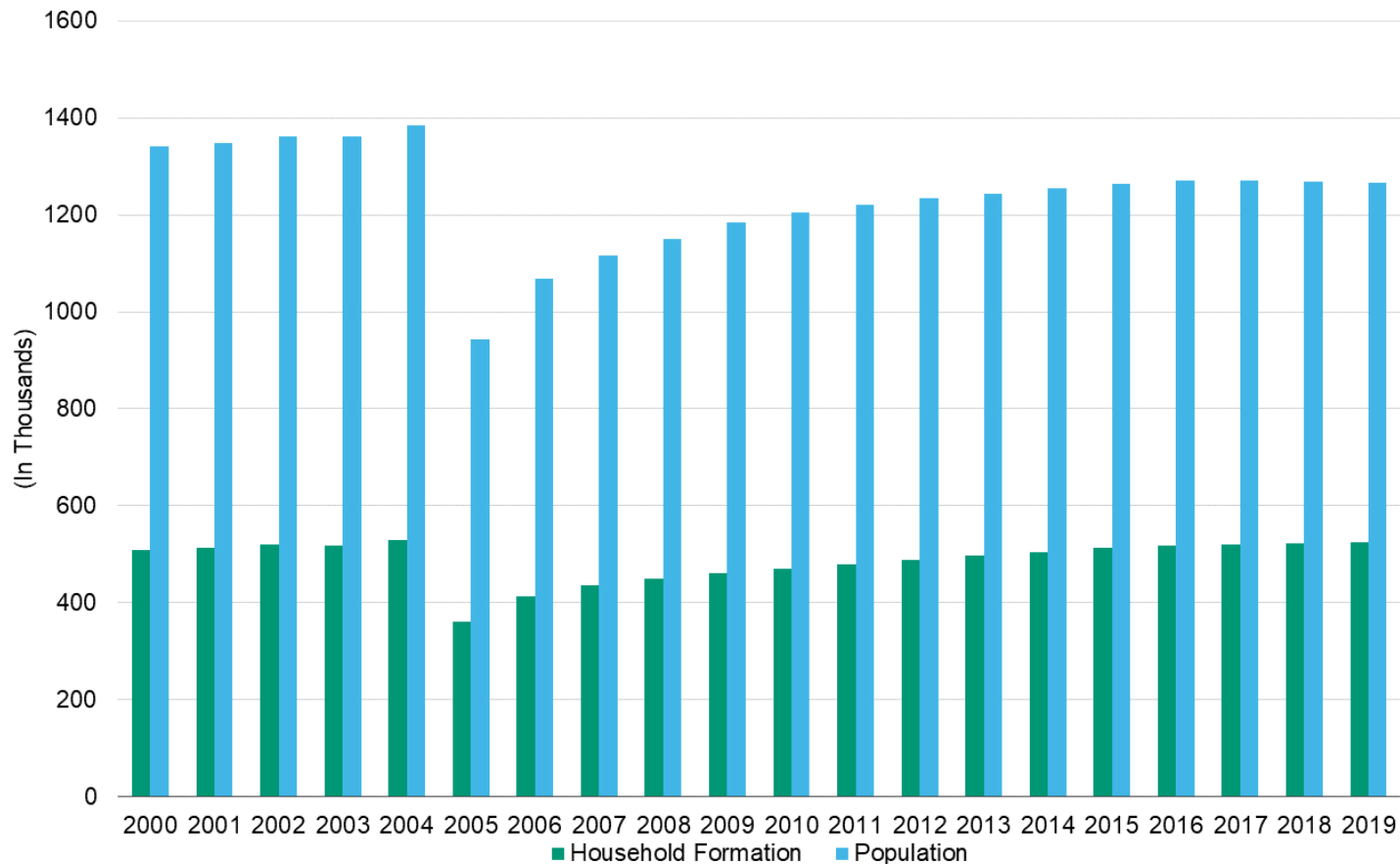


Source: Moody's Analytics REIS

- The Northside Earthquake of 1994 remains the costliest earthquake on record in the US (\$26.4 billion in damages, 2018 dollars)
- *Net positive* for Los Angeles multifamily fundamentals – but *why?*
- This is the optimistic case: that demand remains strong in urban areas where multifamily properties tend to cluster.

# Idiosyncratic Shocks? Potential Negatives

## New Orleans Demographics, 2000 to 2019



Source: Moody's Analytics

- Hurricane Katrina in 2005 devastated New Orleans and the area suffered a permanent shock to demand
- Multifamily fundamentals received a temporary boost because of destroyed units, but over the long run weaker demand did not sustain occupancies.
- What will happen post-COVID-19?

# Questions & Answers

# Today's Speakers



**Cristina Pieretti**  
MANAGING DIRECTOR / HEAD OF REIS



**Victor Calanog**  
HEAD OF CRE ECONOMICS

Thank You

© 2020 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

**CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND/OR ITS CREDIT RATINGS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S INVESTORS SERVICE DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S INVESTORS SERVICE CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.**

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$2,700,000. MCO and Moody's investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at [www.moody.com](http://www.moody.com) under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.