

The Age of **RESPONSIVE REAL ESTATE**

Presented by Econometric Advisors

**2020
SPRING
CLIENT FORUM**

CBRE

U.S. OUTLOOK FOR 2020

CORONAVIRUS AND THE RISK TO CRE



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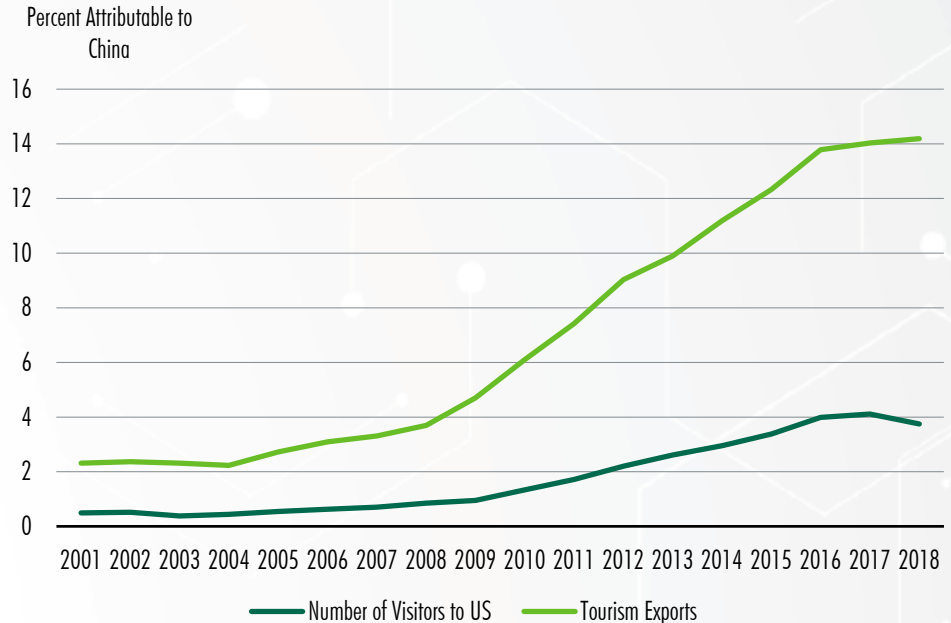
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*Fear of travel: implications for
Lodging*

CHINA'S IMPORTANCE TO US TRAVEL AND TOURISM TRADE HAS INCREASED DRAMATICALLY IN THE PAST DECADE

- **SINCE 2001, CHINA HAS INCREASED ITS PROPORTION OF VISITORS TO THE US FROM 0.5% TO ABOUT 4%, PROPORTION OF SPENDING FROM 2.3% TO 14%**
- **VISITORS FROM CHINA SPEND DISPROPORTIONATELY HIGH AMOUNTS COMPARED TO THE AVERAGE VISITOR**

Relative Importance of China to US Travel and Tourism, 2001-2018

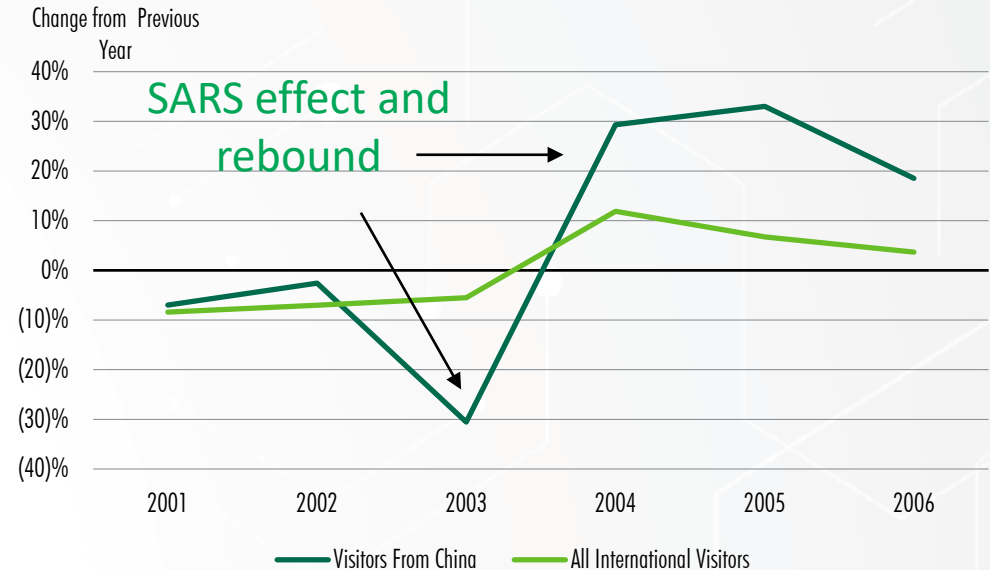


Sources: CBRE Hotels, NTO Q1 2020.

WHAT IF THE EFFECTS OF THE 2003 SARS OUTBREAK WERE REPEATED TODAY ON A PROPORTIONAL BASIS?

- 2003 SAW A 30% DECLINE IN INTERNATIONAL VISITATION FROM CHINA AS TRAVEL RESTRICTIONS TOOK EFFECT.
- A SIMILAR PROPORTIONATE EFFECT COULD MEAN A REDUCTION IN CHINESE VISITATION EQUIVALENT TO 0.3-0.4% OF TOTAL 2020 HOTEL DEMAND.

Change in Number of Visitors from China and the World During 2003 SARS Outbreak



Sources: CBRE Hotels, NTTO Q1 2020.

CURRENT REVISED ESTIMATES FOR NATIONAL PERFORMANCE SLIGHTLY LOWER THAN IN LAST QUARTER OVER COVID-19

Market Data

Submarket Data

Economics

Submarket Locator

Investment Performance

Five Year History and Forecast (Annual)

United States — All Hotels — Baseline Forecast Scenario

YEAR	OCC	ΔOCC	ADR	ΔADR	REVPAR	ΔREVPAR	SUPPLY	ΔSUPPLY	DEMAND	ΔDEMAND
2015	65.4%	-	\$120.41	-	\$78.69	-	4,951,673	-	3,235,921	-
2016	65.4%	0.1%	\$124.06	3.0%	\$81.14	3.1%	5,021,012	1.4%	3,283,828	1.5%
2017	65.9%	0.7%	\$126.81	2.2%	\$83.52	2.9%	5,106,199	1.7%	3,363,052	2.4%
2018	66.1%	0.4%	\$129.96	2.5%	\$85.94	2.9%	5,206,614	2.0%	3,442,727	2.4%
2019	66.1%	0.0%	\$131.20	1.0%	\$86.73	0.9%	5,311,653	2.0%	3,511,367	2.0%
2020	65.6%	-0.8%	\$132.09	0.7%	\$86.63	-0.1%	5,417,265	2.0%	3,552,637	1.2%
2021	65.8%	0.3%	\$133.54	1.1%	\$87.86	1.4%	5,515,924	1.8%	3,629,089	2.2%

Down from -0.6%

Down from 1.4%

Down from 0.7%

EFFECT OF COVID-19 WILL DISPROPORTIONATELY FALL ON PARTICULAR CITIES

- TRAVEL ESPECIALLY CONCENTRATED ON LARGE COASTAL GATEWAY CITIES, AS WELL AS LAS VEGAS AND CHICAGO
- SOME MARKETS, SUCH AS SEATTLE, ALSO HAVE A DISPROPORTIONATE SHARE OF TOTAL INBOUND TRAVEL FROM CHINA

TOP 5 CITIES BY PERCENT OF CHINESE VISITATION

City	Percent of Visitors from China Visited:
New York City	24.52
Los Angeles	23.39
San Francisco	14.12
Las Vegas	10.29
Boston	8.83

Sources: CBRE Hotels, NTTO Q1 2020.

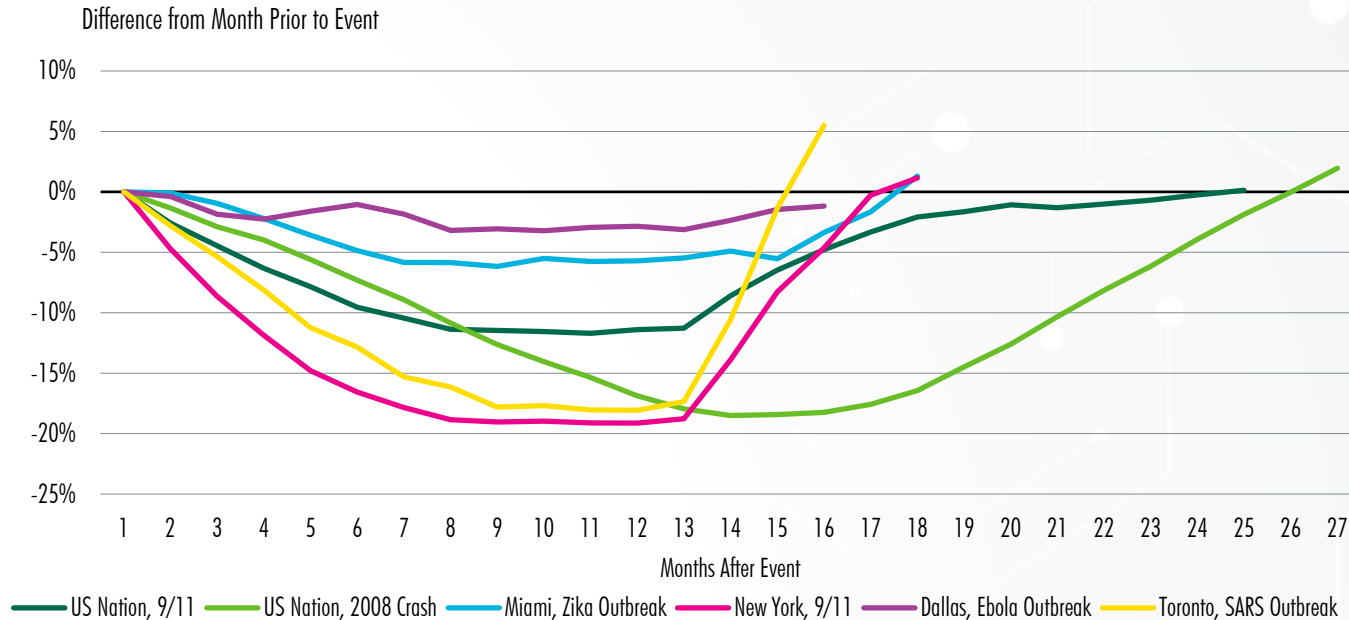
HISTORICAL PRECEDENT FOR INFECTION IN US EVIDENCE FROM SARS, EBOLA AND ZIKA

EFFECT FROM INSIDE

- Currently, the main anticipated effects from COVID-19 are from reduced outbound travel from affected areas.
- An outbreak in a particular US market could have more acute, localized effects.
- Magnitude of effects will depend crucially on scale of outbreak and whether it warrants a travel advisory from national or local health institutions.
- Three historical examples considered:
 - SARS in Toronto
 - Zika in Miami
 - Ebola in Dallas

RECOVERY GENERALLY TAKES 5-6 QUARTERS IN NOMINAL TERMS

Length of Recovery Time in 12-Month Moving Average RevPAR Growth



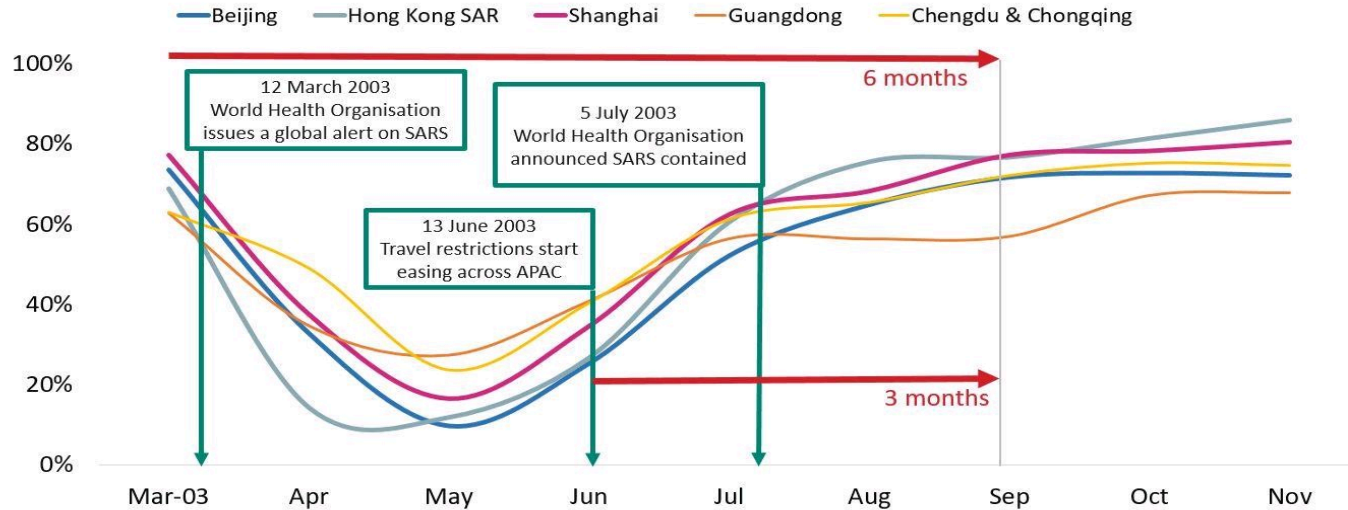
Sources: CBRE Hotels. STR Q1 2020.

The Age of **RESPONSIVE REAL ESTATE**

STR REPORTS HOTELS IN CHINA RECOVERED QUICKLY, POINTING TO POTENTIAL FOR FAST RECOVERY

China hotels recovered sharply after SARS travel restrictions eased

China Hotel Occupancy March-November 2003

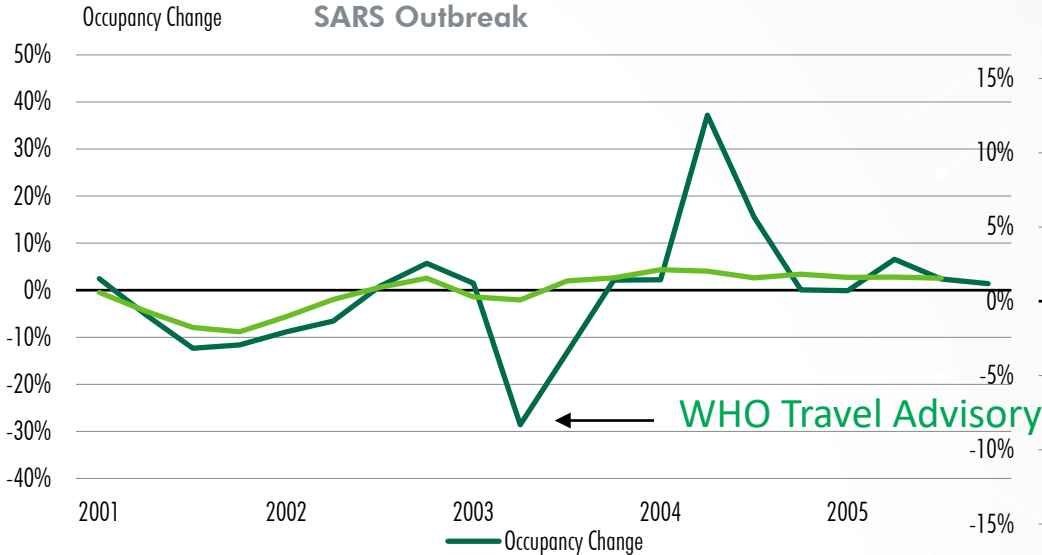


Source: STR / 2020 © CoStar Realty Information, Inc..

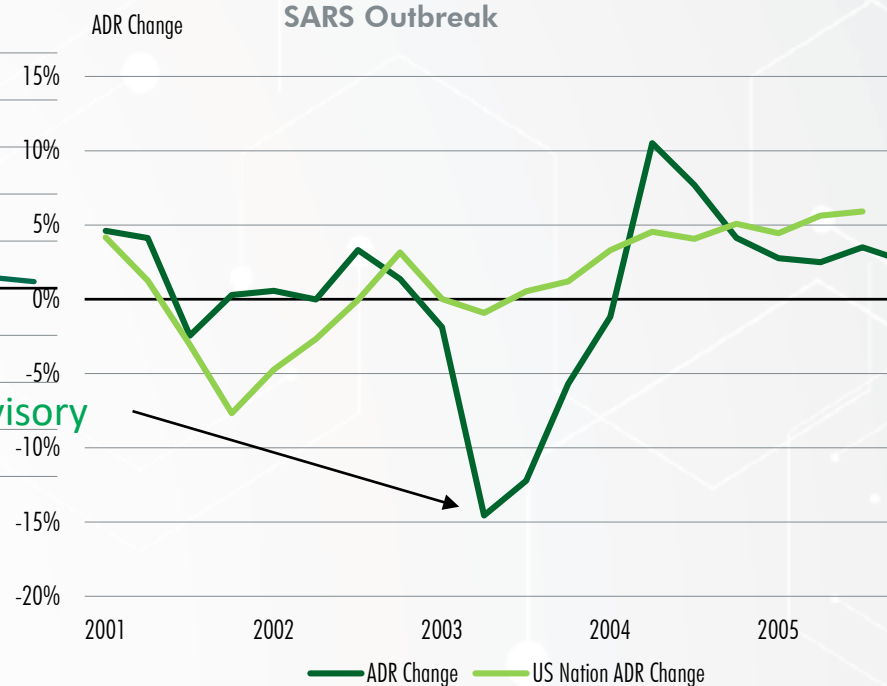
TORONTO SHOWED CHARACTERISTIC DIP THEN RECOVERY WITHIN 2-3 YEARS

OCCUPANCY RECOVERS MORE QUICKLY THAN RATE

Toronto and US National Occupancy Change During 2003 SARS Outbreak



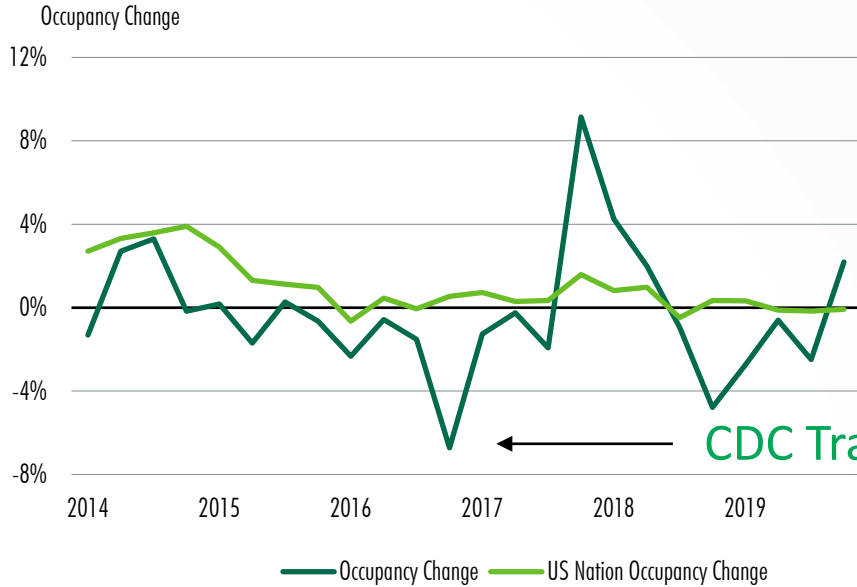
Toronto and US National ADR Change During 2003 SARS Outbreak



Sources: PKF Canada, CBRE Hotels, STR Q1 2020.

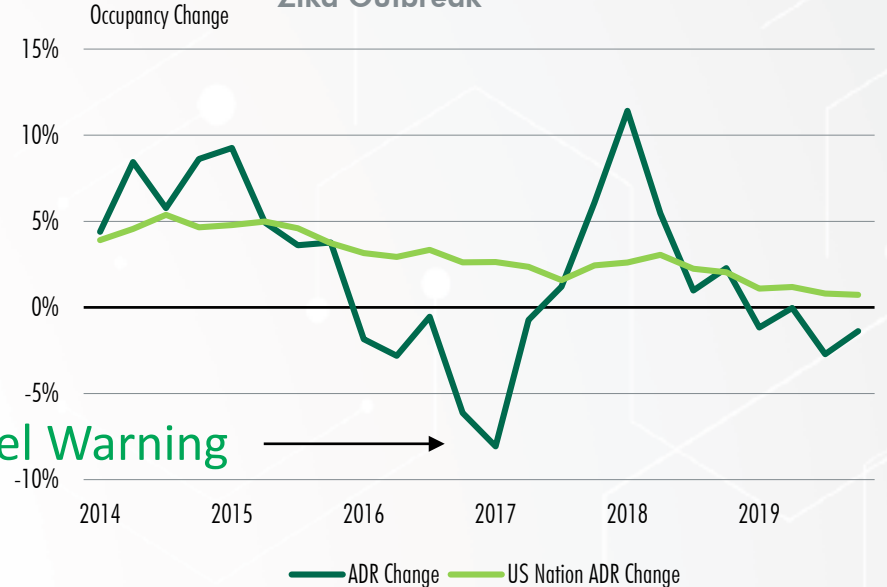
SIMILAR PATTERN IN MIAMI

Miami and US National Occupancy Change During 2016 Zika Outbreak



Sources: CBRE Hotels, STR Q1 2020.

Miami and US National ADR Change During 2016 Zika Outbreak

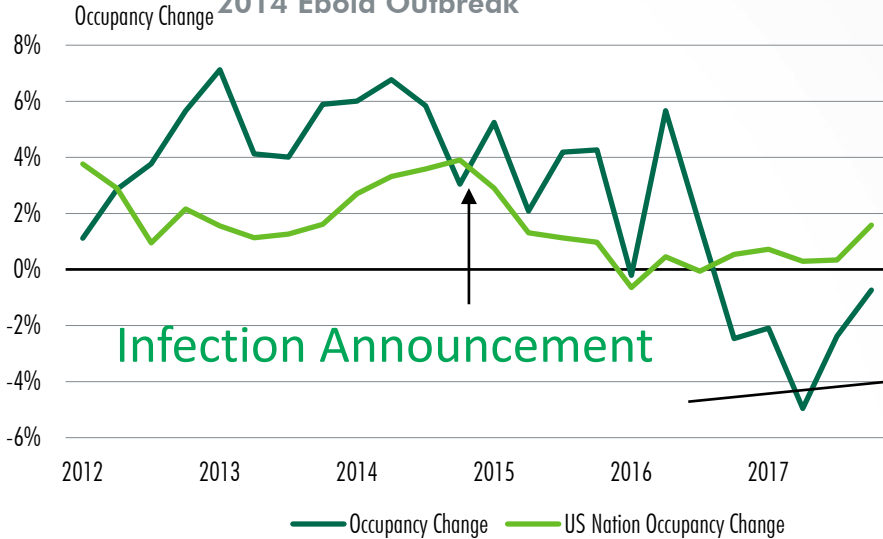


Sources: CBRE Hotels, STR Q1 2020.

DALLAS EXPERIENCE SHOWS IMPORTANCE OF TRAVEL WARNINGS, SCALE OF OUTBREAK

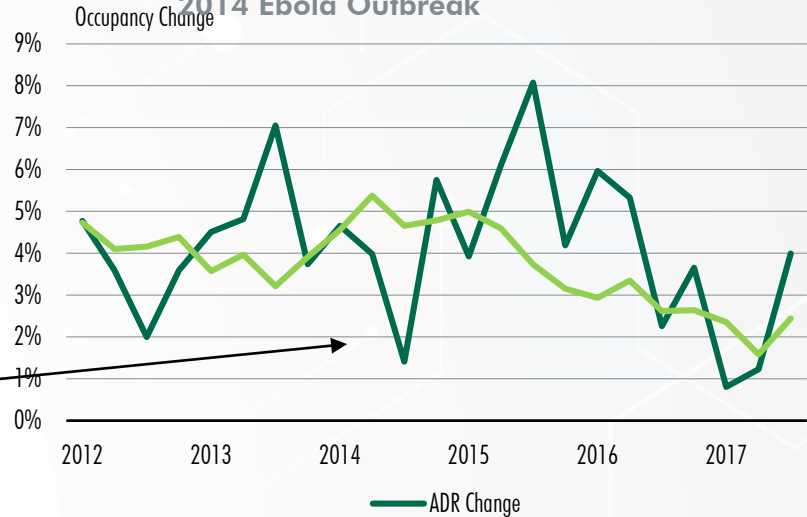
NO TRAVEL WARNING ISSUED, EFFECT MURKY OR NONEXISTENT

Dallas and US National Occupancy Change During 2014 Ebola Outbreak



Sources: CBRE Hotels, STR Q1 2020.

Dallas and US National ADR Change During 2014 Ebola Outbreak



Sources: CBRE Hotels, STR Q1 2020.

ADDITIONAL EFFECTS TO BE CONSIDERED: LOWER OIL PRICES DUE TO ANTICIPATED LOWER CHINESE DEMAND COULD EFFECT TRAVEL TO OIL MARKETS

Cushing Spot Price, Crude Oil, Previous Year



Source: eia.gov Q1 2020.

Cushing Spot Price, Crude Oil, Previous Decade

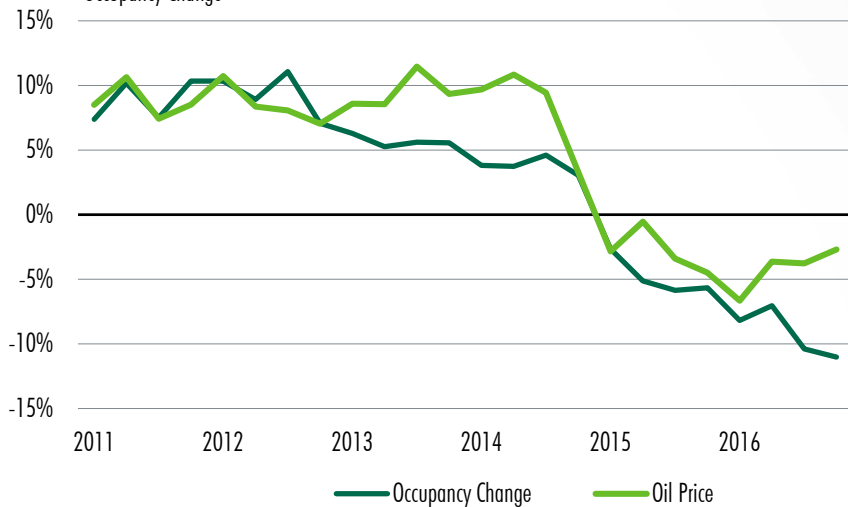


Source: eia.gov Q1 2020.

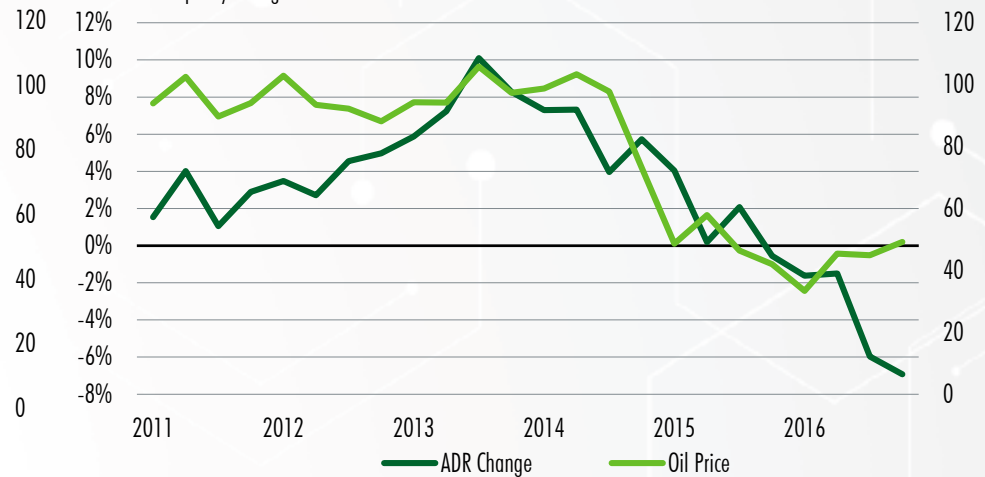
HOUSTON ALREADY BUFFETED BY OIL PRICES, HURRICANE DISRUPTION

CONTINUED SLIDE IN PRICES COULD EXACERBATE FUTURE WEAKNESS

Houston Occupancy and Oil Price Change During
2014 Oil Price Crash



Houston ADR and Oil Price Change During 2014
Oil Price Crash



Sources: CBRE Hotels, STR Q1 2020.

Sources: CBRE Hotels, STR Q1 2020.

SUMMARY THOUGHTS

- **COVID-19 EXPECTED TO CREATE SOME DISTURBANCE IN US LODGING MARKET BY INSTILLING A FEAR OF TRAVEL AND LEADING BUSINESSES TO DEFER TRAVEL**
 - Airline bookings already down
 - Companies cancelling non-essential travel
- **A FEW US MARKETS HAVE A MORE CONCENTRATED EFFECT, MOTIVATING SIGNIFICANT DOWNWARD REVISIONS TO THEIR OUTLOOK**
- **LOCALIZED, SEVERE OUTBREAK WOULD HAVE ACUTE EFFECTS ON A MARKET, LASTING BETWEEN 2-3 YEARS**
- **SECONDARY ECONOMIC EFFECTS COULD ALSO EXERT SMALL, LINGERING DOWNWARD PRESSURE ON PERFORMANCE**

Implications for Retail

CORONAVIRUS AND GLOBAL RETAIL

Travel concentrated in a few gateway markets

Historical Retail Performance

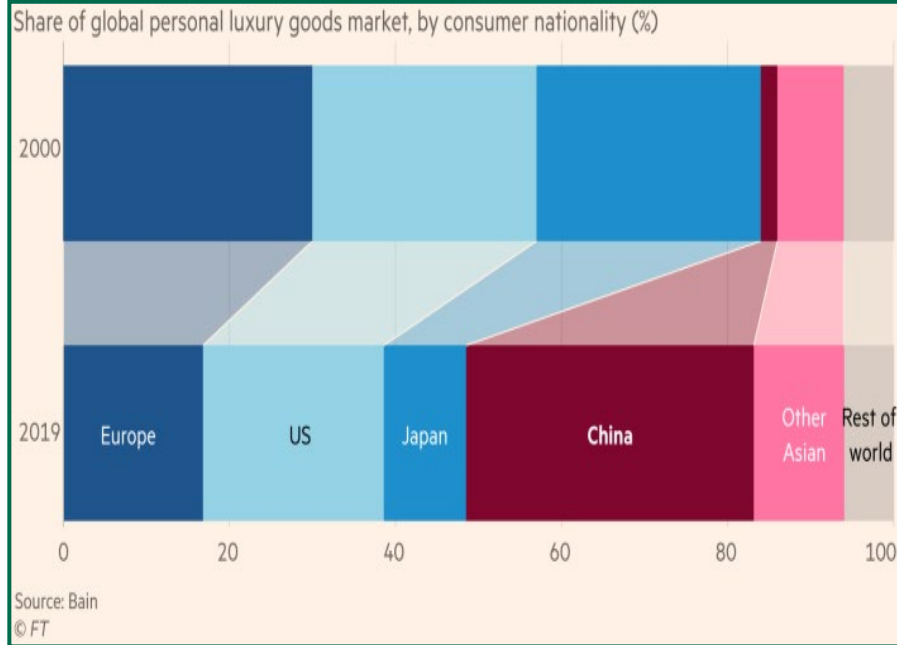
- US retail sales in 2018: \$3.68 trillion
 - Spending from Chinese visitors: \$9 billion (0.25% of total retail sales)
 - Number of visitors from China in 2018: 3 million
 - Average retail spending per person in 2018: \$3,000 (estimated)
 - $3.68 * 0.0025 = 9$ billion
 - Affected retail space : 9-18 million sf
assume \$500-1000 sales / sf (annual)
- CBRE**

Top U.S. Destinations for Chinese Visitors
(% of profiled inbound)



Source: International Travel & Tourism Office.

IMPACT OF CORONAVIRUS ON LUXURY AND FASHION GOODS



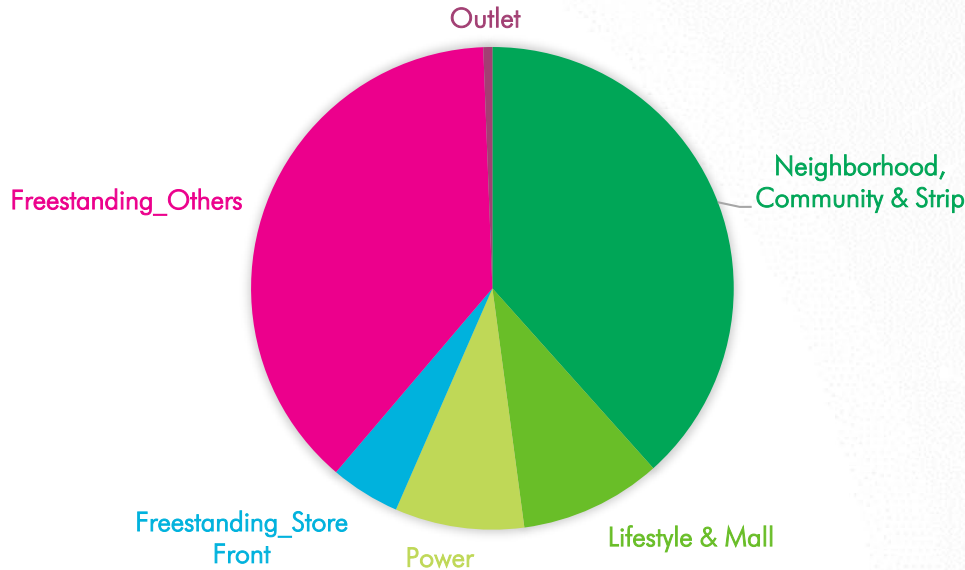
Source: Financial Times.

RETAIL SHARE BY CATEGORY

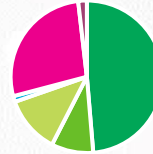
Affected category: urban storefront in gateway cities

Potentially affected category: grocery anchored shopping center

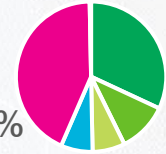
NATIONAL



Las Vegas 1%



Boston 7%



New York 15%



Los Angeles 12%



San Francisco 17%



Source: CBRE Econometric Advisors..

SUPPLY: IMPACT BY RETAIL CATEGORY

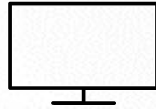
HIGH IMPACT



Apparel
and
Footwear



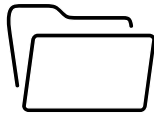
Motor Vehicles



Computers
and
Electronics



Appliances



Books, Paper
and Office
Products



Furniture

LOW IMPACT



Food &
Beverage



Gasoline
and Diesel
Retail



High End
Beauty
Products

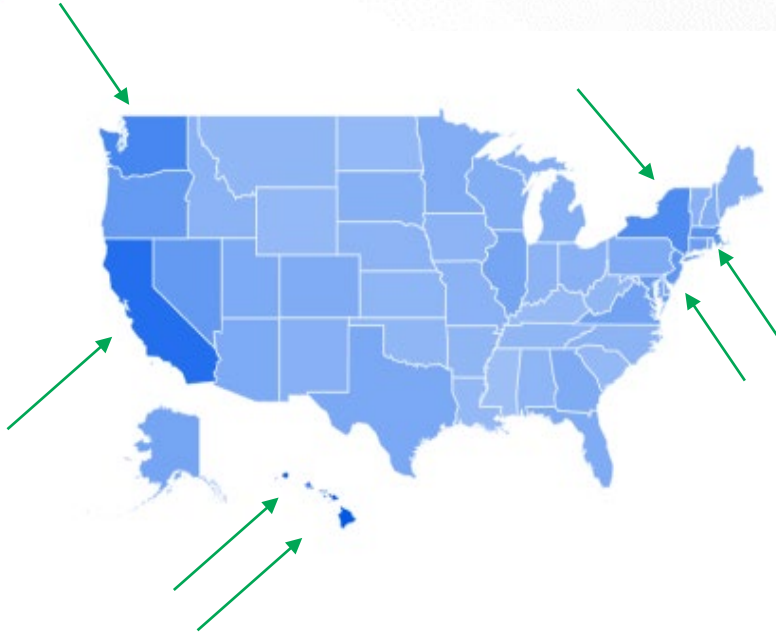


Jewelry

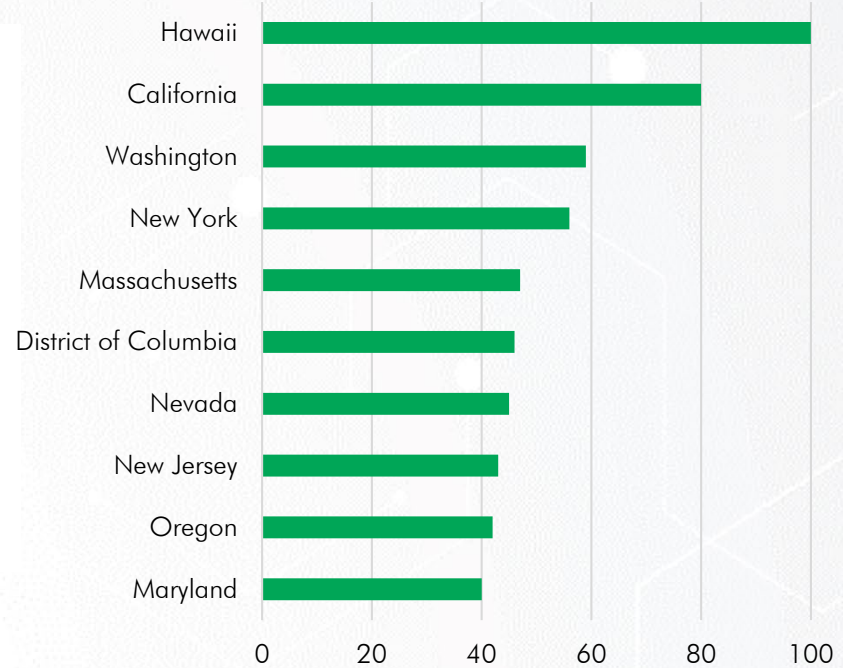
Source: CBRE EA.

REAL TIME MEASURE OF THE CORONAVIRUS IMPACT

Google trends "n95"

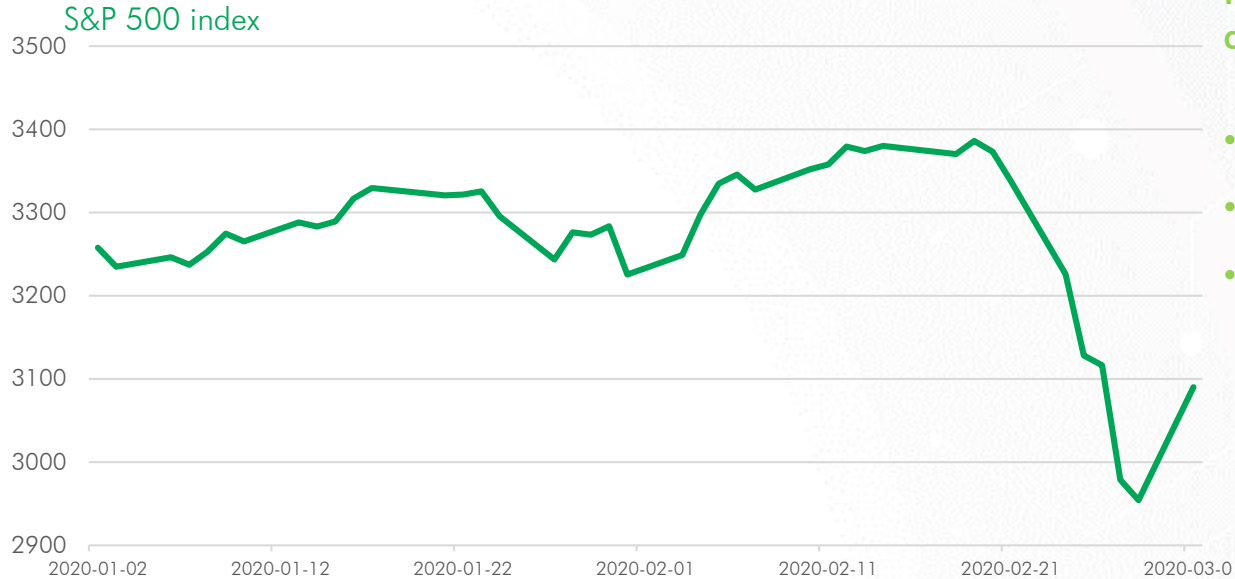


Source: Google Trend.



IMPACT ON INVESTMENT

Flight to quality



Investors are fleeing to the safe assets.

- "Gold at seven year high"
- "Bond yields at record low"
- Core assets may be more attractive for investors in times of rising uncertainty, and liquidity is the key.

Source: S&P Dow Jones Indices LLC.

IMPACT ON INVESTMENT

Liquidity during the Great Financial Crisis (GFC)

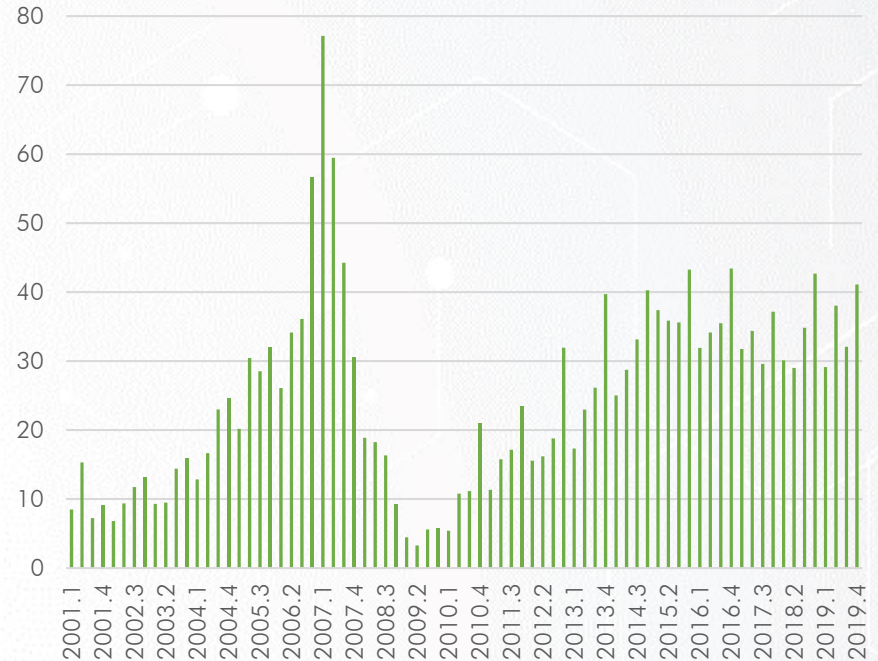
Top 20 markets by turnover rate during GFC

San Jose
New York
Miami
San Diego
Oakland
Los Angeles
Austin
Fort Worth
West Palm Beach
Phoenix
Atlanta
San Francisco
Long Island
Orange County
Portland
Newark
Washington, DC
Denver
Norfolk
St. Louis

Top 20 markets by size

New York
Washington, DC
Chicago
Boston
Los Angeles
Dallas
Houston
Atlanta
Philadelphia
Denver
San Francisco
Seattle
Phoenix
Pittsburgh
Orange County
Detroit
Minneapolis
Baltimore
Newark
Raleigh

US Office Quarterly Transaction Volume (Billions USD)



Source: RCA, CBRE EA.

KEY TAKE-AWAYS

The overall impact on retail sales and leasing is limited nationally.

Luxury retail and urban storefront retail in gateway cities will see a larger impact.

More demand for safe assets (potentially core real estate assets, with liquidity even during economic downturn and times of uncertainties.)

Implications for Industrial

CORONAVIRUS AND GLOBAL SUPPLY CHAINS

What bottlenecks are stemming from the spread of the virus?

- Significant travel restrictions across China
- Limitations on port movements out of China
- Factories not running/running below capacity post-Chinese New Year

Noticeable economic impacts

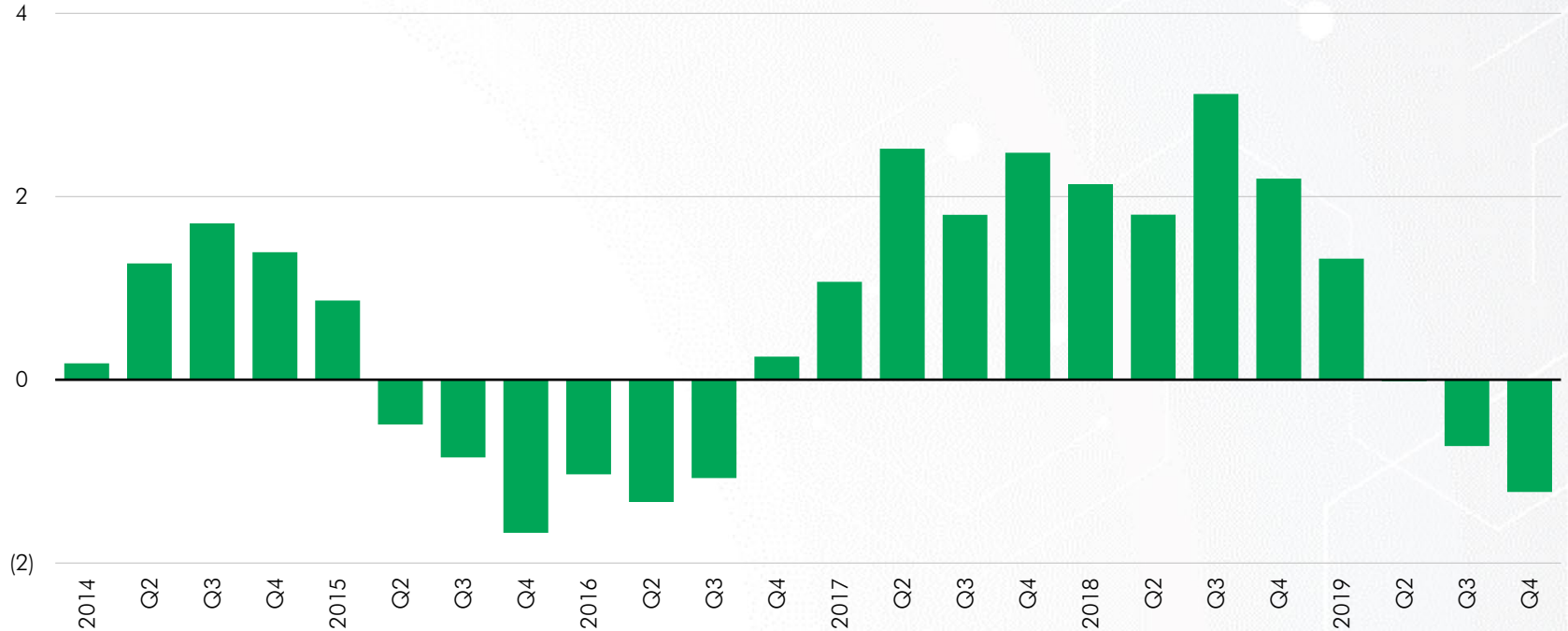
- Slowdown in China's economy in early 2020
- Weakened trade volumes
- Spill over into other economies



*Coronavirus will likely disrupt
U.S. manufacturing, with slight
spill overs into industrial real
estate.*

CORONAVIRUS WILL PROLONG MANUFACTURING SLUMP

Manufacturing industrial production, YOY % growth



Source: Federal Reserve.

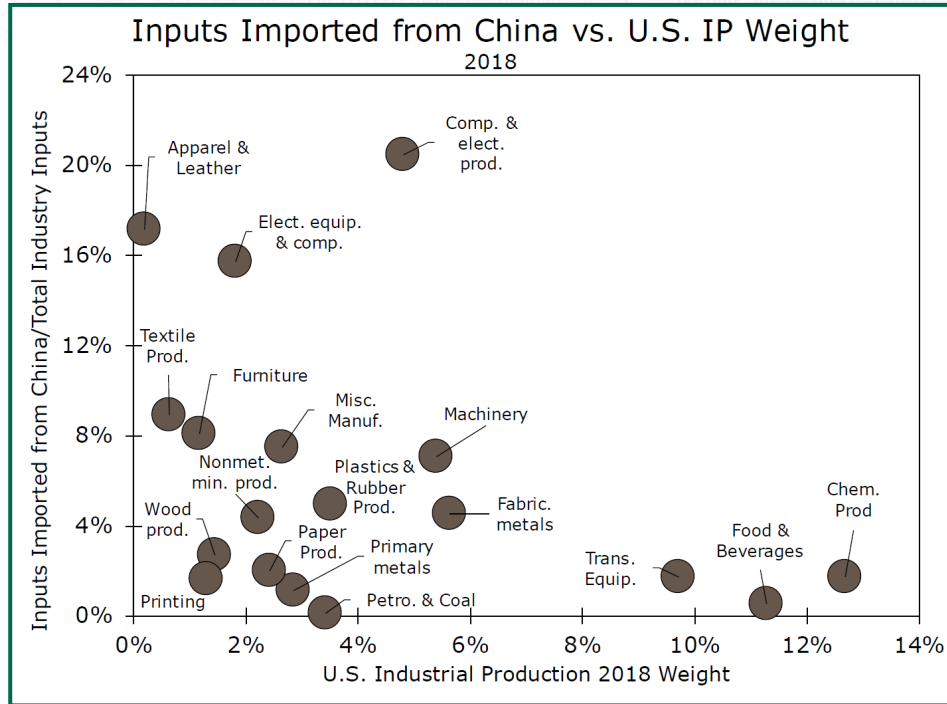
AFFECTED INDUSTRIES

U.S. Imports by NAICS-based Industry

	Industry % of Total Imports	% of Imports from China
Transportation Equipment	16.5%	4.4%
Computer & Electronics	15.6%	37.6%
Chemicals	10.5%	6.3%
Machinery	7.6%	17.4%
Oil & Gas	5.4%	<0.1%
Electrical Equipment	5.0%	34.2%
Apparel & Accessories	3.5%	30.5%

Source: U.S. Department of Commerce.

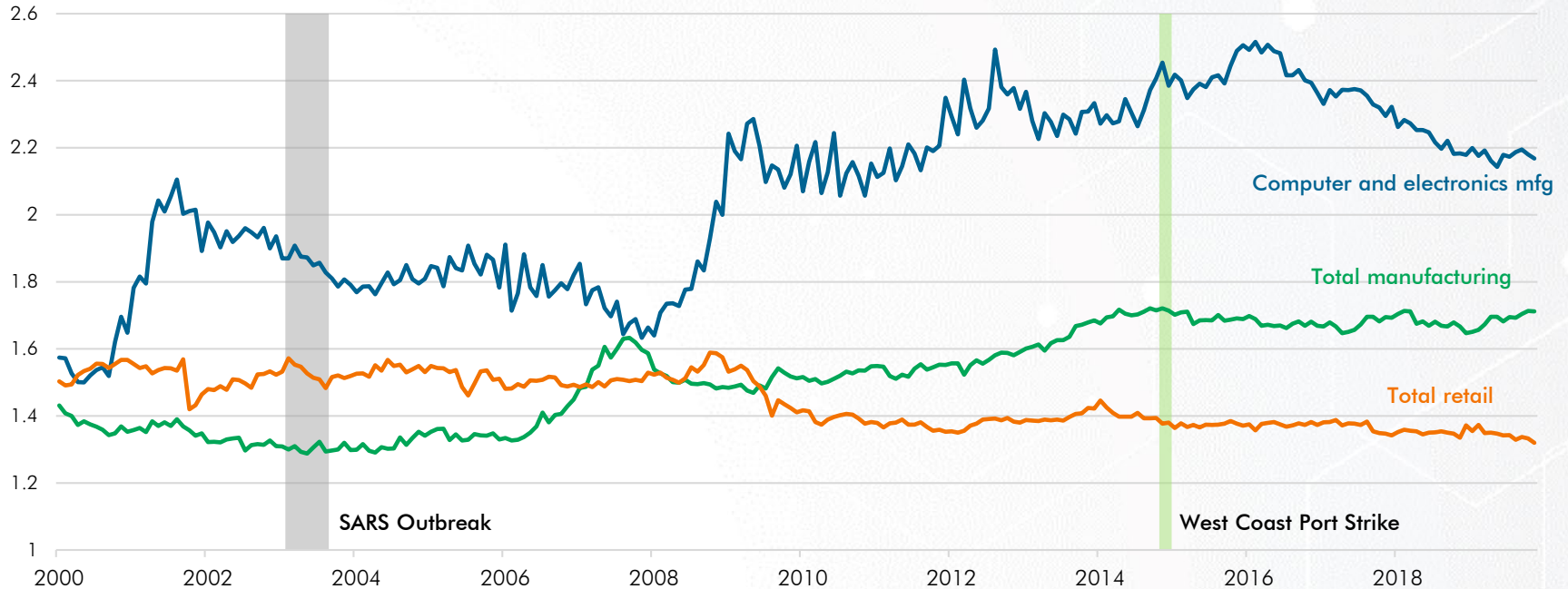
SHARE OF TOTAL INPUTS FROM CHINESE IMPORTS



Source: US Department of Commerce/Federal Reserve/Wells Fargo Securities.

BUSINESSES HAVE DRAWN FROM INVENTORIES DURING PREVIOUS EVENTS

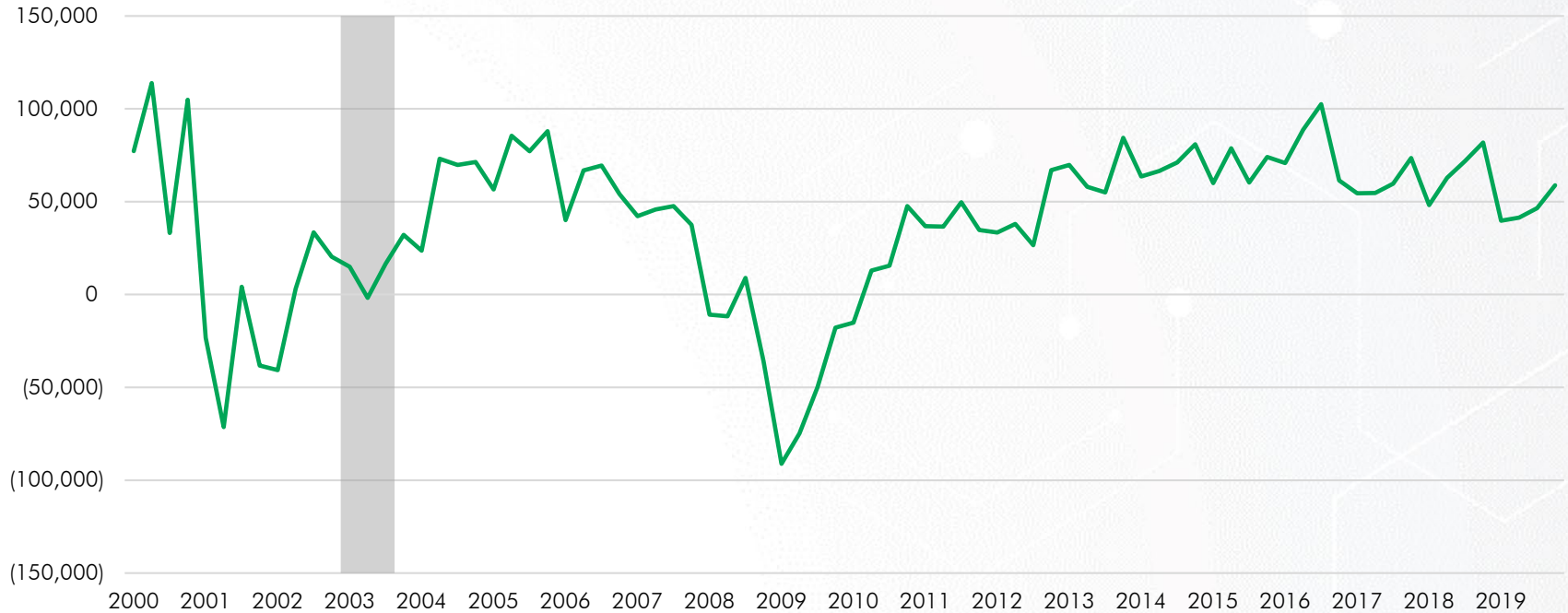
Real Inventory/Sales Ratio, Months Supply



Source: Bureau of Economic Analysis.

SARS SCARE EXHIBITED SOME SPILLOVER TO INDUSTRIAL REAL ESTATE

Industrial Net Absorption, Thousands SF



Source: CBRE.

WILL IT BE WORSE FOR INDUSTRIAL REAL ESTATE?

CORONAVIRUS LIKELY TO HAVE A LARGER IMPACT THAN SARS ON US DOMESTIC MANUFACTURERS

- China represents approximately one-sixth of global economic activity
- China plays a considerably larger role in global supply chains
- Larger concern if outbreaks in other countries further restrict trade flows

INDUSTRIAL REAL ESTATE DEMAND STILL HAS SOME TAILWINDS

- Rising warehouse demand from e-commerce drives much of industrial real estate
- Silver lining from trade war with China
- Pent up demand likely to lead to a rebound once virus is contained