



**CBRE**

# Forecasting in an extended cycle: What's different this time? Secular factors.

CBRE ECONOMETRIC ADVISORS CLIENT FORUM

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## TECHNOLOGY AND REAL ESTATE:

### RESHAPING PROPERTY DEMAND RELATIVE TO PAST ECONOMIC RECOVERIES

#### RETAIL

Internet choice-with-delivery platform replacing store choice and consumer travel

#### INDUSTRIAL & WAREHOUSE

Definitely benefiting from retail misery, but robots and automation are a drag

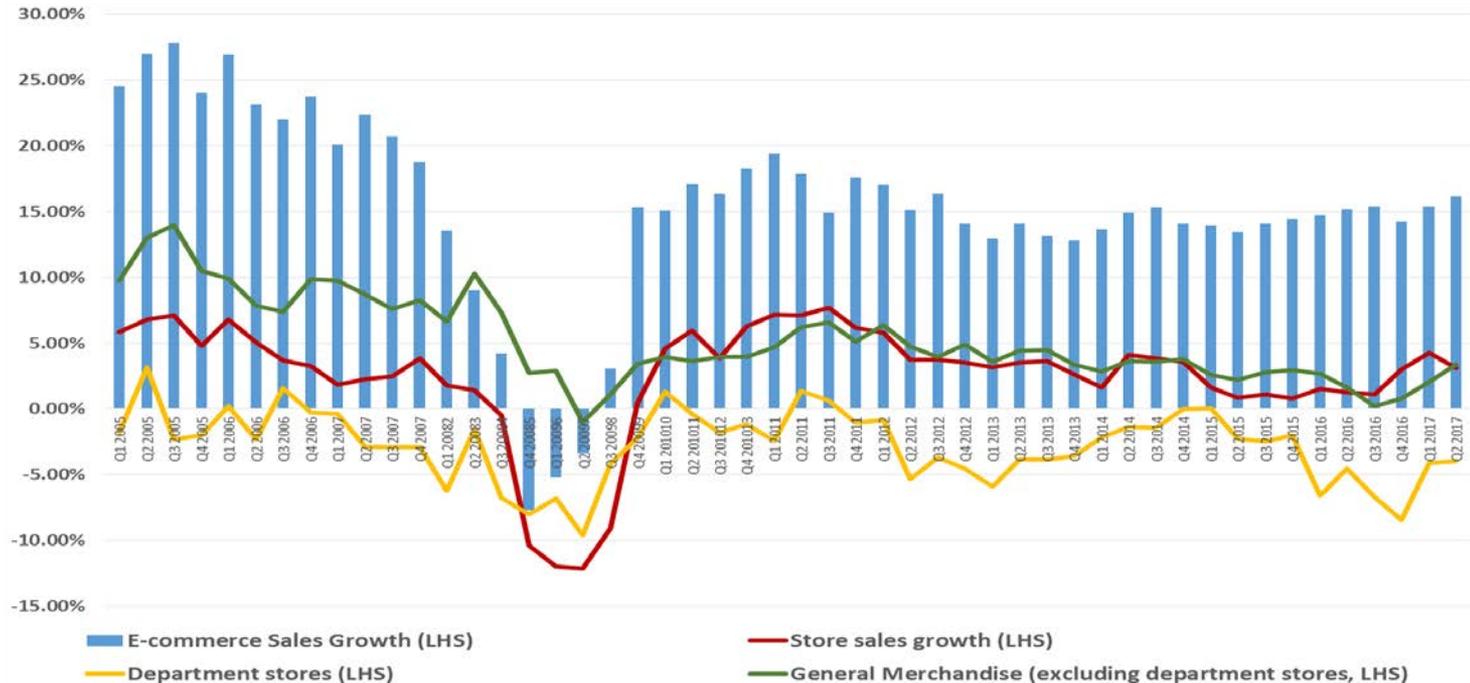
#### OFFICE

Sharing/flexible space expanding offsite remote working

THREE RESEARCH INITIATIVES AT CBRE HELP US UNDERSTAND  
THE SECULAR FORCES AT WORK IN THIS RECOVERY

# HOW AND WHERE PEOPLE SHOP IS CHANGING: DEPARTMENT LOSING TO BIG BOX, EVERYONE MOVING TO E-COMMERCE

YOY GROWTH: E-COMMERCE, 15% | ALL STORES, 3.4% | BIG BOX, 3.6% | DEPARTMENT STORES, -2.8%



## SALES METRICS FOR GOODS DELIVERED BY FIRMS USING INTERNET VERSUS TRADITIONAL DISTRIBUTION CHANNELS

Store	GP/worker(US) <sup>1</sup>	GP/sqft <sup>2</sup>	Internet Revenue % <sup>3</sup>
Amazon (US)	\$121,000	\$298	91%
Walmart (US)	\$62,000	\$226	4%
Macy's	\$75,000	\$72	21%
Publix	\$48,000	\$157	0%
Best Buy	\$79,000	\$192	18%
Land's End	\$119,000	\$503	89%

1. Gross Profit = Revenue - COG, annual 10k. U.S. operations only.
2. Annual 10k. U.S. operations, store + distribution space.
3. Share of gross profits earned from internet sales, 10k, 2016.

## EVENTUAL SPACE TRANSITIONS

### MOVE \$1M IN SALES FROM MACY'S OVER TO AMAZON AND...

Store space demand drops by 14,000 sq. ft., and warehouse space demand rises by 3,400 sq. ft.

### MORE GENERALLY: MOVE \$1M OF SALES FROM A BROAD RANGE OF STORES OVER TO AN INTERNET PLATFORM AND...

Store space demand drops by 2,000 sq. ft., and warehouse space demand rises by 1,300 sq. ft. (regression model, 122 firms).

WHEN WE MOVE FROM A WORLD OF ACTUAL STORES WHERE PEOPLE SHOP IN PERSON, TO ONE OF VIRTUAL STORES WHOSE GOODS ARE DELIVERED, AGGREGATE SPACE DEMAND SHRINKS.

# INDUSTRIAL AUTOMATION

- Robots are made by a number of companies internationally
- IFR tracks when and where each robot is sold and installed since 1990
- Industrial robots concentrated in selected areas/industries: auto, electronics, chemicals, plastics
- With IFR data can estimate the growth in robots per worker in each U.S. MSA since 1990 through 2007



## STATISTICAL ANALYSIS:

### HOW ROBOT “ADOPTION” IMPACTS A LOCAL INDUSTRIAL SPACE MARKET

#### REGRESSION MODEL RESULTS ACROSS 44 MSAs:

An increase of 2 robots per worker over 1990-2007...

1. Reduces cumulative growth in occupied space by 18% over the period—from 33% to 15%.
2. Decreases cumulative growth in constant-dollar industrial rents by 23% over the period—from -4% to -27%.

AUTOMATION IS AS BAD FOR INDUSTRIAL SPACE DEMAND  
AS IT IS FOR LABOR DEMAND!

## WORKING FROM HOME IS INCREASINGLY COMMON

CAN FLEXIBLE, REMOTE COWORKING SPACE PROVIDE A COMMERCIAL ALTERNATIVE THAT WILL FURTHER REDUCE OFFICE SPACE PER WORKER?

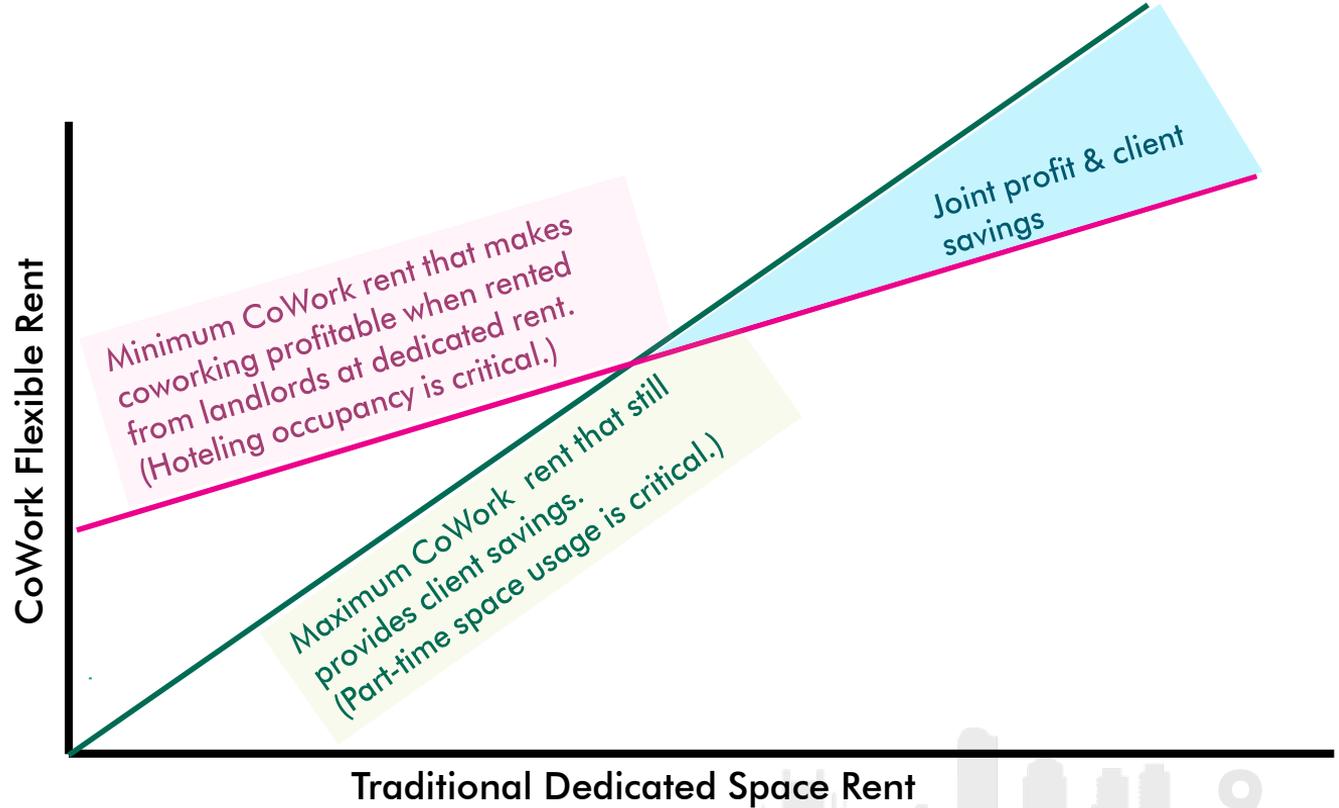
	1991	1997	2004	2015
Work some or all at home	19,967	21,478	26,265	33,970
Paid	7,432	10,116	11,958	NA
35 hours or more	1,070	1,791	1,852	NA
Full-time, not self-employed	94	583	611	NA
At home / total employed	18.50	17.40	19.80	23.80

Source: Bureau of Labor Statistics.

# COWORKING PRICING MODEL: FLEXIBLE RENT VS. TRADITIONAL

## PART-TIME CO-WORKING SPACE RENT MUST PROVIDE:

- Client savings with equal worker productivity
- High enough hotel-type occupancy for profitability



So the jury is still out...

Where do we go from here?



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**THANK YOU**

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