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Shaping Spaces: Mega-trends Influencing the Future of Real Estate

Sabrina Unger
Managing Director,
Head of Research and Strategy
American Realty Advisors
New York, NY

AMERICAN REALTY ADVISORS
INSTITUTIONAL CAPITAL MANAGEMENT

What impacts the real estate market?

GDP growth
Inflation
Interest rates
Policy
People
Technology

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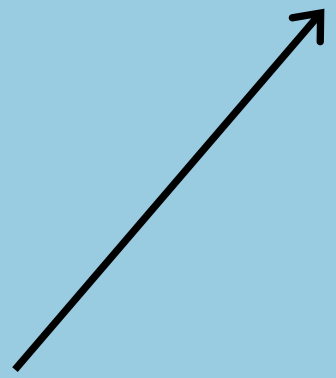
Growth vs. Change

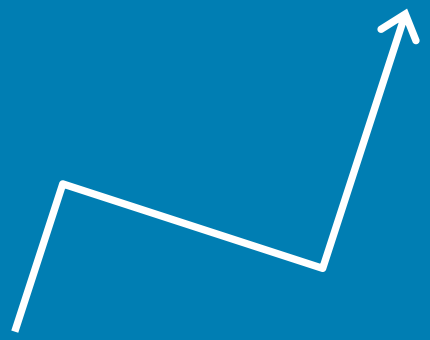
Growth

Growth keeps us on a predictable path.



Change

Change creates disruption and opens opportunities for something new.



ARA Identified Change Agents

Sociodemographic	Technology
Aging Population	E-Commerce
Labor Force Shift	Work from Home
Income Inequality	Big Data / AI
Migration / Immigration	Infrastructure

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Remember the acronym

M A M A

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Remember the acronym

M

Movement

A

M

A

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Remember the acronym

M Movement

A Aging

M

A

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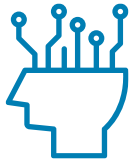
Remember the acronym

M Movement

A Aging

M Machines



A

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Remember the acronym

M Movement

A Aging

M Machines

A Automation

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Movement

Impacts from migration and immigration.

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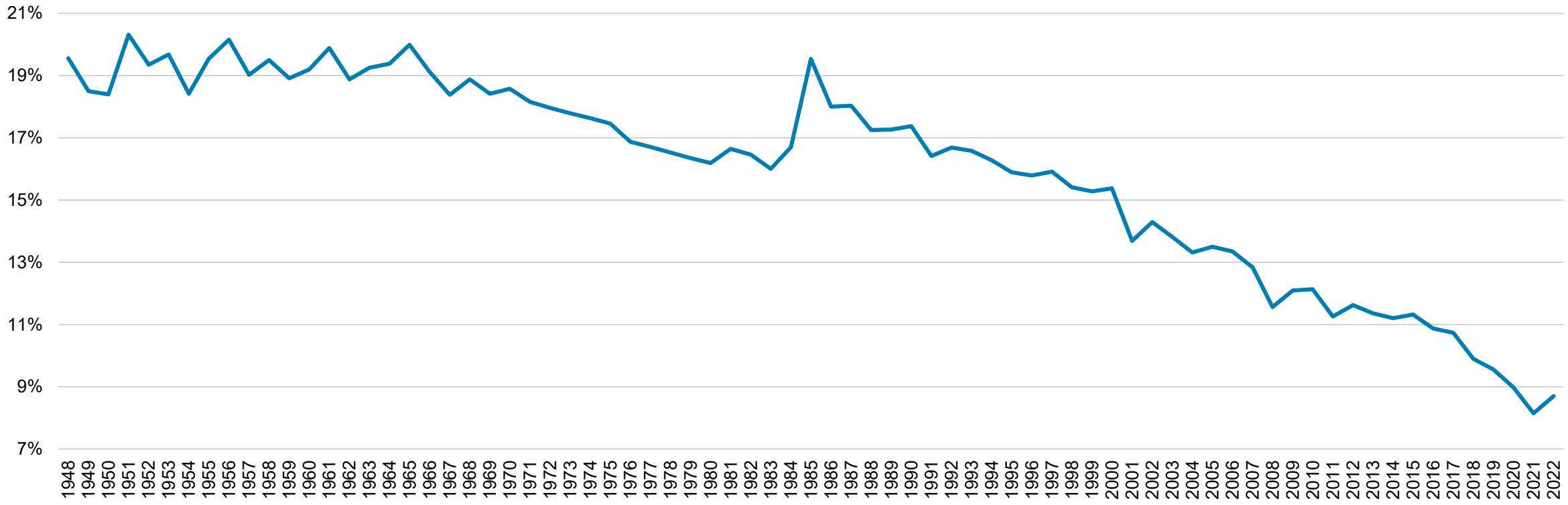
Long-Term Fall in U.S. Population Mobility

Annual Migration Rates, 1948 – 2022



Source: American Realty Advisors based on data from Macrobond and the U.S. Census Bureau Population Survey as of July 2023.

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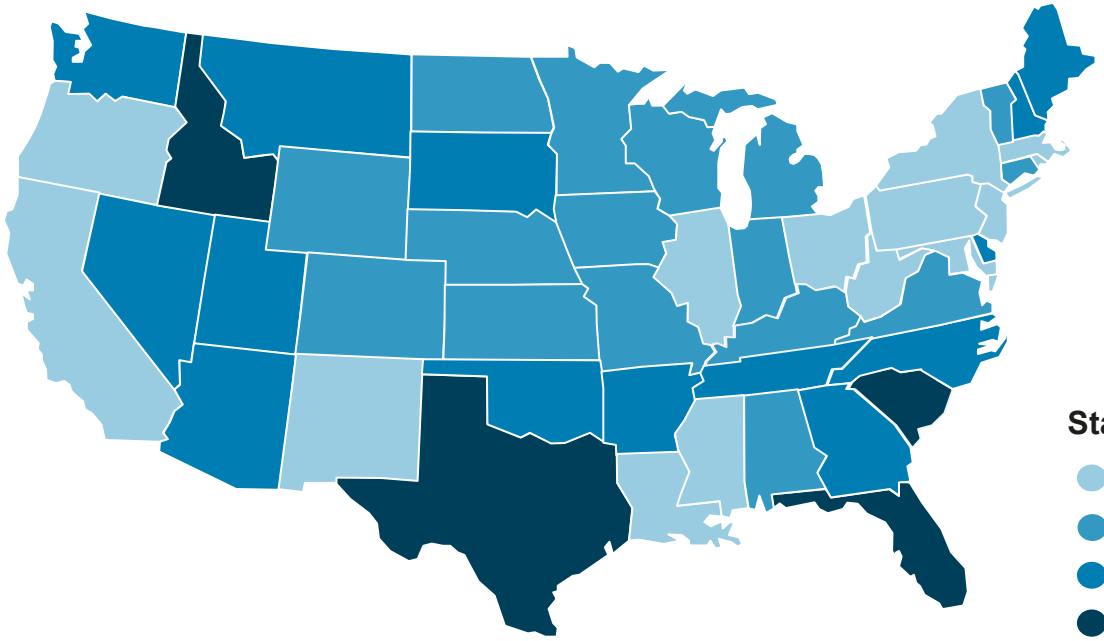
Where Are We Going?

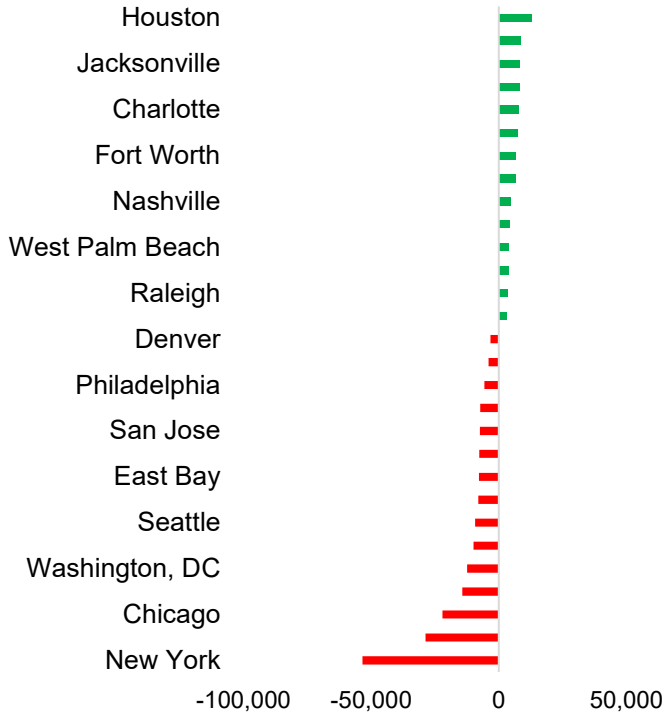
State Migration Patterns, 2022



State Population Change in 2022:

- < 0.0%
- 0.0% - 0.5%
- 0.6% - 1.5%
- > 1.5%

Total Net Moves, 2022



Source: American Realty Advisors based on data from Tax Foundation, the U.S. Census Bureau and John Burns Real Estate Consulting as of July 2023.

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Why Do We Move?

1

Employment Related

2

Housing or Family Related

3

Climate Related

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Real Estate Implications of Movement

Fewer relative young people means fewer movers every year.

Climate-related moves (either elective or forced) may change most optimal locations.

Areas where housing affordability, job opportunities and good weather converge will benefit.

High-tax, high-cost metros will need to dramatically reinvent policy to survive.

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Aging

Impacts from an increasingly older society.

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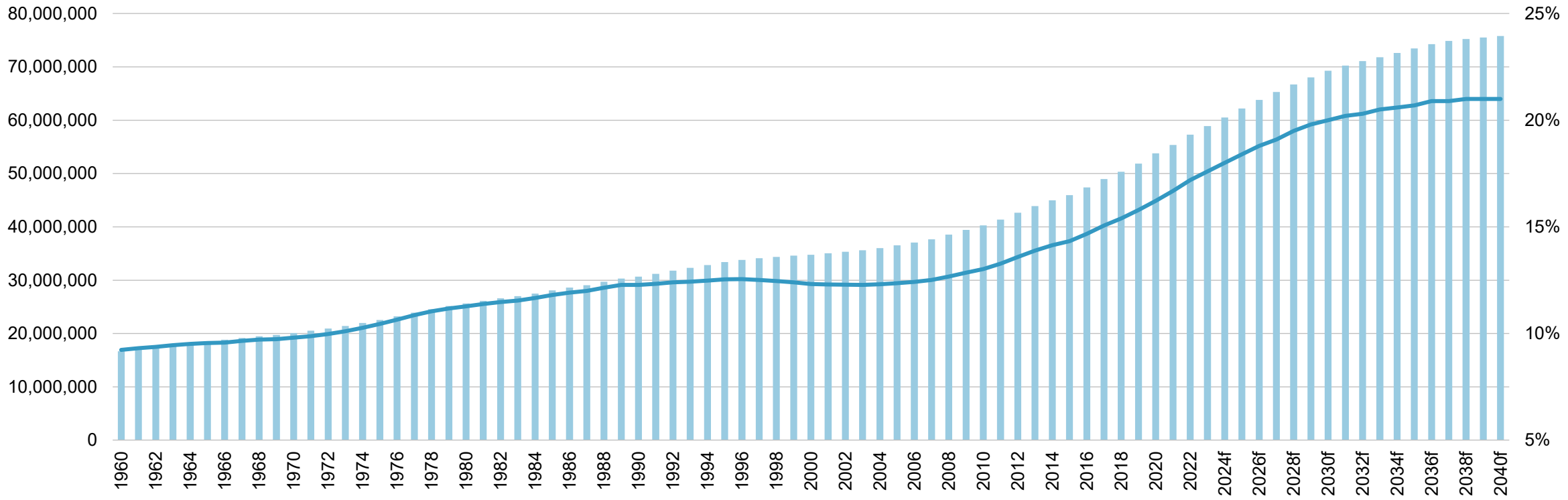
Silver Tsunami

Number and Percentage of US Population 65 & Older, 1980-2040f



Source: American Realty Advisors based on data from The World Bank and Oxford Economics as of July 2023. f=forecast

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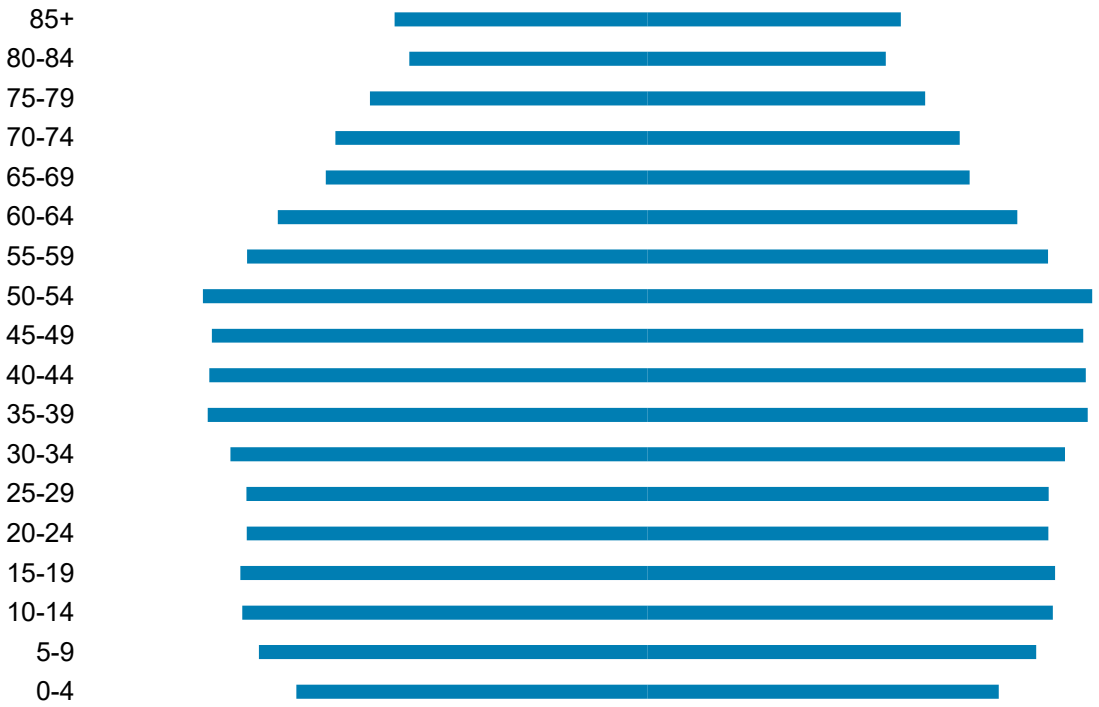
U.S. Demographic Structure

United States Population by Age, 1980

United States Population by Age, 2043f



Source: American Realty Advisors based on data from Oxford Economics as of June 2023. f=forecast

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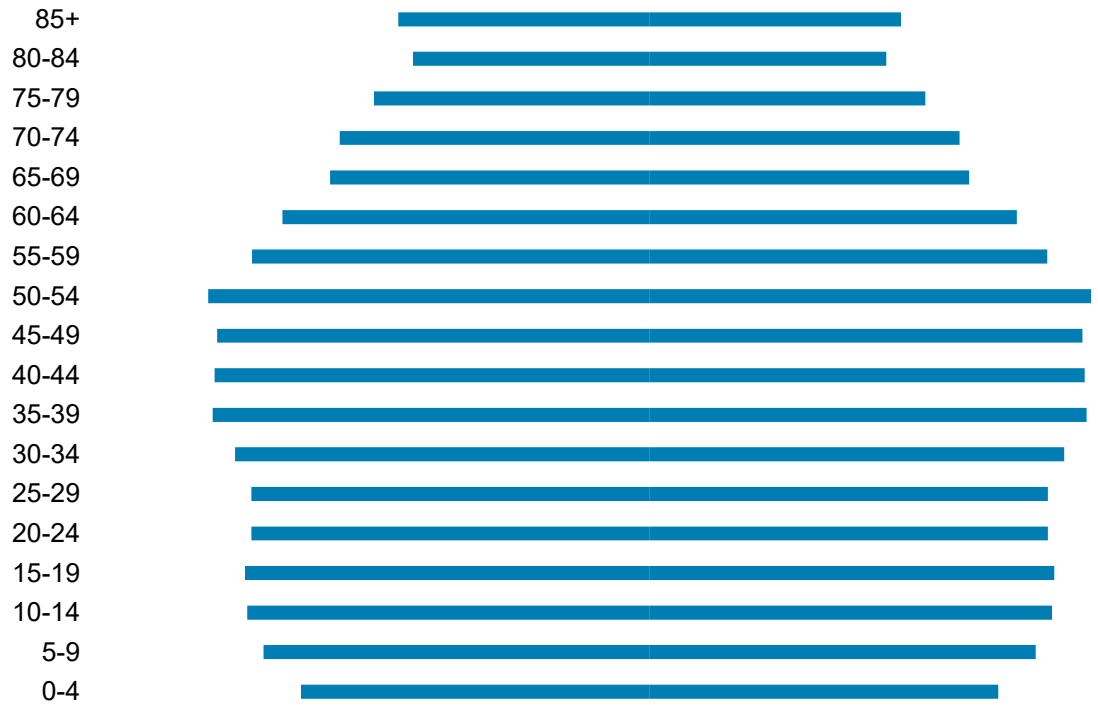
From Pyramid to Pillar

United States Population by Age, 2043f



Source: American Realty Advisors based on data from Oxford Economics as of June 2023. f=forecast

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What Does An Aging Population Suggest About Potential For Economic Growth?

1

Labor force shrinks

2

Productivity growth slows

3

Greater demands on gov't spending but less overall consumption

Lower GDP Growth

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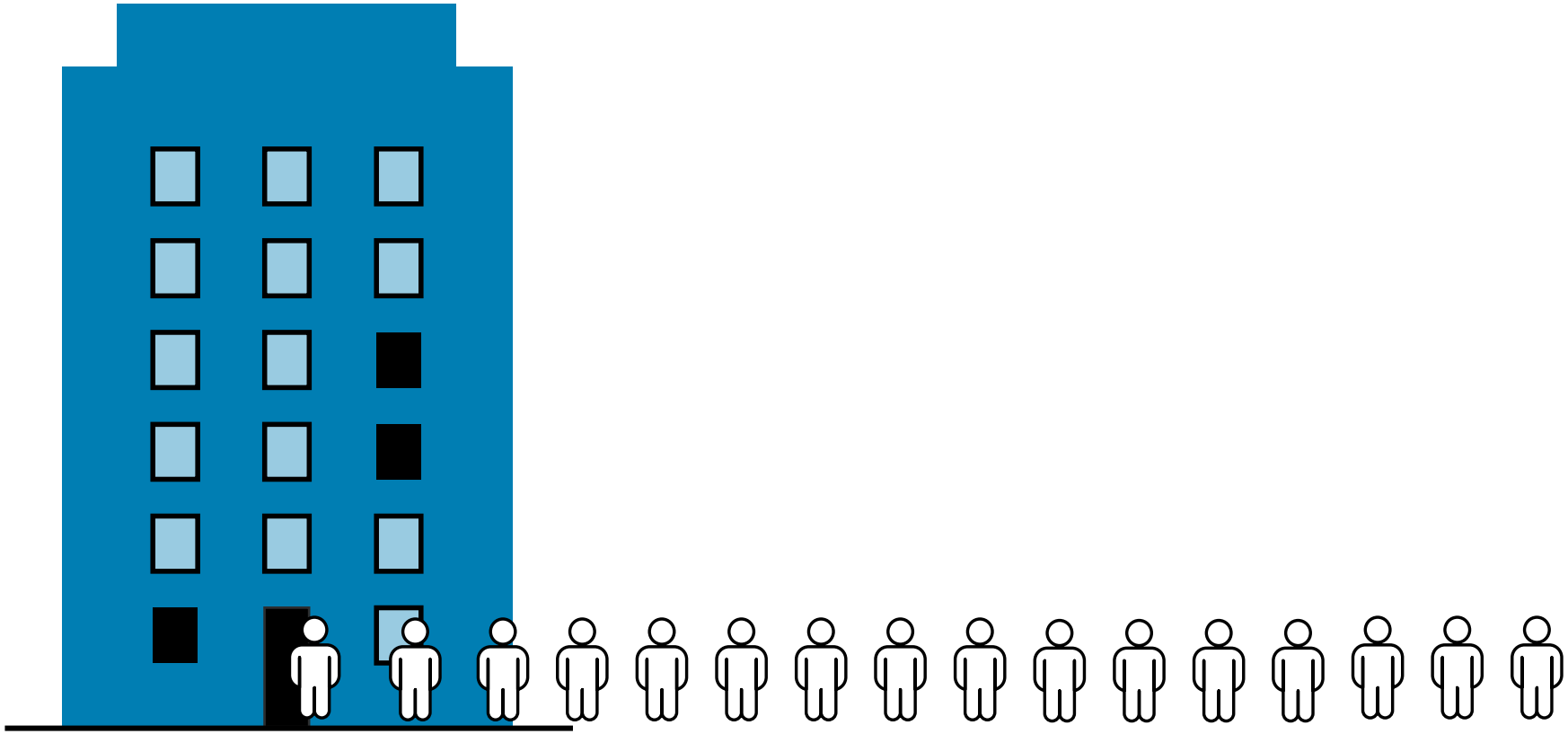
Office Demand Impact Played Out



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Office Demand Impact Played Out

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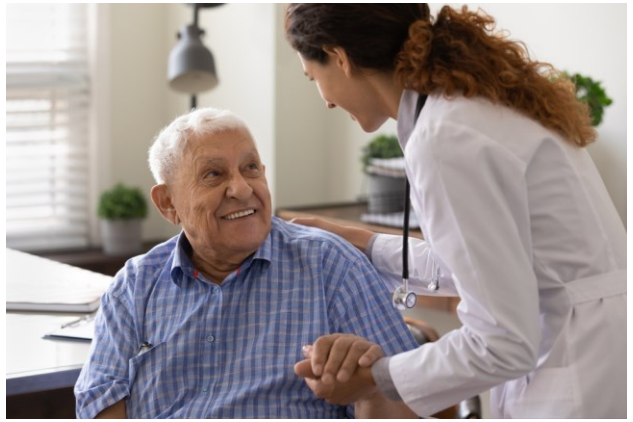
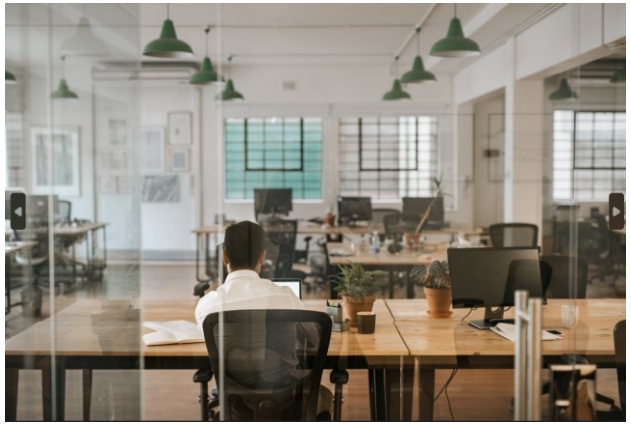
Real Estate Implications of Aging

A top-heavy demographic structure leaves growth prospects challenged.



People spend less as they age – the one exception is healthcare, which should benefit life sciences.



Fewer workers means fewer office users, perpetuating today's WFH headwinds.

Spaces that accommodate multi-generational living may become increasingly in demand.

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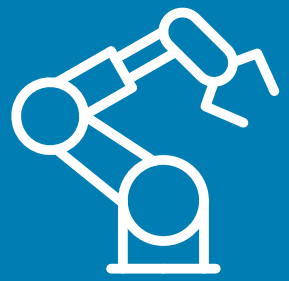
Machines



Impacts from technologies like robotics and drones.

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My Friendly Robot

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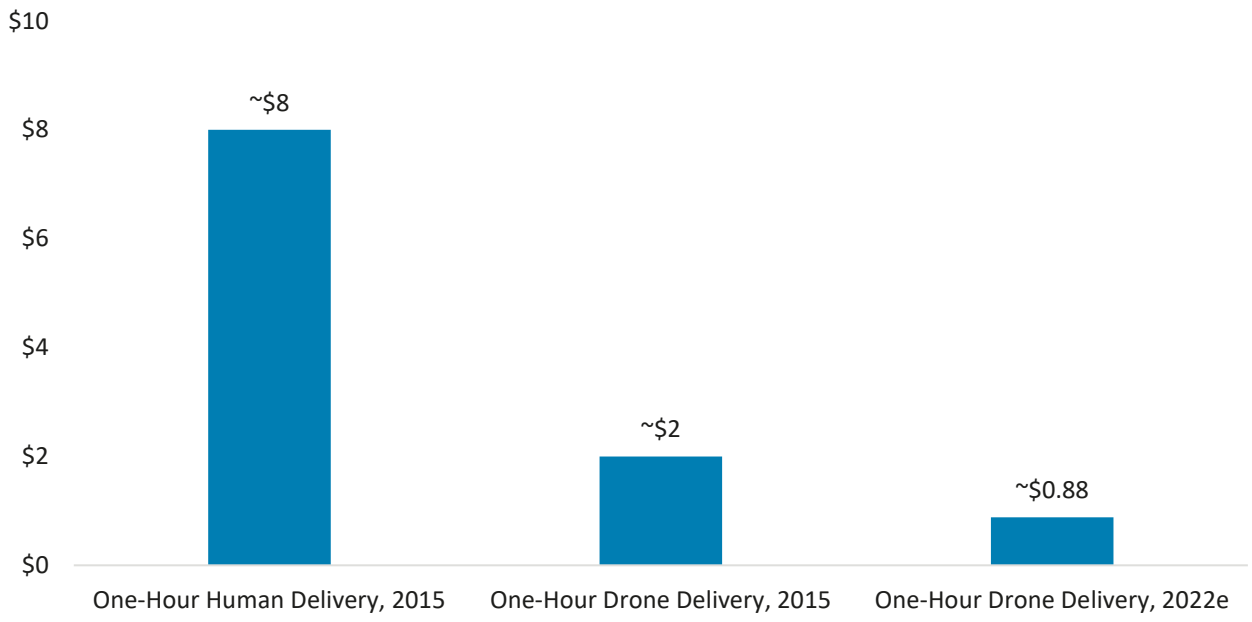
Drone Delivery Already Costs Less Than Humans 8 Years Ago…and Labor Isn't Getting Cheaper!

One-Hour Delivery Cost Per Package by Delivery Means 2015 and 2022e



Source: American Realty Advisors based on data from Bain Macro Trends Group analysis and Ark Invest. e=estimate

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Changes in How We Transport Goods Changes Building Needs

Maybe less of this…

Source: American Realty Advisors based on data from Amazon, Walmart patent filings.

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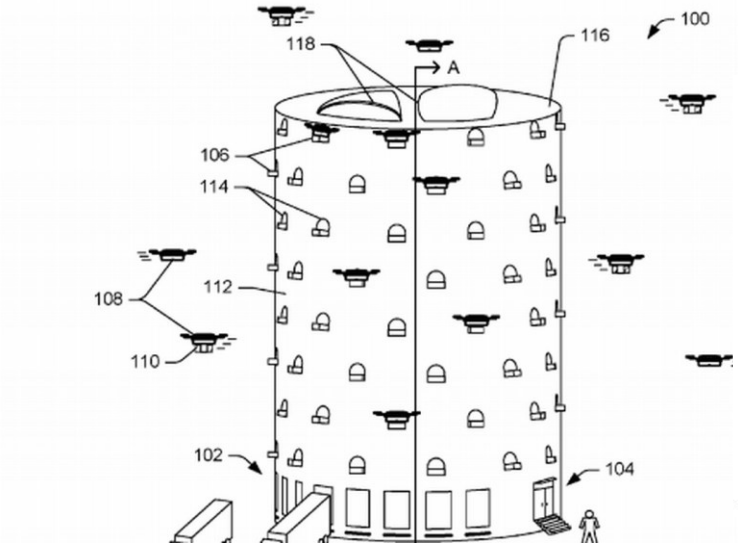
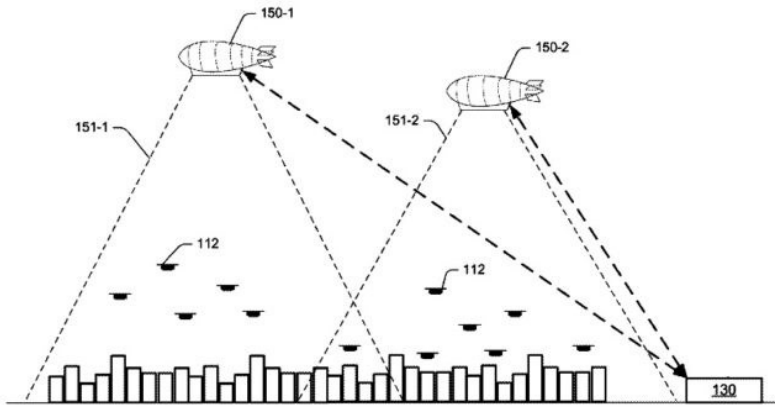
Changes in How We Transport Goods Changes Building Needs

…and more of this.





Source: American Realty Advisors based on data from Amazon, Walmart patent filings.

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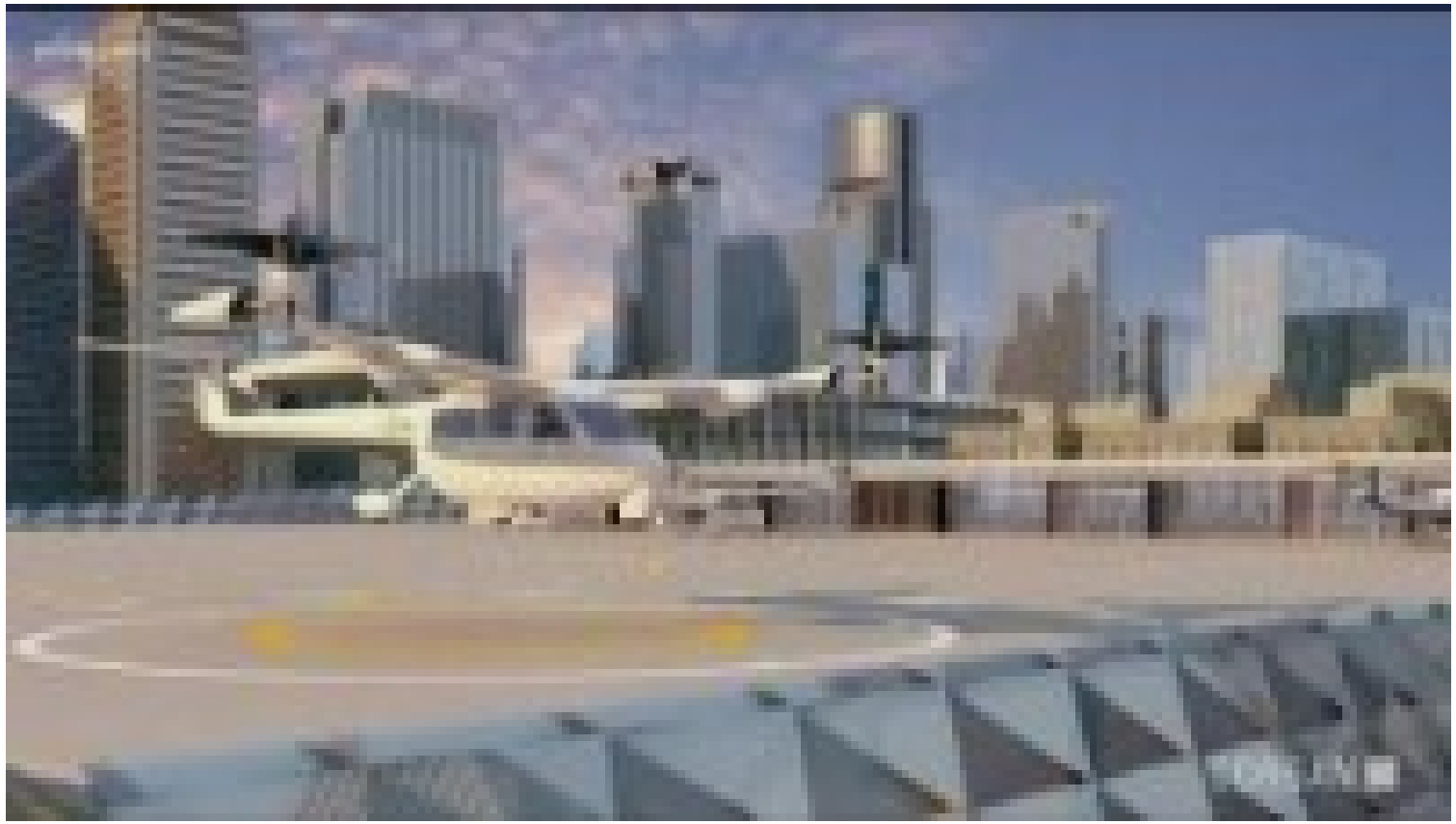
Move Over, Jetsons! Unmanned Air Taxis Coming Soon* To a Texas Metro Near You!



Source: WFAA

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Your E-Commerce Order, Printed Onsite.

From this…

Source: American Realty Advisors

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Your E-Commerce Order, Printed Onsite.

…to this.

Source: American Realty Advisors

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Real Estate Implications of Machines

Ability to create products “on demand” may soften warehouse occupancy.

Delivery drones may make infill industrial even more critical to distributors.

Autonomous Trucks (AT) could change big-box distribution site selection criteria.

Improvements in robotics could reduce labor challenges in tight markets.

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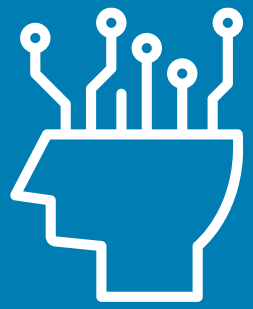
Automation



Impacts from
Artificial Intelligence (AI)
and machine learning.

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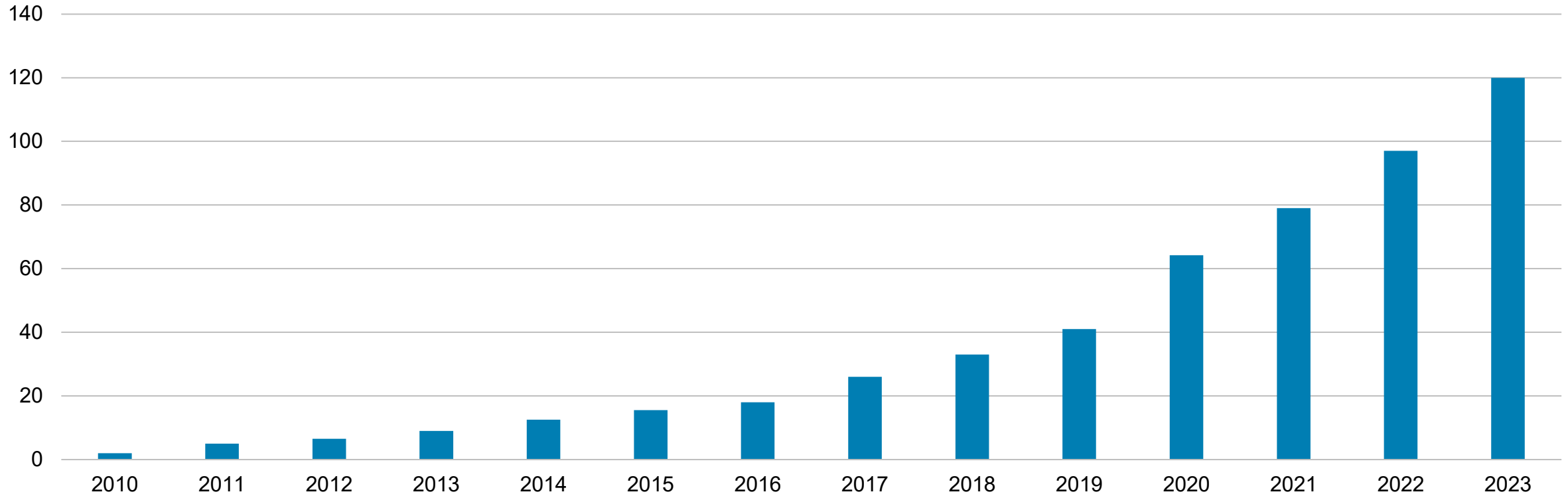
The Sheer Amount of Data being Created Every Day is Growing Exponentially…

Zettabytes of Data Generated Each Year, 2010 – 2023



Source: American Realty Advisors based on data from Statista and Bernard Marr & Co. as of April 2023. Data for 2018 through 2023 is estimated.

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4EB
of data generated by video conferencing each month

500 million
Tweets sent every day

347.3 bn
emails are sent in one day

100x
5G networks can elevate data transmission speed by up to 100x; the average 5G customer uses more than twice the amount of data a typical 4G user consumes

10 EB
of data produced by a connected car per month

…Being Driven By Greater and Greater Connectivity.

335 PB
of data generated from wearable devices per month

10 million
queries are posed to ChatGPT per day

13.1 EB
of data produced by smartphones worldwide per day

4PB
of data created by Facebook, including 350M photos & 100M hours of video watch time

87.5x
By 2025 it is expected that there will be 87.5 times more bytes in the digital universe than there are stars in the observable universe

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PS. What's a Zettabyte?

Abbreviation	Unit	Value	Size (in bytes)
b	bit	0 or 1	1/8th
B	byte	8 bits	1
KB	kilobyte	1,000 bytes	1,000
MB	megabyte	$1{,}000^2$ bytes	1,000,000
GB	gigabyte	$1{,}000^3$ bytes	1,000,000,000
TB	terabyte	$1{,}000^4$ bytes	1,000,000,000,000
PB	petabyte	$1{,}000^5$ bytes	1,00,000,000,000,000
EB	exabyte	$1{,}000^6$ bytes	1,000,000,000,000,000,000
ZB	**zettabyte**	**$1{,}000^7$ bytes**	**1,000,000,000,000,000,000,000**
YB	yottabyte	$1{,}000^8$ bytes	1,000,000,000,000,000,000,000,000

You are here.

Source: American Realty Advisors based on data from Statista as of July 2023.

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Levels of Driving Automation

Level 0 – No Automation
Manual control, human performs all driving tasks

Level 1 – Driver Assistance
Vehicle features a single automated system, cruise control

Level 2 – Partial Automation
Vehicle features a single automated system, cruise control

Level 3 – Conditional Automation
Vehicle performs most driving tasks, but human override still required, environmental detection capabilities

Level 4 – High Automation
Vehicle performs all driving tasks under specific conditions, but human override still an option, geofencing required

Level 5 – Full Automation
Vehicle performs all driving tasks under all conditions, No human attention or interaction is required

Source: American Realty Advisors based on data from Synopsys as of July 2023

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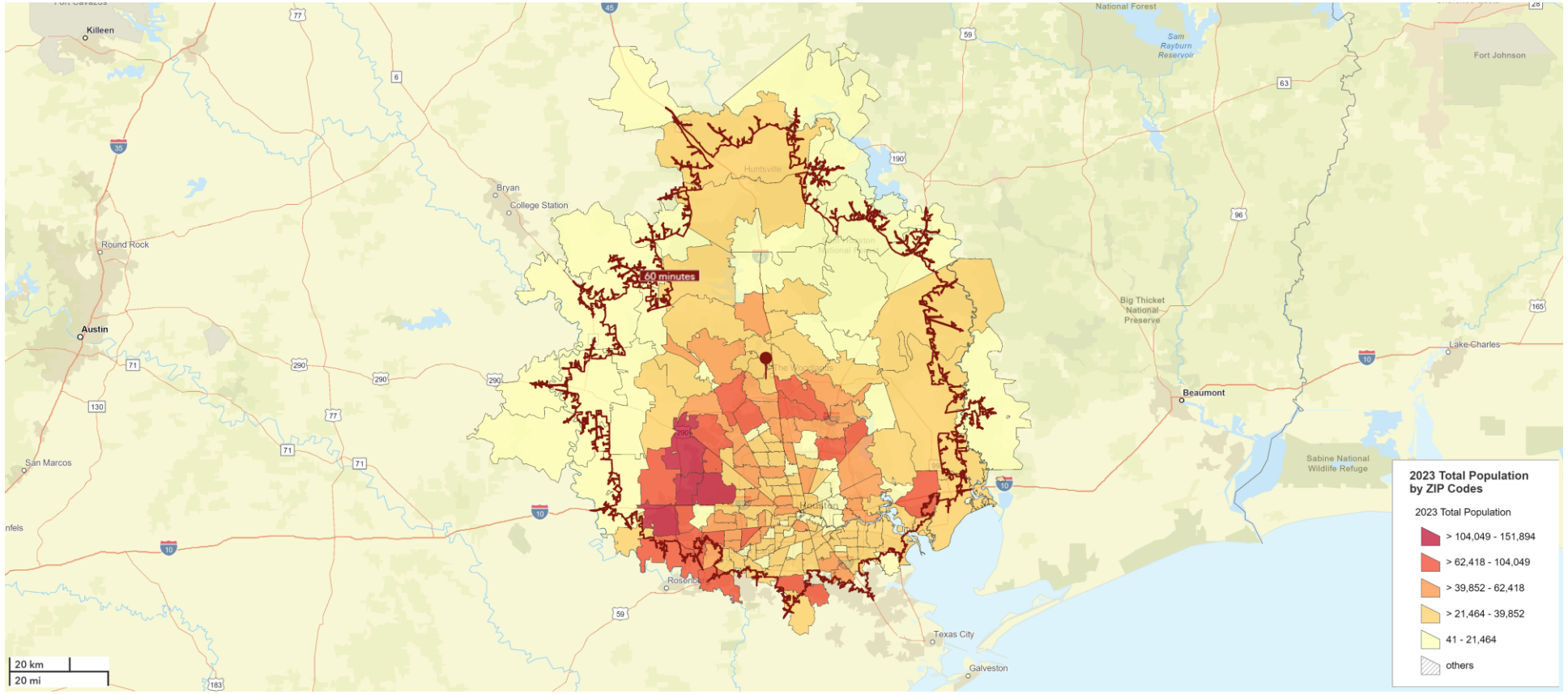
The New Commute?



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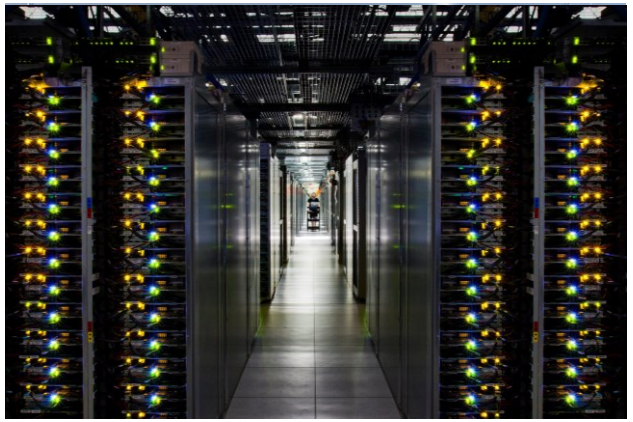
Real Estate Implications of Automation



Amount of data being created and stored increasing exponentially.

Smart buildings can use AI to manage operations more efficiently, saving money on expenses.

AI could automate many administrative tasks, reducing corresponding office demand from outsourced jobs.

Autonomous vehicles could change where we live and where we park our vehicles in cities.

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How and Where Should We Invest Based on These Factors Today for Tomorrow's World?

Movement

- Markets that offer lower cost of living + ample job opportunities (Sun Belt).
- Larger residential units that accommodate renters for longer and potential for multi-generational living (single-family rentals)

Aging

- Life sciences facilities that service high-growth medical research and treatment.
- Reduce exposure to office sector as WFH headwinds get exacerbated by fewer workers/lower growth.

Machines

- Infill industrial that services critical last mile.
- Diversified warehouse exposure (not solely big-box facilities).

Automation

- Data centers in critical infrastructure hubs (Northern Virginia).
- Suburban residential assets in quality school districts where commute time may become less of a factor.

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Key Takeaways

Sociodemographic and technological changes are poised to create structural shifts in occupier demand (risk and opportunity).

Being on the right side of mega-trends requires a view on

- The likelihood of and potential deterrents of adoption and
- The timeline to critical mass ("We tend to overestimate the effect of technology in the short run and underestimate the effect in the long run.")

Institutional real estate is a long-term investment: Think decades, not days.

These future forces may not impact the asset today, but they may be a factor for the next buyer.

Ask your managers

- "What is our portfolio exposure to industries most vulnerable to disruption from AI?"
- "What investments, if any, should we be making to capture demand from an aging society?"
- "How are you mitigating against value erosion for assets in markets with a shrinking population?"
- "How are we positioning our strategy to take advantage of the technological disruptions occurring today?"

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