The Implications of COVID Economics for Commercial Real Estate

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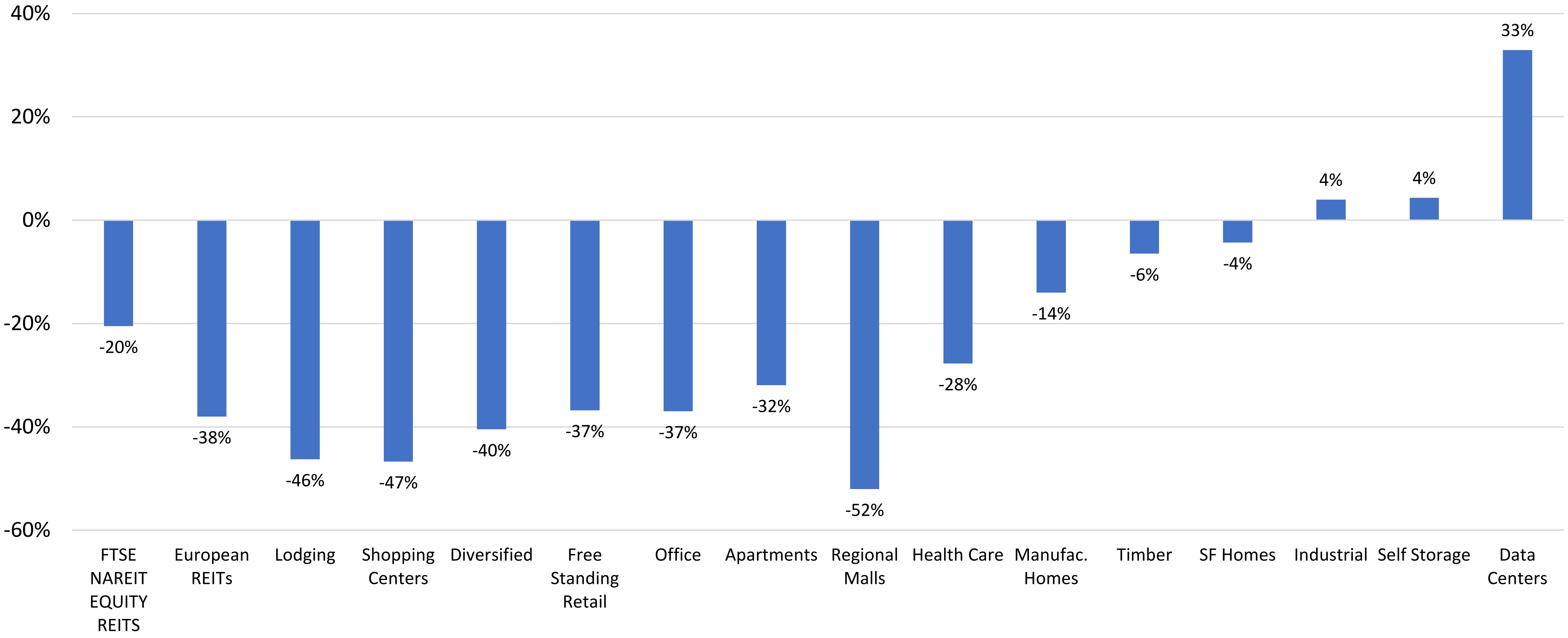
Agenda

1. Recent real estate trends – just the facts
2. The economics of COVID – short-term implications
3. The economics of COVID – long-term implications
4. Valuing CRE with the COVID shock

Listed real estate price declines: Jan. 30, 2020 – Oct. 31, 2020

Source: NAREIT, EPRA, and my calculations



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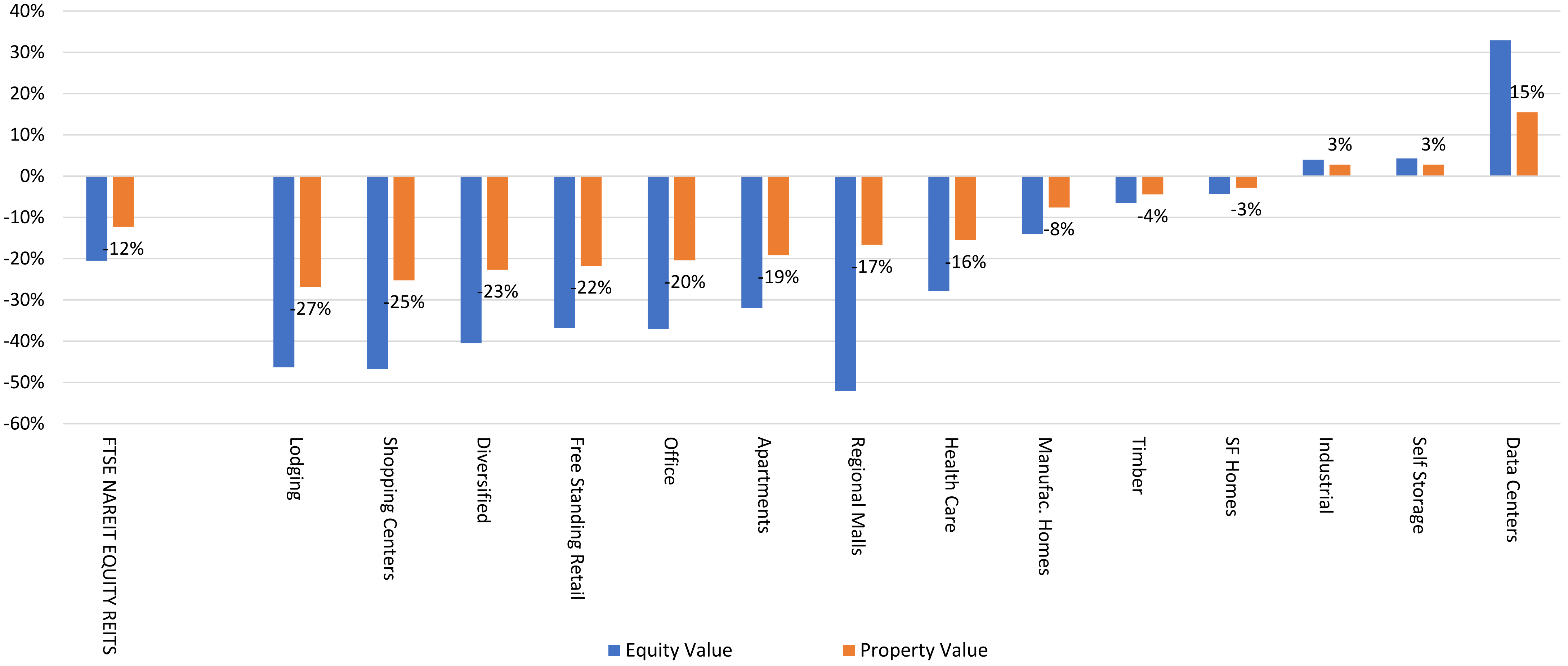
Implied Property Values

Assumes 40% leverage for all equity REITs, property-type leverage ratios based on 2018 FY Compustat



European transaction volume down

Source: Real Capital Analytics

	Q3'20 Volume		YTD'20 Volume	
	€b	YOY	€b	YOY
Office	15.5	-51%	64.1	-26%
Industrial	7.4	-9%	23.5	1%
Retail	6.7	-40%	23.1	-15%
All Commercial	29.6	-42%	110.7	-19%
Hotel	1.9	-67%	7.5	-56%
Apartment	7.9	-48%	39.5	-6%
Seniors Housing & Care	1.4	-41%	4.3	-27%
Dev Site	3.6	11%	10.3	-1%
Grand Total	**44.4**	**-43%**	**172.3**	**-19%**

The Economics of COVID: Short-term
COVID was a negative shock to productivity

- **Coronavirus decreased our productive capacity short-term**
- Social distancing makes both physical capital and labor less productive= shock to total factor productivity
- When working together at a central we went from

$$Y = A^{precovid} F(K, L)$$

to

$$Y = A^{covid} F(K, L)$$

where $\boldsymbol{A^{covid}}$**<<** $\boldsymbol{A^{precovid}}$

- **Hardest hit property sectors are those dependent on face-to-face interactions**

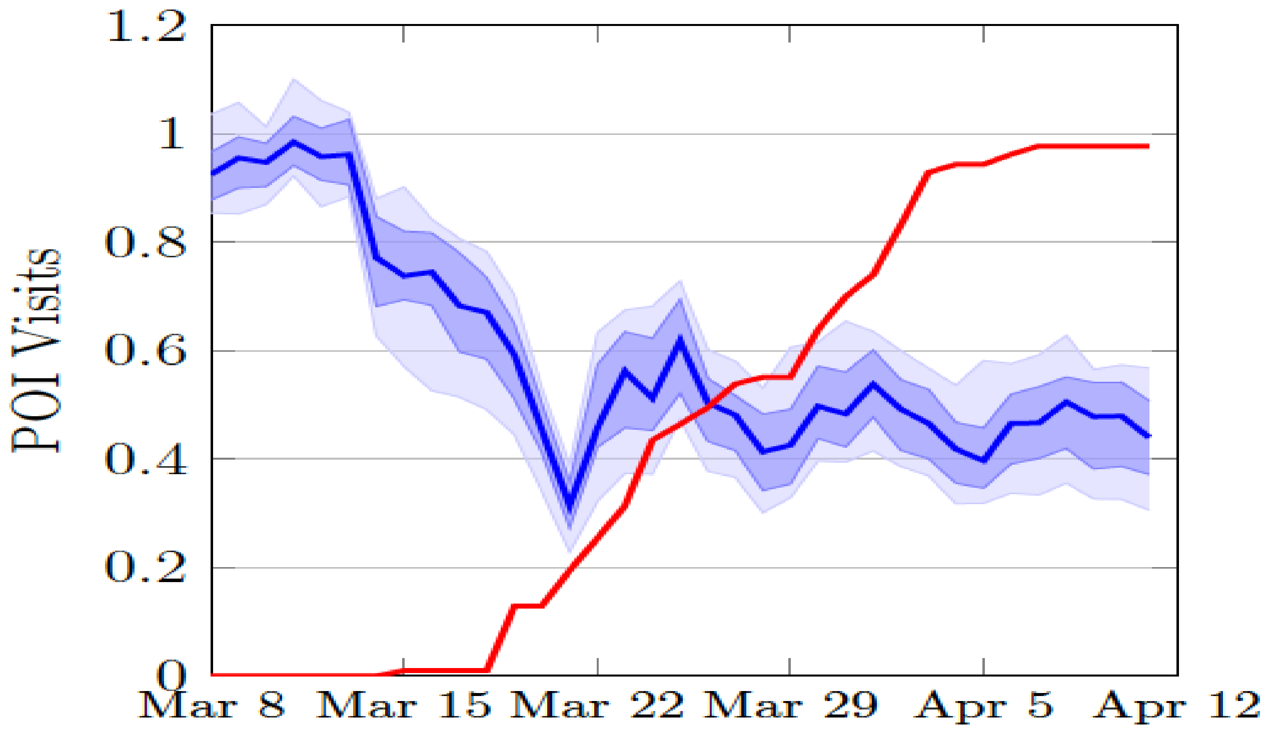
- **Hardest hit cities are those reliant on public transportation and with lots of low-skilled workers**

The Economics of COVID: Short-term

Lockdowns are not the only problem

People sharply reduced consumption before stay-at-home mandates

- Red line is share of US population under “stay-at-home” mandate
- Blue lines are visits to businesses (POIs from SafeGraph)



Source: Farboodi, Jarosch, and Shimer (2020)

The Economics of COVID: Short-term

Business response

How do businesses respond to going from

$$Y = A^{precovid}F(K, L) \text{ to } Y = A^{covid}F(K, L) \text{ ?}$$

1. Work from home! Productivity working from home unaffected by COVID
   - Given how low A^{covid} is, makes sense to invest in learning technology to make work from home more productive
   - More discussion soon on how productive working from home is relative to office

2. Retail: adopt technology to minimize interactions between customers and service providers
   - Accelerates existing trends in retail
   - Note that older people, most vulnerable to COVID, were last holdouts in adopting technology and COVID forced them to

The Economics of COVID: Short-term

Implications by property type

- The good: Housing, especially higher-end
  - Most people that can work from home have college degrees
  - But NAREIT data indicates apartment properties down by 19%...

- The good: Logistics/Industrial
  - Instead of shopping in-store, people shop online and stuff gets delivered from warehouses

The Economics of COVID: Short-term

Implications by property type

- The bad: Office
  - Only reason it's not worse because so many long-term leases
  - True occupancy is extremely low, especially in dense cities dependent on public transportation
  - Many tenants can weather short-term cash flow problems unlike retail
- The bad: Retail
  - Without customers, hard for tenants to pay rent…
  - Mom and pop shops, especially restaurants with thin margins to start with, unlikely to be able to keep paying rent without sales
- The bad: Senior Housing
  - People hesitant to put parents in care right now

The Economics of COVID: Short-term

Implications by property type

- The ugly: Lodging/Hospitality
    - No conference travel
    - Big drop in overall business travel
    - Always cyclical

The Economics of COVID: Long-term

Permanent Effects of Work from Home

- By the time of vaccine dissemination, working from home is much more productive for knowledge workers
  - Not a perfect substitute for working at the office due to knowledge spillovers

- How substitutable work from home is with work at office is open question…

- **Primarily a change for skilled workers**
  - My landscaper and cleaning lady cannot work from home

WSJ Sept. 2020: What CEOs Really Think of Remote Work

The Bulls

"We have adapted to work-from-home unbelievably well. I had a philosophy that I want to hire the best and the brightest even if they work from a different location, and now, ironically, we're all working from another location. We've learned that we can work remote, and we can now hire and manage a company remotely."

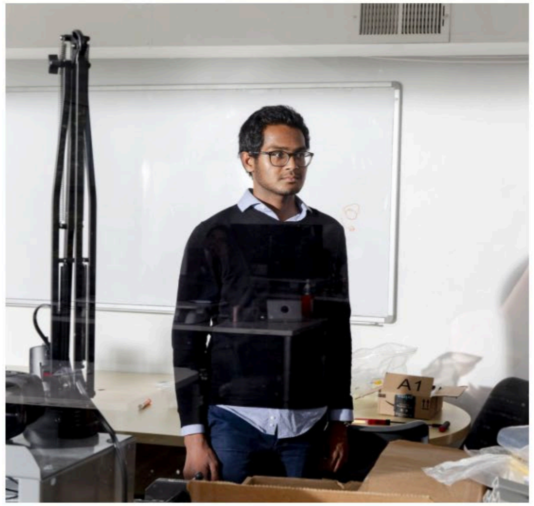
—*Heyward Donigan*, chief executive of Rite Aid Corp., on managing remotely

"The supply and demand for office space may change significantly. A lot of people have learned that they can work at home, or that there's other methods of conducting their business than they might have thought from what they were doing a couple of years ago. When change happens in the world, you adjust to it."

—*Warren Buffett*, chairman and CEO of Berkshire Hathaway Inc., speaking at the company's annual meeting in May

WSJ Sept. 2020: What CEOs Really Think of Remote Work

The Bears



"We tried it…It's just not the same. You just cannot get the same quality of work."

–*Rajat Bhageria*, CEO of robotics startup Chef Robotics, on what the company learned in attempting to work remotely

"What I worry about the most is innovation. Innovation is hard to schedule —it's impossible to schedule."

— *Ellen Kullman*, CEO of 3-D printing startup Carbon Inc., on her concerns about remote work

Reed Hastings

"I don't see any positives. Not being able to get together in person, particularly internationally, is a pure negative."

—*Reed Hastings*, co-chief executive of Netflix Inc., on working from home

WSJ Sept. 2020: What CEOs Really Think of Remote Work
The Moderates

"I don't believe BlackRock will be ever 100% back in office. I actually believe maybe 60% or 70%, and maybe that's a rotation of people, but I don't believe we'll ever have a full cadre of people in [the] office."

—*Larry Fink*, CEO of BlackRock Inc., speaking at the digital Morningstar Investment Conference on Sept. 17

"It's a much harder way to work for anything that requires a personal relationship. And as a consequence, I think we're going to find that we maybe not go back to 100% in the office all the time. Because remote work clearly works for many things, but I think we're going to find that being together delivers value in productivity and creativity and relationships that is irreplaceable."

—*Arne Sorenson*, CEO of Marriott International

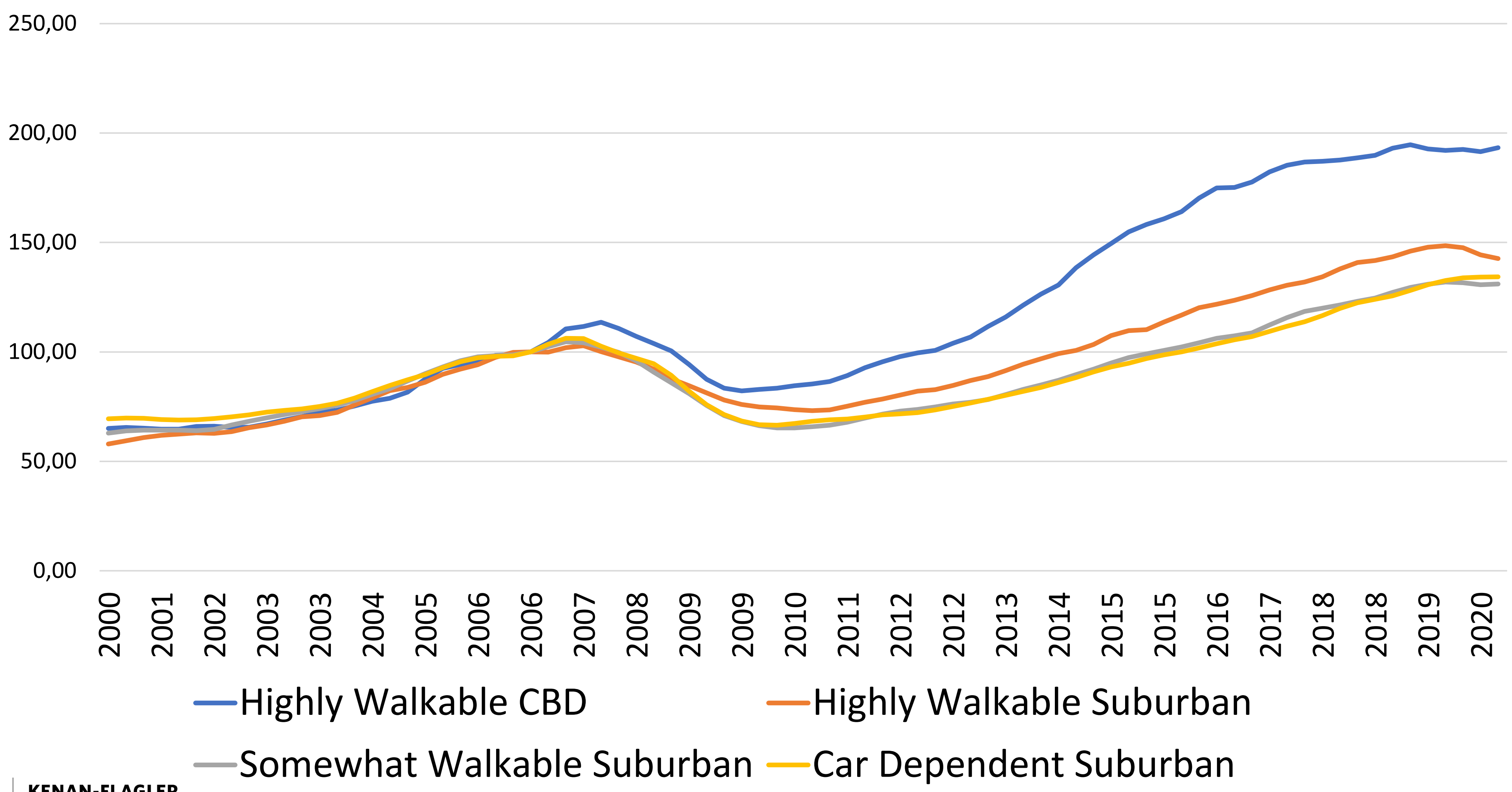
The Economics of COVID: Long-term

Implications of more work from home

- If workers only go into the office 2-3 times per week, may choose to live further from Central Business District (CBD) since commute is less costly
- Especially easy to work from home for cognitive routine workers (e.g., tax preparers, simple legal work, etc…)
- Not good news for city centers if skilled workers may move out
  - Implications for public finance for cities as highest-income workers leave
- Good for suburban office?
  - Recreate some of those knowledge spillovers in WeWork in the suburb?
  - No kids or spouse at the office in the suburb!
  - Economies of scale in office

Limits on Flight to Suburbs: Repeat Transaction Commercial Property Prices

Source: Real Capital Analytics (RCA) Walk-Score / CPPI Indices



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Limits on flight to suburbs

- Why have CBD and walkable suburban done well?

- Density is good for knowledge spillovers!
  - Technology is a complement, not a substitute for face-to-face since technology allows the scaling of innovation

- Density is critical for consumption amenities (variety of nice restaurants, shops, greenways, yoga studios, etc…)
  - Knowledge workers are very willing to pay for consumption amenities

The Economics of COVID: **Long**-term

Implications by property type

- Residential: More demand since need space at home
- Retail: Long-term negative shock that accelerates pre-existing trends
- Industrial/Logistics: Long-term positive shock that accelerates pre-existing trends
- Office:
  - CBD: probably some softening
  - Suburban: probably some increased demand
- Lodging/Hospitality: Minimal long-term impact? Very hard to forge new relationships critical to winning business over Zoom

Valuing CRE with the COVID shock

- Current REIT pricing trends indicate falls of 27% in hospitality… What type of CF shocks does this assume?
- Consider hypothetical hotel valuation… Assume steady-state growth of 3% in Net Operating Income (NOI), a discount rate of 8%
- Even assuming an exit cap of 10% and that NOI does not recover to 2019 levels until 2023, very hard to get to -27%

Valuing CRE with the COVID shock

Assumptions (conservative):							
Discount rate	8%						
Rent growth in steady state	3%						
Exit cap	10%						
YEAR	2019	2020	2021	2022	2023	2024	2025
Pre-COVID:							
NOI	€ 100	€ 103	€ 106	€ 109	€ 113	€ 116	€ 119
Terminal value						€ 1,194.05	
Total CFs	€ 100	€ 103	€ 106	€ 109	€ 113	€ 1,310	
PV:	**€ 1,248**						
Post-COVID:							
Rent as fraction of 2019	100%	50%	75%	90%	100%	103%	106%
NOI	€ 100	€ 50	€ 75	€ 90	€ 100	€ 103	€ 106
Terminal value						€ 1,060	
Total CFS	€ 100	€ 50	€ 75	€ 90	€ 100	€ 1,163	
PV:	**€ 1,062**						
Decline:	**-14.9%**						

Conclusions

- Crucial to disentangle short-term and long-term effects of COVID on commercial property
- Long-term negative effect on retail and positive effect on logistics
- Long-term negative effect on CBD office, maybe slightly positive effect on suburban office
- Long-term effect on some property types might be smaller than current pricing trends indicate