BRIEF | Future Cities

Miami is more resilient to natural hazards than some may think

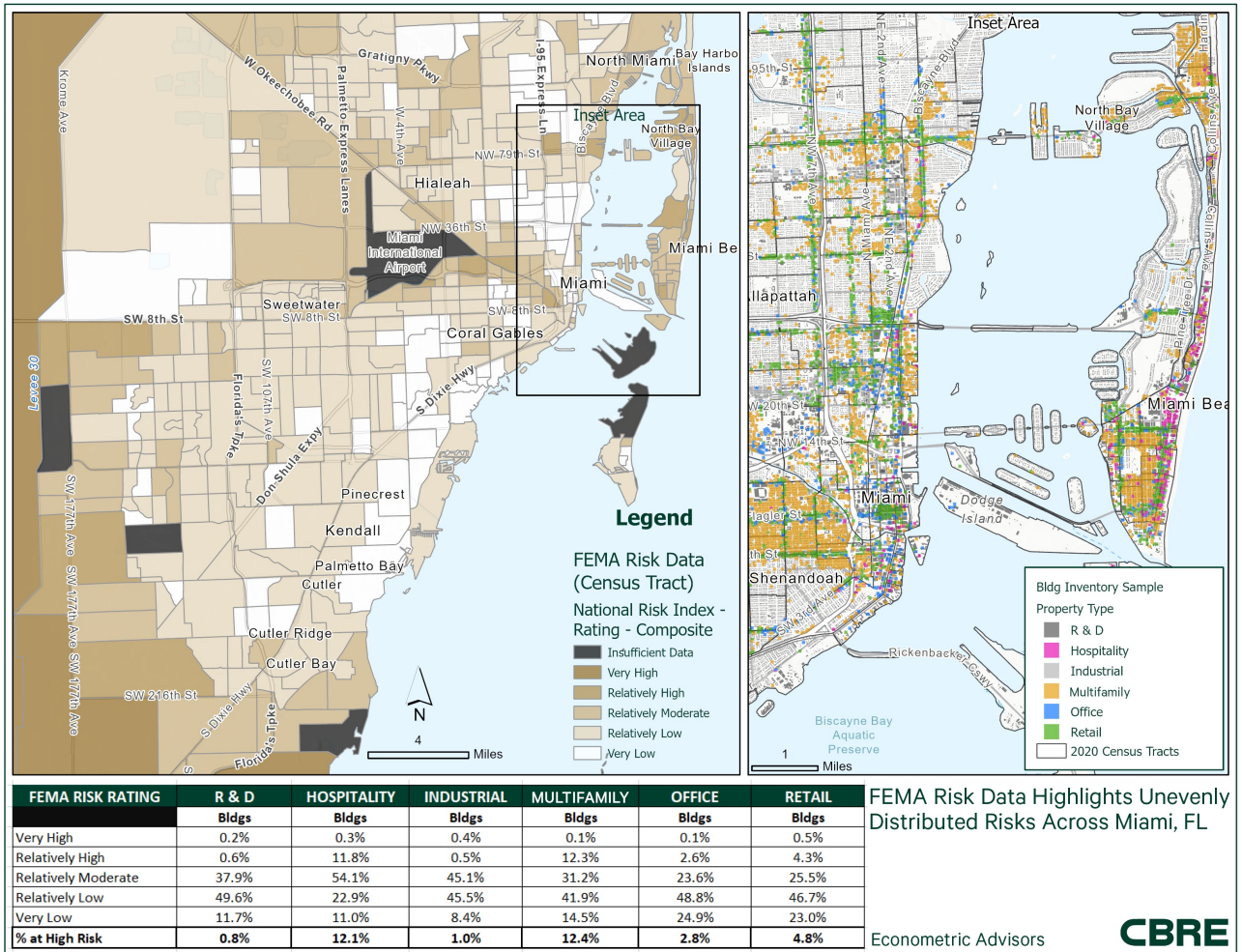By Matt Mowell, Jamie Portolese, Dennis Schoenmaker, Ph.D.

As wildfires, polar vortexes and hurricanes frequent headlines, it begs the question: just how vulnerable are real estate markets to natural hazards?

We looked to Miami—a city associated with strong tropical storms and at the frontier of climate change—to analyze vulnerability. To assess risk, we utilized FEMA's National Risk Index (NRI) which estimates the average annual loss from natural hazards and measures each place's unique vulnerability and resilience to such events. This index distills these factors into a single score that is available at the Census Tract level.

Map 1 shows the NRI rating for Miami Census Tracts, with hurricanes and coastal and riverine flooding being the most relevant risks. Ultimately, this dataset indicates that Miami is better positioned to combat major storm events than many would expect. Expectedly, places like Miami Beach have higher risk ratings. Also, risk levels increase near the Miami River and toward the Everglades. But key places of commerce, such as Downtown Miami, generally have very low to relatively low risk. This is also the case for close-in suburbs to the southwest (e.g., Coral Gables, Coconut Grove). This lower risk rating is partly due to index adjustments for risk mitigation efforts, such as levees. This dataset reflects the risk imposed by individual storm events and further research should explore the long-term impact of rising sea levels due to climate change on Miami's property market.

Map 2 highlights the relevance for real estate by pinpointing building inventory by property type, and the table at the bottom shows their distribution across FEMA risk ratings. Retail is very well positioned, with key nodes, such as Downtown, Miami Design District / Wynwood and Coral Gables ranking either very low or relatively low. Offices have a similar footprint but with slightly less high-risk exposure. Conversely, multifamily and hospitality properties are clustered in riskier locales, such as Miami Beach. Hospitality is likely the most exposed sector universally given its preference for waterfront and high-alpine settings. The upshot is this spatial data shows Miami's commercial property market is more resilient to typical natural hazards than many may believe.

Going forward, CBRE Econometric Advisors will be using the power of maps to view real estate in a new dimension.

Legend

FEMA Risk Data (Census Tract)

National Risk Index - Rating - Composite

- Insufficient Data
- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low

Bldg Inventory Sample
Property Type

- R & D
- Hospitality
- Industrial
- Multifamily
- Office
- Retail
- 2020 Census Tracts

FEMA Risk Data Highlights Unevenly Distributed Risks Across Miami, FL

FEMA RISK RATING	R & D	HOSPITALITY	INDUSTRIAL	MULTIFAMILY	OFFICE	RETAIL
	Bldgs	Bldgs	Bldgs	Bldgs	Bldgs	Bldgs
Very High	0.2%	0.3%	0.4%	0.1%	0.1%	0.5%
Relatively High	0.6%	11.8%	0.5%	12.3%	2.6%	4.3%
Relatively Moderate	37.9%	54.1%	45.1%	31.2%	23.6%	25.5%
Relatively Low	49.6%	22.9%	45.5%	41.9%	48.8%	46.7%
Very Low	11.7%	11.0%	8.4%	14.5%	24.9%	23.0%
% at High Risk	0.8%	12.1%	1.0%	12.4%	2.8%	4.8%

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