

# Three steps to mitigate hurricane risks in CRE lending portfolios

Lessons learned from  
Hurricane Milton



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## Lessons learned from Hurricane Milton

Hurricanes and other climate-related events can cause direct damage to people and properties while also causing widespread disruption to economies and communities. The associated implications for a bank's lending portfolio are complicated, driven by a range of factors including damage from the storm, loan characteristics, and insurance coverage, among others. Below, we outline three steps lenders can take to address hurricane risk: anticipate, measure, and manage. Focusing on commercial real estate (CRE) portfolios, we use Hurricane Milton as an example and frame its impacts in the context of the broader landscape of climate events that the Gulf Coast, the broader US, and other regions globally have been experiencing for years and will continue to experience.

### STEP 1: ANTICIPATING A HURRICANE'S IMPACT

Ahead of Hurricane Milton, [Moody's estimated](#) that there were over 235,000 CRE properties with a cumulative value of around \$1.1 trillion likely to be exposed to winds of at least 50 mph during the storm (Figure 1). This type of information can prompt portfolio managers or operations teams to take preemptive actions to anticipate potential impacts on their portfolio loans or broader market conditions that may affect lending activity. This can inform proactive communication with internal executives and external stakeholders, such as loan servicers monitoring loans to confirm insurance coverage or borrowers who may have an opportunity to mitigate risk at their properties.

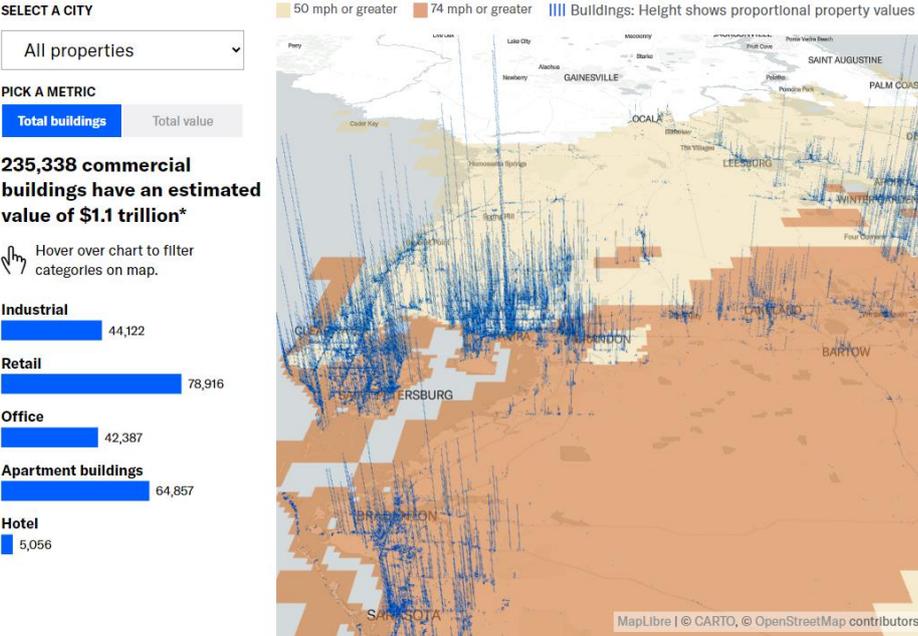
Extreme events like hurricanes present risks to CRE properties through high winds, heavy precipitation, inland flooding and storm surge. These hazards can lead to operations disruptions and lost revenue as well as potential cash flow risk from urgent repair costs. Likewise, there are broader impacts from regional factors like supply chain disruptions or insurance market stresses, which can have indirect implications for CRE properties' underlying loans.

Identifying potential exposure to different facets of a hurricane will help portfolio managers understand the type of impact that is most likely, which can inform preemptive communication with borrowers. This can play the dual role of mitigating risk and potential loss as well as bolstering a lender's reputation and client relationships. If borrowers take risk mitigation actions relevant to whichever element of the storm they're most exposed to — such as implementing flood barriers, removing any loose outdoor equipment, and safeguarding critical information or hardware — the likelihood of loss, financial stress, and potential loan impacts is reduced. Understanding key regions of exposure will also provide an indication of where insurance underwriting moratoriums are likely ahead of the storm, which is useful intel as such moratoriums can delay loan underwriting.

For example, Figure 1 below shows the number of CRE properties in Moody's database that were forecast to be at risk of being exposed to different windspeeds ahead of Hurricane Milton as of October 7, 2024, leveraging real-time storm forecasts from [Moody's RMS™ HWind](#) within the Moody's RMS ExposureIQ™ platform. Lenders could run a similar analysis with their own portfolio to see what portion of their assets were exposed to winds that were expected to cause some damage (50 mph) and those expected to cause worse damage (74 mph). Figure 1 shows buildings with an estimated 50% chance of being exposed to these extreme winds, but by looking at different probabilities, portfolio managers can also gain an understanding of the possibility of more tail-end extreme exposure. Likewise, portfolio managers could run similar analyses on exposure to storm surge and inland flood.

**FIGURE 1** CRE properties forecast to experience extreme wind during Hurricane Milton

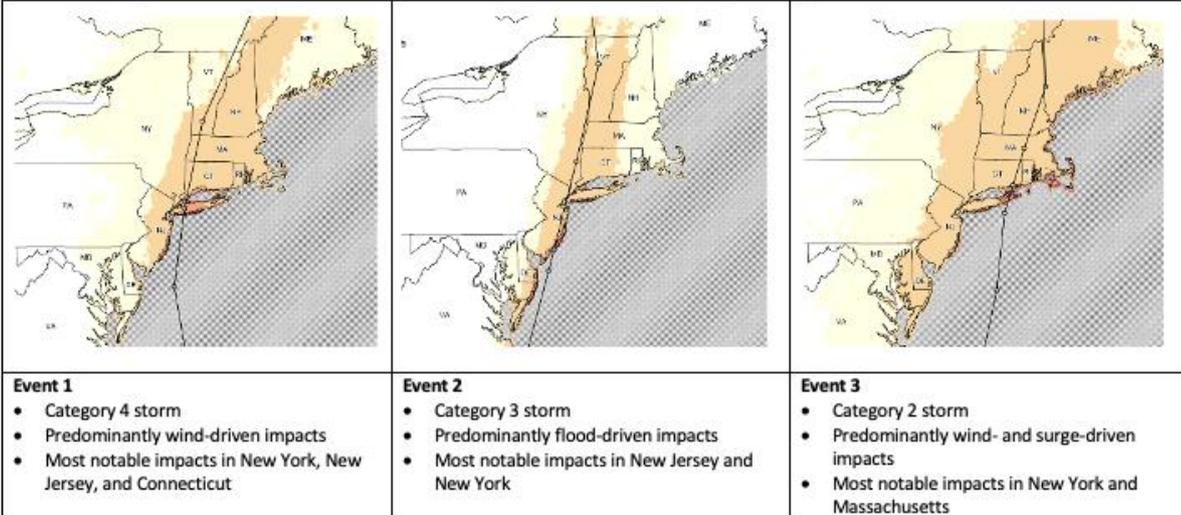
Areas with greater than 50% probability of experiencing the following wind speeds...



Source: [Moody's](#)

The above analysis is informed by catastrophe models that simulate hundreds of thousands of possible events to provide a view of what events could happen in the region of interest and their potential impact, including those events that haven't occurred yet in history but are plausible. While Hurricane Milton was not a particularly extreme event but rather a 1-in-5- or 1-in-10-year event in terms of insured loss severity, this demonstrates a type of analysis that can be leveraged for any type of event, including severe storms. For example, every 1-in-200 event (that is one with a 0.5% chance of happening in a given year) could take thousands of different forms in terms of which areas it affects and the precise characteristics of its impacts through rain, wind, and storm surge. Catastrophe models can provide a view of this range of potential impacts on properties for a certain storm severity, which can in turn inform portfolio management. For example, Figure 2 below shows three different potential storm tracks that all fit within the [Federal Reserve Board's Climate Scenario Analysis Exercise framework](#) of a 1-in-200-year event. While they all match this overall severity level, the three storms below have significantly different characteristics and associated impacts.

**FIGURE 2** Wind footprints of select events with an industry-level 1-in-200-year impact in the Northeast under RCP8.5-2050 (as required by the FRB Pilot Climate Scenario Analysis Exercise, 2023)



Source: Moody’s

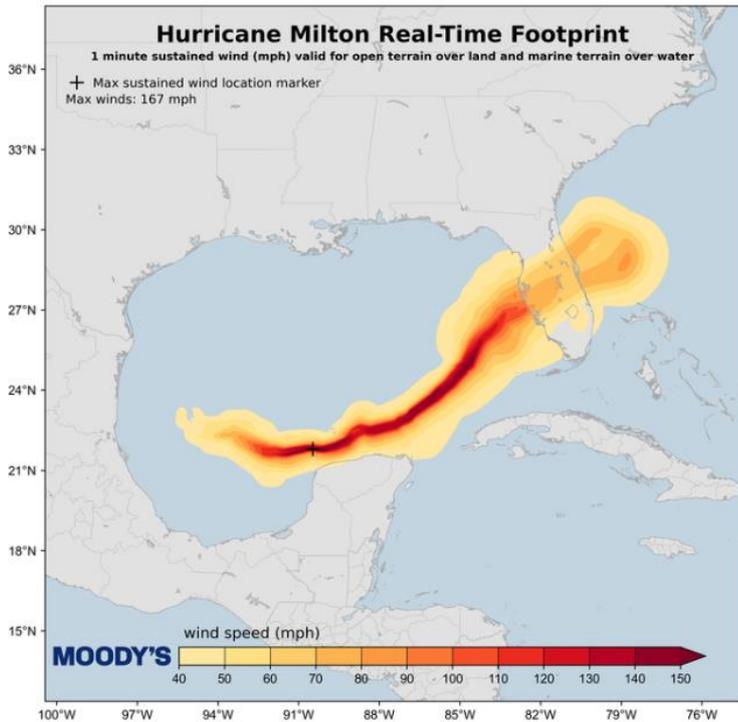
**STEP 2: MEASURING IMPACTS POST-EVENT**

Once a hurricane makes landfall, portfolio managers can begin to assess the likely damage to the properties underlying their loans. This can help inform risk management, stakeholder communication, and future portfolio strategy. Running this analysis soon after a hurricane’s landfall can provide an early indication of potential risks — before financial stress from the borrower would affect mortgage payments. Below, we show findings from a hypothetical loan portfolio composed of the Moody’s CRE properties shown above, identifying potential damage from Hurricane Milton.

**Portfolio damage**

Our hypothetical portfolio composed of Moody’s CRE properties has about 290,000 properties in Florida, including multifamily, office, retail, hotel, and industrial. We analyzed this portfolio using Moody’s RMS best view of wind, surge, and flood impacts from Milton, which combines proprietary insights from our HWind real-time hazard footprints, catastrophe models, reconnaissance data, aerial imagery analysis, and decades of real-time event response experience with validated sources of public data such as from the National Hurricane Center (NHC). Figure 3 below shows the wind footprint from the entirety of the event, showing the highest one-minute sustained wind speed experienced in each location.

**FIGURE 3** Moody’s RMS HWind real-time wind footprint for Hurricane Milton



Source: [Moody's](#)

Based on Moody's analysis of the approximately 290,000 properties in the hypothetical portfolio, over 100,000 are modeled to have experienced structural damage from Hurricane Milton. These 100,000 properties have a total building value of about \$400 billion, which captures the structural value of the properties but excludes associated land value and is hence lower than their total valuation. Land value is generally assumed to be unaffected in our Milton analysis.

Moody's estimates that just under 1% of the value of affected properties was damaged by the extreme wind and water conditions Hurricane Milton caused. Therefore, this event is not likely to have substantial portfolio-wide impacts. However, in the most affected ZIP codes, more than 5% of total building value in our hypothetical portfolio is modeled to be damaged by Hurricane Milton. These ZIP codes are generally concentrated in the coastal areas and peninsulas along Florida's central-west coast where the highest windspeeds and destructive storm surge were experienced during the storm; there are also individual ZIP codes farther inland that were affected by severe flooding from rainfall during Milton.

### Drivers of loss

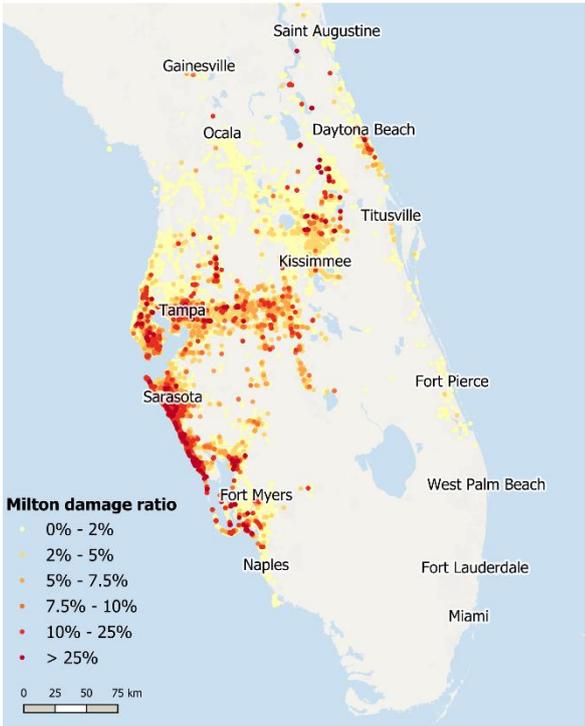
We used Moody's high-resolution post-event analysis to drill down to effects at individual properties, which can help identify specific loans to watch or borrowers to reach out to during an event's aftermath. Note that when going to this location-specific level, uncertainty increases and looking at uncertainty ranges becomes increasingly important. Building characteristics such as elevation, number of stories, age, and construction quality can significantly affect damage but are often not consistently known across a lending portfolio. In the absence of property-specific information we can estimate damage based on average building construction in the area, but capturing more detailed property-level data will inform more precise results.

Damage from extreme winds with sustained speeds of up to 120 mph were generally the main driver of impacts from Hurricane Milton; however, specific coastal areas also saw notable effects due to storm surge. In addition, prolonged heavy rainfall across a portion of the central Florida Peninsula as well as several damaging tornadoes over South Florida on Wednesday, October 9, further added to the overall destruction the storm caused.

Overall, we found that the areas around Sarasota (where Milton made landfall) and nearby Englewood, as well as locations in the Tampa area, were the hardest hit. Some individual properties in these areas are expected to experience double-digit damage ratios, which is an estimation of the percentage of the building value that was damaged. These most extreme damage ratios were typically driven by severe impacts from surge (coastal areas around Sarasota and Englewood) and inland flooding (Tampa area), revealing that while overall damages were predominantly due to hurricane-force winds, extreme water impacts caused peak damages at individual properties.

However, it is also important to note that damage estimates stemming from water impacts tend to be notably more uncertain than equivalent estimates for wind damage since water impacts are typically more localized and can vary notably depending on individual property characteristics, such as first-floor elevation and the presence of basements, which are often not known on a property-by-property level. Figure 4 below shows this distribution of damage ratios.

**FIGURE 4** Damage ratios modeled by Moody’s for a hypothetical CRE portfolio in Florida<sup>1</sup>



Source: Moody’s

While the vast majority (over 90%) of properties are expected to hold insurance coverage for wind damages, most losses from Hurricane Milton are modeled to be below the deductible level, which is usually around 2% of building value. These losses, though relatively minor, will be directly absorbed by property owners. In addition, instances of underinsurance are common in the market, with many coverages being capped at 50% of the building value. Based on Moody’s assessment, damages from Milton rarely exceed this 50% level, and, as a result, such underinsurance is not expected to play a major role for this storm specifically but could become a significant risk for CRE owners and their lenders in more severe and destructive events.

<sup>1</sup> Results capture impacts from wind, coastal surge, and inland flooding. Only locations with a damage ratio greater than 0.1% are shown. Note that while the largest damage ratios show up most clearly on the map due to the color scale, they make up a small share of the total properties with damage.

The extent of insurance coverage for water damage is notably lower than for wind, and Moody's estimates that coverage for water damage is between 60% and 75% in the affected areas, depending on whether a property falls within a Federal Emergency Management Agency (FEMA) flood zone. Likewise, the proportion of businesses insured against flood risk reveals a marked contrast between Florida's coastal and inland areas, according to Moody's RMS 2024 view of the Industry Exposure Database, which represents a view of insured property exposures across various regions and perils. Coastal areas, recognized for their exposure to flood risk, have a higher percentage of eligible properties with active flood insurance coverage. However, many coastal properties are still underinsured as most flood policies have sub-limits — caps within an insurance policy that set a maximum payout for certain types of risks. Properties with comprehensive flood insurance and no minimal sub-limits have a safeguard in place that can help preserve their assets' value by covering repair or replacement costs post-flood. However, properties lacking coverage or those whose policies limit the amount of coverage they have for floods may be vulnerable to substantial financial exposure depending on the extent of the damage and the property's valuation.

### Risks for lenders

This examination of damages, insurance penetration, deductibles, and limits highlights that there is nuance around who will hold the risk, even in today's market of relatively high insurance coverage. For Hurricane Milton, Moody's expects that the majority of losses will not be covered by insurance policies. This primarily stems from the fact that even though there were specific "pockets" of areas with high damages, most of the impacted properties only sustained minor damage, which remained below the deductible threshold of their insurance policies, as discussed above. In contrast, the majority of damages notably above the deductible level, as seen in the hypothetical example in Figure 5, are expected to be covered by insurance.

Figure 5 below studies the credit risk implications with a hypothetical damage ratio for one of the properties hit by Hurricane Milton in our portfolio under different loan term assumptions. We used the damage ratio of 40% for this credit risk analysis as an example of high-end damage that could occur from a hurricane.

The chart shows that, as expected, today's insurance coverage largely mitigates the credit risk from the substantial hurricane damage for a healthy loan. However, without insurance coverage, the expected default frequency (EDF) for the healthy loan increases by almost 7% compared with what would be expected without the hurricane damage. Meanwhile, the unhealthy loan with a higher loan-to-value (LTV) ratio and lower debt-service coverage ratio (DSCR) has much higher baseline credit risk but also a larger change in credit risk due to the hurricane damage. EDF increases by about 8% even with insurance coverage and nearly 20% without insurance. Given that the damage ratio assessed here was particularly high relative to the average damage from Hurricane Milton, there is unlikely to be substantial credit risk for an average portfolio of primarily healthy loans with insurance coverage, based on Hurricane Milton damage.

This does show that while average loans are not expected to experience substantial loss in today's high insurance coverage scenario, extreme events like hurricanes can play pivotal roles in pushing already-distressed loans over the edge to default. Portfolio managers have an opportunity to identify distressed loans and pay close attention to their exposure to loss during a storm.

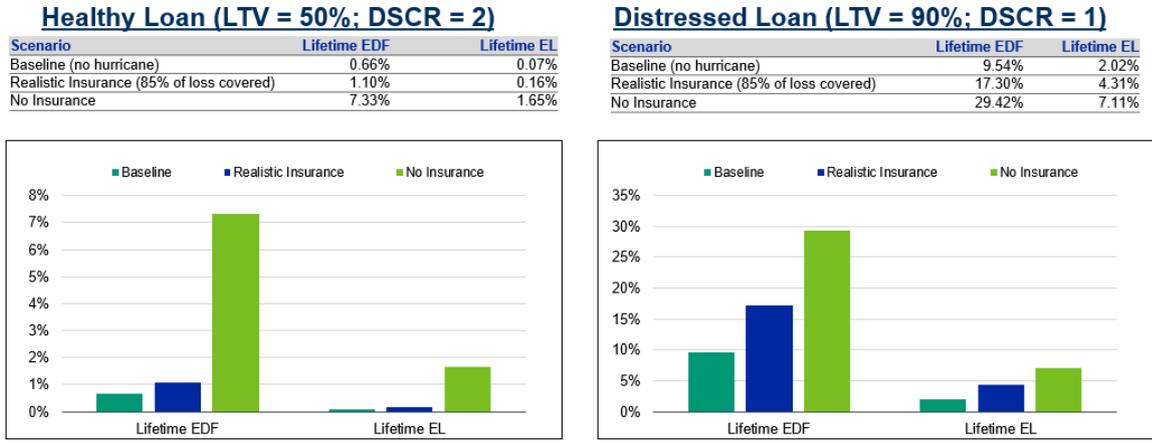
CRE properties are also affected by broader market conditions after a hurricane, which can affect rent, vacancy, and net operating income (NOI) at properties with broader implications for cash flow and credit risk. For example, Moody's Commercial Mortgage Metrics (CMM) research found that properties in markets exposed to Hurricane Harvey experienced lower asking rents, higher vacancy rates, higher operating expenses, and lower NOI in the quarters following the storm compared with the control group.<sup>2</sup> While on their own these impacts are unlikely to substantially influence portfolio-level credit risk,

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<sup>2</sup> Chen, Jun; Wang, Wenjing; Watugala, Megha. "Modeling the impact of acute physical climate risk on CRE property and loan performance." Moody's. May 2022.

they are another factor to consider, particularly in challenged markets or property types that face other headwinds.

**FIGURE 5** The impact of insurance coverage and loan quality on credit risk



Source: Moody's CMM

### STEP 3: MANAGING IMPACTS AND STRATEGIZING FOR THE FUTURE

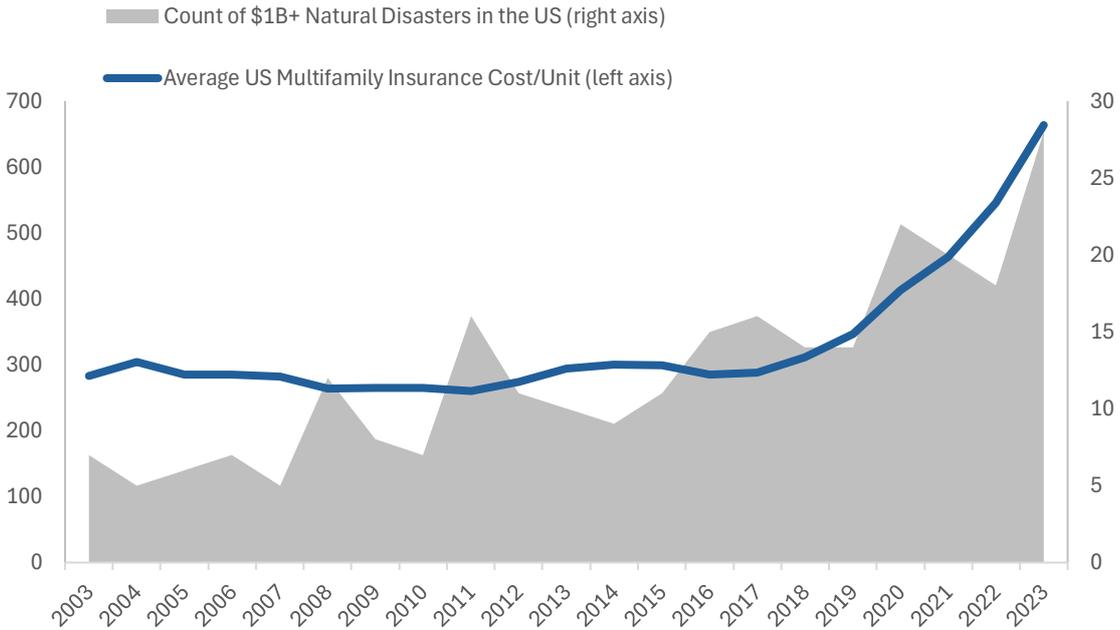
Today, many properties are required to have insurance coverage that will mitigate the worst financial stresses and potential for default due to hurricane damage. However, the insurance industry faces multiple stressors, and insurance is no longer the simple risk mitigation tool it once was. Lenders are increasingly having conversations about how to best balance the cash flow risks their borrowers face due to high premiums, with the risks of extreme events occurring. Understanding the potential for loss under different levels of event severity can help inform these decisions and best align insurance coverage with true risk. Monitoring the changing insurance landscape can also provide insight on where insurance industry stressors may worsen and continue to affect deals. This knowledge, combined with continued monitoring of portfolio properties' exposure to damage from extreme events, can help manage risk by informing capital allocation and portfolio strategies as well as insurance negotiations.

#### Where Milton fits into the shifting insurance landscape

For Hurricane Milton, Moody's RMS estimates that the private market insured loss is [between \\$22 billion and \\$36 billion](#), which includes losses from wind, storm surge, and precipitation-induced flooding. This puts Milton [within the bottom half of the top 10 costliest hurricanes](#) in the US from an insured loss perspective. While this single hurricane is not expected to substantially move the insurance market, a costly year for insurers could reverse the gradual softening the market was beginning to experience. While capacity had been opening up with some new players in the market, this could change upon the next renewal and capacity could become limited again.

Hurricane Milton also adds to the longer-term pressure insurers face from an evolving climate in which extreme events are becoming more frequent. While many factors influence insurance premiums, recent years have seen a surge in costly extreme weather events in the US alongside a rapid increase in insurance premiums, as seen in Figure 6. Meanwhile, (re)insurance rates continue to follow their traditional cyclical pattern of hard and soft markets to date. The insurance industry will need to find ways to adapt to the changing climate through longer-term, more systematic changes. This is an ongoing topic of discussion among insurers, brokers, lenders, regulators, and other market participants, and one that often highlights the importance of asset-level risk mitigation measures and the need to more systemically integrate such resilience measures into insurance negotiations.

FIGURE 6 Multifamily insurance costs and US natural disasters



Sources: NOAA National Centers for Environmental Information (NCEI), Moody’s

Individual insurers must consider difficult decisions regarding withdrawing from or significantly increasing long-term rates in certain markets. For example, citing wildfire risk as part of its decision, insurer State Farm [stopped renewing 42,000 apartment policies in California early in 2024](#), ending its commercial apartment coverage in the state. Meanwhile, as several insurers have gone insolvent in the [Gulf Coast states in recent years](#), those that remain look to raise premiums. There is ongoing dialogue with insurers, regulators, and others regarding potential solutions to these challenges in many of these highly exposed states. This is particularly true in Florida, where many local insurance companies are thinly capitalized and heavily reliant on the availability of sufficient and affordable reinsurance coverage in order to remain solvent. Understanding these implications for insurance helps banks prepare for the reality of continued challenges their borrowers may face in obtaining coverage.

**Implications for lenders**

This [tumultuous insurance landscape](#), with its high costs and low capacity, is particularly challenging for lenders due to insurance requiring annual renewal. In many cases, borrowers face challenges meeting the insurance requirements in their loan terms upon insurance renewal and lenders face requests for waivers to accept higher deductibles, lower limits, or no insurance coverage. This has led to an increase in force-placed insurance, which is when a lender obtains insurance for a property on the borrower’s behalf. This insurance is more expensive and thus presents additional financial burdens on the borrower, with implications for cash flow risk and NOI.

Meanwhile, while a single event like Hurricane Milton may not move the insurance industry as a whole, it is very likely to influence renewals for properties that have been directly damaged by the storm. Even if these higher rates do not lead to waiver requests, they do place additional financial pressure on borrowers. [Moody’s research](#) shows that nonlinear insurance premium increases in recent years means a growing portion of revenue is being taken up by insurance expenses. For example, when looking at the CRE properties in the 99th percentile of insurance premiums as a share of property NOI over the past five years, we find that 13.4% of revenue was taken by insurance in 2023, up from 6.7% in 2018. This means

that all else being equal, these properties would need an additional 1.3% annual rent growth just to maintain their annual NOI.

Lenders can use the property-level analytics discussed in Section 2 above to identify which properties are likely to experience higher rates or higher deductibles during their next renewal based on storm impacts. While it may not affect the terms of loans already on their books, lenders have an opportunity to consider this information to adjust their terms during refinancing. Using post-event analytics and detailed catastrophe models that show what a property could lose during other storms allows banks to identify imminent insurance challenges stemming from the latest hurricane season while also knowing which loans to monitor ahead of future hurricane seasons.

## Climate risk in CRE lending portfolios

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