

Mortgage Rates As A Climate Risk Signal

In September, Tampa narrowly avoided Hurricane Helene, a fortunate miss for a metropolitan area that is home to three million people. The last time Tampa was directly hit by a hurricane was [a century ago](#) in 1921, when only ten thousand people lived there. In just the past 25 years, Tampa's population has grown by half – putting millions of new people in a disaster path.

What's happened to Tampa is part of a broader trend in America of people moving in [climate harm's way](#). Unwittingly but massively, Americans have been moving into locations that are prone to flooding, hurricanes, and wildfires. As the impact of climate change creates more intense natural disaster, many houses in climate risky areas are on track to become stranded assets.

People move for all sorts of reasons: jobs, family, sunshine, low taxes. Unfortunately, climate risk and extreme weather rarely make the list of considerations. For many issues, economists and policymakers can rely on market factors to restrain demand. Prices serve to signal scarcity. When there is more demand for eggs than supply, the price goes p.

However, this basic role of markets is blunted in the realm of housing finance. Fannie Mae and Freddie Mac, the two mortgage giants known as government-sponsored enterprises (GSEs) and owned by the taxpayer since 2008, regularly purchase and guarantee mortgages. But they do not [differentiate](#) for risks that vary across space, like climate risk. The price signal is jammed.

This uniform pricing has its roots in history. Prior to the creation of the GSEs, most mortgage banking was [hyper-local](#), making lenders vulnerable to local shocks, be it a natural or an economic disaster. The GSEs were created by Congress to promote liquidity in the mortgage market nationwide. By pooling mortgages from around the country, the GSEs could diversify local shocks, allowing them to require less compensation for mortgage default risk than local lenders. This diversification dividend, in turn, was passed through to homebuyers in the form of lower interest rates.

When all locations are about equally likely to face mortgage defaults, the uniform risk pricing is sensible and the risk sharing benefits powerful. However, there are limits to such risk sharing. One such limit was made abundantly clear in 2008, when the entire country experienced house price declines at the same time. A shock of this nature cannot be diversified. It created massive [losses](#) for the GSEs and required a taxpayer bailout. Similarly, the risk from persistent changes in weather patterns can create large aggregate losses in a number of [different regions](#) at [the same time](#).

A key point is that some places are much more likely to get hit by natural disasters than others. Take Florida, for example— out of the nearly 300 hurricanes that have hit the United States since the 1850s, [nearly 120](#) have made landfall in Florida. In the government-backed mortgage market, a uniform price means that borrowers in climate-safe areas implicitly subsidize the

mortgage rates of borrowers in high-risk areas, like those in Florida. It's no longer risk sharing when the payments only go in one direction.

When mortgage rates are too low in high-risk areas, we in effect encourage building in dangerous areas and having people move there. The taxpayers' climate exposure gets worse over time.

Staring rising risks in the face, what should policy focus on? The first leg of the policy must be to make mortgage interest rates for new loans reflect the full cost of the climate risk. This will provide the proper signal to potential movers about the climate risks of each location they are considering, helping to stem the flow of people to climate risky areas.

The second leg of the policy must focus on better adaptation of existing real estate and infrastructure assets [to reduce risks](#). Evidence suggests that even small-scale investments in [weatherizing properties](#), such as using fortified roofs in properties prone to hurricanes, or more [mindful landscaping](#) in areas prone to fires, can yield major improvements in resiliency. The government-sponsored enterprises can create financial incentives for households to undertake these types of investments by offering price discounts for mortgage borrowers who make such improvements.

The potential calamity from not adjusting rates or reducing risks is stark. While the GSEs have faced limited losses from climate events in recent years, things could change quickly if a catastrophic weather disaster were to strike during an economic downturn.

If another massive hurricane hits while the country is mired in a recession, property [insurers](#) may not be able to pay out the full brunt of the damage after the disaster at a time when mortgage defaults would already be higher than baseline. Right now, the GSEs' combined net worth is roughly \$140 billion, and they back a collective \$7.6 trillion in mortgages. If just one major hurricane hits Florida and causes an increase in default by two percent, it would wipe out ten percent of the GSEs' equity. Such a default rate is not [too far off](#) from what we saw in 2017 after Hurricanes Irma, Harvey and Maria. The GSEs' equity cushion may need to be bolstered if it is to withstand rising disaster intensity and increasing numbers of borrowers in risky areas.

Most Americans' biggest source of wealth is tied up in their home. To protect these investments, it's time to adapt by building more resilient homes in safer locations and deter building in climate-risky areas via a price mechanism that more accurately signals the real dangers. Adjusting the GSEs' mortgage pricing is a natural way to do so. Homeowners insurance payments are the other natural mechanism but represent only about 5% of the mortgage payment, making interest rate adjustments more potent than changes in insurance premiums. In addition, mortgages are usually 30-year contracts, while insurance contracts are yearly. Lenders and homeowners have incentives to reduce risks over the long-run in a way that insurance companies may not.

Mortgage policy today needs to adjust to reflect mounting risks over the 30-year horizon of a typical mortgage. With taxpayers on the hook for two-thirds of U.S. mortgage debt, Fannie Mae and Freddie Mac are a good place to start.

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