Climate Finance: Issues Relating to Housing and Real Estate

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During the Covid-19 pandemic housing prices increased in many developed economies, partly driven by low interest rates and high rental yields (which exceed bond yields).[1] Speculators have been investing in real estate in a search for yield.[2] The need for speculative investors to maximize their income from their properties leads to increases in rents, making housing less affordable.[3] It is worth noting that a number of factors come together to have an impact on housing prices. There is some evidence of a decline in the prices of properties most exposed to sea-level rise,[4] and of climate gentrification.[5] As sea-levels rise we can expect more of an impact on residential and commercial real estate values.[6]

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1 Deniz Igan, Emanuel Kohlscheen & Phurichai Rungcharoenkitkul, Housing Market Risks in the Wake of the Pandemic, BIS Bulletin No. 50 (Mar. 10, 2022).

2 *See, e.g.*, Francesca Mari, Will Real Estate Ever Be Normal Again?, NYTimes Magazine (Nov. 12, 2021) ("Then there's the role played by investors and speculators. Large corporate and Wall Street landlords, like Invitation Homes, American Homes 4 Rent, BlackRock and Blackstone, are arguably the most toxic players, driving up rents in the select markets they saturate, lobbying for corporate tax cuts and fighting tenant protections. But a majority of investment buyers are smaller companies and individuals: mom-and-pop landlords, tech workers looking to diversify their portfolios, teachers who supplement their paltry paychecks by Airbnb-ing properties on the side. The ease with which they can access credit strains the market and drives up prices.")

3 *See, e.g.*, Whitney Airgood-Obrycki, Alexander Hermann &Sophia Wedeen, "The Rent Eats First": Rental Housing Unaffordability in the United States, Housing Policy Debate (2022) DOI: 10.1080/10511482.2021.2020866.

4 Benjamin J. Keys & Philip Mulder, Neglected No More: Housing Markets, Mortgage Lending, and Sea Level Rise NBER Working Paper 27930 (Oct. 2020).

5 Jesse M Keenan,Thomas Hill & Anurag Gumber, Climate Gentrification: from Theory to Empiricism in Miami-Dade County, Florida, Environmental Research Letters 13 (2018) 054001; Simon Kuper, The Future of Coastal Cities Looks Like Miami, Financial Times (Nov. 4, 2021).

6 Union of Concerned Scientists, Underwater: Rising Seas, Chronic Floods, and the Implications for US Coastal Real Estate (Jun. 18, 2018).

Overheated housing markets can collapse when conditions change leading to housing market corrections. And market corrections have implications for lenders, borrowers and real estate developers (high housing prices lead to increases in construction).[7] Market corrections in housing markets can lead to broader financial stability problems.[8]

Current overheating in the housing market is produced in part by speculation. But underlying current overheating issues is a broader issue because much real estate in the US domestic market and around the world is subject to risks associated with climate change. We have considered these issues briefly in the context of thinking about insurance and climate change, but there we were mostly focusing on the issue from the perspective of the regulation of insurance companies, rather than from the perspective of purchasers of assets benefiting from insurance policies (although we did consider the problem of ensuring consumer access to affordable insurance in a world of increasing risks due to climate change).[9]

At this point I would like to focus on ways in which law and policy have failed to protect people from investing significant amounts of money in assets which may turn out to be worth much less than they have agreed to pay for those assets. In housing bubbles this is always going to be an issue. Asset price bubbles are a problem for financial regulators, because when the burst they tend to lead to turmoil in the financial

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[7] Igan et al. *supra* note 1. Although high construction costs can limit construction. *See, e.g.*, Paul Krugman, Wonking Out: Are We in Another Housing Bubble?, NY Times (Jan. 28, 2022). Construction loans are often significant in weakening bank balance sheets because of the time lag between initiation and completion of the construction project. See, e.g., Emily Johnston Ross, Joseph B. Nichols & Lynn Shibut, Determinants of Losses on Construction Loans: Bad Loans, Bad Banks, or Bad Markets?, FDIC CFR Working Paper 2021-07 (Aug. 2021) at 2.

[8] We have not studied issues of financial stability relating to climate change. *See, e,g.*, Patrick Bolton, Morgan Després, Luiz Awazu Pereira da Silva, Frédéric Samama & Romain Svartzman, The Green Swan: Central Banking and Financial Stability in the Age of Climate Change (Jan. 20, 2020).

[9] *Cf.* Janneke Ratcliffe, Carlos Martín & Ellen Seidman, Three Ways the Housing Finance System Can Protect All Homeowners from the Escalating Effects of Climate Change (May 13, 2021) at https://www.urban.org/urban-wire/three-ways-housing-finance-system-can-protect-all-homeowners-escalating-effects-climate-change.

markets.[10] But they also cause turmoil for purchasers who may not realize they have purchased in a bubble until it pops,[11] and for economic and financial activity more generally as they may lead to a recession. In the lead-up to the bursting of a bubble it is typical to find commentators arguing that it is or is not going to burst.[12] Economists find it difficult to identify bubbles.[13] One problem is that it is hard to identify the fundamental value of an asset:

> The ratio of price to rent could be considered as an equilibrium quantity capturing the relative cost of buying vs. renting; this ratio should be relatively stable over the years if nothing fundamental changes in the economy. What determines this equilibrium level? The price of a house is not the only determinant of the cost of owning it; so, rising house prices do not necessarily indicate that homeownership has become more expensive relative to renting, but may indicate that something has changed in the fundamental value of the house. Supply conditions in the real estate market, expected appreciation rates, taxes, maintenance costs and mortgage features also affect the volatility of price/rent ratios. As studied in the real estate economics literature, the sensitivity of house prices to changes in fundamentals is larger when interest rates are low and in locations where expected price growth is high; so, fast price increases

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[10] *See, e.g.*, Douglas D. Evanoff, Asset Price Bubbles: What Are the Causes, Consequences, and Public Policy Options?, Chicago Fed Letter No. 304 (Nov. 2021) ("In general, according to current economic theory, a bubble exists when the market price of an asset exceeds its price determined by fundamental factors by a significant amount for a prolonged period.")

[11] *See, e.g.*, Krugman, note 7.

[12] Compare Krugman, note 7, and Mark Zandi, No, the Housing Market Isn't in a Bubble. But There Still Are Many Things to Worry about in 2022, The Washington Post (Jan. 6, 2022) (noting government support during the Covid-19 pandemic to avert a foreclosure crisis, and that speculative buyers are not buying to flip but to obtain rental income).

[13] *See, e.g.*, Silvio Contessi & Usa Kerdnunvong, Asset Bubbles: Detecting and Measuring Them Are Not Easy Tasks (Jul.16, 2015) at https://www.stlouisfed.org/publications/regional-economist/july-2015/asset-bubbles-detecting-and-measuring-them-are-not-easy-tasks ("economists find the definition of asset bubbles problematic because the proper identification of a bubble requires some metrics, and there is little agreement about what those metrics should be.")

> (relative to rent) do not necessarily signal the presence of a bubble even when they appear as "exuberant." The correct measure to use, as a comparison for rents, is the imputed annual rental cost of owning a home, a variant of what economists call the "user cost," which is particularly difficult to measure.[14]

The housing market may be subject to risks of a sudden collapse in prices due to climate risks, and it may be hard for people to identify the risks as they may affect a particular housing unit. The Union of Concerned Scientists has noted that "[i]n many cases, the risks are masked by short-sighted government policies, market incentives, and public and private investments that prop up business-as-usual choices and fail to account for sea level rise."[15] Policymakers have:

> encouraged residential land development in places and in ways that have set the resulting home occupants in harm's way—in many cases knowingly.Our residential properties and their occupants are disproportionately exposed to the dozens of climatological effects resulting from global climate change, compared with other components of our human-built environment. From acute events such as hurricanes, heat waves, and wildfires to slow-onset phenomena like drought and chronic flooding, homes are ground zero. For example, there are 5.7 million U.S. residential properties exposed to future flood risks. When realized, this exposure translates to expected annualized losses totaling $20.3 billion

(First Street Foundation, 2021). Millions more live in the wildfire–urban interface, a number that grew over the last several decades as residential development spread in high-cost areas desperate for the single-family lots that perpetuate the climate crisis.[16] Lenders may not focus as much as they should on the riskiness of the loans they

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[14] *Id.*

[15] Union of Concerned Scientists, note 6, at 2.

[16] Carlos Martín, Exploring Climate Change in U.S. Housing Policy, Housing Policy Debate, 32:1, 1-13 (2022) DOI: 10.1080/10511482.2022.2012030 at p 2.

make,[17] and appraisers, realtors and builders “lack direction” with respect to climate related risks:

> These simultaneous phenomena—housing’s contribution to climate change and housing’s exposure to its effects—now challenge traditional approaches to housing policy that emphasize homeownership for middle-income households and provide a thin safety net for low-income ones. Much more empirical work needs to be done to assess these policy overlays, and define which communities need focused attention and which households slip through the cracks.[18]

In some cases borrowers may be able to walk away from mortgage loans after flooding or if a home becomes unsellable.[19]

The Biden Administration has been working on issues relating to climate change in a number of different areas, and in 2021 the US Treasury announced that the Financial Literacy and Education Commission (FLEC) would study the impact of climate change on households and communities.[20] Federal Agencies involved in housing finance have also begun to work on issues relating to climate change.[21]

It is hard for people to make informed choices about whether and where to buy a home. But the purchase of a home is one of the largest and most significant investment

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[17] U.S. Department of Housing and Urban Development, Office of Policy Development and Research, Report to Congress on the Root Causes of the Foreclosure Crisis (Jan. 2010) at ix (“In pursuit of high profits, lenders and investors poured capital into ever riskier loans, particularly after 2003. This flood of capital helped to spur rising home prices that masked the riskiness of the loans being made, leading to continued loosening of underwriting standards. When house price growth finally slowed in late 2006, the true nature of these risky loans was exposed and the “house of cards” came tumbling down.”)

[18] Martín, note 16, at 2.

[19] Christopher Flavelle, Rising Seas Threaten an American Institution: The 30-Year Mortgage, NY Times (Jun. 19, 2020, updated Mar. 2, 2021).

[20] US Department of the Treasury, Treasury Launches Effort to Study Impact of Climate Change on Households and Communities (Oct. 13, 2021).

[21] *See* Federal Housing Finance Association, Request for Input: Climate and Natural Disaster Risk Management at the Regulated Entities (Jan. 2021); https://www.fhfa.gov/PolicyProgramsResearch/Programs/Pages/Climate-Change-and-ESG.aspx; https://www.freddiemac.com/about/esg; https://www.fanniemae.com/about-us/esg .

decisions people make. And a decline in the value of a home may contribute to homeowners walking away from their financial obligations:

> ...foreclosures are most accurately thought of as being driven by a two-stage process: first a trigger event reduces the borrower's financial liquidity, and then a lack of home equity makes it impossible for the borrower to either sell their home to meet their mortgage obligation or refinance into a mortgage that is affordable given their change in financial circumstances. In this view, a lack of home equity is an important determinant of foreclosures as it precludes other means that borrowers can take to resolve an inability to meet their mortgage obligations, but defaults are most commonly triggered by some other event that makes borrowers financially illiquid.[22]

Trigger events affecting a borrower's financial liquidity include the loss of a job or sudden unexpected financial obligations such as uninsured (or underinsured) damage to property, or the impact of a pandemic.[23] And foreclosure affects renters as well as owners, if owners who rent out their property go into foreclosure. The Union of Concerned Scientists notes:

> There are many stakeholders in the coastal real estate market, from individual homeowners and business owners, to lenders, taxpayers, developers, insurers, and investors. Whether a property market crashes, or property values steadily decline in response to worsening flooding, these stakeholders are poised to sustain large collective losses. Many coastal residents, whether they own homes or not, will be affected as shrinking property tax bases prevent cities and towns from fully funding schools, emergency services,and infrastructure repairs, or as property tax rates rise for all residents to compensate for those properties devalued by flood risks.[24]

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[22] Root Causes of the Foreclosure Crisis, note 17, at vii.

[23] *Cf.* Juliana Horowitz, Anna Brown & Rachel Minkin, A Year Into the Pandemic, Long-Term Financial Impact Weighs Heavily on Many Americans, Pew Research Center (Mar. 2021).

[24] Union of Concerned Scientists, note 6, at 3.

In the class up to this point we have to a large extent assumed that the people who are making investment decisions affected by climate risks are either sophisticated market participants or retail investors who will need to be informed about the climate risks associated with their investments.[25] And we have seen that EU policy-makers tend to assume that it is appropriate for regulation to play a role in adjusting investors' preferences as well as in responding to preferences investors already have. But although an individual or retail investor's portfolio of investments may involve a substantial investment of money, the purchase of a home is, for many people, the largest investment they make. Therefore, ensuring that prospective purchasers of a home are fully informed about the risks that the property may turn out to be worth much less than they think would seem to be a priority.

The Consumer Financial Protection Bureau, the federal agency responsible for protecting the interests of consumers of financial services, does provide resources for people who are buying a home.[26] These resources focus on the financial aspects of the purchase, rather than on whether a particular home purchase makes sense in financial terms, although recently the CFPB has focused on over-valuation of homes.[27] The US Department of Housing and Urban Development HUD) provides resources on buying a home,[28] including a home shopping checklist which identifies features of a home a purchaser might care about, such as whether there is snow removal, parking, and traffic and whether it is convenient to schools, work and hospitals, but not whether it is in an area at risk of floods or wildfires.[29] But, although these agencies do not encourage prospective purchasers to focus on climate risk, some information is available, for example from realtor.com and Redfin, relating to the current flood risk (based on FEMA flood maps) and estimated future flood risk (a product of a tool developed by First

[25] For example, the materials on securities disclosure.

[26] https://www.consumerfinance.gov/owning-a-home/ .

[27] Consumer Financial Protection Bureau Outlines Options To Prevent Algorithmic Bias In Home Valuations (Feb. 23, 2022).

[28] https://www.hud.gov/topics/buying_a_home.

[29] https://www.hud.gov/sites/documents/checklist-en.pdf.

Street Foundation).[30] And ClimateCheck allows you to see how climate risks will affect your home (you can search by street address, city, neighborhood or zip code).[31]

In California, sellers of real estate and their agents are required to disclose whether the property is in areas at risk of flooding, wildfires, or earthquakes,[32] and similar obligations apply to landlords who are required to disclose flood risks to prospective tenants.[33] But even where there are good rules about risk disclosure in the housing purchase context there are existing homeowners who bought property before the rules came into effect and who are still affected by the climate risks.

There is a National Flood Insurance Program, which is a federal insurance program for properties in flood zones, but this is a program that has been criticized. For example:

> Public property hazard insurance options—from the National Flood Insurance Program to state wind insurance pools and, likely, wildfire insurance pools—are among the few policy interventions beyond the modest housing-specific mitigation efforts... These options tenuously exist, are often out of reach for low-income and hard-to-serve households, and do not address the myriad of chronic environmental hazards that increasing climate change brings. Without changes in home property insurance policy akin to recent personal health insurance reforms, more exposures will go unmitigated and the likelihood will increase that households— property owners and renters alike—will presume that their homes and communities can simply be rebuilt after the inevitable climatological events and resulting human and economic losses.[34]

And in terms of risks to mortgage lenders there are maturity mismatches, as insurance

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[30] *See* Debra Kamin, Add 'Climate Hazards' to Your Home-Buyer's Checklist, NY Times (Jun. 1, 2021, updated Jun. 7, 2021).

[31] https://climatecheck.com/.

[32] California Civil Code §1103.

[33] California Government Code § 8589.45.

[34] Martín, note 16, at 5.

is generally renewed annually, whereas mortgage loans are long term obligations of the borrower.[35] Other issues relating to the National Flood Insurance Program relate to the construction of the flood maps.[36] We will look at a recent GAO report on FEMA Flood maps.[37]

One response to climate impacts on particular locations is to relocate affected populations, but this strategy also has costs, and may perpetuate inequalities.[38]

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[35] *See, e.g.*, Ketan B Patel, Managing Climate Risk in Mortgage Markets: A Role for Derivatives, Chicago Fed Letter, No. 462, (Oct. 2021).

[36] Daniel Cusick, FEMA Flood Maps Miss Risk to Millions of Homes, Scientific American (Jul. 1, 2020).

[37] GAO, FEMA Flood Maps: Better Planning amnd Analysis Needed to Address Current and Future Flood Hazards (Oct 2021).

[38] Lizzie Yarina, Miho Mazereeuw &Larisa Ovalles a Retreat Critique: Deliberations on Design and Ethics in the Flood Zone, 14:3 Journal of Landscape Architecture 8-23, at 8 (Jan. 2020) ("Most proposals for retreat, however, fail to query the equity of retreat actions, leaving vulnerable populations to carry the burdens of migration away from hazardous areas, while wealthy inhabitants are allowed to stay. What are the broader political, cultural, ecological and urbanistic implications? What are the impacts on receiving communities?")