Housing investment in harm's way

Sea level rise risk, the coastal premium, and housing investment in the United States

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Coastal counties are less than 10% of US land area. Yet they hold roughly 131 million people, 39% of the US population, 56 million jobs and 46% of GDP (NOAA Digital Coast 2024), along with some of the most valuable real estate in the country. These areas are also among the most exposed to hurricanes, floods and sea level rise (SLR). The Union of Concerned Scientists (UCS 2018) estimates that with about 4ft of SLR, homes worth $930 billion would flood at least twice a month by 2100.[1] Exposure is growing. Under a middle-of-the-road scenario (SSP2), EPA projections imply that over half of US population growth from 2020 to 2050 will occur in coastal counties.[2]

The climate finance literature shows SLR risk is priced at the property level. Bernstein, Gustafson, and Lewis (2019) find a discount of about 5 to 7%. Baldauf, Garlappi, and Yannelis (2020) find the discount is concentrated where buyers believe in climate change. From a policy perspective, however, the key question is whether buyers price SLR enough to keep capital out of harm's way. Recent work points to two reasons the discount may be too small. The first runs through government. Hsiao (2025) shows that in Jakarta developers expect the government to protect coastal land after the fact, and so overbuild at the coast. Without a credible commitment not to protect, new coastal development is about twice the efficient level by 2100. Balboni (2025) finds that Vietnam's road upgrades were concentrated in the low-lying coastal zone. Allowing for SLR cuts their value by 35%, and moving them inland pays off only over long horizons that a myopic planner would ignore. Expected protection and public investment make coastal land more valuable and shrink the discount buyers demand. The second runs through lenders. Bakkensen, Phan, and Wong (2025) find that pessimistic buyers of exposed homes are more likely to borrow, and to borrow longer, since a mortgage they can default on shifts long-run risk to the lender. Both forces weaken the price signal relative to the true risk.

Whether that signal deters investment is an empirical question about quantities, and evidence is scarce. The closest work, Lin, McDermott, and Michaels (2024), studies census blocks on the Atlantic and Gulf coasts. Blocks exposed to 1ft of SLR held 12% of the housing stock in 1990 but received 26% of net new housing from 1990 to 2010. New housing avoided risky blocks only in sparse tracts. We ask whether housing investment has moved away from SLR risk, and where it can. We extend their approach to the entire US coast, at the property level, every year from 2000 to 2022. We document four facts. Risk is concentrated in the first kilometer of coast and in a few states. Investment in SLR-prone neighborhoods has not slowed. The coastal price premium dwarfs the SLR discount. Investment avoids risk only where housing supply is elastic.

We combine tax assessor and deed records from Cotality, formerly CoreLogic (Property Basic and Owner Transfer files), which cover 99.9% of the US housing stock, with fine grained NOAA inundation maps. A home is at risk if NOAA maps show its parcel flooded under 6ft of SLR. This

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[1] UCS figures, adjusted by the Congressional Budget Office (CBO 2024) for growth in housing values from 2016 to 2023.

[2] Authors' calculation from EPA ICLUS v2.1.1, SSP2.

gives a high definition measure of SLR risk for each home and neighborhood. We tile the entire US coast with 120,000 neighborhoods, each a hexagon of under 1 km^2. This lets us measure the share of each neighborhood's land at risk and separate risk avoidance across and within neighborhoods. Our sample covers 19 million single-family homes (SFHs) and 51 million deed transfers within 10 km of the coast from 2000 to 2022. We use tract-level housing supply elasticities from Baum-Snow and Han (2024), which measure how easily new housing can be added.

We measure housing investment as the number of SFHs completed (new construction and rebuilds) in each neighborhood and year, from the year built of homes standing today.[3] Homes since demolished or destroyed are not observed. We are addressing this with the National Land Cover Database (NLCD), following Baum-Snow and Han (2024), which also separates pure new construction from redevelopment. For prices, we compare sales in the same neighborhood and year, controlling for home characteristics and distance to the coast. For investment, we compare neighborhoods in the same county and year with different shares of land at risk and different supply elasticities.

First, risk is highly concentrated. Over 80% of SFHs at risk lie within 1 km of the coast. Four states hold 60% of them and about two thirds of their value.

Second, investment in SLR-prone neighborhoods has not slowed. The share of new SFHs completed in neighborhoods with land at risk was 26.3% in 2000 and 28.5% in 2022. The share of new SFHs that are themselves at risk is flat or rising, from 4.6% in 2000 to 7.8% in 2022.

Third, the coastal premium dwarfs the SLR discount. Homes within 50 m of the coast sell for over 50% more than similar homes 1 km inland. By contrast, an at-risk home sells for only about 3% less than a similar safe home at the same distance from the coast.

Fourth, capital avoids risk only where it can. Across neighborhoods, 10 more points of land at risk lower investment by 4.3% where supply is elastic (one standard deviation above the mean). Where supply is inelastic (one standard deviation below), the effect is $+2.1\%$ and not significant. Within partially risky neighborhoods, 10 more points of land at risk raise the share of new SFHs at risk by 7.7 points, less than one for one. Each standard deviation of elasticity lowers that share by a further 1.6 points. Where land is scarce, capital goes to risky land because there is little safe land left.

Housing investment in SLR-prone neighborhoods shows no sign of slowing. Together with the growing coastal population, this could add up to a large risk in the US housing stock over the coming decades. Better information alone is unlikely to fix this. Flood risk disclosure has improved in many states (NRDC 2024), yet investment has kept flowing to risk. Even with perfect disclosure, three forces would keep pulling capital to the coast: a coastal premium that dwarfs the SLR discount, expected public protection and infrastructure overinvestment, and mortgages that shift risk to lenders. Policy can lean against these forces. Disaster aid and flood insurance (NFIP) could be adjusted to discourage investment in neighborhoods at growing risk. Infrastructure appraisals should count SLR damage over the full life of the project. Regulators should track how much SLR risk sits in mortgage portfolios, to ensure risk shifting does not weaken lenders. Lastly, capital avoids risk only where it has somewhere else to go, so easing supply constraints on safe land nearby can do more than limiting building in risky areas. Housing supply policy is also climate adaptation policy.

[3] This measure correlates strongly with building permitting as measured in the Census Building Permits Survey (BPS), with a county-year correlation of 0.96.

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