Discussion of

Build at Your Own Risk? The Welfare Effects of Climate Adaptation in Housing Markets

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Risk disclosure and building standards

Homes inside the regulated area

Risk disclosed to buyers and tenants



Existing homes

Preventive measures may apply

Exposure remains until replacement

MODEL ASSUMPTIONS



New construction

Protective building standards required

Compliant homes are fully protected

What I especially like about the paper

Do building standards add value beyond risk disclosure?

The plans reveal existing soil risk and require protective standards for new construction.

- **New construction, nationwide:** 9.2% less residential floor area approved for construction.
- **Older homes in regulated Toulouse areas:** prices fall 13.9% relative to comparison areas.
- **Homes built after the standards took effect, Toulouse:** a 12.5% premium after adjusting for construction-year trends.

A strength of the paper: connecting these different market comparisons to household welfare.

▶ Estimates and designs

1. What if the standards provide only partial protection?

- The model assumes homes built to the standards avoid damage losses and the nonfinancial costs of living with risk.
- The paper already excludes other location benefits of regulation in a sensitivity check. The full-adjustment gain over disclosure falls from 3.2% to 1.6%, but remains positive.
- The author also discusses cheaper retrofits that may leave some risk; the model calculations assume **full protection**.

Possible extension: quantify intermediate levels of protection.

Build on this discussion by allowing residual risk in the welfare and retrofit calculations.

▶ Premium by dwelling type ▶ Welfare assumptions

2. How long do older homes remain exposed?

The model's 1.8% annual adjustment rate comes from the share of 2019 floor area built after 1999.

Replacement	**Expansion**
A new protected home replaces an exposed one.	A new protected home is added to the stock.
There is one fewer exposed home.	The old home can remain exposed.

The paper includes population growth. As it acknowledges, the same adjustment rate determines how quickly unprotected homes leave the stock.

Possible extension: vary replacement at the same total housing growth.

▶ Stock accounting and a feasible check

Welfare gains and the transition

Change in household utility	Full adjustment 1999 population	50-year transition Growth; 3% discounting
Regulation added to disclosure	$+3.2\%$	$+2.1\%$
Combined policy versus corrected no-policy benchmark	$+0.9\%$	-0.06%

Regulation still improves on disclosure during the transition.

The columns also differ in population and discounting. Extend the analysis to partial protection and different replacement rates.

▶ Comparators and sensitivity

Takeaway

An ambitious paper linking housing-market responses to the benefits of climate adaptation.

Two ideas to build on the existing analysis:

1. Allow homes built to the standards to remain partly exposed.
2. Separate new housing additions from removal of exposed homes.

A strong framework for studying how much protection reaches households, and how quickly.

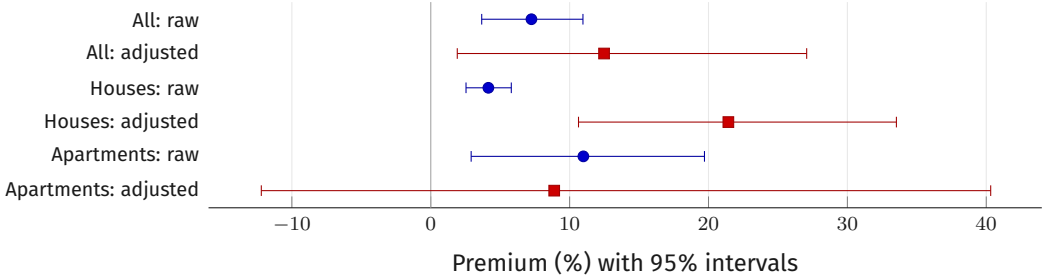
Evidence behind the summary

Outcome	Effect (%)	Reported 95% interval
Authorized floor space	-9.21	$[-16.46, -1.97]$
Existing-home prices	-13.92	$[-17.53, -10.15]$
Post-approval construction premium	$+12.48$	$[1.91, 27.07]$

- Construction permits: PPML imputation, 1995–2019; 594 plans for floor area.
- Older homes: repeat sales, with highly exposed areas outside Toulouse as controls; 3,095 treated pairs across nine plans.
- Newer homes: construction-year comparison with trend adjustment; 11 plans, 21,633 treated transactions, 2010–2019 sales.

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Newer-home premiums before and after trend adjustment



"Raw" and "adjusted" refer to construction-year trends. The overall premium remains positive, but its size and precision change with the adjustment.

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What the paper already checks

- Without other location benefits from regulation, the full-adjustment gain over disclosure is still **1.6%** in household utility. The predicted premium is 8.7%.
- The analysis includes population growth, alternative discount rates, higher climate damages, and willingness to pay for earlier protection.
- Household-utility comparisons are separate from the social account, which also includes landowners and insurers.

The proposed extensions concern protection and replacement.

Allow risk to remain after adaptation, and vary the removal of older homes separately from total housing growth.

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How much older housing remains?

The paper calibrates $s = 0.018$ using the post-1999 share of 2019 floor space:

$$\mu_T = 1 - (1 - s)^T, \qquad H_T^{\text{old}} = (1 - \mu_T) H_0.$$

T is years since the policy; H_0 is the initial stock, and H_T^{old} is the older housing still standing.

- The share of new floor area reflects both additions and replacements.
- Track how much of the original floor area remains to measure how much older housing is still exposed.
- Link the 2011 and 2019 property records if identifiers are consistent; otherwise use construction-year totals to bound how much older housing remains.

Compare different removal rates at the same total housing growth.

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