Local Economic Effects of Public Flood Insurance Compensation*

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Climate change is increasing both the frequency and severity of flooding, creating new challenges for governments seeking to design insurance and adaptation policies that protect households and local economies. When floods occur, physical damage is highly localized, yet their economic consequences can extend beyond affected households, propagating through housing markets, municipal finances, and local labor demand. As climate-related losses escalate, understanding how societies absorb and recover from flood damage has become central to climate policy, financial regulation, and broader debates about climate adaptation.

Across Europe and the United States, rising climate risks are prompting policy initiatives and active debate about whether publicly backed disaster-insurance schemes are needed. Despite this growing policy relevance, we know remarkably little about how such systems function in practice. Although there is extensive literature on the local economic effect of flooding, most of it focuses on very severe flooding cases and insurance regimes that obfuscate the effects of insurance with changes in the behavior of the insurance-provider and incomplete coverages (Gallagher and Hartley 2017, Lautrup et al. 2023, Bin and Landry 2013, Ortega and Taşpınar 2018, and Noth and Rehbein 2019). As a result, it remains unclear whether comprehensive disaster insurance primarily affects households, local economies, or both.

We study the economic consequences of flooding in Denmark, a setting in which losses are covered by a mandatory, nationally cross-subsidized public insurance scheme that reimburses

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nearly all documented repair costs. Under this institutional design, insurance payouts are closely tied to documented reconstruction and financed through a national risk pool, making Denmark an unusually transparent and policy-relevant laboratory for examining the economic effects of flooding when rebuilding is guaranteed and insurance premiums are independent of properties' value and flooding-risk. Furthermore, Denmark's flood insurance system is intentionally generous and places few constraints on reconstruction in exposed locations. Although this design may not be optimal from a long-run adaptation perspective—Denmark is to flood insurance what unemployment insurance without job-search requirements is to labor economics—it provides a rare opportunity to observe the economic consequences of fully socialized flood risk and guaranteed rebuilding. These consequences are informative for countries considering more limited public insurance schemes, as they clarify which effects arise when adaptation incentives are weakened.

Using administrative data that identify every flooded property and its associated insurance payout, linked to population-wide registers, we use a difference-in-differences approach to document the effects on households' financial behavior and mental health, as well as housing prices and local construction firm activity. In figure 1 below, we show a sample of our preliminary results on the effect of insurance payouts related to a big flooding event in December 2013. Panel (a), (b) and (c) show a sample of our results estimated in a DiD setting which hinges a comparison between properties (or households owning these properties) with nearly identical flood-risk but with a difference in whether they were actually flooded during the storm. [1] Thus, panel a shows a sample from our results on household finances comparing similar-risk households who were or were not flooded during the event. Similarly, panel b shows a sample of our results that compare mental health in the form of psychiatric services received from either a specialist (Psychiatrist etc.) or from General practitioners. From this we likewise observe little to no increase in use of mental health services. Panel c shows the different development of house-prices in a similar setup. Here e find that there is a substantial decrease in house prices of flooded house in the wake of the flood, but that it this decrease deteriorate over a 3 to 4 years period. While our results indicate that the effects on households seems small and temporary, the story is different when looking at local specialized[2] construction firms. Panel a and b both show firm-level comparisons between construction firms in flooded and non-flooded municipalities. From these results we document a large increase in both turnover and employment, for the firms in question.

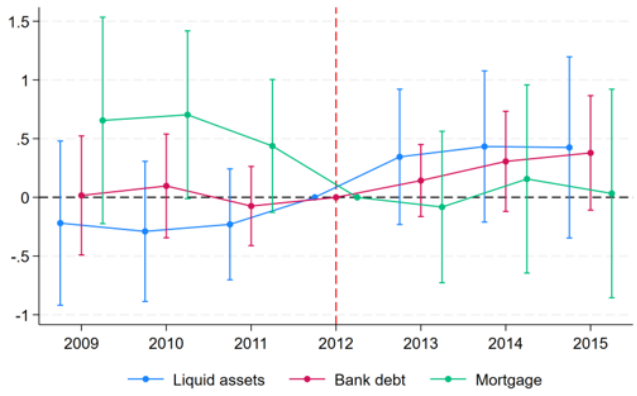
[1] In other results we show that the primary factor deciding whether a household becomes flooded or not is whether their altitude is just below or above the local water level during the flood.

[2] Specialized meaning construction firms delivering services which requires vocational training to perform.

Thus, our preliminary results indicate that households experience little financial and mental-health harm, that housing prices fall temporarily but recover, and that reconstruction generates a substantial and geographically concentrated increase in economic activity in the construction sector. Taken together, our findings show that under comprehensive public insurance, flooding ceases to be primarily a household financial shock and instead operates as a localized demand shock, with effects analogous to automatic, externally financed, place-based stimulus programs.

Figure 1: Sample of our preliminary results

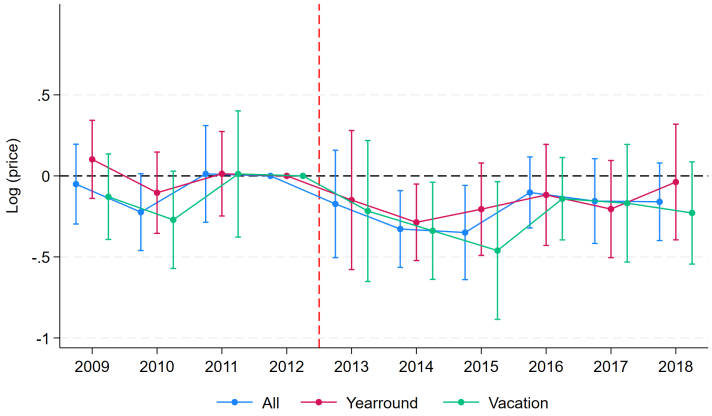
(a) Households' finances



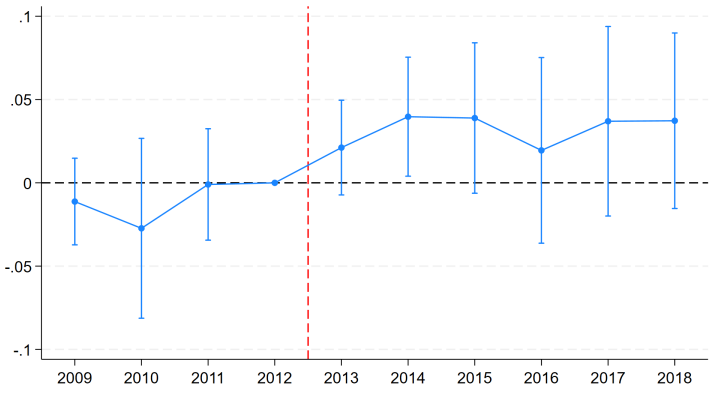
(b) Mental health



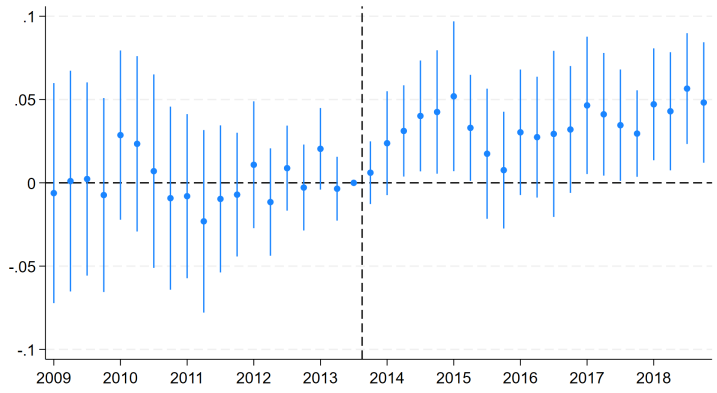
(c) Log-Houseprices



(d) Log-Turnover, construction firms



(e) Log-Employees, construction firms



Notes: Panel (a) and (b) show results on households with ownership treatment or control yearround housing properties (although, we do find similar results on housholds with ownership of vacation housing properties).

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