



Buyouts with rentbacks: a policy proposal for managing coastal retreat

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Abstract

The discussion of adaptation to climate change in coastal areas has focused on short-term risk reduction and climate-proofing, but there is growing recognition that—at some point in the future—relocation to less vulnerable geographical areas will become necessary for large numbers of residents in many coastal communities. Spontaneous relocations that occur after catastrophic events can entail high costs, both for those who resettle elsewhere and for the remaining community. Managed retreat attempts to reduce such costs, thereby facilitating the relocation process. Property buyouts, the most prominently discussed policy tool for managed retreat, present significant challenges in terms of equity, timing, finance, and scale. We discuss innovation in buyout policy that allows residents to remain in their homes as renters after being bought out. We develop the basic structure of such a policy and show the pathways through which it can help to finance buyouts, harmonize public and private decision-making, and manage the timing of community transition. We also recommend funding mechanisms and other details to overcome the substantial barriers to implementation. Although buyouts with rentbacks will require institutional innovation in order to serve as an effective policy framework, the policy has the potential to improve social, economic, and environmental outcomes from the eventual unfortunate but necessary migration away from coastal areas.

Keywords Buyouts · Managed retreat · Sea level rise · Coastal adaptation · Rentbacks · Leasebacks

Introduction

Although the discussion of climate change adaptation in coastal areas has focused on risk reduction and climate-proofing (Woodruff and Stults 2016; Solecki et al. 2011), there is growing recognition that—at some point in the future—managed retreat to less vulnerable geographical areas will

be the most feasible course of action for many communities (Siders et al. 2019). Anticipating the timing and characteristics of climate migration is difficult because there are many uncertainties that interact and compound, including the path of future greenhouse gas (GHG) emissions, sea level rise (SLR), storm regimes (Intergovernmental Panel on Climate Change, 2013), and the costs of collective and individual actions to reduce climate damages and disruption. All of these factors, along with public policy and market forces and feedbacks, will influence individuals and businesses in their decisions to remain in coastal areas, invest in reducing their risks, and eventually relocate to less risky areas.

One impediment to the optimal timing of coastal retreat is the positive feedback between collective risk reduction actions and real estate investment decisions (McNamara and Keeler 2013; Logan et al. 2018; Keeler et al. 2018). Among the numerous barriers to relocation are individuals' investments in coastal property, which can motivate political pressure on local governments to boost property values through risk reduction measures such as beach nourishment, building seawalls, and hardening shorelines to protect transportation infrastructure. Because these investments provide some protection against climate risks,

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they encourage further real estate investment. This feedback creates financial incentives for coastal residents to remain in vulnerable coastal areas in the face of rising hazards.

The policy proposal we discuss in this article—buyouts with rentbacks (BWRs), also known as leasebacks—is intended to disrupt this positive feedback and curb investment in defensive measures for communities that ultimately will become uninhabitable. While BWRs will be costly, the costs of allowing the positive feedback to persist are likely to be substantially higher. BWRs have been implemented for a small number of properties under the locally funded buyout program in Mecklenburg County, North Carolina, and were considered at a broader scale in legislation vetoed by the California governor in 2021 (Georgetown Climate Center 2020). The barriers to implementation are significant, but the policy has the potential to smooth outmigration from communities facing extreme coastal climate risk.

Buyouts with rentbacks

Buyouts are appealing as part of an adaptation strategy because they remove the most vulnerable housing stock from the risk of further damage, protecting property owners and reducing costs and exposure to hazards community-wide (Freudenberg et al. 2016; Hino et al. 2017; Mach et al. 2019). Unlike funds to rebuild housing or infrastructure, or subsidies to insurance, they do not bias recipients toward remaining in risky environments, and in fact, they provide a clear impetus toward relocation to less risky areas.

This paper proposes an extension of the buyout policy under conditions where a significant number of properties are at high risk of damage from climate hazards. That extension is to allow residents to remain in their bought-out property as renters. The idea is simple in principle: property owners sell their property but retain the right to live in that property. Ownership transfers to a public or private entity that serves as landlord for a period of time and steward of managed retreat. Renters move out of the property at a time of their own choosing, but cannot stay past an announced date or trigger for when the property would no longer be rented for residential use. BWRs do not encourage investments that bias residents toward remaining in the long run, but they also do not require immediate relocation. They can be part of a practical, long-term pathway to coastal retreat (Haasnoot et al. 2021).

What problems does this policy help address?

Buyouts with rentbacks separate wealth tied up in real estate equity from other social, climatic, and economic drivers of relocation. The role of equity in property owners'

decision-making is complex and poorly understood (Binder and Greer 2016; Ratcliffe et al. 2019). On the one hand, the desire to get some equity from the property in anticipation of a climate-driven downturn in the real estate market might push people to sell and relocate when they would prefer to remain. On the other hand, people who feel that the time is right to relocate to areas facing lower climate risk might feel trapped by loss of wealth as housing prices slide, leading them to remain until a storm or flood forces mass displacement (de Vries and Fraser 2012).

Allowing property owners to separate the decision to sell an at-risk property from the decision to relocate has two desirable features. For individuals, it allows flexibility in timing and potentially reduces the stress that would be caused by having to sell and move at the same time—either before it is an optimal family decision or after a climate-driven disaster makes remaining an impossible choice.

For communities anticipating eventual outmigration, this policy makes a gradual flow of people leaving an area more likely and could thus ease the strain of sudden adjustments in government service provision and the regional economy. Local governments concerned with sudden disruptions to demographic composition and tax base from storm-induced exodus could see significant advantages. Rental receipts would provide replacement revenue from lost real estate taxes. Communities could stagger buyouts across time to retain more control over expected changes in demography. Smoothing the timing of departures also can make it easier for local governments to clear and manage abandoned properties.

The BWR benefit that motivates our proposal is the alignment of real property ownership and public investments in risk reduction. When decisions are made sequentially by different entities under uncertainty, they can produce path-dependent spirals of investment that lead to harder and more sudden crashes than might be optimal (McNamara and Keeler 2013; Keeler et al. 2018). If more property ownership is centralized in local government, decisions about public investments are made by the same entities making decisions about maintenance and risk reduction for private property. Joint decision-making would help break the positive feedback. Even if BWR policy is implemented through regulated private ownership, the positive feedback could be weakened with contract terms of buyouts that set clear expectations about public investments. It is also possible, however, that centralizing ownership in a private entity could result in concentrated political pressure to continue protecting property. For this reason, we tend to see public ownership as more desirable.

If and when large-scale migration takes place, the built environment left behind in areas subject to submersion, wind, and other destructive forces poses public safety hazards and long-lasting environmental harm. It is unlikely that government or the courts will be able to hold individuals responsible and liable for preventing and/or remediating

this damage after a destructive storm event. If one institution—public or private—is responsible for the property, accountability will be easier to assess and enforce, and there may be economies of scale in organizing and contracting for demolition and salvage. A BWR policy allows consolidation of responsibility for abandoned properties while staggering the timing of abandonment to make sound management more feasible.

Policy details

Simple policy ideas always have complex details, and this one is no exception. We briefly discuss some of these details below.

Purchase price and sources of finance

Buyouts have tended to occur when properties are damaged, with owners typically receiving the pre-damage fair market value (Freudenberg et al. 2016). The program that we envision will be much larger in scale than existing buyout programs and, if introduced after the market has begun to price climate risk (Keenan et al. 2018), “fair market value” may be difficult to determine.

Financing for the purchase price could be comprised of several components:

- Present discounted value of future rents (minus expenses).
- Avoided expenditures for post-disaster assistance, insurance subsidies, and other transfers used to ease the financial burden on homeowners in disaster-prone areas.
- General transfers from the federal or state government designed to compensate people for climate-related losses or help with relocation expenses.
- Potential savings on avoided risk reduction investments that would come from coordinating real estate and community-level investment decisions.
- Potential economies of scale and timing in efficiently financing and managing cleanup and remediation for abandoned properties.

Although future rental income and avoided present and future recovery expenditures can help offset the costs of buyouts under a BWR program, the initial investment in property purchases will nonetheless be a substantial burden for local governments, which face a variety of political and fiscal constraints when considering adaptation investments (Woodruff et al. 2020). One possibility is the establishment of revolving loan funds similar to those that support local investment in water and wastewater infrastructure (Mullin and Daley 2018). In this model, federal or state grants would

capitalize locally managed funds that would be used to purchase properties and replenished in an ongoing way by rental income. A revolving fund was the financing model for the program considered by the California legislature in 2021.

Rental terms

The target rental price should be the best estimate of the fair market rental value of the property, but under conditions of uncertainty and transition, this will not be a straightforward calculation. The rental price could be modified in a number of ways, for example, through an agreement that lowers the purchase price in exchange for some period of free rent. In addition, mutually agreed-upon, transparent, and enforceable terms about maintenance and repair are essential. A policy might reduce investment in ongoing maintenance as the property gets closer to eventual retirement. However, renters need to have some expectations and clarity about the livability of the property for it to fulfill its role as a time-flexible transition to a new location.

Start date of the program

Start date needs to be determined in conjunction with the end-trigger for rentals, but the overarching idea is to anticipate a tipping point when continuing to protect the built environment becomes an unwise decision. The BWR program should start well in advance of the anticipated time for an area’s abandonment. Uncertainty in future SLR rates and changes to storm climate make a specific date impossible to predict, but we anticipate that research and modeling will allow specification of circumstances that would trigger the beginning of a BWR program, possibly tied to some transparent and observable climate signal. Because the risk profiles of even adjacent communities can vary widely, ongoing monitoring will be essential for BWRs to be implemented in advance of disruptive tipping points.

End-trigger

One of the core principles of this program is to provide a relatively certain and transparent criterion for when the property will be deemed uninhabitable and would be demolished or rendered environmentally safe for abandonment. We envision three possible criteria that could be used:

When the original tenant leaves. One of the central purposes of this program is to allow owners to relocate on a time scale independent of concerns about property ownership. The tenant departing is evidence that this purpose has been met. On the other hand, if the original tenant’s departure occurs soon after purchase, the expected rents to finance the property purchase will not be realized. In

addition, rental housing stock may be useful to support tourism and other community benefits during the period of the gradual reduction in economic activity and public service provision. If a tenant departs before some pre-specified period, the program design could allow the house to be rented to new tenants with no expectation of long-term renewal.

When the house is damaged to some specified level. The rental agreement will need to specify the terms under which post-storm or post-flood damages will be repaired. If the damage extends beyond some threshold, this could be the signal that the house is no longer habitable.

When some quantifiable climate (or climate-damage mitigation) signal is observed. The final retirement of housing is most reasonably based on some observable signal that is closely correlated with a tipping point where the benefits of maintaining a livable coastal environment are outweighed by the costs. The signal could be systemic (e.g., mean sea level at a specific location), episodic (e.g., two storms above a given intensity level within a specific time), or related to some impact on infrastructure (e.g., when a given road is impassible a certain number of times a year).

Owning and managing entities

The most obvious arrangement for the rental of buyout properties is *public ownership and management*, an extension of the public housing model that exists throughout the USA and the world. There are numerous differences between this proposed program and most existing US public housing in the composition of renters, the type of housing stock, the duration of residence, and the very purpose behind the program itself. Our point is that public ownership and management of residential properties is neither new nor unprecedented.

One stock objection to this model is the lack of capacity or ability of public sector entities to manage the real property efficiently. At a minimum, coastal communities would have to increase their management and maintenance staff at a time when the community is likely to be in transition. To the extent this is a significant drawback in any particular context, a *public ownership, private management* model could prove attractive. The public owner would contract with private entities to manage and perform maintenance on rented properties and would fund the contract out of rental income. This could provide the additional benefit of providing business to real estate companies that might see sales suffer as the climate risk of ownership rises.

Where local governments cannot support the up-front investment in buyouts or carry the financial risk of a BWR program, *private ownership as well as management* could be an option. Pools of real estate capital could be used to

purchase buyout properties as an investment. These pools would still have to have access to the same sources of non-rental funding that would be available to publicly owned BWRs, and there would need to be enforceable contract terms that governed management, sale, and abandonment processes. A private ownership model might be most likely in areas with dense development and existing common property governed through condominiums or homeowner associations. Private ownership would require government oversight, so there still would be some demand on public resources.

Demolition of the built environment

At the point where houses are abandoned, some entity will need to have responsibility for making sure that destruction, remediation, and salvage meet standards for minimizing environmental damage and public health risks. Septic tanks, metals, and other substances that enter marine and estuarine environments can have substantial negative effects on ecosystem services. A deliberate decommissioning of properties has up-front financial costs but mitigates much larger non-market losses that otherwise will occur. Whatever entity owns properties when they are retired from residential use should have responsibility for meeting these standards, and this responsibility should be priced into the buyout agreement and any contract terms with potential private owners.

Drawbacks and challenges

An obvious obstacle to a BWR program as we have described is the funding required for implementation on a wide scale. Aggregating the diverse sources of funds discussed above—including public funds that span local, state, and federal governments—will demand institutional innovation. Once the program is in place, a related difficulty will be to balance the need for tax and rental revenue against the program's primary goal of managing the demographic transition. Rental terms could be less favorable to residents than their previous monthly mortgage expenses as homeowners for several reasons: (1) buyout price is higher than the original purchase price; (2) rental prices will incorporate costs from the eventual demolition and removal of structures; and (3) the new property manager may need to capitalize rents over a shorter period than a 30-year mortgage while also recovering property tax revenue (if a local government) or generating income (if a private entity). Informed residents may be willing to pay this higher cost in exchange for the ability to stay in their homes without having exposure to future climate risk, which in the long run ultimately drives the asset value to zero. If mortgages are underwater when the buyout occurs, rental terms might be more favorable than

prior homeownership conditions and free up the budget to service the remaining debt from the original mortgage. For the property managers, there are likely to be strong pressures to stretch out the time over which properties contain renters and produce income. Upholding commitments to pre-specified end triggers will be essential to minimizing risk exposure in the most vulnerable communities (U.S. Government Accountability Office 2020).

Like with many other policies and programs, there is some risk of manipulation for private gains. Speculators could buy properties in advance to take advantage of program rules, or there could be fraud in valuing properties or other scams depending on specific details of how program rules are written and implemented. While this challenge is inherent in any transfer program, the scale and novelty of what we are proposing warrants particular attention to these concerns.

BWRs, like other policies for managed retreat, present numerous social and environmental justice challenges (Siders and Ajibade 2021). Local governments vary widely in their administrative capacity and access to capital for implementing such a complex program, and implementation within communities requires attention to distributional and procedural equity as well as issues of historical displacement and preservation of cultural heritage. Program design should have ample opportunity for participation by those shifting from homeowner to renter as well as by existing renters, who are consistently shut out of discussions about managed retreat (Dundon and Camp 2021). It is possible that reducing vulnerability to sudden disruptions and smoothing the timing of departures will promote more just and beneficial outcomes for both individual residents and broader communities, but only with explicit attention to justice concerns within a particular place-based context.

Conclusion

In communities with high exposure to SLR impacts, the positive feedback between private real estate and public decision-making can be a barrier to managed retreat. Residents' property investments encourage collective investments in defensive measures that have transitory benefits and may ultimately aggravate risks (Keeler et al. 2018; Mullin et al. 2019; Dahl et al. 2018). Real estate creates an incentive for residents to remain in vulnerable places, potentially culminating in large-scale, unplanned outmigration that can cause suffering for residents and a sudden collapse of budgets and personnel to provide public services.

By separating the decision to sell an at-risk property from the decision to relocate, BWRs have the potential to improve outcomes for inevitable climate-driven demographic transitions in vulnerable coastal regions. Real estate

investments are not the only consideration in relocation decisions; numerous social, psychological, cultural, and political factors contribute to residents' responses to rising hazards. Yet property investments are a more tractable policy problem than many other relocation concerns. BWRs cannot prevent negative social and economic outcomes from accelerating coastal risks nor can they overcome disparities in people's experiences of those impacts. Their potential is to reduce the magnitude and scope of these negative outcomes by aligning private and public incentives for a retreat that is gradual and planned.

Change is coming to the coast, and considering how public policies will affect individual decisions and market responses beyond investing in short-term risk reduction is essential to being prepared for that change. We have outlined numerous challenges that must be addressed for BWRs to serve as an effective policy framework. Our hope is that consideration and rigorous analysis of policies that consider longer time horizons will improve the ways we adapt to the consequences of climate change that are difficult and painful for coastal communities to consider.

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Declarations

Conflict of interest The authors declare no competing interests.

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