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## Changing Urban Risksapes Climate Change, Finance, and the Built Environment

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## EDITORIAL

# Changing Urban Riskscapes: Climate Change, Finance, and the Built Environment

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**ABSTRACT:** This special issue explores the centrality of finance, risk rating, and valuation in driving urban adaptation pathways and outcomes. The articles in this issue do so through a vast set of sites. These include adaptation efforts underway in high- and low-income cities in Mexico, Portugal, India, the United States, and Taiwan, as well as novel climate risk governance experiments in large and small cities in the Caribbean, the Netherlands, and the Philippines. The articles also look beyond the boundaries of the city and explore the risk rating and valuation practices of increasingly climate-exposed insurance companies and water utilities in Australia and the United Kingdom. All the articles trace the complex and consequential interplay of risk, finance, and adaptation in cities with a specific goal in mind: to consider how urban policies, financing, and planning measures can be repurposed to advance equitable, transformative adaptation.

**KEYWORDS:** climate adaptation; climate finance; climate risk management; finance; urban resilience

## Introduction

In the face of increasingly frequent and severe disasters linked to climate change, there is an urgent need for massive investments in urban climate adaptation. Rapid processes of urbanization around the world are placing ever more lives, livelihoods, and assets in areas that are already experiencing extremely costly disasters

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linked to climate change—a pattern that is only expected to grow as the century wears on (International Panel on Climate Change, 2022). If cities are a hot spot for adaptation, they are typically a cold spot for finance. For one, global climate funding for lower income countries has historically been directed to national rather than local governments, and for projects of mitigation rather than adaptation (Cities Climate Finance Leadership Alliance [CCFLA], 2024). Moreover, the astronomical costs of robust adaptation measures dwarf the budgets of even the world's wealthiest cities—making vital investments in collective flood defences, storm-water management systems, and multifunctional “green” infrastructure, among other adaptive infrastructures, very difficult to come by (CCFLA, 2024).

Importantly, ongoing developments within global financial systems may make these investments even more challenging to pay for. Growing concerns about physical climate risks—be they rising seas, stronger storms, hotter days, or more intense wildfires—have prompted the proliferation and circulation of novel climate risk regulations and ratings across the financial sector, which may reduce investment in regions, cities, or even individual assets considered to be at high risk (Christophers, 2017). These concerns are increasingly being accounted for in everyday financial practice, as re/insurers<sup>1</sup> adjust underwriting; investors contemplate (dis)investment; municipal bond rating agencies revise credit outlooks, and mortgage lending patterns change in hazard-prone cities and urban sectors, as well as individual properties and neighbourhoods (see, e.g., Collier & Cox, 2021; Collier et al., 2021; Cox, 2022; Hilbrandt et al., 2025; Knuth, Cox, et al., 2025; Taylor & Aalbers, 2022).

One need not look further than Los Angeles to ascertain the stakes of these developments. Just a few years before historic, climate change–linked wildfires decimated entire neighbourhoods in January 2025, insurance companies had begun to drop thousands of policies in these very neighbourhoods as they sought to reduce their exposure to wildfire losses (Carbonaro, 2025). Seemingly overnight, questions of insurability—and how it shapes local trajectories of recovery, property values, broader investment dynamics, and capacities for investments in collective, long-term adaptation measures—became core issues for urban policymakers and residents alike (Kwan et al., 2025; Parameshwaran, 2025).

Developments and dynamics like these are not isolated to Los Angeles. Most immediately, they point to an urgent issue that urban policymakers around the world will increasingly confront: how to acquire the necessary resources for vital adaptation interventions when key sources of capital, and risk-rating entities, are increasingly taking urban climate risk into account. Beyond the hurdle of acquiring needed resources for adaptation, questions of finance also shape prospects for urban adaptation in broader ways. For example, how might the *structure* of financial resources—such as whether money comes as a project-based grant or loan—shape the terms, durability, and trajectories of adaptation measures? How, for that matter, might key financial practices of valuation and risk assessment—such as how and where rating agencies, insurers, and investors locate “risk” and “value” within a city—shape where and on what limited resources for adaptation are spent?

These questions raise significant practical problems for urban planners and policymakers. For example, the mechanics of project finance and the link between insurance underwriting and building codes are not common knowledge among policymakers (Smoke, 2017). Nevertheless, the urgent need to simultaneously prepare for and reduce the physical and economic impacts of climate change is forcing policymakers to become experts in these domains—and rapidly. These issues are also central to climate justice (Bigger & Millington 2020; Perry, 2021). Questions of how and where money is spent, as well as how terms like risk and value are understood and defined, speak directly to key distributional concerns of who or what is “worthy” of protection from the effects of climate change and who or what is not (Diezmartinez & Short Gianotti, 2024; Elliott, 2025; Venner et al., 2024). Such distributional questions also open up a host of procedural dilemmas. Who or what should have the authority to make such consequential decisions in the first place, and why (Bulkeley et al., 2014)? If urban policymakers agree in principle that authority should extend beyond themselves and relevant financial and regulatory players, how, exactly, should they go about it? And toward what end(s)? These procedural and distributional matters point to even greater challenges: What changes within urban policy and broader financial architectures are needed to ensure that the “winners” and “losers” of climate adaptation don’t fall across familiar axes of difference (Lamb & Vale, 2024; Shi et al., 2016; Zodgekar et al., 2023)?

This Special Issue explores these and other vital questions related to the ways that sources of financing and funding, as well as financial practices of risk rating and valuation, are shaping urban adaptation trajectories, politics, and outcomes. The articles in this issue do so through a vast set of sites. These include adaptation efforts underway in high- and low-income cities in Mexico, Portugal, India, the United States, and Taiwan, as well as novel climate risk governance experiments in large and small cities in the Caribbean, the Netherlands, and the Philippines. The articles also look beyond the boundaries of the city and explore the risk rating and valuation practices of increasingly climate-exposed insurance companies and water utilities in Australia and the United Kingdom. All the articles trace the complex and consequential interplay of risk, finance, and adaptation in cities with a specific goal in mind: to consider how specific urban policies, financing, and planning measures can be repurposed to advance equitable, transformative adaptation (Shi & Moser, 2021). We elaborate on these articles and their contributions next.

## Finance as a source of capital

How, where, and on what terms finance “touches down” in cities matters. The articles in the Special Issue map out the unevenness of capital flows to urban adaptation contexts, drawing attention to three closely interrelated issues: access, form, and capacity. Several articles underscore how the classification systems of a range of financial entities—including development finance institutions, private banks, insurers, and public funding bodies—greatly shape how and whether cities secure vital adaptation resources. For example, as Manuel

De Vera, Fayola Jacobs, and Patrick Bigger (2025) note, many development finance institutions classify Caribbean countries as middle-income—a judgement that overlooks deep inequalities, high living costs, and widespread economic vulnerability (ECLAC, 2012). Nevertheless, that designation limits these countries' access to concessional financing or low-interest loans for climate adaptation, forcing them to finance adaptation through high-interest debt. National governments or regional institutions generally assume this debt, at times alongside related grants. This means that city governments are not guaranteed a spot at the table when crucial adaptation choices are made—with significant ramifications for how local adaptation projects are prioritized and resourced. De Vera and Jacobs point to the case of the Green Climate Fund—set up under the United Nations Framework on Climate Change to speed up climate finance in developing countries—to problematize such top-down climate finance configurations. Reflecting on their work in the Philippines and the Caribbean, respectively, they contend that these arrangements practically reduce the types of projects and terms under which cities can access resources, reproducing asymmetrical and colonial power relations, and ultimately limiting opportunities to build local capacity and realize more transformative adaptation interventions. Similarly, interventions by both Linda Shi and Zach Lamb (see Taylor et al., 2025) and Julia Wagner and Lucia Santacruz (2025) underscore how housing classifications—such as tenure—guide the flow of public and private finance in U.S. cities. Authors draw attention to how cooperative housing and mobile home living can be systematically marginalized from access to public and private sources of capital due to their atypical, “illegible” housing tenure, with consequences for what forms of housing and living can benefit from much-needed adaptation resources.

Moreover, the form(s) of finance—whether grant-, debt-, or equity-based—structure the substantive features, pathways and outcomes of adaptation in cities. For the reasons introduced earlier, most forms of development finance available to middle-income cities and countries are offered in the form of loans. As Bigger et al. (2025) discuss, these debt-bearing instruments require a clear path to cost recovery or the debt must be repaid out of general funds—often at the expense of other key priorities, like education or health care. The requirements of debt-based finance may thus lead to the prioritization of adaptation projects that promise direct revenue generation over a bounded time horizon. The result is often a fragmented, short-sighted, and exclusionary adaptation pathway, one which appears in urban contexts beyond the Philippines and the Caribbean (see also Knuth, Taylor, et al., 2025). Importantly, these “projectification” dynamics also manifest in grant-based funding. Kayin Venner, Melissa García-Lamarca, and Marta Olazabal (2025) analyze how Portuguese cities access climate adaptation grant funds from the European Union. Here, the design of public funding schemes fosters high inter-urban competition for grants. They find that cities that can afford to invest in staff capacity prove more likely to win competitive grants in the first place and in the future—leading to an uneven “snowballing” and consolidation of resources in wealthy cities.

Existing forms of equity ownership and investment also steer adaptation possibilities in cities. This is particularly true in cities where infrastructure and large segments of real estate markets have been opened up to private, financialized forms of ownership. On the one hand, this means that private financial interests can override the delivery of high-quality and affordable essential services in a changing climate. For example, [Helen James and Sarah Knuth \(2025\)](#) demonstrate how financial practices intended to attract private investment in Thames Water, the largest (and privately owned) water services provider in the United Kingdom, have driven extensive degradation of Thames's infrastructures, extraordinary levels of water wastage, and rising consumer costs—all against a backdrop of growing water insecurity in a climate-changing United Kingdom. On the other hand, private equity in housing can drive public investment in adaptation. Building on insights from Norfolk, Virginia, Alex Fella flags how institutional real estate investors are pursuing a dual strategy of investing in areas that are already marked to receive public adaptation investment *and* that are not—the logic being that if “enough capital concentrates in an area, the city will have to save it” (see [Taylor et al., 2025](#), p. XX).

As the authors note, the task of “saving” cities or specific parts of them is also a problem of technical capacity—in particular, what local governments must do to secure and allocate public and private adaptation resources to begin with. [Erandi Barroso and Fritz-Julius Grafe \(2025\)](#) follow the work of individual practitioners in secondary cities in Mexico and India to analyze how and to what effect those capacities are built. By “evangelizing” the value of adaptation and sustainability to their colleagues in local governance and translating financial institution knowledge on climate best practices into their everyday work, the authors show the creativity involved in anchoring global finance for local adaptation. These inventive practices may increase the legibility of secondary cities hitherto “off the map” of global finance and, equally, the importance of adaptation and resilience to local government officials. Yet the authors question the sustainability of this mode of capacity building as it relies on individuals (and their networks) whose tenure in local governance institutions is often fleeting. For Isabelle Angelovski and Shi, another challenge relates to the twin hurdle of ensuring that investments address core urban climate vulnerabilities and that frontline communities actually benefit from these investments in the long run (see [Taylor et al., 2025](#)). The authors stress that available resources for adaptation far too often go unused due to a lack of local capacity to roll them out and community awareness of them. When these resources are mobilized, as in the case of Barcelona's Superblocks or urban flood defences in Taiwan, adaptation efforts can often push out locals—whether due to the gentrification dynamics they can introduce in specific neighbourhoods or by appropriating the physical space required to build them.

## Risk rating and valuation

If access to capital is consequential in forging adaptation trajectories and outcomes, so too are related problems of valuation and risk assessment: the ways that

experts, including those within the financial sector, define, locate, and/or price “risk” and “value” in particular places. One key actor across the articles is insurance. As [Kate Stein and colleagues \(2025\)](#) and [Paula Jarzabkowski and colleagues \(2025\)](#) discuss in their investigations of climate-changing insurance markets in the United Kingdom and Australia, respectively, insurance has historically profited off being a social good: At its core, insurance provides vital resources for policyholders to recover, rebuild, or relocate in the aftermath of a disaster. But the immense financial losses associated with climate change—and other inflationary drivers—are making profits harder to come by. As the authors note, insurance companies typically seek to address the situation by raising premiums as well as dropping high-risk individual properties, and, on occasion, entire vulnerable geographies, from their portfolio. The challenges of maintaining homeowner insurance markets in the United States, Australia, and other regions also suggest an emerging geography of urban climate-financial crisis in high-risk cities like Miami (see [Taylor et al., 2025](#)). As the articles in the issue discuss, individual indicators of climate risk can place downward pressure on local property values and tax bases (see [Colven et al., 2025](#); [Mehvar et al., 2025](#); [Oerlemans et al., 2025](#)). Over time, these indicators can negatively impact the provision of public goods and services in property tax-dependent municipalities, wiping entire geographies off the adaptation investment horizon ([Montgomery & Palmeira, 2023](#)).

Just as importantly, the articles in the Special Issue show how techniques of valuation and risk assessment shape where and on what limited public adaptation resources are spent—and not spent. One valuation technique, benefit–cost analysis (BCA), stands out across the articles. Where BCA has long been used to determine the relative “worth” of possible public works projects (see, e.g., [Liscow, 2021](#)), it is now becoming a key vector of climate-linked inequality and opportunity. For example, echoing familiar stories of how BCA favours high-resource over low-resource areas, Zach Lamb details how BCAs tend to discourage public adaptation investment in “low value” mobile home parks, whose residents already face significant physical and social vulnerability to climate change (see [Taylor et al., 2025](#)). At the same time, and returning to the Norfolk example, contributors show how private developers in climate-vulnerable cities of the United States are making massive investments in flood-prone areas to “game” valuation techniques like BCAs and force the allocation of public adaptation resources to the benefit of their projects ([Taylor et al., 2025](#)).

When it comes to where and on what local governments invest in adaptation, private techniques of valuation and risk assessment are just as consequential as public techniques like BCA. In a roundtable discussion, Kelly Hereid underscores that in lieu of proactive collective risk reduction measures, like land use changes, and a “well-vetted source of truth [on climate risk] that people have confidence in” ([Colven et al., 2025](#), p. 181), insurance companies and credit-rating agencies are behaving as “adaptation policymakers of last resort” (p. XX). That is, their assessments of climate risk and how to meaningfully address it—as expressed through insurance availability, premium prices, and credit ratings, respectively—are driving both where and on what municipal governments make investments in adaptation, whether through the installation

of stormwater defences in low-lying central business districts in Miami to boost bond ratings (Cox, 2022) or the creation of defensible space and fire-resistant building codes in wildfire-prone ex-urban areas of California to bring insurers back (see, e.g., *Town of Paradise*, 2019). Despite their importance in catalyzing public investments in adaptation, significant normative questions remain for the authors—namely, whether the logics of private insurance companies and rating agencies should be the default frames through which local governments conceive of “worth-while” public adaptation investments and the significance of adaptation more broadly (Colven et al., 2025).

That said, other players have recently entered the climate risk rating and valuation scene, with significant ramifications for urban adaptation. Several articles in the Special Issue highlight the growing role of private, for-profit climate risk analytics and generative artificial intelligence in shaping climate change-informed (dis)investment, emphasizing how these tools fuel speculation. While these tools can rapidly assess the relative climate risks of cities, neighbourhoods, and properties, Cees Oerlemans and colleagues (2025) stress that these data are often static and partial—they fail to account for evolving adaptation investments, potentially distorting perceptions of climate risk and driving reactionary financial (dis)investment decisions. Moreover, access to these data is often limited to those who can afford it and is concentrated in areas with historically robust environmental data collection and modelling. As a result, and as Emma Colven and colleagues (2025) note, the speculative use of climate risk analytics not only reinforces existing inequalities in climate knowledge but also steers investment and divestment in ways that may exacerbate vulnerability and exclusion. Linda Shi raises concerns about the capacity of urban planning and policymaking to keep up with these technologies (see Taylor et al., 2025). Put simply, the speed at which collective and individual investments in adaptation are made does not align with the rapidity of big data-generated assessments of climate risk, raising the question of whether localities deemed risky by these technologies will experience the negative economic impacts of climate change before the physical impacts of climate change arrive (see Paprocki, 2019). Moving beyond questions of how climate risk analytics help shape who or what will *pay* for the effects of climate change, contributors also discuss how climate risk analytics are already informing who or what will *profit* from them. Madison Condon (2023), for example, details the ways that hedge funds are using climate risk analytics to anticipate where people will move as the climate changes and are purchasing property accordingly. In doing so, the authors illuminate how “good [climate] data” can lay the groundwork for extractive adaptation pathways (see Colven et al., 2025).

## Toward equitable adaptation: Insights for policymakers

If the Special Issue articles underscore the consequential role(s) that financial practices and instruments play in forging urban adaptation pathways, the contributions also highlight the inequitable outcomes to which these pathways may

lead. In many ways, such outcomes are predictable. As all the articles note, climate adaptation in both the private financial sector and urban public sector is taking place in and through a highly unequal landscape, where some populations and ways of living have been made more valuable than others over time. Put differently, if one accepts the premise that adaptation entails a series of interventions so that “nothing really has to change” (Swyngedouw, 2009, p. 270) in a changing climate, why would one expect anything but inequitable outcomes?

Importantly, the articles here do find significant opportunities for equity-oriented change in climate adaptation, even if financial experts or urban policymakers have not yet taken them up. One important area for reform relates to key distributional questions of how public and private adaptation resources are accessed and allocated. From a climate justice perspective, this means prioritizing those most vulnerable to climate risks rather than relying on funding and financing models that favour wealthier stakeholders and effectively exclude marginalized communities. Wagner and Santacruz (2025) and Bigger et al. (2025) both argue that adaptation funding should move beyond project-based loans and instead focus on longer term grants. Eliminating concerns about cost recovery, they contend, would not only expand the scope of adaptation measures but also make them more inclusive, ensuring that marginalized communities can actively participate in and benefit from climate adaptation efforts.

Moving to the question of how local governments and utilities seek to attract private investment in costly adaptive infrastructure, James and Knuth (2025) underscore the need to bake strict operational performance requirements into any climate finance deal. Without these safeguards, private investments may prioritize short-term profitability over long-term resilience, exacerbating rather than alleviating shared climate risks. By enforcing rigorous upkeep and accountability measures, the authors argue, climate finance can be made to serve the public good and ensure that critical infrastructure protects rather than endangers the communities most vulnerable to climate impacts. Furthermore, contributors discuss the importance of expanding financial classification systems to include new forms of ownership. For example, Lamb and Shi call for broadening official public and private conceptions of housing tenure to include non-traditional forms like co-ops (Taylor et al., 2025). These structures may lend themselves to community-scale, climate-informed planning and should be able to access vital adaptation and recovery resources.

However, need-based redistribution requires capacity building among low-resource cities, neighbourhoods, and individuals—another equity-oriented intervention that the Special Issue articles identify. Notably, building that capacity does not necessarily entail categorical rejection of financialized risk analytics or private finance in favour of public alternatives but strategic efforts to make the former do new kinds of work. For example, both Jarzabkowski et al. (2025) and Stein et al. (2025) highlight how the highly detailed data held by insurance companies could be harnessed by urban planners to shape climate-sensitive planning approvals and construction standards. Such data could help ensure that historically marginalized communities receive the same level of

climate-informed planning and protection as wealthier areas rather than being further excluded from resilient infrastructure investments.

Relatedly, authors highlight both the need and opportunity to “democratize” and “dynamize” climate data, whether by using climate models and risk projections in tandem with local communities to envision, and plan for, specific climate futures or ensuring that subsequent adaptation actions are accounted for in said climate risk models (Barroso & Grafe, 2025; Colven et al., 2025; Fella in Taylor et al., 2025; Oerlemans et al., 2025). Across these examples, we can see how access to data can support inclusive adaptation planning, granting residents a sense of greater agency in shaping their futures. Moreover, Bigger et al. (2025) call for opening up local knowledge on what specific climate financing is available. A central, regularly updated platform on climate finance resources would, the authors argue, go a long way in supporting local government awareness of where vital adaptation resources are and the various requirements for accessing them—thereby ensuring that knowledge does not remain a key adaptation barrier for low-resource cities and communities.

For many authors, however, capacity building is about more than data sharing and platforms. It entails bringing together otherwise separate worlds—and, in doing so, building new ones. Importantly, and as Barroso and Grafe (2025) note, urban climate practitioners do this work daily, whether by embedding resilience into local government vocabularies or devising creative ways to secure adaptation resources. As these practitioners seek to “anchor” global sources of climate finance locally, the authors note that practitioners have the opportunity to introduce new understandings of adaptation to global climate finance institutions—and therefore shape more locally preferable adaptation pathways. Both Colven et al. (2025) and Taylor et al. (2025) emphasize the need for climate “translators” in urban planning and adaptation policy—individuals who not only understand the science of climate change but can also bridge the gap between technical knowledge and the lived realities of marginalized communities. By embedding these translators within planning processes, cities can ensure adaptation measures are both scientifically informed and responsive to the needs of those most vulnerable to climate impacts. Abdi Mehvar and colleagues (2025) offer a crucial example of what that translation work can look like in practice. The authors reflect on the co-creation and initial roll-out of a 5-year impact research programme on urban climate risk governance in the Netherlands, one that expressly confronts the current and potential roles of finance—as a resource need, as a powerful yet often distant stakeholder, as a way of framing problems—in enabling more just and transformative adaptation. The practical tips, process designs, and organization strategies here can inspire cities and knowledge institutions to seek ways to convene place-based learning and exchange in their communities.

These are, of course, just a handful of ways to make adaptation outcomes more equitable—and indeed, they are offered through rather than against a highly unequal landscape that climate change is already impacting. More radical proposals—such as debt elimination in low-income countries or more aggressive wealth taxation—also appear within the pages of the Special Issue, and they

remain important to fight for. Above all, then, this Special Issue is meant not as a definitive account of finance and urban adaptation, but a point of entry for urban policymakers who care deeply about the worlds that future generations will inherit and the worlds that are already being undone, remade, or denied by climate change. Finance, as we have suggested here, is an increasingly consequential player in the making of climate-changed worlds—this issue, we hope, provides a useful introduction to it.

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## Note

1. Reinsurers are the entities that provide insurance to insurance companies.

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